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A Study on Principal-Agent Theory and The Role Of Project Managers

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ABSTRACT

The principal-agent theory has been successfully applied to the research of management of construction projects. It has focused on the relationship between the project owner as principal and the contractor as agent. Also, the relationship between the contractor as principal and subcontractors as agents has been explored. After introducing the literature in this field, this paper will present recent research into the relationship between the project owner's and contractor's project managers along the lines of the principal-agent theory. An exploratory survey was used at the first stage of research. After the exploratory survey, the Delphi method was employed for further exploration of the issues involved. It has been shown that the two managers play key roles in the construction phase even though they are both agents not related by contracts. Risk minimization is their main concern in the construction phase. Having summarized this research, the paper addresses the opportunities for further research in this area, which offers a challenge to the principal-agent theory in the field of construction. Guidelines for future research take the central part of the paper. They focus on communication risks caused by asymmetric information, which are of central importance to the principal-agent theory.

Keywords: principal-agent theory, communication risk, risk minimization, project management, guidelines for future research.

1. INTRODUCTION

Good communication between key participants is most important for the success of every construction project. Communication involves sharing relevant information between project participants. Poor communication has been shown to be one of the most common project risks . It is usually assumed that all participants cooperate and exchange information in order to achieve project's goals. Actually, there is a potential conflict of interests between project participants because they all have their own interests, as well. The situation in which one of the two parties is better informed than the other is recognized in economics as the principal-agent problem . In construction projects, the project owner and contractor as principal and agent form the key relationship . Delegation of tasks establishes a principal-agent relationship between the project owner and manager, where the principal (project owner) depends on the agent to undertake a task on the principal's behalf It can be assumed that an agent will try to maximize his or her own benefit even when that may involve a higher damage to the client According to the principal-agent theory, this problem is characterized by three issues concerning the relationship between the principal and the agent: adverse selection, moral hazard, and hold-up. These three issues will be discussed in the following section. The literature review shows that the application of the principal-agent theory in construction is extensive. It covers all three issues of risk concerning the relationship between the principal and agent: adverse selection, moral hazard, and hold-up. Analyzing papers that have been published so far, it can be concluded that most authors have researched moral hazard dealing with

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supply chain management, procurement systems, make-or-buy decisions, and outsourcing . Several authors have discussed the adverse selection problem and its impact on building performance and building quality . It should be noted that the hold-up problem dealing with subcontracting and procurement systems has attracted least attention so far . A more detailed analysis of the key construction literature covering all three issues can be found in. However, the literature does not cover the relationship between project managers in construction projects, which is central to the research outlined in this paper. In the pages that follow, the principal-agent theory in construction is introduced first. A short summary of previous research conducted by the author is presented next . The paper closes with guidelines for future research regarding the application of the principal-agent theory to construction projects.

EXPLORATORY SURVEY AND THE DELPHI METHOD

Due to space limitations, this section provides a short summary of previous research conducted by the author concerning the principal-agent problem . The research process consisted of two phases. First, the exploratory survey was conducted. The respondents were project managers with an appreciable experience in the field. The average value of the largest project they managed was US$1 billion and they had fifteen years of experience on the average, working in a wide range of countries around the globe. Among more than thirty countries, they worked in Egypt, Hong Kong, India, Iraq, Italy, Pakistan, Poland, Russia, Saudi Arabia, Spain, Switzerland, Turkey, the United Kingdom, and the United States. Following the principal-agent theory, there were five questions. The first three concerned three issues of information asymmetry (adverse selection, moral hazard, and hold-up), which correspond to their three sources (hidden characteristics, hidden information, and hidden intentions), while the last two concerned two types of communication risk minimization (screening and monitoring). The respondents were asked to rate the importance of each issue addressed in five questions in terms of the four relationships between the key project parties, as shown in . The key finding from this exploratory survey was that, after the contract is signed between the project owner and contractor, the most important relationship in risk minimization is that between the project owner’s and contractor’s project managers. They are both agents and there is no contract between them, which is an interesting challenge for the principal-agent theory. Interestingly, a number of project managers suggested that communication protocols should be part of project administration so as to ensure better communication between all the participants. Following the exploratory survey, there were two additional Delphi rounds. The results of the exploratory survey itself were considered as the first round. The Delphi method was chosen as an appropriate tool because the project managers are geographically spread apart. Also, they were not available for consultation over lengthy periods of time. All of the project managers that were selected from the exploratory survey for the next two Delphi rounds were practitioners with considerable expertise in the project management field, as witnessed by their thirteen years of experience on the average, and the average of the largest project they managed assessed at $1.4 billion. For the second Delphi round 20 of the 27 respondents were selected. In the final Delphi round, 11 out of 15 respondents took part. The focus was on risk minimization in the construction phase. The key finding from the Delphi method confirmed and strengthened the main finding from the previous exploratory research. The central relationship in construction projects after the contract is signed is that between the project managers. Therefore, they play the most important role in the risk minimization process in the construction phase of a project.

