

Target and position article

## Value synergy and value asymmetry in relationship marketing programs

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### ABSTRACT

Prior research advocates a positive, linear association between relationship investments and relationship performance. Our study challenges this conventional wisdom and advances the extant literature by investigating the potential curvilinear effects of suppliers' different relationship marketing programs (i.e., social, financial, and structural) on dyadic perceptions of relationship value. From an analysis of 113 buyer-supplier dyads, we found that social programs enhance relationship value synergy, but their effect on relationship value asymmetry between suppliers and buyers follows a U-shaped curve. On the other hand, we observe a positive and increasing returns-to-scale effect of financial programs on relationship value synergy and its inverted U-shaped association with supplier's relationship value asymmetry. Interestingly, structural programs increase relationship value synergy and have a stronger effect on increasing relationship value for the supplier than for the buyer. In addition, we find that structural programs are more effective in creating value in long-term relationships than in short-term relationships; therefore, as the relationship with a buying firm ages, managers should consider investing more in structural programs to develop their relationship. However, in long-term relationships, managers should avoid investing too much in financial programs because financial programs are less effective in increasing creation of relationship value as a relationship ages.

### 1. Introduction

The business-to-business marketing literature has long recognized that relationship investments enhance relationship performance (Palmatier, Dant, Grewal, & Evans, 2006, Palmatier, Gopalakrishna, & Houston, 2006, Palmatier, Scheer, Houston, Evans, & Gopalakrishna, 2007). Practitioners, however, are less certain about whether they gain much value from their investments in building close inter-organizational relationships with customers, as they increasingly realize that “close relationships are not always synonymous with good relationships” (Anderson & Jap, 2005, p.75). The high failure rate (30%–50%) of close relationships, such as joint ventures or alliances, between firms and either their suppliers or customers has led managers to reconsider the linear view of their relationship building efforts (Anderson & Jap, 2005). Moreover, the rising opportunistic behavior in today's complex supply chains has created the risk that one party in a dyadic buyer-supplier relationship can gain greater value at the expense of the other (Vandenbosch & Sapp, 2010). Such opportunism puts pressure on supplying firms to consider not only how much new value their investments can create for the relationships, but also how much value they can receive compared to their partners. Given the high costs of investing in business relationships, it is critical for managers to

effectively tackle these two challenges; however, prior research reveals a gap to the extent that it has not completely explained this important phenomenon.

A review of the extant literature on buyer-supplier relationships reveals three notable limitations. First, few empirical studies address the complexity of how relationship investments affect relationship performance. On one hand, building on the reciprocity norm of social exchange theory, previous research has focused on the positive linear effect of supplier's relationship marketing programs (including financial, social and structural programs) on customer-specific return on investment (Palmatier, Dant, et al., 2006), and supplier-buyer relationship quality (Palmatier et al., 2007). On the other hand, transaction cost theory posits that relationship investments can create a fertile ground for harmful opportunistic behavior (Williamson, 1975), and “can make it difficult to walk away” (Anderson & Jap, 2005, p.76). The literature on relationship marketing is unclear about how these two contrasting theories together explain the effect of supplier's relationship marketing programs on relationship performance. Second, although business relationship value involves two important facets, value creation and value distribution (Fang, Palmatier, & Evans, 2008), prior research has largely focused on value creation instead of value distribution. Relationship value is “the trade-off between the benefits and

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costs” each party perceives in a dyadic relationship, “taking into consideration the available alternative relationships” (Ulaga & Eggert, 2006b, p.128). Indeed, the focus has been on a single side of the relationship, either the buyer or the supplier, rather than the dyad (Fang et al., 2008; Wagner, Eggert, & Lindemann, 2010). Unfortunately, when the party making relationship investments receives less value than the invested-in party, this difference in the distribution of value between the two parties can be a sign that value is being created for one party at the expense of the other. Third, prior research has ignored the contingency effect of relationship age to which the nonlinear effect of relationship building efforts might be subject. Relationship age reflects the length of time two parties have interacted with each other (Palmatier, Dant, et al., 2006). Previous studies consider relationship age to be a solid proxy reflecting relationship closeness and stability (Kumar, Scheer, & Steenkamp, 1995a; Liu, Li, Tao, & Wang, 2008; Stanko, Bonner, & Calantone, 2007) and point out that as a relationship evolves, trust, commitment, control, and other relational factors will change (Anderson & Weitz, 1989; Jap & Ganesan, 2000; Liu, Su, Li, & Liu, 2010). The literature still lacks consensus about whether relationship age facilitates or impedes relationship building efforts (Palmatier, Dant, et al., 2006). As a relationship ages, both parties experience and gain information about each other, which, in turn, helps to increase each party's trust in its counterpart (Anderson & Weitz, 1989). However, as a relationship ages, an element of complacency may appear as firms pay less attention to their exchange party (Barnes, 2005).

In dealing with the above limitations of the extant literature, our first objective in this study is to build on the competing arguments of transaction cost theory and social exchange theory to propose that there may be potential curvilinear associations between supplier's relationship marketing programs and relationship performance. Our study adopted the relationship marketing definition by Parvatiyar and Sheth (2000) that “relationship marketing is the ongoing process of engaging in cooperative and collaborative activities and programs with immediate and end-user customers to create or enhance mutual economic value, at reduced cost” (p.9). Therefore, following previous research (Palmatier, Gopalakrishna, and Houston, 2006; Palmatier et al., 2007), relationship marketing programs will only refer to the programs initiated by the supplier to build a relationship with the buyer. Second, in this study, following Jap (1999) and Jap (2001), we consider the value created in the buyer-supplier relationship as a “pie” that is divided between the buyer and the supplier. Jap (1999) used the term “pie expansion” to refer to how buyer and supplier increase their value “pie” by collaborating in mutually beneficial strategies, while Jap (2001) used the term “pie sharing” to refer to how the value “pie” is divided between collaborating parties. In the current study, we consider relationship value perceived by the buyer as the buyer's portion or share of the “pie” while relationship value perceived by the supplier as the supplier's portion. Combining these two portions, we try to capture the whole size of the “pie” (relationship value synergy), and while comparing the supplier's portion to the buyer's portion, we can see the difference in their shares (supplier's relationship value asymmetry). An increase in relationship value synergy, which is a combination of buyer's and supplier's relationship value, reflects that new relationship value is created for the buyer or the supplier or both. Meanwhile, an increase in supplier's relationship value asymmetry, as a difference in magnitudes between supplier's and buyer's relationship value, reflects that supplier's relationship value increases more than buyer's relationship value. Our second research aim is to examine how relationship marketing programs influence relationship value synergy and supplier's relationship value asymmetry in a buyer-supplier relationship. Third, our study aims at examining the potential moderating effect of relationship age on the links between relationship marketing programs and relationship value synergy and asymmetry.

This study attempts to make several contributions to relationship marketing knowledge and provide managerial implications. First, this study extends the literature on business relationships by highlighting

the non-linear effects of relationship marketing investments and by assessing the effects of relationship investments on both value creation and distribution in buyer-seller relationships. Second, the study offers a concept of supplier's relationship value asymmetry that captures the relative difference in magnitudes between relationship value perceived by the supplier and value perceived by the buyer. Supplier's relationship value asymmetry (SRVA) and relationship value synergy (RVS) constitute two-sided indicators of relationship performance useful for assessing the effectiveness of relationship investments. Third, our research enriches the understanding of how suppliers should allocate investments into three types of relationship marketing programs (social, structural, and financial) at different levels of relationship age. Finally, findings from the study should help managers weigh the pros and cons of each type of program in order to develop relationships with their partners so as to allow both parties to prosper in their long-term relationship.

## 2. Theoretical background

### 2.1. Relationship value: creation and distribution

The literature on relationship value has demonstrated that perceived value from relationships positively influences relationship performance. Relationship value improves customer trust, commitment, satisfaction (Faroughian, Kalafatis, Ledden, Samouel, & Tsogas, 2012; Ulaga & Eggert, 2006a), customer share (Morales, 2005), and word of mouth and intention to maintain or enhance a relationship (Faroughian et al., 2012; Geiger et al., 2012; Palmatier, Jarvis, Bechhoff, & Kardes, 2009). Furthermore, Geiger et al. (2012) reveal that relationship value strongly influences intentions to switch, search for alternatives, or enhance relationships for both buyers and suppliers.

