

# Evidence for Performance-Related and Skills-Based Pay Implications for Policing

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## Executive Summary

On 1 October 2010, the UK Home Secretary announced that a review of pay and conditions of the Police forces in England and Wales would be undertaken with a purpose of improving service for the public and maximising value for money. The Winsor (2012) report to the Home Office recommended that pay progression be linked to (a) performance, and (b) skill acquisition, rather than the traditional time-served model.

This report provides a comprehensive review of the empirical research conducted into *performance-related pay (PRP)* in the public sector and *skills-based pay (SBP)* across sectors in order to review their efficacy, and provides recommendations relating to their potential design and utility in policing.

### Main Findings

Results relating to the efficacy of PRP in improving organisational outcomes are mixed, as are those pertaining to its influence on employee motivation and job attitudes in the public sector. For SBP, results are uniformly supportive. All studies in our review indicate at least some positive relationships between SBP and desired organisational outcomes, and employees appear to hold positive attitudes towards such pay programmes.

### Performance-Related Pay and Organisational Outcomes

The evidence base for our review of PRP comes from the sectors of health, the civil service, and education. Our findings indicate that:

**PRP incentives work well when tied to observable outcomes, but non-incentivised outcomes (i.e. those not linked to the PRP initiative) may not improve.** The greatest weight of evidence supporting the efficacy of PRP in producing desired organisational outcomes comes from the education sector. Specifically, several studies show a positive relationship between PRP and improvements in student test scores (Atkinson et al., 2009; Lavy, 2009, Muralidharan & Sundararaman, 2009). However, there is little

evidence to suggest that PRP has been successful in improving outcomes in areas that have multidimensional, unobservable requirements. For instance, in education, although test scores linked to PRP incentives improved in many cases, questions have been raised about the efficacy of such schemes and the extent to which they relate to the broader goals of the teaching profession, such as developing students' general life skills (Neal, 2011). Moreover, in some studies where PRP was found to have a positive association with incentivised outcomes, other indicators that were not incentivised either did not improve, or improved at a slower rate than they did pre-intervention (Li et al., 2014; Roland & Guthrie, 2016; Springer et al., 2012).

**Linking PRP to process measures may produce more favourable results than linking it to outcome measures.** In health, positive results were more often found for process measures, than for outcome measures (So & Wright, 2012; Van Herck et al., 2010). Outcome measures relate to the impact of an intervention on, for example, the health and wellbeing of a patient. Process measures provide information about the activities carried out by staff. To the extent that processes are closely associated with outcomes, changes to those processes can improve outcomes.

## **Performance-Related Pay and Employee Attitudes**

**PRP may “crowd out” intrinsically motivated individuals.** A suite of studies by Bellé (Bellé, 2015; Bellé & Cantarelli, 2015) found some support for the concern that using PRP in the public sector may “crowd out” employees who are either intrinsically motivated (i.e. driven by a motivation that is internal rather than external to the individual) or have a strong sense of public service motivation. Bellé and Cantarelli (2015) found a negative relationship between intrinsic motivation and employee effort, and Bellé's (2015) results indicated that financial incentives may undermine intrinsically motivated individuals' willingness to take part in pro-social activities.

**Evidence from education suggests that PRP is generally (but not always) associated with negative job attitudes.** Our findings show PRP can have a negative influence on attitudes such as job satisfaction, pay satisfaction, enthusiasm towards one's work, and the belief that one's effort is being rewarded. However, one study by Jones (2013)

indicated that teachers involved in a PRP scheme were more likely to stay in the profession and pursue personal development opportunities than teachers who worked in schools that did not offer PRP.

## Skills-Based Pay

Our findings relating to SBP show that:

**Results relating the effects of SBP are uniformly positive.** Each of the studies in our review show positive effects of SBP on:

- **Organisational outcomes**, such as increased performance and decreased costs (Murray & Gerhart, 1998; Shaw et al., 2001; Shaw et al., 2005);
- **Employee attitudes**, such as increased job satisfaction, pay satisfaction, and organisational commitment (Mitra et al., 2011; Shaw et al., 2005);
- **Employee behaviours**, such as reduced absenteeism, voluntary turnover, and skill acquisition (Dierdorff & Surface, 2008; Guthrie, 2000; Mitra et al., 2011).

**The evidence base is small, and primarily comes from the private sector.** Although results were positive, we were only able to identify seven studies that empirically investigated SBP initiatives. Of these, only one took place within a public-sector context, with Dierdorff and Surface (2008) examining the influence of SBP on skill acquisition in the United States Army Special Operational Forces. The majority of other studies were conducted in manufacturing contexts, with Shaw and colleagues (2005) finding stronger positive effects in manufacturing settings than in service settings.

## The Design of Pay Programmes

Although there is no “one size fits all” approach to the development of a merit-based pay initiative, we explore some of the characteristics of successful pay systems and find that:

**Participative schemes tend to be more successful than schemes with no employee input.** Employee participation had a positive influence on employee attitudes towards PRP schemes and perceptions of their success (Eijkenaar et al., 2013; Schmidt et al.,

2011; So & Wright, 2012; Van Herck et al., 2010). Shaw et al. (2005) found that employee involvement in the planning of an SBP initiative was positively associated with (a) productivity, and (b) the likelihood that the plan would still be in use seven years after its initial implementation.

**Perceptions of the fairness of a scheme inform attitudes towards it and influence its success.** If employees believe a pay system is fair, they are more likely to form positive attitudes towards it. This result was found for both PRP and SBP schemes (Kim, 2016; Shaw et al., 2005). For PRP, the perceived fairness of the performance appraisal process by which decisions relating to the pay progression of employees are made is paramount (Campbell et al., 1999; Kim, 2016).

