Self-planning functions within the Japanese apparel wholesale industry

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Abstract

Purpose—The purpose of this paper is to clarify what factors affect the recent trend of having self-planning functions within Japanese apparel wholesalers.

Design/methodology/approach—We conducted a questionnaire survey involving Japanese apparel wholesalers and applied the Probit and Multinomial Logit regression analyses.

Findings—The main findings are as follows: (1) Large-scale wholesalers who are located in urban areas tend to have their own planning functions, whereas small-scale wholesalers who are located in rural areas tend not to have self-planning functions and handle goods planned by other suppliers. (2) Wholesalers who handle a wide range of apparel and conduct business with retailers located in the same area, tend not to have their own planning functions. (3) The apparel wholesalers who have business dealings with many suppliers have the ability to promote themselves to the retailers. (4) The apparel wholesalers who have self-planning functions tend to obtain goods from within Japan and other countries and sell goods throughout Japan.

Research limitations/implications—Small-scale and rural apparel wholesalers face difficult circumstances due to their size, location and lack of self-promotion ability. In contrast, large-scale and urban wholesalers are able to ensure greater independence due to their size and location.

Originality/value—This paper focuses on the important role of wholesalers in the Japanese apparel industry and by using the empirical approach, can clarify factors affecting the recent trend of having self-planning functions within Japanese apparel wholesalers.

Keywords: Apparel wholesalers, Self-planning functions, Probit and Multinomial Logit models

Paper type: Research paper

Introduction

The main characteristic of the Japanese distribution system is the multi-layered structure of the wholesalers. Maruyama (2004) indicated that the reasons for this structure could be explained in three different ways. First, numerous small-scale retail stores led to complicated transactions between manufacturers and the retail stores. Thus, wholesalers were able to reduce the transaction costs in order to aggregate the transactions between them. Second, retail companies adopted distribution strategies that relied on the inventory management and delivery functions of wholesalers, in order to concentrate on the management of the retail stores. Finally, manufacturers also used wholesalers to distribute their products to numerous small-scale retail stores. In addition to these factors, the wide variations in commodities and lack of the ability to handle this wide range of commodities on the part of the wholesalers resulted in the multi-layered structure of wholesalers in the distribution system. Torii and Nariu (2004) conducted an empirical analysis to investigate the factors affecting the multi-layered structure of wholesalers, focusing on the wholesalers' private information. The results of the analysis are as follows: Wholesale distribution channels tend to be longer (1) when wholesalers are in close geographic proximity to the end consumers; (2) when wholesalers are not organized into distribution keiretsu by the manufacturers; (3) when the regional variation in demand is idiosyncratic; (4) when producers advertise less intensely and distributors advertise more intensely; and (5) when the density and heterogeneity of retail outlets are greater.

However, in recent years, it has been said that the multi-layered structure of wholesalers has decreased significantly. This is because retailers have been modifying their distribution strategies by using new information technology (IT). Further, manufacturers have also changed their distribution strategies to direct transactions with large-scale retailers that bypass wholesalers (Maruyama, 2004). It is evident that the wholesalers have not accepted this situation in a passive manner; in fact, they are struggling to expand their scale of operations and secure business with large-scale retailers (Kim, 2004). In the case of the Japanese apparel industry, wholesalers have made efforts to survive in a slightly different manner — they avoid pressure from large-scale retailers or manufacturers by

having self-planning functions and their own brands. If apparel wholesalers have only the distribution functions, they can be confronted with the serious situation mentioned above. On the contrary, if they have self-planning functions as well as their own brands, they can have the power to control the retailers as the retailers would be unable to bypass the wholesalers any longer, and they would have to comply with the wholesalers' pricing strategies, promotion strategies and so on. Thus, apparel wholesalers would have more power to control distribution channels.

The purpose of this paper is to investigate the factors that affect the apparel wholesalers' strategies regarding the implementation of self-planning functions, with a particular focus on the location of the wholesalers and their counterpart companies. This article is organised as follows: Section 2 presents an overview of the Japanese apparel industry. Section 3 describes the method and data used in the analysis. Section 4 presents the results of the analysis, and Section 5 includes some concluding remarks.

