# Unfolding the impacts of transaction-specific investments: Moderation by out-of-the-channel-loop perceptions and achievement orientations


## Abstract

When distribution channel partners make specific investments, tailored to a particular supplier, it could prompt either opportunism or beneficial (e.g., extra-role) behaviors. The impact of the investment in turn may depend on whether the channel partner perceives that it is being left out of the channel loop by the supplier, as well as that partner's achievement orientation. This study considers a sample of 155 IT professional service firms and finds that their knowledge-intensive, transaction-specific investments (TSIs) encourage distinct behavioral intentions. If they perceive that the supplier is leaving them out of the channel loop, the effects of the TSIs get amplified in relation to opportunistic and extra-role behavioral intentions. Furthermore, the firms' achievement orientation moderates these influences. Suppliers thus should attend closely to achievement-oriented partners to ensure they do not perceive that they have been left out of the channel loop.



**Keywords**

Out-of-the-channel-loop perceptions

Transaction-specific investments

Achievement orientation

Opportunism behavioral intentions

Extra-role behavioral intentions

## 1. Introduction

In distribution channels, professional service firms (PSFs) plays an important role in moving products and services from suppliers to end customers. For example, Cisco generates more than 85% of its revenue through its channel partners, which consist of system integrators, managed service providers, and value-added resellers (Haranas, 2016). Beyond their direct impact on revenues and margins, PSFs are important sources of market intelligence, value cocreation, market creation, and development (Sarker, Sarker, Sahaym, & Bjorn-Andersen, 2012). Realizing the importance of channel partners to their business, suppliers invest heavily in maintaining and strengthening these relationships (TSL Marketing, 2013). Similarly, channel partners invest time and resources tailored to a specific supplier, ranging from physical assets (e.g., customized machinery, tools, signs) to intangible capital (e.g., training, administrative procedures, skill accreditations; Brown, Crosno, & Dev, 2009). For example, PSFs that partner with Microsoft must complete training courses to be able to sell its products or services.

Such transaction-specific investments (TSIs) by channel partners are important to suppliers, in that they facilitate the appropriate distribution of the supplier's products and services to end customers, but they also indicate the commitment of the channel partners to this supply relationship. When channel partners make more TSIs, they are "locked in" to the relationship (Heide & Stump, 1995). This lock-in effect in turn influences channel partners' behavior, in that it prevents them from doing anything that might damage the relationship, for fear of losing their TSIs. Furthermore, TSIs motivate channel partners to engage in behaviors that benefit the supplier, because the performance of a supplier to which they are closely attached influences their performance as well (Brown et al., 2009). In these ways, suppliers might use TSIs to influence and regulate channel partners' behaviors and manage the relationship. Some prior studies accordingly show that TSIs reduce or mitigate channel

partners' opportunistic behaviors (e.g., Handley & Benton, 2012; Ping, 1993). However, TSIs also might exert negative impacts, if channel partners that have invested in a relationship with a particular supplier seek to maximize the return on their investments by engaging in exploitative behaviors. The lock-in effect also causes channel partners to sense that they have less power or control over their relationship with the supplier, so they may seek to gain control and better protection for their TSIs through opportunistic acts (e.g., hiding market information from the supplier, cheating to earn incentives; Brown, Dev, & Lee, 2000; Crosno, Manolis, & Dahlstrom, 2013). These potentially mixed impacts of TSIs suggest a complex situation that requires further research to clarify the detailed influences on channel partners' behavioral intentions.

Recent developments in transaction cost (TC) theory suggest that elements of the channel relationship may influence the effect of TSIs on investors' (as a type of channel partner) behaviors toward a receiver (i.e., supplier) (Crosno et al., 2013; Liu, Liu, & Li, 2014). A key element is a sense of exclusion in the exchange relationship (Scott, Restubog, & Zagenczyk, 2013), and industry reports indicate that channel partners increasingly complain about being overlooked or excluded by suppliers that exhibit preferential treatment only of "golden-haired children" (Kiernan, 2014) or "elite clubs"—that is, selected channel partners that receive the first opportunities to offer the latest products to end-users (Gilbert, 2015). Differential treatment is common in any channel network, but a growing concern suggests that some channel partners, especially smaller firms, are becoming frustrated with such unfavorable treatment, relative to other players in the channel network (Wright, 2013). The impacts of these preferential practices have not been detailed for channel networks.

To capture this sense or perception of being excluded from the supply chain network, we use the concept of out-of-the-channel-loop perceptions (OCLP). With OCLP, channel partners believe they are at a lower standing in the network than others, with less influence

and reduced access to resources or respect from the supplier (Janssen & Gao, 2013). This unpleasant situation may prompt the channel partner to reevaluate its TSIs and their returns, which then could redetermine the impact of these TSIs (Festinger, 1957; Leahy, 2000). By measuring and testing the influence of this perceived exclusion, we may be able to shed some new light on the mixed findings related to the effects of TSIs in channel relationships. In addition, the ability of channel partners to overcome such challenges might depend on how motivated they are to pursue their own business objectives (Davis, 2012), also known as an achievement orientation. An achievement orientation among resellers likely influences how they interpret their own OCLP and thus set their own goals accordingly, such that it appears likely to influence the ultimate impact of OCLP. However, no extant literature addresses this phenomenon, indicating a clear need for new insights into this source of channel discontent and its potentially heterogeneous consequences for supplier–partner relationships.

Formally, we propose that the concept of being out of the channel loop provides a means to capture perceived exclusion in a channel context. Drawing on recent theorizing about ostracism, with a conceptual backdrop of TC theory (Ferris, Brown, Berry, & Lian, 2008; Williams, 2007), we investigate how OCLP influence the impact of TSIs in supplier–partner networks. That is, we predict and demonstrate how the influences of TSIs on opportunistic and extra-role behaviors depend on the degree to which PSFs feel excluded from the channel loop. Furthermore, through a series of three-way interactions, we establish a contingent effect of the channel partner's achievement orientation on these effects.

