

## Behind make or buy decisions in export strategy: A replication and extension of Trabold

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### Abstract

Given the centrality of make or buy decisions in transaction cost theory, it is important to understand the factors that influence managers' choices. The empirical evidence to date is unclear as to what conditions influence export managers' choices to "make" (the direct mode of establishing in-house export channels) versus "buy" (the indirect mode of outsourcing certain services to intermediaries). Peng and Ilinitch [Peng, M. W., & Ilinitch, A. Y. (1998). Export intermediary firms: A note on export development research. *Journal of International Business Studies*, 29(3): 609–620] propose a transaction cost-based theory of export intermediation. They suggest that market distance and product complexity are the two primary driving forces behind exporters' decision to "buy" by engaging export intermediary firms. Their hypotheses have been tested and partially supported by Trabold [Trabold, H. (2002). Export intermediation: An empirical test of Peng and Ilinitch. *Journal of International Business Studies*, 33(2): 327–344] based on French data. Using a new archival database covering 185,731 export transactions over a two-year period, we replicated Trabold's work using U.S. firm data. Our findings are similar. This strengthens the reliability and validity of Peng and Ilinitch's theory as well as the generalizability of Trabold's findings to a more global context. Overall, given both the importance and paucity of replication work in the strategy literature, this study serves as an example of how export strategy research can advance through cumulative empirical efforts.

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*We do not take even our own observations quite seriously, or accept them as scientific observations, until we have repeated and tested them.*

– Karl Popper (1959, p. 45)

Make or buy decisions are paradigmatic problems central to transaction cost theory (Williamson, 1985). To date, most empirical studies of make or buy

decisions focus on manufacturers' component sourcing decisions; few address manufacturers' market entry strategies (Anderson & Coughlan, 1987). In market entry decisions, "make" typically refers to establishing direct, in-house channels, and "buy" refers to buying services from intermediaries who perform certain tasks. In the case of export entry decisions, the literature is unclear about the conditions under which exporters should approach foreign markets directly through in-house channels ("make") or indirectly via intermediaries ("buy").

While theory suggests that the "make" (direct export) and "buy" (indirect export) modes are equally important (Williamson, 1985), empirical research in export strategy (see review by Leonidou & Katsikeas,

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1996) has overwhelmingly focused on the direct export mode (“make”) such that research on indirect export via intermediation (“buy”) has become “a missing link” (Peng & Ilinitich, 1998, p. 612). To address this missing link, Peng and Ilinitich (1998) propose a transaction cost-based theory of export intermediation. This predicts that market distance and product complexity are likely to be significant variables underlying exporters’ decision to choose to “buy” (involving export intermediaries). Using a sample of 20,000 French exporters, Trabold (2002) conducted a rigorous empirical test of the Peng and Ilinitich hypotheses, reporting largely supportive evidence, albeit with some points of contention.

While Trabold’s (2002) work is impressive, the question of whether a single country study generalizes across national boundaries remains. In this study, we amass a new archival database of 185,731 U.S. export transactions to assess the reliability of Peng and Ilinitich’s (1998) theory and test the generalizability of Trabold’s (2002) findings in a more global context. Although replications are generally argued to be important in scientific research (Kuhn, 1970; Popper, 1959), management disciplines have shown a lack of appreciation for replications (Hubbard, Vetter, & Little, 1998; Tsang & Kwan, 1999). Yet replications serve “the fundamental role of protecting against the uncritical acceptance of empirical results” (Singh, Ang, & Leong, 2003, p. 533). Without replications, the field is difficult to advance. Among replications, the first replication is “the most dramatic,” because a confirmatory first replication may “provide a theory with a quantum leap in credibility” (Tsang & Kwan, 1999, pp. 768–769). A failed first replication can raise serious doubt about the validity of the theory. This article reports the first known replication in the area of export strategy.

### 1. The “buy” side of make or buy decisions in export strategy: export intermediary firms

From whom can exporters “buy” services when engaging in the indirect export mode? They usually buy services from export intermediary firms (EIFs), defined as “entrepreneurial service firms connecting domestic manufacturers and foreign buyers” (Peng & Ilinitich, 1998, p. 610). EIFs perform an important function by linking firms that otherwise would not have been connected across borders. Only recently, however, has EIF research come into its own. Over a decade ago, comprehensive reviews of research in international management (Ricks, Toyne, & Martinez, 1990) and

international marketing (Aulakh & Kotabe, 1993) completely ignored EIFs. A comprehensive review of the export strategy literature by Leonidou and Katsikeas (1996, p. 538) devotes only one *paragraph* to EIFs. In the past few years, however, a number of studies have investigated the “buy” side in export strategy decisions by investigating (1) the multi-dimensional services that manufacturers prefer (Castaldi, De Noble, & Kantor, 1992) and that EIFs provide (Balabanis, 2000; Ilinitich, 1996; Ilinitich, Eastin, Peng, & Paun, 1994); (2) the diversification and adaptive strategies of EIFs (Balabanis, 2001; Ellis, 2001; Perry, 1992); and (3) the determinants of EIFs’ performance (Peng, 1998; Peng, Hill, & Wang, 2000; Peng & York, 2001). Recent research on export intermediation has found its way into more recent surveys of international management (Werner, 2002) and international business (Peng, 2001).