An Overview of the Japanese Apparel Industry

Apparel wholesaler

Before discussing the Japanese apparel wholesalers, we would like to provide a definition of an apparel wholesaler. According to the Industrial Statistics Office, Research and Statistics Department, Economic and Industrial Policy Bureau, Ministry of Economy, Trade, and Industry, a wholesaler is defined as follows:

(1) Selling commodities to retailers or other wholesalers.
(2) Selling a massive amount or large sum of commodities for business use to industrial users (construction, manufacturer, transport, food and beverage establishments, hotels, hospitals, schools, government and public service corporations etc.).
(3) Selling commodities mainly used for business use (office machinery, apparatus, furniture, equipment for hospitals/beauty salons/restaurants/hotels, industrial machinery (except agricultural equipment) and construction material (lumber, cement, plate glass, tile etc.)).
(4) Establishments belonging to companies engaged in manufacturing for selling

their own products (except those establishments mainly engaged in management). For example, a company that manufactures electrical household appliances and operates a branch in another place other than the manufacturing factory, for the purpose of selling its own products to wholesalers and retailers is classified as a 'wholesaler'.

(5) Establishments engaged in the wholesale and repair of commodities. Even in cases where the income from repair fees exceeds that of sales, these establishments will be classified as 'wholesale traders' instead of 'repair service centres'.

(6) Establishments mainly engaged in the sale of commodities on behalf of other firms or individuals or acting as an intermediary for the sale of commodities are classified as 'agents and brokers'.

Based on the above definitions, we can understand that the defined wholesaler includes not only independent wholesale companies but also the sales departments of manufacturers. By way of contrast, Figure 1 shows the classifications of apparel wholesalers defined from a persons' viewpoint.

<Take in Figure 1>

Apparel Wholesalers in Urban Areas are wholesalers whose headquarters are located in urban areas, and in many cases, they have large-scale businesses. On the other hand, *Apparel Wholesalers in Rural Areas* are wholesalers whose headquarters are located in rural areas and they frequently operate as secondary companies. Thus, the scale of their businesses is small. *General Apparel Wholesalers* are wholesalers who handle more than three or four major apparel categories (men's wear, women's wear, children's wear and knitted wear), whereas *Specialty Apparel Wholesalers* are wholesalers who handle certain apparel categories. As we can see in Figure 1, apparel wholesalers are classified in terms of their function, scale and location. Therefore, these points are important in determining the reality of the present situation with respect to the Japanese apparel wholesalers.

Figure 2 shows the trade flow of apparel in Japan. This figure depicts two

types of transactions. The one-way arrowhead shows a normal transaction. For example, domestic manufacturers plan and manufacture their own products and sell them to the wholesalers. By way of contrast, the two-way arrowhead shows another transaction. In this case, the downstream companies assume the role of planning. For example, wholesalers plan their products and outsource their manufacturing to a domestic manufacturer; finally, wholesalers sell them as their own goods to apparel retailers. Further, the dotted arrowhead shows a recent trend in apparel trading. It indicates that the downstream companies tend to have a planning function in order to have the power to control the distribution channels and commodity marketing. Remarkably, this occurs during the retailing stage due to the widespread large-scale retail chain stores in Japan. However, the Apparel Wholesalers in Urban Areas have already faced this situation and the Apparel Wholesalers in Rural Areas also began to implement self-planning functions to survive in the market.

<Take in Figure 2>

Recent Trends in Apparel Wholesaling

According to the *Census of Commerce 2004*, the total number of wholesale establishments in Japan was 375,269 with 3,804 thousand employees and annual sales worth ¥405.5 trillion. By way of contrast, the number of establishments dealing in apparel, apparel accessories and notions [1] were 24,542 with 262 thousand employees and annual sales worth ¥14.1 trillion. Figures 3a and 3b show the trends for the number of establishments, employees and annual sales for all the wholesalers and wholesalers of apparel, apparel accessories and notions in Japan. The trends for the wholesalers of apparel, apparel accessories and notions show almost the same pattern as those for the wholesalers who have three indices, which attained a peak in 1991 and have since been declining. In particular, with regard to the wholesalers of apparel, apparel accessories and notions, where the number of wholesale establishments decreased by 24.1%, the number of employees decreased by 32.5% and the annual sales decreased by 39.9% between 1991 and 2004.

< Take in Figures 3a and 3b >

Table 1 shows the percentage of the reduction rate of the number of establishments, employees and annual sales from 1997 to 2002 with respect to the distribution level of wholesalers. In the total distribution level, the reduction rates of establishments, employees and annual sales for all wholesalers were –11.6, –13.2 and –22.4, respectively, whereas those of the wholesalers of apparel, apparel accessories and notions were –14.8, –22.6 and –24.6, respectively. This indicates that the apparel wholesalers have faced more difficult situations than the other wholesalers. Further, we can understand from this table that the situation of secondary wholesalers, particularly in the case of final wholesalers, has become extremely serious.

