

INTENTION MATTERS IN EMPLOYMENT CONTRACT

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ABSTRACT

Two treatments are conducted to test the effect of employers' generosity on employees' effort level. In the first treatment, the intention is not observable to the employee while in the second treatment, the intention is observable. Higher wage is reciprocated with significantly higher effort level when the intention of generosity is observable. When intention of generosity is not observable, the positive relationship between wage and effort is not completely absent as employees still reciprocate to higher wage but with weaker tendency.

Keywords: intention of generosity; gift-exchange; reciprocity

1. INTRODUCTION

Many experimental results and field research have shown that people frequently choose actions that do not maximize monetary payoffs. For example, people reject unfair but positive offers in the ultimatum game (see, Guth et. al., 1982; Thaler, 1988, Camerer and Thaler, 1995) or make positive contribution in public goods game (see, Walker and Arlington, 1994; Sefton, et. al., 2007) or make positive allocations in a dictator game (see, Fowler, 2006; Hoffman et. al., 1994) . It is generally accepted in the literature that human behaviors are often governed by psychological and social preferences which lead them to sacrifice monetary payoffs in the course of maximizing utility.

Considerable numbers of research have attempted to explain these behaviors. Altruistic behavior is among one of the explanations given, For an altruistic player, the increase in his utility is caused not by his own payoff but others' .(Andreoni and Miller, 1993; Dawes and Thaler, 1988). This suggests the existence of unconditional cooperation among the players. Another approach extends the unconditional altruism to incorporate distributive fairness. Fehr and Schmidt (1999) and Bolton and Ockenfels (2000) explain that reciprocal behaviour is not only motivated by own payoff but also relative payoff. This requires the model to measure the

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comparative performance such as in Clark and Oswald (1996) and Charness and Kuhn (2007) among others. The theory is further expanded to account for perceived kindness which emphasizes the importance of intention or one's belief about others' intention in a relationship. One leading model in this area is by Rabin (1993) and Falk et al. (2003). These papers investigate the roles of fair intention in Gift Exchange Game.

A number of studies have shown that concerns for fairness are the main motivation for many economic transactions. The presence of this tendency has been proven to have important economic effects (Kahneman et. al., 1986; Camerer and Thaler, 1988 and Bewley, 1998). These models emphasize that in addition to preference for material payoff, humans also exhibit preference for fairness. The preference for fairness has been further modelled as the result of either intentional fairness or distributive fairness. Distributive fairness emphasizes on outcome of a fair or unfair action (Fehr and Schmidt, 1999; Bolton and Ockenfels, 2000 and Clark and Oswald, 1996), while intentional fairness dwells on intention of an action (Kelly and Stahelski, 1970; Greenberg and Frisch, 1972; Kahn and Tice, 1973; Rabin, 1993; Fehr and Gächter, 2000; Falk and Fischbacher, 2006; Dufwenberg and Kirchsteiger, 2004 and Falk et. al., 2008).

While there are a number of studies that have incorporated intention in an experimental game setting, the role of intention in an experimental labor market setting remains unexplored. This paper examines the causes of reciprocity in a labor context. Do employees respond to fair or unfair distribution or do they respond to fair or unfair intention of the employers?

Papers closest to our topic are Charness (2000) and Charness (2004). In Charness (2004), the responses of employees were compared when their wages were determined; by the experimenter, by random process and by the employers themselves. In all these treatments, employees behave based on the mechanism which determines the wage but do not know the intention. Employees who attributed low wage to employers exerted lower effort level than other two treatment conditions. These results raise the question on whether attribution of volition determines effort level, and if so, would employees reciprocate based on the intention of the employers? We intend to investigate this response in this paper.

This paper provides experimental evidence on reciprocal behavior which relates to intentional attribution. The main result shows that the employers' intention is important in causing reciprocity. In the treatment when employers' intention is ruled out from observation, effort level exerted by employees is low and the employers also do not have incentive to offer high wage. However, in treatment which allows for attribution of intention, employers are more willing to offer high wage and the effort level is higher. The enhanced cooperation observed in the second condition does not mean that reciprocity is eradicated in the first condition. Significant reciprocity is present when employees cannot observe the intention, although the tendency is weaker.

The paper is organized as follows. Next section discusses the experimental design and procedures. Section 3 presents the findings of the experiment. Section 4 concludes.

