

A STUDY OF ENDOWMENT EFFECT IN CONSTRUCTION PROJECT DISPUTE RESOLUTION

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It has been reported that the average dispute value (the additional entitlement included in the contract to resolve disputes) was US \$84 million and average length of dispute (the period between the time a dispute is formalized and it is settled) was 14.6 months in Asia in the year of 2016 (Arcadis Global Construction Dispute Report 2017). These figures are not impressive in terms of the non-productive use of valuable resources. Endowment effect (EE), which was firstly coined by 2017 Nobel laureate in economics science professor Richard Thaler, is a behavioral phenomenon that people attribute more value to the things they own. EE would derail making rational decisions. This study explores the application of EE on disputants' behavior in construction project dispute resolution (CPDR). In this regard, four sources of EE in CPDR were identified. These are i) ownership, ii) loss aversion, iii) status quo bias and iv) bargaining habit.

Keywords: Psychological barrier, Ownership, Loss aversion, Status quo bias, Bargaining habit, Overcome.

1 INTRODUCTION

In June 2017, the seventh annual Arcadis Global Construction Dispute Report (2017) was published and it highlighted the financial values and time spent on resolving dispute in recent years (Table 1). From Table 1, it can be seen that many additional resources and time have been recurrently spent in resolving construction dispute. Especially, Asia recorded higher average dispute value (the additional entitlement included in the contract to resolve disputes) than the global average. In 2016, it was even almost twice of the global average. Therefore, considerable resources would be saved if construction disputes could be resolved amicably and speedily.

Table 1. Financial values and time input for dispute resolution.

	Average Dispute Value (US\$ Millions)					Average Length of Disputes (Months)				
	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
Global Average	31.7	32.1	51.0	46.0	42.8	12.8	11.8	13.2	15.5	14.0
Asia	39.7	41.9	85.6	67.0	84.0	14.3	14.0	12.0	19.5	14.6

Barriers against dispute resolution were categorized into three forms by Ross and Ward (1995): institutional barriers, strategic barriers and psychological barriers. Institutional barriers

relate to the institutional and organizational factors that discourage settlement and are often imposed by a company's senior management. Restricted channels of communication and information, varied interests among the groups and political considerations are other forms of institutional barriers (Ross and Ward 1995). If effective communication is present, the impact of institutional barriers against settlement may be minimized (Spangler 2012). Strategic barriers are the negotiation strategies used by parties with the belief that these would help to bring benefits for them from the negotiation. Miscalculations or misinterpretations may lead to opportunistic negotiation tactics (Raiffa 1982, Mnookin 2003). Refusing to share information is one of the most common strategies applied on the negotiation table. However, refusal to share information would easily lead to negotiation deadlocks (Raiffa 1982). To deal with strategic barriers, enhancing mutual trust is the solution. Trust would minimize unnecessary suspicion among the disputing parties (Wong *et al.* 2005). The third barrier to successful dispute settlement is psychological in nature. Psychological barriers will govern individual's decision-making activities, including interpreting information, evaluating risks and setting priorities (Ross and Ward 1995). Psychological barriers arise from human instinctive tendency to avoid or delay making decisions when the level of uncertainty is high. Among the three types of barrier in dispute resolution, it is believed that institutional and strategic barriers could be minimized by designing appropriate resolution procedures, assistance from neutral third party and deploying experienced negotiators (Spangler 2012). However, it is more difficult to deal with psychological barriers. Endowment effect (EE) has been reported to be one of psychological barrier that hampers the successful settlement of dispute (Thaler 1980, Tversky and Kahneman 1991, De Dreu and Van Knippenberg 2005, Morewedge and Giblin 2015). This study aims to explore the application of the concept of EE in construction project dispute resolution (CPDR).

2 CONCEPT OF ENDOWMENT EFFECT

2.1 Definition of Endowment Effect

It was generally believed that human decision making can be well explained by Coase theorem (Coase 1988). Coase theorem described the economic allocation of resources in negotiation or similar trade-offs settings (Kahneman *et al.* 1991). Coase theorem predicts the final allocation of resources in negotiations shall be based on an ultimate assumption whereby individuals will value an entitlement the same when consider it as an acquisition or a loss. It was later found that Coase theorem was not always correct: people usually ask for much more as a compensation for giving up an entitlement than they would be willing to pay to acquire the same—a phenomenon named endowment effect (EE) by Thaler (1980). The 2017 Nobel laureate Richard Thaler firstly introduced the concept of EE in 1980, which he referred to as the underweighting of foregone gain of adding goods to individual's endowment (Thaler 1980). Morewedge *et al.* (2009) also explained that the amount people demanded to relinquish something they own was larger than the amount they were ready to spend to get the same. There are two situations of EE: (1) psychological ownership effect: people who own goods will value it greater than people who do not (Beggan 1992, De Dreu and Van Knippenberg 2005, Shu and Peck 2011); (2) In economic exchange situations, the maximum amount of money people are willing to pay (WTP) to acquire goods is much lower than the minimum amount of money people are willing to accept (WTA) to forgo it (Carmon and Ariely 2000, Morewedge and Giblin 2015).

