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The Impact of Employees’ Values on Role Engagement: Assessing the moderating effects of Distributive Justice

Abstract

In this paper we investigate the manner in which employees’ experience of distributive justice moderates the impact of intrinsic and extrinsic values on role engagement. Role engagement is especially important in the healthcare setting, examined here, due to the sector’s complexity, changeability and emotionally challenging nature. Using data collected from a survey of employees from a large government health district in Southeast Queensland, Australia, this study examined the determinants of role engagement among a group of employees working across three hospital locations. The focus of the study was on the impact, both directly and in combination, of espoused extrinsic and intrinsic values and perceived distributive justice on role engagement. We identify strong direct effects from distributive justice on role engagement, and complex third order effects for the combinations of intrinsic and extrinsic motivation and distributive justice in predicting role engagement.

Keywords: distributive justice, extrinsic motivation, health care workers, intrinsic motivation, role engagement.

Introduction

Humans are motivated by various incentives and self-perceived wants and needs, with different people motivated by different combinations of these (Deckers, 2015). In the workplace, employees are rewarded with extrinsic rewards (like remuneration for certain working effort, other extrinsic rewards related to the physical work environment) and intrinsic rewards (the respect of peers and society and a vibrant and supportive work environment). Within any workplace, it is generally the case that some employees will place a high value on certain forms of rewards, while others will not (Amundson, 2007; Choi et al.,
2013; Olafsen et al., 2015). Managing this motivational heterogeneity such that collective and individual employee engagement is optimised is an important challenge for all organisations.

The goal of this current study is to better understand how employees’ experience of distributive justice tends to moderate the impact that their personal values - both extrinsic and intrinsic – have on their role engagement. We anticipate complex and nuanced interaction effects relating to the manner in which employees respond to various incentives and organisational climate measures. Our expectation is that certain employees will value certain combinations of rewards more than others, with these preferences combining with their sense of organisational justice to predict their stated level of organisational engagement.

We aim to contribute to an underexplored arena in human resource management research – namely the impact of compensation on employee engagement and more especially the impact of non-financial remuneration on this outcome (Gupta & Shaw, 2015) by better integrating justice and personal values into our model of engagement.

**Role Engagement**

Engagement with work, or *role engagement*, has been defined as “a persistent, positive motivational state of fulfilment in employees” (Maslach *et al.*, 2001, p.417). Role engagement is a distinct construct that entails behavioural, cognitive and emotional elements (Saks, 2006). Engaged employees are characterised by high energy levels, willingness to invest effort into work, persistence in the face of difficulties, or vigour; enthusiasm, inspiration, an appetite for challenge, or dedication; and high concentration levels, or absorption (Bakker, 2011). An engaged worker is emotionally involved, receptive to the social environment, willing to exert effort to facilitate other’s needs (Moliner *et al*., 2008).

Employees who are engaged with their departments tend to experience a degree of influence and empowerment: They feel that their suggestions are valued and integrated into decisions
affecting them. As a result, they feel they have a personal stake in changes occurring around them. Antecedents of role engagement have been shown to include job characteristics, for example skill variety, autonomy, psychological meaningfulness, and perceived support, rewards and recognition, distributive justice and procedural justice (Albrecht et al., 2015). Variation in personality drives variance in the balance of these antecedents as predictors of engagement (Strauser et al., 2012). Consequences of engagement include satisfaction, commitment, lessened intention to quit and heightened organisational citizenship behaviours (Saks, 2006). In the healthcare context, studies of engagement have emphasised the importance of this outcome to mitigate against employee burnout – a common problem across the sector and especially in nursing (Simpson, 2009). Further, healthcare work is innately emotionally demanding and thus success, both from the employee and the patient points of view, depends greatly on the capacity for employees to remain emotionally committed and personally invested in their roles (Theodosius, 2008).

Social exchange theory (SET) provides a theoretical model for understanding engagement, and helps to explain why individuals respond to antecedent conditions with varying degrees of engagement. According to SET, engagement is a reciprocal relationship between employer and employee, such that a sense of mutual obligation is developed through interactions over time, provided that rules of exchange are adhered to (Cropanzano & Mitchell, 2005). The rules of exchange typically entail reciprocity and repayment. For example, employees who receive economic and socio-emotional resources experience a sense of obligation to repay the employer (Cropanzano & Mitchell, 2005), and that repayment may take the form of greater engagement in terms of committing behavioural, cognitive and emotional resources (Saks, 2006). In contrast, to the extent that an organisation fails to deliver economic and socio-emotional resources, employees are more likely to withdraw and disengage (Menguc et al., 2013).

