Factor analysis of enterprise preferences for Green Purchasing
(Abstract)

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- " Green Purchasing Network" is a network for small and medium-sized enterprise and enterprises that acquire ISO14001 in Osaka. They treat business matching between small and medium-sized enterprises which product environmental products and enterprises which have ISO14001.

- Green Purchasing Network has done the questionnaire survey to the network participating companies for the past five years. This paper tries to reveal recognition of the enterprise's green procurement, and what kind of products they want.

Outline of questionnaire data
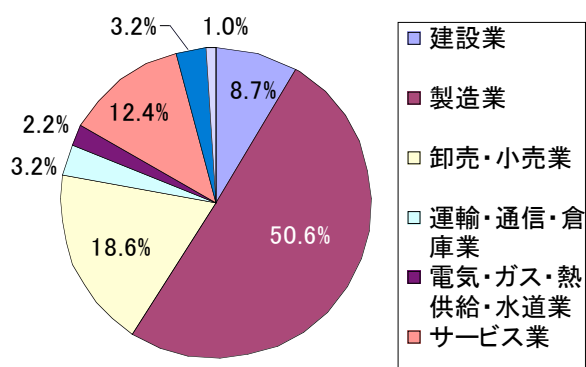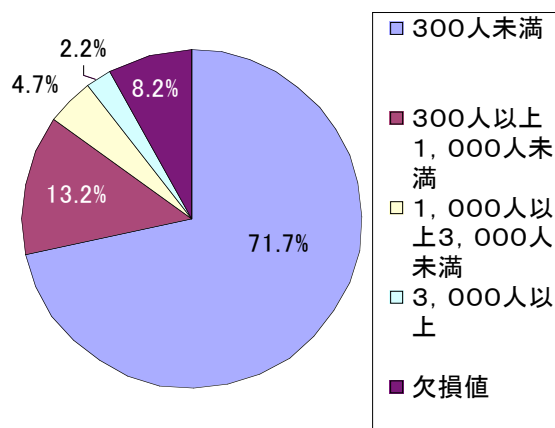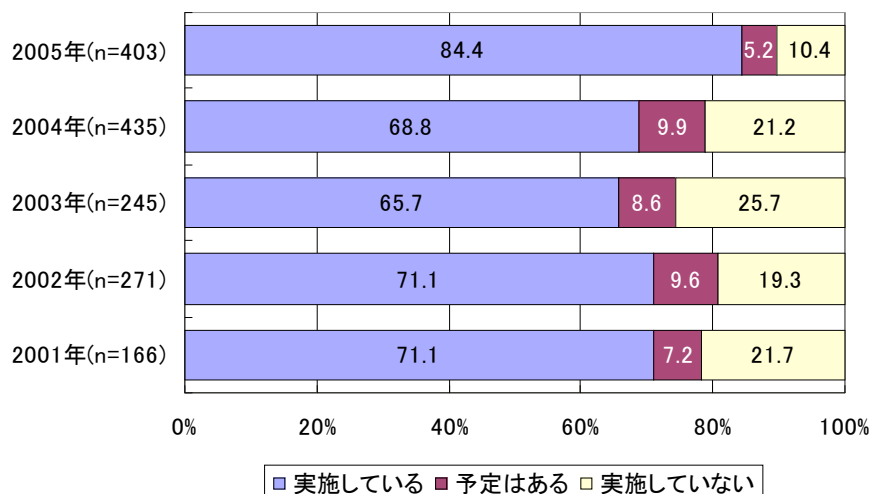
1) Sample profiles

