

Manuscript Presentation: Writing up APIM Results

Example Articles

Distinguishable Dyads

Chung, M. L., Moser, D. K., Lennie, T. A., & Rayens, M. (2009). The effects of depressive symptoms and anxiety on quality of life in patients with heart failure and their spouses: Testing dyadic dynamics using Actor—Partner Interdependence Model. *Journal of Psychosomatic Research*, 67, 29-35.

West, T. V., Magee, J. C., Gullett, L., & Gordon, S. H. (2014). A little similarity goes a long way: The effects of peripheral but self-revealing similarities on improving and sustaining interracial relationships. *Journal of Personality and Social Psychology*, 107, 81-100.

Indistinguishable Dyads

Mohr, J. J., & Fassinger, R. E. (2006). Sexual orientation identity and romantic relationship quality in same-sex couples. *Personality and Social Psychology Bulletin*, 32, 1085-1099.

****this paper also shows mediation and moderation***

McDonald, K. L., Malti, T., Killen, M., & Rubin, K. H. (2014). Best friends' discussions of social dilemmas. *Journal of Youth and Adolescence*, 43, 233-244.

Manuscript Sections

Method

- Sample size in participants section
 - Number of dyads and number of dyads where only one person is measured
 - Number of individuals (of both types if distinguishable)
- Missing data description: amount, type, and handling.
 - This information is commonly found in the participants section of the method section.
 - Depending on the nature of the missingness it may be easier to discuss at the dyad level.
- ***For longitudinal data***
 - Also discuss attrition and test if there are any differences between those who dropped out and those who remained in the study on key demographic and study variables at time 1.
 - These analyses may not involve MLM depending on if the attrition is at the dyadic or individual level.

Descriptive Statistics

- Most descriptive statistics are given when using R to restructure
- Means and standard deviation of key variables
 - Pairwise dataset if indistinguishable

- Separate descriptives if distinguishable (e.g., separate descriptives for men and women)
- Correlation matrix of relevant variables (*see Chung et al. (2009) Table 3*)
- Can be summarized in a table (*see Chung et al. (2009) Tables 1 and 2*)
- Describe any data transformations or data imputations made
- Nonindependence
 - Partial ICC if indistinguishable (*see Mohr & Fessinger (2006) Table 1*)
 - Partial Pearson if distinguishable
 - You may choose to present the ICC in the measures section instead of in the demographic section.

Analysis Strategy

- Make it very clear in your analysis strategy section what variables are in your final model. Also indicate the procedure you used to arrive at this final model (i.e., stepwise, backwards, forwards; what p-value cut-off, if any, did you use to exclude variables?).
- Describe your predictor variables as between-dyad, within-dyad, or mixed variables.
- Make it clear what terms are random if you are running a complicated model with repeated measures.
- In principle the reader should be able to exactly reproduce your results if he or she had the data (*see Chung et al., (2009) page 31 and Mohr & Fessinger (2006) pp. 1091-1093; see page 28 in West et al. (2014)*).
 - Be sure to discuss all details of the model you used to estimate your parameters. This includes the fixed and random effects
- **For longitudinal analyses** there may be even more parameters to discuss in this section. There will also be many choices that you may have made regarding the random effects (e.g., perhaps you decided to exclude a certain covariance because it appeared too small to estimate and was causing problems in SPSS). This is the place to report and justify all of those choices.

Results

- If you have distinguishable dyads, make sure you test and report whether they are empirically distinguishable.
- Actor and Partner Effects
 - Figure (*see below or Chung et al. (2009) Figures 1 and 2*)
 - Table as in a regression analysis (*see Mohr & Fessinger (2006) Table 3; McDonald et al. 2014 Table 3; in West et al. (in press) they are reported in the text*)
 - Include the standard errors, Beta-weight (or B), measure of effect size
 - Only a test of moderation (or set of test statements) can tell you whether an effect is different for the two members of the dyads. Be careful using comparative statements like “the effect is bigger for women than men” unless you show statistically significant moderation.
- R^2 (*see Mohr & Fessinger (2006) pp. 1093*)
- Do not forget to report ALL random effects estimated in your model. If there are too many for the text, consider including a covariance table of the random effects or a supplementary appendix.
- **For longitudinal data**
 - Specifically for growth curve modeling, if you have a model with quite a few fixed effects, sometimes it is helpful to report the results for the level (intercept) first, and then the results for the change (slope).
 - Alternatively, you could organize the results by variable (e.g., What is the effect of avoidance on the level of satisfaction and what is the effect of avoidance on the change in satisfaction? Then move to the next variable.)

