Rewards and Firm Performance –

A Look into the Motivation Black-Box

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ABSTRACT

What is the impact of performance-based rewards on firm performance? Despite substantial research in this area, we are still missing both a generally accepted theoretical model and conclusive empirical findings regarding whether, and under what conditions, the use of rewards increases firm performance. This study integrates arguments regarding the effect of rewards on individual motivation from social psychology and economics and applies them to the organizational level. The resulting conceptual framework describes how rewards influence performance through three distinct and interrelated motivational mechanisms, and allows us to look at the various, partially conflicting, arguments made in the existing literature in a more comprehensive fashion. Hypotheses derived from this model are then tested empirically on a sample of 118 management buyouts in the UK. The results of the structural equation model suggest that in this setting, rewards increase not only extrinsic, but also intrinsic forms of motivation. Surprisingly, however, the performance impact of intrinsic motivation (particularly of a hedonic nature) is much more powerful than that of extrinsic motivation, which fails to show any statistical significance. Furthermore, and contrary to “received wisdom”, the three types of motivation mutually reinforce each other in their positive impact on performance. The data indicates, therefore, that rewards are an important determinant of firm performance, but only indirectly via their role as antecedents of intrinsic motivational levers.
INTRODUCTION

Firm performance depends to a large extent on the degree to which the members of the organization work towards the accomplishment of organizational goals. As seminal contributions in agency theory have pointed out, the interests of individuals in an organization are not always aligned with those of the organization as a whole (Jensen and Meckling 1976; Jensen 1986; Alchian and Demsetz 1972). This may drive employees to behave in ways that impede firm performance. The performance impact of organizational interest alignment, defined as the degree to which the members of the organization are motivated to behave in line with organizational goals (Gottschalg and Zollo 2004), has been emphasized by several recent contributions to the management literature (Makadok 2003; Coff 1997; Coff 1999; Castanias and Helfat 1991). Accordingly, firm performance can be seen as dependent on two elements. A firm's market position (Porter 1979; Porter 1980; Porter 1985) and resource configuration (Barney 1986; Barney 1991; Penrose 1959; Peteraf 1993; Wernerfelt 1984) determine its potential performance, whereas the extent to which firms actually realize their performance potential crucially depends on the aggregate motivation of employees. In other words, organizational interest alignment moderates the potential performance that is based on market positions, assets and capabilities (Figure 1).

The question then arises: through which mechanisms are firms able to enhance organizational interest alignment in a way that increases overall firm performance? Most existing approaches to this question have their theoretical foundations in agency theory. The governance school focuses on how reward systems and control mechanisms can ensure the alignment of individual interests with organizational goals. Belief that performance-contingent (or high-powered) reward systems can increase firm performance is widely accepted by researchers (Prendergast 1999). Likewise, high-powered rewards are often used
with the goal of motivating managers and employees alike to work towards achieving organizational goals. For example, the use of performance-contingent rewards has increased substantially in the US over the past decade, particularly for top managers (Marshall and Heffes 2004).

However, the reasoning underlying the governance perspective may be underspecified with respect to the motivational mechanisms at work. Agency theory makes the (implicit) assumption that human action is driven by extrinsic motivation, i.e. the desire to obtain additional work rewards from the external environment (Brief and Aldag 1977). This means that rewards increase performance because they lead to a higher marginal cost of shirking and to higher monetary benefits from engaging in performance-enhancing behavior (Frey and Jegen 2001). Research in social psychology and organizational behavior suggests, however, that the impact of performance-contingent rewards may not always be beneficial. In fact, a vast stream of research initiated by Deci and Ryan (1975) and Lepper and Greene (1976) demonstrated in experimental settings that the use of rewards can have a negative impact on performance. According to them, this is because rewards undermine intrinsic motivation, i.e. the pleasure and satisfaction derived from an activity (Deci 1975). Substantial controversy remains even within the field regarding whether, and under what circumstances, rewards decrease performance (e.g. Deci and Koestner 1999; Deci and Koestner 1999; Eisenberger and Cameron 1996; Eisenberger and Cameron 1998; Eisenberger and Cameron 1999). Recently, the debate seems to have moved towards the insight that the relationship between rewards and performance is contingent upon the characteristics of the rewards (Deci and Ryan 1985), the nature of the task (Prendergast 1999; Steers and Mowday 1977) and individual preferences (Gottschalg and Zollo 2004). What this research clearly indicates, however, is the need to explicitly consider the mediating role of motivation, as a multi-dimensional construct, in the relationship between rewards and performance.
In order to do this, it is necessary to extend existing theories in two directions. First, we need a comprehensive model of the antecedents and consequences of different types of *individual* motivation that integrates arguments from agency theory and social psychology. Second we need to apply this individual-level theory to the *organization* to explore the impact of rewards, not solely on individual task performance, but on firm performance as a whole.

This paper proposes a three-dimensional theoretical model of motivational mechanisms at the organizational level. The model specifies the antecedents of three distinct components of interest alignment and considers important interaction effects between those. It further captures how the three components of interest alignment interact with each other in their influence on firm performance.

This model departs from previous approaches to study the performance impact of rewards in the following ways. First, it builds on recent advances in motivation theory (Lindenberg 2001) in which the traditional intrinsic-extrinsic dichotomy (Deci 1975; Deci 1976; Brief and Aldag 1977) has been refined through the distinction between (obligation-based) “normative” intrinsic motivation and (enjoyment-based) “hedonic” intrinsic motivation. The corresponding three-dimensional conventionalization of motivational mechanisms captures the essential distinction between a task-oriented and a social component of intrinsic motivation, while remains sufficiently parsimonious for its application in a business context. Second, it develops its arguments at the organizational level of analysis, which corresponds to the goal of understanding the impact of rewards on firm, rather than individual, performance. Third, it explicitly states antecedents, interaction effects and consequences of all three dimensions of interest alignment, as the crucial mediator of the reward-performance relationship.

From the proposed theoretical model, one can derive a set of testable hypotheses
regarding the impact of reward systems on components of interest alignment and firm performance. It thus becomes possible to capture comprehensively the various, partially conflicting theoretical arguments regarding the impact of rewards on firm performance highlighted in the literature. It further allows us to empirically assess whether normative and hedonic motivational mechanisms differ in their antecedents and consequences and how the corresponding different types of motivation interact on the organizational level.

These hypotheses are then empirically tested using a sample of 118 recent management buyouts in the UK. Buyouts provide an ideal setting for studying the influence of rewards, as they drastically change important components of a firm’s reward system (Jensen 1989; Cotter and Peck 2001; Smith 1990). In a sense, the buyout constitutes an exogenous “shock” to the organization that allows us to observe the performance implications of changes in the antecedents of organizational interest alignment.

The empirical analysis reveals a number of surprising results. First, among all three types of interest alignment, only “hedonic” intrinsic motivation has a significant (positive) influence on performance. Second, the introduction of high-powered rewards increases hedonic and normative interest alignment, but has only a minimal effect on extrinsic interest alignment. Third, extrinsic interest alignment has a strong and positive impact on normative interest alignment, which in turn strongly enhances hedonic interest alignment. These results suggest that we may have to rethink some of the existing theories regarding the performance impact of rewards.

The remainder of the paper is structured as follows. The first section reviews the literature on the antecedents of individual motivation, integrating arguments from economics, social psychology and organizational behavior. Section two applies these arguments to the organizational level, develops a comprehensive theoretical model of the antecedents and consequences of organizational interest alignment and derives testable hypotheses regarding
the impact of rewards on firm performance. Section three introduces the empirical setting for
this study and discusses the research design and methodology. Section four presents the
results of the empirical analysis and the final section discusses their implications and outlines
an agenda for further research.

WHAT HAVE WE LEARNED ABOUT INDIVIDUAL MOTIVATION?
The concept of motivation plays a central role in research concerned with understanding the
determinants of individual behavior in organizations and its impact on firm performance
(Maslow 1973; Deci 1971; Deci 1975; Deci and Ryan 1985; Lepper and Greene 1975; Frey
1992; Frey 1993). The basic argument is fairly simple: motivation can be linked to a set of
underlying goals, from whose accomplishment individuals derive a certain level of utility
(Deci 1976). This then creates motivation to engage in behavior that is perceived by
individuals to be useful for meeting their goals (Vroom 1964). The motivation to behave in a
certain way is determined by: (1) the degree to which the behavior meets individual goals;
and (2) the relevance of each goal to the individual (individual preferences).

The use of rewards triggers various motivational processes, which makes it necessary
to consider different types of motivation in our analysis. A comprehensive review of the vast
literature on motivation is beyond the scope of this paper and not necessary for the purpose of
our analysis. Instead, we review and integrate key arguments made by prior work in
economics, social psychology and organizational behavior that are relevant for our analysis
of organizational-level antecedents and consequences of motivation. This will then allow us
to develop a better understanding of how rewards influence aggregate motivation and
ultimately firm performance. In the following, we consider extrinsic motivation according to
Deci’s initial conceptualization (Deci 1975), but use an important distinction between
enjoyment-based “hedonic intrinsic motivation” and obligation-based “normative intrinsic
motivation” proposed by (Lindenberg 2001) (see Table 1). This refinement of traditional motivation theory allows us to more clearly identify the antecedents and consequences of each type of motivation, along with their interaction effects.

**Extrinsic and Intrinsic Forms of Motivation**

*Extrinsic motivation* is driven by the goal of obtaining additional resources (Lindenberg 2001) that come in the form of extrinsic work rewards or outcomes (Brief and Aldag 1977) such as money, power, recognition etc. It can be formally defined as “the degree to which behavior is influenced by tangible and intangible rewards obtained from the environment”. The impact of extrinsic motivation depends jointly on the reward system in place, which determines the extrinsic work rewards that the individual obtains as a function of any given behavior, and on the importance of these rewards to the individual.

*Hedonic intrinsic motivation* is driven by the goal of being engaged in enjoyable (Lindenberg 2001), self-determined and competence-enhancing (Deci and Ryan 1985) behavior. It is influenced by the perceived characteristics of the task and the task context (Hackman, Oldham et al. 1975; Hackman and Oldham 1976; Hackman and Gersick 1990). The impact of hedonic intrinsic motivation depends on the importance the individual attributes to being engaged in enjoyable, self-determined and competence-enhancing behavior (King, Hautaluoma et al. 1983). It can be defined as “the degree to which behavior is to driven by job satisfaction”.

