

Investigating the impacts of guanxi and relationship marketing in port logistics: two cases

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Published online: 14 August 2017
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Abstract This study explores the differential impacts of guanxi and relationship marketing, both at the interpersonal and interorganisational level, within the port logistics industry. We compare the effects of these two marketing approaches on outcome variables to elucidate managerial implications for logistics firms conducting cross-cultural business. The PLS-SEM method is used to analyse data from a survey of logistics companies in Taiwan and Panama. In both countries, interpersonal relationships engender significant effects on interorganisational relationships, and firm performance has significant effects on firm loyalty. As regards the determinants of supply-chain effectiveness and firm performance, we show that interpersonal relationships play a more important role in Taiwan, while interorganisational relationships have more weight in Panama. In other words, Asian companies focus on guanxi marketing at the personal level, while Latin American ones focus on relationship marketing at the interorganisational level. These findings and consequent knowledge can help companies conducting business in Asia and Latin America to adapt to counterpart's cultural business practices.

Keywords Guanxi · Relationship marketing · Supply-chain effectiveness · Firm performance · Loyalty · Port logistics

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Introduction

International business and strategy researchers have endeavoured to explain firm-level outcomes by claiming that firms can achieve rapid economic growth through interpersonal networks (*guanxi* in Chinese), cultivated by managers, that serve as informal substitutes to institutional support (Peng and Heath 1996; Peng et al. 2008). While many studies discuss port system evolution and port-hinterland/foreland relationships from a macro-level perspective, little attention has been paid to the influence of such evolution on the operations of logistics service providers (Shen and Kee 2017). Thus, the understanding from interpersonal networks to interorganisational networks can help port logistics companies clarify the effect of interpersonal *guanxi* on interorganisational relationships and consequent outcome variables, like supply-chain effectiveness and firm performance. *Guanxi* describes interpersonal relationships among managers that are translated into interorganisational strategies of relying on networks and alliances to advance the firm (Peng et al. 2008)—that is, from micro connections to the macro social order (Hammond and Glenn 2004). Besides, Morgan and Hunt (1994) define *relationship marketing* as the activity of building, developing, and maintaining a successful business relationship. Therefore, *guanxi* marketing and relationship marketing have key differences as well as several similarities in terms of concept and constructs (Yau et al. 2000; Wang 2007). Nevertheless, more recently, Wang et al. (2014) indicated that interorganisational relationships (IOR), as well as interpersonal relationships (IR), serve as both enablers and drivers of cooperation among companies as their relationships form and grow. IR is more private and informal, entailing emotional and even irrational factors, and is fundamentally bound to specific individuals and their relationships. IOR can be thought of as organisational cooperation, with firms interacting in line with formal contracts and agreements (Wang et al. 2014).

In the liner shipping industry, vertical integration is an important trend over the past two decades (Lun et al. 2010). Shipping companies can collaborate with other organisations to provide integrated logistics services, by incorporating liner shipping with cargo consolidation, container terminal services, intermodal services, etc. One of the notable examples is Kuehne + Nagel who has expanded its freight forwarding services to more comprehensive logistics offerings (SchedNet 2005), now providing supply-chain management solutions such as integrated and contract logistics (cf Kuehne + Nagel's website). A.P. Møller—Maersk, the leading global liner shipping company, positions itself as an integrated transport and logistics company, providing container transportation, freight forwarding, supply-chain solutions, container terminal services, etc. (cf A.P. Møller—Maersk's website). Recently, the Port Logistics Group is providing end-to-end logistics services, such as retail and wholesale distribution and e-commerce fulfilment, using four ports, Long Beach, New York-New Jersey, Savannah, and Tacoma, as gateways (cf Port Logistics Group's website).

Interpersonal and interorganisational networks are especially pertinent to port logistics because of the complexity of the organisations involved, and the multiple levels at which the various functions and institutions interact (Wang et al. 2013).

Port authorities and port terminal operators are interlinked economically, geographically, and institutionally (van der Lugt et al. 2014). Ports are integral platforms connecting land and sea transport, and function as bases for not only trading logistics and information transfer, but even production activities (Lam and Yap 2011; Felício et al. 2015). Port logistics involves numerous parties facilitating logistics channels and the integration of supply chains, both in and near ports, including port operators and agents, land and sea freight carriers, freight forwarders, and so on (Bichou and Gray 2004). To enable rapid and reliable port logistics services, firms must develop relationships with port logistics services providers. As globalisation and growing competition alter the terrain, firms have turned to closer interfirm relationships to mitigate the resultant uncertainty and risk. Thus, buyer–supplier relationships have become important for gaining a competitive advantage.