Many studies had made efforts to investigate drivers and outcomes of relationship value long before researchers admitted that this concept was too complex and ambiguous to analyze from a static and standardized perspective (Corsaro & Snehota, 2010; Eggert, Ulaga, & Schultz, 2006). Corsaro and Snehota (2010) stressed that the concept of value is always relative and actor-specific, and that “there is not an idiosyncrasy of value perceptions, but rather an idiosyncrasy of value because no two actors can ever have the same temporal and spatial latitude” (p.992). This proposition implies that there is some difference or gap in the buyer's perception and the seller's perception about how much value they receive from the relationship. However, very few studies in the relationship value literature address the asymmetry between parties' value perceptions in inter-organizational buyer-supplier relationships (Wagner et al., 2010). Creating new value and sharing this value are two competing but inseparable facets that a buying firm needs to consider when making a decision about investments in a business relationship (Fang et al., 2008). From the customers' perspective, Wagner et al. (2010) found that customer firms perceive value creation as positive only when they are sharing a bigger “slice” of a larger value “pie”. From the suppliers' perspective, Praxmarer-Carus, Sucky, and Durst (2013) explained how suppliers' perceived distributive fairness mediates the positive relationship between their perceived share of earnings and their satisfaction. Although Praxmarer-Carus et al. (2013) attempted to use a small dyadic sample to compare buyers' and supplier's share of costs and earnings, their scope was limited to costs and earnings from supplier development programs, not value from the complete buyer-supplier relationship. A review of prior studies reveals that the relationship value literature has ignored both the creation and distribution facets of relationship value from a dyadic perspective. Therefore, the present study offers a construct of supplier's relationship value asymmetry to assess the relative difference in magnitudes between relationship value perceived by the supplier and value perceived by the buyer.

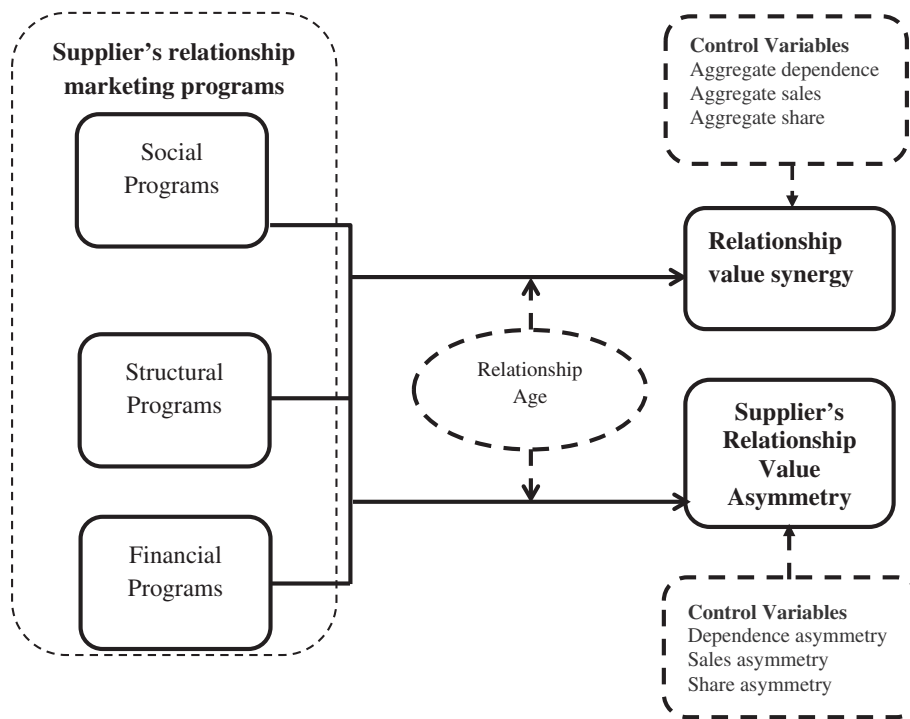


Fig. 1. Hypothesized model of supplier's three relationship marketing programs and RVS and SRVA.

2.2. Transaction cost theory and social exchange theory

With the aim to create greater relationship value for buying firms, many suppliers invest in relationship marketing programs specific to these partners. Supplier's relationship marketing programs included in the hypothesized model fall into three types: social programs, structural programs, and financial programs (Palmatier et al., 2007). Plausibly, suppliers expect that these investments will yield, in return, a fair share of relationship value. There exists a dual logic that buyers may adopt in response to supplier's given relationship investments: reciprocity logic and/or opportunism logic. Because opportunism is the violation of the relational contracting norm that occurs when two involved parties do not share the benefits and costs of a relationship, this study considers it as the logic to explain how relationship marketing programs can affect the difference in relationship value magnitudes between the supplier and the buyer (SRVA). Meanwhile, the norm of reciprocity ensures that both parties can obtain benefits from their relationship. Thus, this study considers it to be the logic that explains how relationship marketing programs can affect RVS. In this sense, both transaction cost and social exchange theories could help explain different outcomes of specific investments in relationship marketing programs, which include social programs, structural programs and financial programs in the hypothesized model.

Transaction cost theory argues that relationship-specific investments can become a fertile breeding ground for opportunism by partners (Anderson & Weitz, 1992; Heide & John, 1992). Opportunism or “self-interest seeking with guile” is one of three core constructs of transaction cost theory and includes such behaviors as lying, cheating, or violating agreements (Williamson, 1985). According to Macneil (1980), the central norm of relational contracts is that benefits and costs in a relationship will be shared between the parties. In other words, opportunism, as a violation of a relational contract, may contribute to an asymmetry in relationship value between suppliers and buyers.

In contrast to transaction cost theory, social exchange theory looks on the “bright” side of how relationship specific investments can induce gratitude and reciprocity behavior (Emerson, 1976). The application of social exchange theory is not limited to interpersonal relationships, but

can be found in many studies of interorganizational relationships to explain the development of business to business relational exchanges (Anderson, 1995; Dwyer, Schurr, & Oh, 1987) and to examine variables, such as relational norms, (Griffith, Harvey, & Lusch, 2006), cooperation (Anderson, Håkansson, & Johanson, 1994; Anderson & Weitz, 1989), and trust and commitment (Kingshott, 2006; Morgan & Hunt, 1994) that help make a relationship successful. Social exchange theory implies that relationships develop over time on the basis of trust, loyalty and mutual commitments that arise through parties' abidance to the norm of reciprocity (Cropanzano & Mitchell, 2005; Lambe, Wittmann, & Spekman, 2001). The norm of reciprocity is an expectation that, after one party's action, the other party should compensate or reciprocate (Houston, 1986). After a counterpart reciprocates, new rounds of exchange initiate and the process repeats in a cycle (Cropanzano & Mitchell, 2005). These reciprocity behaviors reflect each party's engagement in value creation initiatives, which contributes to increased value creation in the relationship.

3. Hypothesis development

3.1. Supplier's relationship marketing programs and relationship value synergy

According to Palmatier et al. (2007), supplier's relationship marketing programs fall into three types: social programs, structural programs, and financial programs. Social programs involve efforts to convey special status and personalize the relationship. They include offering special treatment to buying firms, sharing special reports/information or organizing social interaction events between two firms. Structural programs offer customers tangible, value-added benefits that they find difficult to supply themselves, including electronic order-processing interfaces, customized packaging, or other custom procedural changes. Financial programs refer to offers of direct economic benefits in exchange for past and future customer loyalty and include special discounts, free products for incremental sales and cost-saving incentives (e.g. free shipping, extended payment terms, etc.) (Palmatier et al., 2007). Fig. 1 depicts the overall theoretical model underlying this study.

Previous research argued that supplier's relationship marketing programs can enhance relationship quality, as indicated by buyers' increased trust, commitment and satisfaction (Palmatier et al., 2007). When the supplier raises their investments in social programs or structural programs, these relationship marketing programs will create higher relationship value for the buyer and induce a favorable response from the buyer. Social exchange theory argues that when one party, a supplier in this case, offers substantive relationship marketing programs specifically to a buyer, the supplier anticipates that the buyer will respond by reciprocating these investments (Cropanzano & Mitchell, 2005). Relationship value for the supplier will increase when the buyer can reciprocate by increasing their purchases, lowering price sensitivity, or having other actions that favourably affect supplier's financial outcomes (Palmatier et al., 2007). The buyer's reciprocity behavior will induce further reciprocity behavior in return from the supplier, increasing value creation and maintaining the ongoing relationship (Palmatier et al., 2009). Therefore, as a supplier increases its investments in social or structural programs specifically targeted at a buyer, relationship value increases for both the buyer and supplier; therefore, RVS, the created value the buyer and the supplier perceive in their dyadic relationship, increases.