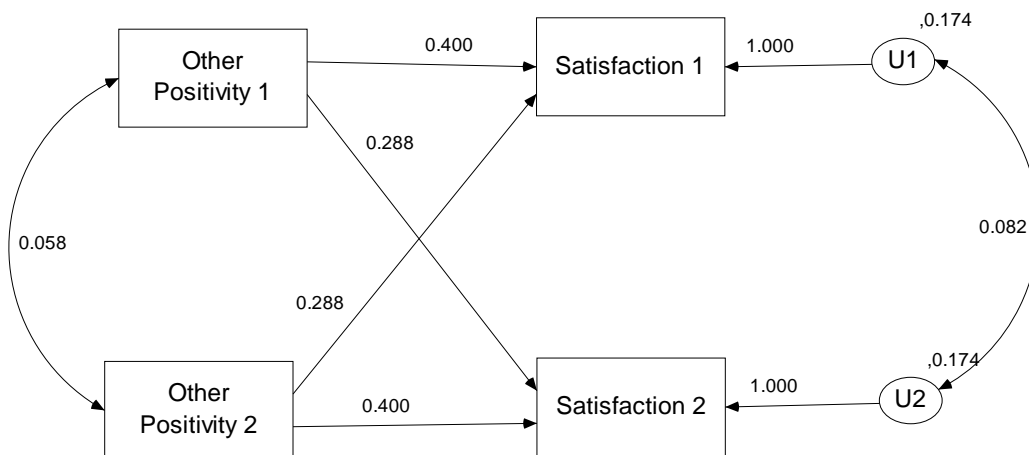
General Analysis Advice

- Even if you think that the actor and partner variables are conceptually measuring the same thing (e.g., the two partners reports of whether there was a conflict), make sure you test this assumption (calculate the ICC) before treating variables measured at the level of the individual as “dyad level” variables by creating sum, difference, or averages.
- If you create a product or a discrepancy score, you need to keep the main effects in the model.
- Check for partner effects even if you do not have a specific theoretical reason for doing so. Having them and not including them in the model can bias the actor effects.
- As you go through the process of analyzing your data, table up your results. This will help you see patterns across variables, instead of being focused on only what is significant and what is not.
- If the journal you are publishing in has a supplemental online materials section (or does not include the methods section toward the word count), it can be useful to include the syntax you used.
- Stay parsimonious. Do not include too many parameters if it is not necessary to do so.

Drawing an APIM Model

Unstandardized

- Covariance Xs
 - Distinguishable: The correlation times the square root product of the variances
 - Indistinguishable: The interclass correlation times the variance
- Correlation between the errors
 - Rho
- Variance of the errors
 - Standard deviation²



Standardized

- Correlation between the Xs
 - Distinguishable: Pearson r
 - Indistinguishable: Pairwise r or intraclass correlation
- Correlation between the errors
 - Distinguishable: Use weight =

- Indistinguishable: No weights
- Path from the Errors
 - Square root error variance
- Paths
 - Standardized paths



Figures from Example Article

- Chung et al. (2009)

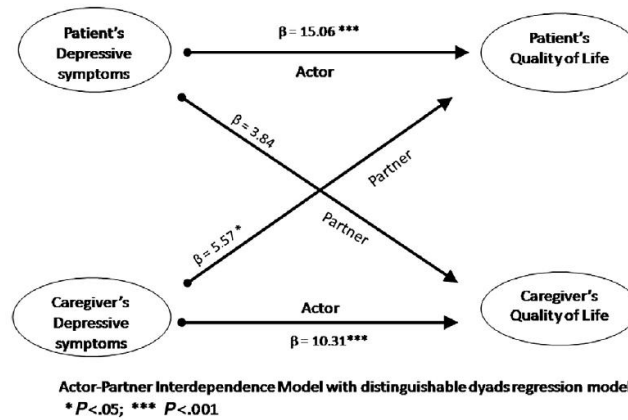


Fig. 1. Depressive symptoms: the actor and partner effects as predictors of quality of life. APIM with distinguishable dyads regression model. $^*P < .05$; $^{***}P < .001$.

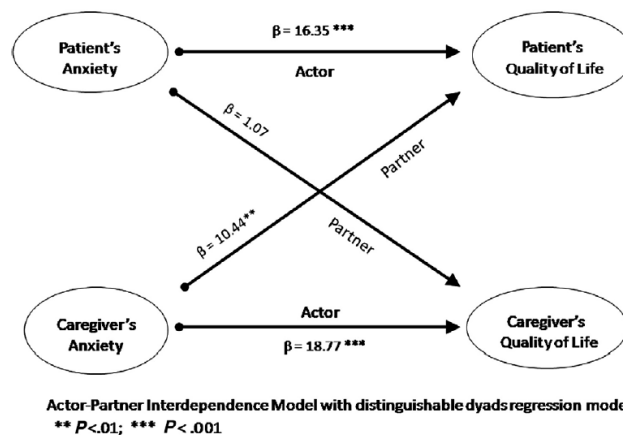


Fig. 2. Anxiety: The actor and partner effects as predictors of quality of life. APIM with distinguishable dyads regression model. $^{**}P < .01$; $^{***}P < .001$.

- Both predictor variables, depression and anxiety, could have been included in the same statistical model, thus controlling for the effects of the other. If this was done, both predictor variables can be included in the figure as well and it might look something like this (the curved lines on the left-side might be dropped):

