

APPENDIX 1 (a)

Showing computation for r and t of H-S form for total sample (N 60)
B1-N

$$\begin{aligned}
 r_{XY} &= \frac{[N\sum XY - (\sum X)(\sum Y)]}{\sqrt{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}} \\
 &= \frac{60(48363) - (278)(-2132)}{\sqrt{[60(270441) - (278)^2][60(531632) - (-2132)^2]}} \\
 &= \frac{3494476}{21010122} \\
 &= 0.16632
 \end{aligned}$$

$$\begin{aligned}
 t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2 - 2r\sigma_{M_1}\sigma_{M_2}}} \\
 &= \frac{(2.21) - (-35.53)}{\sqrt{74.7646 + 126.6319 - 2(0.166)(8.6464)(11.257)}} \\
 &= \frac{37.74}{\sqrt{169.0996}} \\
 &= \frac{37.74}{13.004} \\
 &= 2.903
 \end{aligned}$$

$$\underline{B_2 - S}$$

$$\begin{aligned} r_{XY} &= \frac{[N\Sigma XY - (\Sigma X)(\Sigma Y)]}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}} \\ &= \frac{60(3239) - (-106)(1288)}{\sqrt{[60(78952) - (-106)^2][60(119946) - (1288)^2]}} \\ &= \frac{330868}{5115422} \\ &= 0.647 \end{aligned}$$

$$\begin{aligned} t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2 - 2r\sigma_{M_1}\sigma_{M_2}}} \\ &= \frac{(-1.76) - (21.47)}{\sqrt{21.8791 + 25.6380 - 2(0.647)(4.6776)(5.0636)}} \\ &= \frac{23.23}{\sqrt{44.4522}} \\ &= \frac{23.23}{6.6671} \\ &= 3.485 \end{aligned}$$

$$\underline{B_3 - I}$$

$$\begin{aligned} r_{XY} &= \frac{[N\Sigma XY - (\Sigma X)(\Sigma Y)]}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}} \\ &= \frac{60(2507) - (-186)(-1709)}{\sqrt{[60(95726) - (-186)^2][60(140816) - (1709)^2]}} \\ &= \frac{-167454}{5666862.24} \\ &= 0.0295 \end{aligned}$$

$$\begin{aligned} t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2 - 2r\sigma_{M_1}\sigma_{M_2}}} \\ &= \frac{(-3.10) - (-28.48)}{\sqrt{2.6430 + 25.5940 - 2(0.0295)(2.6430)(25.5940)}} \\ &= \frac{25.38}{\sqrt{28.7222}} \\ &= \frac{25.38}{5.3591} \\ &= 4.736 \end{aligned}$$

$$\underline{B_4 - D}$$

$$\begin{aligned} r_{XY} &= \frac{[N\Sigma XY - (\Sigma X)(\Sigma Y)]}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}} \\ &= \frac{60(166223) - (1577)(3391)}{\sqrt{[60(208031) - (1577)^2][60(378135) - (3391)^2]}} \\ &= \frac{4625773}{10575515.28} \\ &= 0.436 \end{aligned}$$

$$\begin{aligned} t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2 - 2r\sigma_{M_1}\sigma_{M_2}}} \\ &= \frac{(16.28) - (56.51)}{\sqrt{46.2728 + 51.8019 - (0.872)(6.8023)(7.1972)}} \\ &= \frac{39.23}{\sqrt{55.3838}} \\ &= \frac{39.23}{7.4418} \\ &= 5.272 \end{aligned}$$

$$\underline{F_1 - C}$$

$$\begin{aligned} r_{XY} &= \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{[N \sum X^2 - (\sum X)^2][N \sum Y^2 - (\sum Y)^2]}} \\ &= \frac{60(62695) - (786)(-1694)}{\sqrt{[60(243368) - (786)^2][60(454222) - (-1694)^2]}} \\ &= \frac{2430216}{18463407.30} \\ &= 0.132 \end{aligned}$$