Accordingly, this study investigates the effects of building business relationships in port logistics—i.e. logistics services providers—simultaneously at both the personal and interorganisational levels. Drawing from the limited studies on this topic, this research proposes a conceptual model involving interpersonal relationships (person to person) as well as interorganisational relationships (company to company), and explores their effects on supply-chain effectiveness (SEC), firm performance (FP), and loyalty (LY) using two countries as study cases (Taiwan and Panama). According to the World Bank (2016), Taiwan and Panama demonstrate high logistics competitiveness in Asia and Latin America, being at the top 25% of countries in this regard at the global level. Moreover, a special analysis—on the multi-group moderator effect (Sarstedt et al. 2011) in terms of country—is also performed to compare the Taiwan and Panama datasets and to provide more statistical evidence for the hypotheses which can further be applicable to both Asia and Latin American societies.

The objectives of this research are as follows: (1) to propose and empirically test a conceptual model of business relationships, encompassing both interpersonal and interorganisational levels and applicable in both countries; (2) to develop a comparison by analysing the main constructs of each model's results, using a *multi-group moderation effect analysis*; and 3) to highlight managerial implications for logistics firms conducting cross-cultural business.

Theoretical background and hypothesis development

Interpersonal and interorganisational relationships

Shaan et al. (2013) argue that guanxi is relevant to social networks, while business networks involve relationship marketing. They further suggest that guanxi is a feature of interaction in Chinese and Asian markets, and the latter is prevalent in the West. The key difference is that guanxi is relevant to work at the individual network, whereas relationship marketing is an organisational network-level concept. A relationship thus exists between the two levels of commitment, such that higher levels of interpersonal commitment would lead to higher levels of interorganisational commitment (Mavondo and Rodrigo 2001). For example, Chinese employees

with foreign managers who communicated that they wanted a relationship (compared to no relationship) with partners concluded that they interacted better and had little relational and task conflict (Chen et al. 2008).

Wang et al. (2014) have explained that interpersonal relationships can be seen as a four-dimensional framework, involving *ganqing* (emotional commitment), *renqing* (reciprocity and empathy), *xinyong* (trust), and *mianzi* (face). Mavondo and Rodrigo (2001) have found interpersonal commitment to be a key antecedent to interorganisational commitment, and concluded that interpersonal trust between boundary spanners can promote trust at the firm level (Lee and Dawes 2005). Zhang and Zhang (2006) have noted that *guanxi* at the individual level can be imported into the organisation, becoming an organisational asset with influence, having important implications for organisational efficiency and performance. Accordingly, our first hypothesis is proposed.

H1 Interpersonal relationships have a significant positive effect on interorganisational relationships.

Supply-chain effectiveness is an outcome variable, or external standard, describing how well an organisation meets the demands of the various groups and organisations concerned with its activities (Pfeffer and Salancik 1978). In the *supply-chain management* context, interorganisational relationships may also be beneficial, but for this to work, business partners must be integrated into the supply chain. Panayides (2007) has examined the relationships at the interfirm level between logistics service providers, and how these affect the effectiveness and performance of supply chains. In particular, that study found that interorganisational relationships, via relational exchange, help determine how effective logistics services are, and thus affect firm performance. Through personalised, reciprocal, and preferential *guanxi* networks, managers garner information about the regulatory and industry environment, enabling them to react swiftly and effectively. Thus, *guanxi* influences market performance through indirect paths, such as giving corporations greater capacity to respond to changes and capture opportunities (Gu et al. 2008). Accordingly, this study hypothesises the following.

H2 Interpersonal relationships have a significant positive effect on supply-chain effectiveness.

H4 Interorganisational relationships have a significant positive effect on supply-chain effectiveness.

Moreover, as suggested by Palmatier et al. (2007), *relationship development* between buyers and sellers at the individual and firm levels can increase business, reduce price sensitivity, and otherwise improve sellers' financial outcomes. Research has thus confirmed that interorganisational relationships are a leading bellwether of long-term orientation and commitment to a partnership, as well as of the performance of such relationships. Wang et al. (2014) have shown that interpersonal relationships positively affect long-term orientation and commitment as well as market performance, all at the firm level. Thus, both interpersonal and

interfirm relationships affect similar firm-level outcomes, either directly or indirectly. Accordingly, the following hypotheses are proposed.

H3 Interpersonal relationships have a significant positive effect on firm performance.

H5 Interorganisational relationships have a significant positive effect on firm performance.

Supply-chain effectiveness and firm performance

For a logistics service provider, supply-chain effectiveness is the extent to which the provider's goals of delivering the service are accomplished (Panayides and So 2005). These entail on-time delivery, timely response to requests, accurate information storage and delivery, ability to solve problems, fulfilment of promises, and assisting clients in accomplishing their own objectives.

Supply-chain operations involve various costs incurred during purchasing, holding, and delivering inventory, as well as those costs associated with delivery failure. Improving supply-chain-cycle efficiency entails reduction of such costs through closer cooperation and information sharing, to avoid duplicating activities and strengthen on-time performance. In a simulation, Benton and Krajewski (1990) studied the effect of vendor performance in a range of manufacturing environments, concluding that poor delivery performance, as assessed by on-time delivery, causes larger inventory and order backlogs, i.e. poor supply-chain performance. Thus, the following is hypothesised.

H6 Supply-chain effectiveness is positively related to firm performance.

