




# Country of origin and online promotion in cross-border e-business: A study of consumer behavior for quality management

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## ABSTRACT



This research analyzes country of origin and online promotional strategy in cross-border e-business of consumer products. This research reveals the network of products involved in online promotions in cross-border e-business markets, based on country of origin, promotional strategies, cultural differences, and product attributes. The relationship between sales performance of online promotions and similarities of products is analyzed based on the Moran and Geary indices. The quality management of cross-border e-business is further studied based on research of consumer behavior. This research offers support to further discussions about quality management based on an analysis of consumer behavior in cross-border e-business markets.

## KEYWORDS

Consumer behavior; country of origin; cross-border e-business; online promotion; quality management

## I. Introduction

The development of cross-border e-business can benefit cross-border trading companies. Cross-border e-business encourages companies to export and promotes internationalization. Cross-border e-business facilitates information flow across different markets and helps companies realize opportunities by launching more diversified and individualized products (Meng and Liu 2013). Cross-border e-business overcomes the problems of geographic distance and can be less expensive than having a physical presence in a country. Thus, the country of origin is important to international e-business in operations with online customers in target countries (Mahmood, Bagchi, and Ford 2004). The facilitated environment for cross-border e-business further increases exports by upgrading both regulatory policies and the trade network's management information system (Wilson, Mann, and Otsuki 2003). Contextual marketing, which offers customers product

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information in real time, induces site loyalty and encourages repeated site visits. The focus on the needs of customers in the context of e-business is important for contextual marketing (Luo and Seyedian 2003). Online promotions can be attractive to customers by offering cost-saving services in real time.

Research into the country of origin in the online promotions of cross-border e-business is important for the global expansion of cross-border e-business companies. The country-of-origin effect can be further studied in understanding consumer behavior in online sales promotions in cross-border e-business markets. This research analyzes the role country of origin plays in the performance of promotional strategies by revealing the complex network of items involved in the online sales process. The Moran and Geary indices are applied to reveal the relationship between cultural distance, online promotional strategy, and outcomes of the pre-ordered sales. This study contributes to research on country-of-origin effects in online promotions in cross-border e-business markets and the quality management and control in future cross-border online sales activities. This research helps global company managers and decision makers in their future management of cross-border e-business and offers support to discussions about quality management of cross-border e-business based on an analysis of consumer behavior.

## II. Literature review

### *Online promotional strategy and cross-border e-business*

Information shared and transferred via the Internet offers important benefits to consumers in cross-border e-business and also has an important effect on consumer behavior when making purchasing decisions for online products. Petersen, Welch, and Liesch (2002) pointed out that the Internet can have a positive effect in lowering operation costs and expanding the accessibility of information to companies. The Internet can help companies make efficient foreign market expansions based on international transactional efficiency, experiential learning, and reduced sunk costs. Rhee (2005) further stated that the Internet plays an important role in the international expansion of companies. In the Internet era, information is perceived as a resource that generates value by sharing. The network effect of information sharing can offer significant value to companies following Metcalfe's law. Companies involved in cross-border e-business with a good absorptive capacity can take advantage of this learning effect. Therefore, the facilitation of cross-border e-business and the integration of operation systems make companies more efficient in export trade activities and also save time and costs for consumers during online shopping activities. The information involved in online promotion can offer further support to consumer decisions by transferring information online.

Zhang and Wedel (2009) also claimed that customized promotion results in a higher level of profit. Overall, promotional strategies and attributes of products are important information that can influence the decisions of e-business consumers.

