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Analysis of Problems in the Sourcing Strategy of U.S. Apparel and Footwear Industries

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생산지 결정전략의 문제점 분석 : 미국 의류, 신발산업을 중심으로

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요 약

의류산업의 효율성(efficiency) 제고를 위한 중요한 결정의 한가지는 상품생산지 및 생산방법 즉 생산지 결정전략(sourcing strategy)에 관한 것이다. 점차 생산의 대상지역과 방법이 다양해짐에 따라 이는 복잡한 의사결정체계를 요하게 된다. 본 연구는 생산지 결정의 의사결정과정에서 흔히 중요시되는 생산비용 이외에 비생산비용, 즉 거래비용(transaction cost)으로 표현될 수 있는 인자를 분석하고자한다. 이를 위해 미국 의류, 신발 산업의 생산지 결정의 첫단계로서 해외기지생산과 국내생산의 문제점을 비교하였다. 의류산업과 신발산업에 있어 적시공급과 품질관리가 생산지에 관계없이 공통된 문제점으로 지적되었고 의류산업의 경우 노동력의 부족과 재료의 공급이 국내생산의 문제점으로, 오랜생산기일과 생산국가의 환경적요소(예를 들면, 정치적 불안정, 정부규제 등)가 해외기지생산의 특이한 문제점으로 지적되었다. 본 연구는 미국의 의류, 신발 산업을 대상으로 한 것이나, 최근 저가의 노동력을 찾아 동남아 또는 남미로 생산지를 이전하는 국내 의류, 신발업체들이 급격히 증가하고 있음을 감안할 때, 우리 산업에도 시사하는 바가 크다고 할 수 있다.

Ⅰ. Introduction

Since the 1960's, the U.S. apparel industry has confronted severe competition not only from domestic but from foreign producers. To survive in the ever more competitive environment, a firm should carefully choose where and how its products are to be made. The alternatives for production from which a firm can choose are called 'sourcing strategies'. For instance, MePherson[1] differentiates 'two manufacturing options': U.S. or foreign (offshore) production. Jernigan and Eastering[2] expands it into four by adding another dimension of the use of foreign/U.S. contractors. In addition, American Apparel Manufacturers Association identifies more detailed sourcing options in accordance with 9802 production under Harmonized Tariff Schedule, the use of contractors, locations, and fabric sourcing[3]

U.S. apparel and footwear firms have been faced with a difficult task of choosing one among a wide

range of options in terms of the location and the degree of resource commitment for production. These options differ greatly in their advantages and drawbacks.

In choosing an efficient sourcing option, one of critical decisions that U.S. apparel manufacturers should make is whether or not to use offshore production. To facilitate the decision, a firm has to continuously monitor economic and political environment and trade regulations of the country under consideration, and weigh the advantages of each option against its disadvantages. However, many firms in apparel and footwear industries, especially those with high labor-intensiveness, low overhead costs, and low switching costs, tend to frequently change their sourcing options, seeking rather cheaper labor force without analyzing carefully all costs of transactions.

Every year, growing number of U.S. apparel manufacturers employ offshore production in order to be price competitive. Offshore production may provide major benefits to firms by low cost labor which may make firms cost competitive. Offshore production, however, can become less efficient in the longer term due to non-production cost related factors. In fact, there are many cases that U.S. firms decided not to go overseas at all or avoid specific countries after they experienced serious non-cost problems. Therefore, offshore production is sometimes more risky than domestic production due to the high degree of uncertainty caused by unexpectable and uncontrollable factors, which invoke the hidden costs.

Comparing production cost-related advantages and hidden cost-related disadvantages is not easy, however, since production cost factors are likely to be a part of a formal process whereas non-production cost factors may of may not be a part of informal protocols: e.g., production costs are directly comparable by numbers whereas non-production cost factors are indirectly measured by qualitative variables.

In previous studies, production cost, especially wage has been discussed as a major salient factor while non-production cost factors have not gotten much attention. Furthermore, neither theories nor empirical frameworks have been developed to guide efficient decision making in spite of the importance of sourcing decisions in these sectors and the frequency of their occurrence.