$$\begin{aligned} t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2 - 2r\sigma_{M_1}\sigma_{M_2}}} \\ &= \frac{(29.76) - (-28.23)}{\sqrt{64.742 + 112.88 - 2(0.132)(8.0451)(10.625)}} \\ &= \frac{57.99}{\sqrt{155.056}} \\ &= \frac{57.99}{12.451} \\ &= 4.658 \end{aligned}$$

$$\underline{F_2 - S}$$

$$\begin{aligned} r_{XY} &= \frac{[N\Sigma XY - (\Sigma X)(\Sigma Y)]}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}} \\ &= \frac{60(60893) - (507)(-1940)}{\sqrt{[60(248049) - (507)^2][60(363869) - (-1940)^2]}} \\ &= \frac{4637160}{16256291.78} \\ &= 0.028 \end{aligned}$$

$$\begin{aligned} t &= \frac{M_1 - M_2}{\sqrt{\sigma M_1^2 + \sigma M_2^2 - 2r\sigma M_1\sigma M_2}} \\ &= \frac{(1.71) - (-34.30)}{\sqrt{67.712 + 83.650 - 2(0.028)(8.2347)(9.1460)}} \\ &= \frac{36.01}{\sqrt{114.164}} \\ &= \frac{36.01}{10.686} \\ &= 3.37 \end{aligned}$$

APPENDIX 1 (b)

Showing computation for r and t of H-S form for boys (N 32)
B₁ - N

$$\begin{aligned}
 r_{XY} &= \frac{[N\sum XY - (\sum X)(\sum Y)]}{\sqrt{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}} \\
 &= \frac{32(43619) - (-161)(-857)}{\sqrt{[32(141249) - (-161)^2][32(316899) - (857)^2]}} \\
 &= \frac{1257831}{6501728} \\
 &= .19
 \end{aligned}$$

$$\begin{aligned}
 t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2 - 2r_{XY}\sigma_{M_1}\sigma_{M_2}}} \\
 &= \frac{(-5.03) - (-28.78)}{\sqrt{137.1474 + 287.0581 - 2(.19)(11.71)(16.94)}} \\
 &= \frac{21.75}{\sqrt{348.8259}} \\
 &= \frac{21.75}{18.67} \\
 &= 1.16
 \end{aligned}$$

B2-S

$$\begin{aligned}
 r_{XY} &= \frac{[N\Sigma XY - (\Sigma X)(\Sigma Y)]}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}} \\
 &= \frac{32(8612) - (78)(578)}{\sqrt{[32(43106) - (78)^2][32(61588) - (578)^2]}} \\
 &= \frac{230500}{1499245.5} \\
 &= 0.15
 \end{aligned}$$

$$\begin{aligned}
 t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2 - 2r\sigma_{M_1}\sigma_{M_2}}} \\
 &= \frac{(2.43) - (18.06)}{\sqrt{41.9100 + 49.9491 - 2(.15)(6.47)(7.07)}} \\
 &= \frac{15.63}{\sqrt{78.1362}} \\
 &= \frac{15.63}{8.84} \\
 &= 1.77
 \end{aligned}$$

$$\underline{B_3 - I,}$$

$$\begin{aligned} r_{XY} &= \frac{[N\Sigma XY - (\Sigma X)(\Sigma Y)]}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}} \\ &= \frac{32(14370) - (286)(-1059)^2}{\sqrt{[32(44902) - (-286)^2][32(89199) - (-1059)^2]}} \\ &= \frac{156966}{1532379.2} \\ &= 0.10 \end{aligned}$$

$$\begin{aligned} t &= \frac{M_1 - M_2}{\sqrt{\sigma M_1^2 + \sigma M_2^2 - 2r\sigma M_1\sigma M_2}} \\ &= \frac{(-8.93) - (-33.09)}{\sqrt{41.3534 + 52.8835 - 2(0.10)(6.43)(7.27)}} \\ &= \frac{24.16}{\sqrt{84.8877}} \\ &= \frac{24.16}{9.21} \\ &= 2.62 \end{aligned}$$

