

## **STRUCTURAL EQUATION MODEL MODEL ONE**

I have asked 400 entrepreneurs various questions regarding their attitude towards innovation and so on and asked them to rank according to following style. Their responses or data are saved in SPSS at [www.sayedhossain.com](http://www.sayedhossain.com)

From their responses, I have developed following structural equation model using Amos. The outcome is also given below:

### **Ranking style**

Strongly agree = 1 Agree = 2 Somewhat agree = 3 Disagree = 4 Strongly disagree = 5

### **Questions regarding innovation activities to entrepreneurs**

#### **Positive attitude (PA)**

- Overall future will be good.
- My colleagues are good
- My health will be good in future.
- I can change the world

#### **Profit motive (PM)**

- I can gain huge from innovation
- Profit is certain
- Profit is my incentive behind my innovation activities

#### **Sharing research (SR)**

- Sharing with others provides good result
- Sharing leaks out privacy
- Sharing provides motivation.

#### **Research facility (RF)**

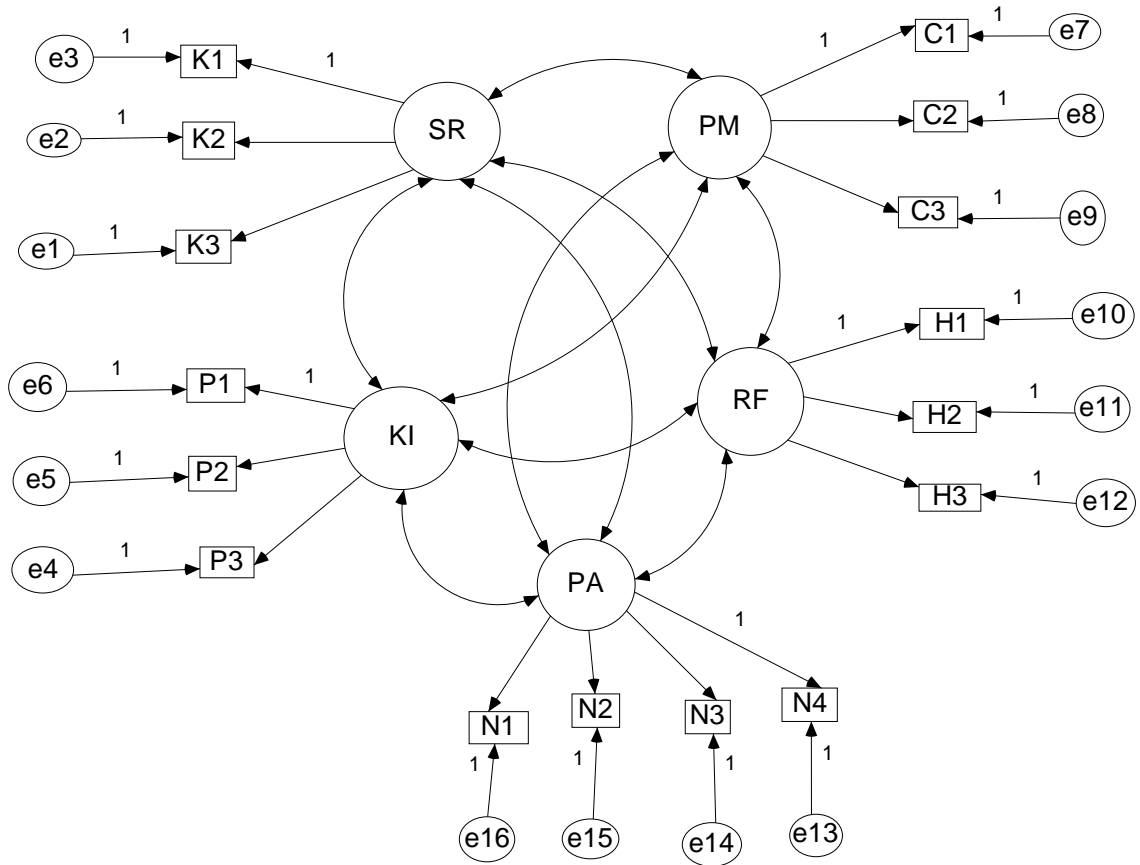
- Enough equipments are needed
- Environment needs to be friendly for research
- Conducive Govt. policy is needed.