## 2. Conceptual background

In interfirm relationships, TSIs are "assets that have little or no value outside the focal exchange relationship" (Williamson, 1985, p. 55), which can include specialized facilities, equipment, knowledge, and skills (Brown et al., 2000). According to TC theory, TSIs determine channel partners' behavior, by acting as bonds against the investing firm's

opportunistic tendencies (e.g., violating contract terms; Heide & Stump, 1995), which would likely provoke retaliation (Provan & Skinner, 1989) that could put its own investment at risk (Brown et al., 2009). However, TSIs also lock the investing firm into a longer-term exchange relationship, because they increase the costs of switching (Williamson, 1985), such that they might promote positive behaviors to ensure the partners' mutual interests in the longer term. Prior literature accordingly reveals mixed results with regard to the outcomes of TSIs as structural regulating mechanisms. For example, Ping (1993) identifies a negative relationship between TSIs and channel partner opportunism, but Brown et al. (2000) and Crosno et al. (2013) report a positive relationship. Table 1 summarizes these mixed findings on the impact of TSIs, thus emphasizing the need for further exploration of their impacts. To reconcile inconsistent findings, Brown et al. (2009) recommend considering the nature of the relationship, the dynamics of social change, and different types of investments (i.e., physical vs. knowledge goods). These recommendations accordingly suggest the special relevance of TSI research for PSFs, which provide knowledge-intensive, customized services (Heirati, O'Cass, Schoefer, & Siahtiri, 2016), such that their specific investments tend to be knowledge-based (e.g., obtaining skill certifications, completing product training courses).

*** Table 1 about here ***

Ostracism is "a perception of being ignored or excluded by others" (Williams & Sommer, 1997, p. 693). Some context-specific conceptualizations capture the sense of an exclusionary experience in specific settings, such as linguistic ostracism (Dotan-Eliaz, Sommer, & Rubin, 2009) or workplace ostracism (Ferris et al., 2008). In channel networks, channel partner perceptions of being excluded by the supplier represent one form of partial ostracism. The partners may be excluded just on some occasions or from some activities, such as product launches, specific communication campaigns, and incentive structures, but they still have access to other resources and support from suppliers—only to a lesser extent

than fully included partners. This partial nature of channel partner perceived exclusion from the supplier can be nicely captured by the notion of being *out of the loop*, rather than the broader term of ostracism (Jones, Carter-Sowell, & Kelly, 2011; Jones, Carter-Sowell, Kelly, & Williams, 2009; Jones & Kelly, 2010). A channel partner's feeling of being excluded arises when it compares its treatment with that of other partners in the distribution network. Such a comparative process is not required for ostracism, especially because ostracism can arise in one-to-one relationships, rather than only in networks (Jones & Kelly, 2013). Accordingly, we define the out-of-the-channel-loop perceptions (OCLP) concept for this study as a sense of being ignored or excluded, by a focal supplier in a channel network, from specific economic and/or social exchanges.

Furthermore, OCLP differs fundamentally from relationship norms and commitment, in that its formation depends on dynamics at the channel network level, whereas the other two result from dynamics in dyadic supplier–channel partner relationships. For example, relationship norms and commitment develop during interactions between a supplier and channel partner over time, but OCLP only arise if channel partners compare their own interaction with the supplier (e.g., accessing resources and support) with the interactions of their peers with the same supplier. Thus, OCLP capture the influence of relational dynamics from a network perspective, which are not captured by relationship norms or commitment from a dyadic relational perspective.

The experience of OCLP should have direct impacts on attitudes and behaviors in social settings, such as negative attitudes toward other group members (Jones et al., 2011) or reduced participation in group activities (Jones & Kelly, 2013). However, in supply chain networks, the effect likely moves through the transactional relationships. That is, business relationships are driven primarily by economic rationales, so we must consider their interplay

with the social dynamics, including OCLP, of interfirm relationships (Brown et al., 2009; Liu, Luo, & Liu, 2009; Rokkan, Heide, & Wathne, 2003).

Achievement orientation at the individual level influences how individuals approach, interpret, and respond to different situations (Kozlowski & Bell, 2006). People with a high achievement orientation tend to be confident and willing to take on challenges and set goals to improve their current performance. It is an important trait for employees working in channel firms too (Pelser et al., 2015), and though the importance of an achievement orientation as a personal trait has been well established at the individual staff level, it has not been conceptualized at the firm level. To the best of our knowledge, its function in managing supplier–channel partner relationships has not been explored either. Drawing from prior achievement orientation studies (Weiner & Kukla, 1970), we argue that at the firm level, an achievement orientation influences the ways a channel firm approaches, interprets, and responds to various situations, including OCLP. For example, an achievement-oriented person who encounters difficulties regards them as a challenge that requires more effort to overcome; an achievement orientation also grants people confidence that they will be able to overcome most challenges through their effort (Atuahene-Gima & Li, 2002; Pelser et al., 2015). An achievement-oriented firm should act in a similar way, such that the firm's achievement orientation likely influences its interpretation of and response to potential challenges and thus the impact of OCLP. For this moderator, we predict its influence on the degree to which channel partners believe that OCLP represents a threat to their business.

## 3. Hypotheses development

### *3.1. Direct effects of TSIs on behavioral intentions*

We examine the impact of TSIs on two behavioral intentions developed by the PSFs in a channel: opportunistic and extra-role. Opportunistic behavior implies "a lack of candor or honesty in transactions, to include self-interest seeking with guile" (Williamson, 1975, p. 9).

Channel partners that intend to engage in these behaviors might anticipate a deliberate misrepresentation of information, violation of contracts (Wathne & Heide, 2000), withholding of critical information, or refraining from agreed-on actions (Murry & Heide, 1998). As we noted previously, the impact of TSIs on behavioral intentions is subject to controversy though (Brown et al., 2000; Crosno & Dahlstrom, 2008; Crosno et al., 2013).