However, when the supplier invests in financial programs for the buyer, this study posits that financial programs improve RVS at an accelerating rate, such that a unit increase in financial programs relates to increasingly higher RVS. Palmatier et al. (2007) and Palmatier, Gopalakrishna, and Houston (2006) failed to find any positive, linear association between financial programs and relationship performance. They suggested that financial programs might differ from social programs or structural programs. Unlike social programs or structural programs which often require investment of some assets (physical and/or human), low to moderate financial relationship investments may be easily matched or imitated by competitors (Palmatier, Gopalakrishna, and Houston, 2006). Because low to moderate levels of investments in financial programs hardly appear attractive compared to competing offers from many other suppliers, the buyer can take such a financial offer from the focal supplier for granted. Therefore, the buyer might perceive only a slight increase in the value received from the relationship and, in return, only somewhat reciprocate the supplier's investments such that the supplier also perceives little increase in their relationship value. Thus, with little new value created for the buyer and the supplier, at low to moderate levels of investments in financial programs, RVS will increase only at a modest rate.

RVS increases at a higher rate when the focal supplier's investments in financial programs are at moderate to high levels. Moderate to large financial programs increase the difficulty with which other suppliers are able to match. Such attractive offerings increasingly induce the buyer to maintain the relationship by reciprocating the supplier's efforts and help the focal supplier secure its relationship with the buyer. After receiving relationship value reciprocated by the buyer. The supplier also will be more likely, in turn, to "re-reciprocate" the reciprocal behavior of the buyer simply because the supplier's large relationship-specific investments motivate them to maintain the relationship in an ongoing reciprocity cycle (Cropanzano & Mitchell, 2005). Therefore, RVS increases at a higher rate in the range from moderate to high levels than in the range from low to moderate levels. Thus, the study hypothesizes the following:

**H1.** Supplier's investments in social programs and structural programs have a positive association with RVS, while those in financial programs have a positive, increasing returns-to-scale association with RVS.

### 3.2. Supplier's relationship marketing programs and supplier's relationship value asymmetry

Unlike the linkage between relationship marketing programs and

RVS built upon the reciprocity logic of social exchange theory, this study premises the association between relationship marketing programs and SRVA on the opportunism logic of transaction cost theory. As a supplier increases the investments in social, structural and financial programs from low to moderate levels to build the relationship with a buyer, the buyer will be less likely to behave opportunistically by exploiting these investments made by the supplier. At low to moderate levels, such programs are only somewhat attractive to the buyer and thus not worth the buyer expropriating (Wang, Li, Ross Jr, & Craighead, 2013). The buyer is unlikely to act opportunistically due also to the concern that doing so would jeopardize these attractive investments from the supplier. As stated before, the buyer will be more likely to reciprocate value to the supplier. Therefore, at low to moderate levels of relationship marketing programs, the supplier can receive value reciprocated by the buyer, yielding increasingly more relationship value for the supplier compared to relationship value for the buyer. In other words, at such levels, SRVA will increase.

When the supplier continues increasing their investments in these programs from moderate to high levels, they become more likely to prompt opportunistic behavior from the buyer (Jap & Ganesan, 2000). Transaction cost theory argues that partner opportunism is highly likely when the focal firm's specific investments generates a value large enough to be worth expropriating and/or because the focal firm has so much unique investment in the relationship that they cannot respond to partner opportunism (Jap & Ganesan, 2000; Wang et al., 2013; Williamson, 1985). In our case, when the supplier has excessive investments in social, structural or financial programs, they become large enough to encourage the buyer's opportunism because the risk of jeopardizing the relationship is now worthwhile to the buyer. Such behavior may be especially applicable to buyers who are attracted by financial incentives (Cao & Gruca, 2005; Palmatier, Gopalakrishna, and Houston, 2006). Furthermore, given their excessive specific relationship investments, the supplier now cannot respond to partner opportunism. As the investor, they will also be less likely to behave opportunistically toward the buyer, because they are concerned that their opportunistic behavior may lead to a loss of their investment's full value and future income (Anderson & Weitz, 1992). Therefore, after a certain point, the supplier's investments in social, structural and financial programs will provide value for the buyer at the expense of value for the supplier, thereby decreasing the asymmetry between the supplier's relationship value and the buyer's. Thus, the study hypothesizes the following:

**H2.** Supplier's investments in social, structural, and financial programs have inverted U-shaped effects on SRVA.

### 3.3. The moderating role of relationship age

Relationship age is the length of time the relationship between two exchange partners has existed (Palmatier, Dant, et al., 2006). Prior research in relationship marketing has shown that relationship age is a significant determinant of relationship performance such as trust, perceived relationship continuity (Anderson & Weitz, 1989), and affective commitment (Verhoef, Franses, & Hoekstra, 2002). When the buyer-supplier relationship is young, neither party has accumulated sufficient behavioral information and understanding about each other to allow for accurate prediction of each other's conduct (Palmatier, Dant, et al., 2006). At lower levels of relationship age, even when the supplier makes high investments in relationship marketing programs for the buyer, the buyer will be less willing to reciprocate because of their lack of confidence in the supplier's intention and in their own commitment to the relationship. However, when relationship age increases, both the buyer and the supplier have gained greater trust in their relationship (Liu et al., 2010, Palmatier, Dant, et al., 2006). Thus, if the supplier invests heavily in relationship marketing programs for the buyer, the buyer will be more likely to commit further to the relationship by

reciprocating the investments and creating more value for the buyer, contributing more to RVS. In other words, the rate of RVS increase will increase in the case of longstanding relationships.

In addition, at lower levels of relationship age, a low accumulation of confidence and commitment between two parties can induce more opportunistic behavior, especially by the buyer (Anderson & Weitz, 1992). When the relationship ages, after years of gathering information to understand and predict the buyer's behavior, the supplier can better protect their investments from opportunistic behavior by the buyer (Deeds & Hill, 1999). In a longstanding relationship, the buyer is also less likely to engage in opportunistic behaviors to the extent that they have established trust with and commitment to the supplier (Palmatier, Dant, et al., 2006). Thus, at high levels of relationship age, the negative effect of excessive relationship marketing programs on SRVA will flatten. These arguments lead to the following hypotheses:

**H3a.** Relationship age positively influences the effects of supplier's relationship marketing programs on RVS.

**H3b.** Relationship age positively influences the effects of supplier's relationship marketing programs on SRVA.

## 4. Method

### 4.1. Measurement instrument

The study adapted all construct measures in this study from existing tested scales in previous research. The study measured all constructs with multi-item 7-point Likert scales or by using measures derived from such scales, if not otherwise indicated.

#### 4.1.1. Relationship marketing program

The study adapted the measurement scales of three types of relationship marketing programs (financial programs, structural programs, and social programs) from Palmatier et al. (2007) and Palmatier, Gopalakrishna, and Houston (2006). Because the supplier directs these relationship marketing programs toward the buyer, the supplier is in a better position than the buyer to report on these variables.

#### 4.1.2. RVS and SRVA

As stated before, following Jap (1999) and Jap (2001), we consider the value created in the buyer-supplier relationship as a pie and relationship value perceived by the buyer as a portion of pie for the buyer while relationship value perceived by the supplier as the other portion for the supplier. Therefore, when we combine these two portions, we have the whole size of the pie (in essence, RVS). The study measured relationship value using a scale adapted from Geiger et al. (2012), then calculated RVS as the product across items of relationship value perceived by each party in a buyer-supplier relationship:  $RVS = RV_{\text{Buyer}} * RV_{\text{Supplier}}$ . On the other hand, when we compare the sizes of the supplier's portion and the buyer's, we can see its difference (SRVA). The study measured SRVA first by measuring relationship value, and then following previous research that has used dyadic difference scores (Fang & Zou, 2010; Homburg & Jensen, 2007), the study calculated the relative difference across items as follows:  $SRVA = RV_{\text{Supplier}} - RV_{\text{Buyer}}$ . Before calculating the product or subtracting supplier's relationship value and buyer's relationship value to measure relationship value synergy and supplier's relationship value asymmetry, we tested metric invariance by constraining the matrix of factor loadings to be invariant across buyer and supplier groups. The full metric invariance was supported as the chi-square difference between the unconstrained model and the full metric invariance model was not significant ( $\chi^2(4) = 7.20, p > 0.10$ ).