#### **Knowledge institution (KI)**

- Should be independent
- Number of knowledge workers should be high
- Flexible office hour is needed for good research

Information: You can see the data in **Hossain Channel** at [www.sayedhossain.com](http://www.sayedhossain.com)

## Model Specification



# AMOS RESULT

## INTRODUCING MODEL

Your model contains the following variables (Group number 1)

### Observed, endogenous variables

K1  
K2  
K3  
C1  
C2  
C3  
P1  
P2  
P3  
H1  
H2  
H3  
N1  
N2  
N3  
N4

### Unobserved, exogenous variables

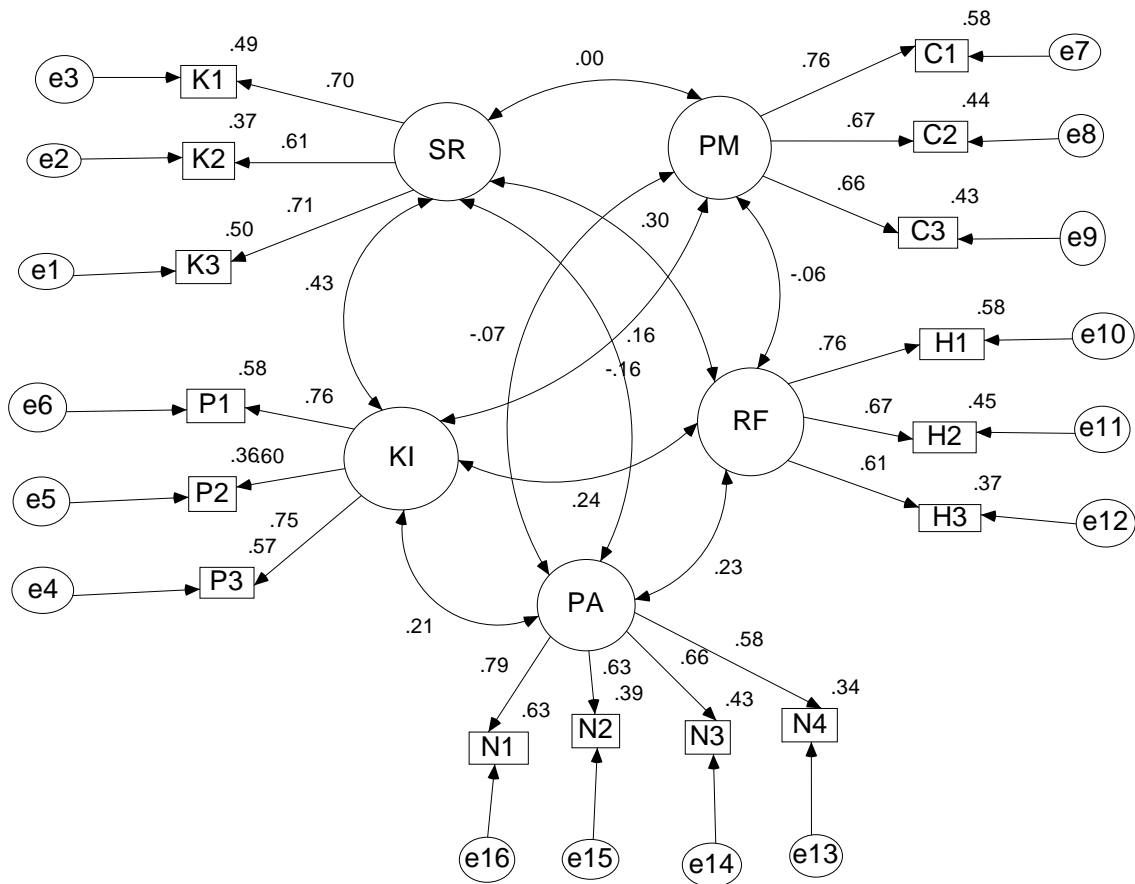
SR  
e3  
e2  
e1  
e7  
e8  
e9  
e6  
e5  
e4  
e10  
e11  
e12  
PM  
RF