### ***Country-of-origin effect and cross-border e-business***

The country of origin plays an important role in the expansion of the global market and offers support to consumer decisions in terms of cross-border buying behavior. Pharr (2005) claimed that the country-of-origin effect has an important value for the purchasing decisions of consumers in the global market. The constructs of country of origin have effects on the equity of global brands and influence product choice in consumer behavior. Rust and Lemon (2001) suggest that e-self-services deliver a cost-saving service to online customers and may also have an influence on the value equity offered in the online shopping experience. In addition, the brand equity of online sales activities can be forwarded by real-time interactions and communications. Thus, online promotion can offer customers services with value and brand equity developed by real-time communication, and the country-of-origin effect is important to consumers in evaluating the values and brand equity of global products online. Kohli, Devaraj, and Mahmood (2004) have found that cost-saving and time-saving services made available through the Internet mediate the decisions of online customers and lead to a higher level of customer satisfaction. There can also be information asymmetry in cross-border e-business markets, and the purchasing decisions of global consumers can be dependent on further support of information flow. The country of origin in cross-border e-business markets can be an important factor affecting the decision making of global consumers. Therefore, the country-of-origin effect offers support to consumer decisions in the expansion of global products in cross-border e-business markets. Sharma (2005) reported that the support of e-business can be helpful to export management companies in the delivery of export services, product portfolio, global market coverage, and the improvement of efficiency and effectiveness. Su (2007) argued that consumers rationally choose a set of fixed alternatives that maximize utility, and that brand equity, as well as price, can be important to the online shopping behavior of customers. Cenfetelli, Benbasat, and Al-Natour (2008) found that supporting services as an external stimulation can be important for customer satisfaction. Pre-ordering services with promotional activities can be helpful to develop customer perception of online sales. Therefore, the country-of-origin effect is an important factor in the decisions of consumers in cross-border e-business markets.

### ***Cultural distance and cross-border e-business***

In purchasing decisions of consumers in cross-border e-business markets, the cultural distance between the country of origin and the sales market is also important to consumer behavior in cross-border online consumptions. Cultural distance is important to the location and performance of global expansion. Tang (2012) claimed that differences in individualism between two countries encourage expansion across the countries, while differences in power distance discourage it. Zeng et al. (2013) stated that a subsequent expansion located in a country culturally similar to the home country of a multinational enterprise (MNE) benefits from the MNE's prior double-proximate experience. Furthermore, Yetim (2003) pointed out that life satisfaction is positively correlated with individualism, self-esteem, and mastery, and is negatively correlated with collectivism. Therefore, the satisfaction of consumers in host countries is also associated with the cultural distances across different countries. Furthermore, Chan and Swatman (2000) claimed that cultural factors are important to online marketing. Kogut and Singh (1988) stated that cultural distance can be measured on the basis of Hofstede's cultural dimensions. Eid, Elbeltagi, and Zairi (2006) argued that entry to a new country in the international Internet market can be influenced by the presence of different cultures companies can offer. Furthermore, Lee et al. (2007) believed that the culture factor can be important to both consumer perceptions and consumer decisions regarding the adoption of technology. In addition, the culture/technology fit has an effect on perceptions of the mobile Internet. Cyr (2008) also pointed out that culture has an effect on the e-loyalty of customers across different countries. Therefore, cultural distance is important to the country-of-origin effect in online promotions in cross-border e-business markets.

### **III. Research method**

This research analyzes the country of origin, cultural distance, and promotional strategy in the sales of cross-border e-business by studying Chinese customers in the online sales promotion of food product categories. These food product categories are an important part of the retail business in online business activities and are offered with promotions. The price information of 105 sample items was obtained from the listed online pre-ordering prices. The package information of the items includes per-unit weight in grams and the number of units sold in the package. The promotional information includes coupons given online to the consumers and the discounts given to the final payment. The food product categories include snacks, fast food, food, milk, beverages, candies, and sauces. The countries and districts of origin include Australia, Denmark, Germany, Hong Kong, Italy, Japan, New

Zealand, Singapore, South Korea, Spain, Taiwan, Thailand, the UK, and the US. The food product categories and country of origins are represented by binary variables. The cultural distances between China and countries of origin are measured based on Hofstede's cultural dimensions.

The two-mode network of retailing food products involved in online promotions in cross-border e-business markets is revealed based on the country and district of origin, cultural distances, online promotional strategies, and the product attributes, which include product categories, price, and package information. The interconnection of products in the network is further measured by binary distance based on country and district of origin, cultural distances, online promotional strategies, and the product attributes. The cultural distances and variables of promotional strategies are transformed to binary variables by the threshold of the median. The Moran index and Geary index are applied to further test the relationship between closeness of items and the outcome of pre-ordering online sales performance based on cultural distance, online promotional strategy, and product attribute. The closeness of items is measured based on the similarities of the products. The Moran index and Geary paired comparison index are used to further analyze the relationship between the country network structure and the export competitiveness of emerging markets.