$$\underline{B_4 - D}$$

$$\begin{aligned} r_{XY} &= \frac{[N\sum XY - (\sum X)(\sum Y)]}{\sqrt{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}} \\ &= \frac{32(108108) - (1047)(2068)}{\sqrt{[32(117279) - (1047)^2][32(219546) - (2068)^2]}} \\ &= \frac{1819340}{3572291.00} \\ &= 0.50 \end{aligned}$$

$$\begin{aligned} t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2 - 2r\sigma_{M_1}\sigma_{M_2}}} \\ &= \frac{(32.71) - (64.62)}{\sqrt{81.0766 + 146.9985 - 2(.50)(9.00)(12.12)}} \\ &= \frac{31.91}{\sqrt{118.9951}} \\ &= \frac{31.91}{10.91} \\ &= 2.83 \end{aligned}$$

$$\underline{F_1 - C}$$

$$\begin{aligned} r_{XY} &= \frac{[N\Sigma XY - (\Sigma X)(\Sigma Y)]}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}} \\ &= \frac{32(79549) - 562(-723)^2}{\sqrt{[32(153478) - (562)^2][32(265577) - (-723)^2]}} \\ &= \frac{2139242}{6054098.9} \\ &= 0.35 \end{aligned}$$

$$\begin{aligned} t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2 - 2r\sigma_{M_1}\sigma_{M_2}}} \\ &= \frac{(17.56) - (-22.50)}{\sqrt{140.2421 + 243.4001 - 2(.35)(11.84)(15.60)}} \\ &= \frac{40.06}{\sqrt{254.3494}} \\ &= \frac{40.06}{15.95} \\ &= 2.51 \end{aligned}$$

$$\underline{F_2 - S}$$

$$\begin{aligned} r_{XY} &= \frac{[N\Sigma XY - (\Sigma X)(\Sigma Y)]}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}} \\ &= \frac{32(3530) - (158)(-841)}{\sqrt{[32(59070) - (158)^2][32(73269) - (-841)^2]}} \\ &= \frac{245838}{17467343.7} \\ &= 0.014 \end{aligned}$$

$$\begin{aligned} t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2 - 2r\sigma_{M_1}\sigma_{M_2}}} \\ &= \frac{(14.93) - (-26.28)}{\sqrt{56.9237 + 49.9184 - 2(.014)(7.54)(7.07)}} \\ &= \frac{31.21}{\sqrt{105.3495}} \\ &= \frac{31.21}{10.26} \\ &= 3.04 \end{aligned}$$

APPENDIX 1 (c)

Showing computation for r and t of H-S form for girls (N 28)

B₁ - N

$$\begin{aligned}
 r_{XY} &= \frac{[N\Sigma XY - (\Sigma X)(\Sigma Y)]}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}} \\
 &= \frac{28(4744) - (294)(-1275)}{\sqrt{[28(129192) - (294)^2][28(214733) - (-1275)^2]}} \\
 &= \frac{507682}{3935718} \\
 &= .12
 \end{aligned}$$

$$\begin{aligned}
 t &= \frac{M_1 - M_2}{\sqrt{\sigma M_1^2 + \sigma M_2^2 - 2r\sigma M_1\sigma M_2}} \\
 &= \frac{(10.50) - (-45.53)}{\sqrt{160.8482 + 199.8405 - 2(.12)(12.68)(14.14)}} \\
 &= \frac{56.03}{\sqrt{317.6579}} \\
 &= \frac{56.03}{17.82} \\
 &= 3.14
 \end{aligned}$$

$$\underline{B_2 - S}$$

$$\begin{aligned} r_{XY} &= \frac{[N\Sigma XY - (\Sigma X)(\Sigma Y)]}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}} \\ &= \frac{28(-5373) - (-184)(710)}{\sqrt{[28(35846) - (184)^2][28(58360) - (710)^2]}} \\ &= \frac{-19804}{331042} \\ &= 0.059 \end{aligned}$$

$$\begin{aligned} t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2 - 2r\sigma_{M_1}\sigma_{M_2}}} \\ &= \frac{(-6.57) - (25.35)}{\sqrt{44.1796 + 51.4750 - 2(-.059)(6.65)(7.17)}} \\ &= \frac{31.92}{\sqrt{101.2809}} \\ &= \frac{31.92}{10.06} \\ &= 3.17 \end{aligned}$$