This preliminary study tries to identify problems which may act as non-production cost factors for sourcing decisions in two separate but related industries-U.S. apparel and footwear. Both footwear and apparel sectors are analyzed in this study for two reasons. First, the footwear sector is similar to the apparel sector in terms of industry characteristics and the nature of production. Second, both sectors are dealing with fashion goods which are characterized as a frequent change of product mix, extreme diversification, and a short product life.

This study may also be applied to such newly developed countries as Korea: In these countries, labor cost has increased very fast recently. As a result, and due to the emergence of the less developed countries, they have been losing competitiveness in world market. Apparel industry, which happens to be one of the most labor-intensive, has been hit the hardest. They now seriously consider whether to move plants in order to get low cost labor.

II. Domestic vs. Offshore Production

A major advantage of domestic production for U. S. apparel manufacturers is that it makes the production closer to their customers (retailers and ultimate consumers) and to its suppliers (textile producers). It also makes it easy to understand preferences and tastes of their customers.

As fashion cycles shorten and consumers' tastes become diverse, apparel manufacturers have recog-

nized that reducing the lead times of apparel production with more frequent changes of product mix is necessary. One of the popular strategies for this is Quick Response (QR) strategy, which was originally introduced to fight imports for private label apparel in the 1970's[4]. QR strategy is based on close coordinations among U.S. textile mills, U.S. apparel manufacturers, and retailers in order to get products to consumers more quickly. Additionally, use of microelectronics in the assembly stage and such new technologies as CAD/CAM/CIM at various stages have been widely promoted and adopted to implement this strategy. According to Kurt Salmon Associates, QR strategy can save 25% of retail sales by decreasing the loss coming from forced markdowns (for what are not selling) or stockouts (for what are selling well)[5]. Thus, QR strategy has been increasingly adopted by U.S. apparel manufacturers.

Domestically produced apparel and footwear products also have advantages for consumers who have a preference for made-in-U.S.A. products. The "Rules of Origin" provision of the 1984 Trade Act specified that apparel and textiles products manufactured in the U.S. must have a "made-in-U.S.A." label. Although it is doubtful that the consumers preferences for made-in-U.S.A. products are directly translated into their buying decisions[6,7,8], U.S. manufacturing has been promoted by the "Crafted with Pride in U.S.A." campaign both at industry and consumer levels.

On the other hand, the advantage of offshore production is low production costs based on low-wage labor in the Third World countries. Considering that labor cost comprises about one third of total production cost for U.S. apparel and footwear industries[9], low labor cost provides a strong incentive for them manufacturing activities taken place outside the U.S.

Another incentive comes from such non-production cost factors as flexibility in the size of orders and willingness for foreign manufacturers to provide other special services or features. On the whole, U.S. textile mills and apparel manufacturers have tended to overemphasize high productivity through mass production, which limits flexibililty, diversity and the ability to respond quickly[10,11]. Moreover, U. S. fabric suppliers' minimum order requirements are costly for fashion products which require frequent changes of style and a diverse product mix[12]. This may lead many U.S. apparel manufacturers to go offshore. Considering the fact that apparel firms usually manufacture products in the places where they can best source materials for the products in order to save lead times and transportation costs, flexibility and better service from foreign mills should be another incentive for apparel manufacturers to go for offshore production[13].

Inflexibility and unwillingness of U.S. Contractors to cooperate with U.S. apparel manufacturers may also account for offshore production. Usually U.S. contractors require minimum orders, which force apparel firms to have limited assortments. Furthermore, they are not willing to adjust to demand fluctuation. Asian producers, in contrast, willingly work overtime if the order is behind schedule or willingly change product specifications at the request of their client. Such flexibility cannot be found among U.S. contrctors[14]. Moreover, sophisticated skills needed to provide certain products such as tailored suits, sweaters, and blouses, are not readily found among U.S. contractors[12].

Offshore production can be costly to domestic apparel firms, however. Previous study conducted by Forney et al[13]. found that offshore production has frequently had the major problem of long lead times, which has promoted domestic apparel producers to stay in the U.S. and even encouraged importers to come back. On the other hand, cycle times may be cut in half when apparel manufacturers use U.S. contrctors. Quality control is another

major problem associated with offshore production, as Rabolt[15] identified in her study. She found that quality problems came from various sources such as poor production methods, obsolete equipments, low skills of workers, language barriers, cultural differences, and etc. U.S. manufacturers, thus, opt not to produce in a country with large number of problems. For instance, Esprit has chosen not to produce in India and Sri Lanka because of quality control problems and widely dispersed facilities.

