

# Effects of employee governance and operational control on psychological ownership and perceived justice

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Two kinds of employee control, governance control in which employees have similar control to shareholders in the direction of the organisation, and operational control in which they have control over the way they work, were investigated in four scenario studies. Study 1 found that greater levels of formal governance control enhanced psychological ownership, perceived justice, organizational commitment and satisfaction. Study 2 found that psychological ownership, perceived justice, organizational commitment and satisfaction increased with increased levels of both governance and operational control, and the effects of the two forms of control were largely independent. In Study 3, higher proportions of at-risk income produced greater feelings of ownership and higher ratings of the importance of governance and operational control but decreases in perceived justice. Study 4 showed that increased operational control, governance control and proportion of at-risk income all enhanced psychological ownership and justice. However, this study also showed low levels of perceived justice where there was governance control without an at-risk income component. Overall, having both governance and operational control appears to produce the best outcomes in terms of psychological ownership and perceived justice.

This paper examines how psychological ownership by employees of an organisation and their perceptions of justice might be affected by the actual control they have over the organisation and the extent to which their remuneration depends on the organisation's performance. The term psychological ownership is frequently used to describe employees' feelings and beliefs that the organisations they work for are in some sense theirs. Psychological ownership is normally distinguished both from legal ownership and from the control over operational decisions that is normally exercised by management (e.g. Pierce, Kostova, & Dirks, 2003; Pierce & Rodgers, 2004). Moreover, psychological ownership itself is probably a complex rather than a simple construct. For example, Pierce, Kostova and Dirks (2001) distinguish routes by which psychological ownership emerges in individuals; controlling the target, knowledge of the target, and investing in the target. Pierce and Jussila (2010) distinguish individual and collective psychological ownership. In individual ownership the individual feels that (s)he has a stake in the target; collective psychological ownership implies that the individuals

feel as though they are part of a team.

As the common recommendation to "work like you own the company" suggests, there is widespread belief that employees will work harder and smarter and be happier if they feel in some way that they own the organisation. Indeed, there is evidence that enhanced performance is associated with greater psychological ownership (Brown & Crossley, 2008; Van Dyne & Pierce, 2004), and that job satisfaction and organisational commitment increase with psychological ownership (Avey, Avolio, Crossley, & Luthans, 2009; Mayhew, Ashkanasy, Bramble, & Gardiner, 2007). On the other hand, psychological ownership may not always be a positive force. It is possible, for example, that greater psychological ownership might lead to greater resistance to organisational change or information hoarding (Pierce & Jussila, 2010).

In the present paper psychological ownership was a dependent rather than an independent variable in the scenario studies. However, two of the studies (1 and 2) included independent measures of the satisfaction and commitment that the respondents might feel under different

ownership regimes, with the expectation that organisational arrangements that increase psychological ownership might also increase satisfaction and commitment. Additionally, in all four studies respondents were asked how just or fair they perceived the different organisational arrangements to be. Perceived justice is important in its own right (e.g. Singer, 1997). One aspect of it, organizational justice, describes the perceived fairness of treatment received from an organization by both individuals and by groups (Aryee, Budhwar & Chen, 2002; Chi & Han, 2008). Chi and Han's (2008) research indicated that organisational variables affect perceived justice in much the same way as they affect psychological ownership.

Important variables in our four scenario studies were the degree of governance control, the degree of operational control, and what proportion of the employee's income was variable (determined by the organisation's performance) rather than fixed. Governance control means that employees have at least some of the same formal rights as shareholders of the company, and thus are in some sense legal (as opposed to psychological) owners. Operational control is the extent

to which the employee has control over the actual job operations that he or she is involved in.

One common method of providing both legal ownership and governance control to employees is through employee share ownership (cf. Dow, 2003; Hansmann, 1996). Here, individual employees own some but usually not all the shares in their employing organisation. Such ownership may be either direct (each worker has a personal share-holding) or indirect, in which a trust will own the shares (Kruse & Blasi, 1998). The voting rights associated with the shares may be held by the trustee or passed onto the member employees (Culpepper, Gamble & Blubaugh, 2004; Kruse & Blasi, 1998).