< Take in Table 1 >

Maruyama (2000) stated that the reasons for these serious situations could be summarized into four points: (1) the side use of information network technologies; (2) the strategic alliances between large retail firms and manufacturers using efficient consumer response (ECR) and quick response (QR) systems; (3) the reform of logistics initiated by convenience stores; and (4) the shift from speculation to the postponement of inventory investment. It is well known that these changes have resulted in *Oroshi-no-Nakanuki* (retailers and manufacturers bypassing wholesalers entirely). Therefore, the number of wholesalers has been decreasing recently. On the contrary, there is another approach to explain the recent reduction in the number of wholesalers. Kim (2004) conducted an empirical analysis to investigate this situation and concluded that the distribution strategies of large-scale wholesalers who aim to conduct business with large-scale retailers in order to expand their business scale, handled a wide range of goods by using sophisticated inventory management systems and adopting advanced types of logistic systems. This led to shorter steps in wholesale marketing channels.

While we also agreed with these distribution strategies adopted by the large-scale wholesalers in order to survive in the difficult environment,

particularly in the case of apparel wholesalers, we also focused on the planning strategies that enabled them to control the distribution channels and commodity marketing. In reality, in the Japanese apparel industry, it is said that although the imports of low-cost apparel have been increasing, value-added apparel designed by Japanese apparel companies has seen a steady improvement (Itami, 2001). Recently, as a consequence of the success of representative Japanese apparel companies such as World, Onward Kashiyama and so on, many apparel wholesalers began to lean towards operating their own planning functions. Furthermore, it is believed that the strategies of apparel wholesalers depend on the size and locality.

Locality was one of the most important key factors for our research because it was assumed that locality was related considerably to the understanding of fashion trends. We supposed that a company that was located in the highly sensitive urban market had the advantages of accessing and understanding the market information. For example, while planning any apparel product, the companies are required to recognize information such as the tone of colour, fine difference of dimensions, nuance of the fabrics, the general feel of the whole product and so on. Except in the case of special goods, ordinary consumers would evaluate the apparel products according to extrinsic factors.

We were certain that we could obtain information through the Internet in real time; however, in some cases, it was more important to obtain information 'face-to-face'. Daft et al. (1987) proposed that all means of communication, such as face-to-face, telephone, e-mail, notes and so on, had the capacity to resolve ambiguity and facilitated shared understanding. These media could be ranked based on their capacity, which was referred to as 'media richness'. The richer the media was, the more capacity it had. The capacity was based on the following four criteria (Daft et al., 1987; Trevino et al., 1990): (1) the availability of instant feedback, enabling quick agreement regarding a common interpretation or understanding; (2) the capacity of the medium to transmit multiple cues such as body language, voice tone and inflection in order to convey the interpretations; (3) the use of natural language, rather than numbers, to convey the subtleties; and (4) the personal focus of the medium.

Based on the above discussions, we can say that it would be desirable for the

apparel companies that need product development based on ambiguous information to collect and analyse market information through the 'rich' media. Further, the companies that directly communicate with consumers through rich media such as face-to-face communication have a higher possibility of interpreting ambiguous market information. By way of contrast, the companies that use only the lean media such as memos, reports and images via the Internet face considerable difficulties because these processed media have already lost rich information that would be desired for apparel product planning.

It is assumed that direct communication with consumers would be easier for companies that are located in sophisticated urban markets. The companies would have many more "chances" to contact the highly fashion-sensitive consumers compared with companies that are not located in close proximity to such a market irrespective of whether or not they are conscious of this opportunity. The planning department staff located near the urban market could have access to the consumers' multiple cues and natural language. Although the companies located at a distance from the urban market might directly communicate with the consumers through group interviews and so on, resulting in time-consuming procedures as well as wasted labour expenses.

In this article, we investigated what factors affected the apparel wholesalers' decisions to implement self-planning functions. In the following section, we explain the adopted methodology and data used in our analysis.

