

論文の内容の要旨

論文題目

A Strategic Analysis on the Effects of Contract-type on Contract Termination in Public-Private Partnerships in Sub-Saharan Africa

(サブサハラ・アフリカ地域のPPP事業における契約解除問題の戦略分析)

氏 名: オドエメナ アントニー トチュク

This study examines how theories on contracts and strategic behavior contribute to the understanding of contract termination in public-private partnerships (PPP). The genesis of the study was based on outstanding questions regarding the determinants of a PPP's differential vulnerability to termination in Sub-Saharan Africa (SSA). Using the hold-up and underinvestment models, this study illustrates the mechanism through which the partners' respective investments and contributions affect the social surplus of a PPP, and how the social optimality or sub-optimality of the partners' investments and contributions emanate from the specificities that characterize the partners' payoffs and entitlements in the PPP contract. Finally, this study examines the effects of contract type on the complex issues associated with contract termination in a PPP and formalized the connection between contract type and the factors that lead to contract termination.

This study relies on insights from contract theory, transaction costs economics, and the theory of industrial organizations. Contract theory informs the study's analysis of the hold-up and underinvestment problems. Insights from transaction cost economics provide a basis for the operationalization of the governance of PPPs, the definition of contract termination as a failed transaction, and the hypothesis for how such failures emanate from largely human factors. The implications of the insights gained from the structure-conduct-performance in the theory of industrial organizations facilitates the establishment a logical connection between hold-up and underinvestment and a PPP's performance. The thesis' formal analysis led to the identification of contract types that are vulnerable to the inefficiencies that result from the problems of hold-up and underinvestment. Using rough sets theory and the logic of explanatory power, the study then generates a set of decision rules that are used to assess the relevance of contract type and other attributes with respect to contract termination. A multiple regression model was also used to assess the statistical relationship between contract termination and contract type.

The empirical analysis conducted in this study relies primarily on information regarding PPPs in SSA in the database developed by the World Bank's Public Private Partnership Group and the Public-Private Infrastructure Advisory Facility (PPIAF) on private participation in infrastructure. The study also uses notes taken during field visits alongside of qualitative data from news reporting and publicly available documents related to the implementation and termination of a given project.

The integration of rough sets theory and the logic of explanatory power led to the construction of a PPP information system—a data table that summarizes the values of the attributes associated with a given PPP contract. The next step of the analysis involves the construction of elementary sets using the notions of indiscernibility and binary relations. Finally, the study develops a series of decision rules that associate contract type and the values of sector and nationality attributes with the occurrence of contract termination. Each decision rule is expressed in the form of “if ... then ...” logical implications. The extent to which each decision rule reveals some associated probability of contract termination is then computed. The author then evaluates the relevance of the values of contract types with respect to contract termination.

The study's results demonstrate the vulnerability of contract termination faced by a PPP project varies from one category to another. In terms of the project's sector, the study found that the energy and transport sectors are most vulnerable and least vulnerable to contract termination, respectively. Despite the apparent differences in terms of vulnerability among the four values of the sectors' attribute, the study's regression analysis found the relationship between sector and contract termination to be negative and statistically insignificant. In terms of the sponsor's nationality, the study also found some evidence of varying vulnerability. Specifically, the findings indicate that domestic-sponsored projects are less vulnerable to termination when compared with foreign- and mixed-sponsored PPP projects. As with the sector attributes, however, the study's regression analysis indicates that the relationship between the sponsor's nationality and the outcome of a PPP is statistically insignificant.

The study's findings with respect to the effect of contract type also indicate the existence of some differences in the vulnerability of type- α and type- β contracts (i.e., the two contract types derived from the formal analysis). By definition, a type- β PPP contract involves joint operation, shareholding and the use of $\beta_j \in (0,1)$ to denote the partners' respective profits, voting rights and entitlements. The type- α contract on the other hand involves the use of the specific performance mechanism; a mechanism that separates the social payoff function into two distinct functions, one involving only the investors' control and contributions, and the other involving only those of the government's. Comparatively, the type- α contract induces

socially optimal investments, unlike the type- β contract. Precisely, the results derived from the empirical analysis show that if a contract is type- β , the probability that the contract will be terminated is 0.261, whereas if a contract is type-m, the probability that the contract will be terminated is 0.084. In comparison with the values of the sector and the sponsor attributes, the study also found that type- β contracts are more likely to experience termination. In particular, while type- β contracts provide the strongest positive explanation for contract termination, domestic sponsorship provides the strongest negative explanation for contract termination. This finding implies that domestic sponsorship decreases the degree to which one should expect the termination of a PPP.

The study's regression analysis also identified contract type as a statistically significant factor in the explanation of contract termination. Aside from this, the results of the study's sensitivity analysis indicate that the explanations for contract termination derived from the two contract types associated with the formal analysis are less sensitive to contextual factors when compared with the explanations derived from a project's sector and the sponsors' nationality. In this regard, unlike the other competing attributes, the study found that the relevance of contract type in the explanations of contract termination were less ad hoc and more correct in a larger set of circumstances.

Through the case studies, this study finds some connection between the specificities of a PPP's contract type and some of the factors that constrain and frustrate the smooth implementation of a project. The identified factors include: the problem of underfunding or underinvestment in a project's physical assets, disputes associated with the realization of an outcome that is sub-optimal, and the problems associated with controlling interests. Specifically, the study shows how the issues associated with a partners' ability or inability to implement their individually preferred decisions in a PPP lead to conflicts and serious problems of coordination, and how such issues originate from the allocation of rights and entitlements in the contract.

In addition, the case studies provide some insights on the nature of the relationship between the consequences of underinvestment and the legal definition of poor performance, default, and the terms of termination in a PPP. The study's findings also provide some insight on how the inefficiencies and strategic issues that practitioners attribute a PPP's failure and termination that originate from the contract type governing the partnership. These findings precisely attest to the pervasive role of endogenous and human factors that lie beyond the project's sector, the sponsor's nationality, and the exogenous socioeconomic environment at work within contractual relations.