2. EXPERIMENTAL DESIGN AND PROCEDURES

The experimental design is based on Gift Exchange Game between “employer” and “employee”. The set up allows us to learn the reciprocal behavior of an employee towards offers made by an employer. The game was first described by Fehr et. al., (1993) to model the reciprocal behavior between two parties. The game begins with a person making a sacrifice by offering money to another person in exchange for a “gift” from the other person. As there is no monetary benefit in making that sacrifice, the sacrifice usually is concluded as social preference. This behavior is consistent with the efficiency wage by Arkelof (1982) in which employers offer higher than market clearing wage in exchange for higher productivity.

The game is a two stage sequential move game, in which the employer moves first by offering a certain level of wage to the employee. Each employer is endowed with 20 to 120 experimental money each round. The employer can offer wage ranges from 20 to 120 to the employee. If the employee accepts the offer, the employee can “work” by exerting effort level according to Table 1. If he rejects the offer, both parties earn zero profit for that round.

Table 1 : Effort Levels and Costs of Efforts

Effort level (e)	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Cost per effort level (C(e))	0	1	2	4	6	8	10	12	15	18

At the end of each round, payoff is calculated. The payoff to the employer in the given round is:

$$\prod_i^{employer} = (120 - w_i)e_i \quad (1)$$

where w is the wage level chosen by employer and e is the effort level exerted by employee. The employee’s payoff is given by:

$$\prod_i^{worker} = w_i - 20 - C(e_i) \quad (2)$$

where 20 is the travel cost borne by the employee. In total, there are 10 rounds of interactions, and total payoff is the accumulated income. The total income in experimental money is then paid out to the students at the rate of 13 experimental money = RM1. On average, each student earns RM35. The duration for each round of interaction is 3 minutes. Overall, the experiment took an hour and a half which includes the time taken to explain the procedure and payments to the subjects.

Two different treatments were conducted to investigate the effect of employers’ intention on the performance of employee. The difference between the two treatments is the observability of different wage choices available to the employer. This allows employees to observe the

intention of the employer when he chooses the wage level. The treatment when the choices are not observable is referred to as Non-Intentional Treatment (i.e. NI-treatment) and the treatment when choices are observable is termed as Intentional-treatment (i.e. I-treatment).

In the NI-treatment, employer is free to choose any wage levels from 20 to 120 experimental money. There is no reference wage level available to the employees. Therefore, wage chosen by the employers did not convey any message about the employers' intention.

In the I-treatment, employers had three choices of wage offer; market wage, wage higher than market wage by 5 experimental money (i.e. not so generous wage) and wage higher than market wage by 10 experimental money (i.e. generous wage). All three choices are observable to the employees, thus making the market wage the reference wage. Intuitively, an offer of (i) wage equals to market wage is clearly perceived as neutral since employers match the offer to the market wage. The not so generous wage offer is perceived as unfair but fairer than the wage offer in condition (i) because the generous wage available to employers will result in low payoff to the employers.

Comparing effort levels between treatments, given the same wage level, the employees in the I-treatment would exert higher effort level than in the NI-treatment if employers showed good intention by offering generous wage offer. The observability of the wage choices would force employers to offer higher wage levels than in the NI-treatment. The exerted effort levels exhibited by the employees in the I-treatment would reflect the true reciprocal behavior as employees would not have benefit in building reputation.

In total there were 76 subjects who had participated in the experiment, of which 48 subjects participated in NI-treatment and 28 participated in I-treatment. The treatments were conducted in two different days and no subjects were allowed to participate in both treatments. The experiment began with the NI treatment first and the subjects who turned up on the first day of the experiment participated in the NI-treatment. Subjects who turned up on the second day of the treatment participated in the I-treatment. The treatment assignment is random as students sign up for the experiment days according to their schedule. The subjects were graduate students from different faculties in Universiti Sains Malaysia. The subjects have never participated in any experiments before. The age of the subject ranges between 20 to 24 years old. The recruitment was made through announcement in the class. Upon entering the experimental lab, the students were separated randomly to the role of "employee" and "employer" in two different rooms. The sitting arrangement was such that each student was separated by a partition to avoid verbal communication during the experiment. Each was given 10 minutes to read the instructions. The experimenter then explained the rules and procedures and answered questions raised by the subjects before the experiment began. The experiment was programmed and conducted through z-Tree experimental software (Fischbacher, 2007).

3. RESULTS

We first report the differences of effort levels between treatments with intention (I-treatment) and without intention (NI-treatment) and then followed by comparing the responses of individual employees toward generous and not so generous offers in the I-treatment.