Firm performance and loyalty

Luo and Chen (1997) have empirically studied how guanxi affects firm performance (financial outcomes in a given period) in China, finding that guanxi-based variables affect accounting and market performance. For example, foreign investors with local partners (joint venture participants) are likely to have better access to powerful Chinese *guanxi* networks than others (wholly owned investors). The advantages of joint ventures are reflected in cheap and reliable material supplies, market access, preferential tax treatment, low land rent, priority in obtaining infrastructure services, and provisions for assistance from the authorities when problems arise (Luo and Chen 1997).

Relationship marketing also yields various benefits to firms, like increased market share, profits, and customer retention (Morgan and Hunt 1994; Shaalan et al. 2013). According to the *holistic* marketing concept, relationship marketing aims to build mutually satisfying long-term relationships with key parties—customers, suppliers, distributors and other marketing partners (Kotler and Keller 2007). Therefore, if two companies have established a relationship, they will share a market and increase their market share in turn.

Customers' commitment to and trust in a seller, as well as the quality and performance of that relationship, all serve to increase loyalty because of lower perceived risk in engaging trusted partners (Palmatier 2008). According to a study by Lages et al. (2008), the way business-to-business relationships perform can positively influence loyalty, meaning that a customer will not search for alternatives, will rebuy without soliciting competitive bids, and will refrain from disclosing competitive quotes. Logistics play a vital role in cementing customer loyalty. Logistics-related factors are experienced by customers after they make payments, and are often classified as post-purchase factors. Studies have found that physical delivery is usually seen by customers as key, and that logistics capability is positively associated with company performance in container shipping services and the computer and consumer electronics retail industry (Ramanathan 2010). Thus, this study proposes the following.

H7 Firm performance has a significant positive effect on loyalty.

Summary

The buyer–supplier relationship has thus become an important basis for achieving a sustainable competitive advantage. The development of our study follows the model developed by Wang et al. (2013), reflecting relationships at the interorganisational and interpersonal levels (*guanxi*), assessing the resultant interfirm performance. This theoretical model was adjusted to fit the port logistics context by incorporating two constructs used by Panayides and So (2005). Accordingly, the research model of this study is shown in Fig. 1.

Methodology

Questionnaire design

Our model's constructs (Table 8 in Appendix) have been identified and modified from previous studies. They include interpersonal relationships (IR) (Yen et al.

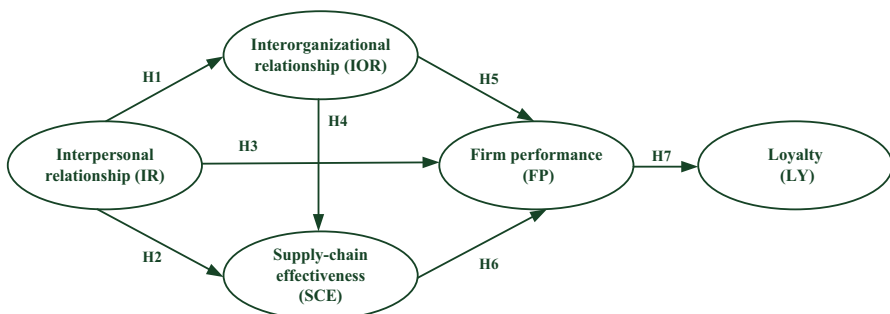


Fig. 1 The research framework

2011; Li et al. 2012; Wang et al. 2014), interorganisational relationships (IOR) (Wang et al. 2013), supply-chain effectiveness (SCE) (Panayides and So 2005), firm performance (FP) (Panayides and So 2005), and loyalty (LY) (Poujol et al. 2013). The expressions of the items are adjusted to the context of port logistics and presented on a five-point Likert scale from “strongly disagree (=1)” to “strongly agree (=5)”, used for all items where respondents specify their level of agreement with a statement.

Sampling procedure

The target sample includes boundary spanners (liaisons) of a logistics provider firm, namely those in direct contact with their supplier (another logistics provider). The data were collected via in-person and web surveys. Web surveys use a visual stimulus, and the respondent has complete control with regard to how each question is read and comprehended. The link of the online questionnaire was emailed to respondents. To ensure that each respondent answered the questionnaire only once, we allowed only one response per computer.

Data analysis methods

The SmartPLS Version 2.0 M3 Beta (Ringle et al. 2005) was employed to analyse the collected data. PLS has been employed in many fields, in structural equation modelling, especially when there are limited participants and the data distribution is skewed [e.g. surveying female senior executives or multinational CEOs]. PLS-SEM has been employed in many fields, such as marketing, organisation, behavioural sciences, and business strategy (Kwong and Wong 2013).

Initially, a descriptive analysis was created, pertaining only to respondent characteristics. The *partial least squares* technique was used for measurement and structural model assessment. Finally, a *multi-group moderation effect analysis* was employed to compare the Taiwan and Panama models.

