

Mediation with random slopes for the 1-1-1-1 case has the indirect effect that I show below. I don't know a reference for this but it can be derived from basic statistical principles assuming normal errors for the random slopes. With random slope means b_1 , b_2 , b_3 corresponding to the regressions of y on m_1 , m_1 on m_2 , and m_2 on x , respectively, and their corresponding errors e_1 , e_2 , e_3 , the indirect effect boils down to the expectation

$$E[(b_1+e_1)(b_2+e_2)(b_3+e_3)] = b_1*b_2*b_3 + b_1*E[e_2e_3] + b_2*E[e_1e_3] + b_3*E[e_1e_2]$$

because $E[e]=0$ and $E[e_1e_2e_3]=0$ for normal variables. An expressions such as $E[e_2e_3]$ is the same as $Cov(e_2e_3)$, the covariance of the corresponding two random slopes.

If the regression of m_2 on x is moderated by w and the $x*w$ interaction also has a random slope (with mean b_4 and error e_4), the indirect effect is

$$b_1*b_2*(b_3+b_4*W) + \text{the above 3 terms involving the covariances} + b_4*W*Cov(e_1e_2) + W*Cov(e_1e_4) + W*Cov(e_2e_4),$$

where W is a value on the moderator w .

I hope I got all that right.