Method and Data

Probit and Multinomial logit models

We conducted two kinds of empirical analysis. First, we focused on the self-planning functions of apparel wholesalers and then analysed what factors affected the decisions they made. Second, we categorized the apparel wholesalers as follows: (1) apparel wholesalers who have self-planning functions and handle only their own planned goods (hereafter, we will refer to this category as C1); (2) apparel wholesalers who have self-planning functions; however, they handle not only their own planned goods but also goods planned by other suppliers (C2); (3) apparel wholesalers who do not have self-planning functions and handle goods planned by other suppliers (C3); and (4) apparel wholesalers

who do not have self-planning functions and handle only goods planned by a particular supplier (C4). We then analysed those factors that affect whether or not to have self-planning functions as well as to handle goods planned by other suppliers. Therefore, we applied the two kinds of models with qualitative dependent variables. One is the Probit model and the other is the Multinomial logit model. In the Probit model, the dependent variable (Y_{PB}) takes the value of 1 if the apparel wholesalers have a self-planning department, which also means that they have their own brands and the value of 0, if they do not have their own planning department. On the other hand, in the Multinomial logit model, the dependent variable (Y_{ML}) takes the value from 1 to 4 as follows: 1 if apparel wholesalers are categorized into C1; 2 if apparel wholesalers are categorized into C2; 3 if apparel wholesalers are categorized into C3; and 4 if apparel wholesalers are categorized into C4.

The linear regression models of the Probit and Multinomial logit models are defined as follows:

[Probit model]

$$\begin{aligned} Y_{PB} &= \alpha + \beta_{SCALE}\,SCALE + \beta_{UBN}\,UBN + \beta_{SCLUBN}\,SCLUBN \\ &\quad + \beta_{GOODS}\,GOODS + \beta_{AREA}\,AREA + \beta_{PUPW}PUPW \\ &\quad + \beta_{SUPW}\,SUPW + \beta_{PUPD}\,PUPD + \beta_{SAPD}\,SAPD \end{aligned} \tag{1}$$

[Multinomial logit model]

$$\begin{aligned} Y_{ML} &= \alpha + \beta_{SCALE}\,SCALE + \beta_{UBN}\,UBN + \beta_{GOODS}\,GOODS \\ &\quad + \beta_{AREA}\,AREA + \beta_{PUPW}PUPW + \beta_{SUPW}\,SUPW + \beta_{PUPD}\,PUPD \\ &\quad + \beta_{SAPD}\,SAPD \end{aligned} \tag{2}$$

where SCALE is a proxy of the size of apparel wholesalers; UBN is a location dummy variable; SCLUBN is a cross term of SCALE and UBN; GOODS is the number of goods treated by the wholesalers; AREA is a percentage of the transaction amounts in the area of the prefecture where the apparel wholesalers are located; PUPW and SUPW are composite variables of pressures from suppliers and retailers; and PWPD and SAPD are the trading area dummy variables.

Data

All the data used in this study with the exception of sales amounts were gathered from the questionnaire survey conducted in February 2006. We selected observations from The Yearbook of Textile/Apparel Companies, edited by the Credit Exchange Agency Ltd. in Japan. The total sample size was 3,008 in the category of wholesalers dealing with men's wear, women's wear, children's wear, school uniforms, work wear, knitted wear, casual wear, jeans, sports wear and shirts. The questionnaire survey was conducted in two steps. First, a questionnaire was mailed to 300 companies randomly selected from the 3,008 observations in order to check the consistency between the questions and the realities of the apparel wholesalers. Second, we obtained answers from this survey, checked the consistency of the questions and then dispatched the modified questionnaire to 2,708 companies. The total number of usable questionnaires was 470 — a response rate of 17.4%.

< Take in Table 2 >

The variables used for the estimation of the Probit and Multinomial logit models are shown in Table 2, and the independent variables can be defined as follows: A proxy of a size of apparel wholesalers (SCALE) is a sales amount sourced from The Yearbook of Textile/Apparel Companies. For a location dummy variable (UBN), we defined UBN = 1 if an apparel wholesaler is located in the prefecture that includes Tokyo, the national capital of Japan or the prefecture where there is/are government-ordinance-designated city/cities [2], and UBN = 0 otherwise. A percentage of transaction amounts in the area of the prefecture where the apparel wholesalers are located (AREA) is defined as transaction amounts in the area of the prefecture where the apparel wholesalers are located per total transaction amount. The composite variables of pressures from suppliers and retailers (PUPW and SUPW) are defined as follows: PUPW takes the value from 0 to 4 depending on the number of statements marked by the apparel wholesalers. The statements are (1) we obtain goods from a particular supplier and the share of total purchases is very high; (2) information from a

particular supplier is very important for decision making; (3) advice regarding administration from a particular supplier is very important; and (4) financial support from a particular supplier is very important. The SUPW is also constructed in the same manner as the PUPW. The trading area dummy variables (PWPD and SAPD) are defined as follows: PWPD/SAPD = 1 if the apparel wholesalers select the statement that we obtain/sell goods from/to a particular district and PWPD/SAPD = 0 otherwise.