## Recommendations

Based on the evidence gathered in this review, we recommend the following:

**Develop a pay system that rewards skill acquisition and maintenance, and “doing the right thing”.** PRP has been shown to positively influence observable outcomes, but there is little evidence of its efficacy in contexts that have multidimensional, often unmeasurable goals. Policing is one such context. Linking PRP to processes rather than outcomes may be beneficial, providing the processes are linked to desired results and are evidence-based. In our review, SBP was positively associated with desirable organisational outcomes and attitudinal responses, as well as the demonstration of proactive employee behaviours in situations that are uncertain and prone to constant change (Díaz-Fernández. et al., 2013), scenarios often faced by police officers and staff. As such, focusing on SBP may be beneficial, providing forces do the following:

**Take a holistic approach to the design and implementation of the system and strive to gain organisational support for it.** Evidence suggests that although employees may not always feel that a merit-based pay plan benefits them directly, increases in performance via improvements in goal-setting and performance management processes may occur in institutions that take a proactive, integrated approach to the implementation of the system (Marsden & Belfield, 2006). Performance management and appraisal needs to be

taken seriously; these processes cannot be solely considered as a “box ticking” exercise when they are a central mechanism by which pay progression is decided. Furthermore, workforce involvement in the process is paramount, ideally enabling employees to take part in the design of the system. If this is not possible, ensuring that the rationale behind the scheme and its mechanics are communicated clearly to staff can help the development of positive attitudes and support for it. Developing positive attitudes towards the initiative is likely to enhance its overall success with regards to achieving the desired outcomes attached to it.

## **Introduction**

Police forces in the United Kingdom are operating in a time of great uncertainty and upheaval, with budget reductions requiring them to adapt the way they are structured and the roles they carry out. One of the reforms facing police services involves the distribution of their pay and conditions. In 2010, the Home Secretary appointed Sir Tom Winsor to carry out a review. Winsor (2012) recommended that, rather than determining pay progression by tenure, it be linked to (a) performance and (b) skill acquisition and maintenance. A recent survey into pay and morale in policing, conducted by the Police Federation of England and Wales (Boag-Munroe, 2016), indicated that over half of the 45,000 respondents reported low morale. Of those who reported low morale, 71% cited their pay and benefits as a reason. Of the respondents who stated they planned to leave the police, 67.6% cited pay and benefits as a factor, compared to 58.6% in 2015.

As pay in policing is currently subject to reform and is an important issue for employees, this paper reviews several concepts relating to pay. We begin by offering a brief overview of pay satisfaction, before focusing on one of its sub-dimensions, that of pay structure and administration. Given the Winsor Review (2012) recommended a shift in policy from length of service and rank as sole determinants of increased remuneration, to a link between (a) pay and performance and (b) pay and skill acquisition and maintenance, we review the literature on performance-related pay (PRP) and skills-based pay (SBP) structures. Specifically, we evaluate their effectiveness in producing favourable organisational outcomes (i.e. performance and reduced turnover), examine how they relate to different types of motivation (i.e. public service motivation, extrinsic motivation, and intrinsic motivation), and other employee attitudes (i.e. job satisfaction, perceptions of fairness, perceptions of success). We conclude by discussing some of the important factors to consider when designing a new pay system, from both a general standpoint and in considering the needs and complexities of the policing context.

## Pay Satisfaction

Pay is a central facet of the reward systems offered by organisations to employees engaging in the pursuit of organisational goals (Heneman & Judge, 2000). Monetary pay is used as an incentive for performance (Gardner et al., 2004), and to attract and retain the best talent (Trevor et al., 1997). However, research into actual pay has shown that the expected positive associations with performance and talent retention are weak at best (Currall et al., 2005; Motowidlo, 1983; Trevor et al., 1997). Rather, researchers have posited *pay satisfaction*, the positive or negative feelings that individuals have towards their pay (Micelli & Lane, 1991), more accurately predicts desirable personal and organisational outcomes than does actual pay (Currall et al., 2005; Heneman & Judge, 2000; Heneman & Schwab, 1985; Micelli & Lane, 1991). Indeed, at the individual level, extant research has shown that satisfaction with pay reduces turnover intent (Dailey & Kirk, 1992; DeConinck & Stilwell, 2004; Motowidlo, 1983; Tekleab et al., 2005; Vandenberghe & Tremblay, 2008) and actual turnover (Tekleab et al., 2005; Vandenberghe & Tremblay, 2008). Conversely, pay dissatisfaction is linked to various undesirable outcomes (Heneman & Judge, 2000), such as reduced performance (Bretz & Thomas, 1992), lateness (Koslowsky et al., 1997), absence (Weiner, 1980), and theft (Greenberg, 1993). Little research exists at the organisational level, but in their sample of 6,394 public school teachers and 117 public school districts employing these teachers, Currall and colleagues (2005) found that pay satisfaction at the individual level was positively associated with district-level academic performance and negatively related to teacher intention to quit.

It is evident that pay satisfaction and dissatisfaction are important determinants of a variety of outcomes. However, the existing research is not without its problems. The most pressing of these relates to how the construct has been measured. For instance, much of the research into pay satisfaction and turnover intention has not considered the multidimensionality of the construct (Vandenberghe & Tremblay, 2008). Early work into pay satisfaction and its measurement (e.g. The Minnesota Satisfaction Questionnaire; Weiss et al., 1967; and the Job Descriptive Index; Smith et al., 1969) treated it as a global, unidimensional construct. However, several authors, most notably Herbert Heneman, have

suggested that such a conceptualisation is not sufficient and that various dimensions of pay satisfaction should be considered and measured separately (e.g. Heneman & Judge, 2000; Heneman & Schwab, 1985; Judge, 1993; Judge & Welbourne, 1994; Scarpello et al., 1988). Since the development of the multidimensional Pay Satisfaction Questionnaire (PSQ; Heneman & Schwab, 1985), although there was some early disagreement with regards to the number of dimensions of pay satisfaction (Mulvey et al., 1992; Orpen & Bonnici, 1987), research has supported the validity of the PSQ and has generally found the prevalence of four distinct dimensions (Currall et al., 2005; Carraher & Buckley, 1996; DeConinck et al., 1996; Judge, 1993; Judge & Welbourne, 1994). These four dimensions relate to satisfaction with (a) pay level, (b) pay rises, (c) benefits, and (d) pay structure and administration. Most studies of pay satisfaction have used either indeterminate measures or solely considered pay level (Heneman & Judge, 2000). In this report, we focus on the pay structure and administration dimension of pay satisfaction. Specifically, we consider the efficacy of merit-based pay in the form of performance-related pay (PRP) and skills-based pay (SBP).

