

**Four Day Workshop on  
Mediation, Moderation and Conditional Process Analysis  
5-8 April 2019  
Shailesh J. Mehta School of Management  
Indian Institute of Technology, Bombay**

**WORKSHOP OBJECTIVE**

In social science research, theory development is the main focus and making a meaningful theoretical contribution is difficult. A way to make a meaningful theoretical contribution is by incorporating mediation and moderation approaches in research (Summers, J. O. 2001). In the recent literature, combining mediation with moderation and moderation with mediation has taken place a major role in the top tier journals. This workshop will help the scholars to understand the process of theory development using mediation, moderation, moderated mediation and mediated moderation approaches.

**EXPECTED OUTCOME OF THIS COURSE**

At the end of this course, the scholars will get exposure on the recent advancements related to mediation and moderation analysis. Moreover, they will be able to develop and test the theoretical models using the advanced approaches covered in this workshop.

**WORKSHOP SCHEDULE**

Time/session	Day 1	Day 2	Day 3	Day 4
Session 1 (9.30-11.00)	Understanding theoretical Contribution	Testing simple mediation models using Regression and Process Macro	Introduction to moderation analysis	Introduction to conditional process analysis
11.00-11.15	<b>BREAK</b>			
Session 2 (11.15-12.45)	Role of theory in Mediation and Moderation analysis	Customising models in PROCESS macro	Testing moderation models	Moderated mediation analysis
12.45-1.45	<b>LUNCH</b>			
Session 3 (1.45-3.15)	Role of SEM and multiple regression in mediation and moderation analysis	Serial mediation analysis	Three way interaction effects	Testing moderated mediation model
3.15-3.30	<b>Break</b>			
Session 4 (3.30-5.00)	Introduction to mediation analysis	Multiple mediation analysis	Testing and interpreting three way interaction effects	Mediated moderation analysis
Session 5 5.00-6.30	Beyond Baron and Kenny: Mediation analysis	Bi-factor mediation analysis	Introduction to conditional process analysis	Moderated moderated mediation analysis

## SESSION WISE PLAN AND REQUIRED READINGS

Session	Topic	Readings
1	Understanding theoretical contribution	Whetten, D. A. (1989), Summers, J. O. (2001).
2	Role of theory in Mediation and Moderation analysis	Siu, O. L., Lu, J. F., Brough, P., Lu, C. Q., Bakker, A. B., Kalliath, T., ... & Sit, C. (2010).
3	Role of SEM and multiple regression in mediation and moderation analysis	Hair book (last three chapters)
4	Introduction to mediation analysis	Baron and Kenny (1986)
5	Beyond Baron and Kenny: Mediation analysis	Zhao, X., Lynch, J. G., & Chen, Q. (2010).
6	Testing simple mediation models using Regression and Process Macro	Hayes, A. F. (2009).
7	Customising models in PROCESS macro	Hayes book appendix
8	Serial mediation analysis	Van Jaarsveld, D. D., Walker, D. D., & Skarlicki, D. P. (2010).
9	Multiple mediation analysis	Wo, D. X., Ambrose, M. L., & Schminke, M. (2015).
10	Bi-factor mediation analysis	Gonzalez, O., & MacKinnon, D. P. (2016).
11	Introduction to moderation analysis	Baron, R. M., & Kenny, D. A. (1986).
12	Testing moderation models	Dawson, J. F. (2014).
13	Three way interaction effects	Dawson, J. F. (2014).
14	Testing and interpreting three way interaction effects	Skarlicki, D. P., van Jaarsveld, D. D., Shao, R., Song, Y. H., & Wang, M. (2016).
15-16	Introduction to conditional process analysis	Edwards, J. R., & Lambert, L. S. (2007).
17	First and second stage Moderated mediation analysis	Lim, S., & Tai, K. (2014).
18	Testing moderated mediation model	Bai, Q., Lin, W., & Wang, L. (2016).
19	Mediated moderation analysis	Nandkeolyar, A. K., Shaffer, J. A., Li, A., Ekkirala, S., & Bagger, J. (2014).
20	Moderated moderated mediation analysis	Hayes, A. F. (2018).

## REFERENCE BOOKS

1. Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2013). Applied multiple regression/correlation analysis for the behavioral sciences. Routledge.
2. Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2013). Multivariate data analysis, 7/e. Pearson India.
3. **Hayes, A. F. (2017). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. 2<sup>nd</sup> edition, Guilford Press.**
4. Jaccard, J., & Turrisi, R. (2003). Interaction effects in multiple regression (No. 72). Sage.
5. MacKinnon, D. P. (2008). Introduction to statistical mediation analysis. Routledge
6. Pawar, B. S. (2009). Theory building for hypothesis specification in organizational studies. SAGE Publications India.

## JOURNAL REFERENCES

### *Understanding contribution*

1. Colquitt, J. A., & Zapata-Phelan, C. P. (2007). Trends in theory building and theory testing: A five-decade study of the Academy of Management Journal. *Academy of management journal*, 50(6), 1281-1303.
2. Summers, J. O. (2001). Guidelines for conducting research and publishing in marketing: From conceptualization through the review process. *Journal of the Academy of Marketing Science*, 29(4), 405-415.
3. Sutton, R. I., & Staw, B. M. (1995). What theory is not. *Administrative science quarterly*, 371-384.

### *Regression and SEM references*

4. Nathans, Laura L., Oswald, Frederick L., & Nimon, Kim (2012). Interpreting Multiple Linear Regression: A Guidebook of Variable Importance. *Practical Assessment, Research & Evaluation*, 17(9).
5. Ullman, J. B. (2006). Structural equation modeling: Reviewing the basics and moving forward. *Journal of personality assessment*, 87(1), 35-50.
6. Williams, L. J., Vandenberg, R. J., & Edwards, J. R. (2009). 12 structural equation modeling in management research: a guide for improved analysis. *The Academy of Management Annals*, 3(1), 543-604.