It is found that the endowment effect is not confined to exchange of goods or services, it is also applicable in the domain of decision making. De Dreu and Knippenberg (2005) claimed that ownership attachment of EE also applied to beliefs, ideas and positions people use in decision making, people had the tendency to defend the arguments and positions they owned. Liedtka

(2015) also proposed that in the process of problem solving, EE would lead to attachment to first solutions and reduction in options considered. This study aims to investigate the behavior and influence of EE in construction project dispute resolution (CPDR).

2.2 Sources of Endowment Effect and Respective Influence in CPDR

After the concept of EE was first coined by professor Thaler, extensive follow-on studies have been conducted to explore the theories and sources of EE (Tversky and Kahneman 1991, De Dreu and Van Knippenberg 2005, Shu and Peck 2011, Morewedge and Giblin 2015). Four widely proposed sources of EE and their influence in CPDR were discussed in this section and they were summarized with respective key references in Figure 1.

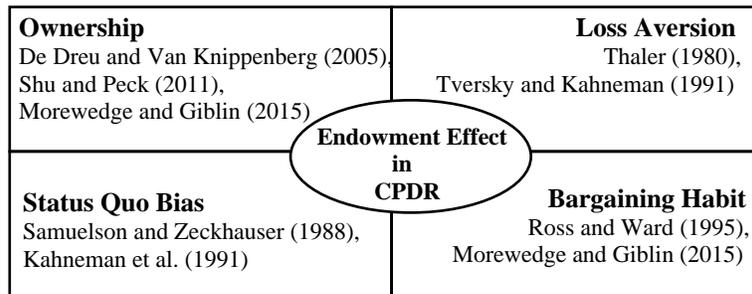


Figure 1. Four sources of EE and respective key references.

2.2.1 Ownership

Psychological ownership explains the tendency of EE (De Dreu and Van Knippenberg 2005, Shu and Peck 2011, Morewedge and Giblin 2015). Beggan (1992) and Morewedge *et al.* (2009) claimed that ownership would increase the perceived value of goods people own. Not confined to goods, but values of beliefs and ideas would also be raised as well (De Dreu and Van Knippenberg 2005). Ownership creates an association between owner and the good and it becomes part of the self-concept of the owner (Ariely *et al.* 2005, Weiss and Johar 2013). Therefore, the positive nature of human’s self-enhancement renders a positive evaluation of the goods people owns (Carmon *et al.* 2003, Ariely *et al.* 2005). It has been pointed out that once a psychological attachment has been formed, the potential loss of the good is seen as a threat to the individual (Beggan 1992, Dommer and Swaminathan 2013). One will unconsciously ask for more compensation if he has to give up his owning goods, leading to a WTA-WTP gap. Besides, Carmon and Ariely (2000) stated that ownership would activate and increase the owners’ accessibility to the positive features of the goods they own, which results in a higher value of their goods compared to other people. In CPDR, under the influence of ownership effect, disputants would attribute irrational value to their assessments and opinions about the dispute matter. Their further decision making would be affected to defend their previous assessments.

2.2.2 Loss aversion

Thaler (1980) described EE as a form of manifestation of loss aversion. Loss aversion is a concept derived from prospect theory and it is the tendency to prefer avoiding loss over acquiring gains of the same amount (Tversky and Kahneman 1991). Loss aversion implies that decision makers will attach more weights to prospective loss than to equivalent prospective gains, where losses are the outcome below the reference states while gains are the outcome above the reference

state (Kahneman and Tversky 1979). Receiving an entitlement will move an individual from a state of not-owning to owing the entitlement, whereas forgoing an entitlement will move an individual from owing to not owing the entitlement (Novemsky and Kahneman 2005, Morewedge and Gliblin 2015). People are generally more sensitive to loss than gain, loss looms larger than its corresponding gain (Tversky and Kahneman 1991). Therefore, he would ask for more compensation if he had to sell his ownings, compared to the price he would pay to acquire the identical amount of goods. In CPDR, taking their own assessment about the dispute as a reference state, disputants would consider comprising as receiving losses. Disputants' loss aversion tendency makes them become more sensible to their compromises than their prospective gains from settlement. Hence, disputants would be reluctant to step out and accept the offer from the counterpart.