EIF research has attracted two criticisms. First, much of this research is “highly particularistic in nature” (Ellis, 2001, p. 238), each being a “silo” not necessarily related to issues covered in other studies. Second, with the exception of Trabold (2002), *all* of the EIF studies are based on small-sample interviews and surveys. Because these studies are inherently vulnerable to all the standard criticisms leveled at survey research (e.g., nonresponse bias, common method bias), they may offer “limited scope for generalization” (Ellis, 2001, p. 238). Both Trabold (2002) and the research described below attempt to address these important concerns.

### 2. A transaction cost-based theory of export intermediation

Although both the “make” and “buy” options are of equal importance in theory (Williamson, 1985), export strategy research to date has focused almost exclusively on the “make” side. Peng and Ilinitich (1998) argue that the crucial component associated with the “buy” option – EIFs – may have been overlooked as relatively unimportant because EIFs either enable low-profile, small and medium-sized exporters to initiate their first overseas sales or they assist relatively large exporters in entering nonessential, marginal markets.<sup>2</sup> Some neoclassical trade theorists have noted that although

<sup>2</sup> In other words, EIFs serve an important function for firms that have not yet grown to the point of creating their own in-house export arms or international division structures as predicted by Hulbert and Brandt (1980) and Stopford and Wells (1972).

trade occupies a central position for economic efficiency gains, trading companies, such as EIFs, “play no role in this story” (Jones, 2000, p. 3). This position ignores the significant transaction costs that potentially permeate international sales (Casson, 1998). Peng and Ilinitch (1998) suggest that EIFs may play a positive role by reducing such costs (see also Roehl, 1983).

In their transaction cost-based theory of export intermediation, Peng and Ilinitch (1998) draw on Williamson (1985) to focus on search, negotiation, monitoring, and enforcement costs.<sup>3</sup> They propose market distance and product complexity as two fundamental building blocks of the theory. Their first proposition focuses on ex ante search and negotiation costs, which can be substantial especially for distant, unfamiliar markets. EIFs may be particularly helpful for exporters interested in penetrating these markets, by leveraging their knowledge and contacts in overcoming information asymmetries and their expertise and capabilities in conducting export negotiations. As a result, Peng and Ilinitch (1998, p. 614) state the first condition under which exporters are more likely to choose to “buy” via exporting indirectly through intermediaries. Specifically:

**Proposition 1.** *The more distant and unfamiliar the markets are, the more likely that export intermediaries will be selected by manufacturers.*

Peng and Ilinitch’s (1998) second proposition highlights ex post monitoring and enforcement costs, which may be higher for complex, differentiated products. Transaction cost theory posits that because the distribution of complex products is more likely to require significant asset-specific investments, such as specialized sales force training and post-sales services, these products require channel integration (Williamson, 1985). This claim has been empirically supported in several export strategy studies (Anderson & Coughlan, 1987; Aulakh & Kotabe, 1997; Campa & Guillen, 1999). Extending this logic, Peng and Ilinitch reason that, *conversely*, the distribution of simple, non-differentiated, commodity-based products, which primarily compete on price, may require little product-specific knowledge. Therefore, transactions involving these products are less costly to

monitor, and contracts are easier to enforce. As a result, Peng and Ilinitch (1998, p. 615) suggest:

**Proposition 2.** *The higher the commodity content of the products, the more likely that export intermediaries will be selected by manufacturers.*

### 3. Trabold’s (2002) empirical test

Trabold’s (2002) study represents the first published direct test of Peng and Ilinitch’s (1998) theory using a large scale, archival database. Although archival data on EIFs are rare,<sup>4</sup> Trabold has innovatively overcome this barrier by drawing on a database collected by French Customs. This database provides information on approximately 20,000 exporters (each year), representing the overwhelming majority of French exporters and covering 94% of France’s total export value.<sup>5</sup>

Trabold (2002, p. 327) interprets his findings as partially supportive of Peng and Ilinitch’s P1 and strongly corroborative of P2. He concedes that his results may be driven by the unique features associated with France’s export trade structures (e.g., historical linkages to Africa due to colonial ties, p. 341). He also speculates that his methodological choices in measuring “distance,” “familiarity,” and “market” may be idiosyncratic (p. 341). Finally, Trabold (2002, p. 342) also suggests that his work can clearly benefit from replication, which the present study undertakes.

## 4. Methodology

### 4.1. Replication: an overview

Although the crucial role of replication is well established (Kuhn, 1970; Popper, 1959), replication tends to be under-appreciated in social sciences and management disciplines (Hubbard et al., 1998; Tsang & Kwan, 1999). Management scholars and editors seem to focus more on research novelty, and replication is generally viewed as lacking creativity (Singh et al., 2003). Yet, a survey of journal editors finds that the same editors who express a lack of interest in replication also “seem to express guilt arising from the belief that

<sup>3</sup> The second part of Peng and Ilinitch’s (1998) article consists of a resource-based theory of EIF performance, with three propositions. These propositions have been supported by empirical work reported in Peng (1998), Peng et al. (2000), and Peng and York (2001). They have not been tested by Trabold (2002: 328), and are not investigated here.