#### IV. Results

Figure 1 presents the two-mode network of items involved in the online sales promotion based on cultural distances, online promotional strategy, and product attributes. It shows that items with a higher level of cultural distance are offered at

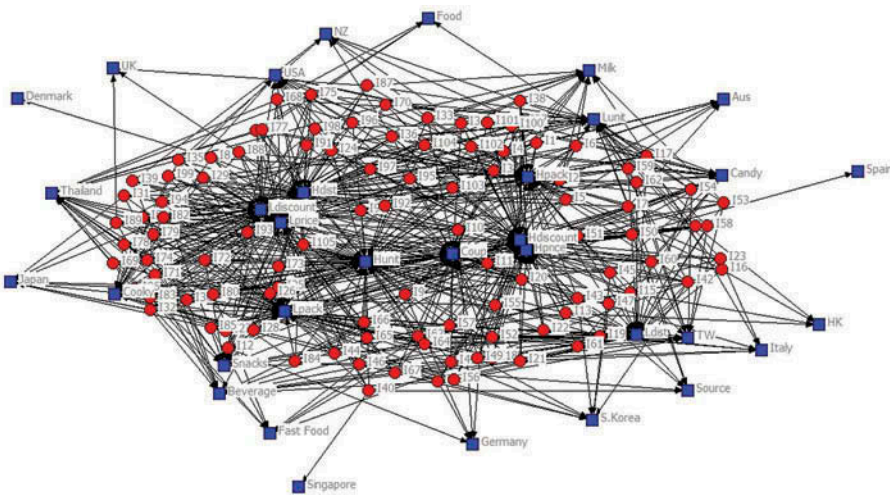
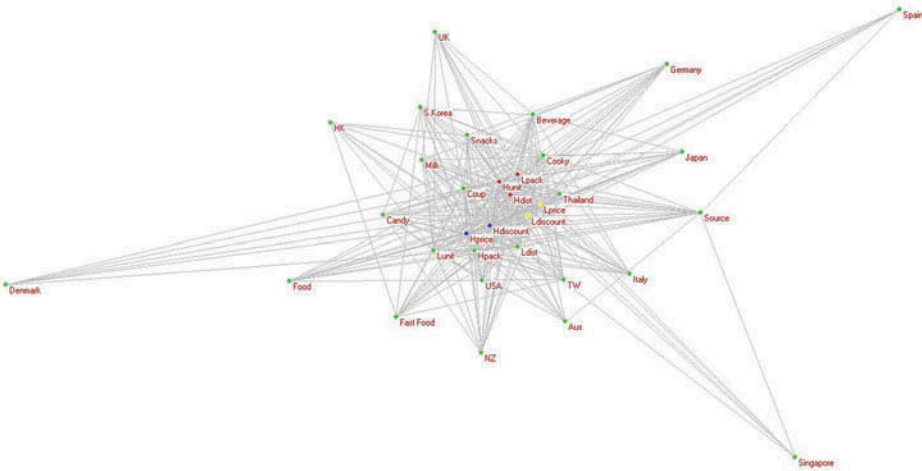


Figure 1. The two-mode network of items involved in online promotion.

lower prices with lower discounts. These items are sold in smaller packages with a larger number of units per package. Items with lower cultural distances are offered with higher discounts, more coupons, and are packaged in larger quantities. Furthermore, cookies, snacks, beverages, and fast food are primarily offered in smaller packages and sold in Thailand, Japan, Singapore, Germany, the UK, and the US. Candies and sauces are primarily offered by South Korea, Taiwan, Hong Kong, Italy, and Spain. In addition, milk powders are primarily offered by Australia in larger packages with a smaller number of units. **Figure 2** shows the islands of attributes in the network. It is clear that attributes of items sold in fewer packages with larger units are associated with higher cultural distance. We can also see that lower prices are associated with lower discounts, while higher prices are associated with more discounts.

In summary, items sold by countries and districts with higher cultural distances are primarily offered in lower weighted units, but with a larger number of units in the promotional packages. These items are offered at lower prices, with lower discounts, such as nuts from the US. Items sold by countries and districts with lower cultural distances include sauces and jams from South Korea, and can be promoted online due to their appeal of being imported. In addition, items sold in lower-weight packages can take advantage of this packaging to enable consumers to test the products, such as durian snacks from Thailand and cookies from Japan. These items are sold at higher prices with more coupon offers and higher discounts, and the packages are better promoted. On the other hand, milk products from Australia are sold in higher-weight but less-packaged units.

Furthermore, it is suggested that quality management in the packaging of online products is important in cross-border e-business markets.