There has been substantial growth in the prevalence of employee share ownership in the United States since the mid 1970s where it has become the predominant form of employee ownership (National Centre for Employee Ownership, 2010). This growth has been encouraged by the potential to provide a financial benefit to employees; and at same time improve employee attitudes, behaviours, worker-management cooperation, in part because of the development of psychological ownership (Kruse & Blasi, 1998; Pierce & Rodgers, 2004; Pierce, Rubinfeld, & Morgan, 1999; Poutsma, de Nijs, & Poole, 2003). Another approach to governance control has been taken by the German process of co-determination (*Mitbestimmung*). Under German industrial law it is compulsory that employees have a large minority representation on the boards of large firms. Reviews of the consequences have often been positive (Fitzroy & Kraft, 2005; Smith, 1991).

However, the simple implementation of a formal employee ownership scheme neither guarantees a positive change in employee attitudes and behaviours, nor necessarily results in automatic improvements in productivity or financial performance (e.g. Blasi, Conte, & Kruse, 1996; Faleye, Mehrotra, & Morck, 2005; Kruse & Blasi, 1998). For example, several researchers have attributed poorer financial performance in employee owned organisations to problems arising from collective decision making and the

rather mixed preferences employees show for organisational outcomes (for example, workers may want to minimise redundancies) compared to the more single-minded preferences of investors (e.g.: Dow, 2003; Dow & Putterman, 1999; Hansmann, 1996).

Such considerations indicate that it might be worthwhile to develop psychological ownership by other means than governance control. In particular, psychological ownership might be enhanced though greater operational control. For example, O'Driscoll, Pierce, and Coghlan (2006) showed that the employee's affective, motivational, and behavioural responses are more positive when the work environment is characterised by low levels of structure and where there is the opportunity to exercise personal control. There are various sources of personal control in the workplace. This paper concentrated on participation in decision making. Where goal setting, planning, operation, and human resource decisions are made by senior managers and passed down the hierarchy, little decisional control remains at the job level (Pierce, O'Driscoll, & Coghlan, 2004). In comparison, participative management practices allow employee decisional input into issues relevant to the context of their jobs, thus providing the job holder with greater operational control (Pierce et al., 2004).

An important question is whether operational control can produce comparable levels of psychological ownership to governance control, and aspects of this question are addressed in Studies 2, 3 and 4 below. In many employee ownership situations, a proportion of the employee's total return from the work is dependent on the profits made by the organization. Study 3 investigated whether the importance of governance and operational control were affected by the proportion of an employee's income that was at risk. The expectation was that both governance and operational control would be seen as more important when this proportion was increased, but it is not clear which type of control would be most affected. In Study 4 governance control, operational control and proportion of at-risk income were manipulated and the effects on psychological ownership

and perceived justice assessed.

All four studies were scenario studies. In each study respondents read a number of different scenarios describing different organisational arrangements and they were asked how they would react under different organisational arrangements. Clearly, such a methodology has both an advantage and a disadvantage. The advantage is that one can gain some insight into how people would react to a variety of situations that they may not have experienced or, indeed, had much opportunity to experience. The disadvantage is that people may not be able to describe how they would actually feel or behave under these conditions. Some amelioration of this disadvantage was obtained by recruiting both worker and student respondents in three of the studies. The logic is that if people's responses to the scenarios are closely tied to their actual real-life experiences then the students and workers will respond differently, as the workers will have had more of these experiences. Obtaining a fairly similar pattern of responses suggests such experience may be of lesser importance.

The different studies addressed different, although related, specific issues, and these are presented before each study. To summarise, an important basic motivation behind all the studies was to investigate whether some of the apparent benefits of governance control, such as psychological ownership, perceived justice or job satisfaction, might also be obtained through governance control. That is, do governance control and operational control have interchangeable effects?

## Study 1

Study 1 investigated the perceived consequences of increasing degrees of governance control of the organization, ranging from simple employment (with no ownership) to a scenario in which employees held shares with full shareholder voting rights. The expectation was that psychological ownership would be enhanced as governance control increased. Indeed, it would be odd if it were not. It was also hypothesised that satisfaction, commitment and perceived justice would be enhanced with greater governance control.

**Method**

**Participants.** There were 19 male and 19 female workers or students. Ages ranged from 20 years to 59 years with a mean age of 31.6 years. All participants were volunteers, were tested independently, and returned the completed questionnaire in an envelope (to ensure anonymity). There were 12 male and 8 female workers, with a mean age of 38.3 years, and 7 male and 11 female students, with a mean age of 24.2 (*SD* = 5.6) years. The students were recruited individually on campus, the workers individually from a number of different locations. The working sub-sample was asked for their occupation. The responses were varied: administrator, builder, company director (2), contractor, customer service administrator, dentist, driver, early childhood teacher, forklift driver, IT administrator, postal assistant, quantity surveyor, research assistant, salesperson, self-employed trader, solicitor, technician, tour coordinator, and transport. We did not ask for details of their current or past employment. Piloting indicated that few workers had experienced governance control.