Our approach is consistent with previous research that has used dyadic difference scores (Fang & Zou, 2010; Homburg & Jensen, 2007; Kumar, Scheer, & Steenkamp, 1995b). To measure differences between marketing and sales units in regard to customer orientation, Homburg

and Jensen (2007) “used a twin scale: one for marketing and one for sales” (p.130) (which have the same items). Then they computed the differences across items in which “the larger the discrepancy between marketing and sales, the larger is the difference score, regardless of which has the higher and which has the lower score” (Homburg & Jensen, 2007, p.130). Furthermore, the method of multiplication and subtraction of our study is based on the dimensional approach, which has been long used to measure interdependence and dependence asymmetry in the marketing literature (Fang & Zou, 2010; Homburg & Jensen, 2007; Kim & Hsieh, 2003). According to Kim and Hsieh (2003), the multiplication method is the dimensional approach that was used to measure the magnitude of bilateral dependence (Heide, 1994; Lusch & Brown, 1996), and the subtraction method is the dimensional approach that was used to measure the asymmetry of relative dependence (Anderson & Narus, 1990; Gundlach & Cadotte, 1994; Jap & Ganesan, 2000). The dimensional approach adopted to measure relationship value synergy and supplier's relationship value asymmetry in our study presumes that buyer's relationship value and supplier's relationship value capture the same phenomenon except for the locus of relationship value, and therefore they can be added or subtracted to characterize relationship value synergy (Kim & Hsieh, 2003). Supplier's relationship value and buyer's relationship value can be different in terms of the magnitude and the relationship value elements (Corsaro & Snehota, 2010). However, in our study, we are only interested in the relative difference in magnitudes between supplier's relationship value and buyer's relationship value. Therefore, we follow this dimensional approach to measure relationship value synergy and supplier's relationship value asymmetry.

#### 4.1.3. Relationship age

The study measured relationship age by the length in years of the interfirm relationship.

#### 4.1.4. Control variables

The study considered three control variables for interdependence in RVS: aggregate annual sales of the buyer and supplier (Aggregate sales =  $Sales_{\text{Buyer}} * Sales_{\text{Supplier}}$ ), the product of the supplier's share in the buyer's total purchase and the buyer's share in the supplier's total sales (Aggregate share =  $Share_{\text{Buyer}} * Share_{\text{Supplier}}$ ) and aggregate dependence between the buyer and supplier (Aggregate dependence =  $Dependence_{\text{Buyer}} * Dependence_{\text{Supplier}}$ ). The study controlled for supplier's dependence asymmetry in SRVA using three control variables: the relative difference between the supplier's size and the buyer's size (Supplier's Sales asymmetry =  $Sales_{\text{Supplier}} - Sales_{\text{Buyer}}$ ), the relative difference between the buyer's share in the supplier's total sales and the supplier's share in the buyer's total purchase (Supplier's Share asymmetry =  $Share_{\text{Buyer}} - Share_{\text{Supplier}}$ ), and the relative difference in dependence between the supplier and buyer (Supplier's Dependence asymmetry =  $Dependence_{\text{Supplier}} - Dependence_{\text{Buyer}}$ ). On a seven-point scale (1 = strongly disagree, 7 = strongly agree), the study measured dependence using the following item: “We do not have a good alternative to buyer A/supplier X in our trading area” (Jap & Ganesan, 2000).

## 4.2. Sample and data collection

To validate the measures for all constructs, following Anderson and Gerbing (1991), the researcher invited a group of academic scholars familiar with business-to-business relationship marketing to review a draft questionnaire. The study developed and modified questionnaires to suit the specific position of key informants in dyadic relationships (Jap, 1999). To assess item clarity, comprehension and time necessary to complete the survey, the researcher sent the draft questionnaire to 30 marketing or procurement managers who were potential respondents to the survey. The pre-test revealed no major concerns about the readability, clarity of instructions and questions, or survey length.

This study, set in Vietnam, focuses on relationships between firms and their business buyers or suppliers. Given the conceptual framework proposed in the hypothesis development section, the unit of analysis was matched business buyer-supplier dyads and the level of analysis in the study is the relationship level. Following O’Cass and Ngo (2011), the study ensured data equivalence by conducting forward and backward translations for the survey between English and Vietnamese using two professional certified translation companies. Through a nationwide survey, a professional market research company collected primary data for this study. The study targeted sales, marketing, and procurement managers as well as sales executives who were directly in charge of dealing with the specified partners. Our sampling frame was the local government’s directory database of registered businesses, which includes firm information (industries, postal address, etc.) as well as names and contact details (i.e., telephone, fax and email addresses) of firm managers.

The study based our data collection process on that of Wathne and Heide (2004). In the first stage, the market research company contacted 1079 randomly selected firms from the business directory via telephone to screen their eligibility for the study and to locate a key informant in the marketing, sales, or purchasing department. Out of the 1079 firms contacted, 165 firms were not eligible for the study because they either did not have relationship marketing activities directed toward their buyers or because their parent corporations determined their marketing activities toward their buyers. Out of 914 firms eligible for the study, 354 firms agreed to participate in the survey as suppliers or buyers. In the second stage of data collection, in supplier-side questionnaires, the survey asked each respondent to identify one random buyer of their key product and to respond to the survey in terms of their firm’s relationship with this specific buyer. Buyer-side questionnaires asked each respondent to respond to the survey in terms of the firm’s relationship with one random selling firm that supplied them with parts for their final products. Out of 354 sent questionnaires in the first stage, 125 questionnaires were completed and returned, making an effective response rate of 35.3%. In the next stage, the market research company sent questionnaires to 125 partner firms provided by respondents in the first stage. The number of questionnaires completed and returned by partner firms was 121, for an overall response rate of 96.8%. After deleting eight questionnaires because of missing data for key variables or because respondents did not have any experience with the focal relationships and were not confident in their responses, the study matched the remaining completed questionnaires from suppliers and buyers by using code numbers to form 113 matched business buyer-supplier dyads. To assess non-response bias, the study used the approach recommended by Armstrong and Overton (1977). In comparing the early versus late respondents (first/last 25%; first/last 33%) across key variables, the study found no significant differences.

The sample characteristics show that 95% of buyer informants and 95% of supplier informants can personally make decisions regarding the focal relationship or can influence decisions regarding the focal relationship. Among 113 buyer-supplier dyads in the final sample, 48 dyads (42.5%) have a relationship age of 2–5 years, 49 dyads (43.4%) have a relationship age of 5–10 years, and 16 dyads (14.1%) have a relationship age of over 10 years. The numbers of employees in selling and buying firms range from 10 to over 1000 employees (60.2% of supplying firms and 74.3% of buying firms with 10–300 employees, 25.7% of supplying firms and 14.2% of buying firms with 300–1000 employees, and 14.1% of supplying firms and 11.5% of buying firms with over 1000 employees). The sample of buying and supplying firms includes various industries ranging from food processing (26.2%), packaging and labeling (21.3%), plastics and chemicals (15.6%), building material manufacturing (9.8%), electronics manufacturing (8.9%) and textiles and leather (8.0%), to distribution (6.7%), and services (3.6%).

## 5. Analysis

### 5.1. Reliability, validity and descriptive statistics

The study used confirmatory factor analysis (CFA) to provide a thorough validation. The CFA results indicate that the measurement model provides a reasonable fit to the data with NNFI, CFI, and IFI all exceeding 0.90 ( $\chi^2 = 140.83$ , d.f. = 91, RMSEA = 0.070) (Gerbing & Anderson, 1992). Appendix A lists all scale items.

Composite reliabilities for all five latent constructs exceeded the acceptable levels of 0.70. Item loadings for all constructs ranged from 0.71 to 0.87 and were significant at the 1% significance level, indicating acceptable reliability (Fornell & Larcker, 1981; Hair, Ringle, & Sarstedt, 2011). In particular, although some previous studies have argued that the reliability of algebraic difference scores may be poor due to dependence on the correlation between the constituents (Peter, Churchill Jr, & Brown, 1993), RVS and SRVA yielded composite reliabilities of 0.90 and 0.89, indicating that this problem does not arise in our study (Homburg & Jensen, 2007). In addition, Appendix A shows good results for convergent validity of all constructs with AVEs greater than 0.5 (Fornell & Larcker, 1981).

The study used two different techniques to assess discriminant validity. First, Table 1 suggests that all square roots of AVE values were consistently greater than the off-diagonal correlations, indicating satisfactory discriminant validity (Fornell & Larcker, 1981). Second, following Gaski and Nevin (1985) and O’Cass (2002), the analysis compared the correlations between two composite constructs and their respective reliability estimates, and found that none of the correlations was higher than their respective reliabilities. This result confirms discriminant validity. Table 1 also gives the means and standard deviations of the constructs used in the following analyses.