Results

Characteristics of firms and respondents

In the final survey, 86 questionnaires from Taiwan and 81 questionnaires from Panama were received, respectively, due to several factors, such as time required for filling out the survey and response patterns. Among the respondents, 54.6% were freight forwarders, and 39% had a shipping line as their major logistics service provider. The majority of surveyed companies (59.6%) had been working in the logistics sector for over 10 years. More than 61.7% had 1–50 employees.

Respondents were 55.3% female, and 39.7% belonged to the corporate executive department. *Manager* was the position with the highest percentage (36.9%) from all the respondents. The age ranges were evenly distributed, with ages 25–30, 31–40, and 41–50, constituting 25.5, 27, and 24.8%, respectively. Finally, 70 and 71

respondents from Taiwan and Panama, respectively, were retained for analysis. A demographic analysis is presented in Table 1.

Measurement model assessment for Taiwan and Panama

Indicator reliability (values of 0.50 or higher are acceptable) is a measure of the loadings of the indicators (Hair et al. 2011). It can be seen in Table 2 that all indicators for both countries have factor loadings above 0.50, except Renqing_2 (0.482) in the Panama measurement model. This value is still acceptable for exploratory research. These values provide support for the indicator reliability of both measurement models.

Furthermore, the composite reliability (CR) values for these models exceeded 0.70 for the five constructs, indicating high levels of internal consistency reliability among them (Hair et al. 2010). To check convergent validity, each latent variable's average variance extracted (AVE) was greater than the acceptable threshold of 0.5; thus, convergent validity for all constructs in the two models was confirmed (Hair et al. 2010). The results are shown in Table 2.

Structural model assessment for Taiwan and Panama

After the construct measures had been confirmed as reliable and valid, the next step was to assess the structural model results (Bollen 1989). The principal analysis in the structural model is the path coefficients assessment, and the structural model for potential collinearity between constructs was examined in advance, as the results may be biased if collinearity is present.

To assess inter-construct collinearity, the variance inflation factor (VIF) was calculated by carrying out multiple regressions in SPSS. A VIF of five or less indicates no collinearity problem (Hair et al. 2010). The VIF values ranged between 1.187 and 1.541, demonstrating that the structural model results for both countries were not adversely affected by collinearity.

Furthermore, to evaluate the models' predictive relevance for each endogenous construct (dependent variable), cross-validated redundancy was conducted by running the blindfolding procedure (seeking values of Q² above an acceptable threshold of 0) (Hair et al. 2014) in SmartPLS. The results showed that the cross-validated redundancy values for all four endogenous constructs were above zero—for both country models—providing support for the models' predictive relevance.

Structural path analyses for Taiwan and Panama

Lastly, the strength and significance of the path coefficients were evaluated for the relationships (structural paths) hypothesised between the constructs. SmartPLS can generate *t* statistics for significance testing of the structural paths using bootstrapping. Path coefficient values are standardised on a range from -1 to $+1$, with coefficients closer to $+1$ representing strong positive relationships, and coefficients nearer to -1 indicating strong negative relationships. A path coefficient will be

Table 1 Characteristics of firms and respondents

Attributes	Frequency(s)	Percentage of total (%)
Characteristics of firms		
Major logistic service provider		
Shipping line	55	39
Airline	30	21.3
Truck line	15	10.6
Courier	10	7.1
Port terminal operator	9	6.4
Airport terminal operator	11	7.8
Third-party logistics	11	7.8
Role in the port logistics		
Third-party logistics	12	8.5
Freight forwarder	77	54.6
Shipping line	29	20.6
Airline	13	9.2
Truck line	3	2.1
Courier	7	5
Years of experience		
Under 2 years	8	5.7
2–5 years	13	9.2
6–10 years	36	25.5
Over 10 years	84	59.6
Number of employees		
1–50	87	61.7
51–100	14	9.9
101–500	18	12.8
501–1000	8	5.7
1001–2000	9	6.4
Over 2000	5	3.5
Characteristics of respondents		
Department		
Corporate executive	56	39.7
Marketing	2	1.4
Sales	50	35.5
Logistics	33	23.4
Position		
CEO/President	0	0
Director	11	7.8
Manager	52	36.9
Supervisor	30	21.3
Others	48	34
Working experience		
Under 2 years	31	22

Table 1 continued

Attributes	Frequency(s)	Percentage of total (%)
2–5 years	41	29.1
6–10 years	32	22.7
Over 10 years	37	26.2
Gender		
Male	78	55.3
Female	63	44.7
Age		
18–24 years old	11	7.8
25–30 years old	36	25.5
31–40 years old	38	27
41–50 years old	35	24.8
Over 50 years old	21	14.9
Country		
Taiwan	70	49.6
Panama	71	50.4

significant if its *t* statistic is larger than 1.96. Table 3 shows the path coefficient values of the structural model assessment for the Taiwan and Panama data.

The results of the bootstrapping resampling technique (72 cases, 5000 sample points), used to determine the statistical significance of the paths (see Table 4), showed that the majority of paths' *t*-statistic values exceeded 1.65 ($p < 0.10$ criterion, significance level of 10%).