Estimation Results

While estimating the Multinomial logit model, we must eliminate the indeterminancy in the model (Greene, 2003). Therefore, we normalized C2, C3 and C4 by C1, which also meant that we assumed apparel wholesalers made independent decisions regarding the categories they selected. Table 3 shows the estimated results of these models.

< Take in Table 3 >

The estimated coefficient of SCALE in the Probit model shows a positive sign and is statistically significant at the 10% level, whereas that of C3 in the Multinomial logit model shows a negative sign and is statistically significant at 1% level. This indicates that large-scale apparel wholesalers tend to have self-planning functions in contrast to small-scale apparel wholesalers who tend to be apparel wholesalers who only obtain goods from other suppliers. The estimated coefficient of UDAM in the Probit model shows a positive sign and is statistically significant at the 1% level, whereas C3 and C4 in the Multinomial logit model show a negative sign and are statistically significant at 1% and 10% levels, respectively. This indicates that the apparel wholesalers located in urban areas tend to have self-planning functions, in contrast with those located in rural areas who tend to be apparel wholesalers who only obtain goods from other suppliers. In order to investigate the complementarities between the size and the location of apparel wholesalers, we applied a cross term variable (SCLUBN) to the Probit model. The estimated coefficient of SCLUBN shows a positive sign, indicating that the apparel wholesalers, who are large as well as located in urban

areas, tend to have self-planning functions. We can see this in Table 4; however, we cannot say this with certainty, even at the 10% significance level. However, the calculated P-value of the coefficient is 0.106. Therefore, we believe that we can obtain a reasonable result.

With regard to the coefficient estimation results of GOODS and AREA, we could obtain almost the same results — the estimated coefficients show negative signs in the Probit model, whereas those of C2, C3 and C4 in the Multinomial logit model show positive signs and all are statistically significant. These indicate that the apparel wholesalers who have their own brands as well as handle only their own planned goods tend to treat a small range of goods and conduct business with suppliers and retailers located throughout Japan. In other words, the apparel wholesalers who handle goods planned by other suppliers, irrespective of whether or not they have their own brands, tend to handle a wide range of goods and conduct business with suppliers and retailers located in the same area.

Further interesting results are that the coefficient estimates of C4 for PUPW and C3 for SAPW in the Multinomial logit model show negative and positive signs, respectively. This indicates that apparel wholesalers who treat goods supplied by particular suppliers tend to be under pressure from the suppliers, whereas those who obtain goods from many suppliers tend not to be under pressure from the retailers. Furthermore, the coefficient estimates of PUDAM and SADAM in the Probit model show negative signs and are statistically significant, indicating that the apparel wholesalers who have their own brands and handle only their own planned goods conduct business with suppliers and retailers located throughout Japan. On the contrary, the estimated coefficients of C3 and C4 in the Multinomial logit model show positive signs and are statistically significant, indicating that apparel wholesalers who handle goods planned by other suppliers tend to supply goods to retailers located in a particular area.

Conclusions

This paper focused on the recent trend that apparel wholesalers have struggled to survive in the current difficult circumstances of *Oroshi-no-Nakanuki*, that is,

retailers and manufacturers bypass wholesalers entirely, in order to implement self-planning functions that help in creating unique brands. Further, this paper investigated what factors affected whether or not to have self-planning functions in the case of apparel wholesalers by using an empirical approach such as the Probit and Multinomial logit models. Before conducting an empirical analysis, we conducted a questionnaire survey that included a nationwide listing of apparel wholesalers in the categories of men's wear, women's wear, children's wear, school uniforms, work wear, knitted wear, casual wear, jeans, sports wear and shirts. The main findings are as follows:

(1) The large-scale apparel wholesalers who are located in urban areas tend to have self-planning functions. This result also implies that the small-scale apparel wholesalers who are located in rural areas do not have the ability to implement self-planning functions and have no other choice but to handle goods planned by other suppliers.
(2) The apparel wholesalers who handle goods planned by other suppliers tend to treat a wide range of goods and conduct business with the retailers located in the same area. On the contrary, apparel wholesalers who have their own brands and handle only self-planned-goods tend to handle narrow range of goods and conduct business with retailers located throughout Japan.
(3) The apparel wholesalers who handle goods planned by a particular supplier tend to be under pressure from the supplier, whereas the apparel wholesalers who conduct business dealings with many suppliers have the ability to promote themselves to the retailers.
(4) The apparel wholesalers who have self-planning functions tend to obtain goods within Japan and from other countries and sell goods throughout Japan, whereas the apparel wholesalers who do not have self-planning functions tend to obtain and sell goods from or to a particular area of Japan.