Following Ou, Verhoef, and Wiesel (2016), Gelhard and Delft (2016), and Richardson, Simmering, and Sturman (2009), the study assessed the presence of common method variance using two methods. For the partial correlation method recommended by Lindell and Whitney (2001), the study selected the supplying firm’s location (in Northern or Southern areas of Vietnam) as the marker variable because no theoretical connection was evident between it and other variables. With  $r_M = 0.031$ , the mean change in correlations of the five key constructs ( $r_U - r_A$ ), after partialling out the effect of  $r_M$ , was small, 0.02 (Malhotra, Kim, & Patil, 2006). For the second method, following Podsakoff, MacKenzie, Lee, and Podsakoff (2003) and Liang, Saraf, Hu, and Xue (2007), the study included in the model a common method factor that included all the focal constructs’ indicators and then calculated the variance of each indicator explained by the focal constructs and by the common method factor. The results demonstrated that most method factor loadings are not significant and the average variance of the indicators explained by the focal constructs is 0.65, whereas the average variance explained by the common method factor is very small, 0.014, making the ratio of two variances 46:1. The results of the two methods indicate that common method bias is not likely to be a serious concern in our study (Liang et al., 2007).

**Table 1**  
Means, standard deviations, square root of average variances extracted, and correlations.

|                        | M     | SD   | 1           | 2           | 3           | 4           | 5           |
|------------------------|-------|------|-------------|-------------|-------------|-------------|-------------|
| 1. RVS                 | 21.87 | 8.32 | <b>0.82</b> |             |             |             |             |
| 2. Social programs     | 4.37  | 1.27 | 0.40        | <b>0.76</b> |             |             |             |
| 3. Structural programs | 3.99  | 1.46 | 0.48        | 0.59        | <b>0.81</b> |             |             |
| 4. Financial programs  | 4.91  | 1.27 | 0.33        | 0.34        | 0.37        | <b>0.81</b> |             |
| 5. SRVA                | -0.12 | 1.70 | 0.17        | 0.29        | 0.38        | 0.36        | <b>0.82</b> |

Notes: All correlations greater than 0.17 are significant ( $p < 0.10$ ); Numbers shown in the diagonal denote the square root of the average variance extracted.

5.2. Results

This study tests the hypotheses by using OLS-based hierarchical regression. To measure the quadratic term, the study squared the indicators of each relationship marketing program. Following [Homburg, Müller, and Klarmann \(2011\)](#), the study mean-centered all indicators before creating the product indicators to enable model convergence and to facilitate the interpretation of the coefficients, without changing the form of the relationship. For analysis with RVS as the dependent variable, the study regressed RVS on control variables (aggregate sales AGGSALE, aggregate share of purchase/sales AGGSHARE, aggregate dependence AGGDEP), linear term of social programs (SOCIAL), linear term of structural programs (STRUCT), linear (FINAN) and quadratic terms of financial programs (FINAN<sup>2</sup>) in the following equations:

$$RVS = \alpha + \beta_1 AGGSALE + \beta_2 AGGSHARE + \beta_3 AGGDEP + \epsilon \tag{1}$$

$$RVS = \alpha + \beta_1 AGGSALE + \beta_2 AGGSHARE + \beta_3 AGGDEP + \beta_4 SOCIAL + \beta_5 STRUCT + \beta_6 FINAN + \epsilon \tag{2}$$

$$RVS = \alpha + \beta_1 AGGSALE + \beta_2 AGGSHARE + \beta_3 AGGDEP + \beta_4 SOCIAL + \beta_5 STRUCT + \beta_6 FINAN + \beta_7 FINAN^2 + \epsilon \tag{3}$$

$$RVS = \alpha + \beta_1 AGGSALE + \beta_2 AGGSHARE + \beta_3 AGGDEP + \beta_4 SOCIAL + \beta_5 STRUCT + \beta_6 FINAN + \beta_7 FINAN^2 + \beta_8 AGE + \beta_9 SOCIAL^2 AGE + \beta_{10} STRUCT^* AGE + \beta_{11} FINAN^* AGE + \beta_{12} FINAN^{2*} AGE + \epsilon \tag{4}$$

**Table 2** summarizes the results of Models 1–3. Here, the control variables in Model 1 explained 7% of the variance and only aggregate dependence has a significant effect on RVS ( $\beta = 2.17, p < 0.01$ ). Adding the linear term of social, structural and financial programs in Model 2 produced a significant effect (R-squared = 0.31, F-value = 7.99,  $p < 0.001$ ). Model 3 supports H1 because both supplier's social programs and structural programs have positive and linear impacts on RVS (social programs-RVS:  $\beta = 1.56, p < 0.10$ ; structural programs- RVS:  $\beta = 2.44, p < 0.001$ ). To examine whether there is a positive and increasing returns-to-scales association between financial programs and RVS, the study followed [Falk, Hammerschmidt, and Schepers \(2010\)](#), [Cohen, Cohen, West, and Aiken \(2003\)](#) and tested whether the linear and quadratic terms of financial programs are significantly positive. The  $\beta$ -coefficient for financial programs is positive, and significant ( $\beta = 1.76, p < 0.05$ ), whereas the quadratic term of financial programs also has a positive and significant  $\beta$ -coefficient ( $\beta = 1.27, p < 0.05$ ). After including the quadratic term of financial program, Model 3 changes significantly (F-change = 5.40, p-value < 0.05). This result provides support for H1 that the overall effect of financial programs on RVS is positive and increasing returns-to-scale. Comparing the full Model 3 and Model 1 which excludes the linear terms of social, structural and financial programs and the quadratic term of financial programs, the study obtained a large effect size  $f^2$  ([Cohen, 1977](#)) of 0.43, which confirms the meaningful effect of three types of relationship marketing programs on RVS.

For analysis with SRVA as the dependent variable, the study regressed SRVA on three control variables (sales asymmetry SALEA, asymmetry of share of purchase/sales SHAREA, dependence asymmetry DEPA), linear and quadratic terms of social programs, linear and quadratic terms of structural programs, linear and quadratic terms of financial programs in the following equations:

$$SRVA = \alpha + \beta_1 SALEA + \beta_2 SHAREA + \beta_3 DEPA + \epsilon \tag{5}$$

$$SRVA = \alpha + \beta_1 SALEA + \beta_2 SHAREA + \beta_3 DEPA + \beta_4 SOCIAL + \beta_5 STRUCT + \beta_6 FINAN + \epsilon \tag{6}$$

$$SRVA = \alpha + \beta_1 SALEA + \beta_2 SHAREA + \beta_3 DEPA + \beta_4 SOCIAL + \beta_5 STRUCT + \beta_6 FINAN + \beta_7 SOCIAL^2 + \beta_8 STRUCT^2 + \beta_9 FINAN^2 + \epsilon \tag{7}$$

Results of Model 5 in **Table 2** show that all control variables do not appear to have significant effects on SRVA. In the next step, when Model 6 entered social, structural, and financial programs as linear terms, R-squared increased by 15% (F-change = 6.92, p-value < 0.001). To investigate the curvilinear effects of three programs, Model 7 adds the quadratic terms of social, structural and financial programs. The result demonstrates partial support for H2. R-squared significantly increased by 5% (F-change = 2.28, p-value < 0.10). The quadratic term of financial programs had a negative effect on SRVA (financial programs<sup>2</sup>-SRVA:  $\beta = -0.28, p < 0.05$ ) while the linear term was positive ( $\beta = 0.33, p < 0.05$ ), which supports Hypothesis 2 that supplier's financial programs have an inverted U-shaped effect on SRVA. Hypothesis 2 was not supported in the case of social programs when their quadratic term had a positive effect on SRVA (social programs<sup>2</sup>-SRVA:  $\beta = 0.25, p < 0.10$ ), indicating the U-shaped association between social programs and SRVA. While the quadratic term of structural program was negative, but insignificant ( $\beta = -0.03, n.s$ ), the linear effect of structural programs on SRVA was significant and positive ( $\beta = 0.38, p < 0.05$ ), which suggests that structural programs are positively associated with SRVA. Comparing the full Model 7 with Model 5 which excludes linear terms and quadratic terms of social, structural, and financial programs, the study obtained the medium effect size  $f^2$  ([Cohen, 1977](#)) of 0.27, which confirms the meaningful effect of three types of relationship marketing programs on SRVA.