**Measures.** Printed questionnaires were used. Each questionnaire consisted of 4 scenarios followed by four questions. Each scenario represented a particular type of employment situation. Participants first read a standard coversheet and instructions for the questionnaire, and were then presented four scenarios (one per page). The order of the scenarios within each questionnaire was randomised.

The four scenarios were:

(1) Employment scenario. The employment scenario depicted a situation where employees did not have shares in the company, control over the

company or information regarding the performance of the company.

(2) Share Trust scenario. An allocation of company shares was held in trust for each employee. Employee-owners had no control over the company through shares held in trust, nor information about the performance of the company, but did have an equity stake through direct claim on the value of the shares and dividends paid.

(3) Representative Control scenario. Employees held shares personally, but elected a representative to vote on company decisions on their behalf. Employee-owners thus had representative control of the company, an equity stake and possible dividends, and information regarding the performance of the company.

(4) Direct Control scenario. Individual employees held shares and full share-holder rights. Employee-owners had direct control over the company through full voting rights, as well as share equity, possible dividends, and information.

The same four questions were asked after each scenario. The questions concerned: (1) Justice, “Considering the information given in the scenario above, how just, or fair, do you believe that this type of employment arrangement is to workers in the company?” (2) Commitment, “Considering the information given in the scenario above, how committed do you believe you would feel towards the company, its goals, and its ongoing success if you were a worker here?” (3) Ownership, “Considering the information given in the scenario above, how would you rate your belief that you personally owned some of this company, i.e. would you see yourself as an owner

of the company?” (4) Satisfaction, “How satisfactory would you find the employment situation described in the scenario above if you were a worker in this company?” Participants recorded responses to each of the four questions on a 7 point rating scale, 1 indicated the lowest level of the dependent variable, 4 a neutral point, and 7 the highest level of the dependent variable. (For more detail on the wording used for Studies 1 to 3, see Fraser, 2010.)

**Results and Discussion**

Average ratings for each measure on each scenario are shown in Table 1. Separate one-way repeated measures analyses of variance comparing ratings across the four scenarios showed significant effects for the justice measure ( $F(3, 111) = 22.79, p < 0.001$ , Partial  $\eta^2 = 0.38$ ), commitment ( $F(3, 111) = 28.49, p < 0.001, \eta^2 = 0.44$ ), perceived ownership ( $F(3, 111) = 61.30, p < 0.001; \eta^2 = 0.62$ ), and satisfaction ( $F(3, 111) = 25.45, p < 0.001, \eta^2 = 0.41$ ). As Table 1 shows, more control enhanced all the measures, but the effect was strongest for perceived ownership. Note that, in this study at least, the perceived ownership variable functions to some extent both as a manipulation check and as a check that our measure of psychological ownership worked appropriately. It would be disconcerting if the respondents did not register greater psychological ownership as governance control increased.

A 4 (scenario)  $\times$  2 (gender) split-plot analysis of variance was performed for each dependent measure to investigate possible interactions. One significant interaction was found on the satisfaction measure between scenario and gender ( $F(3, 108) = 3.01, p < 0.05$ ). The effect size here was small,  $\eta^2 = 0.08$ . Overall, women found the employment scenario less satisfactory than men did, and the direct control scenario more satisfactory. Similar 4 (scenario)  $\times$  2 (worker v student subsample) analyses of variance on the four dependent measures found no significant scenario  $\times$  subsample interactions.

Table 2 shows correlations between the dependent variables. Psychological ownership has moderate to weak correlations with the other variables, perhaps in part because (as Table 1 shows) it was also the most

Table 1. Mean Rating Scores with Standard Deviations across Scenarios in Study 1

Scenario	Employment		Share Trust		Representative Control		Direct Control	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Justice	4.4	1.5	4.5	1.4	5.5	1.3	6.3	1.1
2. Commitment	4.1	1.3	5.0	1.1	5.6	1.1	6.2	1.0
3. Ownership	2.2	1.8	3.7	1.4	4.8	1.2	5.9	1.2
4. Satisfaction	4.2	1.3	4.7	1.1	5.3	1.1	6.0	1.1

Table 2. Pearson Correlations between the four Dependent Variables in Study 1

	Justice	Commitment	Ownership
Commitment	.75*	-	
Ownership	.05	.32	-
Satisfaction	.72*	.80*	.33*

Note.  $p < .05$ , two-tailed

strongly affected by the manipulation.