### *Mediation and moderation references*

7. Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), 1173.
8. Dawson, J. F. (2014). Moderation in management research: What, why, when, and how. *Journal of Business and Psychology*, 29(1), 1-19.
9. Dawson, J. F., & Richter, A. W. (2006). Probing three-way interactions in moderated multiple regression: development and application of a slope difference test. *Journal of Applied Psychology*, 91(4), 917.
10. Edwards, J. R., & Lambert, L. S. (2007). Methods for integrating moderation and mediation: a general analytical framework using moderated path analysis. *Psychological methods*, 12(1), 1.
11. Gonzalez, O., & MacKinnon, D. P. (2018). A bifactor approach to model multifaceted constructs in statistical mediation analysis. *Educational and psychological measurement*, 78(1), 5-31.
12. Haans, R. F., Pieters, C., & He, Z. L. (2015). Thinking about U: theorizing and testing U- and inverted U-shaped relationships in strategy research. *Strategic Management Journal*.
13. Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication monographs*, 76(4), 408-420.

14. Hayes, A. F. (2015). An index and test of linear moderated mediation. *Multivariate Behavioral Research*, 50(1), 1-22.
15. Hayes, A. F. (2018). Partial, conditional, and moderated moderated mediation: Quantification, inference, and interpretation. *Communication Monographs*, 85(1), 4-40.
16. MacKinnon, D. P. (2011). Integrating mediators and moderators in research design. *Research on Social Work Practice*, 21(6), 675-681.
17. Malhotra, M. K., Singhal, C., Shang, G., & Ployhart, R. E. (2014). A critical evaluation of alternative methods and paradigms for conducting mediation analysis in operations management research. *Journal of Operations Management*, 32(4), 127-137.
18. Mathieu, J. E., & Taylor, S. R. (2006). Clarifying conditions and decision points for mediational type inferences in organizational behavior. *Journal of Organizational Behavior*, 27(8), 1031-1056.
19. Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior research methods, instruments, & computers*, 36(4), 717-731.
20. Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior research methods*, 40(3), 879-891.
21. Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior research methods*, 40(3), 879-891.
22. Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate behavioral research*, 42(1), 185-227.
23. Rucker, D. D., Preacher, K. J., Tormala, Z. L., & Petty, R. E. (2011). Mediation analysis in social psychology: Current practices and new recommendations. *Social and Personality Psychology Compass*, 5(6), 359-371.
24. Rungtusanatham, M., Miller, J. W., & Boyer, K. K. (2014). Theorizing, testing, and concluding for mediation in SCM research: Tutorial and procedural recommendations. *Journal of Operations Management*, 32(3), 99-113.
25. Sardeshmukh, S. R., & Vandenberg, R. J. (2016). Integrating Moderation and Mediation A Structural Equation Modeling Approach. *Organizational Research Methods*.
26. Taylor, A. B., MacKinnon, D. P., & Tein, J. Y. (2008). Tests of the three-path mediated effect. *Organizational Research Methods*, 11(2), 241-269.
27. Zhao, X., Lynch, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of consumer research*, 37(2), 197-206.

#### **Example discussion papers**

28. Bai, Q., Lin, W., & Wang, L. (2016). Family incivility and counterproductive work behavior: A moderated mediation model of self-esteem and emotional regulation. *Journal of Vocational Behavior*, 94, 11-19.

29. Lim, S., & Tai, K. (2014). Family incivility and job performance: A moderated mediation model of psychological distress and core self-evaluation. *Journal of Applied Psychology*, 99(2), 351.
30. Nandkeolyar, A. K., Shaffer, J. A., Li, A., Ekkirala, S., & Bagger, J. (2014). Surviving an abusive supervisor: The joint roles of conscientiousness and coping strategies. *Journal of Applied Psychology*, 99(1), 138.
31. Siu, O. L., Lu, J. F., Brough, P., Lu, C. Q., Bakker, A. B., Kalliath, T., ... & Sit, C. (2010). Role resources and work–family enrichment: The role of work engagement. *Journal of Vocational Behavior*, 77(3), 470-480.
32. Skarlicki, D. P., van Jaarsveld, D. D., Shao, R., Song, Y. H., & Wang, M. (2016). Extending the multifoci perspective: The role of supervisor justice and moral identity in the relationship between customer justice and customer-directed sabotage. *Journal of Applied Psychology*, 101(1), 108.
33. Van Jaarsveld, D. D., Walker, D. D., & Skarlicki, D. P. (2010). The role of job demands and emotional exhaustion in the relationship between customer and employee incivility. *Journal of Management*, 36(6), 1486-1504.
34. Wo, D. X., Ambrose, M. L., & Schminke, M. (2015). What drives trickle-down effects? A test of multiple mediation processes. *Academy of Management Journal*, 58(6), 1848-1868.

### Required software

SPSS above 20 version and PROCESS Macro

Moodle cloud account link: <https://murugan.moodlecloud.com/login/index.php>

### Other online resources

1. AOM author resources: <http://aom.org/publications/amj/author-resources.aspx>
2. Mediation, moderation and conditional process modeling by ANDREW F. HAYES: <http://www.afhayes.com/>
3. Mediation and moderation analysis by KRISTOPHER J. PREACHER: <http://quantpsy.org/medn.htm>
4. Mediation, moderation and SEM by DAVID A. KENNY: <http://davidakenny.net/>
5. Jeremy Dawson: <http://www.jeremydawson.com/slopes.htm>

### Course instructor

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