In this paper, we were able to clarify the factors that have affected the recent trend of having self-planning-functions within the Japanese apparel wholesalers; however, we were unable to clarify whether or not apparel wholesalers with planning functions were successful or better off than before. We have left this

task for future research.

Notes

1. We were unable to solely use the apparel category; therefore, we used the category of apparel, apparel accessories and notions (Industrial Classification 502) as a proxy of apparel.
2. There are 17 government-ordinance-designated cities (Sapporo, Sendai, Saitama, Chiba, Yokohama, Kawasaki, Niigata, Shizuoka, Hamamatsu, Nagoya, Kyoto, Osaka, Sakai, Kobe, Hiroshima, Kitakyushu and Fukuoka) in Japan. The government-ordinance-designated city is defined as a city whose population will be expected to be more than a million. The main characteristics of a government-ordinance-designated city are that the public services and public projects are operated by the city itself instead of prefectural governments and that it receives direct financial support by the Japanese government. Due to these reasons, we believed that the prefectures that contain the government-ordinance-designated city/cities were urbanized in comparison with other prefectures.

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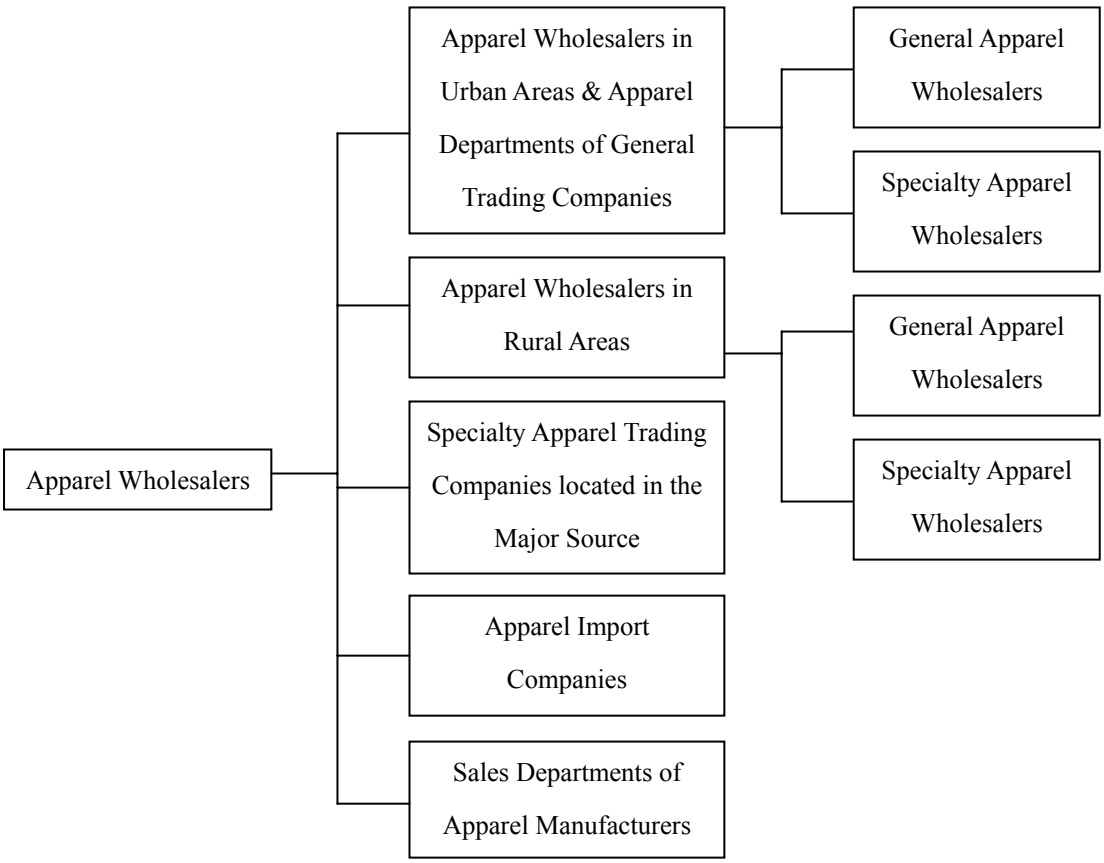

Figure 1. Classification of apparel wholesalers in Japan

Source: Japan Fashion Education Promotion Association (1995)