### Study 2

Study 1 established that, as suggested by previous research, greater governance control was seen as producing enhanced psychological ownership and also increased satisfaction, perceived justice and commitment. Study 2 investigated the effect of having either operational control or governance control on the same dependent variables. The previous research indicates that all four dependent variables would be enhanced by either operational or governance control, but it is not clear which type of control would produce a greater effect. Nor does the previous research clearly indicate whether the effects would be independent and thus additive, or whether some interactive effect might be produced.

#### Method

Participants and procedure. There were 55 participants in total, 31 male and 24 female. There were 29 workers and 26 students. Ages ranged from 18 years to 65 years with a mean age of 31.5 years. Similar procedures were used to Study 1, and a similar range of worker occupations recorded.

**Questionnaire.** The study used a 2 (governance control versus no control)

× 2 (operational control versus no control) within-subjects design. Thus, each participant was presented with four scenarios, and in different orders for each participant. The same dependent measures were used as in Study 1.

All four scenarios were preceded by an introduction which described three roles in a hypothetical organisation, worker, manager, and shareholder, and described the decision-making responsibilities of each role. The introduction also said that all workers also owned shares in the organisation.

The key passage of the operational control scenarios read (with bold as in the questionnaire): **“In this company workers also actively participate with the managers in decision making about the overall operation of the company.** This means that workers are not just responsible for the tasks that are a part of their jobs, they are also involved in work related decisions that would traditionally be the sole responsibility of a manager. **Through this involvement in managerial decision making, workers are able to share their work-related knowledge, help to improve the performance of the company, and provide a better workplace benefiting everyone in the company.** This is known as participative management and is intended to encourage an open

and cooperative relationship between management and workers by including workers in some company decision making.”

The key phrase in the no operational control conditions read: **“Workers such as you are not involved in making the types of operational or strategic decisions made by managers.”**

The corresponding passage for governance control present scenarios read: “In this company major decisions must gain the approval of the company’s shareholders as they have a right to vote to approve or disapprove these decisions. **The shares owned by workers in the company are the same as the shares owned by the other shareholders so the workers are also involved in this process of approving major decisions.** Workers therefore also have some control over the company the same as the other shareholders. The purpose of the workers’ shares is to provide the financial benefits of share ownership to workers, and as a consequence of this arrangement the workers’ shares also provide them with some control over the company.”

The no governance control conditions contained a key phrase that read: **“Workers like you are not included in this process of voting on major company decisions, even though you also own shares in the company.”**

#### Results and Discussion

Table 3 shows results obtained from the study. Analyses of variance (2 × 2 with repeated measures on both governance and operational control) showed justice was rated more highly when both operational ( $F(1, 54) = 24.24, p < 0.001, \eta^2 = 0.31$ ) and governance control were present ( $F(1, 54) = 42.81, p < 0.001, \eta^2 = 0.44$ ).

There was no significant ( $p < .05$ ) interaction. Similarly, commitment was scored more highly when there was operational ( $F(1, 54) = 21.58, p < 0.001, \eta^2 = 0.29$ ) and governance control ( $F(1, 54) = 66.84, p < 0.001, \eta^2 = 0.55$ ), and there was no interactive effect. Perceived ownership was also rated higher when operational ( $F(1, 54) = 15.37, p < 0.001, \eta^2 = 0.22$ ) and governance control were present ( $F(1, 54) =$

Table 3. Mean Rating Scores with Standard Deviations across Scenarios in Study 2

Scenario	No Worker Control		Operational Control Only		Governance Control Only		Operational & Governance Control	
	M	SD	M	SD	M	SD	M	SD
1. Justice	4.5	1.4	5.1	1.2	5.3	1.3	6.2	1.0
2. Commitment	4.4	1.3	5.1	1.0	5.7	1.1	6.3	0.8
3. Ownership	2.7	1.5	3.5	1.4	4.8	1.7	5.1	1.6
4. Satisfaction	4.3	1.3	5.3	0.9	5.5	1.1	6.1	0.9