Prior research indicates that channel partners might plan to engage in more opportunistic behaviors to maximize the returns on their TSIs (Brown et al., 2000) and protect their investment from abuse by the supplier (Brehm & Brehm, 1981; Crosno et al., 2013). Moreover, when a partner dedicates specific investments to a supplier, its dependence on the supplier increases, and this increased dependence implies that the partner relinquishes some control to the supplier (Brehm & Brehm, 1981; Heide & John, 1992). Being deprived of control in a vulnerable situation may encourage the partner to loosen its moral rules (John, 1984) and engage in unethical behaviors (i.e., opportunism) to regain some semblance of control (Crosno et al., 2013). Considering the mixed findings on the impacts of TSIs, we posit that when TSIs are knowledge based, they may encourage, rather than discourage, a partner's opportunistic behavior (Brown et al., 2009). Compared with physical investments (e.g., equipment, tools), knowledge-based TSIs are less durable and often lose value at a faster rate (Brown et al., 2009). For example, expertise with current products becomes obsolete as soon as a new version is introduced to the market, so this knowledge-based asset no longer has much value to channel partners. Recognizing these outcomes, PSFs might sense greater pressure to recoup investments in knowledge-based assets more quickly, under time pressures (e.g., due to constantly updated product versions). They even might feel compelled to take "shortcuts," such as opportunistic behaviors, to generate quicker returns on their TSIs. A strong fear or threat of losing knowledge-based TSIs can drive opportunistic behaviors and intentions. Therefore, even as we acknowledge the mixed findings about the

impacts of TSIs, we posit that the substantial time pressures associated with knowledge-based TSIs means that they are more likely to encourage opportunistic behaviors. These motivations should be especially pertinent for PSFs, whose TSIs tend to be knowledge based (Heirati et al., 2016). In summary, we expect channel partners' TSIs to be positively associated with their opportunistic behavioral intentions.

Extra-role behavioral intentions instead refer to a channel partner's plans to perform activities to support the supplier, including further investments to promote its products, beyond what is formally required by a contract (Wuyts, 2007). By definition, TSIs are difficult to redeploy in other exchange relationships, such that they increase switching costs and create a lock-in effect (Rokkan et al., 2003). Channel partners that are locked in then may engage in behaviors to signal their commitment (Aydin & Özer, 2005). Furthermore, TSIs would be wasted were the relationship with the particular supplier to come to an end, due to their limited value outside this relationship. This huge cost to the channel partner is irretrievable (Arkes & Blumer, 1985; Bornstein et al., 1999). Such costs can be especially high when investments are intangible, because compared with tangible investments that might be adapted to other relationships, intangible investments (e.g., expertise, knowledge about a supplier's product) cannot be shifted. That is, the perceived cost of a loss of knowledge-based assets due to a terminated exchange relationship is greater. In this view, compared with physical TSIs, knowledge-based TSIs more likely function as sunk costs that encourage channel partners to behave in ways that help maintain the exchange relationship and avoid the loss of their TSIs, such as extra-role behaviors (Garland, 1990). This view is supported by Goodfriend and Agnew's (2008) finding that investors are more committed to a relationship when their investments are intangible rather than tangible in nature. In this view, as sunk costs, TSIs influence channel partners to behave in ways to maintain the exchange relationship and avoid the loss of their TSIs, such as extra-role behaviors (Garland, 1990).

At first glance, it may seem counterintuitive to predict that TSIs trigger opposing (opportunistic and extra-role) behaviors, but we argue that they actually seek the same goal: maximizing returns on the investment. Companies frequently engage in seemingly conflicting behaviors to pursue a particular goal, such as when, to support their overall viability, they undertake activities to pursue both short-term and long-term performance goals (Levinthal & March, 1993), as is well documented in organizational ambidexterity literature (Lavie, Stettner, & Tushman, 2010). For example, companies might hide some information but share other information with their business partners (Yang, Fang, Fang, & Chou, 2014). Similarly, we posit that channel partners might behave opportunistically to maximize their short-term payoffs while also continuing to invest in the supplier to ensure returns in the long term. Such a scenario might be particularly likely if the channel partner's TSIs are intangible and the supplier's monitoring capability is low (Wang, Gu, & Dong, 2013). Thus, we predict that knowledge-based TSIs promote both opportunistic and extra-role behaviors by channel partners. Formally:

*H1: Channel partners' TSIs are positively associated with their (a) opportunistic and (b) extra-role behavioral intentions.*

*3.2. Moderating effects of OCLP*

We argue that OCLP signal to channel partners that they are being disadvantaged compared with their peers, in terms of receiving support from and accessing the resources of the supplier (Jones et al., 2009). With these OCLP, channel partners likely believe that the supplier is not concerned with their interests (Jones et al., 2009), leaving the partners in a vulnerable position that might lead them to reevaluate their relationship with the supplier and their investments in the relationship. Because they sense they are getting less back from the supplier, they may be more motivated to maximize their returns, which amplifies the impact of TSIs on their opportunistic behaviors. Furthermore, OCLP send the message that the

channel partners lack control over the relationship, because the supplier is exhibiting a lack of concern for their interests or their potential negative reactions. This sense of a loss of control should motivate partners to engage in more opportunistic behaviors to gain more control over the relationship, so that they can better protect their TSIs (Crosno et al., 2013; John, 1984).

We also contend that OCLP may intensify channel partner's concerns about sunk costs, by amplifying their perceptions of their specific investments in this supplier. Perceived exclusion can distort perceptions of the time and effort spent performing a task, such that people tend to overestimate those investments when they feel excluded (Tomaka & Blascovich, 1994; Twenge, Catanese, & Baumeister, 2003). Thus, compared with its peers, a channel partner experiencing OCLP may tend to have an augmented view of its overall investments in the supplier, due to its overestimation of intangible, precious resources it has devoted to the supplier. Concerns about sunk costs become keener, reflecting this augmented perception of investments in the relationship. The intensified sunk cost bias in turn may strengthen the impact of TSIs on extra-role behaviors (Molden & Hui, 2011). Accordingly, we argue that OCLP enhance the relationship between TSIs and extra-role behavior; formally,

*H2: Out-of-the-channel-loop perceptions enhance the positive relationships of channel partners' TSIs with their (a) opportunistic and (b) extra-role behavioral intentions.*