*Normative intrinsic motivation* is driven by the goal of engaging in behavior that is compliant with organizational norms and values. Individuals are thus normatively intrinsically motivated to engage in a given behavior, to the extent that this behavior is congruent with organizational norms and values (Allen and Meyer 1990; Kreps 1997). The intensity of normative intrinsic motivation hence depends on the degree to which individuals
identify themselves with organizational norms and values. More formally, normative intrinsic motivation can be defined as “the degree to which behavior is influenced by the norms and values of the firm”.

----(Table 1 about here)---

The Relationship between Extrinsic and Intrinsic Motivation

Different types of motivation are present in many situations (Frey and Jegen 2001), so it is important to understand how they jointly influence behavior. As we cannot expect the three dimensions of motivation to be orthogonal, we need to pay close attention to possible interaction effects between them. A look at existing research in motivation theory lets us make predictions regarding the direction of these interaction effects. The negative impact of extrinsic motivation on intrinsic forms of motivation has received most attention in the literature so far. This phenomenon is known in social psychology as the “over justification effect” (Deci 1975; Deci 1976; Lepper and Greene 1978), and in economics as “motivational crowding theory” (Frey and Oberholzer-Gee 1997; Frey and Jegen 2001). Both these theories essentially argue that the introduction of extrinsic motivation (e.g. through rewards for behavior that was previously voluntary) suppresses intrinsic forms of motivation, as individuals tend to attribute their behavior to the rewards and no longer recognize the intrinsic reasons for their behavior (e.g. task enjoyment or compliance with social norms). Empirical tests of this theory (primarily in a laboratory setting) support the view that intrinsic motivation is reduced as extrinsic motivation is increased (Deci and Koestner 1999; Deci and Koestner 1999), but there is also evidence of real-world phenomena that are consistent with motivational crowding theory (Frey and Jegen 2001). If these findings are generalizable to a managerial context, one would expect extrinsic motivation to have a negative impact on
intrinsic forms of motivation.\footnote{Interestingly, the opposite effect, \textit{i.e.} the influence of intrinsic motivation on extrinsic forms of motivation, has received little attention in the literature. While it may be interesting to further explore this link, this relationship is beyond the constraints of this paper.}

With respect to the two forms of intrinsic motivation, no formal theory has been yet advanced regarding interaction effects. However, one can easily argue that a positive link exists between normative intrinsic motivation and hedonic intrinsic motivation. According to Lindenberg (2001), normative motivation is characterized by the presence of a normative frame, \textit{i.e.} a concern for the organization’s norms and values. One would expect that this state of mind facilitates the development of a hedonic frame, \textit{i.e.} the enjoyment of one's task, which corresponds to hedonic motivation (Lindberg, 2001).\footnote{This argument of a positive relationship between a normative and a hedonic frame is not as such present in Lindenberg’s theory.} Whenever individuals strongly identify themselves with “their company” and “their job”, the degree to which task characteristics become enjoyable increases.

\section*{INTEREST ALIGNMENT AND THE PERFORMANCE IMPACT OF REWARDS}

\textbf{The Performance Impact of Organizational Interest Alignment}

Motivation has been identified as an important determinant of individual task performance, as it influences to what extent individuals reach their potential performance (e.g. Schuler and MacMillan 1984). In a very similar fashion, firm performance is also a function of how well the individuals who work for the organization are motivated to accomplish organizational goals.\footnote{Organizational goals can be, and normally are, the result of an intense multi-stakeholder dialogue. They can also, more simply, be the result of the owner’s vision and will. The argument developed in this paper, however, applies irrespective of the exact definition of organizational goals, since it refers to the degree of alignment.} If we conceptualize a firm’s \textit{potential} performance as determined by the combined use of its assets, capabilities and market positioning, the translation of \textit{potential} into \textit{actual} performance crucially depends on individuals’ willingness to utilize their skills and the
available assets to compete in the most effective way (Castanias and Helfat 1991; Schuler and MacMillan 1984; Schuler and Jackson 1987). We can thus model actual organizational performance as a function of both potential organizational performance and the aggregate level of motivation to behave in ways conducive to the realization of that potential (Gottschalg and Zollo 2004).

To be able to apply arguments from the preceding discussion of the various types of motivation and the interaction effects between them to the organizational level, it is helpful to use the concept of organizational “interest alignment” as a measure of the aggregate correspondence between individual and organizational goals. Organizational interest alignment can therefore be defined as “the degree to which the members of an organization are motivated to behave in line with organizational goals” (Gottschalg and Zollo 2004:7). It is important to note that this definition of interest alignment does not impose restrictions as to how the members of the organization are being motivated, thereby allowing us to incorporate different motivational mechanisms in our theory.4

The positive performance impact of high levels of organizational interest alignment follows almost immediately from its definition. It is more interesting, however, to look for possible drivers of this effect in the motivational processes at the individual level.

It is, as yet, uncertain how individual motivation aggregates to the organizational level remains. Existing work examining one (extrinsic) aspect of interest alignment from the governance perspective implicitly assumes that individual motivation can simply be aggregated to the organizational level. Lacking a theory of how motivational levels aggregate, we must expect a priori that motivation operates similarly at the individual and organizational levels. If this is true, we expect overall interest alignment to be driven by

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4 In this respect organizational interest alignment differs from the related concept of the “governance problem”, with its implicit focus on agency theory arguments and thus extrinsic motivation.
three different underlying motivational mechanisms: extrinsic, hedonic and normative interest alignment. **Extrinsic interest alignment** is the degree to which individual interests are aligned with organizational goals based on extrinsic motivation, **hedonic interest alignment** is the degree to which individual interests are aligned with organizational goals based on hedonic intrinsic motivation, and **normative interest alignment** is the degree to which individual interests are aligned with organizational goals based on normative intrinsic motivation. Each of these components will then have a direct and positive impact on firm performance. Whenever extrinsic, normative intrinsic or hedonic intrinsic factors are at play to increase individual motivation, both the corresponding component of interest alignment at the collective level and ultimately, firm performance are increased. This effect can be formally stated in the following hypotheses:

**H1a:** The greater the level of extrinsic interest alignment in a given organization, the higher the performance of the firm.

**H1b:** The greater the level of normative interest alignment in a given organization, the higher the performance of the firm.

**H1c:** The greater the level of hedonic interest alignment in a given organization, the higher the performance of the firm.

At the same time, we need to consider the interaction effects between the motivational processes. As our discussion of individual motivational processes has shown, many arguments have been made regarding the existence of a negative influence of extrinsic motivation on intrinsic motivation (Deci 1975; Lepper and Greene 1978; Frey and Jegen 2001). If a similar effect occurs at the collective level, we have to expect extrinsic interest alignment to have a negative impact on both hedonic and normative interest alignment. This leads us to hypothesize that:

**H2a:** The higher the level of extrinsic interest alignment in a given organization, the lower the level of interest alignment.
\textit{H2b: The higher the level of extrinsic interest alignment in a given organization, the lower the level of normative interest alignment.}

Similarly, we have argued on the individual level that a normative cognitive frame can be expected to facilitate the development of a normative cognitive frame (Lindenberg 2001). In a collective setting we can also expect the presence of a strong orientation towards the norms and values that characterize the work situation to reinforce the relevance of task characteristics for the individual. Hence one would expect a positive impact of normative interest alignment on hedonic interest alignment, as stated in the following hypothesis:

\textit{H2c: The higher the level of normative interest alignment in a given organization, the higher the level of hedonic interest alignment.}

\textbf{How can organizations influence interest alignment?}

The recognition of the performance relevance of organizational interest alignment leads to the question: what is the influence of organizational-level characteristics on the different motivational mechanisms underlying organizational interest alignment?

Extrinsic interest alignment, for example, can be used to stimulate organizational performance-maximizing behavior with a relatively large degree of discretion (e.g. Schuler and MacMillan 1984), as long as the behavior can be pre-specified and rewards can be allocated accordingly. These contingencies on the completeness of contracts and the complex monitoring of actual behavior have generated entire branches of economic theory (Coase 1937; Williamson 1975; Williamson 1985; Williamson 1989; Alchian and Demsetz 1972; Jensen and Meckling 1976; Fama and Jensen 1983; Hart 1989; Hart 1995). For the purpose of this paper, suffice to say that extrinsic interest alignment largely depends on how organizations allocate financial and non-financial rewards to individuals as a function of their behavior (Prendergast 1999). The influence of the total set of these allocation processes, set
out in the organizational reward system,(extrinsic interest alignment) is contingent upon individual preferences, since compensation or power status may motivate people to different degrees.

In contrast, hedonic interest alignment is a function of the perceived characteristics of a given task and of the task context. Individuals are hedonically intrinsically motivated when they perceive their job characteristics to be attractive. This in turn depends on the degree to which the individual sees the job as enjoyable, self-determined and competence enhancing (Deci and Ryan 1985). Prior research has shown that changes in individual job design and task context, as well as changes in employee perceptions regarding the attractiveness of their job characteristics can indeed have an important impact on employee motivation (Hackman, Oldham et al. 1975; Hackman and Oldham 1976; Hackman and Gersick 1990), again subject to variations in individual preference.5

Finally, normative interest alignment depends on the level of employee-organization identification, or in other words, on the tightness of the social community that the firm provides. Firms can actively influence employee-organization identification, for instance, through the use of socialization regimes (Van Maanen 1978; Van Maanen and Schein 1979; Kerr 1975). These can take the form of company-wide events or training sessions targeted at increasing employee-organization identification and proliferating organizational norms and values among employees. However, just as in the previous cases, the effectiveness of such measures in stimulating normative interest alignment is sensitive to the characteristics of individual preferences. Furthermore, the degree to which employee-organization identification leads to increased normative interest alignment is contingent upon the fit between the existing set of organizational norms and values and the strategic objectives of the

5 However, there may be limits to the degree of overlap between what individuals perceive as enjoyable, self-determined and competence-enhancing tasks and the organizational needs for implementing its strategy. Individuals may be highly (hedonically intrinsically) motivated by the characteristics of the tasks they are performing, but the corresponding behavior may not necessarily be in line with organizational goals.
organization. In other words, employee-organization identification enhances performance through normative interest alignment only to the extent that the norms and values of the organization are in line with organizational goals.