100.31,  $p < 0.001$ ,  $\eta^2 = 0.65$ ). However, there was a small, significant interactive effect of the two kinds of control ( $F(1, 54) = 4.88$ ,  $p < 0.05$ ,  $\eta^2 = 0.08$ ): As the table shows, the interactive effect of the two sorts of control on psychological ownership was slightly less than the two independent effects added together. Finally, satisfaction increased with both operational ( $F(1, 54) = 29.64$ ,  $p < 0.001$ ,  $\eta^2 = 0.35$ ) and governance control ( $F(1, 54) = 48.88$ ,  $p < 0.001$ ,  $\eta^2 = 0.48$ ), and there was no interactive effect.

Including gender in the analyses of variance produced no significant interactive effects, but a  $2 \times 2 \times 2$  analysis of variance of the psychological ownership measure with governance control, operational control, and subsample as factors (the first two repeated measures, the last between subjects) found a significant two-way interaction between governance control and subsample ( $F(1, 53) = 4.81$ ,  $p < 0.05$ ,  $\eta^2 = 0.08$ ) with feelings of ownership for students lower than for workers when there was no governance control, while feelings of ownership for students increased to a higher level than for workers when governance control was present.

The study showed that both operational and governance control affected respondents' ratings of all the measures. However, governance control generally had more effect than operational control. This conclusion is reached both from comparisons of the  $\eta^2$  values for all the measures and from examining the means in Table 3. The finding that both variables had significant effects, coupled with the lack of a significant interactive effect for all but the perceived ownership measure,

indicates that the two sorts of control may produce their effects in rather different, independent ways. Thus, the effects do not appear to substitute for one another; neither is there any evidence for synergistic effects.

### Study 3

If employees take part in some kind of profit-sharing arrangement (for example, if they own shares in the firm), then some of their income will depend on the profits made by the firm, and thus be at risk rather than fixed. Study 3 investigated the effects of varying the proportion of a worker's income that was fixed rather than profit-dependent on the rated importance of having operational and governance. Thus, whereas in previous studies operational and governance control were manipulated as independent variables, here their rated importance comprised dependent variables. The study also assessed whether feelings of ownership and justice changed under the same conditions.

#### Method

**Participants and procedure.** There were 20 male and 20 female participants, all workers, with an age range from 19 to 66 years ( $M = 36.8$ ), completed questionnaires. Similar recruitment procedures were used and a similar range of occupations recorded. Students were not recruited because Studies 1 and 2 had found little difference between workers and students.

**Questionnaire.** Four scenarios were presented to each respondent in randomised order. The scenarios were described as employment, low risk, medium risk, and high risk. Four

dependent measures, all rated on 7-point rating scales, were used. The first two dependent variables were importance of governance control ("In this situation how important would it be to you to be able to vote for or against major company decisions suggested by management? Voting would enable you to have some governance control over the company."), and importance of operational control ("In this situation how important would it be to you to be able to participate with management in decision making surrounding the daily operation of the company? Participating in work related decisions would give you some operational control over the company"). The remaining two dependent variables were justice and perceived ownership, measured as in Study 1.

The employment scenario depicted a typical employment relationship where employees received a fixed weekly salary with no at-risk component. Employees did not own any shares in the employing company. The three risk scenarios presented employee ownership situations where employees also owned company shares. In the low-risk scenario, employee-owners experienced a low level of risk on the income they received with (on average) 75% being fixed and 25% variable based on any dividend paid on their shareholding; in the medium-risk scenario they received returns that were on average 50% fixed and 50% based on any dividend paid on their shareholding, and in the high-risk scenario the corresponding proportions were 25% and 75%. For all risky scenarios, respondents were told that "when the company is performing at an average

Table 4. Mean Rating Scores with Standard Deviations across the Scenarios in Study 3

Scenario	Employment		Low Risk		Medium Risk		High Risk	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Importance of Governance Control	3.1	1.7	5.3	1.1	6.2	0.8	6.5	0.8
2. Importance of Operational Control	3.4	1.8	5.2	1.1	6.1	0.8	6.4	0.8
3. Justice	5.0	1.6	4.7	1.3	4.6	1.4	4.2	1.7
4. Ownership	1.6	1.2	4.6	1.6	5.3	1.5	5.6	1.4

level this combination of payments will provide you with a fair wage for the work you do. If the company is performing well your income will be higher, but if it is performing poorly your income will be less.”