Accordingly, as summarised in Table 5, three structural paths are not significant for Taiwan: IOR → FP (1.342), IOR → SCE (0.305), and SCE → FP (0.653). For Panama, three paths are not statistically significant: IR → SCE (1.049), IR → FP (1.236), and SCE → FP (0.275).

These results suggest that, in both countries, interpersonal relationships have significant effect on interorganisational relationships, reflecting micro connections to the macro social order (Hammond and Glenn 2004). However, for port logistics firms in Taiwan, interpersonal relationships engender more significant effects on supply-chain effectiveness and firm performance than interorganisational relationships, and the opposite is the case in Panama. In other words, *guanxi* marketing might be an important aspect in terms of interorganisational relationships in Asian port logistics, but interorganisational relationships might be more important for relationship marketing in Latin America.

Multi-group moderation analysis

Testing for *multi-group moderation* determines whether the relationships hypothesised in a model differ, based on the value of the moderator. As the two country datasets were analysed separately, *country* was used as the moderator in this multi-

Table 2 Assessment results of the measurement model of Taiwan and Panama data

Construct	Dimension	Item	Factor loading	AVE	CR		
Taiwan							
Interpersonal relationship (IR)	Xinyong	Xinyong_1	0.782	0.6312	0.872		
		Xinyong_2	0.899				
		Xinyong_3	0.761				
		Xinyong_4	0.724				
	Renqing	Renqing_1	0.688			0.5316	0.814
		Renqing_2	0.511				
		Renqing_3	0.786				
		Renqing_4	0.880				
	Ganqing	Ganqing_1	0.624			0.5476	0.773
		Ganqing_2	0.975				
		Ganqing_3	0.550				
	Mianzi	Mianzi_1	0.885			0.6859	0.866
		Mianzi_2	0.893				
Mianzi_3		0.691					
Interorganisational relationship (IOR)	-	IOR_1	0.852	0.6937	0.872		
		IOR_2	0.823				
		IOR_3	0.824				
Supply-chain performance (SCE)	-	SCE_1	0.768	0.6838	0.896		
		SCE_2	0.796				
		SCE_3	0.845				
		SCE_4	0.894				
Firm performance (FP)	-	FP_1	0.784	0.6657	0.856		
		FP_2	0.762				
		FP_3	0.896				
Loyalty (LY)	-	LY_1	0.818	0.5415	0.822		
		LY_2	0.566				
		LY_3	0.840				
		LY_4	0.686				
Panama							
Interpersonal relationship (IR)	Xinyong	Xinyong_1	0.764	0.6261	0.869		
		Xinyong_2	0.898				
		Xinyong_3	0.769				
		Xinyong_4	0.725				
	Renqing	Renqing_1	0.765			0.5676	0.834
		Renqing_2	0.482				
		Renqing_3	0.808				
		Renqing_4	0.894				
	Ganqing	Ganqing_1	0.750			0.6265	0.831
		Ganqing_2	0.939				
		Ganqing_3	0.660				
	Mianzi	Mianzi_1	0.871			0.6307	0.835
		Mianzi_2	0.831				
		Mianzi_3	0.666				

Table 2 continued

Construct	Dimension	Item	Factor loading	AVE	CR
Interorganisational relationship (IOR)	-	IOR_1	0.856	0.5956	0.814
		IOR_2	0.698		
		IOR_3	0.753		
Supply-chain effectiveness (SCE)	-	SCE_1	0.757	0.6809	0.895
		SCE_2	0.794		
		SCE_3	0.842		
		SCE_4	0.901		
Firm performance (FP)	-	FP_1	0.808	0.6586	0.852
		FP_2	0.734		
		FP_3	0.886		
Loyalty (LY)	-	LY_1	0.815	0.555	0.830
		LY_2	0.582		
		LY_3	0.838		
		LY_4	0.718		

Table 3 Path coefficient values of Taiwan and Panama

Structural paths Taiwan	Path coefficient Taiwan	Structural paths Panama	Path coefficient Panama
FP → LY	0.550	FP → LY	0.565
IOR → FP	0.203	IOR → FP	0.454
<i>IOR → SCE</i>	<i>0.042</i>	<i>IOR → SCE</i>	<i>0.405</i>
IR → IOR	0.236	IR → IOR	0.577
<i>IR → SCE</i>	<i>0.432</i>	<i>IR → SCE</i>	<i>0.159</i>
IR → FP	0.371	IR → FP	0.158
SCE → FP	0.121	SCE → FP	0.050

IR interpersonal relationship, *IOR* interorganisational relationship, *SCE* supply-chain effectiveness, *FP* firm performance, *LY* loyalty. Italics indicates that the effect of IOR/IR on SCE is different between Taiwan and Panama

group analysis. Two relationships hypothesised ($IOR \rightarrow SCE$ and $IR \rightarrow SCE$) in the Taiwan and Panama models were tested for difference by country.