The following section concerns PRP, beginning with an overview of the theoretical debate for and against the use of such initiatives, followed by a review of the empirical work undertaken in the public sector.

## **Performance-Related Pay (PRP)**

Performance-related pay (PRP) involves linking at least some part of an employee's remuneration to their performance, rather than to seniority or tenure. The implementation of such a plan as a tool to attempt to increase employee motivation and productivity has been used in the private sector for a number of years (Prendergast, 1999), and has become increasingly prominent in the public sector. Over three-quarters of the Organisation for Economic-Cooperation and Development (OECD) member countries have introduced PRP of some form (OECD, 2011).

We consider the theoretical debate for and against the use of PRP systems from three areas of academic literature: economics, psychology, and economic psychology, before examining the existing empirical research conducted into the construct, focusing on the public sector.

### **The Economic Debate around Performance-Related Pay**

Proponents of PRP draw on standard economic theories, particularly the principal-agent perspective (Burgess & Ratto, 2003). In this case, the principal (the employer) wants the agent (the employee) to perform a task. However, principal-agent relationships are often hindered by two issues: moral hazard and adverse selection (Dixit, 2002).

In the case of moral hazard, the agent's action impacts the principal's payoff, but the actions of the agent are not always directly observable to the principal. Employees' effort cannot be observed, but it influences outcomes about which the employer cares. In this scenario, under a fixed-pay contract, the employer has little flexibility to affect the effort undertaken by the employee after the hiring decision has been made. The issue may be intensified when dismissing employees is difficult, as is often the case in the public sector. Under these conditions, it may be challenging to align the interests of the two parties. In theory, PRP should alleviate the problem of moral hazard by linking observable outputs, which are correlated with unobservable effort (Hasnain et al., 2014), to pay, thus aligning the interests of principal and agent through monetary incentive (Weibel et al., 2010).

In the process of hiring new candidates, employers may be faced with the issue of adverse selection. In this context, potential candidates may have access to knowledge that employers do not. As such, it can be difficult to sort high-quality candidates from low-quality ones in the selection process. Theoretically, a PRP scheme should act as a natural filter to improve the sorting process, as higher-quality workers are more likely to excel in such an initiative and thus more inclined to apply for positions that utilise it (Delfgaauw & Dur, 2007).

One of the main issues concerning the economic theory behind the implementation of PRP initiatives is that individuals may “game” the system, particularly when tasks are multi-dimensional (Burgess et al., 2004; Hasnain et al., 2014). That is, they may focus attention on working towards measured, observable outcomes that are linked to rewards, potentially to the detriment of other, unobservable outcomes. This issue is particularly problematic in the public sector, where outcomes can have wider implications for society. For instance, educators may “teach to the test” and focus their attention on test-taking strategies at the expense of the broader goals of the teaching profession, such as helping students to develop more general life skills (Neal, 2011). Furthermore, statistics may be manipulated to meet performance targets, from outright cheating (i.e. school officials conspiring to change students’ test scores; BBC, 2013; Lavy, 2009), to high- and low-level strategic behaviour. An example of high-level strategic behaviour is “cream-skimming”, which is the manipulative pre-selection of individuals to a programme who are likely to improve programme effects. For instance, training centres may select people they anticipate to already possess high levels of the target performance outcome at the beginning of a course to be able to meet said target outcome with minimal effort (Heckman et al., 1997). Although such actions are likely to result in the programme meeting its performance metrics, it is unlikely that participants will benefit from it in any meaningful way. Moreover, they restrict opportunities for those who would genuinely benefit from such a programme. Low-level strategic behaviour could include teachers purposefully focusing on the performance of “borderline” students to try to improve pass rates, at the expense of others (Lavy, 2009).

## **The Psychological Debate around Performance-Related Pay**

In addition to economic underpinnings, supporters of PRP have also turned to the psychology literature for a conceptual foundation. Equally, detractors of PRP have posited that the economic argument that underlies the use of such initiatives cannot fully explain the multiple factors that motivate an employee. For supporters, two theories of motivation; expectancy theory (Vroom, 1964) and reinforcement theory (Skinner, 1948), have been used to support the implementation of PRP schemes. Put simply; these theories posit that (a) increased effort will result in increased performance, and (b) increased performance will be recognised and rewarded by management. Expectancy theory suggests that employees form an expectation that they will be rewarded for their effort, and thus increase the amount of effort they put into their work. Reinforcement theory stresses the effect of developing the behavioural norm of high effort by reinforcing the behaviour with reward.

However, Kerr (1975) argued that it is difficult to design PRP initiatives that meet the criteria of expectancy theory and reinforcement theory. He suggests that many employers incentivise a particular outcome while actually hoping for another to occur. For instance, many governmental organisations have budgets that expire at the end of the financial year and tend to face uncertainty over their financial allowance for the following year. It is likely that the powers who award such budgets and contracts would hope for prudent spending, yet the uncertainty over the allocation of future resources and the knowledge that at the end of the year the budget is lost implicitly incentivises spending over prudence. Indeed, in their investigation of federal procurement agencies in the United States, Liebman and Mahoney (2013) found that fixed-term budgets led to a spike in year-end spending. This year-end spending tended to be on projects that were ranked as lower-quality compared to projects that were signed off earlier in the year, and the authors suggested that allowing budgets to roll over into the following financial year may lead to welfare gains and a reduction in such low-quality year-end spending.

