How to use truth tables to analyse arguments

Analysis of Premise Arguments Using Truth Tables In this exercise, I intend to use the truth table to analyse the following two premises:

If you invest in any international Oil and Mineral Corporation, then you get rich.

You failed to invest in any international Oil and Mineral Corporation therefore, you didnt get rich.

A. True

B. False

The above argument provides two conditions, the only way you get rich is by investing in international Oil and Mineral Corporations failure to which you fail to get rich.

Premise 1: If you invest in any international Oil and Mineral Corporation, then you get rich.

Premise 2: You failed to invest in any international Oil and Mineral Corporation.

Symbolic Form

In reducing the above statement to symbols, we let:

p be the statement " You invest in an international Oil and Mineral Corporation." and

q be the statement " You get rich."

The symbolic form of the above argument is thus (Florida State University. n. d);

$p \rightarrow q$

$\sim p$___

$\therefore \sim q$

Truth Table

The truth table consists of columns for each premise and one for the

conclusion.

Statement 1

Statement 2

Premise 1

Premise 2

Conclusion

p

q

p → q

~ p

~ q

1

T

T

T

F

F

2

T

F

F

F

T

3

F

T

T

T

F

4

F

F

T

T

T

Interpretation

In the first row, the first premise is TRUE while the second premise is FALSE. The conclusion is found to be false. You invest in an international corporation and you get rich. The premise 1 is TRUE thus if you invest in any international Oil and Mineral Corporation, then you get rich. The premise 2 is FALSE thus you invested in the corporations. The conclusion thus is FALSE which reflects that the person gets rich. Hence, the argument is valid. In the second row, the conclusion is true when both premise 1 and premise 2 are FALSE. You invest in an international corporation and you do not get rich. The premise 1 is FALSE thus if you invest in any international Oil and Mineral Corporation, then you will not get rich. The premise 2 is FALSE thus you invested in the corporations. The conclusion is that you do not get rich which is TRUE. Hence, this argument is also valid.

In the third row, both premise 1 and premise 2 are true and yet the conclusion is false. You do not invest in any international corporation, but you get rich. The premise 1 is TRUE thus if you invest in any international oil

and mineral corporation, then you get rich. The premise 2 is also true thus you did not invest in any international corporation. The conclusion is FALSE which means the person gets rich. This shows that the argument is invalid. In the fourth row, the conclusion is TRUE while both premise 1 and premise 2 are TRUE. You do not invest in any international corporation and you do not get rich. The premise 1 is TRUE thus if you invest in any international Oil and Mineral corporation, then you get rich. The premise 2 is TRUE thus if you failed to invest in the corporations. The conclusion is TRUE which means that you do not get rich. This argument is thus valid.

Reference

Florida State University. n. d. How To Use Truth Tables to Analyse Arguments. Retrieved from http://www. math. fsu. edu/~wooland/argumentor/TruthTablesandArgs. html