### *3.3. Moderation by achievement orientation*

Achievement orientation influences channel partners in various ways, including their interpretations of the situation and goals. A channel partner with a high achievement orientation constantly identifies problems and thinks about how to improve its performance (Kozlowski & Bell, 2006). In turn, it is more sensitive to identifying any undesired situations, such as being out of the channel loop. This perceived challenge then needs to be overcome. A high achievement orientation might prompt greater expectations of a return on investment

(Glover, Bumpus, Logan, & Ciesla, 1997) and better treatment from the supplier relative to peers. A channel partner with a high achievement orientation cares more about accessing resources and getting support from the supplier and may feel disadvantaged to a greater degree than do partners with a low achievement orientation if they experience similar levels of OCLP. This intensified feeling of being disadvantaged may lead partners to consider their returns on investment further reduced, evoking a stronger motivation to try to increase the payoff. In addition, with a high achievement orientation, the focus tends to be on autonomy, because these actors prefer to explore ways to do things better or accomplish more (Zhou, 1998). Achievement-oriented channel partners thus seek more control over their relationships with suppliers, to ensure they have freedom in how they conduct business. If they experience OCLP, these partners also should sense their loss of control to a greater degree than do partners with a low achievement orientation. This intensified perception could cause them to engage in more aggressive or opportunistic behaviors to gain more control over the supplier relationship, so that they can better protect their TSIs. Thus, we expect achievement orientation to enhance the impact of OCLP on the relationship between TSIs and opportunistic behaviors.

However, partners with a high achievement orientation also tend to attribute success (e.g., strong sales performance) to personal efforts rather than external factors (Weiner & Kukla, 1970). These channel partners might believe that the supplier has only a small role in their success, such that they still could perform well, even with minimal support. This view should reduce the influence of OCLP on their feeling of being locked-in, because they do not sense that they are more dependent on the supplier and retain confidence in their ability to generate adequate returns on their investment in a reasonable timeframe. In addition, people with a high achievement orientation are more worried about attaining growth and improvements (Weiner & Kukla, 1970), such that they focus more on gains rather than losses

(i.e., missed payoff on their investments) with respect to their TSIs. This tendency in turn might reduce the sunk cost bias that we predicted would be amplified by OCLP. Therefore, we expect an achievement orientation to attenuate the interaction effect of TSIs and OCLP on extra-role behaviors, such as future investments in the supplier. We accordingly propose:

*H3: Achievement orientation (a) positively moderates the interaction effect of OCLP and TSIs on opportunistic behavioral intentions, such that the synergetic effect is enhanced, but it (b) negatively moderates the interaction effect of OCLP and TSIs on extra-role behavioral intentions, such that these synergetic effects are attenuated for channel partners with a high achievement motivation.*

Our conceptual model in Figure 1 builds on TC theory, in which TSIs affect channel partners' behavioral intentions (Brown et al., 2000; Liu et al., 2014). It also features OCLP and achievement orientations, to capture the influences of the distribution network and the individual firm, respectively.

*** Figure 1 about here ***

## 4. Research method

### *4.1. Sample and data collection*

The IT services industry is an appropriate setting for testing our conceptual model, because it features a large number of PSFs that function as channel partners and often sell products or services on behalf of a single, dominant supplier (CompTIA, 2016). The power asymmetry in this type of network leaves PSFs especially vulnerable to suppliers. In collaboration with an industry association that includes more than 5,000 registered PSFs, including systems integrators, managed service providers, value-added resellers, IT consultants, cloud specialists, and IT solution providers, we distributed an online survey to 600 randomly drawn PSFs, asking senior managers with knowledge about channel relationships and supplier decisions to complete the surveys.

The 192 questionnaires returned represent a response rate of 32%. To ensure the respondents were competent to answer the questions, we followed O'Cass, Heirati, and Ngo's (2014) approach and asked respondents to rate, on a seven-point Likert scale (1 = "no knowledge at all" to 7 = "very knowledgeable"), their knowledge about dealings with channel suppliers. We dropped any respondent who scored below 4, leaving 155 professional IT service firms to be included in the final sample. The respondents, appropriate for this study, include top-level managers such as CEOs and managing directors (31.3%) and middle-level managers such as channel managers/directors, sales and marketing managers/directors, and procurement managers (68.7%). In terms of company size, 12.5% of the sample had less than 10 employees, 21.9% had 11–20 employees, 23.4% had 21–50 employees, 20.8% had 51–100 employees, 8.9% had 101–200 employees, and 12.5% had more than 200 employees.

To check for non-response bias, we compared early respondents (first 30) against late respondents (last 30) and found no significant differences for any of the constructs (Armstrong & Overton, 1977). In addition, we compared the participating firm with a random group of 50 nonparticipating firms in terms of company size and age and found no significant difference. Therefore, non-response bias does not appear to be a concern.

*4.2. Measures*

We pretested the questionnaire among 20 professionals in the IT services industry and asked them to comment on any items they found ambiguous or difficult to understand. Minor modifications were made accordingly.

The measurement scales for all the constructs came from prior literature and offer proven reliability and validity. We made some minor modifications to fit the study context. The Appendix contains the complete list of items with their factor loadings, reliability, and average variance extracted (AVE) statistics. For the *transaction-specific investments* measure, we adopted three items from Wang, Gu, and Dong (2013) and Dahlquist and

Griffith (2014) that capture knowledge-based TSIs by professional IT service firms. The measure of *out-of-the-channel-loop perceptions* relied on five items from O'Reilly, Robinson, Berdahl, and Banki (2015) and Stamper and Masterson (2002) that reflect the channel partner's sense of being ignored or excluded from the supplier's channel network. To capture achievement orientation, we adopted four items from Atuahene-Gima and Li (2002), in which we shift the referent point to reflect firm-level achievement orientation (Chan, 1998), or the extent to which channel partners are confident they can achieve goals and overcome challenges. The four items to measure *opportunistic behavioral intentions* were adapted from Heide, Wathne, and Rokkan (2007) and Wang et al. (2013); they capture the channel partner's intention to engage in unethical behaviors. *Extra-role behavioral intentions* rely on three items from Kim, Hibbard, and Swain (2011) that indicate a partner's willingness to invest further in the relationship with the focal supplier. All items were measured with seven-point, Likert-type scales anchored by 1 = "strongly disagree" and 7 = "strongly agree."