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2. GUIDELINES FOR FUTURE RESEARCH

Taking into consideration the findings from the previous section, there are three directions for future research proposed here. First, strategies of communication risk minimization could be explored in further detail. Second, future research could look into more complex relationships between project participants. Third, the communication process between project participants could be investigated in much greater detail, so as to arrive at viable communication protocols. These possibilities will be briefly discussed below. Selection of strategies for minimizing communication risk caused by information asymmetries As argued in the previous section, the project mangers play the most important role in risk minimization in the construction phase after the contract between the project owner and contractor is signed. One of the possibilities for future research is focusing on the construction phase

SELECTION OF THE APPROPRIATE STRATEGIES FOR MINIMIZING COMMUNICATION RISK BETWEEN PROJECT PARTICIPANTS CAUSED BY INFORMATION ASYMMETRIES.

There are six strategies for minimizing information asymmetries between project participants: 1. bureaucratic control (contracts), 2. information systems, 3. incentives (bonuses), 4. corporate culture, 5. reputation, and 6. trust. A survey could be used to establish the rank list of the six strategies mentioned above for risk minimization. Once again, the respondents would be project managers with considerable experience and expertise in the field. They would be asked to rate the importance of each strategy for minimizing information asymmetries mentioned above in terms of the four relationships between the key project parties: project owner-contractor; project owner's project manager-project owner; contractorcontractor's project manager; and contractor's project manager-project owner's project manager. After this step, the multi-attribute utility theory can be used for compiling a rank list of the strategies for risk minimization, calculating the overall utility function for each alternative.

ESTABLISHING COMMUNICATION PROTOCOLS IN CONTRACTS

Many of the communication problems occur in the construction phase, when conflict can become dysfunctional and disruptive . Such conflict is detrimental to both the project owner and contractor as the principal and agent. Exploring the intricacies of the monitoring process would require much more detailed investigation of project managers and their interaction to arrive at the most promising interplay between formal and informal communication during construction. As shown by the exploratory survey presented in the previous section, communication protocols defined in contracts may help improve the monitoring process .In particular, this is what a large number of respondents suggested in their comments to the survey. Such an investigation could be best achieved by means of interviews and/or focus groups.

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3. CONCLUSIONS

As outlined in the Introduction, the principal-agent theory in construction was first introduced in this paper. Due to space limitations, a short summary of previous research conducted by the author was presented next. Guidelines for future research regarding the application of the principal-agent theory to construction projects complete the paper. As has been argued in the previous section, there are three directions for future research worth considering at this stage. First, strategies of communication risk minimization could be explored. Second, future research could look into more complex relationships between project participants, including the designer. Third, the communication process between project participants could be investigated in greater detail, so as to explore viable communication protocols between the key project participants. On the basis of research into the relationship between the project owner's and contractor's project managers conducted to date, it deserves greater emphasis in further research. Especially in the construction phase, this relationship is crucial for the understanding of project management as a field. The three directions outlined in the previous section offer great promise. Only by understanding better the relationships not regulated by contracts can we expect significant advance of the field.

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