<sup>4</sup> This, in part, explains why all other EIF studies use interview and/or survey methods to collect data.

<sup>5</sup> Trabold (2002, p. 330) excludes 80,000–95,000 very small “micro-exporters,” each with annual export sales of less than US\$100,000. Given that small exporters are especially likely to be interested in employing EIFs to enter foreign markets (Peng & Ilinitch, 1998, p. 610), his results may have under-estimated the propensity to use EIFs.

real science requires a discrete ritual of replication of published works” (Madden, Easley, & Dunn, 1995, p. 84). To the extent that science is a cumulative enterprise (Kuhn, 1970), replication is the best way to “winnow the measures, methods, and theories on the basis of accumulated evidence” (Pfeffer, 1993, p. 616). Otherwise, excessive diversity with uncorroborated findings may make little scientific progress and subject a field to permanently remain in the straightjacket of a preparadigm stage, which in the long run does not confer status, prestige, and resources in the community of social sciences and management disciplines (Pfeffer, 1993). To the extent that strategy research aspires to become a scientific inquiry, it seems important to engage in cumulative empirical research efforts centered on replications (Singh et al., 2003).

On the other hand, in social science research, “replications are possible only in a relative sense” (Rosenthal, 1991, p. 5). “Strict replications as conceptualized in the physical sciences cannot be conducted in strategy research” (Singh et al., 2003, p. 537). While we have tried to follow Trabold (2002) as closely as possible, because we introduce a different population in a different country, our study is *not* an exact replication. Rather our study falls into the category of “good-enough replications,” a concept promoted by Singh et al. (2003). In other words, it is a replication with extension (Hubbard et al., 1998; Tsang & Kwan, 1999). The present study, the *first* replication of Trabold (2002), is intended to directly assess the validity of Peng and Ilinitch’s (1998) predictions and the generalizability of Trabold’s (2002) findings. While eventually it is a series of replications – not a single study – that establish or refute a theory, the first replication such as ours has “significant epistemic value” (Tsang & Kwan, 1999, p. 768).

#### 4.2. Data and procedures

While Trabold’s (2002) data are drawn from French Customs, our main source of data comes from U.S. Customs. The Port Import Export Report Service (PIERS, <http://www.piers.com>) collects information directly from U.S. Customs documents about *every* export shipment. The information then is verified through other sources by the PIERS quality control staff. It is one of the most accurate and comprehensive databases available concerning U.S. export activities.

Through the PIERS database, we obtained the following information, which is available for every export transaction: (1) name and address of the U.S. exporter; (2) product classified by the Harmonized

system code (HARM code);<sup>6</sup> (3) value of exports; and (4) final destination country, among others. To identify the EIFs involved, we then compared the PIERS data with two leading business directories, *Ward’s Business Directory* and *Dun and Bradstreet Business*, which contain specific information about more than 100,000 U.S. firms. Exporters in the PIERS database were matched with the information available in the two directories according to their name and address. Through their main SIC code, firms which were listed in the wholesale section by the two business directories and which were not involved in manufacturing were identified as EIFs.

Data from the top 10 states in terms of annual export value are used for this study. In descending order of export value during the two years when data are available (1997 and 1998), these 10 states are California, Texas, New York, Michigan, Washington, Illinois, Ohio, New Jersey, Florida, and Pennsylvania, which collectively account for nearly 60% of total U.S. exports. A total of 185,731 transactions over a two-year period (91,253 transactions involving 10,492 exporters in 1997 and 94,478 transactions involving 10,502 exporters in 1998) have been identified in these 10 states.

Although one may question whether our sample is representative of the United States, it is important to note that there is significant regional variation among the top 10 states (4 on the East Coast, 2 on the West Coast, and 4 in the Midwest/Texas region). Also, the size of our database compares favorably with that of Trabold’s. Given the lion’s share of U.S. exports commanded by the top 10 states (each contributing on average 6% of U.S. exports versus the 11th state, Massachusetts, which only contributes 2.4%), it seems reasonable that, on average, channel decisions made by exporters in these states are likely to reflect the decision criteria used around the country.

#### 4.3. Dependent variable

Although Peng and Ilinitch’s (1998) propositions focus on the *likelihood* that manufacturers will choose EIFs as opposed to direct export, neither Trabold’s nor our data contain direct information on the likelihood construct. Following Trabold, we use the share of EIFs’ export transaction value in total export value as a proxy

<sup>6</sup> The Harmonized code is an international standardized numerical method of classifying traded products developed by 60 countries and used around the world. The NAP code, as used in Trabold (2002), is adopted by France.

of the likelihood of exporters' choosing the "buy" option (using intermediaries in export activities). This seems a reasonable proxy, because "as a rule, the higher the probability that manufacturers will choose to export indirectly instead of directly, the higher the share of EIFs in exports should be" (Trabold, 2002, p. 331).

