This analysis is being run on a synthetic dataset (n=200) that is a sample drawn from a population with known relationships between three variables. In the population, path a is positive, path b is positive, the indirect effect is positive, the direct effect is positive, and the total effect is positive.

When reading in this literature, be aware that some people denote the total effect as c and the direct effect as c', while other people do the reverse. It can be mighty confusing.
Sobel-Goodman Mediation Tests

| Coef     | Std Err | Z     | P>|Z| |
|----------|---------|-------|------|
| Sobel    | .06244281 | .03011738 | 2.073 | .03814301 |
| Goodman-1 (Aroian) | .06244281 | .03057152 | 2.043 | .04110038 |
| Goodman-2 | .06244281 | .0296563 | 2.106 | .03524347 |

Proportion of total effect that is mediated: 0.1723256
Ratio of indirect to direct effect: 0.20820458
Ratio of total to direct effect: 1.2082046

The dots that show the progress of the bootstrapping analysis can be suppressed from the output by adding `nodots` here.

```
. bootstrap r(ind_eff), reps(5000): sgmediation dep_var, iv(indep_var) mv(med_var)
```

```
(bootstrapping analysis)
```

```
command: sgmediation dep_var, iv(indep_var) mv(med_var)
    _bs_1: r(ind_eff)
```

```
Bootstrapping analysis
```

```
Observed | Bootstrap | Normal-based
---------|-----------|---------------
| Coef.   | Std. Err. | z     | P>|z| | [95% Conf. Interval]|
---+----------+---------+-------+-------+------------------|
| _bs_1 | .0624428 | .0312969 | 2.00 | 0.046 | .001102    .1237836 |

This section is a handy summary of everything except the Indirect Effect. For the Indirect Effect, only the coefficient is correct. (It is calculated simply as a x b or Total Effect - Direct Effect.) The Std. Error, Z, and P columns for the Indirect Effect are replaced by the bootstrapping analysis described above.

The dots that show the progress of the bootstrapping analysis can be suppressed from the output by adding `nodots` here.

```
. bootstrap r(ind_eff), reps(5000): sgmediation dep_var, iv(indep_var) mv(med_var)
```

```
(bootstrapping analysis)
```

```
command: sgmediation dep_var, iv(indep_var) mv(med_var)
    _bs_1: r(ind_eff)
```

```
Bootstrapping analysis
```

```
Observed | Bootstrap | Normal-based
---------|-----------|---------------
| Coef.   | Std. Err. | z     | P>|z| | [95% Conf. Interval]|
---+----------+---------+-------+-------+------------------|
| _bs_1 | .0624428 | .0312969 | 2.00 | 0.046 | .001102    .1237836 |

To be ignored for our purposes.
. estat bootstrap, percentile

Bootstrap results                              Number of obs  =    200
Replications    =    5000

command:  sgmediation dep_var, iv(indep_var) mv(med_var)
    _bs_1:  r(ind_eff)

---------------------------------------------+------------------
      |  Observed      Bootstrap
      |    Coef.       Bias    Std. Err.  [95% Conf. Interval]
__bs_1 |  .06244281   .0002222   .03129692    .0074044   .1296649   (P)
---------------------------------------------

(P) percentile confidence interval

This is the calculated estimate (the same as in the
sgmediation analysis above)

This confidence interval corresponds to the Preacher
and Hayes SPSS confidence interval.
If this interval does not include
zero, the indirect effect is
statistically significant.

See Zhao et al. 2010 (JCR) for more about
the substantive interpretation of a
bootstrapped mediation analysis.