

Measures	Formula
Measures of change in y_i ($i = 1, \dots, k$) ^a	
1. Range	$\max y_i - \min y_i$
2. Mean-over-time	$\bar{y} = \frac{1}{k} \sum_{i=1}^k y_i$
3. Standard deviation (SD)	$s_y = \sqrt{\frac{1}{k-1} (y_i - \bar{y})^2}$
4. Coefficient of variation (CV)	$100 \times \frac{s_y}{\bar{y}}$
5. Change	$y_k - y_1$
6. Mean change per time unit	$\frac{y_k - y_1}{t_k - t_1 + 1}$
7. Change relative to the first score	$\frac{y_k - y_1}{y_1}$
8. Change relative to the mean over time	$\frac{y_k - y_1}{\bar{y}}$
9. Slope of the linear model $y_i = a + bt_i + \epsilon_i$	$b = \frac{\sum_{i=1}^k (y_i - \bar{y})(t_i - \bar{t})}{\sum_{i=1}^k (t_i - \bar{t})^2}$
10. R^2 : Proportion of variance explained by the linear model $y_i = a + bt_i + \epsilon_i$	$R^2 = b^2 \times \frac{\sum_{i=1}^k (t_i - \bar{t})^2}{\sum_{i=1}^k (y_i - \bar{y})^2}$
Measures of change in $\Delta_{1,i} = y_{i+1} - y_i$ ($i = 1, \dots, k$) [*]	
11. Maximum of the first differences	$\max \Delta_{1,i}$
12. SD of the first differences	$s_{\Delta_1} = \frac{1}{k-2} \sum_{i=1}^{k-1} (\Delta_{1,i} - \bar{\Delta}_1)^2$ where $\bar{\Delta}_1 = \frac{1}{k-1} \sum_{i=1}^{k-1} \Delta_{1,i}$
13. SD of the first differences per time unit	$s_{\Delta'_1} = \frac{1}{k-2} \sum_{i=1}^{k-1} (\Delta'_{1,i} - \bar{\Delta}'_1)^2$ where $\Delta'_1 = \frac{\Delta_{1,i}}{t_{i+1} - t_i}$
14. Mean of the absolute first differences	$ \Delta_1 = \frac{1}{k-1} \sum_{i=1}^{k-1} \Delta_{1,i} $
15. Maximum of the absolute first differences	$\max \Delta_{1,i} $
16. Ratio of the maximum absolute first difference to the mean-over-time	$\frac{(\max \Delta_{1,i})}{\bar{y}}$
17. Ratio of the maximum absolute first difference to the slope	$\frac{(\max \Delta_{1,i})}{b}$
18. Ratio of the SD of the first differences to the slope	$\frac{s_{\Delta_1}}{b}$
Measures of change in $\Delta_{2,i} = \Delta_{1,i+1} \Delta_{1,i}$ ($i = 1, \dots, k$) [*]	
19. Mean of the second differences	$\bar{\Delta}_2 = \frac{1}{k-2} \sum_{i=1}^{k-2} \Delta_{2,i}$
20. Mean of the absolute second differences	$ \Delta_2 = \frac{1}{k-2} \sum_{i=1}^{k-2} \Delta_{2,i} $
21. Maximum of the absolute second differences	$\max \Delta_{1,i}$
22. Ratio of the maximum absolute second difference to the mean-over-time	$\frac{(\max \Delta_{2,i})}{\bar{y}}$
23. Ratio of the maximum absolute second difference to mean absolute first difference	$\frac{(\max \Delta_{2,i})}{ \Delta_1 }$
24. Ratio of the mean absolute second difference to the mean absolute first difference	$\frac{(\bar{\Delta}_{2,i})}{ \Delta_1 }$

^a k may vary from subject to subject.