#### 4.4. Independent variables

##### 4.4.1. Market distance measure

Although the literature features many measures about distance between two country markets, there has not been a perfect measure of "market distance." The simplest measure is *geographical* distance. This measure may not capture the real difference between markets (e.g., the very great geographic distance between Great Britain and New Zealand and the very close cultural and market linkage). Since Hofstede's (1980) influential study, the focus has shifted to *cultural* distance (Shenkar, 2001). Two measures developed by Kogut and Singh (1988) and Ronen and Shenkar (1985) are often used. The Kogut and Singh measure is an average value of the standardized difference among the four Hofstede dimensions between two countries. The Ronen and Shenkar approach enables us to place different countries in the eight cultural clusters (Anglo, Arab, Far East, Germanic, Latin America, Latin Europe, Near East, and Nordic) and one independent cluster which includes four "outliers" (Brazil, India, Israel, and Japan). This measure has recently been expanded by Peng et al. (2000, p. 182) to include two additional clusters (Sub-Sahara Africa and Eastern Europe) and one additional member of the independent cluster (China). The implication is that the cultural distance between the United States, which belongs to the Anglo cluster, and other clusters increases as one moves from the Anglo cluster to more distant clusters such as Near East and Arab clusters. Overall, the Ronen and Shenkar (1985) measure has been shown to have some advantage over the Kogut and Singh (1988) approach in some empirical studies (Barkema, Bell, & Pennings, 1996). In EIF studies, the Ronen and Shenkar (1985) measure has not only been used by Trabold (2002), but also by Balabanis (2000, 2001) and Peng et al. (2000). It is used in our study.

In order to be consistent with Trabold (2002, p. 331), two measures of market distance were adopted. The first one is the geographical distance between the United States and other countries, using the great circle distance (in miles) between major ports of the United States and the export destination countries (Fitzpatrick & Modlin, 1986). The mean of these distances for all

countries in a region (e.g., Africa) is used as the geographic distance between the United States and that region. The second one is labeled as cultural distance, using the paradigm developed by Ronen and Shenkar (1985) for cultural clusters and updated by Peng et al. (2000).

##### 4.4.2. Product complexity measure

Peng and Ilinitch's (1998) second proposition calls for a product complexity measure to determine the level of commodity content. Two measures are often used to proxy product complexity: a product commodity level classification scheme (OECD, 1994) and R&D intensity at the industry level. Trabold (2002, p. 332) stated that the use of R&D intensity "may not pay full respect to the original ideas of Peng and Ilinitch ... Had they looked at R&D intensity rather than commodity content as the decisive factor determining the likelihood of EIF involvement, they would probably have expressed their second proposition accordingly." His exploratory results using R&D intensity are also not supportive of the Peng and Ilinitch proposition (Trabold, 2002, p. 340). We concur and note that in Peng et al. (2000, p. 174), the product complexity measure is a classification of high, medium, and low commodity content levels. Therefore, in order to theoretically capture the original P2, we only use the commodity content level (high, medium, and low), classified by U.S. Customs for each two-digit HARM code product category.

Following Trabold (2002), we primarily employed the mean comparison test. Because our data cover the *entire population* of all U.S. export transactions from the top 10 states of all export markets and of all export product categories, statistical inferences based on random sample theories do not apply here. The differences we find are true population differences.

## 5. Findings

### 5.1. Findings for Peng and Ilinitch's (1998) first proposition

As shown in Table 1, we divided the world into eight geographic regions. We then organized them according to the geographical distance between the United States and these regions, which, in descending order, are Asia, South Pacific, Africa, Middle East, Eastern Europe, Western Europe, South America, and North America (Canada). The prediction in P1 is that EIFs' export shares would follow this order.

Our results are similar to Trabold's by partially supporting P1 on a *regional* level. First, as hypothe-

Table 1  
The EIF share among U.S. export transactions from the top 10 states by geographic regions

	Geographic distance (miles)	1997 (%)	1998 (%)	Average (%)
Asia	11000	43.13	41.10	42.11
South Pacific	9300	55.42	53.87	54.65
Africa	7500	26.19	30.56	28.37
Middle East	7200	40.86	27.57	34.22
Eastern Europe	5400	26.79	44.36	35.57
Western Europe	4800	37.09	34.85	35.97
South America	4300	44.85	41.92	43.39
North America (Canada)	1000	35.52	41.72	38.62

sized, there is a positive correlation between the geographical distance and EIFs' export share variables ( $r = .28$ ), which is stronger than Trabold's (2002, p. 333) correlation of  $r = .18$ , but the correlation is not significant. Second, as predicted, some distant regions have a higher EIF share of exports (Asia and South Pacific) and some closer regions have a lower EIF share (Eastern Europe and Western Europe). Third, the EIF share for several regions does not appear as predicted. One of them is Africa. While Africa is the third geographically farthest region from the United States, the EIF share of exports to this region is actually the lowest (28.37%). Further, the EIF share of exports to the closest regions, South America and North America, is not the lowest as predicted.