**Extrinsic and Intrinsic Reward motivation**
Motivation, a fundamental psychological construct, has been defined as the set of processes that direct and sustain action (Latham & Pinder, 2005); as the desire to make effort (Dowling & Sayles, 1978); or as activation and intention (Ryan & Deci, 2000b). Motivation can be driven by extrinsic factors such as financial, work conditions, physical work environment conditions or other rewards and recognition (Amabile, 1993; Amundson, 2007; Brief & Aldag, 1977), and/or can be driven by intrinsic factors such as a personal commitment, inherent satisfaction, personal values or innate role enjoyment (Gagné & Deci, 2005; Ryan & Deci, 2000a). According to empirical research on Self-Determination Theory, people who are intrinsically motivated perform activities with more interest and confidence, leading in turn to enhanced performance, persistence and creativity (Sheldon et al., 1997). This then results in higher self-esteem (Deci & Ryan, 2008) and greater overall well-being when compared to people who are extrinsically motivated (Ryan & Deci, 2000b). The term extrinsic motivation refers to motivations to perform an activity in order to attain a separable outcome rather than for inherent enjoyment (Ryan & Deci, 2000b). Extrinsic motivations vary along a continuum of autonomous regulation from non-valued behaviours that are performed solely to comply with an external force or to accrue some tangible reward through to behaviour that is valued and congruent with one’s values and needs.

In different careers and sectors of the labour market, the preponderance of intrinsically versus extrinsically motivated employees differ. Nursing has been shown to have a cohort of employees with relatively high intrinsic motivation (Ten Hoeve et al., 2017). Importantly, there is a tendency for this to be changing among younger members of society (Lub et al., 2016) both in absolute and relative terms. As such, younger employees tend to have more diversity in their values and how these relate to their individual motivation while also exhibiting a population level trend towards greater expectation of extrinsic rewards. These changes reinforce the need for a more contingent and careful management of employee rewards.
Although extrinsic and intrinsic reward motivation are often contrasted, they are not mutually exclusive (Malhotra et al., 2008). In general, higher levels of satisfaction with both or either of extrinsic and intrinsic rewards will lead to a variety of positive employee/organisational outcomes, including satisfaction, loyalty and engagement. This is particularly true where these higher espoused values coincide with a sense that the organisation is operating in a just manner in relation to the provision of rewards valued by both intrinsically and extrinsically inclined employees.

**Distributive Justice**

Organisational justice is a frequently researched topic in organisational psychology and organisational behaviour (Colquitt et al., 2001; Moliner et al., 2008). Distributive justice, an important aspect of organisational justice, entails perceptions of fairness in the allocation of rewards and recognition (Parker et al., 1997; Di Fabio & Palazzeschi, 2012). In the service industries there is substantial evidence for a direct relationship between distributive justice and organizational outcomes such as citizenship behaviours or other discretionary customer-service and prosocial behaviours (Cohen-Charash & Spector, 2001; Skitka et al., 2003).

Distributive justice implies that people involved in implementing decisions have a say in making those decisions (Brockner et al., 2015). Further, it suggests the notion that if employees perform well, there will be sufficient recognition and rewards; that there be appropriate explicit reward and recognition of expertise within a team and workforce, and explicit acknowledgement of professional seniority (Aryee et al., 2002; Cohen-Charash & Spector, 2001; Laschinger & Finegan, 2005; Wayne et al., 2002; Williams et al., 2002). Workers who perceive that they are unfairly treated are less likely to engage in helpful extra-role behaviours (Bettencourt & Brown, 1997; Masterson et al., 2000; Maxham & Netemeyer, 2003; Rupp & Cropanzano, 2002).