We also included control variables that may influence behavior in the channel: firm size, market uncertainty, exclusive dealing, and strategic importance. Firms in the IT industry differ greatly in size, so we include a measure based on the number of employees. Market uncertainty, reflecting variations in the market environment and sales forecasts, was measured with a three-item, seven-point, Likert scale extracted from Wang et al.'s (2013) research. For the measure of exclusive dealing, we asked the respondents if they carried alternative products, produced by other suppliers (yes or no) (Frazier, Maltz, Antia, & Rindfleisch, 2009). Finally, the strategic importance measure used a single item from Dahlquist and Griffith (2014) that asked how important the focal supplier was to their business, relative to alternative suppliers.

*4.3 Reliability and validity*

To evaluate the psychometric properties of the constructs, we performed confirmatory factor analysis using AMOS 22, software suite 9. Table 2 contains the model fit indices, factor loadings, composite reliability, and AVE values for the constructs. The overall chi-square goodness-of-fit index for the model is 270.73 (df = 191; $p < .05$), with a comparative fit index of .97, root mean square error of approximation of .05, standardized root mean square residual of .05, incremental fit index of .97, and Tucker-Lewis index of .96. Thus, the measurement model fit the data adequately (Marsh, Hau, & Wen, 2004). To test for convergent validity, we checked the significance and magnitude of the item loadings; all items loaded significantly on their respective constructs and had standardized loadings of at least .71. In addition, all of the AVEs were above the recommended threshold of .50, in further support of convergent validity (Anderson & Gerbing, 1988; Fornell & Larcker, 1981). The composite reliability values were greater than .80, suggesting acceptable reliability (Hair, Black, Babin, & Anderson, 2010). With respect to discriminant validity, we followed Fornell and Larcker's (1981) procedure; we present the correlations among the variables in Table 3. The square roots of the AVE for all constructs were greater than their correlations with any other constructs in the study, indicating discriminant validity (Chin, 2010).

*** Table 2 and 3 about here ***

*4.4 Common method bias*

We also sought to account for the potential impact of common method bias, so we took proper procedures in our survey design and performed statistical checks, in line with Podsakoff, MacKenzie, Lee, and Podsakoff's (2003) recommendations. First, respondents were guaranteed confidentiality, assured that there were no right or wrong answers, and asked to answer the questions as honestly as possible. Second, the wording of each item was carefully constructed to avoid ambiguity or vagueness. The constructs we used to measure the channel firm's behavior are generally concrete (e.g., opportunism, investments), which also

helps reduce the potential for bias (Rindfleisch, Malter, Ganesan, & Moorman, 2008). Third, the survey included different response formats (i.e., predictor and criterion questions placed in various locations), to prevent respondents from guessing the studied relationships.

Then, to test statistically for common method bias, we performed Harman's single-factor test. The first factor accounted for only 32% of the total variance, so common method bias was not a significant concern (Podsakoff et al., 2003). With a marker variable approach, we included industry experience, which is theoretically unrelated to at least one variable in the model (Lindell & Whitney, 2001). We adjusted the correlations among the variables by using the lowest positive correlation between this marker variable and other latent constructs (i.e., .02). Only small differences emerged between the original and adjusted correlations (i.e., less than .03), and the original coefficient values and associated significance levels did not change after this adjustment (Chung, Wang, Huang, & Yang, 2016). This test confirmed that common method bias was unlikely. Finally, with an unmeasured latent method factor approach, we estimated the model with and without the latent method factor and noticed no significant changes in factor loadings or path coefficients (Teller, Alexander, & Floh, 2016). Accordingly, common method bias does not appear to be a problem for this study.

## 5. Analysis and results

We use partial least squares (PLS) to test all the hypothesized main effects and two-way interaction effects. In Model 1, we included the main effects of all predictor and control variables, then added the two-way interactions in Model 2 (see Table 4). To test the three-way interaction effects, we employed moderated regression; it would be inappropriate to test them in PLS due to standardization issues (Hair, Hult, Ringle, & Sarstedt, 2017). Combining structural equation modeling with regression analysis to test moderation effects is a well-established practice in marketing literature (Schmitz & Ganesan, 2014; Yim, Chan, & Lam, 2012). We mean-centered the variables in the model before creating the interaction terms

(Aiken & West, 1991). According to the regression analysis, the variance inflation factors are lower than the cut-off value (highest value = 4.75) (Hair et al., 2010), so multicollinearity is not a concern. The standardized regression coefficients and their respective *p*-values are in Table 4.

*** Table 4 about here ***

*5.1. Results*

As the results in Table 4 reveal, we find a significant positive relationship between TSIs and opportunistic behavioral intentions ($\beta = .23$, $p < .05$), in support of $H_{1a}$. However, we find no significant relationships of TSIs with extra-role behavioral intentions, so we cannot confirm $H_{1b}$. In terms of the moderating role of OCLP, it positively moderates the relationships of TSIs with opportunistic ($\beta = .22$, $p < .05$) and extra-role ($\beta = .21$, $p < .05$) behavioral intentions, in support of $H_{2a–b}$. The analyses also support a moderating role of achievement orientation. Consistent with $H_{3a}$, achievement orientation positively moderates the interaction effect between OCLP and TSIs on opportunistic behavior intentions ($\beta = .15$, $p < .05$). Meanwhile, it negatively moderates the interaction effects on extra-role behavior intentions ($H_{3b}$, $\beta = -.16$, $p < .05$). That is, all elements of $H_3$ receive support.