In Table 2, we group countries according to the expanded Ronen and Shenkar (1985) cultural clusters and rank these clusters according to the EIF share of exports from high to low. The correlation between cultural distance and EIF share produced mixed results. On one hand, supportive evidence can be found in the EIF share of exports to the Arab cluster, which as predicted is the highest (other than the independent

Table 2  
The EIF share among U.S. export transactions from the top 10 states by the expanded Ronen and Shenkar cultural clusters

	1997 (%)	1998 (%)	Average (%)
Independent <sup>a</sup>	48.24	42.89	45.56
Arab	45.70	42.61	44.15
Anglo	42.65	41.72	42.19
Latin America	40.52	40.66	40.59
Latin Europe	42.78	35.25	39.01
Far East	38.10	38.46	38.28
Eastern Europe <sup>b</sup>	26.79	44.36	35.57
Germanic	30.65	29.60	30.12
Nordic	33.23	24.98	29.11
Sub-Saharan Africa <sup>b</sup>	26.03	30.41	28.22
Near Eastern	31.95	8.89	20.42

<sup>a</sup> Ronen and Shenkar's (1985) original independent cluster includes Brazil, India, Israel, and Japan. Here, China is added to the independent cluster following Peng et al. (2000, p. 182).

<sup>b</sup> New clusters added by Peng et al. (2000, p. 182).

cluster). Also, the EIF share of exports to the culturally closer Nordic and Germanic clusters, as predicted, appears to be among the lowest. On the other hand, contrary to P1's prediction that the cultural cluster to which the United States belongs (Anglo) would be ranked as the lowest percentage (or at least among the lowest), the EIF share to Anglo countries (42.19%) ranks as the second *highest*. The Near Eastern cluster has the lowest share of EIF exports (20.42%) despite being one of the clusters which are culturally furthest from the United States.

Finally, shown in Table 3, if "market" is defined at the *country* level as opposed to the regional or cluster level, the outcome improves. Overall, given that U.S. exporters are likely to focus on more developed countries (e.g., Balabanis, 2001, p. 82), unfamiliar, low-income, less developed countries appear to be fertile ground for EIFs to carve out a strong market niche. As predicted, the top 10 countries are dominated by five sub-Saharan African countries (Gambia, Senegal, Togo, Ethiopia, and Guinea), which are geographically distant and culturally unfamiliar. It is also interesting to note that virtually *all* U.S. exports to Iraq (99.49%), a country which is not only distant and culturally unfamiliar but also hostile to the United States (at the time of our study, 1997–1998), have gone through EIFs. Somewhat unexpectedly, five developed countries also make the top 30 list: two from the Anglo cluster (Australia and New Zealand), two from the Germanic cluster (Austria and Switzerland), and one from the Latin Europe cluster (France).<sup>7</sup> Nevertheless, the evidence that the two Anglo countries to which EIFs command a relatively high export share are geographically distant (that is, Australia and New Zealand but

<sup>7</sup> Although we do not have data, we may speculate that some of these Anglo/European export destinations (Australia, Austria, Switzerland, and France) may have tight import controls in place (true for auto parts, electronics, semiconductors). These make the use of additional export knowledge brought by EIFs important for market penetration. We thank Reviewer 2 for suggesting this point.

Table 3  
The top 30 countries with the highest percentage shares of EIFs among U.S. export transactions from the top 10 states

Rank and country	Average GDP per capita for 1997 and 1998 (US\$)	Geographic distance (miles)	Expanded Ronen and Shenkar culture cluster	1997 (%)	1998 (%)	Average (%)
1. Iraq	N/A	6200	Arab	99.06	99.91	99.49
2. Gambia	345	4050	Africa	89.21	86.40	87.81
3. Bulgaria	1205	4870	Eastern Europe	83.57	91.90	87.74
4. Senegal	530	3970	Africa	84.79	82.32	83.56
5. Togo	345	5300	Africa	89.60	69.86	79.73
6. Ethiopia	105	7160	Africa	86.91	71.57	79.24
7. Guinea	910	4380	Africa	72.18	81.51	76.84
8. Bangladesh	340	7900	Far East	76.47	71.32	73.89
9. Surinam	1730	2660	Latin America	85.92	60.69	73.30
10. Paraguay	1835	4610	Latin America	65.21	75.35	70.28
11. Djibouti	840	7250	Africa	82.60	56.57	69.59
12. Haiti	425	1430	Latin America	67.52	66.49	67.01
13. New Zealand	15350	8750	Anglo	61.44	65.29	63.37
14. Honduras	730	1820	Latin America	63.28	61.11	62.20
15. Austria	27405	4400	Germanic	64.86	55.22	60.04
16. Turks Island (U.K.)	N/A	1220	N/A	58.64	59.27	58.96
17. France	25340	3840	Latin Europe	64.91	51.85	58.38
18. India	420	7730	Independent	61.25	54.41	57.83
19. Yugoslavia	1410	4720	Eastern Europe	59.94	54.62	57.28
20. Mexico	3865	1900	Latin America	58.78	55.27	57.03
21. Kuwait	19250	6530	Arab	57.61	56.16	56.89
22. Guyana	890	2500	Latin America	48.87	63.63	56.25
23. Australia	21810	10100	Anglo	53.95	54.98	54.47
24. Gabon	4190	6010	Africa	63.48	45.12	54.30
25. Switzerland	42340	4130	Germanic	60.25	46.68	53.47
26. Morocco	1250	3820	Africa	56.15	50.72	53.43
27. Brazil	4670	4230	Independent	57.30	47.11	52.21
28. Congo	525	6530	Africa	48.52	55.75	52.14
29. Costa Rico	3540	2050	Latin America	54.66	49.38	52.02
30. Cayman Island	N/A	1380	N/A	48.56	55.25	51.91