Further criticism of the psychological underpinnings of PRP mechanisms concerns how people are motivated. Extant research suggests that public sector workers tend to be motivated by notions of pro-social behaviour, commitment to institutional goals, and altruism (Perry & Hondeghe, 2008), and that there exists a certain “public service

motivation” within public sector workers (Perry & Wise, 1990). Public sector workers derive much of their motivation from the belief of the intrinsic importance of the roles they perform, rather than the external rewards they receive for performing said roles (Perry & Wise, 1990). A concern is PRP initiatives that incentivise performance with monetary reward may “crowd out” such intrinsically motivated individuals from public sector professions and attract people who are primarily motivated by extrinsic rewards. We return to this issue in our review of the empirical work into PRP in the public sector.

## **The Economic Psychology Debate around Performance-Related Pay**

Researchers in a third strand of literature, economic psychology, have questioned the efficacy of pay for performance. Pink (2009) posited that monetary incentives and other extrinsic rewards are ineffective because they crowd out intrinsic motivators. Moreover, once the issue of money is “off the table”, that is, when people are paid enough to live comfortably, Pink (2009) argued that extrinsic motivators are unnecessary. He developed a theory which, in its simplest form, argues that intrinsic motivators can and should be harnessed to drive productivity and performance. The motivators at the centre of this theory revolve around (a) *autonomy*, the need people have to direct their own lives, (b) *mastery*, the drive to incrementally improve performance, and (c) *purpose*, the need to be part of something that matters. Relatedly, in a series of experiments, Ariely et al. (2009) offered three sets of monetary rewards for performance in a set of tasks: small, medium, and large. In simple mechanical tasks, results were as might be expected; the greater the reward level, the better the performance. However, when the tasks involved rudimentary cognitive skill, the highest reward level resulted in a decrease in performance compared to the lower levels. A medium reward level was no better than the low level in eliciting performance, but both were better than the highest level. In effect, it appeared that the participants who performed worst under the high reward condition “choked” under pressure. Ariely and colleagues (2009) linked these findings to the “Yerkes-Dodson law”, which found that, beyond a certain optimal level of arousal, a further increase in arousal may diminish performance in task execution.

## **The Empirical Evidence Base for Performance-Related Pay**

In the previous subsection, we focused on the conceptual arguments for and against the use of PRP. We now consider the available empirical evidence from the public sector, focusing on whether PRP has been shown to improve organisational outcomes and the attitudinal responses to such schemes by public sector workers. See **Appendix 1** for a summary table of the empirical papers reviewed in this section.

### **Does Performance-Related Pay Improve Organisational Outcomes?**

The first question we must ask relates to whether PRP is fit for purpose. Does it work as a means to improve individual performance and organisational outcomes? Researchers have empirically explored this question in several public sector organisational settings, and results are inconclusive.

#### ***Evidence from the Health Sector***

The efficacy of PRP schemes in the area of health has proven to be varied. However, results tend to be less positive for randomised control trials than observational studies (Eijkenaar et al., 2013). Randomised control trials are studies in which participants are randomly assigned to either a treatment condition or a control condition. For example, new drugs are often tested using this research design, with patients being randomly assigned to either a treatment group that takes the drug, or a control group that takes a placebo. In observational studies, the researcher does not manipulate the study environment. Randomised control trials are considered the gold standard of research because they can test causal inference (for instance, that PRP causes an increase in individual performance) and ensure that treatment effects are not caused by other observable or unobservable characteristics (Hasnain et al., 2014). In contrast, it is impossible to infer causality in observational studies. Although there may be an association between PRP and an increase in individual performance, it is not possible to conclude that PRP causes the increased performance.

Positive effects for PRP have tended to be found for care quality measures of chronic diseases and preventative health measures such as immunisations, and particularly in

primary care more so than acute care settings. For instance, in a randomised control trial of primary care providers in Ontario, Canada, Li et al. (2014) found that performance-based incentive payments to individual physicians resulted in an increase in the provision of four out of five primary care services. However, results showed no effects for other services examined in the study. Other studies have shown that incentivising physicians to perform immunisation vaccinations appears to increase the number of vaccinations performed (Fairbrother et al., 1999; Fairbrother et al., 2001; Kouides et al., 1998). However, a series of randomised control trials examining PRP on the provision of cancer screening showed no significant effects between treatment (incentivised) and control (non-incentivised) groups (Hillman et al., 1998; Hillman et al., 1999).

In 2004, the UK National Health Service launched the Quality and Outcomes Framework (QOF), the largest health-related PRP system in the world (Roland & Guthrie, 2016). Gillam et al. (2012) found modest, cost-effective reductions in mortality rates and hospital admissions in incentivised condition hospitals. Quality of care metrics increased at a greater level during the first year of QOF than they had before the scheme started; however, in subsequent years they returned to pre-scheme levels. Roland and Guthrie (2016) noted that Scotland abandoned the system in 2016, and questioned its cost-effectiveness. They suggested that quality of care for chronic diseases such as asthma did increase, but only at the rate that they were before the implementation of the QOF. Further, quality of care for conditions not included in the scheme continued to improve, but did so at a slower rate than before QOF, raising questions about its overall efficacy. One area that QOF did seem to improve was the reduction of inequality in the delivery of care, with the gap in the quality of care between practices in deprived and affluent areas narrowing due to improvements of practices in socioeconomically depressed locations.