**6. Discussion**

This study focuses on the impact of TSIs on interfirm relationships and the boundary conditions that affect such impacts in the context of PSFs. Accordingly, we adopted TC theory as the overarching theory for the proposed model; it enables us to predict the impact of TSIs on channel partners' behaviors, to form the baseline for our model. To select the dependent variables, we also relied on TC theory that predicts the specific effect of TSIs on an investor's (i.e., channel partner in this study) behaviors. Specifically, noting the lock-in effect suggested by TC theory, we predict that TSIs encourage channel partner behaviors that benefit both parties in the exchange relationship (e.g., extra-role behavior). Willingness to

invest is a form of positive extra-role behavior, because the channel partner makes the investments voluntarily, oriented toward helping the supplier (Kim, Hibbard, & Swain, 2011; Wuyts, 2007). Studying this particular behavior enables us to capture partner's extra-role behaviors that relate more specifically to TSIs, a focal construct in this study. However, noting the controversy surrounding the effect of TSIs on investors' opportunistic behaviors, we also include them as a dependent variable, to shed new light on this channel relationship issue. In line with recent developments (Liu et al., 2014; Tangpong, Hung, & Ro, 2010), we introduce two novel, conditional variables (i.e., OCLP and achievement orientation) to explore how specific aspects of an exchange relationship may influence the effects of TSIs, as predicted by TC theory. Both these boundary conditions help explain the impact of TSIs on channel partners' behavioral intentions.

Industry reports suggest that a feeling of being excluded by a supplier affects channel partners' behaviors, such as their intentions to participate in grey markets (Coyne, 2012) or switch to other suppliers (Hoffman, 2008), yet no empirical evidence has confirmed these potential impacts. We add some nuance to extant understanding of how TSIs influence channel partners' behavioral intentions; the impact is moderated by OCLP, which enhances the effects of TSIs on both negative (opportunism) and positive (extra-role) behavioral intentions.

With this investigation of TSIs as important structural mechanisms for managing channel relationships, we do not find exclusive support for either a bonding (e.g., mitigating opportunistic behaviors) or a lock-in (e.g., promoting extra-role) effect. Rather, TSIs by PSFs in the IT service industry are associated with opportunistic behaviors. Contrary to the conventional wisdom that suppliers should encourage channel partners to commit more and highly specific investments to their exchange relationship, our findings suggest they should take a cautious approach, especially if the investments are knowledge based in nature.

The results for the two-way interaction effects also reveal that the partner's achievement orientation reduces the impact of TSIs on its extra-role behavior. We did not test this relationship formally, but the finding aligns with our argument about the role of achievement orientation in relation to TSIs. That is, it likely reduces the lock-in effect of TSIs, thereby mitigating the sunk cost bias they may have developed, in association with their investment in the supplier. In turn, it could reduce their tendency to invest further in their relationship with the supplier. However, our research goal was to explore the role of achievement orientation as a second moderator that helps explain the effect of OCLP, so to keep the study focused—not distracted by the two-way interaction effects between TSIs and achievement orientation—we have not formally developed a hypothesis about this relationship.

Finally, in our effort to understand the boundary role of OCLP and account for heterogeneity among channel partners, we examined how a PSF's achievement orientation interacts with TSIs and OCLP to influence their behaviors. To a certain extent, OCLP represent hurdles in the channel relationship, such that channel partners take less priority than other players in the network and receive both less support and fewer resources (Jones et al., 2009). An achievement orientation influences channel partners' interpretation of these hurdles and the goals that they set in response (Kozlowski & Bell, 2006), so it also affects the impact of OCLP. Our findings highlight the importance of considering channel members' heterogeneity when managing relationships (Pelser et al., 2015); particular attention should center on partners with high achievement orientations, which appear relatively more self-focused and aggressive.

## 7. Managerial implications

Suppliers in the IT industry work with many channel partners and are unlikely to treat them all equally, whether due to their limited resources or their strategic considerations. However, by managing the perceptions carefully, suppliers could capitalize on OCLP in their

distribution channels. For channel partners who feel out of the channel loop, suppliers could tactically remind them of the specific investments they already made in the relationship (e.g., training sessions attended, advanced skill certifications obtained); doing so would help enhance their sunk cost bias, which should increase behaviors that benefit the exchange relationship.

Our study also suggests that suppliers should segment their channel partners according to their OCLP and achievement orientations. For high achievement-oriented channel partners, suppliers should minimize OLCP, such as by proactively demonstrating their concern and respect, to reduce any sense of being excluded or ignored. For example, they might pay regular visits to and engage in regular communication with these partners to minimize their OCLP.

## 8. Limitations and further research

Some limitations of our study suggest directions for further research. First, we tested our hypotheses in the single context of professional IT service firms. With this approach, we could control for extraneous sources of variation and capture the unique features of our focal construct (i.e., knowledge-based TSIs). However, this approach also demands caution before applying our findings to other channel contexts. Additional research could test our model in less knowledge-intensive channel contexts, to validate our findings and improve their generalizability. Second, our cross-sectional survey approach cannot reveal the interplay of the focal constructs over time. Longitudinal designs thus would be valuable. Third, in addition to OCLP and achievement orientation, studies might explore other potentially relevant moderators to explain the opposing behaviors triggered by TSI in more detail, such as entitlement or deservingness (Feather, 2003), which also constitute important sources of heterogeneity among channel partners (Pelser et al., 2015). Fourth, we measure channel partners' extra-role behavior according to their willingness to make further investments in the

supplier (Kim et al., 2011), which captures only a particular form of extra-role behavior. Additional research could apply Wuyts's (2007) scale to gain a broader view of extra-role behaviors in supplier–channel partner relationships and thus complement our findings.

In addition, in our correlation results, opportunistic behavior correlated negatively with TSIs (albeit insignificantly). Yet in the regression results, this relationship changed, to become positive and significant. Similarly, Brown et al. (2000) revealed that the relationship between TSIs and opportunism changed from negative and insignificant to positive and significant when they shifted their analysis from bivariate to multivariate. We were disappointed that our moderator did not fully explain the seemingly conflicting behavior caused by TSIs. A possible explanation could relate to the absence of a control or moderating variable in the analysis (Paulhus, Robins, Trzesniewski, & Tracy, 2004). We hope continued studies explore other potential moderators and control variables to explicate the relationships between TSI and opportunistic behavior.

