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## Article

# Logical Reasoning in Management: From "Philosopher Kings" to Logical Managers?

Junior Management Science (JUMS)

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## **Online-Appendix zu**

„Logical Reasoning in Management: From  
“Philosopher Kings” to Logical Managers?”

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# Appendix

## Appendix A: Survey Screenshots

Section 1 of 3

### Logical Reasoning in Management

Have you ever wondered, how good your Logical Reasoning Ability is?  
We are conducting academic research on Logical Reasoning Ability's influence on Management Success.  
Therefore we would be happy, if you would participate in this anonymous survey.  
It will only take you around 5-7 minutes.  
Survey participation is only possible once. You will get the survey confirmation code upon completion!

Age \*

Short answer text

Gender \*

☐ Male

☐ Female

☐ Other

Country of Work \*

Short answer text

Company Size \*

How many people does your company employ?

Short answer text

Company Age \*

For how many years has your company been in existence?

Short answer text

Industry \*

In which industry does your company operate?

1. Agriculture, Forestry and Fishing

2. Manufacturing

3. Energy

4. Construction

5. Wholesale and Retail Trade

6. Transportation and Storage

7. Accommodation and Food Service Activities

8. Information and Communication

9. Financial and Insurance Activities

10. Real Estate

11. Public Administration and Defence; Compulsory Social Security

12. Education

13. Human Health and Social Work Activities

14. Arts, Entertainment and Recreation

Management Responsibility \*

Please estimate how many people you have supervisory power over. (E.g. if you have 2 people you manage, and those two respectively manage 5 others, you would have supervisory over  $2+5+5=12$  people)

Short answer text

## Appendix A: Survey Screenshots

Section 2 of 3

### Logical Reasoning Test

In the following tasks you are given 2 pieces of information that you must assume to be true. Having those in mind, you must decide which of the conclusions follows logically.

Example

GIVEN: If my job is boring, I will quit. SUPPOSE: My job is boring.

➡ It must be the case that I will quit.

1 \*

GIVEN: If it is raining then the roof is wet. SUPPOSE: The roof is wet.

1. It must be the case that it is raining.
2. Maybe it is raining and maybe it is not.
3. It must be the case that it is not raining.

2 \*

GIVEN: If James is a watchman then James likes candy. SUPPOSE: We find out that James is a watchman.

1. It must be the case that James likes candy.
2. Maybe James likes candy, maybe he doesn't.
3. It must be the case that James doesn't like candy.

3 \*

GIVEN: If this rock is a garnet then it is a semiprecious stone. SUPPOSE: This rock is not a semiprecious stone.

1. It must be the case that this rock is a garnet.
2. Maybe this rock is a garnet or maybe this rock is not a garnet.
3. It must be the case that this rock is not a garnet.

4 \*

GIVEN: All roses are flowers.. SUPPOSE: Some flowers fade quickly. Conclusion: Some roses fade quickly.

1. This conclusion is right.
2. This conclusion is not right

5 \*

GIVEN: If Jim cut himself then Jim would be bleeding. SUPPOSE: We found out that Jim did not cut himself.

1. It must be the case that Jim is bleeding.
2. Maybe Jim is bleeding and maybe he is not.
3. It must be the case that Jim is not bleeding.

6 \*

We know the following about the ages of Peter, Quint, Rosie, and Sally: - Peter is older than Quint - Rosie is younger than Quint- Rosie is older than Sally. What can be said about Peter and Sally?

1. Peter is older than Sally
2. Peter is younger than Sally
3. You cannot tell

7 \*

Attention Check: What is 1+3?

1. 2
2. 3
3. 4

8 \*

You work at the post office as a label checker. Cards have a letter on one side and number on the other; cards A-2 and B-3 are sold. You are ONLY checking for the following requirement: If a card has an 'A' on one side, then it has a '2' on the other. Four Cards are lying on your desk. Which cards would you turn around to check whether this specific requirement is fulfilled? (Multiple Choice)

☐ A

☐ B

☐ 2

☐ 3

After section 2 Continue to next section

## Appendix A: Survey Screenshots

Section 3 of 3

### Final Remarks

Description (optional)

Did you have previous contact with formal logic? \*

- Yes, in my math class (e.g. studying set theory or propositional logic)
- Yes, studying philosophy
- Yes, studying for a GMAT/GRE/Interview/another assessment Test
- Yes, in another setting
- No

What's closest to your major? \*

☐ Business

☐ Natural Science (Physics, Chemistry, Biology & related)

☐ Computer Science

☐ Formal Science (Mathematics, Analytic Philosophy & related)

☐ Engineering

☐ Social Science

☐ Liberal Arts & Humanities

What is your highest degree? \*

- High School Diploma / A-Levels / Abitur
- Bachelors Degree
- Masters Degree / Diplom
- MBA
- Ph.D.
- None of the above

Under which circumstances were you raised? \*

A "3" would indicate that you were raised in a family with average income (in relation to the country of residence)

	1	2	3	4	5	
Well below average	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Well above average

How many hours do you work per week? \*

Short answer text

Company (Optional)

Short answer text

Name (Optional)

Short answer text

E-Mail (Optional)

If you are interested in the study findings.

Short answer text

Please explain your management responsibility in 1-2 sentences

Short answer text

Feel free to add comments, suggestions, or problems you experienced!

Short answer text

## Appendix B: Overview categorical variables

Variables	N	%
Gender		
Male	34	42.5
Female	46	57.5
Majors		
Business	34	42.5
Computer Science	13	16.25
Engineering	12	15
Formal Science	7	8.75
Liberal Arts & Humanities	5	6.25
Natural Science	7	8.75
Social Science	2	2.5
Degree		
Bachelors Degree	47	58.75
High School Diploma	16	20
Masters Degree	15	18.75
MBA	1	1.25
None of the above	1	1.25
PhD	0	0
Industry		
Accommodation and Food	5	6.25
Agriculture, Forestry and Fishing	4	5
Arts, Entertainment and Recreation	2	2.5
Construction	3	3.75
Education	2	2.5
Financial and Insurance Activities	7	8.75
Human Health and Social Work	2	2.5
Information and Communication	11	13.75
Manufacturing	26	32.5
Public Administration / Defence	1	1.25
Transportation and Storage	3	3.75
Wholesale and Retail Trade	14	17.5
Parents' Degree		
Bachelors Degree	44	55
High School Diploma	26	32.5
Masters Degree	6	7.5
PhD	2	2.5
None of the above	2	2.5
Formal Logic Experience		
No	23	28.75
Yes, in another setting	8	10
Yes, in my math class	26	32.5
Yes, studying for an assessment test	7	8.75
Yes, studying philosophy	16	20

## Appendix C: LRA Means in different populations & ANOVA-Test Statistics

Variables	F	Pr(>F)	M	SD
Majors	4.3	<0.01		
Business			2.53	1.42
Computer Science			2.53	1.24
Engineering			3.67	2.35
Formal Science			5.57	1.72
Liberal Arts & Humanities			4.2	2.17
Natural Science			3.86	2.54
Social Science			4	1.41
Degree	1.55	0.2		
Bachelors Degree			2.94	1.83
High School Diploma			2.88	2.19
Masters Degree			4	1.93
MBA			4	/ (as n=2)
None of the above			6	/ (as n=2)
PhD			/	/ (as n=0)