While we have found some positive results on quality of care measures, effects attributable to PRP initiatives have tended to be small and short-term (Houle et al., 2012; So & Wright, 2012). Reasons for these findings have been attributed to the bonuses being modest in scale (Greene., 2013; Hillman et al., 1999; So & Wright, 2012), and existing high levels of achievement resulting in little room for further improvement (Greene., 2013; Roland & Guthrie, 2016; Van Herck et al., 2010).

Although the evidence base for PRP in acute care settings is less extensive, and results, in general, tend to be less positive, a large PRP scheme for hospitals in the United States did show a significant increase in quality measures in participating hospitals (Eijkenaar et al., 2013). However, again, these effects were short-lived. They reduced significantly during the second stage of the scheme. It is unclear whether these diminishing returns were caused by enthusiasm for the project waning, ceiling effects, or a more complex pay structure during phase two.

### ***Evidence from the Civil Service***

Fewer empirical studies have been carried out in the civil service than in the health sector, possibly due to the difficulty of measuring outcomes in this context. Policy-based civil service issues are multidimensional and, often, unobservable (Hasnain et al., 2014). In the health sector, there have been numerous studies on the effects of PRP on measurable outcomes. In the civil service, to our knowledge, only three empirical studies have examined the link between PRP and performance outcomes. Once again, the results are varied.

In the UK, Burgess et al. (2010) evaluated a PRP pilot programme in the tax office which ran for nine months in 2002. They found that the team-based PRP scheme had positive effects on individual and team performance. A similar system in Jobcentre Plus showed no impact on performance, although the authors of that study suggest this was because the positive effects found in smaller teams were counterbalanced by negative effects in larger teams (Burgess et al., 2004). In both studies, the authors did indicate that employees may have taken part in strategic gaming behaviours. In the Jobcentre study, quantity outcomes (job placements) improved but quality outcomes (customer service ratings) did not. Burgess and colleagues (2004) suggest that this may have been because employees allocated effort to the quantity outcomes because they were more concrete than the quality outcomes, and thus easier to obtain. In the tax office study, Burgess and colleagues (2010) found that managers disproportionately allocated efficient workers to incentivised tasks. A study of PRP and executive pay in Denmark did not find any evidence that incentive payments improved public sector management (Binderkrantz & Christensen, 2011).

### ***Evidence from the Education Sector***

Much of the research of PRP in the public sector has been conducted in education, the area that appears to show the greatest support for PRP implementation. Numerous studies indicate that such schemes have a positive effect on student test scores. However, although the weight of evidence supports PRP, not every programme examined has been successful.

In an international sample, Woessman (2011) found that students in countries that adjusted teachers' salaries in accordance with outstanding performance improved test scores in mathematics by around 25% of a standard deviation, compared to students in countries that did not implement any PRP programmes. Atkinson et al. (2009) examined a PRP scheme for teachers in England and showed that it improved pupil test scores by 90% of a GCSE grade and increased value added by around 40% of a grade per pupil, on average. In this context, value added was the residual from regressing the student's GCSE score on their Key Stage 3 score, controlling for gender. In Israel, Lavy's (2009) study showed that individual monetary incentives offered to teachers for improving students' test scores were associated with significant conditional pass rates and improvement in mean test scores. A large-scale randomised control trial in India also showed that a PRP scheme which awarded bonuses to teachers based on the average increase in their students' test scores led to improved performance in examinations (Muralidharan & Sundararaman, 2009). At the end of the two-year period of analysis, students in the programme schools significantly outperformed those in comparison schools in maths and language tests. Increased performance was noted in both "mechanical" and "conceptual" components of the examinations, suggesting an improvement in general learning outcomes. Moreover, the improvements documented in the programme schools compared to the comparison schools were also found in tests that were not linked to the bonus payments, suggesting positive spill-over effects.

The Project of Incentives in Teaching (POINT) was a three-year randomised control trial conducted in the Metropolitan Nashville School System. Mathematics teachers volunteered to take part in a controlled experiment whereby they would receive a monetary bonus when their students showed unusually large gains on standardised tests (Springer et al., 2012). Eligible teachers were not given any instruction or required to change their pedagogical approaches in any way, rather, the goal of the study was to determine whether

the absence of appropriate incentives had been hindering the American education system, and thus if POINT would be successful in improving student test scores in and of itself. Results generally did not support this hypothesis, as although an upward trend in mathematics scores occurred over the period of analysis, there was no significant difference between the performance of students whose teachers were in the treatment group and those whose teachers were in the control group.

**In summary**, evidence for the efficacy of PRP in three areas of the public sector, health, the civil service, and education, is mixed at best. It appears that the more “mechanical” or task-oriented the outcome, the more likely it is that positive PRP-related effects will occur, yet task performance in “interesting”, multidimensional scenarios may suffer (Ariely et al., 2009; Weibel et al., 2010). There was some evidence that PRP proved to be successful in improving student test scores and care quality metrics, two sets of observable outcomes. However, some studies that evaluated PRP on these metrics did not find significant effects, and in some, but not all (e.g. Muralidharan & Sundararaman, 2009), other metrics not tied to PRP incentives either did not improve at all or improved more slowly than their pre-intervention rate (e.g. Li et al, 2014; Springer et al., 2012).

### **The Effects of Performance-Related Pay on Motivation and Job Attitudes**

One of the key conceptual underpinnings of PRP concerns the standard economic theory that offering financial incentives will increase employee motivation and effort, which in turn will lead to greater productivity. As such, it is necessary to understand the effects of PRP on these attitudes and motivation, as well as others such as job satisfaction.

#### ***Does Performance-Related Pay “Crowd Out” Intrinsically Motivated Employees?***

A prominent argument against PRP is the concern that tying performance outcomes to financial incentives will “crowd out” employees who are intrinsically motivated. This concern is particularly relevant in the public sector, as public sector workers tend to be more intrinsically motivated than their private sector counterparts (Buelens & Van den Broeck, 2007; Georgellis et al., 2011; Perry, 1997; Weibel et al., 2010). Some evidence from

existing research supports the notion that PRP systems may “crowd out” intrinsically motivated employees in the public sector.