We also acknowledge that envy is similar to OCLP; it "occurs when a person lacks another's superior quality, achievement, or possession and either desires it or wishes the other lacked it. It occurs when this shortcoming exists in a domain that is self-definitional" (Parrott & Smith, 1993, p. 906). But OCLP instead results from a comparison with peers, related to treatment received from a third party; it indicates a standing relative to peers within a network (Jones et al., 2009). Envy may arise in both dyadic and more expansive relationships (Veiga, Baldridge, & Markóczy, 2014), but OCLP require the broader networks (i.e., at least two in-the-loop members and one out-of-the-loop member). In terms of their impact, envy as an emotion can lead to either negative (similar to opportunism) or positive (extra-role) behaviors, depending on whether it is malicious or benign (van de Ven, Zeelenberg, & Pieters, 2009). Despite this similarity, such that envy and OCLP may lead to negative or positive behavioral outcomes, the underlying mechanisms of their impact differ

fundamentally. That is, the influence of OCLP on behavior stems from its threat to fundamental needs, such as belonging and control (Jones & Kelly, 2013). Envy instead appears to affect behaviors mainly through a mediating effect of emotions, with little connection to fundamental needs (Schaubroeck & Lam, 2004).

Finally, most prior channel relationship literature treats TSIs as a unidimensional construct, but a more specific approach, reflecting unique assets dedicated to the relationship (Lohtia, Brooks, & Krapfel, 1994), could provide new insights into the impact of TSIs in channel relationships. We encourage studies that adopt multidimensional operationalizations of TSIs, which may reveal further complexity with regard to their influences.

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**Figure 1. Conceptual model**

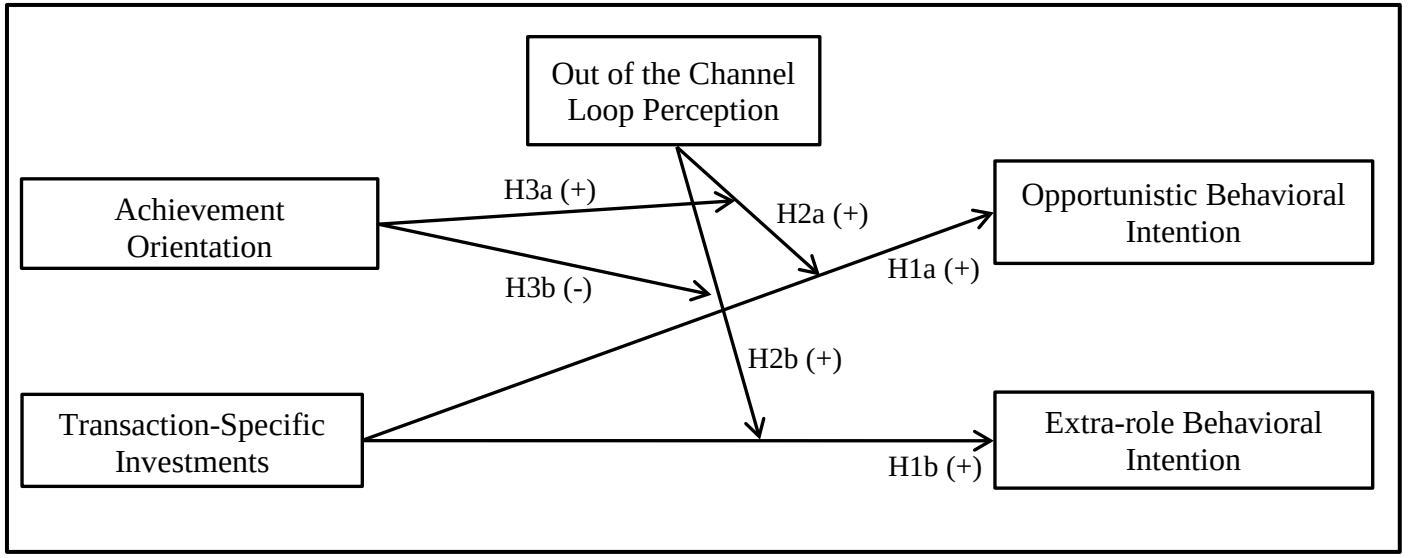

**Table 1. Mixed findings on the impact of TSIs**

| Studies | Theoretical Lens | Relationship between TSIs and Investor's Opportunistic Behavior | Key Rationale |
|---|---|---|---|
| Handley & Benton (2012) | Transaction cost theory | Negative | Perceived retaliation from exchange partner discourages opportunistic behavior. |
| Ping (1993) | Transaction cost theory | Negative | Fear of economic loss discourages opportunistic behavior. |
| Brown et al. (2000) | Transaction cost theory | Positive | Motivation to generate additional return on investments encourages opportunistic behavior. |
| Crosno et al. (2013) | Psychological reactance theory | Positive | Motivation to regain more control to protect investments encourages opportunistic behavior. |
| Crosno & Dahlstrom (2008) | Transaction cost theory | No relationship | Transaction cost theory may be limited by its focus on controlling an exchange partner's behavior. |