Based on this discussion, we propose a model of organizational interest alignment that considers three types of interest alignment: hedonic, normative and extrinsic interest alignment, along with their antecedents. Interest alignment is affected by three aspects of the organizational context: the reward system, as a determinant of extrinsic interest alignment; the perceived attractiveness of job characteristics (including the task context and task perceptions) as a determinant of hedonic interest alignment; and, employee-organization identification, as a determinant of normative interest alignment. The effect of each of these factors, however, is moderated by important individual and organizational contingencies. First, the influence of all three factors on interest alignment depends on the sensitivity of the workforce to the specific type of interest alignment. Moreover the degree to which rewards, job design and values fit with organizational strategy also acts as a moderator on the relationship between interest alignment and its antecedents. Finally, we need to consider possible interaction effects between different types of interest alignment, such as the negative impact of extrinsic on hedonic or normative interest alignment, and the positive effect of normative on hedonic interest alignment (Figure 2).

**The Influence of the Strength of the Reward System on Interest Alignment**

How will rewards influence organizational interest alignment and ultimately firm performance according to this model? In the following, we focus on the strength of the reward system, i.e. “the extent to which financial or non-financial rewards provided to the individual are contingent upon the level of congruence between individual behavior and
organizational goals” as one important feature that affects organizational interest alignment. A strong or “high-powered” reward system allocates more rewards to individuals who behave in a way that contributes to the accomplishment of organizational goals. On the other extreme, a weak or “low-powered” reward system rewards all individuals more or less in the same way, irrespective of their behavior.

Most obviously in our model, the strength of the reward system has a direct impact on extrinsic interest alignment, as rewards are the key determinant of extrinsic motivation. According to the key propositions of agency theory, performance-contingent rewards are a powerful way of aligning principals’ and agents’ incentives based on extrinsic motivation. Thus we can expect a positive relationship between the strength of the reward system and extrinsic interest alignment on the organizational level. This can be formally stated in the following hypothesis:

**H3a: The greater the strength of the reward system, the higher the level of extrinsic interest alignment.**

However, the reward system not only has a direct impact on extrinsic motivational mechanisms, but it can also have “side effects”. Through its influence on other antecedents of interest alignment specified in our model, rewards can (indirectly) affect components of interest alignment based on intrinsic forms of motivation. For example, prior research has identified the reward system’s impact on the perceived attractiveness of job characteristics, which determines hedonic interest alignment (Deci and Ryan 1985). However, the direction of this influence is not always clear. It has been argued that to the extent that performance-based rewards are perceived as controlling, they decrease self-determination as an important component of the attractiveness of job characteristics (Deci and Ryan 1985) and hence reduce

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6 Reward systems may differ in many additional respects (reference Pendergast), such as the degree of equality between co-workers, overall compensation levels, or the administration of rewards based on behavior or outcomes. While we would expect that these factors also have an impact on interest alignment, these are beyond the scope of this paper and are left for future research.
hedonic interest alignment. Accordingly we hypothesize that:

**H4a: The greater the strength of the reward system, the lower the level of hedonic interest alignment.**

At the same time, strong rewards can convey information about individual performance or abilities and can therefore be perceived as competence-enhancing (Amabile 1993). Similarly, if an individual perceives that a strong reward system is “fair”, the impression of procedural justice is increased (Koys 1990). Both of these effects will lead to job characteristics becoming increasingly attractive. A strong reward system then, can be expected to increase the attractiveness of job characteristics thereby hedonic interest alignment, which can be formally stated in the following hypothesis:

**H4b: The greater the strength of the reward system, the higher the level of hedonic interest alignment.**

Two contradictory views exist in the literature regarding the influence of strong reward systems on antecedents of normative interest alignment. First, the argument articulated for example, by Ghoshal and Moran (1996), posits that a strong reward system promotes opportunism (as an individual characteristic) and disrupts the social community provided by the firm. According to our model, this reduces the level of employee-organization identification and lowers normative interest alignment. Consequently we can hypothesize that:

**H5a: The greater the strength of the reward system, the lower the level of normative intrinsic motivation.**

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7 It is important to note that the mechanism through which rewards decrease intrinsic motivation described here is theoretically different from the overjustification or crowding-out effect discussed earlier (Hypothesis H2a and H2b). Hypotheses H2a and H2b described the influence of one type of interest alignment on the other, as extrinsic motivation (triggered by rewards) crowds-out intrinsic motivation. Now, we are looking at a case in which there are interaction effects between different organizational antecedents of interest alignment, as rewards themselves have an influence on the attractiveness of job characteristics, which in turn determine hedonic interest alignment.
On the other hand, Foss (1996) provides the counter argument that when a strong reward system contributes to an effective governance structure based on incentives and control, opportunism is suppressed and the development of a social community within the firm is facilitated. If this were true, we would expect strong rewards to increase employee-organization identification and to strengthen normative interest alignment. This can be stated more formally in the following:

**H5b: The greater the strength of the reward system, the higher the level of normative intrinsic motivation.**

In summary, the received literature leads us to expect the strength of the reward system to have multiple effects on different types of interest alignment. It can first increase extrinsic interest alignment, which in turn may decrease hedonic and normative interest alignment. At the same time, it can affect antecedents of hedonic and normative interest alignment in a positive or negative way. The full model of antecedents and consequences of organizational interest alignment, along with the hypothesized relationships related to the performance impact of rewards, is presented in Figure 2.

--------------Figure 2 about here-------------------

This model gives us a comprehensive view on the fundamental arguments regarding motivational theory proposed by economic and social psychology studies. It reveals the complexity of the mediating role of motivation in the relationship between rewards and performance and points to the importance of considering rewards jointly with other tools to enhance organizational interest alignment (Gottschalg and Zollo, 2004). It also illustrates that the net effect of strong rewards on overall interest alignment and ultimately firm performance, remains theoretically unclear and awaits empirical validation. In the following, we will thus empirically test our hypotheses regarding the different ways in which strong rewards influence firm performance.
RESEARCH DESIGN

Research Setting

Our hypotheses were tested in the context of leveraged management buyouts in the UK. This was an ideal setting as it fulfilled certain key criteria. First, it allowed us to observe changes in the strength of the reward system, as well as other hypothesized antecedents of interest alignment. Second, we could measure the performance impact of these changes. And third, we could isolate the performance impact of interest alignment from other factors that may alter firm performance.

Prior research on buyouts emphasizes the fact that a buyout dramatically changes important aspects of a firm's reward system, for example through the introduction of pay-for-performance remuneration schemes or equity plans for top management and employees (Fox and Marcus 1992; Anders 1992). In addition, detailed interviews with 23 top executives involved in the management of (successful and less successful) buyouts revealed that buyouts also have a substantial impact on hedonic or normative interest alignment. They provoke fundamental changes in an employee’s overall perception of his/her job in a company. This effect can vary from being either negative or positive. It tends towards the negative when the buyout is seen as a “hostile takeover” by a financial investor or as the result of unsatisfactory performance. On the other hand, it can be highly positive, as in cases in when the buyout leads to the revitalization of a mature business (Berg and Gottschalg 2005). In exploratory interviews, experienced buyout managers reported that the ways in which the buyout is communicated and its objectives and consequences are explained to the workforce are important. These critically influence how the buyout event is perceived by the employees. Furthermore, managers also reported that buyouts have an effect on the social community of the firm, and hence affects normative intrinsic motivation. Often they result in a more closely knit social community within the firm, such as in the case of a spin-off buyout, which
reduces the overall scope of activities. As the CEO of a successful buyout commented: “we used to be a mechanical division that felt that it did not fit in a group dominated by an electrical engineering culture. After the (spin-off) buyout the culture of our unit changed and we are now a close community with a ‘mechanical mindset’.” Similarly, buyouts can have an impact on motivation through increased employee-organization identification. As one top manager of another buyout put it: “of course it is great to have all those stock options, but that's not what's keeping you working in the office on a Saturday night. Through the (management) buyout this becomes ‘your’ company and you work as hard as you can, because you want ‘your baby’ to succeed and to make that IPO.”

It should also be noted that the performance of a buyout can be assessed with a (relatively) high degree of accuracy and objectivity. Buyouts are typically based on a detailed business plan developed at the time of the investment and which can be used to measure subsequent performance. Even more important, most buyouts involving private equity firms have a limited investment horizon (Baker and Montgomery 1994), so the equity investor’s realized return on equity (annualized Internal Rate of Return (IRR)) can be observed as an objective performance measure post-exit.

Finally, buyouts are stand-alone acquisitions that tend to leave the resource configuration of the acquired company relatively unchanged (Baker and Montgomery 1994), especially when compared to events that lead to comparable changes in the antecedents of interest alignment (like a merger or major acquisition). This is not to deny the substantial level of change that a buyout can trigger in the acquired company. However, if we apply the distinction between factors that determine potential performance and those that determine the ability to realize this potential (Figure 1), a large amount of overall value generation through the buyout can be attributed to the latter (Berg and Gottschalg, 2005), so that the performance impact of the introduction of more high-powered rewards is therefore sufficiently isolated.
Sample

The research design involved three phases. In the first phase, detailed interviews were conducted with 23 senior executives involved in European buyouts, either as managers of buyout portfolio companies or as investment managers working for private equity firms. Based on these interviews, a questionnaire-based survey was developed and fine-tuned to ensure measurability and clarity. Recipients of the survey were identified using the buyout database of the Centre for Management Buyout Research (CMBOR) at the University of Nottingham, the most comprehensive source of information on buyouts in the UK. Management buy-ins were excluded from our analysis, as the change in the top management team they imply is likely to have a particular impact on interest alignment that we wanted to exclude from our analysis. In the second phase, a survey was conducted on the 2,415 buyouts that took place between 1996 and 1999 in the UK, or were exited between 2000 and 2002. These criteria were chosen as reliable performance information could be obtained, either in the form of an objective return on equity (IRR), or through a comparison of initial business plans with actual performance after a sufficient interval (at least three years). The final phase of the research design involved augmenting the dataset with secondary data on relevant characteristics of the acquired company and comparable stock market returns over the investment horizon for each deal.

The survey consisted of four main parts. The first and third parts asked the responding top executive of the buyout company to assess the motivation levels of his or her top management team prior to and following the buyout. Extrinsic, hedonic and normative interest alignment were measured through a total of eight questions using an instrument developed by Amabile (Amabile, Tighe et al. 1994) that was adjusted to the buyout setting. The second part of the survey gathered information about the characteristics of the buyout such as: (a) the incentive system put in place; (b) the initial perception of the buyout event;
and, (c) the degree to which objectives and reasons for the buyout had been communicated. The fourth part of the survey assessed buyout performance through multiple objective and subjective performance measures.