**Distributive Justice and Role Engagement**
A sense of organisational justice, including (among other sub-elements distributive justice) promotes well-being at work in terms of low burnout and high engagement (e.g., Maslach et al., 2001)). In turn, well-being engenders extra-role customer service (Moliner et al., 2008; Salanova et al., 2011) and can increase job performance (Cohen-Charash & Spector, 2001). Distributive justice predicts related constructs like satisfaction and reduces intention to leave (Cohen-Charash & Spector, 2001; Colquitt et al., 2001).

While there has been some recent empirical work exploring the potential impact of perceived distributive justice on employee engagement (Strom et al., 2014; Haynie et al., 2016), there has been a traditional assumption that variance in engagement is driven by factors exogenous to the employee (for example organisational context and senior leadership trustworthiness) rather than through the engagement of employee attributes and their experience of the organisational context (Nedkovski et al., 2017; Saks, 2006). Another common characteristic of recent research is that it has tended to adopt complex model designs that better elucidate second-order effects relating to the interplay of personal values, context, organisational design and managerial values and behaviour (Haynie et al., 2016; van Dijke et al., 2015).

Increasingly, empirical research seeks to link context, conduct and individual characteristics to better understand the complex interplay of factors that lead to employee engagement outcomes (Rodwell et al., 2017). In line with this trend, we sought to examine the impact of extrinsic and intrinsic values on engagement with a focus on the moderating effect of employees’ sense of distributive justice.

Research on SET has demonstrated a strong link between intrinsic motivation and satisfaction of human needs for autonomy and competence, but only when the activity itself is perceived as appealing, novel and challenging (Ryan & Deci, 2000b). For example, high degree of prosocial motivation, or a desire to benefit others, enhanced productivity at work when accompanied by high levels of intrinsic motivation (Grant, 2008). This supports the notion that intrinsic motivation plays a moderating role: prosocial and intrinsic motivations interact
to predict higher levels of workplace engagement and output characterised as productivity performance and persistence.

In the health care context, we felt that it was reasonable to predict that higher perceived distributive justice would lead to higher engagement at work in the healthcare setting when combined with employees with high intrinsic motivation (Hypothesis 1).

**Extrinsic motivation, distributive justice and role engagement**

In the health care area studies have shown that extrinsic motivation at the more autonomous end of the continuum is associated with better adherence to medication and other treatments, long term maintenance, and symptom control among patients (Ryan *et al.*, 1995; Williams *et al.*, 2004; Williams *et al.*, 1998).

According to SET, the extent of an individual employee’s role engagement is contingent on the economic and socio-emotional resources they receive from the organisation (Saks, 2006). Kahn (1990) found that employees vary in role engagement as a function of their perceptions of received benefits of their role. To the extent that an employee perceives fairness in the distribution of rewards and recognition, or distributive justice, their engagement is expected to increase. As such, it was predicted that there would be an interaction effect between desire for extrinsic rewards and perceived distributive justice on the employee role engagement criterion such that employees who scored high on desire for extrinsic rewards and high in perceived distributive justice would experience heightened levels of employee role engagement (Hypothesis 2).

**Multiplicative effects of intrinsic and extrinsic motivation, distributive justice in predicting role engagement**

Finally, we felt it worthwhile to examine whether a cumulative and multiplicative (in statistical terms, a three-way) interaction existed for employees with concurrent high intrinsic and extrinsic values, distributive justice and role engagement. We noted earlier that intrinsic
and extrinsic motivation are not considered mutually exclusive, and employees may value both extrinsic and intrinsic rewards equally. Thus we predicted that for employees reporting high preference for both intrinsic and extrinsic rewards, the experience of distributive justice may have a cumulative effect in predicting role engagement (Hypothesis 3).

Method

Context

This study stems from a larger longitudinal project that aimed to understand the impact of the relocation to a greenfield hospital site on the cultures and performance of the organisation and on the health services as a whole, and more specifically, to establish links between organisational cultures and performance to seek out opportunities for improvement. The major relocation of workers and healthcare operations was from an older hospital site to a new purpose-built facility adjacent to a major public university some 2 km away. The change in the physical facilities was notable and extensive, with a much larger campus available at the new site and state of the art healthcare technology employed. In many respects the new site provided a new platform for the continued operation of ongoing healthcare activities and it could be considered moot whether it fundamentally changed the workforce culture of the organisation and its stakeholders.