not, say, Canada) is still supportive of the geographic distance variant of P1.

In summary, similar to Trabold (2002), our regional- and cluster-level analysis shows only mixed support for P1. Unlike Trabold's (2002) country-level analysis, in which the fit does not improve from the regional-level analysis, our country-level analysis is better able to support P1.

### 5.2. Findings for Peng and Ilinitich's second proposition

The second proposition focuses on the commodity content of the exports. Similar to Trabold (2002) who uses the French industrial classification (NAP) employed by French Customs, we use the HARM code used by U.S. Customs. Although NAP and HARM are not entirely compatible, their scope is the same. Consequently, we compile Tables 4 and 5, which document the EIF share in the top 30 and

bottom 30 product categories using the two-digit HARM code. Table 4 displays a more straightforward test of P2, which suggests that this table should contain mostly products with a high or medium commodity content level. Table 5 illustrates a reverse test of the P2 logic, which suggests that most products listed in the table would have a low or medium commodity content level.

Similar to Trabold's Table 6 (2002, p. 339), our Table 4 strongly supports P2. As predicted, all the top 30 products whose EIF export share is high have either a high or medium level of commodity content. Among them, 18 (60%) high commodity content products dominate the list, followed by 12 (40%) medium commodity content products. Examples of such high commodity content products found in both Trabold's (2002, p. 339) and our tests include several textile products (e.g., silk, carpets, knitted fabrics, wool, apparel) and agricultural products (e.g., animal skin, dairy, fruits and nuts, meat, trees and plants). The

Table 4

The top 30 product categories for which the EIF share among all export transactions is the highest by the two-digit HARM code

HARM2	Product	Commodity content	1997 (%)	1998 (%)	Average (%)
43	Fur skins and artificial fur, manufactures	Medium	100.00	100.00	100.00
50	Silk, including yarns and woven fabrics thereof	High	100.00	100.00	100.00
67	Prepared feathers, human hair and articles thereof, artificial flowers	Medium	98.98	99.98	99.48
64	Footwear, gaiters, and the like	Medium	90.10	95.10	92.60
11	Milling industry products	High	90.93	88.74	89.83
04	Dairy, eggs, honey, and edible products	High	84.91	86.52	85.72
90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and accessories	Medium	91.04	79.79	85.42
28	Inorganic chem, org/inorg compounds of precious metals, isotopes	Medium	84.48	86.08	85.28
41	Raw hides and skins and leather	High	80.41	88.83	84.62
49	Printed books, newspapers, pictures, manuscripts, typescripts and plans	High	83.91	83.10	83.50
57	Carpets and other textile floor coverings	High	81.05	85.68	83.37
37	Miscellaneous chemical products	Medium	84.49	82.20	83.34
63	Made-up textile articles nesoi, needlecraft sets, worn clothing, rags	High	82.26	84.13	83.20
60	Knitted or crocheted fabrics	High	100.00	65.83	82.92
31	Fertilizers	Medium	83.11	82.20	82.65
08	Edible fruits and nuts, peel of citrus/melons	High	82.81	81.34	82.07
79	Zinc and articles thereof	Medium	93.48	69.50	81.49
02	Meat and edible meat offal	High	80.26	81.73	81.00
55	Man-made staple fibers, including yarns etc	High	77.74	79.54	78.64
83	Miscellaneous articles of base metal	Medium	82.58	73.04	77.81
51	Wool and fine or coarse animal hair, including yarns and woven fabrics thereof	High	59.93	95.10	77.52
71	Pearls, stones, precious metals, imitation jewelry, coins	Medium	83.58	70.90	77.24
91	Clocks and watches and parts thereof	Medium	81.62	71.76	76.69
44	Wood and articles of wood, wood charcoal	High	75.48	77.51	76.49
62	Articles of apparel and clothing accessories-not knitted or crocheted	High	78.07	73.48	75.78
05	Products of animal origin	High	73.83	77.63	75.73
75	Nickel and articles thereof	Medium	84.71	66.50	75.60
06	Live trees and other plants	High	72.39	78.55	75.47
21	Miscellaneous edible preparations	High	74.81	73.38	74.10
45	Cork and articles of cork	High	85.90	60.71	73.30

distribution of these goods does not require specialized sales force training and after-sales service. No exception of products with a low commodity content level is found. The 100% support for this prediction is even stronger than Trabold's (2002, p. 339) very strong support of 83%.