A suite of randomised control trials by Bellé conducted in the Italian public sector suggested that, in the contexts of a health authority (Bellé, 2015) and a central government organisation (Bellé & Cantarelli, 2015), PRP programmes did appear to have some crowding out effects. Bellé and Cantarelli (2015) found that, overall, financial incentives had no significant effect on employee effort. However, there were some moderation effects based on motivation types. Specifically, there was a negative relationship between PRP and job effort for people who had high levels of intrinsic motivation. On the other hand, there was a positive relationship between PRP and job effort for those who had high levels of extrinsic motivation.

Bellé (2015) investigated the influence of PRP compared to a symbolic reward on work performance. Results indicated that PRP had a larger effect on task performance when rewards were kept secret compared to when they were disclosed. There was a negative interaction effect between PRP and visibility for participants who met the beneficiary of their actions, which heightened the impact of their work and its positive impact on others’ lives. Indeed, these results, obtained in an organisational setting, replicated the findings of a laboratory experiment by Ariely, Bracha and Meier (2009) in which undergraduate students were asked to click two buttons on a computer for up to five minutes. For each click, the researchers would donate a small sum of money to charity. Students offered a contingent reward outperformed those that were not offered a reward, however, a subsample of students in the bonus condition whose results were not disclosed performed better than those whose results were made public. The findings of Bellé (2015) suggested that financial incentives may have a crowding out effect for people taking part in pro-social activities, especially when results are made public. However, such crowding out effects were not present for the group that received a symbolic reward (recognition by senior members of the organisation at an awards ceremony), yet the positive effect of the symbolic reward on performance was significant.

## ***Public Service Motivation: Its Relationship with Performance-Related Pay, Workplace Outcomes, and Personal Wellbeing***

Public service motivation (PSM) is related to intrinsic motivation, so much so that the two have been conflated in past research, or even used interchangeably (e.g. Kwon, 2012). As such, the concern that PSM will be “crowded out” by extrinsic incentives is also a relevant issue in this context.

Perry and Wise (1990: 368) defined PSM as “*an individual’s predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations*”. In this respect, it is a stable trait. However, in salient situations PSM may also become a psychological state, causing people to act in a way that serves the public good as a means to satisfy their psychological needs (Wise, 2004).

Several studies have examined the relationship between pay systems, PSM, and work effort. Returning to Bellé and Cantarelli (2015), the authors found that PSM did not have a moderating effect on PRP and job effort. However, they did find support for the argument that PSM and intrinsic motivation are different constructs as they related to effort and financial reward differently. A survey of public sector workers in 15 countries found that while wages and PSM both possessed motivational qualities, PSM influenced the work effort of many employees, especially those in supervisory positions, more than wages (Taylor & Taylor, 2011). A study conducted in Switzerland reported similar findings, showing that PSM was an important determinant of work effort, while material incentives were only weakly related to it (Anderfuhren-Biget et al., 2010).

Concentrating on the issue of “crowding out”, results from an observational study conducted in the context of civil service middle-managers in Taiwan indicated that the pursuit of high pay (“the love of money”) was negatively associated with PSM, and the desire for job security was positively related to PSM (Chen & Hsieh, 2015). Pay satisfaction was also positively correlated with PSM and moderated the relationship between the pursuit of high pay and pay satisfaction. Specifically, pay satisfaction lessened the adverse effect of the pursuit of high pay on PSM. In this respect, Chen and Hsieh (2015) suggested that pursuit of money had a “crowding out” effect, while pursuit of job security had a

“crowding in” effect, with regards to PSM. They draw on work by Frey and colleagues (Frey & Jegen, 2001; Frey & Osterloh, 2005) which posits that whether an extrinsic motivator has a “crowding out” effect rather than a “crowding in” effect depends on whether individuals deem external interventions to be controlling or supportive. Relatedly, findings of a meta-analysis by Deci et al. (1999) indicate that crowding out is likely to occur when initiatives promote short-term effects and promote immediate behavioural change. Prior studies have shown that PRP schemes may only have short-term effects (Houle et al., 2012; So & Wright, 2012), and they, by their nature, promote behavioural change. A large-scale study by Jacobsen et al. (2014) provides some support for the assertions of Frey and colleagues. In their sample of 3,230 school teachers in Denmark, the authors showed that if the perceptions of an obligatory, externally-imposed student plan were that it was controlling, relations with PSM and intrinsic motivation were negative.

### ***Job Satisfaction and Other Attitudes***

Job satisfaction has been associated with work motivation (Ilardi et al., 1993), and thus productivity (Böckerman & Ilmakunnas, 2012) and performance (Judge et al., 2001). Given these linkages, it is important to understand how PRP affects job satisfaction. Several studies, particularly in education, have explored this question, with a number finding that PRP initiatives negatively impacted teachers’ job satisfaction. For instance, after controlling for earnings, Belfield and Heywood (2008) concluded that PRP was a negative predictor of job satisfaction, belief that one’s effort was being rewarded, and overall pay satisfaction. Similarly, Gius (2013) found that teachers in PRP school districts were less likely to think teaching was important, less likely to be enthusiastic about teaching, and more liable to leave if an opportunity for better pay presented itself than were teachers in school districts that had not implemented PRP.

Marsden’s (2015) recent survey of teachers’ attitudes to a new pay system implemented in England and Wales that linked pay progression to performance indicated the prevalence of negative attitudes towards the scheme. The new system was introduced in the Autumn of 2013, replacing the “Threshold” system originally implemented in 2000, and data were collected in 2014. While the Threshold system involved PRP, the pay-performance link has been strengthened in the new approach, as all pay progression is now based on

performance and the outcomes of appraisal. The Threshold system included automatic pay progression until individuals reached the top level of the “Main” pay scale, at which point teachers could pass the “threshold” onto an upper pay scale with further pay progression being linked to performance reviews and appraisals of professional knowledge, teaching skills, and pupil performance. Marsden (2000) also conducted a survey of teachers before the implementation of the Threshold system and found similarly negative attitudes towards it.