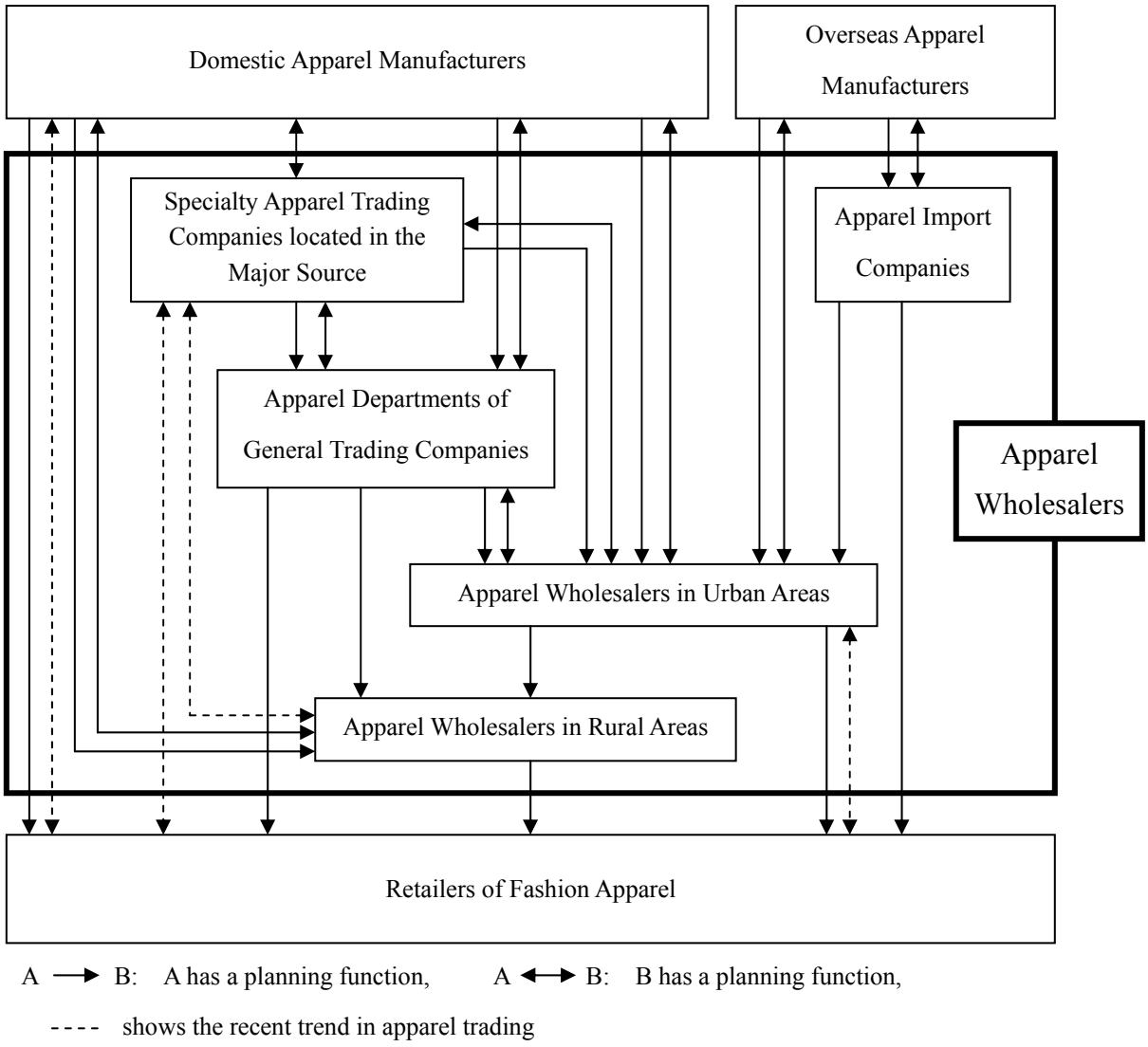

Figure 2. Trading flow of apparel in Japan

Source: Japan Fashion Education Promotion Association (1995)

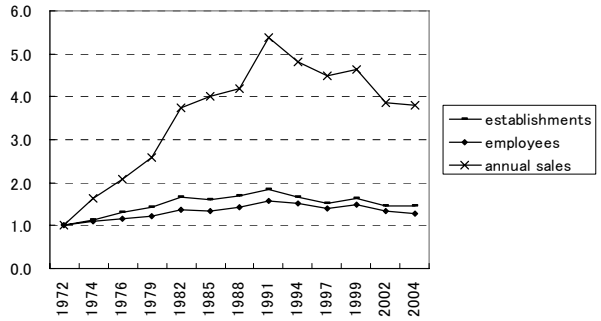

Figure 3a. Trends of the number of establishments, employees and annual sales (All wholesalers, 1972 = 1.0)