Participants

The study was conducted within a regional health district in southeast Queensland, Australia in 2013. Staff members including nurses, administration, allied health practitioners, medical staff, operational staff, and professional staff were surveyed as part of a larger longitudinal project exploring organisational culture, transformation and organisational performance. The target population included the full workforce of the health district examined in this paper. Our sample used in this study did not significantly differ from the wider population on key demographic measures.
Materials

A survey questionnaire was designed drawing on validated measures in the public domain, which were adapted to capture employees’ role engagement, motivation for extrinsic and intrinsic rewards, workgroup integration, and perceptions of rewards and recognition fairness.

Measures

Role engagement

The 4 item Role Engagement scale was adapted from items used in previous research (Spreitzer, 1996). Pettigrew and Wolf (1982) originally developed their scale to assess, *inter alia*, the non-participation of teachers in their school organisation’s decisions and management. We adapted the question wording to suit the hospital and health service organisational context within which this research occurred.

For example “I have influence over what goes on in my unit or department” was used to better suit the structure and terminology of the health district examined here. Respondents rated each item from 1 (*very often*) to 5 (*not at all*). Negatively worded items were reverse scored and then factor scores were derived using SPSS (Statistical Package for the Social Science, 2016) to reflect the underlying constructs being examined.

Overall reliability (Chronbach’s alpha) was 0.68 for this scale. While an alpha value of 0.68 is on the low side of the acceptability for a valid scale, George and Mallory (2003) and Hair *et al.* (2006) have shown values as low as 0.6 to be acceptable if there are only few items in a scale. We also note that this scale had two reverse-scored items. While the inclusion of such items can have important benefits in relation to face and discriminant validity, their inclusion in prior studies has been shown to slightly reduce alpha scores for scale reliability (Carlson *et al.*, 2011).

Preference for extrinsic or intrinsic motivation
To measure individual employees’ preference for extrinsic and intrinsic motivations we adapted the *Work Values Scale* developed by Warr (2008). Warr’s scale has been widely used in international surveys that seek to elucidate group and individual values, for example in the European Values Study field questionnaire (EVS, 2011). This simple scale included a list of 17 various job characteristics such as *good pay*, an *opportunity to use initiative*, and *generous holidays*. Respondents were asked to rate each characteristic according to what extent they agree each listed aspect is important in a job from 1 (strongly disagree) to 5 (strongly agree). Exploratory principle components analysis with Varimax rotation was used to group items into two factors with eigenvalues greater than 1.0. Three cross-loading items were not included. The resulting extracted factors measuring extrinsic (8 items) and intrinsic (6 items) motivation showed acceptable internal consistency (Table 1) and were used in our later analysis.

Scale reliability measures for our two Warr (2008) based scales were strong (‘intrinsic’ alpha was 0.85 and ‘extrinsic’ alpha was 0.88). These compare favourably with other recent uses of this scale in a published study by De Lange *et al.* (2010) and comfortably exceed a commonly used reliability threshold of 0.6 (George and Mallory, 2003).

**Distributive justice**

Distributive justice embodies the notion that people involved in implementing decisions should have a say in making those decisions, and if employees perform well, there will be sufficient recognition and rewards. Consistent with other researchers (Alexander & Ruderman, 1987; Parker *et al.*, 1997; Sweeney & McFarlin, 1993), perceptions of fairness in the allocation of rewards and recognition were conceptualised as perceptions of distributive justice.

Distributive justice was measured with a three item scale previously used in organisational settings (Parker *et al.*, 1997). Respondents recorded their responses on a 1 (strongly
disagree) to 5 (strongly agree) Likert-type scale which captured notions of appropriate explicit rewards and recognition of skills and expertise within a team and workforce. A factor score was extracted that showed a high coefficient alpha (.88) for use in later analysis. Scale reliability for this scale compared favourably with a similar scale used by Andrews and Kacmar (2001) which achieved a reliability alpha of 0.82.

Control Variables

To better isolate the examined effects from other drivers of employee engagement shown in previous empirical research, we included measures of contract status (full time or part time), gender, age (in ranges), employment contingency status (permanent or contingent), duration in current occupational role and education levels.

Table 1 provides descriptive statistics for these control and derived variables, including alpha scores for the three derived predictor variables and for the derived dependent variable.