III. Methodology

1. Research Design

Since U.S. apparel and footwear firms are dispersed throughout the U.S., a mail survey was adopted in the study. Otherwise, it is quite difficult to contact a representative sample. A mail survey is considered a relatively efficient way to reach business people, particularly in such industries as apparel and footwear, because at any given time potential respondents are apt to be away from the workplace due to frequent business trips.

Total Design Method that Dillman[16] suggests to use one postcard reminder and two additional follow-ups was adopted to obtain representative responses.

2. Questionnaire

The questionnaire was divided into 3 sections. The first section contained general information on sourcing strategy including the use of offshore production and its proportion. The respondents were also asked to specify product types, its weight from total production and its sourcing options by each production locations including U.S.. In the second section, they were asked to specify problems in each production locations. In the third section, their experiences in foreign business were asked. Finally, respondent's job position was also asked.

3. Sample and Data Collection

A mailing list of 112 apparel and 64 footwear manufacturers was selected from three sources by systematic sampling: Fairchild's Textiles and Apparel Financial Directory of 1990/1991; the Directory of Members and Associate members of the American Apparel Manufacturers Association (AAMA) of 1991; and the Directory of the U.S. Footwear Industry Association (FIA) of 1990.

Questionnaires were sent to the production manager or other personnel involved in production decisions. The study was conducted from July 12 to September 26 of 1991. As Dillman[16] suggested, postcard reminders were sent one week after the first mailing. On August 5, follow-up letters were sent, accompanied by a copy of the questionnaire. Telephone follow-ups started on August 21. Making repeated requests for responses can increase the representativeness of a sample and decrease non-response bias.

Out of the total of 170 questionnaires mailed, 118 questionnaires were returned, 4 were undelivered and 48 were not returned after two mail follow-ups and one telephone follow-up. These data give an overall response rate of 70.4 percent and an adjusted response rate of 71.9 percent.

IV. Results and Discussions

1. Characteristics of the sample

Table 1 provides description of the respondents. The table shows similar trends for apparel and footwear respondents in terms of their use of offshore production. About half of the respondents use offshore production to supplement domestic production and its average weight is 39 percent. In terms of foreign experience, apparel and footwear manufacturers have 11.5 and 13.3 years of experience, respectively. It is also shown that about 50 percent of questionnaires were completed by "prod-

Table 1. Descriptive Information on Respondents

	Apparel Firms	Footwear Firms
	N(%)	N(%)
Production Location		
Domestic only	40(49)	16(47)
Offshore only	2 (2)	1 (3)
Both	40(49)	17(50)
	82	34
Foreign Experience		
less than 10 years	19(45)	6(33)
10~19 years	13(31)	4(22)
20~29 years	4(10)	5(28)
more than 30 years	3 (7)	.
no answer	3 (7)	3(17)
	(mean= 11.5 years) 42	(mean= 13.3 years) 18
Percentage of offshore production		
1~10%	8(19)	4(22)
11~49%	17(40)	6(33)
50~79%	12(29)	5(28)
80~95%	3 (7)	.
95~100%	2 (5)	2(11)
	(mean= 39%) 42	(mean= 36%) 18
Title of the respondents		
Production manager	36(44)	10(29)
Administrator	21(26)	18(53)
Others	15(18)	6(18)
	82	34

Table 2. Problems in Apparel Industry

Offshore manufacturing		U.S. Manufacturing	
Poor quality	18	Labor shortage	8
Late delivery	16	Poor quality	5
Long lead times	3	Late delivery	5
Political instability	4	Timely raw material supply	6
Government restriction	3	Fabric quality	5
Natural disaster	3	High price	1
Labor shortage	1	Poor facility	1
Timely raw material supply	1		
Handling product mix change	1		
Management problem	1		
Poor contractor selection	1		
Turnover	1		
Total	49	Total	26

Table 3. Problems in footwear industry

Offshore manufacturing		Domestic manufacturing	
Late delivery	13	Raw material availability	2
Poor quality	11	Poor quality of material	2
Problems with new technology	3	Late delivery of material	1
High cost	2		
Receiving information	2		
Political instability	1		
Total	31	Total	5

uction people"(e.g. Production Manager, V.P.Manufacturing, Director of Production etc.). The rest were done by those who were involved in sourcing decisions (e.g. V.P. Quality Control, V.P. Product Development, etc.).