KI  
e16  
e15  
e14  
e13  
PA

**Variable counts (Group number 1)**

|                                    |    |
|------------------------------------|----|
| Number of variables in your model: | 37 |
| Number of observed variables:      | 16 |
| Number of unobserved variables:    | 21 |
| Number of exogenous variables:     | 21 |
| Number of endogenous variables:    | 16 |

## STANDARDIZE ESTIMATE



**Standardized Regression Weights: (Group number 1 - Default model)**

|            | Estimate |
|------------|----------|
| K1 <--- SR | .697     |
| K2 <--- SR | .609     |
| K3 <--- SR | .706     |
| N1 <--- PA | .794     |
| N2 <--- PA | .628     |
| N3 <--- PA | .655     |
| N4 <--- PA | .584     |
| C1 <--- PM | .762     |
| C2 <--- PM | .667     |
| C3 <--- PM | .657     |
| P1 <--- KI | .760     |
| P2 <--- KI | .598     |
| P3 <--- KI | .753     |
| H1 <--- RF | .760     |
| H2 <--- RF | .672     |
| H3 <--- RF | .612     |

**Correlations: (Group number 1 - Default model)**

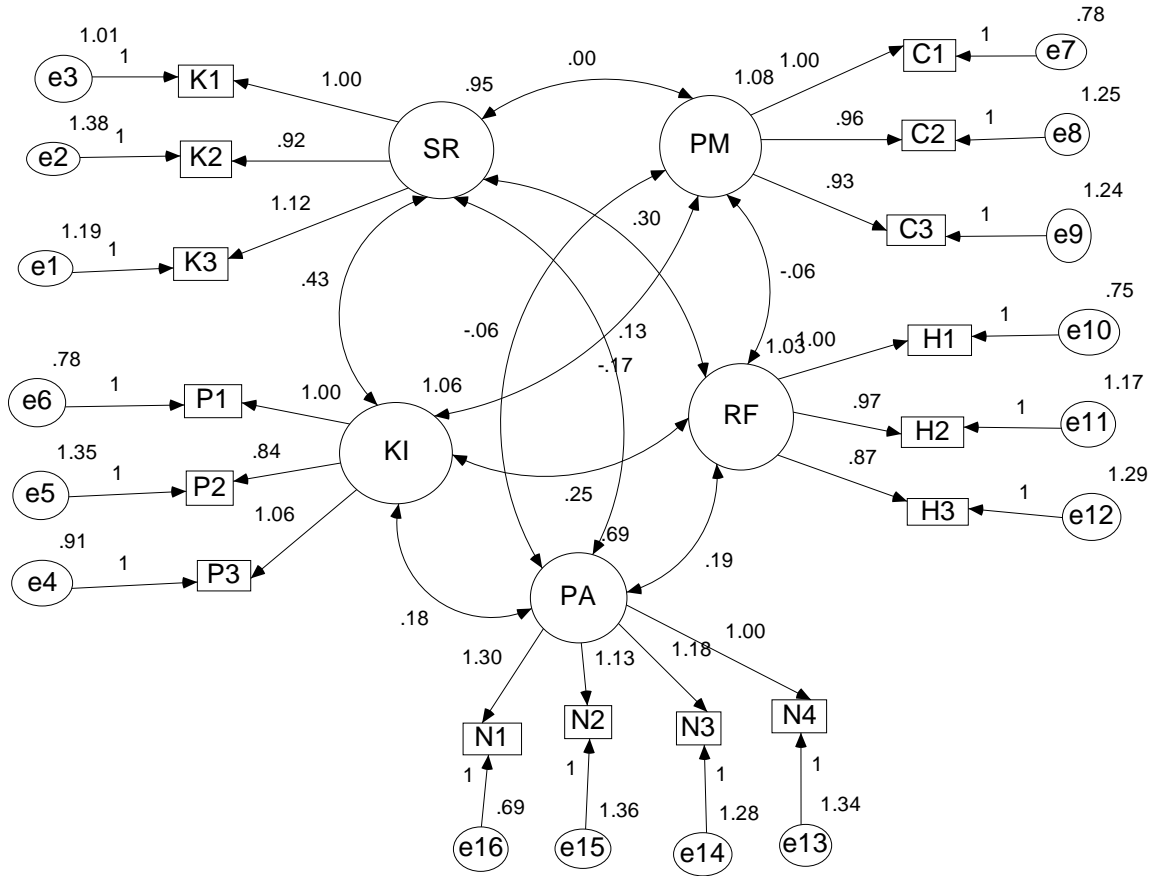
|            | Estimate |
|------------|----------|
| SR <--> PM | .000     |
| PM <--> RF | -.059    |
| SR <--> KI | .429     |
| SR <--> RF | .300     |
| RF <--> PA | .231     |
| SR <--> PA | .160     |
| PM <--> PA | -.069    |
| RF <--> KI | .242     |
| KI <--> PA | .205     |
| PM <--> KI | -.161    |