The path coefficient values (Table 3) differed significantly ($IOR \rightarrow SCE$ for Taiwan is 0.042 and for Panama is 0.405; $IR \rightarrow SCE$ for Taiwan is 0.432 and for Panama is 0.159). However, the assumption that *country* has a moderating effect on the relationships (i.e. $IOR \rightarrow SCE$ and $IR \rightarrow SCE$) cannot be confirmed merely by looking at the path coefficients. To determine whether there is any substantial difference between the relationships (i.e. $IOR \rightarrow SCE$ and $IR \rightarrow SCE$), based on *country*, a multi-group moderation effect analysis was used to provide supporting statistical evidence; the analysis developed by Gaskin (2012) was used for that purpose.

Table 4 Bootstrapping results—path coefficients (mean, standard deviation, *t* statistics)

Structural paths	Sample mean (M)	Standard deviation (STDEV)	<i>t</i> statistics (IO/STERRI)
Taiwan			
IR → IOR	0.251	0.135	1.748
IR → SCE	0.436	0.106	4.088
IR → FP	0.354	0.109	3.415
<i>IOR → FP</i>	0.221	0.151	<i>1.342</i>
<i>IOR → SCE</i>	0.052	0.138	<i>0.305</i>
<i>SCE → FP</i>	0.122	0.185	<i>0.653</i>
FP → LY	0.575	0.081	6.799
Panama			
IR → IOR	0.575	0.137	4.223
<i>IR → SCE</i>	0.157	0.152	<i>1.049</i>
<i>IR → FP</i>	0.167	0.128	<i>1.236</i>
IOR → FP	0.443	0.173	2.633
IOR → SCE	0.397	0.192	2.106
<i>SCE → FP</i>	0.052	0.181	<i>0.275</i>
FP → LY	0.589	0.078	7.245

IR interpersonal relationship, IOR interorganisational relationship, SCE supply-chain effectiveness, FP firm performance, LY loyalty. Italics indicates that the effect of IOR/SCE/IR on FP/SCE is different between Taiwan and Panama

Table 5 Structural relationship assessment for the model

Structural path	Hypothesis	<i>t</i> statistic	Significance	Result
Taiwan				
IR → IOR	H1	1.748	$p < 0.10$	Supported
IR → SCE	H2	4.088	$p < 0.10$	Supported
IR → FP	H3	3.415	$p < 0.10$	Supported
<i>IOR → FP</i>	<i>H5</i>	<i>1.342</i>	<i>$p > 0.10$</i>	<i>Not supported</i>
<i>IOR → SCE</i>	<i>H4</i>	<i>0.305</i>	<i>$p > 0.10$</i>	<i>Not supported</i>
<i>SCE → FP</i>	<i>H6</i>	<i>0.653</i>	<i>$p > 0.10$</i>	<i>Not supported</i>
FP → LY	H7	6.799	$p < 0.10$	Supported
Panama				
IR → IOR	H1	4.223	$p < 0.10$	Supported
<i>IR → SCE</i>	<i>H2</i>	<i>1.049</i>	<i>$p > 0.10$</i>	<i>Not supported</i>
<i>IR → FP</i>	<i>H3</i>	<i>1.236</i>	<i>$p > 0.10$</i>	<i>Not supported</i>
IOR → SCE	H4	2.106	$p < 0.10$	Supported
IOR → FP	H5	2.633	$p < 0.10$	Supported
<i>SCE → FP</i>	<i>H6</i>	<i>0.275</i>	<i>$p > 0.10$</i>	<i>Not supported</i>
FP → LY	H7	7.245	$p < 0.10$	Supported

IR interpersonal relationship, IOR interorganisational relationship, SCE supply-chain effectiveness, FP firm performance, LY loyalty. Italics indicates that the results are not supported in Taiwan and Panama cases

Table 6 Multi-group moderation result of IOR → SCE

	Taiwan	Panama
Sample size	70	71
regression weight	0.041	0.412
Standard error	0.132	0.163
<i>t</i> statistic	1.781	
<i>p</i> value (2-tailed)	0.077	

IR interpersonal relationship,
SCE supply-chain effectiveness

Table 7 Multi-group moderation result of IR → SCE

	Taiwan	Panama
Sample size	70	71
Regression weight	0.444	0.165
Standard error	0.097	0.145
<i>t</i> statistic	1.609	
<i>p</i> value (2-tailed)	0.110	

IR interpersonal relationship,
SCE supply-chain effectiveness

First, we run the bootstrapping resampling technique in SmartPLS for both datasets. The values used for the multi-group analysis are regression weight (sample mean) and standard error.

We next calculate the *t* statistics and *p* values of the paths for the multi-group analysis. These are shown in Table 6 for the relationship between IOR and SCE. The *t* statistic value (1.781) did not exceed 1.96; thus, the relationship between IOR and SCE is not significantly different for Taiwan versus Panama, at a 95% confidence level. However, considering a 90% confidence level, the *t* statistics value exceeded 1.65, which means that the relationship between IOR and SCE significantly differs between Taiwan and Panama.

In Table 7, it can be seen the *t* statistic value (1.609) of the path relationship between IR and SCE exceeds neither 1.96 nor 1.65; therefore, this value shows that there is no significant difference between Panama and Taiwan in terms of the IR to SCE path.