2. Problems in U.S. and offshore production

Out of 42 apparel firms who adopt both offshore and U.S. production, 32 firms point out problems in offshore production countries whereas only 4 complain about U.S. production. On the other hand, 21 out of 40 apparel firms which employ only U.S. production mention problems of domestic production. Similarly, 14 out of 17 footwear firms who use offshore production to supplement U.S. production point out several problems in offshore production whereas only one of them complains about U.S. production.

Problems that they have experienced in production location were analyzed by product types, percent of production in each location, sourcing option and experience in apparel business. However, specific patterns of problems were not found except the differences in the problems associated with U.S. vs. offshore production and apparel vs. footwear production. Problems reported by apparel

and footwear industries are separately presented in Tables 2 and 3.

1) Common problems is apparel production, whether production occurs in the U.S. or offshore, involve quality and delivery. These are the major problems for footwear production, too. Considering that U.S. production has the advantage in terms of proximity to the market, this result is somewhat surprising. It can be explained by the poor delivery commitments on the part of U.S. contractors. Although there is no doubt that delivery from U.S. Contractors takes less time than from foreign contractors, the important thing for customers is the ability to meet delivery commitments on time. In other words, U.S. delivery may be: a) longer than expected; b) not actually very different from offshore firms' speed of delvery; c) unreliable or slower than promised.

2) On the other hand, U.S. production seems to have problems mainly in securing labor and materials. Labor shortage is the most frequently mentioned problem in domestic apparel production whereas problems in domestic footwear production are regarding materials, especially their quality, availability and delivery. It implies that there is a room for U.S. manufacturing to enhance its competitiveness by way of better communication and cooperation among textile producers and apparel manufacturers of among footwear manufacturers and material suppliers.

3) Unique problems in offshore manufacturing, on the other hand, are related to foreign countries' external factors such as political instability (strikes, riots), government restrictions, or natural disasters (earthquakes, typhoons, fire, etc.). Although U.S. production may also face these uncontrollable problems, foreign production is perceived to be more risky and problematic because of psychological as well as geographic distance.

One issue unique to offshore production of footwear has to do with technology. This implies that U. S. footwear producers may have been moving

Table 4. Problems in Offshore Manufacturing in the Apparel Industry by Country

Country	Poor quality	Late delivery	Long lead times	Government restriction	Political instability	Natural diaster	Others
Taiwan	2		1				
Korea	3	2					
China	3	2					
Phillipines				1			
India					1		
Thailand	1			1			
Bangladesh	1					1	
Dominican R.	3	4			2		1
Mexico	3			1			2
Costa Rica	1	1	1			1	
Honduras		2					2
Guatemala	1	2					
Jamaica			1			1	
Columbia		1					
Haiti					1		
Peru		1					
Turkey		1					
Total	18	16	3	3	4	3	6

Table 5. Problems in Offshore Manufacturing in the Footwear Industry by Country

Country	Poor quality	Late delivery	Problems in new tech.	High cost	Receiving information	Political instability
Taiwan	2	2	1			
Korea	2					
China	1	3				
India	1	4			1	
Thailand	1		2			
Parkistan					1	
Dominican R.	2	1				1
Brazil	2					
El Salvadore		1				
Italy		1		2		
Spain		1				
Total	11	13	3	2	2	1

technological changes into offshore production before production technologies have been perfected in order to keep pace with the competition. Nike's Air line, Reebok's Pump series, or Puma's Disk system are examples of these products which have been newly developed and put into use for offshore production at the same time[17].

4) When comparing apparel production problems in specific regions or countries, late delivery is a key problem in Caribbean Basin countries and Mexico whereas poor quality is a somewhat more frequently mentioned problem in Asia (see Table 4 and 5). Although the findings can not be analyzed statistically due to the limited number of responses, late delivery seems to be a more serious problem in Caribbean Basion countries despite its closer location to the U.S., compared to Asian producers.