$$\underline{B_3 - I}$$

$$\begin{aligned} r_{XY} &= \frac{[N\sum XY - (\sum X)(\sum Y)]}{\sqrt{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}} \\ &= \frac{28(-11863) - (100)(-650)}{\sqrt{[28(50824) - (100)^2][28(61617) - (-650)^2]}} \\ &= \frac{267164}{1349668} \\ &= .19 \end{aligned}$$

$$\begin{aligned} t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2 - 2r\sigma_{M_1}\sigma_{M_2}}} \\ &= \frac{(3.57) - (-23.227)}{\sqrt{63.6822 + 59.3466 - 2(.19)(7.98)(7.70)}} \\ &= \frac{26.78}{\sqrt{99.6793}} \\ &= \frac{26.78}{9.98} \\ &= 2.68 \end{aligned}$$

$$\frac{B - D}{4}$$

$$\begin{aligned} r_{XY} &= \frac{[N\Sigma XY - (\Sigma X)(\Sigma Y)]}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}} \\ &= \frac{28(58115) - (530)(1323)}{\sqrt{[28(90762) - (530)^2][28(158589) - (1323)^2]}} \\ &= \frac{926030}{2465956} \\ &= .37 \end{aligned}$$

$$\begin{aligned} t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2 - 2r\sigma_{M_1}\sigma_{M_2}}} \\ &= \frac{(18.90) - (47.25)}{\sqrt{102.9718 + 122.5475 - 2(.37)(10.14)(11.07)}} \\ &= \frac{28.35}{\sqrt{142.4544}} \\ &= \frac{28.35}{11.93} \\ &= 2.38 \end{aligned}$$

$$\underline{F_1 - C}$$

$$\begin{aligned} r_{XY} &= \frac{[N\Sigma XY - (\Sigma X)(\Sigma Y)]}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}} \\ &= \frac{28(-16854) - (.224)(.971)}{\sqrt{[28(189890) - (1224)^2][28(188645) - (-971)^2]}} \\ &= \frac{716592}{4060678} \\ &= .17 \end{aligned}$$

$$\begin{aligned} t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2 - 2r\sigma_{M_1}\sigma_{M_2}}} \\ &= \frac{(43.71) - (-34.68)}{\sqrt{173.9588 + 197.6685 - 2(.17)(13.19)(14.06)}} \\ &= \frac{78.39}{\sqrt{308.5738}} \\ &= \frac{78.39}{17.57} \\ &= 4.46 \end{aligned}$$

$$\underline{F_2 - S}$$

$$\begin{aligned}
 r_{XY} &= \frac{[N\sum XY - (\sum X)(\sum Y)]}{\sqrt{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}} \\
 &= \frac{28(-18656) - (-55)(-1217)}{\sqrt{[28(94571) - (-55)^2][28(98292) - (-1217)^2]}} \\
 &= \frac{589303}{1833564} \\
 &= .32
 \end{aligned}$$

$$\begin{aligned}
 t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2 - 2r\sigma_{M_1}\sigma_{M_2}}} \\
 &= \frac{(-1.96) - (-43.46)}{\sqrt{120.4885 + 57.9030 - 2(.32)(10.98)(7.61)}} \\
 &= \frac{45.42}{\sqrt{124.9145}} \\
 &= \frac{45.42}{11.18} \\
 &= 4.06
 \end{aligned}$$

APPENDIX 1 (d)

Showing computations for t of sex differences on 'Honest' form
B₁ - N

Boys : 32
 Girls: 28

$$\begin{aligned}
 t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2}} \\
 &= \frac{(-5.03) - (10.50)}{\sqrt{137.1474 + 160.8482}} \\
 &= \frac{15.53}{\sqrt{297.9956}} \\
 &= \frac{15.53}{17.262} \\
 &= 0.899
 \end{aligned}$$

