

Response to Reviewer 4 Comments

Point 1: This paper is investigating if empirical models aided by machine learning were able to bypass the necessity of understanding the formation mechanism. Contractual disputes in construction projects are taken as an example. Comparable machine-learning-aided mechanistic models and machine-learning-aided empirical models were established and their efficiencies were examined in different scenarios. The paper is interesting and well-written. Suggestion for authors is to add a Discussion section to compare the obtained outcomes and contributions with previous studies.

Response 1: Thank you very much for your possitive comments on our research. In the meanwhile, the authors have rewritten our discussion to refer it back to the literature:

“Pearson’s Chi-square test of independence and Pearson product-moment correlation coefficient both highlighted the strong association of contract quality and client capabilities, which was consistent with the fact that client was more empowered in setting and explaining the contractual arrangements (Wang et al., 2021). Existing research agreed on the fact that interactive process factors were strongly associated with both client and contractor factors (Busby and Hughes, 2004; Shrivastava and Singla, 2020). Established upon this fact, this research further indicated that interactive process factors, being governed with contractual arrangements, were hence more closely associated with client factors rather than contractor factors.” (Lines 469-477)

“The weakest association was presented by the project characteristics and extrinsic uncertainties. Early research often listed such technical factors as critical (Love et al., 2008). However, as the technology advanced to lower the technical barrier in the construction industry, such factors became less important in affecting the project management results (El-Sayegh et al., 2020; Kumar Viswanathan et al., 2020).” (Lines 496-500)

“Established upon the factor lists screened out by the Pearson’s chi-square tests and the Pearson product-moment correlational coefficient analyses, the authors further established comparable models to investigate the functions of empirical and mechanistic models. The Project Management Book of Knowledge pointed out that conflict in construction where heavy assets were involved was inevitable (Fenn et al. 1997). Each of the five principles proposed by the PMBOK, i.e. avoid, accommodate, reconcile, force, and collaborate, had a different fitting scenario (Chamberlain, 2017). The models proposed in this paper would assist in selecting suitable principles to guide the conflict management and dispute resolution in construction projects.” (Lines 526-534)