Figure1: type of business

建設業
製造業
卸売・小売業
運輸・通信・倉庫業
電気・ガス・熱供給・水道業
サービス業

3.2% 1.0%
8.7%
12.4%
2.2%
3.2%
18.6%
50.6%

Figure2: Number of employees

300人未満
300人以上1,000人未満
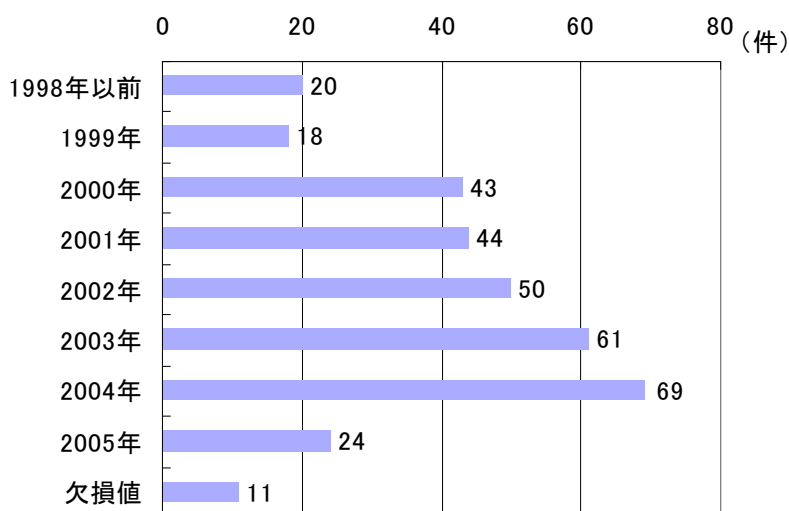1,000人以上3,000人未満
3,000人以上
欠損値

2.2%
4.7%
8.2%
13.2%
71.7%

- The majority of answer is "Manufacturing"; 50.6%. "Wholesale and retail trade" is 18.6%, "Service industry" is 12.4%, and "Construction industry" is 8.7 %. Besides this, the answer according to a public utility such as "Transportation, communication, and warehouse industry" and "Electricity, gas, heat supply, and water service industry" though the number of samples is little.

- 70 percent of total answer is the office of a small and medium-sized scale of "Less than 300 people".

2) The execution rate of the green procurement

Year	実施している	予定はある	実施していない
2005年(n=403)	84.4	5.2	10.4
2004年(n=435)	68.8	9.9	21.2
2003年(n=245)	65.7	8.6	25.7
2002年(n=271)	71.1	9.6	19.3
2001年(n=166)	71.1	7.2	21.7

・ The execution rate by the result of the questionnaire of five years in the past changed by 71.1%, 71.1%, 65.7%, 68.8%, and 84.4 percent.

3) Date of beginning for Green Purchasing

Year	件
1998年以前	20
1999年	18
2000年	43
2001年	44
2002年	50
2003年	61
2004年	69
2005年	24
欠損値	11

・ The office that begins Green Purchasing in each fiscal year increases between 2000 and 2004. Especially, there are a lot of offices that execute green purchasing from April 2001 when the green purchase low was enforced.

Outline of questionnaire data analysis result
1) The analysis of binary choice model
・ Factor analysis of the office execution for Green purchasing especially in the raw material, production facilities, and the building material and buildings.
・ The explained variables are that 50% or more of all procurements of each three items put with 1 and other those 0. The explaining variables are current profit of three years, type of business, number of employed people, and the ratio of the external transaction.

(*: significant in 5% level, **: significant in 1% level.)

Raw material parts (50% or more)

	C	Manufacturing	Labor	Number of sample	Log likelihood
Coefficient	-1.44322**	0.798683**	0.0003731*	264	-153.622
t-statistic	-6.1602	2.80761	1.67501		

The office where the green procurement ratio of the raw material parts exceeded 50% of all procurements is "Manufacturing industry" and many numbers of labor existed. The ratio of the external transaction was not significant here as the explanation of the green procurements of the raw material parts.

Production facility (80% or more)

	c	An increase in current profit	Transportation /communication industry	Labor	Number of sample	Log likelihood
Coefficient	-6.06267**	2.60673**	2.90832**	0.001124**	245	-20.237
t-statistic	-4.8077	2.0782	2.13118	2.12827		

The office where the green procurement ratio of production facilities exceeds 80% of all procurements is "Transportation, communication, and the warehouse industry", and increasing in current profit.

Building material(80% or more)

	c	An increase in current profit	Dealings with EU	Labor	Number of sample	Log likelihood
Coefficient	-4.79358**	1.61528*	0.0009392**	0.001124**	251	-29.0095
t-statistic	-6.10953	1.88022	2.40064	2.12827		

The office where the green procurement ratio of the building materials exceeds 80% of all procurements is increase of current profit and dealing with foreign countries (EU), and is an office where a lot of numbers of labor exist.