<< Insert Table 1 About Here >>

Results

For this analysis, we chose to focus on clinical staff working within hospital sites within the wider health district. Two hospital sites provided the responses for this analysis, one providing 25 responses and the other 122. Clinical staff differ from other staff in that they will have regular contact with patients and as such this sample included medical practitioners, nurses, allied health professionals and the like. Within our sample, 23% of respondents were male, 70% were nursing staff, 11% were medical practitioners and 18% were allied health and related occupations. The mean respondent age was approximately 39 years of age. These figures are broadly representative of the Australian clinical healthcare workforce (including nurses). In Australian and elsewhere the nursing workforce is heavily feminine.
Our analysis shown that the two sites do not significantly differ in respect to any of the main predictor or the dependent variables. Between site variance for Extrinsic Motivation was $F = 2.755$, $p > 0.10$, for Intrinsic Motivation was $2.453$, $p > 0.10$, for Distributive Justice was $F = 0.777$ ($p > 0.10$) and Role Engagement was $F = 0.841$, $p > 0.10$). As such, no significant site specific effects were evident in our sample, assuring us that the aggregation of the two sites was appropriate for further analysis (Bell and Jones, 2015; Clark and Linzer, 2015).

Scores on the role engagement, extrinsic and intrinsic motivation and distributive justice measures were scaled so that they each had a mean of zero and standard deviation of 1.0. Zero-order Pearson correlations between the measures are shown in Table 2. There was a moderate to strong positive association between role engagement and perceived distributive justice, and significant but weak positive correlations between role engagement and employee preference for extrinsic and intrinsic reward motivation (Table 2). Age and gender were not significant correlates of role engagement.

We have proposed three hypotheses – namely the presence of a significant interaction between intrinsic motivation (IM) and distributive justice (DJ) in predicting role engagement (RE), the presence of a similar interaction combining extrinsic motivation (IM) and distributive justice (DJ) in predicting role engagement (RE) and an omnibus interaction using all three predictor variables (IM, EM and DJ) in an interaction to predict role engagement.

To test these moderation/interaction hypotheses, we utilised the PROCESS macro (Hayes, 2009) for conducting a moderated hierarchical regression analysis within SPSS. Role engagement was the criterion variable while intrinsic and extrinsic motivation, distributive justice and their interactions were the predictor variables. Variance related to employment
arrangements (part or full time, permanent or contingent), age, gender and education was accounted for by entering these covariates as control variables.

Cases with incomplete data were excluded by SPSS from the analysis leaving a sample size of 147 cases. Overall the model accounted for 35% of the variance in role engagement ($R^2 = .35, F(13, 133) = 5.53, p < .001$). The results are summarised in Table 3.

There are a number of notable findings evident in table 3 from the fully specified model. Full time employees are more engaged than part time employees ($B = 0.53, p < 0.10$) while (as hypothesised in H1) DJ had a significant, direct and positive effect on RE ($B = 0.61, p < 0.001$).

The interaction of EM and IM reward preference was also significant ($B = -0.28, p < 0.001$) (Table 3), indicating that the effect of extrinsic motivation on role engagement was moderated by the level of intrinsic reward motivation. This particular relationship was not hypothesised in our paper, but is illustrated below (Figure 1) as it features within our third hypothesis that deals with third order effects internalising these second order effects.

The plot of the moderation effect showed that when employees reported a low level of preference for both extrinsic and intrinsic rewards, role engagement was at its lowest (Figure 1). In contrast, the combination of low preference for extrinsic rewards and high preference for intrinsic rewards resulted in the highest role engagement (Figure 1).

We see in Figure 1 the strong linear effect of intrinsic motivation in predicting role engagement such that the most engaged group represented are the low extrinsic/high intrinsic group. This illustrates the strong vocational nature of careers in clinical medicine and the importance of intrinsic drivers for clinicians in engaging closely with their organisational
context to deliver patient care. This tends to align with prior literature which speaks of the importance of intrinsic motivation for nursing and other healthcare careers.

Exploring more fully the three-way interaction between IM, EM and DJ in predicting RE, we note a significant interaction term ($B = -0.21$, $p < 0.05$). To better explain this effect, we separate out the interaction effect in three figures, each representing a different level of employee IM.