To test H3a, Model 4 adds the moderator, relationship age, interaction terms between supplier's three relationship marketing programs and relationship age, and interaction terms between the quadratic term of financial programs and relationship age. Meanwhile, Model 8 for testing H3b includes relationship age, interaction terms between three relationship marketing programs, and relationship age, and interaction terms between the quadratic terms of financial programs, social programs and relationship age.

$$SRVA = \alpha + \beta_1 SALEG + \beta_2 SHAREG + \beta_3 DEPG + \beta_4 SOCIAL + \beta_5 STRUCT + \beta_6 FINAN + \beta_7 SOCIAL^2 + \beta_8 STRUCT^2 + \beta_9 FINAN^2 + \beta_{10} AGE + \beta_{11} SOCIAL^* AGE + \beta_{12} STRUCT^* AGE + \beta_{13} FINAN^* AGE + \beta_{14} SOCIAL^{2*} AGE + \beta_{15} FINAN^{2*} AGE + \epsilon \tag{8}$$

**Table 2** shows that the coefficient estimate for the interaction term between the linear structural programs and relationship age is significant and positive ( $\beta = 2.10, p < 0.05$ ). This result partially supports H3a in that, as relationship age increases, the positive association between structural programs and RVS strengthens. However, the results do not support H3a in the case of financial programs because relationship age significantly and negatively moderates the effect of financial programs on RVS ( $\beta = -1.41, p < 0.001$ ). According to [Dawson \(2014, p.7\)](#), the best way to test for moderating effects is to use an F-test between regression models- i.e., the complete model, and one without interaction terms included. Such a test in this study reveals that relationship age significantly moderates the effects of social and financial programs on RVS (F-change = 3.14,  $p < 0.01$ ). Furthermore, comparing the full Model 4 with Model 3 excluding the interaction terms between three relationship marketing programs and relationship age, the study obtained the medium effect size  $f^2$  ([Cohen, 1977](#)) of 0.14, which confirms that relationship age is a strong moderator for the effects of social and financial programs on RVS.

The result does not support H3b, which hypothesized that relationship age moderates the effects of the three programs on SRVA. The coefficient estimates for the interaction terms between all three

**Table 2**  
Regression results.

|  | DV = RVS      |                          |                          |                          | DV = SRVA     |                 |                          |                          |
|--|---------------|--------------------------|--------------------------|--------------------------|---------------|-----------------|--------------------------|--------------------------|
|  | Model 1       | Model 2                  | Model 3                  | Model 4                  | Model 5       | Model 6         | Model 7                  | Model 8                  |
| <b>Main effects</b>                                |               |                          |                          |                          |               |                 |                          |                          |
| Social programs                                    |               | 1.64 <sup>+</sup> (1.88) | 1.56 <sup>+</sup> (1.86) | 1.88* (2.22)             |               | - 0.01 (- 0.04) | 0.13 (0.62)              | 0.14 (0.67)              |
| Structural programs                                |               | 2.25* (2.52)             | 2.44** (2.78)            | 2.27** (2.65)            |               | 0.46* (2.43)    | 0.38* (1.95)             | 0.40* (1.95)             |
| Financial programs                                 |               | 1.38 <sup>+</sup> (1.84) | 1.76* (2.34)             | 2.37*** (3.17)           |               | 0.39* (2.45)    | 0.33* (2.00)             | 0.32 <sup>+</sup> (1.86) |
| Social programs <sup>2</sup>                       |               |                          |                          |                          |               |                 | 0.25 <sup>+</sup> (1.80) | 0.28 <sup>+</sup> (1.89) |
| Structural programs <sup>2</sup>                   |               |                          |                          |                          |               |                 | - 0.03 (- 0.23)          | - 0.09 (- 0.59)          |
| Financial programs <sup>2</sup>                    |               |                          | 1.27* (2.32)             | 1.33* (2.37)             |               |                 | - 0.28* (- 2.24)         | - 0.30* (- 2.17)         |
| <b>Moderating effects</b>                          |               |                          |                          |                          |               |                 |                          |                          |
| Relationship age                                   |               |                          |                          | 2.16 <sup>+</sup> (2.15) |               |                 |                          | - 0.19 (- 0.62)          |
| Social programs × relationship age                 |               |                          |                          | 0.91 (1.11)              |               |                 |                          | 0.22 (0.88)              |
| Structural programs × relationship age             |               |                          |                          | 2.10* (1.95)             |               |                 |                          | - 0.04 (- 0.14)          |
| Financial programs × relationship age              |               |                          |                          | - 1.97** (- 2.66)        |               |                 |                          | 0.22 (1.20)              |
| Social programs <sup>2</sup> × relationship age    |               |                          |                          |                          |               |                 |                          | 0.08 (0.41)              |
| Financial programs <sup>2</sup> × relationship age |               |                          |                          | - 1.41*** (- 3.03)       |               |                 |                          | 0.01 (0.13)              |
| <b>Control effects</b>                             |               |                          |                          |                          |               |                 |                          |                          |
| Aggregate sales                                    | 0.79 (1.05)   | 1.19 <sup>+</sup> (1.74) | 1.24 <sup>+</sup> (1.85) | 0.95 (1.40)              |               |                 |                          |                          |
| Aggregate share                                    | 0.11 (0.14)   | 0.46 (0.68)              | 0.20 (0.29)              | 0.27 (0.40)              |               |                 |                          |                          |
| Aggregate dependence                               | 2.17** (2.63) | 1.21 (1.60)              | 1.38 <sup>+</sup> (1.86) | 1.50* (2.10)             |               |                 |                          |                          |
| Sales asymmetry                                    |               |                          |                          |                          | 0.04 (0.24)   | - 0.02 (- 0.14) | 0.01 (0.07)              | 0.00 (0.03)              |
| Share asymmetry                                    |               |                          |                          |                          | 0.19 (1.17)   | 0.15 (1.01)     | 0.18 (1.18)              | 0.26 (1.54)              |
| Dependence asymmetry                               |               |                          |                          |                          | 0.43** (2.65) | 0.20 (1.23)     | 0.11 (0.68)              | 0.12 (0.68)              |
| R <sup>2</sup>                                     | 0.07          | 0.31                     | 0.35                     | 0.43                     | 0.07          | 0.22            | 0.27                     | 0.29                     |
| Δ R <sup>2</sup>                                   | 0.07          | 0.24                     | 0.03                     | 0.09                     | 0.07          | 0.15            | 0.05                     | 0.02                     |
| F-value  | 2.69*         | 7.99***                  | 7.91***                  | 6.39***                  | 2.65*         | 5.00***         | 4.22***                  | 2.67**                   |
| Δ F-value  | 2.69*         | 12.44***                 | 5.40*                    | 3.14**                   | 2.65*         | 6.92***         | 2.28 <sup>+</sup>        | 0.52                     |

Unstandardized coefficients for mean-centered variables are reported. t-statistics are in parentheses.

- \*\*\* p < 0.001.
- \*\* p < 0.01.
- \* p < 0.05.
- <sup>+</sup> p < 0.10.

programs (linear or quadratic) and relationship age were not significant. Multicollinearity did not appear to pose a problem in all models because VIFs are well below 10 (Mason & Perreault Jr, 1991).

### 5.3. Robustness check

As a robustness check, the study confirmed the results of the curvilinear relationships in our study. Given our small sample size, the study followed Dong, Ding, Grewal, and Zhao (2011) and Albers' (2012) recommendation to use the parametric method to re-check our proposed curvilinear relationships. The study added the cubic terms of three programs to Model 3 and Model 7 and got results for the following equations:

$$RVS = \alpha + \beta_1 AGGSALE + \beta_2 AGGSHARE + \beta_3 AGGDEP + \beta_4 SOCIAL + \beta_5 STRUCT + \beta_6 FINAN + \beta_7 FINAN^2 + \beta_8 FINAN^3 + \varepsilon \quad (9)$$

$$SRVA = \alpha + \beta_1 SALEA + \beta_2 SHAREA + \beta_3 DEPA + \beta_4 SOCIAL + \beta_5 STRUCT + \beta_6 FINAN + \beta_7 SOCIAL^2 + \beta_8 STRUCT^2 + \beta_9 FINAN^2 + \beta_{10} SOCIAL^3 + \beta_{11} STRUCT^3 + \beta_{12} FINAN^3 + \varepsilon \quad (10)$$

The results showed that after including the cubic terms of social programs, structural programs and financial programs, the model does not change significantly (F-change = 0.00, p > 0.10 for Model 9; F-change = 0.04, p > 0.10 for Model 10). All the cubic terms are not

significant in both Model 9 (Financial Programs<sup>3</sup>:  $\beta_{12} = 0.01$ , p > 0.10) and Model 10 (Social Programs<sup>3</sup>:  $\beta_{10} = 0.11$ , p > 0.10; Structural Programs<sup>3</sup>:  $\beta_{11} = 0.00$ , p > 0.10; Financial Programs<sup>3</sup>:  $\beta_{12} = 0.04$ , p > 0.10). These results eliminate the possibility of a cubic functional form in our study.