**Figure 2.** Islands of attributes in the complex network of online promotion for food items.

Consumers are attracted by promotions with fewer packages but with more units during online consumption of products with a higher cultural distance. In addition, quality management of the packages with a higher number of units is important to online consumption in cross-border e-business markets. Moreover, online consumers are more likely to be attracted by more substantial discounts associated with higher-valued products. It is suggested that the quality management of higher-valued items in online promotion is important to consumers in cross-border e-business markets.

Table 1 shows the results of the Moran index and Geary index in tests of the relationship between pre-ordering, performance, and item closeness. It is found that the autocorrelation between the closeness matrix of items and the pre-ordering performance in the online promotion by the Moran index test is 0.033, which is between 0 and 1, at a significance level of  $p < 0.01$ . Therefore, the closeness of items, based on country of origin, cultural distance, promotional strategy, and product attribute, has a positive relationship with pre-ordering performance of online sales. It is also found that the autocorrelation between closeness of items involved in the online promotion and the pre-ordering performance by the Geary index test is 0.958, which is between 0 and 1, at a significance level of  $p < 0.05$ . This data further support that the closeness of items in the network, which is constructed by country of origin, cultural distance, promotional strategy, and product attribute in the online promotion, has a positive relationship with pre-ordering performance.

**Table 1.** Moran index and Geary index in test of relationship between pre-ordering sale performance and item closeness.

Method	Moran	Geary
Permutations	1000	1000
Random Seed	686	803
Autocorrelation	0.033	0.958
Significance	0.00	0.03

## V. Conclusion

The development of cross-border business has encouraged companies to become more involved in global markets. The country-of-origin effect is important for the further expansion of Chinese companies involved in cross-border e-business. This research reveals the effect of country of origin in the online promotions of cross-border e-business by studying the online promotion of retail food products in cross-border e-business markets. The two-mode network of products involved in online promotions in cross-border e-business markets is revealed, based on country of origin, cultural distance, promotional strategy, and product attribute. It is found that items from countries and districts with a higher cultural distance

are offered at lower prices and lower discounts, and it is possible for these products to further improve their market entry through online promotion. It is also found that items from countries and districts with a lower cultural distance are primarily sauces and jams, which are sold by countries and districts with similar cultures. It is further found from the islands of the attributes in the network that food items with a higher cultural distance are offered in promotions with fewer packages but with more units.

Furthermore, this research finds that snack foods, beverages, and fast foods are sold in packages of lower weight, by countries with a culture in favor of retailing foods. It is also found that milk powders are primarily sold in packages of higher weight by countries with a culture of higher milk consumption and production. In addition, items sold in higher-priced units are also offered in conjunction with higher discounts or coupons for better promotions. It is further found from the islands of the attributes in the network that lower pricing is associated with a lower discount, while higher pricing is associated with a higher discount. Thus, larger discounts in cross-border e-business promotions are applied to higher-priced food items, addressing the concerns of price-sensitive customers in cross-border e-business markets.

From the findings of this research, it is suggested that the quality management of packaging in online promotions is important to consumers in cross-border e-business markets. Furthermore, it is suggested that quality management of higher-valued products with larger discounts is also important to online consumers in cross-border e-business markets. This research further finds that the closeness of items based on country of origin, cultural distance, promotion strategy, and product attributes has a positive relationship with pre-ordering sales performance based on the Moran index and Geary index. The findings of this research can be helpful to global managers and decision makers in further understanding consumer behavior in cross-border e-business markets and offers support for quality management of cross-border e-business through consumer behavioral analysis.