Not all evidence is negative, however. A follow-up study to Marsden’s (2000) survey by Marsden and Belfield (2006) indicated that the negative attitudes towards the Threshold system in England and Wales had softened somewhat, with some teachers and head teachers beginning to view the initiative as a useful performance management tool and an effective way to set aligned goals. Furthermore, one study found that teachers involved in a PRP scheme were more likely to stay in the profession and more liable to pursue personal development opportunities (Jones, 2013).

Considering the results in this section, some issues relating to the effect of PRP on public sector workers’ motivations and attitudes are apparent. First, the weight of evidence suggests that PRP may cause crowding out effects, and some studies indicate that non-monetary motivation, such as intrinsic or PSM, may be more predictive of effort than financial reward. Second, some articles in the education section suggest that PRP is negatively associated with job satisfaction, but there is also evidence to suggest that PRP may be positively associated with some attitudes and that negative attitudes may soften over time.

## **Skills-Based Pay (SBP)**

While PRP initiatives incentivise performance based on employee output, skills-based pay (SBP) is another form of compensation system that rewards workers on the basis of “what they can do, rather than what they are doing” (Greene & Scott, 1991: 424). SBP systems are predominately used in the manufacturing and engineering industries, but are also prevalent in industries such as science, engineering, and academia. For example, universities typically require candidates to have completed doctoral study to be considered for an academic position. In instances where this is not the case, employees will invariably be given a pay increase upon completion of a PhD programmes, even though their job content and responsibility level are unlikely to change immediately. In manufacturing, employees are often given pay increases on the acquisition (and eventual mastery) of job-specific skills (i.e. welding). Thus, the way SBP systems are structured is very much context- and industry-dependent. Skills may be measured via the attainment of formal qualifications that are noted as industry-wide standards (such as a PhD). Equally, they may be examined through an on-the-job training programme and certification examination that is particular to a specific organisation. Regardless, the important points for the structure of an SBP programme are that: (a) skills should be clearly defined, (b) a training system that allows employees to seek and acquire the desired skills should be available, and, (c) a formal competency testing system to ensure the mastery and maintenance of the desired skills should be implemented (Murray & Gerhart, 1998). Finally, a focus on skill breadth, that is, a range of competencies that employees can utilise on a lateral level, should be central to SBP schemes. Allowing employees the opportunity to train and master a range of skills should foster increased organisational productivity. Furthermore, it should result in a multi-skilled workforce that can do various jobs within the company, improving human capital efficiency and reducing general labour costs (Shaw et al., 2005).

### **The Empirical Evidence Base for Skills-Based Pay**

There are fewer empirical studies of SBP initiatives than there are for PRP. We were only able to find one empirical investigation of the use of SBP in the public sector (Dierdorff &

Surface, 2008), so our evidence base primarily comes from private enterprise. Moreover, most of the studies in this section concern the manufacturing industry. That said, the available evidence does appear to support the utility of SBP initiatives in improving organisational performance. Furthermore, studies of employee attitudes towards such remuneration schemes generally show that employees tend to have positive views of them. See **Appendix 2** for a summary table of the empirical studies reviewed in this section.

Although the pool of empirical research into SBP remains limited (Dierdorff & Surface, 2008), studies that have investigated the effect of SBP systems on firm performance and other desirable organisational outcomes have reported positive results. For instance, Murray and Gerhart (1998) studied a component assembly plant that had implemented a SBP system. The plant operated within a large corporation that produced vehicle safety systems, and the authors identified a comparison plant that used a traditional time-based compensation plan within the same company. Murray and Gerhart (1998) analysed data collected over 37 months and found that the treatment facility (which used a SBP system) outperformed the comparison plant on several measures, showing greater productivity, favourable quality outcomes (scrap reduction), and lower labour costs per part.

Shaw and colleagues (Mitra et al., 2011; Shaw et al., 2001; Shaw et al. 2005) provided moderate support for the positive effects of SBP on performance and other desirable organisational outcomes. Mitra et al. (2011) conducted a comparative analysis of different remuneration packages, with a sample of 214 organisations. Of these organisations, 98 used skills-based pay, 58 used market-based pay, and 58 used job-based pay. The authors found that skills-based pay plans were perceived to produce superior outputs than job- or market-based pay plans. Favourable workplace attitudes (improved employee satisfaction and commitment) and flexibility (greater adaptability of employees in meeting production needs, and increased work team effectiveness) led to improvements in the relationship between pay plans and workplace productivity (increased output per hour worked, and fewer bottlenecks in product or service delivery), and between pay plans and workforce membership behaviours (reduced voluntary turnover, lower absenteeism, and fewer layoffs).

Shaw and colleagues (2001) conducted a study that examined the interactive relationship between the use of congruent manufacturing and compensation practices on various aspects of plant performance in the concrete pipe industry. Specifically, the authors posited that team incentives and SBP would enhance the effectiveness of total quality management and advanced manufacturing technology systems, while practices that would inhibit cooperative practices, such as individual incentives and seniority-based pay, would impede effectiveness. Among the most consistent results was the effectiveness of the use of SBP in predicting several performance outcomes, such as negative associations with lost-time accidents and customer complaints, and a positive relationship with supplier satisfaction.

