

Quantitative Research Methods – Management Assignment

Instructions:

Answer ALL questions; there are five tasks.

Do not write the questions in the submitted text.

Only write the question number.

Marks will be awarded for content, presentation and quality of the analysis. Deadline for submission, upload by 17 January 2022

Question 1

You are carrying out research on the behaviour of tourists within a host country. In order to assist your research you need to prepare a questionnaire. Kindly provide a sample of your questionnaire where you have questions which are in the following format:

- (a) A question asking for a binary variable.
- (b) A question asking for a nominal variable.
- (c) A question asking for a continuous variable.
- (d) A question asking for an ordinal variable.
- (e) A question using a Likert scale.

In addition, suggest a suitable null and alternative hypothesis to compliment the study.

Question 2

During the museum sessions of December, the following information concerning the choice of main programs were noted on a daily basis. In fact, the following number of visitors opted for a heritage experience:

76; 44; 65; 30; 74; 62; 52;

34; 55; 77; 89; 45; 88; 64;

64; 88; 87; 88; 77; 63; 53;

29; 33; 88; 76; 77; 90; 34;

77; 45; 53;

You are required to:

- (a) Construct a frequency distribution and a relative frequency distribution for the data.
- (b) Construct a cumulative frequency.
- (c) Construct a histogram for the data provided.
- (d) Find out the mode and the median.
- (e) Calculate the mean of the distribution and compare it the mode and median.
- (f) Address the shape of the histogram and relate the appearance to the outcome of your calculation on the measure of central tendency. Also comment on the dispersion of data.

Question 3

You have been presented with an extract from the NSO Report for October 2021, namely Table 6: Profile of inbound tourists by period of departure, (Attached to the exam paper).

- (a) Plot a stacked bar chart to represent the age of the tourists arriving over the years 2019-z1;
- (b) Analyse the organisation of stay, by combining a bar chart and a line graph to distinguish between the two sets of data.

Question 4

A mystery shopper was analysing the outcome of one's team. The data collected consisted of the score each outlet was given by mystery shopper and the average price the service claims.

Outlet No: Score Average price

I	/f	III	IV	V	VI	VII	VIII	IX	X
5	6	9	7	5	5	4	8	7	4
12	13	20	22	12	14	12	18	17	10

You are required to:

- (a) Plot the data on a scatter diagram.
- (b) Calculate the coefficient of correlation and indicate whether you think that it suggests significant relationship between the score and the price.
- (c) Any additional comments that you deem fit.

Question 5

A Gym instructor calls on customers to follow a four-tier course in slim management. The customer's performance is quite significant and from a review carried out it appears that customer in the first tier has a positive outcome of 80%; whilst those attempting tier 2 have a successful performance of 75%; whilst the third tier the likely score is 60%. As regard the final tier the score is 55%.

Customers who fail in one tier are allowed to carry out a resit, to complete the programme. You are requested to construct a probability tree and use it to work out:

- (a) The probability that all tiers would be successful.
- (b) The probability that customers would require a resit session.
- (c) The probability that customers would be ruled out since they have failed two tiers.

Table 6. Profile of inbound tourists by period of departure

Characteristics	January-October			Change	Percentage change
	2019	2020 ¹	2021	2021/2020	
Total inbound visitors	2,435,485	631,636	766,325	134,689	21.3
Overnight cruise passengers ²	18,061	946	1,110 ³	164	17.3
Inbound tourists	2,417,424	630,690	765,215	134,525	21.3
Mode of travel					
Air	2,372,680	614,856	745,380	130,524	21.2
Sea	44,744	15,834	19,835	4,001	25.3
Sex					
Males	1,191,775	333,939	395,700	61,762	18.5
Females	1,225,649	296,751	369,515	72,763	24.5
Age group					
0-24	500,899	140,233	178,963	38,730	27.6
25-44	965,054	259,130	322,910	63,780	24.6
45-64	710,815	183,294	208,666	25,373	13.8
65 or more	240,655	48,034	54,676	6,642	13.8
Markets³					
EU	2,019,087	428,502	535,181	106,680	24.9
of which: Euro area	1,172,610	345,699	429,617	83,918	24.3
Non-EU	398,337	202,189	230,034	27,845	13.8
Purpose of visit					
Holiday	2,166,000	562,257	686,827	124,570	22.2
Business and professional	150,308	44,598	44,023	-	-
Other (including educational, religious and health tourism)	101,115	23,835	34,365	10,530	44.2
Organisation of stay					
Package	721,909	158,442	177,914	19,472	12.3
Non-package	1,695,514	472,249	587,301	115,052	24.4
Frequency					
First-time tourists	1,819,874	450,893	551,869	100,976	22.4
Repeat tourists	597,549	179,798	213,346	33,549	18.7
once a year or less	447,956	121,871	155,579	33,709	27.7
more than once a year	149,593	57,927	57,767	-	-
Duration of visit					
1-3 nights	493,271	155,354	114,169	-41,186	-26.5
4-6 nights	719,828	185,397	194,970	9,573	5.2
7 nights or more	1,204,324	289,940	456,077	166,137	57.3
Average length of stay (nights)	7.1	7.6	8.8	1.2	-

¹ Provisional² Refer to methodological notes 6 and 7.³ Data refers to January-June 2021 as a result of delays in data provision from source for July-October 2021.⁴ Refer to methodological note 8.

Notes:

1. Totals may not add up due to rounding.

2. Changes denoted by the dash symbol (-) should be treated with caution. For more information, please refer to methodological note 5.