**Squared Multiple Correlations: (Group number 1 - Default model)**

|    | Estimate |
|----|----------|
| N4 | .341     |
| N3 | .429     |
| N2 | .394     |
| N1 | .630     |
| H3 | .374     |
| H2 | .451     |
| H1 | .577     |
| P3 | .568     |
| P2 | .357     |
| P1 | .578     |
| C3 | .431     |
| C2 | .445     |
| C1 | .581     |
| K3 | .499     |
| K2 | .371     |
| K1 | .486     |

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## UN-STANDARDIZED ESTIMATES



<http://www.sayedhossain.com>



**Regression Weights: (Group number 1 - Default model)**

|            | Estimate | S.E. | C.R.   | P   | Label  |
|------------|----------|------|--------|-----|--------|
| K1 <--- SR | 1.000    |      |        |     |        |
| K2 <--- SR | .924     | .103 | 8.957  | *** | par_1  |
| K3 <--- SR | 1.117    | .120 | 9.326  | *** | par_2  |
| N1 <--- PA | 1.300    | .131 | 9.926  | *** | par_7  |
| N2 <--- PA | 1.131    | .125 | 9.079  | *** | par_8  |
| N3 <--- PA | 1.180    | .127 | 9.316  | *** | par_9  |
| N4 <--- PA | 1.000    |      |        |     |        |
| C1 <--- PM | 1.000    |      |        |     |        |
| C2 <--- PM | .961     | .102 | 9.435  | *** | par_13 |
| C3 <--- PM | .934     | .099 | 9.410  | *** | par_14 |
| P1 <--- KI | 1.000    |      |        |     |        |
| P2 <--- KI | .841     | .085 | 9.842  | *** | par_15 |
| P3 <--- KI | 1.059    | .098 | 10.804 | *** | par_16 |
| H1 <--- RF | 1.000    |      |        |     |        |
| H2 <--- RF | .968     | .104 | 9.286  | *** | par_17 |
| H3 <--- RF | .866     | .096 | 9.036  | *** | par_18 |