Conclusions and discussion

The results of this study confirm that interpersonal-level *guanxi* positively influences interorganisational relationships in port logistics. Our findings contribute to research on *guanxi* and relationship marketing by examining the level at which the relationships are located. Through a comparison between models, this study clarifies the pathway available to companies for building business relationships with counterparts from other cultural backgrounds. As Hu (2013) suggested, international firms should focus on *guanxi* marketing rather than relationship marketing to successfully do business in Asia (e.g. Taiwan and China). For example, foreign

investors with local partners (joint venture participants) are more likely to have better access to powerful Chinese *guanxi* networks than others (wholly owned investors) (Luo and Chen 1997).

As our model differs from most existing ones—i.e. it is applicable to both Asian (Taiwan) and Latin American (Panama) societies—this allows comparisons between the results of our model. Assuming the two countries analysed here are representative of the two regions, the results from the Taiwan model show that IOR influences neither FP nor SCE in an Asian market. These results differ from those of Wang et al. (2013), where IOR positively affects the performance of interfirm relationships. The reason for this discrepancy may be that firms have to develop *guanxi* with key people in other companies (Luk et al. 2008) and that, in Chinese society or in an Asian market, *guanxi* is vital for firm performance, and firms can rely on *guanxi* to create and maintain competitive advantage (Park and Luo 2001). Thus, the performance advantages of marketing capability may be substantial for firms operating in a market in which *guanxi* is pervasive (Shou et al. 2014). This phenomenon can be attributed to the social investment programme that forms part of interpersonal relationships, involving social interaction between two or more people, such as individual treatment, meals, and personalised information, aiming to increase communication between buyers and suppliers and thus to facilitate interpersonal and interorganisational commitment (e.g. to share future resources and make equitable contributions) (Pesämaa et al. 2013).

As all the hypotheses involving interpersonal relationships (IR) were supported (IR → FP, IR → IOR, and IR → SCE), strong evidence exists that interpersonal relationships serve as the driving factor behind relationship performance. These findings are consistent with the results of Barnes et al. (2011) and Wang et al. (2013), who have studied the dimensions of *guanxi* and how these affect buyer–supplier relationship outcomes. However, these studies are only applicable to Asian societies. Our findings are also consistent with those of Li et al. (2012), where the development of a relationship with a supplier significantly affects firm performance.

Supply-chain effectiveness, from a buyer's viewpoint, has been thought to influence firm performance, consistent with the results of Panayides (2007). A surprising result is that our hypothesis SCE → FP is not supported. This outcome may be due to the lack of concern for operational performance both in Taiwan and Panama, which is used to define supply-chain effectiveness. Operational performance involves timely delivery of products, effective inventory management, and delivery of accurate information. In other words, most companies tend to interpret interfirm relationship performance by looking only at financial performance (Luo and Chen 1997), thereby paying less attention to operational performance. For example, Yeung et al. (2012) assessed logistics professionals' or senior executives' perceptions of their firms' export sales and growth, relative shares in the target markets, and export profitability in comparison with their major competitors.

Besides, analysing the results from Panama, it can be seen that all of the hypotheses that involve IOR (IOR → FP and IOR → SCE) are supported, contrary

to the Taiwan model's results. Support for these hypotheses might be attributable to exchange partners in relationship marketing being economically and impersonally involved in the relational networking, basically at the interorganisational level. These results are consistent with the study of Palmatier et al. (2007), and they demonstrate the important roles that relationship marketing play as key drivers of exchange performance—roles that are applicable only to Panama in our model.

Furthermore, comparing the two cases individually, in the case of Taiwan, only IR influences firm performance; conversely, in the case of Panama, only IOR positively influences firm performance. These findings provide extra evidence that *guanxi* and relationship marketing tend towards the interpersonal and interorganisational levels, respectively. Now, the questions are the following: Why is IOR weaker in Taiwan and IR weaker in Panama, and what causes this phenomenon? To explain this, we have conducted a multi-group moderation effect analysis in which the *country* is supposed to act as a moderator. Each country has its own cultural background (Deng 1997), and different cultures have differing values, perceptions, and philosophies (Ablonczy-Mihályka 2009). Countries in terms of cultural background, on the other hand, may be the key moderator in this analysis. Mullen and Johnson (1990) suggested that the cultural context can be described as the totality of the customs, arts, sciences, religions, politics, and economics that distinguishes one society from another and thus those from the same cultural background should have similar values, preferences, habits, and behaviours. Cultural background may differ among persons from the same country: for example, an Asian American may have grown up in America and raised by Asian parents but later moved to Asia. Unfortunately, this study has not considered this issue in its survey, thus preventing a reformulation of the multi-group moderation analysis. The relationship between IOR and SCE is significantly different between Taiwan and Panama, such that the effect of IOR on SCE for Panama is stronger than for Taiwan.