2.2.3 Status quo bias

Korobkin (2003) claimed that EE is developed from status quo bias. Samuelson and Zeckhauser (1988) first introduced the term status quo bias and they conducted a series of decision-making experiments and subjects were found to be inclined to stick with their original status quo. Status quo bias is a psychological bias that individuals have a greater tendency to remain status quo when making decisions under risks (Kahneman *et al.* 1991). Status quo is the baseline of the decision makers when confronted with great uncertainties over the circumstances of the decision. Any changes from this baseline will be seen as a loss. Under the influence of status quo bias, individuals are reluctant to make changes. They will only do so if the expected outcome offers a significant higher gain. Thus, their WTA would be higher than the corresponding WTP. This shows the presence of EE in exchange situations. In CPDR, bias towards status quo would make disputants keep their original assessments about the dispute. They are unwilling to search alternative information or consider evidence from the opposite side to construct new positions.

2.2.4 Bargaining habit

It was suggested that strategic bargaining habit was one of the factors that contribute to the formation of a WTP-WTA gap (Kahneman *et al.* 1991). When people have to make trade-offs in negotiations, individuals were found to misrepresent their valuations by over-stating or under-stating their true value in order to receive maximum profit. Knez *et al.* (1985) discovered that sellers often over-claimed their WTA in order to maximize profits. On the other hand, buyer will tend to under-claim their WTP when he attempts to acquire something. Morewedge and Gliblin (2015) related this bargaining habit as a strategic misrepresentation. In negotiations, people will strategically misrepresent their valuation of the goods, either over-value it or under-value it, so as to achieve a more favorable outcome. This phenomenon is not only observed in goods exchange situations, it is also presented in business negotiations (Ross and Ward 1995). Parties' unfaithful offers and responses are important reasons leading to negotiation failures (Ross and Ward 1995). In CPDR, disputants may use opportunistic bargaining strategies to maximize their potential interests, which will devastate the relationship among the parties and makes the resolution process become more difficult.

3 SUGGESTIONS TO OVERCOME ENDOWMENT EFFECT IN CPDR

Involvement of a third party neutral to assist CPDR can be a feasible way to narrow the impact of EE (Ross and Ward 1995, Elliott 1999). Although the presence of a third party cannot completely eliminate the psychological barriers as parties are still affected by their own thinking

(Korobkin 2005). A third-party neutral can guide the negotiations in the “right” direction to a mutual consented settlement (Ross *et al.* 1975, Lord *et al.* 1984). A third-party neutral helps disputants to unveil their stereotypes, discover their common goals and re-build mutual trust (Clark and Marshall 1981, Ross and Ward 1995). Awareness is the first step for EE minimization. Besides, when the common goals and mutual trust are developed, communication would be enhanced among the disputing parties. This will in turn reduce opportunistic and aggressive bargaining strategies. In these regards, the impact of EE would be alleviated with the facilitation of third-party neutral advisors in CPDR. It is therefore worthwhile and economical to incorporate a third party neutral not only just after a dispute has arisen, instead, having the expert assistance of a third-party neutral like dispute resolution advisor throughout the whole project duration would be instrumental in reducing the chance of developing a EE-based dispute resolution attitude. The improvement in communication and early detection of contracting parties’ irrational behaviors together would reduce the chance of developing EE. Timely advice and intervention by a standing third-party neutral would steer the disputing parties back to rational courses.

4 CONCLUSIONS

Dispute is inevitable due to the complex nature of construction project (Cheung and Yiu 2006). Extensive resources would be saved if construction dispute could be resolved efficiently. Identifying the barriers to amicable CPDR is the first step. This study focuses on one of the psychological barriers—endowment effect (EE). EE was first proposed by the 2017 Nobel laureate professor Richard Thaler and it is an irrational behavior underpinned by the tendency of people attributing higher value to the things they own. The existence of EE would bring difficulties to amicable communication among the disputing parties and hamper successful CPDR settlement. This study examined the influence of EE in CPDR. The nature and theoretical background of the EE were explored. Four sources of EE and their respective influence in CPDR were identified: ownership; loss aversion; status quo bias and bargaining habit. The involvement of third-party neutral was further highlighted as an instrumental way to minimize the influence of EE.

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