B₂ - S

$$\begin{aligned}
 t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2}} \\
 &= \frac{(2.43) - (-6.57)}{\sqrt{41.9100 + 44.1796}} \\
 &= \frac{9.00}{\sqrt{86.0896}} \\
 &= \frac{9.00}{9.278} \\
 &= 0.970
 \end{aligned}$$

$$\underline{B_3 - I}$$

$$\begin{aligned}
 t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2}} \\
 &= \frac{(-8.93) - (3.57)}{\sqrt{41.3534 + 63.6822}} \\
 &= \frac{12.50}{\sqrt{105.0356}} \\
 &= \frac{12.50}{10.243} \\
 &= 1.220
 \end{aligned}$$

$$\underline{B_4 - D}$$

$$\begin{aligned}
 t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2}} \\
 &= \frac{(32.71) - (18.90)}{\sqrt{81.0766 + 102.9718}} \\
 &= \frac{13.81}{\sqrt{184.0484}} \\
 &= \frac{13.81}{13.566} \\
 &= 1.017
 \end{aligned}$$

$$\underline{F_1 - C}$$

$$\begin{aligned}
 t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2}} \\
 &= \frac{(17.56) - (43.71)}{\sqrt{140.2421 + 173.9588}} \\
 &= \frac{26.15}{\sqrt{314.2009}} \\
 &= \frac{26.15}{17.725} \\
 &= 1.475
 \end{aligned}$$

$$\underline{F_2 - S}$$

$$\begin{aligned}
 t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2}} \\
 &= \frac{(4.93) - (1.96)}{\sqrt{56.9237 + 120.4885}} \\
 &= \frac{6.89}{\sqrt{177.4122}} \\
 &= \frac{6.89}{13.319} \\
 &= .517
 \end{aligned}$$

APPENDIX 1 (e)

Showing computation for t of sex difference on social desirability
 Boys : 32
 Girls: 28

B₁ - N

$$\begin{aligned}
 t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2}} \\
 &= \frac{(-26.78) - (-45.53)}{\sqrt{287.0581 + 199.8405}} \\
 &= \frac{18.75}{\sqrt{486.8986}} \\
 &= \frac{18.75}{22.068} \\
 &= 0.849
 \end{aligned}$$

B₂ - S

$$\begin{aligned}
 t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2}} \\
 &= \frac{(18.06) - (25.35)}{\sqrt{49.9491 + 51.4750}} \\
 &= \frac{7.29}{\sqrt{101.4241}} \\
 &= \frac{7.29}{10.070} \\
 &= 0.723
 \end{aligned}$$

$$\underline{B_3 - I}$$

$$\begin{aligned}
 t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2}} \\
 &= \frac{(-33.09) - (-23.21)}{\sqrt{52.8835 + 59.3466}} \\
 &= \frac{9.88}{\sqrt{112.2301}} \\
 &= \frac{9.88}{10.546} \\
 &= .936
 \end{aligned}$$

$$\underline{B_4 - D}$$

$$\begin{aligned}
 t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2}} \\
 &= \frac{(64.62) - (47.25)}{\sqrt{146.9985 + 122.5475}} \\
 &= \frac{17.37}{\sqrt{269.5460}} \\
 &= \frac{17.37}{16.417} \\
 &= 1.058
 \end{aligned}$$

$$\underline{F_1 - C}$$

$$\begin{aligned}
 t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2}} \\
 &= \frac{(-22.50) - (-34.68)}{\sqrt{243.4001 + 197.6685}} \\
 &= \frac{12.18}{\sqrt{441.0686}} \\
 &= \frac{12.18}{21.001} \\
 &= 0.579
 \end{aligned}$$

$$\underline{F_2 - S}$$

$$\begin{aligned}
 t &= \frac{M_1 - M_2}{\sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2}} \\
 &= \frac{(-26.28) - (-43.46)}{\sqrt{49.9184 + 57.9030}} \\
 &= \frac{17.18}{\sqrt{107.8214}} \\
 &= \frac{17.18}{10.383} \\
 &\approx 1.654
 \end{aligned}$$