In fact, there are a large number of family-owned firms in which ownership and managerial control are not separated. In the United States, at least one-third of the S&P top 500 firms have substantial family ownership, holding on average about 18 percent of the outstanding equity (Hitt et al. 2007). Family-owned firms perform better when a member of the family is the CEO than when the CEO is an outsider. In many countries outside the United States, such as in Latin America, Asia, and some European countries, family-owned firms represent the dominant form (Hitt et al. 2007). Thus, the connection from family-owned relationship networks might be another important factor in doing business in Latin America.

Last, the results show that loyalty directly affects firm performance, independent of interpersonal or interorganisational relationships. In both Asian and Latin American companies, this represents a very important finding, in that they can invest in building business relationships and let *firm performance* enhance loyalty by itself. In both the Taiwan and Panama models, the findings indicate that firm performance strongly influences loyalty. Accordingly, a firm's performance has a positive impact on its long-term orientation if the business-to-business relationship provides needed capabilities (Yeung et al. 2012).

Managerial implications

Companies doing business in Asia must cultivate guanxi by engaging in guanxi. To do so, the principal focus should be on interpersonal relationships (IR). For companies doing business in Latin America, the focus must be on investing in relationship marketing at the interorganisational level, thus facilitating successful interaction with partners to finally obtain the desired benefits. In this respect, logistics companies should promote integration of their supply chain with suppliers, by boosting interpersonal relationships through boundary spanners, who are key liaisons for developing interpersonal relationships. Boundary spanners, such as managers, are in charge of implementing relationships to enhance communication patterns, knowledge of partners' needs, and personal commitment, trust, loyalty, and performance with their counterparts. Once a successful interpersonal relationship is in place, it will be transferred to the organisational level, thus facilitating endorsement of agreements or contracts among partners. Firms can thus improve the overall interorganisational relationship performance of the chain (operation and financial outcomes), service delivery time, and total cost.

Research limitations and suggestions for future research

Despite the contributions of this research, it has the following limitations. First, the data collection was very complex because of difficulties in reaching the target respondents. Then, we could not use a wide array of data in which the respondents were managers to perform the analysis.

Second, researchers may take into consideration characteristics of respondents, e.g. age, gender, job position, and cultural background. These components could significantly contribute in multi-group moderating effect analysis.

Last, our sample was limited to Taiwan and Panama. Although it provided an excellent context for our purpose—to discover the impact of guanxi and relationship marketing—it may have failed to reflect the diversity of both guanxi in Asia and relationship marketing in Latin America.

Appendix

See Table 8.

Table 8 Constructs and measures of the research model

Construct	Dimension	Measurement items
Interpersonal relationship (IR)	Xinyong (Trust) (IR1)	This supplier's representative is honest and frank with our company
		This supplier's representative keeps promises he makes to our company
		This supplier's representative seems to be concerned with our needs
		The people at my firm trust this supplier's representative
	Renqing (Reciprocity and Empathy) (IR2)	I feel a sense of obligation to this supplier's representative for doing us/me a favour
		I think that "calling in" favours is part of doing business with this supplier's representative
		The practice of "give and take" of favours is a key part of the relationship between this supplier's representative and me
		I would try my best to help this supplier's representative out when he/she is in need
	Ganqing (Commitment) (IR3)	This supplier's representative and I often have meals together
		This supplier's representative and I frequently keep in touch by telephone, e-mail, cell phone messages, or by social networking (e.g. Facebook, Twitter, etc.), as friends do
	Mianzi (Face) (IR4)	This supplier's representative and I usually participate in entertaining activities, such as singing karaoke
		I never criticise this supplier's representative in public because it would cause him/her to lose face
Interorganisational relationship (IOR)	Mianzi (Face) (IR4)	I avoid opposing or criticising this supplier's representative in public, even if I disagree with him/her
		If I receive an invitation from this supplier and from another non-supplier of mine at the same time, I will give priority to this supplier's invitation
	Mianzi (Face) (IR4)	If we were to stop working with this supplier, we would have a lot of trouble redeploying our people and facilities presently serving this supplier
		If we were to stop working with this supplier, we would be wasting a lot of resources and knowledge specifically tailored to this relationship
		We have made a substantial investment in personnel development dedicated to this supplier
		My company provides on-time service delivery to our clients due to the relationship with this supplier
Supply-chain effectiveness (SCE)	Mianzi (Face) (IR4)	My company provides timely response to our clients' requests due to the relationship with this supplier
		My company achieves accurate transaction record keeping due to the relationship with this supplier
	Mianzi (Face) (IR4)	My company delivers accurate information to our clients due to the relationship with this supplier

Table 8 continued

Construct	Dimension	Measurement items
Firm performance (FP)		There were significant cost savings resulting from doing business with this supplier
		Our firm's profitability has increased because of the relationship with this supplier
		My company has improved the cash-to-cash cycle time because of the relationship with this supplier
Loyalty		We are going to do more business with this supplier in the next few years
		My company considers this supplier its first choice for logistics services
		I have said positive things about this supplier to other professional colleagues
		I have recommended this supplier to professional colleagues who seek my advice

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