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- Cenfetelli, R. T., I. Benbasat, and S. Al-Natour. 2008. "Addressing the What and How of Online Services: Positioning Supporting-Services Functionality and Service Quality for Business-to-Consumer Success." *Information Systems Research* 19 (2):161–181. doi:10.1287/isre.1070.0163.
- Chan, C., and P. M. C. Swatman. 2000. "From EDI to Internet Commerce: The BHL Steel Experiences." *Internet Research: Electronic Networking Applications and Policy* 10 (1):72–82. doi:10.1108/10662240010312039.
- Cyr, D. 2008. "Modeling Web Site Design across Cultures: Relationships to Trust, Satisfaction, and E-Loyalty." *Journal of Management Information Systems* 24 (4):47–72. doi:10.2753/MIS0742-1222240402.
- Eid, R., I. Elbeltagi, and M. Zairi. 2006. "Making Business-to-Business International Internet Marketing Effective: A Study of Critical Factors Using A Case-Study Approach." *Journal of International Marketing* 14 (4):87–109. doi:10.1509/jimk.14.4.87.
- Kogut, B., and H. Singh. 1988. "The Effect of National Culture on the Choice of Entry Mode." *Journal of International Business Studies* 19 (3):411–432. doi:10.1057/palgrave.jibs.8490394.
- Kohli, R., S. Devaraj, and M. A. Mahmood. 2004. "Understanding Determinants of Online Consumer Satisfaction: A Decision Process Perspective." *Journal of Management Information Systems* 21 (1):115–135. doi:10.1080/07421222.2004.11045796.
- Lee, I., B. Choi, J. Kim, and S. Hong. 2007. "Culture-Technology Fit: Effects of Cultural Characteristics on the Post-Adoption Beliefs of Mobile Internet Users." *International Journal of Electronic Commerce* 11 (4):11–51. doi:10.2753/JEC1086-4415110401.
- Luo, X., and M. Seyedian. 2003. "Contextual Marketing and Customer-Oriented Strategy for E-Commerce: An Empirical Analysis." *International Journal of Electronic Commerce* 8 (2):95–118.
- Mahmood, M. A., K. Bagchi, and T. C. Ford. 2004. "Online Shopping Behavior: Cross-Country Empirical Research." *International Journal of Electronic Commerce* 9 (1):9–30.
- Meng, X., and Y. Liu. 2013. "Effect of E-Business on International Trade." *Heilongjiang Science and Technology Information* 6 (2013):113.
- Petersen, Bent, Lawrence S. Welch, and Peter W. Liesch. 2002. "The Internet and Foreign Market Expansion by Firms." *Management International Review* 42 (2):207–221.
- Pharr, Julie M. 2005. "Synthesizing Country-of-Origin Research from the Last Decade: Is the Concept Still Salient in an Era of Global Brands?" *Journal of Marketing Theory and Practice* 13 (4):34–45. doi:10.1080/10696679.2005.11658557.
- Rhee, J. H. 2005. "The Internet Era and the International Expansion Process: The Moderating Role of Absorptive Capacity." *Management International Review* 45 (3):277–306.
- Rust, R. T., and K. N. Lemon. 2001. "E-Service and the Consumer." *International Journal of Electronic Commerce* 5 (3):85–101. doi:10.1080/10864415.2001.11044216.
- Sharma, V. M. 2005. "Export Management Companies and E-Business: Impact on Export Services, Product Portfolio, and Global Market Coverage." *Journal of Marketing Theory and Practice* 13 (4):61–71. doi:10.1080/10696679.2005.11658559.
- Su, B. 2007. "Consumer E-Tailer Choice Strategies at Online Shopping Comparison Sites." *International Journal of Electronic Commerce* 11 (3):135–159. doi:10.2753/JEC1086-4415110305.

- Tang, L. 2012. "The Direction of Cultural Distance on FDI: Attractiveness or Incongruity?" *Cross Cultural Management* 19 (2):233–256. doi:[10.1108/13527601211219919](https://doi.org/10.1108/13527601211219919).
- Wilson, J. S., C. L. Mann, and T. Otsuki. 2003. "Trade Facilitation and Economic Development: A New Approach to Quantifying the Impact." *The World Bank Economic Review* 17 (3):367–389. doi:[10.1093/wber/lhg027](https://doi.org/10.1093/wber/lhg027).
- Yetim, U. 2003. "The Impacts of Individualism/Collectivism, Self-Esteem, and Feeling of Mastery on Life Satisfaction among the Turkish University Students and Academicians." *Social Indicators Research* 61 (3):297–317. doi:[10.1023/A:1021911504113](https://doi.org/10.1023/A:1021911504113).
- Zeng, Y., O. Shenkar, S. Song, and S. Lee. 2013. "FDI Experience Location and Subsidiary Mortality Differences in National Culture and the Expansion of Korean MNEs." *Management International Review* 53 (3):477–509. doi:[10.1007/s11575-013-0169-0](https://doi.org/10.1007/s11575-013-0169-0).
- Zhang, J., and M. Wedel. 2009. "The Effectiveness of Customized Promotions in Online and Offline Stores." *Journal of Marketing Research* 46 (2):190–206. doi:[10.1509/jmkr.46.2.190](https://doi.org/10.1509/jmkr.46.2.190).

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