### Results and Discussion

Results from Study 3 are shown in Table 4. A one-way repeated measures analysis of variance with level of at-risk income as the independent variable was carried out with all four dependent variables. The rated importance of both governance ( $F(3, 117) = 95.40, p < 0.001, \eta^2 = 0.71$ ) and operational ( $F(3, 117) = 53.54, p < 0.001, \eta^2 = 0.58$ ) control increased significantly with the riskiness of worker income, as did feelings of ownership in the scenario ( $F(3, 117) = 99.50, p < 0.001, \eta^2 = 0.72$ ). However, perceived justice showed a small but statistically significant decrease as the riskiness of the income increased ( $F(3, 117) = 3.11, p < 0.05, \eta^2 = 0.07$ ). Analyses of variance that included gender as well as scenario as factors found no significant interactions for any of the four variables.

The results show that the importance of having both governance and operational control increased as the percentage of at risk income increased. Examination of the means in Table 4 and the partial  $\eta^2$  values suggests that this consideration is more important for governance than operational control but the difference is not large.

### Study 4

Study 3 showed that when the percentage of at-risk income increased, both governance and operational control were thought more important but perceived justice decreased. The combination of these findings is a little difficult to interpret. For example, it could be that the respondents believed that having at-risk income was in itself unjust. If this is true, it would be an argument against many forms of governance (and perhaps operational) control. Alternatively, it could be that respondents felt that it was unjust to have at-risk income when there was little control, operational or governance. Both explanations seem compatible with the results of Study 3. To disentangle them, Study 4 manipulated both at-risk income and the two different types of control as independent variables. Governance and operational control were manipulated as in Study 2 and riskiness of income (using the no risk and 50% at-risk income levels of Study 3) added. Partly to keep the size of the questionnaire small and partly because of earlier results, only two dependent variables, perceived ownership and perceived justice, were included.

### Method

**Participants.** Thirty-nine people, 19 male and 20 female, completed the study. Eleven of them were students, the remainder were employed. The average age of the sample was 33.0 years, with a range from 17 to 60. Recruitment procedures were similar to those used earlier, except that all the students were recruited from a single 400-level

psychology class.

**Questionnaire.** Four scenarios closely based on the four used in Study 2 and varying the presence or absence of governance and operational control each occupied a page and were randomly ordered. Following the descriptions of the control in that scenario, the respondent was told, firstly, to consider that he or she was on a fixed weekly salary and then asked the justice and ownership questions, and, secondly, to consider being in a situation where 50% of the pay was fixed, and the other 50% could vary. The wording of these conditions was similar to that used in Study 3. The previously used justice and ownership questions were then asked.

### Results and Discussion

Results from the study are shown in Table 5, and their statistical significance was assessed using 2 (governance control)  $\times$  2 (operational control)  $\times$  2 (income risk) repeated measures analyses of variance on the psychological ownership and justice measures. Overall, the respondents rated employment to be more just when there was more income risk ( $F(1, 38) = 10.1, p < .01; \eta^2 = .21$ ), operational control was present ( $F(1, 38) = 8.37, p < .01; \eta^2 = .18$ ), and there was no governance control ( $F(1, 38) = 7.12, p < .05; \eta^2 = .16$ ). However, as examination of the table indicates, interpretation of these main effects is considerably qualified by the substantial interactive effect of income risk and governance control ( $F(1, 38) = 22.29, p < .001; \eta^2 = .37$ ): The combination of having governance

Table 5. Mean Rating Scores with Standard Deviations across the Scenarios in Study 4

Scenario	No Worker Control		Operational Control Only		Governance Control Only		Operational & Governance Control	
	M	SD	M	SD	M	SD	M	SD
<b>Justice Measure</b>								
Employment income only	5.0	1.7	5.0	1.3	3.3	1.8	4.0	1.5
50 % at risk income	4.7	1.4	5.0	1.4	4.3	1.6	5.3	1.4
<b>Ownership Measure</b>								
Employment income only	2.5	1.6	3.1	1.7	2.9	1.8	3.5	1.9
50 % at risk income	4.2	1.7	4.5	2.0	4.5	1.6	5.0	1.8

control without an at-risk income component was not seen to be very just. The combination of having governance but not operational control was also not seen as particularly just, although this interactive effect was appreciably smaller ( $F(1, 38) = 5.62, p < .05; \eta^2 = .13$ ). There were no other significant interactions. As in previous analyses, possible interactions with gender and working status were tested for, but none were found.