## Table 2. Measurement items and validity assessment

| Construct | Loadings | *t*-value | CR | AVE |
|---|---|---|---|---|
| ***Transaction-specific investment*** | | | .86 | .67 |
| If this relationship were to end, we would be wasting a lot of knowledge that is tailored to the relationship. | .76 | 11.02 | | |
| We have invested a great deal in building up the relationship with this supplier. | .87 | | | |
| If this relationship were to end we would lose a lot of investments. | .83 | 12.63 | | |
| ***Out-of-the-channel-loop perception*** | | | .90 | .63 |
| Compared to how some resellers are treated by this supplier, it feels like … | | | | |
| We are left out. | .71 | 10.47 | | |
| We are excluded. | .74 | | | |
| We are not part of its channel partner networks. | .82 | 10.16 | | |
| We are 'outsider' in its channel partner networks. | .89 | 10.94 | | |
| We are on the fringes of its reseller networks. | .81 | 9.93 | | |
| ***Partner's achievement orientation*** | | | .94 | .78 |
| We have confidence in our ability to meet most sales objectives. | .83 | 15.34 | | |
| We expect to perform at highest level. | .93 | | | |
| We consistently set challenging sales goals for us to attain. | .90 | 18.43 | | |
| We continuously try to improve our sales performance. | .88 | 17.60 | | |
| ***Partner's opportunistic behavioral intention*** | | | .92 | .75 |
| We may interpret terms of the contractual agreement in our favor at the supplier's expense. | .88 | 13.45 | | |
| We may not keep all promises that were made when we began the relationship with this supplier. | .83 | | | |
| We will try to take advantage of "holes" in our contractual agreement to further our own interests. | .88 | 13.49 | | |
| We may violate some contractual terms in certain circumstances. | .87 | 13.46 | | |
| ***Partner's extra-role behavioral intention*** | | | .88 | .72 |
| Our level of investment in selling this supplier's product will increase in the near future. | .81 | 12.02 | | |
| We are willing to invest more to support this supplier's product line. | .87 | | | |
| We plan to make future investments to support this supplier's product line. | .86 | 12.99 | | |
| ***Market uncertainty*** | | | .86 | .66 |
| It is difficult to monitor the market environment trends for our supplier's products. | .87 | | | |
| The sales forecasts for our supplier's products are quite inaccurate. | .82 | 10.93 | | |
| The market in which we operate is quite unpredictable. | .75 | 10.00 | | |

Notes: CR = composite reliability, AVE = average variance extracted. The fit indices are as follows: $\chi^2 = 270.73$; $p < .01$; $\chi^2/df = 1.42$; root mean square error of approximation = .05; confirmatory fit index = .97; incremental fit index = .97; Tucker-Lewis index = .96; goodness-of-fit index = .87; adjusted goodness-of-fit index = .83; standardized root mean residual = .05.

**Table 3. Correlations, means, and standard deviations**[a]

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Transaction-specific investments | **.82** | | | | | | | | | |
| 2. Out-of-the-channel-loop perception | -.17* | **.79** | | | | | | | | |
| 3. Achievement orientation | .71** | -.25** | **0.88** | | | | | | | |
| 4. Opportunistic behavioral intention | -.11 | .58** | -.31** | **.87** | | | | | | |
| 5. Extra-role behavioral intention | .58** | -.22** | .44** | -.07 | **.85** | | | | | |
| 6. Market uncertainty | .29** | .17* | .19* | .29** | .16* | **.81** | | | | |
| 7. Firm size[b] | .08 | .09 | -.14 | .13 | .11 | .02 | - | | | |
| 8. Strategic importance | .81** | -.25** | .61** | -.20* | .61** | .19* | .06 | - | | |
| 9. Exclusive dealing[c] | -.04 | .13 | -.01 | .01 | -.02 | -.10 | -.00 | -.08 | - | |
| 10. Industry experience | .09 | -.03 | .14 | .06 | .04 | .05 | .05 | .07 | -.00 | - |
| Mean | 4.68 | 3.21 | 4.95 | 3.45 | 4.39 | 4.18 | 3.34 | 4.78 | .30 | 4.66 |
| SD | 1.35 | 1.46 | 1.44 | 1.54 | 1.33 | 1.25 | 1.54 | 1.48 | .46 | 1.42 |

[a]The square root of the average variance extracted (AVE) is on the diagonal.

[b]Firm size is calculated on the basis of the number of full-time employees. It consists of six categories, coded as 1 = 10 or fewer, 2 = 11–20, 3 = 21–50, 4 = 51–100, 5 = 101–200, and 6 = 200 or more.

[c]Exclusive dealing is coded as 0 = not exclusively dealing, and 1 = exclusively dealing.

*$p < .05$. **$p < .01$.

**Table 4. Results of the main and moderating effects tests**

| | Model 1 | | Model 2 | | Model 3 | |
|---|---|---|---|---|---|---|
| | **Opportunistic Behavioral Intention** | **Extra-role Behavioral Intention** | **Opportunistic Behavioral Intention** | **Extra-role Behavioral Intention** | **Opportunistic Behavioral Intention** | **Extra-role Behavioral Intention** |
| Transaction-specific investments (TSIs) | .23 (1.97)* | .22 (1.47) | .30 (2.09)* | .29 (1.90)* | .36 (2.74)** | .26 (1.91)* |
| Out-of-the-channel-loop perception (OCLP) | .48 (6.44) ** | -.10 (1.59) | .47 (6.14)** | -.12 (1.91)* | .40 (5.03)** | -.03 (-.42) |
| Achievement orientation (AO) | -.32 (3.33)** | .03 (.50) | -.37 (3.52)** | -.09 (1.13) | -.38 (-3.89)** | -.08 (-.75) |
| ***Two-way interactions*** | | | | | | |
| TSIs × OCLP | | | .22 (1.76)* | .21 (1.82)* | .28 (2.51)** | .24 (2.08)* |
| TSIs × AO | | | .01 (.14) | -.16 (1.89)* | .02 (.34) | -.07 (-.96) |
| OCLP × AO | | | -.20 (1.61) | -.35 (2.61)** | -.23 (-2.01)* | -.42 (-3.69)** |
| ***Three-way interactions*** | | | | | | |
| TSIs × OCLP × AO | | | | | .15 (1.85)* | -.16 (-1.88)* |
| ***Control variables*** | | | | | | |
| Strategic importance | -.11 (1.45) | .38 (2.82)** | -.14 (1.68)* | .38 (2.83)** | -.13 (-1.29) | .36 (3.42)** |
| Market uncertainty | .23 (2.99)** | .05 (.68) | .24 (2.81)** | .06 (.68) | .24 (3.36)** | .08 (1.13) |
| Firm size | .03 (.82) | .08 (1.39) | .02 (.58) | .07 (1.36) | .03 (.40) | .07 (1.03) |
| Exclusive dealing | -.03 (.77) | .04 (.81) | -.01 (.23) | .07 (1.35) | .00 (.00) | .07 (1.15) |
| $R^2$ | .45 | .41 | .46 | .47 | .49 | .48 |
| $R^2$ change | | | .01 | .06 | .03 | .01 |

Notes: All parameter estimates are standardized.
**$p < .01$ (one-tailed test).
*$p < .05$ (one-tailed test).