Table 5 is also supportive of P2, although not as significantly as in Table 4. Specifically, as predicted, 18 (60%) of the bottom 30 products for which EIFs have a low export share are classified as having either a low or medium level of commodity content. Among these products, eight (27%) have a low commodity content level and 10 (33%) have a medium commodity content level. Examples of products with a low commodity content level include nuclear reactors, locomotives, aircraft, and ships, most of which are complex products in need of extensive specialized sales force training and after-sales technical support. Although Trabold (2002, p. 339) does not provide a

similar table, he reports in the text that 81% of his bottom 100 list falls into products with a low or medium commodity content.

Data in Table 5 also reveals important exceptions. *Contrary* to the prediction, a total of 12 (40%) products for which the EIF share is among the bottom 30 actually have a high commodity content level. Most of these appear to be agricultural products (e.g., sugar, oil seeds, prepared meat and fish, cereals, paper products, fats and oils, salt, beverages, and tobacco), which should have appeared in Table 4 instead of Table 5. These anomalies are similar to those noted by Trabold's (2002, p. 339).

In summary, similar to Trabold (2002), we find very strong support for P2, despite some anomalies. Our two tests support 100% and 60% of the predictions. Our evidence is consistent with the 83% and 81% of corroborative evidence reported in Trabold's two comparable tests, respectively.

Table 5  
The bottom 30 product categories for which the EIF share among all export transactions is the lowest by the two-digit HARM code

HARM2	Product	Commodity content	1997 (%)	1998 (%)	Average (%)
17	Sugars and sugar confectionery	High	41.73	45.62	43.68
23	Residues from food industries, animal feed	High	53.91	31.95	42.93
84	Nuclear reactors, boilers, machinery and mechanical appliances, computers	Low	41.68	44.18	42.93
18	Cocoa and cocoa preparations	High	36.41	46.33	41.37
12	Oil seeds/miscellaneous grains/medical plants/straw	High	49.22	31.66	40.44
16	Edible preparation of meat, fish, crustaceans, etc.	High	46.49	32.85	39.67
40	Rubbers and articles thereof	Medium	44.16	34.40	39.28
30	Pharmaceutical products	Low	36.41	40.30	38.36
10	Cereals	High	36.34	39.57	37.95
19	Preparations of cereals, flour, starch or milk	High	33.99	39.74	36.86
81	Base metals nesoi, cermets, articles etc	Low	46.07	26.17	36.12
33	Oils and resinoids, perfumery, cosmetic or toilet preparations	Medium	43.59	28.62	36.11
42	Articles of leather, saddlery and harness, travel goods, handbags, articles of gut	Medium	40.87	27.48	34.17
48	Paper and paperboard, articles of paper pulp	High	35.68	30.53	33.10
73	Articles of iron or steel	Medium	33.67	32.10	32.88
86	Railway or tramway locomotives, rolling stock, track fixtures and fittings, signals	Low	26.37	36.18	31.28
15	Animal or vegetable fats, oils and waxes	High	34.09	25.67	29.88
76	Aluminum and articles thereof	Medium	22.52	36.09	29.30
25	Salt, sulphur, earth and stone, lime and cement	High	30.69	23.47	27.08
69	Ceramic products	Medium	25.97	25.92	25.94
97	Works of art, collectors' pieces, antiques	Low	9.87	40.01	24.94
88	Aircraft, spacecraft, and parts thereof	Low	19.23	24.94	22.08
89	Ships, boats, and floating structures	Low	17.59	25.07	21.33
34	Soaps, waxes, scouring products, candles, modeling pastes, dental waxes	Medium	16.50	23.46	19.98
22	Beverages, spirits and vinegar	High	17.86	21.63	19.74
35	Albuminoidal sub, starches, glues, enzymes	Medium	19.58	14.09	16.84
70	Glass and glassware	Medium	17.15	16.16	16.65
78	Lead and articles thereof	Medium	16.21	16.04	16.13
96	Miscellaneous manufactured articles	Low	12.40	12.54	12.47
24	Tobacco and manuf. tobacco substitutes	High	2.62	3.41	3.02

## 6. Discussion

### 6.1. Contributions

Overall, three contributions emerge. First, our findings not only suggest that Trabold's (2002) results are largely replicable, but also lend credibility to Peng and Ilinitch's (1998) theory. Despite Trabold's (2002, p. 341) concern about the possible idiosyncratic nature of his results, his French findings seem mostly generalizable, at least to the U.S. context studied here. We have shown how export strategy research can be advanced through cumulative empirical efforts. As Tsang and Kwan (1999, p. 768) suggest, as more replications are repeated successfully, "it is likely that the theory has hit upon some real structure or mechanism in the social world."