<< Insert Figure 2 About Here >>

Figure 2 illustrates the ‘low case’ of IM. These employees are clustered around 0.8 standard deviations below the mean for intrinsic motivation or the 10th percentile when employees are ranked on intrinsic motivation (approximately the lowest quintile in our sample ordered by IM).

Three issues are notable. First, we see improved engagement as these employees experience heightened EM, with this being especially notable for employees rating highly on the extrinsic motivation scale. This is illustrative of a positive interaction beta for this group on the distributive justice by extrinsic motivation pairing. Second, employees in this group experiencing very low DJ, regardless of their extrinsic motivation preference, are very poorly engaged with their workplace (values cluster around 0.8 standard deviations below the mean along the lowest line). Finally, for the ‘mean’ case within this low IM group, approximately average distributive justice coupled with approximately average EM leads to a level of RE only slightly below average.

<< Insert Figure 3 About Here >>
Our next illustration (Figure 3) illustrates the interaction effects for the mid quintile group as ordered by IM. Notable here are the approximately parallel lines illustrating limited interaction effects for distributive justice and extrinsic motivation in predicting role engagement, with most of the variance evident in the figure driven by the strong direct effect of distributive justice on engagement for this group.

Our final illustration (Figure 4) illustrates the complex third-order effects evident in our dataset. We note the very high point estimate for role engagement for this group of employees who are concurrently high on intrinsic motivation, low on extrinsic motivation and experiencing high rates of distributive justice. We note the highest point estimate in this figure (representing this group of employees) is more than two standard deviations above the mean on role engagement. The downward slope of the top four lines at first seems counter-intuitive, but in reality this points to an important trade-off for healthcare staff between engagement driven by intrinsic drivers and engagement driven by extrinsic drivers. Extrinsic motivators, in our sample, seem to ‘crowd out’ the more substantial effects of intrinsic drivers to support engagement.

Thus, in relation to H3, where we proposed a cumulative interaction between IM, EM and DJ, we rather find a crowding out effect evident in relation to IM and EM (Frey & Jegen, 2001) which makes itself evident within the hypothesised three-way interaction explored here. While we expected that employees with high IM and EM preference concurrently experiencing high DJ would have accentuated RE, in fact the strong crowding out effect between EM and IM mitigated this effect. As such, H3 is rejected.

Limitations
This study is based on a cross-sectional survey and is thus at risk of common-method variance (CMV) (Lindell and Whitney, 2001). We used both ex ante and ex post strategies to mitigate these issues.

As our study focuses primarily on assessing the significance of third order effects, there is less susceptibility to CMV than would be the case for studies examining only primary or secondary effects (Chang et al., 2010). In a practical sense, we are examining the impact of a combination of two effects in the context of a third effect.

Ex post, we also followed Harman’s (1961) approach of loading all items onto a single factor (using SPSS) to assess this single factor’s explanatory power for cumulative variance. Harman suggested that where this single factor explained in excess of 50% of the cumulative variance in the dataset, CMV may be evident. In our analysis this test returned a result well under that benchmark of 28.82%.

**Discussion**

This study aimed to examine relations between role engagement, extrinsic and intrinsic reward motivation, distributive justice and workgroup integration among full-time and permanent part-time employees of a large, public health district in Queensland, Australia.

Our analysis of the direct and combinatory effects included in our model provides a rich and nuanced understanding of what drives role engagement within our sample of healthcare workers. Employees’ perceptions of distributive justice were related to role engagement. In this hospital and health service context, distributive justice comprised the notion that the people involved in implementing decisions deserve a say in decision making, and that high standards of performance should be recognized and rewarded as appropriate. Not surprisingly, the higher an employee’s sense that their skills and expertise within their team were explicitly recognized: the higher their reported role engagement.
In support of H1, we find that distributive justice is a very important precursor to employee engagement for all employees. Increasing distributive justice increases engagement for all, with this effect being stronger for employees who are high extrinsic/low intrinsic and somewhat less for employees who are high intrinsic/low extrinsic.

The most engaged group of employees are those who are highly intrinsically motivated. This supports the notion of healthcare work as vocational and emotional in nature. Supporting this group of employees who are highly committed to the organisation and its patients clearly requires attention to the elements that make up our distributive justice item – namely involvement in decision-making and acknowledgement of good practice and performance.