## 6. Discussion

### 6.1. Effects of supplier's relationship marketing programs on relationship value synergy and supplier's relationship value asymmetry

The key finding from this study suggests that an increase in supplier's relationship marketing programs can help to create relationship value, but at the same time differently distribute relationship value between two parties. Fig. 2a illustrates a positive association between social programs and RVS. This finding is consistent with the argument of social exchange theory that, after an action by one party, the other party should reciprocate (Houston, 1986). A supplier's strong investments in social programs that aim to strengthen the relationship with a buyer through social activities or special status or treatment can increase the buyer's reciprocal activities. When both the supplier and the buyer receive increasing value from the relationship, this increased value consequently gives rise to RVS. Furthermore, the study reveals an interesting finding that as a supplier's investment in social programs increases from low to moderate levels, they decrease SRVA or create more value for the buyer than for the seller. Previous study argues that



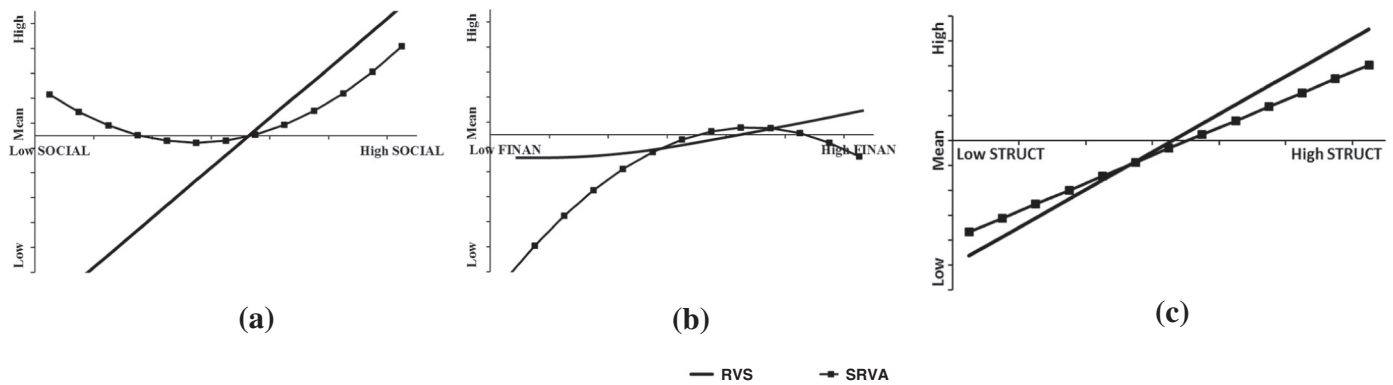


Fig. 2. Effects of (a) social programs, (b) financial programs, (c) structural programs on RVS and SRVA.

it takes large investments to build up trust and commitment in business relationships (Ganesan, 1994; Morgan & Hunt, 1994). Therefore, when investments in social programs are only at low to moderate levels, trust and commitment are unlikely to be established. Therefore, the buyer receiving higher value from the relationship will be more likely to behave opportunistically toward the supplier. SRVA will increase with increasing value for the buyer rather than for the supplier when social program investment is at low to moderate levels. SRVA is lowest when social program investment is at the level of 4.02 out of 7 in the Likert scale. However, as the investment in social relationship programs passes the moderate point and increases to high levels, high trust, commitment or personal interfirm ties induce greater reciprocation from the buyer for the supplier's investments. Simultaneously, established relationships between two parties also discourage the buyer from acting opportunistically against the supplier. This finding challenges previous findings about the linear effect of social programs (Palmatier, Gopalakrishna, and Houston, 2006, Palmatier et al., 2007) by demonstrating that supplier's investments in social programs do not increase relationship value for the supplier, but only do so for the buyer until such investments are at moderate to high levels (Jap & Ganesan, 2000; Wang et al., 2013).

The effects of financial programs on RVS and SRVA in Fig. 2b follow a different trajectory. When financial program efforts are at low to moderate levels, they contribute little to increase RVS. Competitors can match any low to moderate discount or financial incentive that a supplier offers to its focal buyer; in which case, the focal buyer will be likely to reciprocate only little in response to the supplier's investments, thus slightly increasing RVS. RVS hardly increases until supplier's financial offerings become large enough to dampen competitors' efforts to compete or imitate. When financial programs increase beyond a level, they make the supplier more attractive and prompt both the buyer and the supplier to engage in reciprocity behaviors, which gradually raises RVS. Our finding of a positive and increasing returns-to-scale association between financial programs and RVS is an important extension to the literature. Previous studies have never found a significant and linear association between the supplier's investments in financial programs and relationship performance (Palmatier, Gopalakrishna, and Houston, 2006, Palmatier et al., 2007). Our closer look at the complexity of this relationship reveals that the association between financial programs and RVS is positive and increasing returns-to-scale. On the other hand, the results specifically show that when financial program investments increase from low levels to a moderately high level (5.66), they help to increase SRVA or more relationship value for the supplier than for the buyer. However, excessive financial investments above a moderately high level (e.g., 5.66) can result in a decrease in SRVA, or more relationship value for the buyer than for the supplier. This finding again confirms the expropriation effect argued by transaction cost theory that the buyer only exploits the supplier's investments in financial programs when they are large enough to be

worth the risk of jeopardizing the relationship (Jap & Ganesan, 2000; Wang et al., 2013). Furthermore, excessive financial programs offered specifically to the buyer can bind the supplier in the relationship so strongly that they hardly can respond to the buyer's opportunistic behavior (Jap & Ganesan, 2000, Wang et al., 2013). Therefore, this expropriation effect causes the buyer to seek more relationship value for themselves, decreasing SRVA when financial programs are at moderate to high levels.

The empirical result in Fig. 2c suggests that structural programs are the only type among the three relationship marketing programs that helps to increase RVS and at the same time increase relative relationship value for the investing party, the supplier. Unlike social programs and financial programs, structural programs typically require considerable set-up efforts by both parties, and their unique offers discourage the buyer to switch (Palmatier, Gopalakrishna, and Houston, 2006). Therefore, structural programs can create a stronger tie than either social programs or financial programs to bind both the buyer and the supplier. Under structural programs, the buyer is less likely to behave opportunistically and more likely to reciprocate to the supplier for their relationship investments. Therefore, RVS increases as the supplier's investments in structural programs increase. At the same time, SRVA gradually increases with more value for the supplier than for the buyer.

### 6.2. The moderating effect of relationship age

The empirical results of this study support the contingent effect of relationship age on the links between relationship marketing programs and RVS. However, how relationship age moderates the link between structural programs and RVS is different from how it moderates the effect of financial programs on RVS. As the buyer-supplier relationship grows year after year, the supplier's investments in structural programs are more likely to induce more RVS. This finding is consistent with the results of previous studies which show that relationship age negatively affects opportunistic behavior (Liu et al., 2010). Furthermore, as the buyer and the supplier work together for a long time, they have an increasingly better understanding and quality of communication with their partner, thus the supplier's structural offer for the buyer can be more fulfilling and effective in RVS. This finding suggests that the supplier should invest more in structural programs for the buyer as their dyadic relationship ages. In contrast to how relationship age affects the association between structural programs and RVS, our study reveals that as the buyer-supplier relationship ages, excessive financial incentives offered by the supplier become less effective in increasing RVS. Particularly at a young stage of the relationship, suppliers often use financial offerings as tangible rewards to attract buyers (Dwyer et al., 1987). However, once two parties have established a long-term relationship, they look for some durability in the association over time and both the buyer and the supplier may look for more than short-term

financial benefits (Dwyer et al., 1987). Therefore, in a long-standing relationship, financial benefits, which are likely to be matched by competitors, become less attractive for the buyer to reciprocate and create new relationship value. In addition, although relationship age moderates the way relationship marketing programs affect RVS, it does not influence distribution of value from these programs between the two parties.