Of the total 2,415 companies to which the survey was sent in July 2003, 303 were removed from our list as they could not be contacted and 244 indicated that no one from the management team in place during the time of the buyout was still with the company. Two follow-up letters at fortnightly intervals were sent to the remaining 1,868 companies. With 89 companies responding before October 2003, the response rate was 5%. In early 2004, we made a second effort to collect data from a sub-sample of the remaining 1,779 firms. Of these, we had access to additional information for 334 via research contacts with institutional investors in buyout funds. We focused our efforts on these 334 firms, as the link between the qualitative information collected through the survey and the quantitative (performance) information available through the research contacts was particularly valuable. Each of these companies received several follow-up calls: 31 could not be reached by mail or phone, and 51 reported that no one from the buyout management team was still with the company. These were thus removed from our target list. Of the remaining 257, 29 returned our survey, which corresponds to a response rate of 11% for the second data collection and increased the overall response rate to 6.3%. This response has to be interpreted in light of the inevitable complexity of a survey that aims at capturing complex motivational processes at the organizational level. Equally, we need to consider the tendency in the private equity domain not to disclose any information on individual transactions. For this reason, survey response rates in the buyout area tend to be lower than for publicly traded companies.

The survey was sent to the most knowledgeable respondent, who was identified by the CMBOR buyout database. Most of the respondents were either Chief Executives (68%) or Managing Directors (19%), the remaining respondents held other top management functions.
Respondents were motivated to complete the questionnaire by the opportunity to compare their own buyout experience with those of other firms, as well as by assurances that their individual responses would be kept strictly confidential.

To assess the impact of a possible non-response bias, a number of sample mean comparison tests were made. First, the general characteristics of the 118 buyouts in our sample were compared to all 2,415 buyouts from the CMBOR database initially identified for this study. Two-tailed t-tests for continuous variables and chi-square tests for categorical variables indicated that there were no significant differences between the two samples in terms of size (equity invested), deal source (privatization, secondary buyout, public-to-private deal etc.), comparable public market returns, the distribution of deals across 10 industry categories or the percentage of deals that were already exited. However, the average holding period of the 118 deals in our sample was significantly longer (5.7 vs. 5.2 years) than the average buyout in the CMBOR database. Also, the entry years 1997 and 1999 were significantly over-represented in our response sample. In a second step, the performance (IRR) of the 69 deals in our sample for which this data was available was compared with a set of UK buyouts composed of deals on which our research partners from the community of investors in buyout funds were able to provide us with performance information. The performance of the buyouts in our sample does not statistically differ from either the overall set of 402 UK buyout deals or the 190 UK buyout deals that were entered during the same time period as our survey responses.

**Specification of the Structural Model**

This study’s aim is to assess the effect of changes in the tightness of reward systems on different types of interest alignment and performance. Consequently we needed to develop a dynamic model that linked changes in the reward structure to changes in the level
of the different components of interest alignment, and ultimately, to buyout performance. Based on the preceding theoretical discussion, as well as the insights gained through the exploratory interviews, the following structural equation model was submitted for empirical testing. The model considers three antecedents of changes in interest alignment: (a) the strength of the reward system introduced in the buyout; (b) the perception of the buyout; and (c) the level of communication of the buyout event. It further measured changes in the endogenous interest alignment in its three dimensions as extrinsic, normative and hedonic interest alignment. Buyout performance is the ultimate dependent variable. It is important to note that this model, which is represented in Figure 3, differs slightly from the previously introduced theoretical model (Figure 2). The reason for this difference comes from the fact that several constructs of the theoretical model, such as the tightness of the social community, cannot be measured through our research design. Instead, the empirical structural equation model measures the perception of the buyout as a key antecedent to both changes in the tightness of the social community and in the attractiveness of job characteristics. Hence we have to transfer our hypotheses H4a/b and H5a/b into the structural equation model. In Figure 3, all previously developed hypotheses are indicated next to the corresponding paths.

--- Figure 3 about here---

**Specification of the Measurement Model**

As the constructs used in our theoretical model are unobservable, they must be inferred from measured variables. Accordingly, a “latent variable” design with multiple indicators for each construct was chosen. This design accommodates the nature of the

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Even though no formal hypotheses have been developed regarding the influence of communication on interest alignment, this construct has been included in the model, as the role of communication has been frequently mentioned by practitioners as an important determinant of buyout perception and ultimately of intrinsic forms of motivation in the buyout.
research by allowing constructs to be represented by a combination of variables that can be measured empirically. The statistical method (partial least-squares — see below) requires the specification of the epistemic relationships (Bagozzi 1984, Fornell and Bookstein 1982) of all constructs used in the structural model as either: reflective, i.e. each item is caused by — or reflects — the unobserved construct; or formative, i.e. each of the items causes — or forms — the unobserved construct (Hulland 1999). The constructs and the variables used to measure them are described below (Table 2 summarizes the constructs and their indicators).

**Dependent Variable.** We measure buyout performance using two questions in the survey that asked for the respondent's qualitative performance assessment according to two criteria: “How did the investment perform relative to expectations set in the initial business plan?” measured **Performance** on a fully anchored Likert scale ranging from “-2” (Strongly below) to “+2” (Strongly above). The second question “How would you evaluate the degree of accuracy to which the original business plan has been implemented?” measured **Plan Accuracy** on a fully anchored Likert scale ranging from “-2” (Completely changed) to “+2” (Most accurate). While one cannot exclude the possibility of reporting biases in such measures, research has shown that self-reported performance data are generally reliable (e.g. Dess and Robinson Jr 1984). In addition, we were able to obtain an objective and quantitative performance measure for 69 of the total 118 deals. The annualized return on equity of the deal was obtained either directly from the respondent through the survey (21 cases), or based on proprietary information the author was able to obtain from institutional investors in buyout funds (48 cases)\(^9\). Based on this objective assessment, we were able to validate the subjective performance assessments, as IRR correlates with Performance at .69 (p<.0001) and with Plan Accuracy at 0.31 (p<.01). The Performance construct can be

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\(^9\) The author would like to thank the research partners for providing access to this information.
expected to be reflective, as successful buyouts are typically those that: (a) succeed in accurately implementing the original business plan and (b) generate higher-than-expected returns.

**Endogenous Constructs: Change in Interest Alignment** has been measured based on survey responses that capture motivational levels prior to and following the buyout. Given the novelty of the theoretical distinction between hedonic and normative types of intrinsic motivation, and the limited amount of prior research on organizational-level motivation, existing instruments (e.g. the Work Preference Inventory (WPI) developed by Amabile et al., 1994) had to be adjusted to capture the hedonic–normative distinction and the organizational level of analysis, and to take account of the buyout setting. In the survey, the responding member of the top management team was asked to assess the motivational levels of his or her management team prior to the buyout and at the time of the survey. This one-respondent research design was the only practical way of collecting data on a sufficiently large cross-sectional sample of buyouts, as the requirement to have multiple respondents per company would have reduced the response rate to levels that make any statistical analysis of the data impossible. The response was given on a 5-point fully anchored Likert scale ranging from “-2” (False) to “+2” (True) through the following two questions: (1) “In the period prior to the buyout, to what extent would you say that the following statements were true (on average) for the other members of your management team?” and, (2) “Looking at the situation today, to what extent would you say the following statements are true (on average) for the other members of your management team?” Following these two introductory questions, the eight statements, described in the following in more detail, were evaluated twice to assess hedonic, normative and extrinsic interest alignment. The difference in scores on each of these questions between the present and the time prior to the buyout were taken as
measures of the change in indicators of interest alignment. A priori, the answers to these questions should reflect underlying levels of interest alignment in all three dimensions, so that we expect all three constructs to be reflective (Hulland 1999).

**Hedonic Interest Alignment (HIA)** was measured using the two following statements: “They feel/felt satisfied by their job” and “They enjoy(ed) what they are/were doing”. These items capture the essence of the hedonic frame of (Lindenberg 2001) underlying hedonic interest alignment, according to which a task is performed for its own sake, as the activity is perceived as enjoyable and leads to satisfaction.  

**Normative Interest Alignment (NIA)** was measured using four items, corresponding to the statements: (1) “They really feel/felt as if this company’s problems are/were their own”; (2) “This company has/had a great deal of personal meaning for them”; (3) Their behavior is/was guided by norms and values of the company”; and, (4) “They take/took pride in the success of their company”. Again, these items have been developed to capture the nature of the normative frame (Lindenberg 2001) that underlies normative interest alignment.

**Extrinsic Interest Alignment (EIA)** was assessed using two items that capture extrinsic motivation, based on the goal of obtaining additional resources (Brief and Aldag 1977) in either tangible or intangible form through the statements: (1) “Their behavior is/was guided by a desire to maximize shareholder value”; and (2) “Their behavior was guided by a desire for professional success”.

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10 Exploratory interviews with top managers of buyout companies indicated that it would not be practical to obtain responses to a survey that measures the entire WPI instrument twice (prior to the buyout and today). Hence the most relevant items of the WPI for our purposes were identified with the interviewees, adjusted to the context of our study and integrated in the questionnaire.
**Explanatory Variables.** Three determinants of changes in interest alignment were considered in our study. First, the construct Changes in the Strength of the Reward System was measured by two formative indicators: (a) the Percent of Shareholders Equity owned by the employees of the firm after the buyout on a fully diluted basis (EQ_M_A); and (b) the Percentage of Total Annual Compensation that is based on performance after the buyout (PayforPerf). Theoretically, the formative nature of these variables can be justified by the observation that individuals receive rewards as a function of their performance-enhancing behavior, *either* if they hold equity the company, *or* if annual remuneration is performance-based. Second, the construct Perception of Buyout was measured with two reflective items, through the answer to the question of “How do you think did the majority of the members of your company perceive the buyout event when it was announced?” and then via the question of “How did you personally initially perceive the buyout event when it was announced?”. Answers were given in both cases on a fully anchored Likert scale ranging from “-2” (Very negative) to “+2” (Very positive). These items can be expected to both reflect the overall perception of the buyout and hence be modeled as reflective.