**Covariances: (Group number 1 - Default model)**

|            | Estimate | S.E. | C.R.   | P    | Label  |
|------------|----------|------|--------|------|--------|
| SR <--> PM | .000     | .069 | .004   | .997 | par_3  |
| PM <--> RF | -.062    | .071 | -.865  | .387 | par_4  |
| SR <--> KI | .432     | .079 | 5.487  | ***  | par_5  |
| SR <--> RF | .297     | .073 | 4.048  | ***  | par_6  |
| RF <--> PA | .195     | .059 | 3.289  | .001 | par_10 |
| SR <--> PA | .130     | .056 | 2.312  | .021 | par_11 |
| PM <--> PA | -.060    | .057 | -1.045 | .296 | par_12 |
| RF <--> KI | .253     | .073 | 3.471  | ***  | par_19 |
| KI <--> PA | .176     | .059 | 3.009  | .003 | par_20 |
| PM <--> KI | -.172    | .072 | -2.375 | .018 | par_21 |

**Variances: (Group number 1 - Default model)**

|     | Estimate | S.E. | C.R.   | P   | Label  |
|-----|----------|------|--------|-----|--------|
| SR  | .953     | .149 | 6.404  | *** | par_22 |
| PM  | 1.078    | .155 | 6.944  | *** | par_23 |
| RF  | 1.027    | .149 | 6.892  | *** | par_24 |
| KI  | 1.063    | .145 | 7.356  | *** | par_25 |
| PA  | .693     | .123 | 5.634  | *** | par_26 |
| e3  | 1.007    | .114 | 8.811  | *** | par_27 |
| e2  | 1.376    | .126 | 10.906 | *** | par_28 |
| e1  | 1.194    | .140 | 8.555  | *** | par_29 |
| e7  | .779     | .114 | 6.856  | *** | par_30 |
| e8  | 1.245    | .128 | 9.758  | *** | par_31 |
| e9  | 1.242    | .124 | 10.028 | *** | par_32 |
| e6  | .777     | .100 | 7.783  | *** | par_33 |
| e5  | 1.353    | .115 | 11.727 | *** | par_34 |
| e4  | .909     | .114 | 8.000  | *** | par_35 |
| e10 | .753     | .110 | 6.875  | *** | par_36 |
| e11 | 1.171    | .123 | 9.493  | *** | par_37 |
| e12 | 1.288    | .118 | 10.915 | *** | par_38 |
| e16 | .687     | .095 | 7.243  | *** | par_39 |
| e15 | 1.365    | .119 | 11.438 | *** | par_40 |
| e14 | 1.284    | .117 | 10.974 | *** | par_41 |
| e13 | 1.341    | .111 | 12.026 | *** | par_42 |

**MODEL FITTING**

**CMIN**

| Model              | NPAR | CMIN           | DF  | P           | CMIN/DF      |
|--------------------|------|----------------|-----|-------------|--------------|
| Default model      | 42   | <b>151.869</b> | 94  | <b>.000</b> | <b>1.616</b> |
| Saturated model    | 136  | .000           | 0   |             |              |
| Independence model | 16   | 1623.062       | 120 | .000        | 13.526       |

**RMR, GFI**

| Model              | RMR  | <b>GFI</b>  | <b>AGFI</b> | PGFI |
|--------------------|------|-------------|-------------|------|
| Default model      | .090 | <b>.956</b> | <b>.936</b> | .661 |
| Saturated model    | .000 | 1.000       |             |      |
| Independence model | .408 | .602        | .549        | .531 |

**RMSEA**

| Model              | <b>RMSEA</b> | LO 90 | HI 90 | PCLOSE |
|--------------------|--------------|-------|-------|--------|
| Default model      | <b>.039</b>  | .027  | .050  | .942   |
| Independence model | .177         | .170  | .185  | .000   |

**AIC**

| Model              | <b>AIC</b>     | BCC      | BIC      | CAIC     |
|--------------------|----------------|----------|----------|----------|
| Default model      | <b>235.869</b> | 239.607  | 403.510  | 445.510  |
| Saturated model    | 272.000        | 284.105  | 814.839  | 950.839  |
| Independence model | 1655.062       | 1656.486 | 1718.925 | 1734.925 |

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