Second, this study makes an empirical contribution by providing insight into make or buy decisions in export strategy – especially the "buy" side – which has not been sufficiently examined in the literature. Methodologically, one can criticize much of the existing literature (e.g., Peng & York, 2001), which, although invoking a transaction cost perspective, actually focuses on the firm level. In export strategy studies, a true transaction cost emphasis on the transaction level – as called for by Williamson (1985) – necessitates a focus on the sub-firm, export venture (transaction) level (Cavusgil & Zou, 1994). Given the lack of a priori determination for a firm to always make "make" (or "buy") decisions in export strategy, it is plausible that a firm may use a combination of both modes when entering different markets. We have overcome this drawback in existing studies by collecting a large

**Product Commodity Level (P2)**

<b>Market Distance (P1)</b>	(1) <b><u>Most Likely</u></b>	(2) <b><u>Question Mark</u></b> ✧ Machinery to Africa ✧ Mechanical appliances to Africa ✧ Computers to Africa	<i>Distant Markets</i>
	(3) <b><u>Question Mark</u></b> ✧ Mineral fuels to Canada ✧ Animal and vegetable fats and oils to Canada	(4) <b><u>Least Likely</u></b>	<i>Nearby Markets</i>
	<i>High</i>	<i>Low</i>	

Fig. 1. The likelihood of manufacturers choosing to “buy” by exporting indirectly via EIFs.

amount of data on the export transaction level. As a result, our study, like Trabold’s (2002), sheds considerable light on the transaction-level (as opposed to the firm-level) determinants of make or buy decisions in export strategy.

Third, although under-appreciated, replications can advance theory by raising new questions (Kuhn, 1970; Popper, 1959). The anomalies reported in our study do exactly that. Having identified market distance and product complexity as the two underlying drivers behind the export entry question, Peng and Ilinitch’s (1998) theory is not clear about how these two forces *jointly* determine entry decisions. As shown in Fig. 1 (adapted from Peng et al., 2000, p. 179), these two forces obviously are not independent, and may interact. While the theory has clear predictions for Cells 1 and 4, there is no clear prediction about the mixed conditions for Cells 2 and 3. Yet, most of the inconsistent results for P1 lie in Cells 2 and 3. Take the two most inconsistent regions from Table 1 as examples. Although Africa is the third geographically farthest region, the share of low commodity content products exported to Africa (53.8%) is the highest among all eight regions. The low commodity content products, such as machinery, mechanical appliances, and computers, which constitute the bulk of U.S. exports to Africa, can be placed in Cell 2, which the theory does not predict clearly. The same can be argued for the case of North America (Canada). High commodity content products, like mineral fuels, animal and vegetable fats

and oils, are among the top exports, which makes the case fall into Cell 3. Both Cells 2 and 3 raise important questions on the multivariate nature of make or buy decisions in export strategy, thus calling for clearer development of the theory as well as multivariate methods to capture such interactions.

6.2. *Limitations and future research directions*

A key limitation for replication research is that even a single successful replication “does not mean conclusive verification” (Tsang & Kwan, 1999, p. 770). An interesting direction for future research is to probe deeper into why the support for P2 is stronger than the support for P1 in both Trabold’s and our studies. A possible reason is that compared with product attributes, the importance of market distance is likely to decline as firms gain more experience. While cultural distance may be “shortened” through experience and learning, it is difficult to change product attributes. These may play a more significant role in shaping export entry decisions than cultural distance. Unfortunately, since our database does not contain information on firms’ international experience, it is impossible to estimate how such experience might help firms overcome market distance. A future survey to capture the critical experience construct in combination with archival databases may push this line of reasoning further (see Luo & Peng, 1999).

A substantial number of exports are transactions between firms that are related—for example, trade

between a U.S. parent company and its foreign subsidiary, between a U.S.-based subsidiary of a foreign firm and its foreign headquarters, and/or between two foreign subsidiaries (one in the United States and the other elsewhere). Their export entry decisions are more likely to be driven by transfer pricing considerations, as opposed to pure transaction cost imperatives. Future research may need to exclude such intra-multinational transfers, which was not possible to do with our database. Finally, it will be fascinating to explore in future research whether EIFs remain relevant as exporters become larger and develop their own international divisions (Hout, Porter, & Rudden, 1982).

## 7. Conclusion

Given the centrality of make or buy decisions in transaction cost theory, it is important to identify and understand what factors affect such decisions – especially the underexplored “buy” side – in export strategy. In this study, Peng and Ilinitch’s (1998) transaction cost-based theory of export intermediation has not only withstood a rigorous replication of Trabold’s (2002) study, but also experienced a “leap in credibility” (Tsang & Kwan, 1999, p. 769) because the predictions are largely supported—albeit with some important exceptions. While we have taken a first step by responding to Singh et al.’s (2003) recent call for more replications for knowledge accumulation in strategy research, given the paucity of replication research, we invite more researchers to join us in undertaking replications and more editors and reviewers in considering such work for publication—in the best scientific tradition of Kuhn (1970) and Popper (1959).

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