Finally, the level of Communication of Buyout of the buyout event to management and employees was measured in four binary items corresponding to the questions: “Which aspects of the buyout were explicitly explained to the employees of your company? General characteristics of LBOs; Strategic motivation for buyout; Required operational changes; New performance targets?” As this construct consists of binary items, each of which contributes to the overall level of communication, we expect this construct also to be formative.

**Analytical Method**

Given the nature of the structural equation model and the individual constructs, the model was estimated using the latent variables partial least-squares method (PLS) (Wold
This relatively recent and powerful multivariate analysis technique has been increasingly used by social science researchers (see Birkinshaw, Morrison et al. 1995) as well as in the management field (Cool and Schendel 1988; Cool, Dierickx et al. 1989; Fornell, Lorange et al. 1990; see Birkinshaw, Morrison et al. 1995; see Hulland, 1999 for a review of PLS). In contrast to its better-known relative LISREL (Lohmoller 1988), it is appropriate for the estimation of structural equation models that include reflective and formative constructs, allows the analysis of structural models with smaller sample sizes, and has no distributional requirements with regards to the latent variable indicators.\(^{11}\)

**Reliability and Validity**

Content validity of the questionnaire items was verified during interviews with experts from the buyout industry (either managers of buyout portfolio companies or investment managers working for the acquiring private equity firm). The interviewees confirmed the content validity of all our measures. The acceptability of the measurement model was assessed by first conducting a “tetrad-test” for causal indicators (Bollen and Ting 2000) to check whether all constructs had been specified correctly as reflective or formative. The only indicator not confirmed by this test was “normative interest alignment”, which was consequently remodeled as composed of formative indicators, according to the tetrad-test. The following analysis had to be conducted separately for reflective constructs on the one hand, and formative constructs, on the other. In the first step, the trait validity of reflective constructs had to be checked. Individual item reliability was evaluated by examining their respective loadings. Table 2 contains the PLS parameter estimates for the *measurement* model. All reflective constructs consist of items with loadings greater than the rule-of-thumb

\(^{11}\) For the calculations, a beta-testing version of the software package PLS-Graph Version 3.00 built 1060a. The author would like to thank W. Chin for providing access to this software.
of .7 (Formell et al., 1982). Composite reliability for all reflective constructs was assessed using the composite reliability measure (Werts, Linn et al. 1974)\(^{12}\) and the Average Variance Extracted (AVE) measure (Fornell and Larcker 1981; Fornell and Larcker 1981). All reflective constructs also had composite reliability scores above the threshold of .7 and AVE values above the threshold of .5 (see Table 2). Construct discriminant validity for reflective constructs was assessed based on the comparison between the square root of the AVE measure of the focal construct and the correlation between the focal construct and all other constructs in the model (see Table 3). For all constructs, the square root of AVE is substantially greater than the correlation with any other construct (Fornell and Larcker 1981; Fornell and Larcker 1981). Finally, item discriminant validity was verified through a correlation analysis of all items with all constructs, in which items of all reflective constructs load highest on the construct that they intend to measure (Chin 1998) (see Table 4).

The formative constructs were checked for multicollinearity using the variance inflation factor (Mason and Perreault Jr 1991). All constructs had VIF levels far below the threshold of 10 (Table 2). In response to criticism of this method, we also ran a series of nested multiple regression models incorporating the items for each construct sequentially to explain different dependent variables, but no signs of multicollinearity could be observed (Kennedy 1998)

**RESULTS**

**Descriptive Statistics and Bivariate Correlation Analysis**

Descriptive statistics for the original items and the (standardized) PLS estimates for the various constructs are reported in Table 5. The results indicate that the average IRR of the 69 responses for which quantitative performance information has been available is 23%. The responses to the qualitative performance assessments indicate that the average buyout in

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\(^{12}\) This composite reliability measure is a more precise estimate of construct reliability than Cronbach’s alpha.
our sample performed slightly below the expectations set in the initial business plan. This makes intuitive sense if we consider the time period. The majority of the deals were entered in the second half of the 1990s, during which expectations regarding the potential performance of private equity investments were generally rather optimistic. Given that most of the qualitative performance assessments were made after the economic downturn in the UK in 2001 and 2002, it is not surprising that the average deal in our sample performed below expectations. On average, the management teams in the 118 buyouts held about 50% equity after the buyouts, reflecting the dominance of buyouts of small and medium companies with large managerial stakes in the UK buyout market. Similarly, the use of pay-for-performance schemes was relatively widespread, with an average of 20% of total annual compensation being performance-contingent. On average, the initial perception of the buyout event was quite positive, both by the respondent and the remaining members of the management team. Various aspects of the buyout had also been explicitly communicated to the employees. It should also be acknowledged that on average, buyouts increased all three types of interest alignment, as the average score on all eight items was highly positive. The bivariate correlation analysis (Pearson’s correlation coefficient) of the various constructs used in our model (Table 6) provides some initial evidence that several of the hypothesized relationships are indeed of statistical significance. One finds a significant and positive relationship between: (a) performance and changes in hedonic (p<.01) and changes in normative interest alignment (p<.1); (b) all three constructs for changes in hedonic, normative and extrinsic interest alignment (all three p<.001); (c) rewards and changes in hedonic interest alignment (p<.05); (d) perception and changes in hedonic (p<.01) and changes in normative interest alignment (p<.05); and (e) communication and perception (p<.01).

as it considers the weights of the individual items calculated by PLS.
Partial Least-Squares Results

The PLS estimates for the path coefficients in the structural model are reported in Table 7a, along with the t-values indicating the statistical significance of the path coefficient. The overall fit of the structural model can be evaluated on the basis of significant relationships among t-constructs on one hand, and by the explained variance of the endogenous latent variables on the other. Table 7 shows that six of the 11 hypothesized individual relationships are significant at the .1 level. The coefficients of determination (Adj. R²) of the endogenous constructs are 7.5% for Performance, 40% for changes in normative interest alignment, 50% for changes in hedonic interest alignment, but only 1% for changes in extrinsic interest alignment (Table 7). Furthermore, the predictive power of our model has been assessed by calculating Q² values (Chin 1998) for all endogenous variables. Table 7 shows that Q² values are greater than zero for all endogenous constructs, so that we can infer that the model has not only explanatory but also predictive power for both changes in the different types of interest alignment and performance.

An interesting picture evolves from the results of our analysis of the hypothesized individual relationships. Hypotheses H1a, H1b and H1c predict a positive relationship between changes in each of the three sub-components (extrinsic, normative and hedonic) of interest alignment and performance. The analysis fails to provide support for the direct positive performance impact of both extrinsic and normative interest alignment, as stated in H1a and H1b. This is particularly striking, as enhanced extrinsic motivation was one of the most prominent factors for value creation in buyouts according to the received literature (Kaplan 1989; Singh). With respect to changes in hedonic interest alignment, however, our results indicate a strongly positive and significant (p<0.05) impact on performance, in line with H1c. This suggests that buyout success is a function of how much the buyout contributes to greater overall job satisfaction of the managers of the target company. This
makes it even more interesting to take a close look at the other relationships tested in the structural equation model, in particular at those regarding potential antecedents of hedonic interest alignment.

Hypotheses H2a and H2b predict a negative impact of extrinsic interest alignment on normative and hedonic interest alignment, according to the individual-level effect frequently described in the literature. Our results, however, do not provide any support for the presence of such a relationship. On the contrary, we find a strongly positive and highly significant (p<0.001) relationship between extrinsic interest alignment and normative interest alignment, \textit{i.e.} the opposite of what H2a had predicted. Furthermore, we find an equally positive and significant (p<0.001) relationship between normative interest alignment and hedonic interest alignment, strongly supporting H2c. Taken together, these findings suggest that the three sub-components of interest alignment are mutually reinforcing. Specifically, in our buyout setting it seems as if extrinsic interest alignment, \textit{i.e.} behaviour driven by a desire to create shareholder value or individual ambitions, seems to contribute to normative interest alignment through the creation of high levels of employee-organization identification. Normative interest alignment, in turn, enhances job satisfaction, as the component of interest alignment that is most relevant for buyout performance. It seems as if, in the buyout context, extrinsic interest alignment had indeed an indirect (positive) impact on performance, thanks to its interactions with both normative and hedonic interest alignment.

When we look at the influence of stronger rewards on the various components of interest alignment, the analysis provides no (or only marginal) support for the positive influence of stronger rewards on extrinsic interest alignment hypothesized in H3a. While the corresponding path coefficient is positive, the t-test for statistical significance of the effect shows a value of 0.99, which is substantially below the conventional 10\% significance level. However, when we apply the reasoning that required significance levels should be calculated
as a function of sample size, remaining degrees of freedom and the expected “effect size” to balance the likelihood of type-I and type-II errors (Erdfelder, Faul et al. 1996), a t-test value of 0.99 can be considered sufficient for a “small” effect size in our setting. Irrespective of whether one interprets the results as a non-significant or a weekly significant effect of rewards on extrinsic interest alignment, they contradict a large number of studies that argue for a strong and positive relationship between high-powered incentives and extrinsic interest alignment, especially in the buyout context.

Hypotheses H4a and H4b make competing predictions regarding the influence of stronger rewards on hedonic interest alignment. In our empirical setting, this relationship is modelled in two parts. First there is a link between the change in the strength of rewards and the perception of the buyout, and second a link between the perception of the buyout and changes in hedonic interest alignment. Our findings suggest that the introduction of stronger rewards leads to a more positive perception of the buyout (p<0.1) and that positive perception of the buyout in turn significantly (p<0.1) increases hedonic interest alignment. Consequently we find significant support for H4b, and no support for the competing H4a.

Similarly, H5a and H5b state conflicting expectations regarding the influence of stronger rewards on normative interest alignment. Again, our empirical model captures this relationship modelled in two stages. First is the change in the strength of rewards and the perception of the buyout, followed by the link between the perception of the buyout and changes in normative interest alignment. The previously mentioned finding of a significantly positive (p<0.1) effect of the introduction of stronger rewards, on the perception of the buyout, together with the fact that a positive perception of the buyout in turn increases hedonic interest alignment provide support for H5b, but no support for the competing H5a. However, the significance test of the second relationship between perception of the buyout

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13 These thresholds have been calculated using the GPower software developed by Erdfelder et al. (1996)
and normative interest alignment results in a t-statistic of 1.59. The significance level therefore lies below the standard 10% threshold, but still corresponds to a “medium-size effect” according to the GPower analysis. Overall, these results suggest that in the buyout context, the introduction of rewards has a positive impact on the intrinsic types of motivation that underlie normative and hedonic interest alignment (Figure 4).