Since missing the specific delivery date can cause severe damages to sales and customer relations, punctual delivery is more important than short lead times in production planning. As Morawetz[14] found a U.S. department store buyer was likely to cancel an order for delivery in March if the order had not arrived by April 1, because after that date they could only be sold at the discount rate of 40 or 50 percent. Since replacement merchandise was not always readily available, the floor space for the canceled order might remain empty, and the money that had been spent on advertising might be wasted. He also described some U.S. retailers' experiences with Colombian apparel manufacturers, which ended in turning away from Columbia because of late delivery. He explained that delivery dates are much more important in the U.S. market than in Columbia, Venezuela and the Caribbean because seasonal variations in fashion and climate. Although he used interviews with U.S. retailers rather than U.S. manufacturers, the findings may also apply to the case of U.S. manufacturers producing in the Caribbean countries.

V. Conclusions and Implication

The main benefit of offshore production in apparel and footwear industries is the cost savings through low-wage labor. However, potential problems involved in offshore production, i.e., the loss of control and uniqueness of each country, should be weighed against production cost savings. This implies that more precise information regarding the specific offshore production should be collected and

analyzed before the actual involvement and that contingency planning should also be prepared.

Although this study is exclusively focused on U.S. industries in the specific time scan, it can be applied to other countries in which labor costs in local production are becoming more expensive and offshore production is emerging as an alternative solution. In the future research, problems identified in the present study can be quantified as non-production cost factors or transaction cost factors. Future studies may analyze relative importance of factors in determining sourcing options or specific production loctions.

REFERENCES

1) McPherson, Edwin M. (1987). *Apparel Manufacturing Management Systems: A Computer-Oriented Approach.* Park Ridge, NJ: Noyes Publications.
2) Jernigan, Marian H. and Eastering, Cynthia R. (1990). *Fashion Merchandising and Marketing,* New York, NY: Macmillan Publishing Co..
3) Dickerson, K.(1990). *Textiles and Apparel in the International Economy,* New York, NY: Macmillan Publishing Co..
4) United States Department of Commerce (1991). Chapters on Textiles, Apparel, and Leather. *U. S. Industrial Outlook,* Washington, DC: Department of Commerce.
5) Sack, K. (1988, April 12). Retailing Basic Analysis. Standard & Poor's Industrial Survey, R75-R106.
6) Bergeron, D.P., and Carver, M.N. (1988). Student Preferences for Domestic-Made or Imported Apparel as Influenced by Shopping Habits. *Journal of Consumer Studies and Home Economics,* 12, 87-94.
7) Hester, S. (1986). Imported versus Domestic Apparel: Are Attitudes and Buying Behavior Related? *ACPTC Proceedings: National Meeting, 121.*
8) McLean, F.P., Roper, L.L., and Smothers, R. (1986). Imported versus Domestic Blouses: Women's Preferences and Purchase Motives. *Home Economics Research Journal,* 14(3), 306-313.
9) Parsons, Carol A. (1987). *Flexible Production Technology and Industrial Restructuring: Case Studies of the Metalworking, Semiconductor and Apparel Industries,* Ph.D. Dissertation, University of California, Berkeley.
10) Dertouzos, Michael L., Richard K. Lester, and Robert M. Solow (1989). *Made in America: Regaining the Productive Edge,* Cambridge, MA: The MIT Press.
11) Steele, Peter (1990). Hong Kong Clothing-Waiting for China. *The Economist Intelligence Unit,* Special Report No. 2028, NY: Business International Corporation.
12) David, Susan and Sylvia Schwartz (1990, October 20, personal communication).
13) Forney, Judith C., Rosen, Diana M., and Orzechowski, janice M. (1990). Domestic Versus Overseas Apparel Production: Dialogue with San Francisco-Based Manufacturers. *Clothing and Textiles Research Journal,* 8(3), 39-44.
14) Morawetz, David (1980). Why the Emperor's New Clothes are not made in Columbia: A Case study in Latin America and East Asian Manufactured Exports. *World Bank Staff Working Paper* No. 368.
15) Rabolt, Nancy J., Bothwell, Katrina, Forney, Judith C., and Barry, Mary (1988). Quality Control in Overseas Apparel Manufacturing. *Journal of Consumer Studies and Home Economics,* 12, 389-397.
16) Dillman, D.(1978). *Mail and Telephone Survey: Total Design Method.* New York: John Wiley.
17) Pereira, Joseph (1991). From Air to Pump to Puma' s Disc System, Sneaker Grimmicks Bound to New Heights. *Wall Street Journal,* October 31, B1.