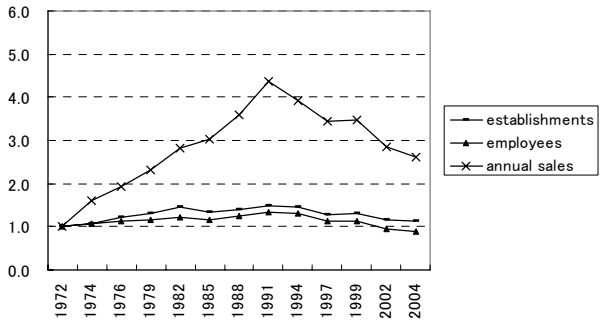

Figure 3b. Trends of the number of establishments, employees and annual sales (Wholesalers of apparel, apparel accessories and notions, 1972 = 1.0)

Source: Research and Statistics Department, Economics and Industrial Policy Bureau, Ministry of Economy, Trade and Industry, 'Statistics by Distribution Channel', in the *Census of Commerce 2002* (2004)

Table 1. Reduction rate of the number of establishments, employees and annual sales from 1997 to 2002 (in percentage)

	All wholesalers			Apparel, apparel accessories and notions		
Distribution level	establishments	employees	annual sales	establishments	employees	annual sales
Total	–11.6	–13.2	–22.4	–14.8	–22.6	–24.6
Primary wholesalers	–16.5	–16.6	–19.0	–17.0	–25.2	–24.9
Direct trade wholesalers	–20.4	–21.0	–21.4	–22.0	–27.9	–27.4
Retail direct trade wholesalers	–21.6	–21.3	–22.5	–20.6	–26.8	–25.3
Other direct trade wholesalers	–19.1	–20.7	–21.0	–31.2	–38.8	–43.8
Source wholesalers	–7.0	–4.4	–11.7	–6.4	–17.0	–19.2
Secondary wholesalers	–6.3	–6.2	–14.6	–9.3	–20.7	–23.4
Intermediate wholesalers	5.8	4.4	–8.1	2.3	–6.3	2.9
Final wholesalers	–10.6	–10.2	–18.3	–14.2	–25.7	–34.4
Other wholesalers	–14.9	–17.7	–31.2	–21.7	–19.1	–25.3

Source: Research and Statistics Department, Economics and Industrial Policy Bureau, Ministry of Economy, Trade and Industry, 'Statistics by Distribution Channel', in the *Census of Commerce 2002* (2004)

Table 2. Variables

Variable name	Unit	Mean	Standard deviation	Minimum	Maximum
Y_{PB}	-	0.550	0.498	0	1
Y_{ML}	-	2.329	0.886	1	4
SCALE	Million yen	1,213	4,130	25	52,234
UBN	-	0.751	0.433	0	1
GOODS	-	4.005	2.261	1	11
AREA	%	46.031	32.940	0	100
PUPW	-	1.530	0.951	0	4
SUPW	-	1.521	0.870	0	4
PUPD	-	0.454	0.500	0	1
SAPD	-	0.537	0.499	0	1

Table 3. Estimation results

Variable	Probit		Multinomial Logit					
			C2		C3		C4	
	Estimate	t-statistic	Estimate	t-statistic	Estimate	t-statistic	Estimate	t-statistic
C	0.571	1.446	–0.945	–1.213	–1.503	–1.733*	–3.452	–2.951***
SCALE	0.001	1.855*	–0.00003	–0.784	–0.001	–3.117***	–0.00004	–0.466
UDAM	1.012	3.580***	–0.645	–1.165	–1.685	–2.960***	–1.221	–1.757*
SALEUBN	–0.001	–1.618	-	-	-	-	-	-
GOODS	–0.119	–2.936***	0.355	3.338***	0.545	4.667***	0.243	1.645*
AREA	–0.009	–3.112***	0.022	3.112***	0.032	4.206***	0.031	3.248***
PUPW	–0.091	–1.027	0.261	1.357	0.326	1.482	0.654	2.280**
SAPW	0.097	0.995	–0.219	–1.054	–0.448	–1.861*	–0.261	–0.860
PUDAM	–0.300	–1.655*	0.065	0.159	0.675	1.488	0.084	0.143
SADAM	–0.700	–3.645***	0.543	1.257	1.333	2.806***	2.020	2.995***
Scaled R-squared	0.371				0.466			
Log likelihood	–153.761				–307.283			

***indicates significance at the 1% level.

** indicates significance at the 5% level.

* indicates significance at the 10% level.