Finally, the PLS analysis of our structural equation model points to another performance-relevant antecedent of hedonic interest alignment. In line with what has been mentioned in several of the interviews during the fieldwork that preceded the survey-based data collection for the study, the intensity of communication of the buyout to the management team and employees has a strongly significant (p<0.002) and positive impact on the perception of the buyout, which in turn enhances hedonic interest alignment and ultimately performance. To gain additional confidence in the findings from the PLS analysis, a number of robustness checks of the PLS analysis were conducted. These are reported in Appendix A.

**DISCUSSION AND CONCLUSION**

So how do rewards influence firm performance? The results of our analysis suggest that several aspects of common wisdom about how rewards influence individual task performance cannot be simply transferred to the organizational level, at least not in a management buyout context. On an aggregate level, this study confirms the existence of an overall positive relationship between rewards and firm performance. However, our analysis also provides detailed insight into the motivational mechanisms through which stronger rewards lead to an enhanced level of interest alignment, and this is the driving force behind this positive performance impact. The evidence provided suggests that we may have to revise some of our prior convictions as to how rewards work.

Based on existing theory, we expected a positive impact of all three components of
interest alignment on organizational performance. However, our results point to hedonic interest alignment as the only significant performance determinant among the three. This suggests that the phenomenon of “loving” one's job that Amabile (Amabile 1997; Amabile 2000) described as the driving force behind outstanding performance on specific tasks (creativity-related jobs, academia) may also be present at the organizational level. It seems as if the perception of a work environment as self-determined, competence enhancing (Deci and Ryan 1985) works as an important determinant of firm performance. At the same time it is surprising, that extrinsic interest alignment, based on the motivation to work for tangible or intangible rewards, has no significant direct impact on performance. This calls into question a variety of measures commonly undertaken to influence behaviour through extrinsic motivation, such as monitoring and control regimes.

Second, our findings shed light on the interaction effects between the different components of interest alignment. Here, we find that on the organizational level different types of motivation seem to be mutually reinforcing in their influence on performance. Specifically, extrinsic interest alignment has a highly significant positive influence on normative interest alignment, which suggests that individual self-interest (which underlies extrinsic interest alignment) does not necessarily harm individual-organization identification. Hence our findings contradict the propositions made by Ghoshal and Moran that self-interest reduces individual-organization identification and thereby the influence of organizational norms and values on the individual (Ghoshal and Moran 1996). Furthermore, normative intrinsic motivation significantly enhances hedonic intrinsic motivation. This confirms the view that a normative frame (Lindenberg 2001), *i.e.* a concern for the organization’s norms and values, facilitates (rather than inhibits) the development of a hedonic frame, *i.e.* the enjoyment of one's task (Lindenberg 2001). One possible explanation for this phenomenon could be that whenever individuals strongly identify themselves with “their company” and
“their job”, the degree to which task characteristics become enjoyable increases. This finding, together with the fact that extrinsic interest alignment does not have the same positive influence on normative interest alignment as it has on hedonic interest alignment, points to the relevance of the distinction between the obligation-based (normative) and the enjoyment-based (hedonic) component of intrinsic motivation proposed by Lindenberg (2001) that was introduced to the strategy discourse by Gottschalg and Zollo (2004). Finally, and contrary to the conclusions of three decades of research and social psychology (Deci and Koestner 1999; Deci and Koestner 1999), we do not find any evidence of a possible “over justification effect”, i.e. a negative impact of one type of interest alignment on the other. This could be explained either by the fact that several types of motivational mechanisms can coexist on the organizational level, (while on an individual level one crowds out the other), or that the individual preferences (of top managers) and task characteristics in the context differ so radically from the typical experimental design of studies documenting the over justification effect (in psychology, pre-school children drawing pictures) that findings from the latter cannot be generalized to the former.

Finally, our analysis provides novel insight into the organizational-level antecedents of the different types of interest alignment, with a particular focus on of the impact of high-powered rewards systems. Surprisingly, we do not find a relevant relationship between the strength of rewards and extrinsic interest alignment. This questions the implicit assumption that underlies much agency theory research, namely that incentives work because they increase the marginal cost of shirking and decrease the monetary benefits from engaging in performance-enhancing behavior. What we find, instead, suggests that strong rewards work through a very different mechanism. They seem to increase both perceived task characteristics (and thereby hedonic interest alignment), and the level of employee-organization identification (and thus normative intrinsic interest alignment). In part,
however, these observations can be ascribed to the particular empirical setting of the study. The top managers of buyout companies are likely to be less sensitive to financial rewards than other individuals, if we assume that the marginal utility of wealth is decreasing. On the other hand, it must be said that top managers, not unlike those in our sample, are a focal point in the debate about the use of high-powered incentives and questions of corporate governance. This suggests that our findings may be relevant to this debate. At the same time, it may be simply that the type of rewards introduced in the buyout (in particular equity ownership) are not perceived as controlling, thus they do not have a negative impact on the attractiveness of perceived task characteristics. Instead, external equity investors in buyouts often have substantial experience with this type of transaction (Zollo and Gottschalg 2004) and are thus likely to have developed a competency in structuring rewards in a way that is perceived as “fair” by the members of the organization, which may explain the positive influence of rewards on both hedonic and normative motivational mechanisms. This suggests that even in order to understand how rewards influence firm-level performance, even more attention has to be paid to their characteristics and the context in which they are administered.

When we compare our findings with the arguments typically made by economics-oriented researchers on the one hand, and social psychology-oriented researchers on the other, it would appear that our findings fall firmly in neither camp. While we find support for the basic economic argument (“rewards work”), the mechanisms through which rewards enhance firm performance are quite different from what would have been expected according to standard agency theory. Hence the results should encourage economists to integrate intrinsic types of motivation in their models to come to an accurate treatment of motivation as a multifaceted mediator of the rewards-performance relationship. Researchers in social psychology or organizational behavior will find support for their arguments in the fact that intrinsic types of motivation play a crucial role in the way rewards influence firm
performance in our analysis. However, this influence is quite different from what has been shown in many of their experiments. Rather than a negative influence of rewards on antecedents of intrinsic motivation, and a negative relationship between extrinsic and intrinsic motivation, we find quite the opposite. In line with more recent findings in both organizational behavior (e.g. Amabile 1993) and economics (Frey and Jegen 2001), we find that (the right) rewards stimulate intrinsic motivation and that extrinsic interest alignment reinforces normative and (indirectly) hedonic interest alignment.

Our findings have a number of important implications beyond motivation theory and the reward-performance relationship. The remarkably strong influence of hedonic interest alignment on performance suggests that the ability to make managers “love” their jobs may be important. Similarly, our findings point to the fact that we may have to reconsider the way we use stock option plans today. If it is true in general that stock options do not necessarily increase extrinsic interest alignment, but that they can increase performance through intrinsic motivational mechanisms, it becomes important to administer them in a way that gives them meaning beyond the obvious financial implications.

Having said this, it is important to keep in mind that the results should be interpreted with care, since there are important limitations inherent in the design of our study that need to be considered before the findings can be generalized. First, the chosen empirical setting implies a number of particularities regarding antecedents and consequences of interest alignment. It is possible that some of our findings are idiosyncratic to the buyout situation. Second, the nature of the private equity industry with its tendency towards secrecy made survey-based data collection difficult and led to a relatively low response rate. In addition, the chosen one-respondent research design to assess aggregate managerial motivation is somewhat imperfect, as ideally motivation should be measured through multiple respondents. Finally, the study tests novel theory using novel measures and thus did not have the luxury of
well-established and validated instruments in measuring the key constructs.

Future research in this area should verify whether and under what conditions the findings presented here can be observed in different empirical settings. It would be particularly interesting to conduct a longitudinal analysis to gain additional insight into the directionality of the performance-interest alignment relationship, and to gather data from multiple respondents across multiple hierarchical layers within one large organization to verify how individual motivation aggregates to organizational interest alignment. This would also allow us to better understand motivational “cascading effects”, i.e. whether interest alignment on one hierarchical level is influenced by, or influences interest alignment on another hierarchical level.

Overall, the results of our analyses point to the need to consider more explicitly the role of motivational mechanisms in our theories. The important impact of motivation at the organizational level has been increasingly recognized in the management discourse (Makadok 2003; Coff 1997; Coff 1999; Castanias and Helfat 1991; Gottschalg and Zollo 2004). It is now time to further open up the motivation black-box. This can only be achieved if we incorporate motivation in our theories in way that does justice to the multi-dimensional and interrelated nature of the construct. The development of a comprehensive theory of firm performance and competitive advantage requires a detailed understanding of how motivation works at the organizational level that can only be gained through an integration of existing motivation theories in both social psychology and economics. While the analysis presented in this paper can be but a first step towards this goal, it may open up the door to a rich and fruitful area for future inquiry.
APPENDIX A: Robustness Checks

As the calculation of path coefficient and significance levels according to the PLS methodology is non-deterministic, the specified structural equation model was estimated 20 times using identical model specifications to compare the results. As expected, individual path coefficient and t-test scores varied slightly across the 20 analyses, but the results did not qualitatively differ from the initial number specified in Table 7. We then tested the individual relationships specified in the PLS model with multivariate (OLS) regression techniques. The purpose of these analyses was twofold: to verify the relationships previously identified in PLS in a traditional multivariate model, and to see whether the introduction of additional control variables that were impossible to include in the structural equation model would alter the results. The 10 control variables consisted of dummies for the two most frequent entry years, the three most frequent industry categories, the returns to the FTSE 100 stock market index during the time between the entry of the buyout and either the exit or the date of the survey response, the debt-to-equity ratio in the first annual report after the buyout, the holding period in days, the size of the deal measured as the natural logarithm of the amount of equity invested and a dummy indicating whether the deal was exited or not. Every equation was tested in a two-stage nested OLS model, with and without control variables. Again, the results (not reported) qualitatively confirmed the findings from the PLS analysis, including the model specifications with control variables. Furthermore, the theoretical variables increased the explanatory power (measured by an F-Test of the increase in $R^2$) of the model significantly when added to a first stage that included controls only. Moreover, I checked for a potential common methods bias between the eight questions that measure different aspects of interest alignment and the two performance measure. The corresponding
factor analysis showed that the two performance measures load on a distinct factor which indicates that no common methods bias is present among these constructs. As a final robustness check, a test for inverted causality between performance and changes in interest alignment was carried out. In other words, an assessment was made whether the link between performance and changes in interest alignment is indeed causal, as specified in the structural model, *i.e.* changes in interest alignment *causing* changes in performance. This is especially important, as from a theoretical standpoint the opposite relationship (higher performance leading to increased interest alignment) is also plausible. This is especially true in the case of hedonic interest alignment, which is driven by job satisfaction and thus intuitively linked to success. With the available cross-sectional data, the best possible way of gaining insight into the causal direction of this relationship was to first run a model in which one component of interest alignment was the dependent variable, explained by controls and its hypothesized antecedents, and then to add performance as an additional explanatory variable in a second stage of the nested models. The results of the three models with change in extrinsic, normative and hedonic interest alignment as dependent variables indicated that performance does indeed have a positive impact on hedonic interest alignment beyond the effect of its hypothesized antecedents. However, the influence of hedonic interest alignment on measures of performance was of greater magnitude and of higher statistical significance than the influence of performance on interest alignment in the alternative specifications. These results give us confidence in the hypothesized causal impact of interest alignment on performance, even though one cannot fully exclude the possibility of inverse causality with the available data. Only a longitudinal research design could shed additional light on this question and would be an interesting focus for future research efforts.