## 7. Conclusions

### 7.1. Implications

This study reveals several important theoretical implications. First, it contributes to the literature on business relationships by highlighting the curvilinear effects of supplier's relationship marketing programs. Although most previous studies found positive linear effects of relationship investments on performance (Ganesan, 1994; Palmatier, Dant, et al., 2006), this study finds curvilinear effects of social programs and financial programs on value asymmetry. These ambivalent effects of relationship investments support the argument of Anderson and Jap (2005) that “the very factors that make partnerships with customers or suppliers beneficial can leave those relationships vulnerable to deterioration” (p.75). To develop close relationships, buyers and suppliers are often unable to expand the size of the benefit “pie” unless they make unique investments, such as relationship marketing programs, to support the relationship. Our study confirms that these investments in financial programs indeed help to expand the relationship value “pie”; however, they also become the doorway through which relationships become vulnerable to deterioration (Anderson & Jap, 2005) when they give rise to relationship value for the invested-in party, the buyer, at the expense of relationship value for the investing party, the supplier.

Second, this study extends the relationship value literature by considering both RVS and its distribution in the dyad. While previous studies focus only on how relationship marketing programs can create value (Palmatier, Gopalakrishna, and Houston, 2006), this study makes an important implication that bilateral perspectives on relationship value presents a more complete and comparative view of relationship value perceptions than a unilateral perspective (Corsaro & Snehota, 2010). Relationship marketing programs can increase value creation and simultaneously contribute to asymmetry in relationship value distributed to suppliers and buyers. This implication underscores the need for relationship value research to pay more attention to how relationship marketing efforts affect both value creation and its distribution.

The third theoretical implication of this study is to extend the findings of Palmatier, Gopalakrishna, and Houston (2006) and Palmatier et al. (2007) about the distinct effects of three types of relationship marketing programs on relationship performance. It confirms the positive effects of social programs and structural programs, and also reveals that financial programs, which previous research has never found to have a significant or linear effect on relationship performance, do potentially impose a positive and increasing returns-to-scale effect on value synergy and an inverted U-shaped effect on supplier's value asymmetry.

Fourth, the study contributes to the literature on the effects of relationship marketing programs by showing how relationship age moderates these effects. Relationship age can help to strengthen the value creating effect of structural programs; however, financial programs offered to longer-term partners can induce less RVS than when offered to newer partners. Last, the study contributes to transaction cost theory and social exchange theory by further exploring how they operate as competing mechanisms to explain value creation and distribution. At different levels, relationship marketing programs can follow the logics of either transaction cost theory, social exchange theory, or both in how they affect RVS and SRVA.

This study also offers several implications for managerial decision-making. From a practitioner's standpoint, understanding the curvilinear

effects of relationship investments on creation and distribution is important given the risks and costs associated with relationship marketing. Monitoring the effects of the supplier's investments in financial programs is important to the extent that these investments contribute to increases in RVS, but too much investments in financial programs may create more value for the buyer than the investing supplier. Furthermore, this study yields an interesting implication for managers in that financial programs little contribute to increase value creation until they reach moderate to high levels. Thus, low levels of such financial investments are more or less wasted.

In addition, with the aim at helping managers to make better decisions on their relationship investments, the study suggests heuristically optimal levels of social programs and financial programs. As social programs investments are only from low to moderate levels, the newly created value is likely to be mostly distributed to the invested party, the buyer, rather than to the investing party, the supplier. Only after the supplier's social programs pass the moderate levels do they help to increase more value for the supplier, compared to for the buyer. However, if a supplier invests in these financial programs beyond a moderately high level, the investment can create more relationship value for the buyer at the expense of that for the supplier. Finally, the study suggests to managers how the effect of each relationship marketing program on RVS varies across relationships of different ages. As the relationship with a buying firm ages, managers should consider investing more in structural programs to develop their relationship since structural programs are more effective in creating value in long-term relationships than in short-term relationships. However, in long-term relationships, managers should avoid investing too much in financial programs because financial programs become increasingly less attractive and induce less RVS as a relationship ages. Overall, because financial, social and structural relationship marketing programs impose distinct and complex effects on value creation and distribution, managers need to be careful when making decisions on the allocation of resources across these programs.

### 7.2. Limitations and directions of future research

This study has some limitations and reveals some pathways for future research. Because our sample includes many small to medium sized firms, the respondents' personal factors are likely to contaminate the assessment of their interfirm relationships. Although our study manages to collect data from both sides of the buyer-supplier dyad, the data relies on a single informant in each side which may cause problems with informant bias and measure specificity (Anderson, Zerrillo Sr, & Wang, 2006). Future study can deal with these problems by having two informants from each side of the buyer-supplier dyad. Furthermore, although the diversity of industries in our sample offers some useful generalizability, this study is limited to only one country and culture. Vietnam has the heritage of Confucian culture that emphasizes personal relationships (Nguyen, Weinstein, & Meyer, 2005). Therefore, social programs that partly involve efforts to personalize interfirm relationships might have different effects on relationship performance in other cultures. Further study could expand the sample to various countries in order to investigate the moderating role of cultural factors in the effectiveness of relationship marketing programs. In addition, although this study manages to use data collected from both buyers' and supplier's sources, the findings are based on subjective data mostly measured on Likert-based scales, which need to be further validated by future research with objective data. A future study can also extend this research by examining some potential mechanisms (i.e. opportunism and reciprocity) mediating the links between relationship marketing programs and relationship performance. Last, as there remains a debate about the role of time in business relationships in relationship marketing literature (Medlin, 2004), our results should be treated with caution. A longitudinal design with a lagged measure would help to calibrate more precisely the curvilinear effects of relationship

marketing programs on value creation and its distribution.

Previous studies have found positive associations between supplier's relationship marketing programs and relationship performance. However, this study is the first to examine how these programs might have a curvilinear effect on the value created in a relationship and the

difference in perceived value between the investing and invested parties. It yields important implications for both researchers and managers about both positive as well as harmful effects of relationship investments, and the distinct moderating influence of relationship age.

**Appendix A. Survey items**

| Social Programs CR = 0.80, AVE = 0.58 (1-None, 7-A great deal)   | Loadings | t-value |
|--|----------|---------|
| 1. Buyer A often receives special treatment or status from our firm.   | 0.81     | 19.25   |
| 2. Buyer A is often provided meals, entertainment, or gifts by our firm  | 0.76     | 15.42   |
| 3. Buyer A often receives special reports and/or information from our firm.  | 0.71     | 9.34    |
| <b>Structural Programs CR = 0.85, AVE = 0.66 (1-None, 7-A great deal)</b>  |          |         |
| 1. In our firm, special structural changes have been instituted for buyer A.   | 0.87     | 28.86   |
| 2. Our firm's policies and procedures are often adapted for buyer A.   | 0.77     | 15.21   |
| 3. Dedicated personnel are assigned to buyer A beyond what is typical for our buyers.  | 0.79     | 17.97   |
| <b>Financial Programs CR = 0.79, AVE = 0.66 (1-None, 7-A great deal)</b>   |          |         |
| 1. Buyer A frequently gets special pricing or discounts from our firm.   | 0.81     | 24.49   |
| 2. Buyer A receives special financial benefits and incentives from our firm.   | 0.81     | 24.49   |
| <b>Relationship value synergy CR = 0.90, AVE = 0.68</b>  |          |         |
| 1. Compared to our relationship with our largest buyer/supplier, the relationship with buyer A/supplier X has an outstanding value to us.                              | 0.86     | 30.68   |
| 2. Compared to our relationship with our largest buyer/supplier, the benefits of the relationship with buyer A/supplier X far outweigh the disadvantages.              | 0.82     | 21.31   |
| 3. Compared to our relationship with our largest buyer/supplier, the relationship with buyer A/supplier X makes a crucial positive contribution to our firm's success. | 0.81     | 19.24   |
| 4. Compared to our relationship with our largest buyer/supplier, the relationship with buyer A/supplier X strongly matches our conception of an optimal relationship.  | 0.81     | 15.96   |
| <b>Supplier's relationship value asymmetry CR = 0.89, AVE = 0.67</b>   |          |         |
| 1. Compared to our relationship with our largest buyer/supplier, the relationship with buyer A/supplier X has an outstanding value to us.                              | 0.84     | 26.68   |
| 2. Compared to our relationship with our largest buyer/supplier, the benefits of the relationship with buyer A/supplier X far outweigh the disadvantages.              | 0.75     | 13.43   |
| 3. Compared to our relationship with our largest buyer/supplier, the relationship with buyer A/supplier X makes a crucial positive contribution to our firm's success. | 0.87     | 30.32   |
| 4. Compared to our relationship with our largest buyer/supplier, the relationship with buyer A/supplier X strongly matches our conception of an optimal relationship.  | 0.80     | 22.98   |

Fit statistics:  $\chi^2 = 140.83$ ; d.f. = 91; CMIN/df = 1.55; NNFI = 0.90; CFI = 0.93; IFI = 0.93; RMSEA = 0.070; GFI = 0.88.

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