The interaction effects of IM and DJ is shown to be non-significant in predicting RE (B = 0.17, p > 0.10) in our fully specified model. These effects are, however, evident in our three-way interaction term (B = -0.21, p < 0.05) where the most engaged employees are those that are highly intrinsically motivated and also experiencing high distributive justice.

H2 is rejected (B = -0.03, p > 0.10) – again with some evidence provided by the three-way interaction that is relevant. For employees with low intrinsic values there appears to be a divergence pattern between the estimates of engagement as both extrinsic values and distributive justice increase. Conversely, for the high intrinsic values group, these point estimates converge. This shows the importance that intrinsic values has on the relationship between extrinsic values and distributive justice in the prediction of role engagement.

We note with reference to H3 a significant three-way interaction effect between employee intrinsic and extrinsic rewards focus, distributive justice and role engagement (B = -0.21, p < 0.05). The negative directionality of this interaction term’s coefficient (as opposed to the positive directionality that we hypothesised) make interpretation difficult without the illustrations provided in this paper.
Taken together, these results suggest that employee role engagement is driven by a complex set of factors that differ among a heterogeneous group of employees. Distributive justice is important for all, and is a powerful motivator for engagement for employees reporting highly on intrinsic motivation. There is evidence that the most engaged employees are not those most motivated by extrinsic rewards alone, although employees who are motivated primarily by extrinsic rewards alone can be highly engaged when they experience high levels of distributive justice.

Thus finding the right balance of extrinsic and intrinsic rewards is an important challenge in this context, and most likely others where intrinsically-motivated employees are present. Creating more contingent reward sets for all employees, while also maintaining distributive justice, is an important challenge that may well yield a more engaged workforce.

Acknowledgement

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References


Table 1: Descriptive statistics and internal reliability (Alpha)

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- \( n = 147 \)
- Age Categories - 2 = Under 30, 3 = 31-40, 4 = 41-50, 5 = 51-60, 6 = Over 60;
- Duration in Current Occupational Discipline – 1 = Less than a year, 2 = 1 to 2 years, 3 = 3 to 5 years, 4 = 6 to 10 years, 4 = 11 to 15 years, 5 = 16 to 20 years, 6 = More than 20 years;
- Duration in Occupation – 1 = Year 10 or less, 2 = High School Completion, 3 = Professional Diploma, 4 = Vocational Education Certificate, 5 = UG Degree, 6 = PG Degree.
Table 2: Pearson Correlation Coefficients

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<td>-.030</td>
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<td>-.265***</td>
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<td>6. Educ. Level</td>
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<td>.163*</td>
<td>-.193**</td>
<td>.062</td>
<td>-.168*</td>
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<td>-.100</td>
<td>-.072</td>
<td>.093</td>
<td>-.054</td>
<td>.084</td>
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<td>-.152†</td>
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<td>-.063</td>
<td>.147†</td>
<td>.146†</td>
<td>.038</td>
<td>-.058</td>
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<td>.153†</td>
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<td>.011</td>
<td>.018</td>
<td>.090</td>
<td>.042</td>
<td>.148†</td>
<td>.191*</td>
<td>.502***</td>
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† p < .10,  * p < .05,  ** p < .01,  *** p < 0.001,  n = 147
Table 3: Fully Specified Regression Model with Interactions

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<th>t</th>
<th>p</th>
<th>LLCI</th>
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n = 147
Figure 1: Interaction of Intrinsic and Extrinsic Motivation in Predicting Engagement
Figure 2: Interaction of Extrinsic Motivation and Distributive Justice at Low Intrinsic Motivation

Very Low (Mean - 0.8 SD) Intrinsic Motivation

Rate of Engagement

Very High Distributive Justice

Very Low Distributive Justice

Level of Extrinsic Motivation
Figure 3: Interaction of Extrinsic Motivation and Distributive Justice at Mean Levels of Intrinsic Motivation
Figure 4: Interaction of Extrinsic Motivation and Distributive Justice at Very High Intrinsic Motivation

![Graph showing interaction between Extrinsic Motivation and Distributive Justice at Very High Intrinsic Motivation](image)

Very High (Mean + 1.1 SD) Intrinsic Motivation

Rate of Engagement

Level of Extrinsic Motivation

Very High Distributive Justice

Very Low Distributive Justice