14 Most of the controls are measured directly through only one item and hence not suitable for PLS which is based on a latent variable design with multiple items per construct (reference Hulland).
A firm’s assets and capabilities and its competitive position only determine potential firm performance. Employee motivation through Interest Alignment has a crucial impact on the degree to which a firm is able to realize this potential and thus on actual firm performance.

The different components of Organizational Interest Alignment are determined by the reward system in place, the (perceived) attractiveness of job characteristics and the tightness of the social community the firm provides. The three components then interact in their impact on firm performance.
Based on the received literature we expect stronger rewards to have a triple impact on performance. First, they enhance performance through increased extrinsic interest alignment (H3 and H1a). Second, this greater level of extrinsic interest alignment crowds-out hedonic and normative interest alignment (H2a and H2b). Finally, they influence the perception of the buyout, as an antecedent of hedonic and normative interest alignment. However competing arguments can be made regarding the expected direction of this effect (H4/5a vs. H4/5b).
Our data provides significant support for Hypotheses H1b, H2c, H4b and H5b, weak support for H3, no support for H1a, H1c and H2b and significant support for the opposite of what is predicted by H2a.
<table>
<thead>
<tr>
<th>Form of Motivation</th>
<th>What drives motivation?</th>
<th>What are the relevant characteristics of behavior?</th>
<th>What moderates how motivated an individual will be?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extrinsic Motivation</td>
<td>The desire to obtain additional resources from the outside (Extrinsic Work Rewards)</td>
<td>The degree to which the additional resources will be received as a reward for such behavior</td>
<td>The utility of Extrinsic Work Rewards to the individual</td>
</tr>
<tr>
<td>Hedonic Intrinsic Motivation</td>
<td>The desire to engage in enjoyable, self-determined and competency-enhancing activity</td>
<td>(Perceived) characteristics of the task and the task context</td>
<td>The individual utility derived from being engaged in an enjoyable, self-determined and competency-enhancing activity</td>
</tr>
<tr>
<td>Normative Intrinsic Motivation</td>
<td>The desire to comply with organizational norms and values</td>
<td>The degree of congruence between the behavior and organizational Norms and Values</td>
<td>The identification of the individual with the organization, \textit{i.e.} importance of compliance with organizational Norms and Values to the individual</td>
</tr>
</tbody>
</table>
### Table 2: Construct Definition and Measurement Model

<table>
<thead>
<tr>
<th>Construct</th>
<th>Composite Reliability</th>
<th>Scale</th>
<th>Loading</th>
<th>T-Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Buyout Performance</strong> (reflective)</td>
<td>Composite Reliability= 0.812; AVE = 0.69</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 1 “PERFORMA”</td>
<td>“How did the investment perform relative to expectations set in the initial business plan?”</td>
<td>Scale Loading T-Statistic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 2 “PLAN_ACC”</td>
<td>How would you evaluate the degree of accuracy to which the original business plan has been implemented?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Change in Hedonic Interest Alignment</strong> (reflective)</td>
<td>Composite Reliability= 0.945; AVE = 0.896</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 1 “SATISFMD”</td>
<td>Change in the level of agreement that the members of management team “feel satisfied by their job”(^{15})</td>
<td>Scale Loading T-Statistic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 2 “ENJOYMD”</td>
<td>Change in the level of agreement that the members of management team “enjoy what they are doing”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 3 “NORMSMD”</td>
<td>Change in the level of agreement of the members of management team “Their behavior was guided by norms and values of the company”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 4 “PRIDEMD”</td>
<td>Change in the level of agreement of the members of management team “They took pride in the success of their company”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Change in Normative Interest Alignment</strong> (formative)</td>
<td>Max. VIF &lt; 2.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 1 “IDENTIMD”</td>
<td>Change in the level of agreement that the members of management team “really felt as if this company’s problems were their own”</td>
<td>Scale Weight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 2 “MEANIMD”</td>
<td>Change in the level of agreement of the members of management team “This company had a great deal of personal meaning for them ”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 3 “NORMSMD”</td>
<td>Change in the level of agreement of the members of management team “Their behavior was guided by norms and values of the company”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 4 “PRIDEMD”</td>
<td>Change in the level of agreement of the members of management team “They took pride in the success of their company”</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2 (continued): Construct Definition and Measurement Model

<table>
<thead>
<tr>
<th>Change in Extrinsic Interest Alignment (reflective)</th>
<th>Composite Reliability= 0.792; AVE = 0.656</th>
<th>Scale</th>
<th>Loading</th>
<th>T-Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 1 “SHAVALMD”</td>
<td>Change in the level of agreement of the members of management team that “Their behavior was guided by a desire to maximize shareholder value”</td>
<td>5-point Likert</td>
<td>0.85</td>
<td>17.8</td>
</tr>
<tr>
<td>Item 2 “SUCCSEMD”</td>
<td>Change in the level of agreement of the members of management team that “Their behavior was guided by a desire for professional success”</td>
<td>5-point Likert</td>
<td>0.77</td>
<td>9.4</td>
</tr>
<tr>
<td>Rewards (formative)</td>
<td>Max. VIF &lt; 2.0</td>
<td>Scale</td>
<td>Weight</td>
<td></td>
</tr>
<tr>
<td>Item 1 “EQ_EM_A”</td>
<td>Change in the average percentage of the total compensation is performance based for the company management prior to the buyout vs. today</td>
<td>5-point Likert</td>
<td>0.96</td>
<td></td>
</tr>
<tr>
<td>Item 2 “pfp_mgta”</td>
<td>Change in the total percentage of equity owned by management and employees prior to the buyout vs. today.</td>
<td>5-point Likert</td>
<td>0.34</td>
<td></td>
</tr>
<tr>
<td>Perception (reflective)</td>
<td>Composite Reliability= 0.845; AVE = 0.733</td>
<td>Scale</td>
<td>Loading</td>
<td>T-Statistic</td>
</tr>
<tr>
<td>Item 1 “INITPERS”</td>
<td>How did you personally initially perceive the buyout event when it was announced?</td>
<td>5-point Likert</td>
<td>0.92</td>
<td>19.7</td>
</tr>
<tr>
<td>Item 2 “INITPERM”</td>
<td>How do you think did the majority of the members of your company perceive the buyout event when it was announced?</td>
<td>5-point Likert</td>
<td>0.78</td>
<td>7.65</td>
</tr>
<tr>
<td>Communication (formative)</td>
<td>Max. VIF &lt; 2.0</td>
<td>Scale</td>
<td>Weight</td>
<td></td>
</tr>
<tr>
<td>Item 1 “EXPMOTIV”</td>
<td>Strategic motivation for buyout</td>
<td>Binary (Yes-No)</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>Item 2 “EXPTAR”</td>
<td>New performance targets</td>
<td>Binary (Yes-No)</td>
<td>0.02</td>
<td></td>
</tr>
<tr>
<td>Item 3 “EXPCHAN”</td>
<td>Required operational changes</td>
<td>Binary (Yes-No)</td>
<td>0.89</td>
<td></td>
</tr>
<tr>
<td>Item 4 “EXPGEN”</td>
<td>General characteristics of LBOs</td>
<td>Binary (Yes-No)</td>
<td>0.24</td>
<td></td>
</tr>
</tbody>
</table>

15 All items related to interest alignment constructs were measured by the comparison of responses to two separate questions: the first about the situation prior to the buyout, and the second about the current situation.
Table 3: Construct Discriminant Validity

<table>
<thead>
<tr>
<th></th>
<th>Percepti</th>
<th>Incentiv</th>
<th>Performa</th>
<th>Communic</th>
<th>HIM</th>
<th>NIM</th>
<th>EM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percepti</td>
<td>0.80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incentiv</td>
<td>0.082</td>
<td>NM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performa</td>
<td>0.149</td>
<td>0.14</td>
<td>NM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communic</td>
<td>-0.228</td>
<td>0.11</td>
<td>-0.09</td>
<td>0.81</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIM</td>
<td>-0.296</td>
<td>-0.20</td>
<td>-0.27</td>
<td>0.27</td>
<td>0.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NIM</td>
<td>0.140</td>
<td>0.15</td>
<td>0.14</td>
<td>-0.07</td>
<td>-0.66</td>
<td>NM</td>
<td></td>
</tr>
<tr>
<td>EM</td>
<td>-0.114</td>
<td>-0.11</td>
<td>-0.10</td>
<td>0.11</td>
<td>0.46</td>
<td>-0.62</td>
<td>0.81</td>
</tr>
</tbody>
</table>

The table shows the correlation between all constructs. For all reflective constructs the square-root of the AVE is reported in the diagonal.

