

95 年博士班資格考（管理計量方法）

4 小時，closed book

Questions: 題目分成 A、B 二部份，作答時，請注意各題之比例配分並標示題號

Part A: “eCommerce adoption in developing countries: a model and instrument”

1. For the preliminary test of the model (pp. 887), this study claimed that the model satisfactorily discriminates adopters from non-adopters and the different levels of institutionalization of eCommerce, please criticize the presentation results of using multiple discriminant function analysis (10%)
2. Based on the PERM model (Figure 3, pp. 887) and variables in final instrument (Appendix E, pp. 895), please write the equations (measure and structural) (25%), **in terms of LISREL notation** (symbols), and transfer into Matrix forms (15%).

Part B: *Basic concepts and techniques*

1. When should we use ANOVA and MANOVA? (5%)
2. (1) State the major purpose and limitation of factor analytic techniques. (5%)
(2) How to get factor scores? and how to use them in information domain? (6%)
3. (1) What are the differences between hierarchical and nonhierarchical clustering techniques? (5%)
(2) Describe the guidelines for cluster validation. (5%)
4. The partially completed ANOVA table for a randomized block design is shown below. Complete the ANOVA table. (9%)

Source	df	SS	MS	F
Treatment	3	15	a	b
Blocks	c	20	d	e
Error	f	g	h	
Total	11	44		

5. From Table 1 and the paper title: “A multivariate framework for the analysis of the digital divide: Evidence for the European Union-15, Information &

Management 43 (2006) 756–766”. (15%)

(1) Please stepwise describe how to validate the digital divide for the European Union-15.

(2) For your research purposes, you use what multivariate analysis methods, why use the methods.

(3) What results could be gotten for your methods?

Table 1. Raw data for European Union-15										
	PC	TEL	BRO	SER	WEB	B2B	COST	HOH	PS	APOP
Austria	30	46.9	2.4	109	73.7	32.4	28.5	46.2	40.2	57
Belgium	36	50.0	2.3	42	60.5	23.4	37.0	34.7	22.9	51
Denmark	45	72.6	2.3	98	74.6	41.9	26.3	58.9	58.6	73
Finland	42	54.2	0.7	127	77.2	40.2	17.0	48.1	65.7	67
France	34	57.7	0.6	33	59.1	10.5	26.5	26.2	48.8	45
Germany	35	63.6	1.0	78	80.0	30.5	25.4	37.9	40.1	56
Greece	8	53.1	0.0	17	57.5	13.1	39.0	11.7	39.0	36
Ireland	39	41.6	0.0	123	64.8	33.6	30.4	46.2	68.4	43
Italy	20	47.2	0.4	22	62.8	14.5	28.1	32.9	38.9	58
Luxemburg	52	76.2	1.6	155	64.2	21.9	35.4	43.6	15.2	66
Netherlands	43	62.6	2.7	67	76.9	31.2	29.1	58.5	36.6	65
Portugal	12	44.0	0.6	19	54.2	5.3	31.6	23.4	51.4	27
Spain	17	43.7	0.5	30	57.2	18.4	27.7	23.4	50.4	42
Sweden	56	63.8	2.3	142	75.7	29.3	28.2	64.3	61.0	71
U.K.	37	53.1	0.3	132	77.1	28.0	24.2	46.5	50.2	59

Notation:

PC: Number of computers per 100 inhabitants

TEL: Number of main telephone lines per 100 inhabitants

BRO: Number of broadband connections per 100 inhabitants

SER: Number of secure servers per million inhabitants

WEB: Percentage of businesses with a website

B2B: Percentage of businesses buying online

COST: Internet dial up access costs for a residential user (off peak) (USD PPP)

HOH: Percentage of households connected to the Internet

PS: Percentage of public services online

APOP: Percentage of active population using a computer for professional purposes