Feelings of ownership were enhanced when there was an at-risk income component ( $F(1, 38) = 60.1, p < .001; \eta^2 = .61$ ), when there was operational control ( $F(1, 38) = 11.0, p < .01; \eta^2 = .22$ ), and when there was governance control ( $F(1, 38) = 7.28, p < .05; \eta^2 = .16$ ). No combination of these variables had a significant interactive effect. Including gender produced one significant interaction: Women reported slightly greater ownership than men when there was an at-risk income component, and slightly less when there was not ( $F(1, 37) = 5.99, p < .05; \eta^2 = .14$ ). Inclusion of worker status produced no significant interactions.

## General Discussion

Study 1 found that participants rated organisational commitment, organisational justice, satisfaction, and psychological ownership higher with increasing levels of governance control. The result is in line with many previous findings that increasing employee ownership produces positive organisational attitudes (Chi & Han, 2008; Mayhew et al., 2007; Pierce et al., 1991; Pierce et al., 2003; Pierce & Rodgers, 2004; Van Dyne & Pierce, 2004; Wagner et al., 2003).

Study 2 suggested that both governance and operational control are psychologically beneficial in terms of the four measures used. However, the effects of governance control were somewhat stronger in this study. More important, perhaps, the lack of a significant interactive effect of the two forms of control on three of the measures and only a small effect on the fourth measure indicate that the effects of the two types of control are substantially independent of each other. Thus, the two forms of control appear to be neither substitutable nor synergistic.

Study 3 showed that both governance and operational control are seen as more important when the at-risk component proportion of the worker's income increases. Feelings of ownership also increase markedly. On the other hand, the perceived justice of the arrangements declines slightly. It was not clear from this study whether the last result came about because some respondents saw the possibility of workers having an unpredictable income over which they had very little control at all (for example, general economic conditions). However, the significant interactive effect of governance control and having an at-risk income component in Study 4 helps to resolve the issue. These participants saw governance control as more just when there was an at-risk income component than when there was not. Risk and governance responsibility thus were seen as belonging together. The psychological ownership results from Study 4 were somewhat simpler as there were no interactive effects. In decreasing order of importance, feelings of ownership were enhanced by having an at-risk income component, operational control, and governance control.

A number of the results indicate that perceived justice and psychological ownership do not always go hand in hand. For example, there was no correlation between the two in Study 1, and they were differently affected by the proportion of at-risk income in Study 3. The effects of combinations of governance control and proportion of at-risk income were different on the two variables in Study 4. Overall, measures that enhance psychological ownership are not necessarily seen as more just.

Interactive effects of gender were investigated in all the studies, and interactive effects of whether or not the participant was actually in employment in Studies 1, 2 and 4. Few significant interactive effects were found and those found were small in comparison to the effects of the manipulated variables. In particular, increased employment experience (of the worker compared to the student subsamples) did not produce different patterns of results, a finding that suggests our scenario studies might have some real-world validity.

Nonetheless, a limitation of

the present research is that it was conducted entirely with imagined scenarios. Scenario studies such as these should be regarded as suggestive of real-world outcomes rather than solid demonstrations of them. Real-world working environments, after all, are affected by far more variables than are presented in our scenarios. A related limitation is that the effects of different worker experiences with governance and operational control were not investigated. Their omission from these studies reflects, firstly, the difficulty in finding workers with much experience of governance control, and, secondly, the difficulty of defining a single measure of operational control that would hold over a variety of occupations. Studies which questioned respondents from particular firms and occupations could be conducted to fill these gaps. In sum, the present results provide motivation to examine and compare variations of governance and operational control in real-life settings, despite the inevitable confounding of variables that occur in such settings.

Overall, the results from our four studies suggest that both governance and operational control enhance psychological ownership and have reasonably sized effects on commitment, perceived justice and satisfaction. The two types of control appear to have largely independent effects. That is, the two types of control do not appear to substitute for each other or provide any synergistic interaction. The implication then is that an organisation might do well to see if it can offer both forms of control. Our respondents saw the combination of governance control and at-risk income as just. It is thus important that control, particularly governance control, is offered if employee compensation contains a substantial at-risk component.

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