Table 4: Correlation Analysis Between Reflective Items and all Constructs

<table>
<thead>
<tr>
<th></th>
<th>Performa</th>
<th>EIA</th>
<th>HIA</th>
<th>NIA</th>
<th>Rewards</th>
<th>Percepti</th>
<th>Communic</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERF</td>
<td>0.93</td>
<td>0.15</td>
<td>-0.29</td>
<td>0.22</td>
<td>-0.17</td>
<td>-0.06</td>
<td>-0.06</td>
</tr>
<tr>
<td>PLAN_ACC</td>
<td>0.71</td>
<td>-0.05</td>
<td>-0.13</td>
<td>0.00</td>
<td>0.03</td>
<td>-0.07</td>
<td>-0.06</td>
</tr>
<tr>
<td>SHAVALMD</td>
<td>0.15</td>
<td>0.85</td>
<td>-0.40</td>
<td>0.56</td>
<td>-0.01</td>
<td>-0.09</td>
<td>-0.04</td>
</tr>
<tr>
<td>SUCCSEMD</td>
<td>-0.01</td>
<td>0.77</td>
<td>-0.35</td>
<td>0.44</td>
<td>-0.20</td>
<td>-0.08</td>
<td>-0.06</td>
</tr>
<tr>
<td>SATISFMD</td>
<td>0.23</td>
<td>0.41</td>
<td>-0.94</td>
<td>0.62</td>
<td>-0.22</td>
<td>-0.16</td>
<td>-0.08</td>
</tr>
<tr>
<td>ENJOYMD</td>
<td>0.28</td>
<td>0.46</td>
<td>-0.95</td>
<td>0.69</td>
<td>-0.16</td>
<td>-0.28</td>
<td>-0.13</td>
</tr>
<tr>
<td>IDENTIMD</td>
<td>0.10</td>
<td>0.49</td>
<td>-0.51</td>
<td>0.75</td>
<td>-0.07</td>
<td>-0.11</td>
<td>-0.05</td>
</tr>
<tr>
<td>MEANIMD</td>
<td>0.16</td>
<td>0.59</td>
<td>-0.57</td>
<td>0.87</td>
<td>-0.13</td>
<td>-0.07</td>
<td>-0.06</td>
</tr>
<tr>
<td>NORMSMD</td>
<td>0.16</td>
<td>0.33</td>
<td>-0.50</td>
<td>0.67</td>
<td>-0.08</td>
<td>-0.24</td>
<td>-0.14</td>
</tr>
<tr>
<td>PRIDEMD</td>
<td>0.09</td>
<td>0.50</td>
<td>-0.59</td>
<td>0.83</td>
<td>-0.17</td>
<td>-0.22</td>
<td>-0.03</td>
</tr>
<tr>
<td>EQ_EM_A</td>
<td>0.06</td>
<td>0.11</td>
<td>-0.18</td>
<td>0.12</td>
<td>-0.94</td>
<td>-0.12</td>
<td>0.07</td>
</tr>
<tr>
<td>PFP_MGTA</td>
<td>0.19</td>
<td>0.02</td>
<td>-0.07</td>
<td>0.09</td>
<td>-0.28</td>
<td>-0.05</td>
<td>-0.06</td>
</tr>
<tr>
<td>INITPERM</td>
<td>0.12</td>
<td>0.09</td>
<td>-0.27</td>
<td>0.20</td>
<td>-0.14</td>
<td>-0.93</td>
<td>-0.26</td>
</tr>
<tr>
<td>INITPERS</td>
<td>-0.04</td>
<td>0.10</td>
<td>-0.10</td>
<td>0.12</td>
<td>-0.08</td>
<td>-0.78</td>
<td>-0.21</td>
</tr>
<tr>
<td>EXPMOTIV</td>
<td>0.07</td>
<td>0.04</td>
<td>-0.19</td>
<td>0.08</td>
<td>-0.04</td>
<td>-0.11</td>
<td>-0.39</td>
</tr>
<tr>
<td>EXPTAR</td>
<td>0.20</td>
<td>0.13</td>
<td>-0.03</td>
<td>0.08</td>
<td>0.03</td>
<td>-0.15</td>
<td>-0.54</td>
</tr>
<tr>
<td>EXPGEN</td>
<td>0.08</td>
<td>0.14</td>
<td>-0.25</td>
<td>0.10</td>
<td>0.24</td>
<td>-0.13</td>
<td>-0.47</td>
</tr>
<tr>
<td>EXPCHAN</td>
<td>0.06</td>
<td>0.03</td>
<td>-0.04</td>
<td>0.06</td>
<td>-0.01</td>
<td>-0.26</td>
<td>-0.96</td>
</tr>
</tbody>
</table>
Table 5a: Descriptive Statistics of Original Items

<table>
<thead>
<tr>
<th>Item</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERFORMA</td>
<td>118</td>
<td>-2</td>
<td>2</td>
<td>-0.11</td>
<td>1.266</td>
</tr>
<tr>
<td>PLAN_ACC</td>
<td>118</td>
<td>-2</td>
<td>2</td>
<td>0.13</td>
<td>1.042</td>
</tr>
<tr>
<td>IRR</td>
<td>69</td>
<td>-0.50</td>
<td>1.00</td>
<td>0.2313</td>
<td>0.38476</td>
</tr>
<tr>
<td>EQ_EM_A</td>
<td>118</td>
<td>0</td>
<td>100</td>
<td>50.84</td>
<td>26.123</td>
</tr>
<tr>
<td>pfp_mgta</td>
<td>118</td>
<td>5.0</td>
<td>75.0</td>
<td>19.636</td>
<td>14.2281</td>
</tr>
<tr>
<td>INITPERM</td>
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<td>-2.0</td>
<td>2.0</td>
<td>0.757</td>
<td>0.8924</td>
</tr>
<tr>
<td>INITPERS</td>
<td>118</td>
<td>-1.0</td>
<td>2.0</td>
<td>1.589</td>
<td>0.7156</td>
</tr>
<tr>
<td>EXPMOTIV</td>
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<td>1</td>
<td>0.85</td>
<td>0.361</td>
</tr>
<tr>
<td>EXPTAR</td>
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<tr>
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<tr>
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<td>0.56</td>
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<tr>
<td>SATISFMD</td>
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<td>5</td>
<td>1.92</td>
<td>1.299</td>
</tr>
<tr>
<td>ENJOYMD</td>
<td>118</td>
<td>-1</td>
<td>5</td>
<td>1.75</td>
<td>1.170</td>
</tr>
<tr>
<td>IDENTIMD</td>
<td>118</td>
<td>-2</td>
<td>5</td>
<td>2.29</td>
<td>1.281</td>
</tr>
<tr>
<td>MEANIMD</td>
<td>118</td>
<td>-2</td>
<td>5</td>
<td>1.92</td>
<td>1.192</td>
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<tr>
<td>NORMSMD</td>
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<td>1.40</td>
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<td>0.953</td>
</tr>
<tr>
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<td>1.53</td>
<td>1.170</td>
</tr>
</tbody>
</table>

Table 5b: Descriptive Statistics of PLS Constructs

<table>
<thead>
<tr>
<th>Construct</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performa</td>
<td>118</td>
<td>-1.975</td>
<td>2.010</td>
<td>0.0008</td>
</tr>
<tr>
<td>EIA</td>
<td>118</td>
<td>-2.566</td>
<td>3.477</td>
<td>-0.0012</td>
</tr>
<tr>
<td>HIA</td>
<td>118</td>
<td>-3</td>
<td>3</td>
<td>0.00</td>
</tr>
<tr>
<td>NIA</td>
<td>118</td>
<td>-3.300</td>
<td>3.468</td>
<td>-0.0006</td>
</tr>
<tr>
<td>Rewards</td>
<td>118</td>
<td>-2.346</td>
<td>2.302</td>
<td>0.0003</td>
</tr>
<tr>
<td>Percepti</td>
<td>118</td>
<td>-3.653</td>
<td>2.145</td>
<td>0.0014</td>
</tr>
<tr>
<td>Communic</td>
<td>118</td>
<td>-1.45</td>
<td>1.17</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Table 6: Correlation Analysis (Pearson)

<table>
<thead>
<tr>
<th></th>
<th>Performa</th>
<th>EIA</th>
<th>HIA</th>
<th>NIA</th>
<th>Rewards</th>
<th>Percepti</th>
<th>Communic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performa</td>
<td>0.094</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>EIA</td>
<td>0.271(**)</td>
<td>0.463(**)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIA</td>
<td>0.618(**)</td>
<td>0.194(*)</td>
<td>0.15</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>NIA</td>
<td>0.197(*)</td>
<td>0.324(*)</td>
<td>0.917**</td>
<td>0.048</td>
<td>0.275(**)</td>
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<tr>
<td>Rewards</td>
<td>0.074</td>
<td>0.061</td>
<td>0.112</td>
<td>0.084</td>
<td>-0.048</td>
<td>0.275(**)</td>
<td></td>
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</table>

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
+ Correlation is significant at the 0.1 level (2-tailed).
### Table 7a: PLS Path Coefficient Estimates

<table>
<thead>
<tr>
<th></th>
<th>EIA</th>
<th>HIA</th>
<th>NIA</th>
<th>Rewards</th>
<th>Perception</th>
<th>Communication</th>
<th>$R^2$</th>
<th>$Q^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance</td>
<td>0.029</td>
<td>0.303*</td>
<td>-0.027</td>
<td></td>
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<td></td>
<td>8%</td>
<td>15%</td>
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<tr>
<td>EIA</td>
<td></td>
<td>0.113</td>
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<td></td>
<td></td>
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<td>1%</td>
<td>7%</td>
</tr>
<tr>
<td>HIA</td>
<td>0.056</td>
<td></td>
<td>0.641***</td>
<td>0.103+</td>
<td></td>
<td></td>
<td>50%</td>
<td>54%</td>
</tr>
<tr>
<td>NIA</td>
<td>0.6***</td>
<td>0.134</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40%</td>
<td>36%</td>
</tr>
<tr>
<td>Perception</td>
<td></td>
<td></td>
<td>0.147+</td>
<td></td>
<td>0.282**</td>
<td></td>
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</tr>
</tbody>
</table>

+: p<0.1; *: p<0.05; **: p<0.01; ***: p<0.001

### Table 7b: PLS Path Coefficient t-Statistic

<table>
<thead>
<tr>
<th></th>
<th>EIA</th>
<th>HIA</th>
<th>NIA</th>
<th>Rewards</th>
<th>Perception</th>
<th>Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance</td>
<td>0.21</td>
<td>2.10</td>
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<tr>
<td>HIA</td>
<td>0.57</td>
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<tr>
<td>Perception</td>
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<td></td>
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<td>1.67</td>
<td>3.20</td>
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REFERENCES