Table 2: Effort Levels For Different Levels of Wage

Treatment wage	Effort	I-treatment Std. error	n	Effort	NI-Treatment Std. error	n
65-69	0.3124	0.0350	10	0.5476	0.0394	21
70-74	0.4500	0.0500	2	0.4957	0.0543	23
75-79	0.4231	0.0508	13	0.4538	0.0730	13
80-84	0.4500	0.1500	2	0.3111	0.0700	18
85-89	0.5273	0.0359	11	0.3500	0.0500	2
90-94	0.2333	0.0882	3	0.5000	0.1035	8
95-99	0.5900	0.0458	10	0.5000	0.0000	1
100-104	0.4000	0.0707	5	0.2250	0.0629	4
105+	0.6157	0.0270	70	0.4000	0.1761	5

The results from the two treatments indicate positive relationship between effort and wage level. None of the employees and employers select minimum effort and wage levels (i.e. $e = 0:1$ and $wage = 20$ or 21) in the I-treatment and the minimum wage levels are chosen 4 times in NI-treatment. Table 2 shows the summary of effort levels at each wage range for the two treatments.

Comparing the frequency of high and low wage offers between treatments, more employers are found to offer high wage bracket (i.e. 95 - 99 and 100+) in I-treatment than in NI-treatment. In the I-treatment, none of the employers offer average wage to the employees. This is because when employers' intention is observable to the employees, employers have no choice but to offer higher than average wage to induce effort.

The good intention is reciprocated by higher effort level in the I-treatment than in the NI-treatment. In most of the wage brackets (except 65 - 69 and 90 - 94), effort levels in I-treatment are consistently higher than effort in NI-treatment. For example, in the wage bracket of 85-89, effort in the I-treatment is 0.53 in I-treatment compared to 0.35 in the NI-treatment.

Table 3 shows the effect of wage on effort levels in the two treatments. Coefficients of wage show positive relationship between effort and wage and the slope is steeper in I-treatment than in NI-treatment. A Wald test on the wage parameters reveals that effect of wage on effort is significantly higher in I-treatment than in NI-treatment (t-statistics 5.1956). The difference suggests enhanced positive reciprocity when employees observe good intention exhibited by employers in I-treatment compared to NI-treatment.

The responses of employees are shown in Figure 1 (a), which plots the effort levels in each round for the two treatment conditions. The employees in I-treatment start with lower effort level than NI-treatment, but effort levels are consistently higher after second interaction. On average, effort level in I-treatment (0.5078) is higher than in NI-treatment (0.3183).

Employees responded with higher effort level when offered a generous wage than not so generous wage. Column 3 in Table 3 reveals that when wage is equal to generous wage, effort increases by 0.0129. This is equivalent to an increase of 4.161 in own wage. Generous wage induces higher effort than not so generous wage. Figure 1(b) plots the evolution of average effort when employers offered not so generous offer and generous offer within I-treatment. On average, the effort in the former is 0.5027 and in the latter is 0.5423.

Table 3: Random Effects Tobit Regression Results with Effort as Dependent Variable

Treatment	NI-treatment	I-treatment	I-treatment with dummy	Overall
	(1)	(2)	(3)	(4)
Constant	0.0639*	-0.2887*	0.0880*	0.0476
Z value	1.21	-2.53	1.15	0.87
Wage	0.0033**	0.0082***	0.0031***	0.0037***
Z value	7.53	4.88	5.69	7.87
D			0.0129**	
Z value			1.647	
D-t				0.0696*
Z value				2.55
D-t x wage				-0.0015**
Z value				2.41
X ²	127.12	176.81	80.33	210.92
N	227	139	126	356

Notes:

D=1 if wage is equal to generous wage and 0 otherwise

D-t=1 if it is I-treatment and 0 otherwise

* Significant at 10% level, ** Significant at 5% level, *** Significant at 1% level.

