Mgm600-0803b-02 applied managerial decision-making - phase 4 individual project

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Project

Name of the Student

Subject

Name of the Concerned Professor

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Applied Managerial Decision-Making

While studying the characteristics of a series involving only a single variable,

which is generally referred to as univariate distribution, one is often required

to confine oneself to the measure of central tendency, its variation,

skewness, etc. However, when the idea of a bivariate distribution or a

multivariate distribution comes into scenario, one may require to know how

the two or more given variables are related to each other and to quantify the

extent of their relationship. At such times, correlation allows a manager to

assess how the two variables are related. Thus:

" Correlation is the statistical measurement of the relationship between two

variables. Possible correlations range from +1 to -1 (Wagner, 2008)."

To gauge the extent of correlation between two variables, it is vital to know

whether the correlation between them is positive or negative (Pink Monkey,

2008):

1. Positive Correlation

This type of relationship between the two variables exists when both of them

move in the same direction, i. e. either both of them move upward or

downward. If we consider two variables X and Y, they are positively or

directly correlated if the have values as given under in two cases and when

these values are plotted on a graph, the graph will rise from left to right.

(a) X = 5 8 9 13 16 20 25

Y = 23 29 31 35 42 43 45

(b) X = 100 95 80 68 55 50

Y = 20 18 17 14 10 9

Y Y

X'XX' X

Y'Y'

Positive and Linear CorrelationPositive and Non-Linear Correlation

2. Negative Correlation

This type of relationship exists between the two variables when both of them move in the opposite directions i. e. one variable moves upwards while the other moves downwards. If two variables are negatively correlated then they will have the values as given under and if these values are plotted on a graph, the graph will fall from left to right.

(a) X = 5 8 9 13 16 20 25

Y = 45 43 42 35 31 29 23

(b) X = 100 95 80 68 55 50

Y = 9 10 14 17 18 20

Y

Y

X'

XX'X

Y'Y'

Negative and Linear Correlation Negative and Non-Linear Correlation

Correlation can further be classified as:

1. Perfect Correlation

Correlation between the two variables is said to be perfectly positive if the coefficient of correlation is calculated as +1 and perfectly negative if the coefficient of correlation is calculated as -1.

2. No Correlation

In case there exists no interdependence between two given variables, the correlation will not exist and its value will be 0.

Another possible classification of correlation is:

1. Simple Correlation

Simple correlation is confined to deducing relationship between only two variables say X and Y.

2. Multiple Correlation

Multiple correlation refers to the relationship between more then two variables at a time.

Forecasting is a critical job for the managers around the world and correlation is a statistical tool that can considerably help the managers at Widge Corp to arrive at decisive conclusions, so far as the marketing of their soft drinks in public schools is concerned.

1. According to the article ' Closing the Digital Divide: Internet Subsidies in Public Schools by Goolsbee and Guryan, there definitely exists a positive correlation between the two variables ' Number of school lunch eligible students in the school' and ' Amount of federal and state funding for the school for education related programs' (2003) . Thus it will be positively beneficial for the managers at Widge Corp to focus their marketing activities

on the schools where the number of ' School lunch eligible students' is high.

Number of school

lunch eligible students

in the school

Amount of Federal and State funding.

2. As per the given study, there exists no correlation between ' Impact of

subsidy received'

the ' Age of students at school'. Pragmatically speaking, the given two

variables are not of

much use to the managers at Widge Corp.

Age of Age of students

studentsat school

at school

Impact of subsidy receivedImpact of subsidy received

3. Also their exists zero correlation between the variables ' Number of

classrooms connected

to the internet' and ' Student Performance'.

Number ofNumber of

connectedconnected

classroomsclassrooms

Student performance

Student performance

3. According to the given article, there exists a positive correlation between '

Teacher's

comfort level with the internet' and the ' Ability of teachers to use Internet

effectively with their students'.

Teacher's comfort level

with the Internet

Ability of teachers to use Internet effectively with their students

Thus the schools where the teachers are more conversant with the Internet

are more likely to receive Federal and State funding and it will be beneficial

for the managers to focus on such schools.

Variable AVariable BCorrelation

Number of schoolAmount of funding received+ve

Lunch eligible students

Impact of subsidyAge of students at schoolzero

received

Number of classroomsStudent performanceminimal

connected to the

Internet

Teacher's comfort Ability of teachers to use

level with theInternet effectively with+ve

Internettheir students

References

Goolsbee, D., & Guryan, J. (2003). Closing the Digital Divide: Internet

Subsidies in Public

Schools. Capital Ideas, Vol. 5 No. 1. Retrieved Sept. 27, 2008, from

http://www. chicagogsb

. edu/capideas/summer03/digitaldivide. html

Types of Correlation, (2008). Pink Monkey. com. Retrieved Sept. 27, 2008,

from http://www

. pinkmonkey. com/studyguides/subjects/stats/chap6/s060630. asp

Wagner, K. V., (2008). Correlation. Psychology Dictionary. Retrieved Sept.

27, 2008, from

http://psychology. about. com/cindex/g/def_correlation. htm