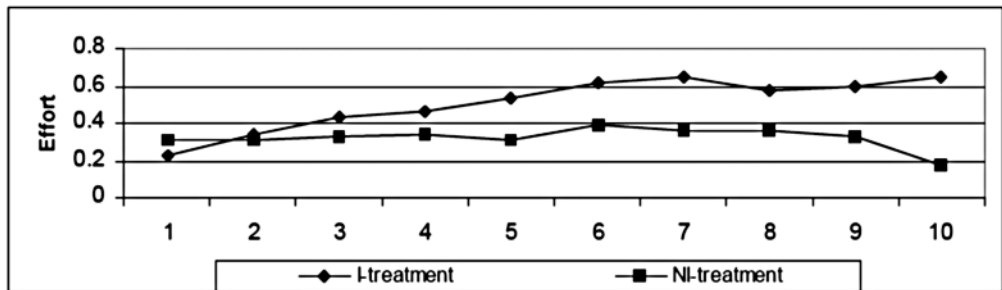
So far, the attention has been focused on the effects of the employers' intention on employees' reciprocal behavior. However, Table 2 and Table 3 reveal that reciprocity is not completely absent in the NI-treatment. In Table 3 column 4, shows that reciprocal response is stronger in I-treatment than in NI-treatment. However, the wage coefficient is still significant when D-t=0 (i.e. dummy variable for treatment), which indicates that employees reciprocate to wage in the NI-treatment. The average effort levels in period 4, 5 and 9 for wage=not so generous are 0.52, 0.59 and 0.65 respectively, and for wage=generous wage offer are 0.233, 0.4 and 0.45 respectively. This is because there are two subjects, subject number 10 and 11 who always offer near to Nash equilibrium effort level, 0.1 to 0.2. The rest of the subjects played higher effort level.

Pairwise correlation between wage and effort in the two treatments showed that the results are robust. The coefficients show that the correlation between the wage and effort in NI-treatment is 0.4932 and in I-treatment is 0.5328, both are significant below 1% level. Therefore, significant reciprocity exists in NI-treatment, although the behavior is weaker.

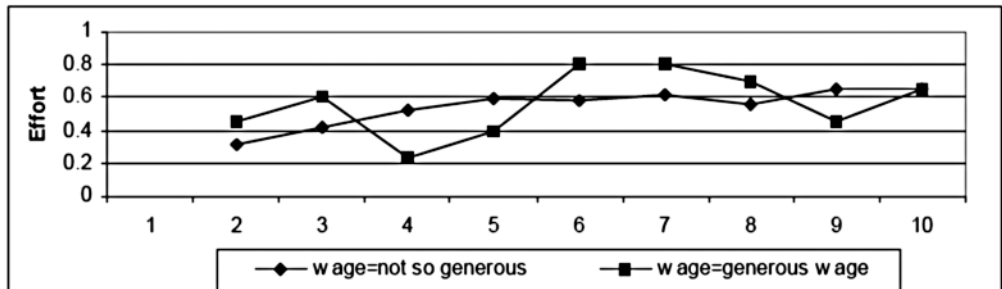
4. CONCLUSION

Many past studies have attributed the reciprocal behavior to distributive consequences when judging fairness of an action. In this paper, we experimentally prove that people do not only respond to distributive fairness but also to the intention signaled by the partner. The findings cast serious doubt on the standard economic theory that actions are solely determined by payoff, and show that the model of fairness in payoff as in Bolton and Ockenfels (2000) is incomplete as it neglects the non-pecuniary side of each action.

We compare the responses of employees to wage offered by employers in two different treatments using a simple Gift Exchange Game. In the NI-treatment, as employees can only compare current wage with previous wage, employers have no strategic reason to offer significantly higher wage than previous wage. However, in the I-treatment, whereby employees can observe different wage offer choices available to employers, it allows employees to evaluate employers' intention. Hence, employees will reciprocate effort accordingly.



(a) Effort levels in I and NI-treatments



(b) Effort levels within I treatment

Figure 1: The Evolution of Effort Levels in the Two Treatments

The reciprocity model explains the differences in the two treatments. The observability of employers' generosity in I-treatment result in employees' reciprocity whereby higher generosity is reciprocated by higher effort level compared to the NI-treatment. The results show that not only fairness in payoff outcome matters but reciprocity could be enhanced when the intention is observable. Furthermore, the rational choice theory based on material wellbeing cannot be used to predict the employees' behavior especially in the context where the contract is not complete. The central component of the "gift" does not lie with the material gift itself, but how the employee views the gift is more important.

Although in the real labour market setting, information of wage and compensation packages are less accessible and explicit, the findings here highlight that any gestures or intention made by the employer that acknowledge employee's effort is likely to reinforce positive perception of the employee towards the employer. This suggests that apart from the contractual wage given to employees, employers should also include other forms of gratuity payout that will help signal employers' good intention and generosity. In other words, current practices such as such as performance based bonus instead of contractual based bonus should be encouraged and continuous professional development should be reviewed regularly according to employees' skills needs to affirm employees.

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