Relatedly, in a two-wave study (Time 1 data were collected in 1991, Time 2 data were collected in 1998), Shaw et al. (2005) found that supervisor support for an SBP plan and employee involvement in the plan were both positively associated with productivity success and flexibility success (the extent to which the SBP plan had been successful in achieving greater workplace flexibility, increased employee versatility, increased work team effectiveness, and adaptability of employees to changing production needs) at both time points. Employee involvement also related to SBP plan survival probability (whether the organisation still used an SBP initiative at Time 2), as a positive one-unit change in employee involvement was associated with a three times greater likelihood of SBP survival at Time 2. Furthermore, the design characteristics of SBP plans, that is, the extent to which they focused on improving a breadth of skills and the total number of skills acquired, were strong indicators of flexibility success and survival. Shaw and colleagues (2005) did find that positive results were more likely to occur in manufacturing plants than service facilities, and suggest this effect was likely a result of SBP plans in manufacturing contexts being simpler to implement than in service contexts due to the skills required being more concrete (i.e. machine operators, welders) than in service-based industries.

Guthrie (2000) examined the relationships between alternative pay practices (i.e. a proportion of an employee's wage based on either SBP or group-based incentives) and turnover in 153 New Zealand firms. He found that the use of SBP pay systems was associated with decreased turnover.

Dierdorff and Surface (2008) studied the prevailing notion of SBP; that contingent monetary reward would promote individual skill development and maintenance. The study's sample came from the U.S. Army Special Operations Forces, consisting of 2,105 people. The skills tested were foreign language acquisition. The SPB plan consisted of three pay blocks that represented three levels of language skill. Thus, each level indicated greater skill proficiency. Individuals would earn SPB for skill proficiency in two or more foreign languages, and the pay policy provided monthly increases of \$100, \$150, or \$200 to base salary, depending on the skill proficiency attained and demonstrated. Data were captured over five years, and results showed that individuals who received SBP on their first attempt (Time 1) demonstrated greater rates of skill acquisition across time points 2 to 5. The model indicated that about 5% of the variance in linear skill acquisition related to whether individuals earned SBP on their initial attempts. The rate that individuals received SBP was also positively associated with linear skill development, accounting for around 42% of the variance in skill development across individuals. Results also indicated that those who received SBP more often showed less deceleration in their skill change. The relationships between the amount of SBP earned and rate of skill change were similar to those for the frequency that participants received SBP; individuals receiving larger amounts of SBP showed more rapid skill change and less deceleration in skill proficiency over time. However, effects were smaller for the "amount of SBP" model than the "frequency of SBP" model, implying that frequency of SBP was a better indicator of skill development and retention than amount of SBP received. Thus, Dierdorff and Surface (2008) found empirical support for the implicitly-held belief that linking pay to desired skills would subsequently increase the learning of those skills.

In summary, although the body of empirical research into SBP is smaller than that of PRP, and the bulk of evidence comes from the private sector, results appear to be positive. In addition, the research designs have tended to be particularly robust. For instance, using longitudinal data (i.e. Dierdorff & Surface, 2008; Mitra et al., 2011; Shaw et al., 2005) or collecting data from multiple sources (i.e. Shaw et al., 2001), and some research has explicitly examined links between desired organisational outcomes and SBP plan design characteristics (Shaw et al., 2005), organisational support (Shaw et al., 2005), and culture

and climate (Mitra et al., 2011). It is to these issues, the design characteristics of merit-based pay plans and the potential problems associated with them, that we now turn.

## **Designing Successful Pay Plans**

The empirical evidence base for PRP systems in the public sector and their effects on organisational outcomes and employee motivation, attitudes, and behaviours is inconsistent at best. Some programmes patently have not elicited the results that their organisations desire, yet others have seen performance metrics increase significantly. For SBP, the evidence is more uniformly positive, but most of the research has taken place in the private sector and the body of empirical evidence is relatively sparse. What is it that makes successful merit-based initiatives work? We argue that it is impossible to design a “one size fits all” system, and that careful, considered programme design is essential. However, here we explore the characteristics of some successful initiatives and highlight considerations that evidence suggests are important to their design.

### **What Should Be Measured?**

Our review indicates that tying PRP to process measures linked to desired organisational outcomes may produce more positive effects than incentivising outcomes themselves. In education, PRP systems have typically tended to consider outcome measures in the form of standardised test scores. Although many studies have shown that such systems are associated with improved examination results linked to the scheme, there has been little evidence that such positive results have “spilled over” into other areas (e.g. teacher behaviour, student absenteeism, non-incentivised examination scores). As such, concerns have been raised over whether only concentrating on testing adequately measures the multifaceted nature of teaching performance (Yuan et al., 2013). There have been suggestions that, under such a structure, teachers may game the system and “teach to the test” (Neal, 2011). Fryer (2011) advocated that teachers also be incentivised on process and intermediate outcome measures, such as student attendance, completed homework, and additional reading, rather than focusing solely on test scores. The Threshold system, introduced in the UK primary and secondary education sectors in 2000, did include PRP related to “professional knowledge and teaching skills”, as well as to student performance

outcomes. However, whether a teacher successfully demonstrated the former, more skills-based attributes appeared to be rather subjective (Marsden, 2000: 1).

In health, process targets have been more widely linked to PRP, and have mostly yielded greater improvements than outcome targets (So & Wright, 2012; Van Herck et al., 2010). An example of a framework that contains both outcome and process metrics is the Quality and Outcomes Framework (QOF), which was launched in 2004 by the UK National Health Service, and is the largest health-related PRP system in the world (Roland & Guthrie, 2016). Although it has some issues, as discussed previously in this review, there is evidence that the initiative has had positive spill-over effects. For instance, some process measures that did not attract QOF points improved as a result of the QOF (Sutton et al., 2010). Furthermore, even when QOF incentives for some indicators were removed, high performance levels in these areas were maintained (Kontopantelis et al., 2014). However, when a wide range of objective and subjective targets are introduced, merit-based schemes may become very complicated to administer and collecting reliable measures can be difficult (Gravelle et al., 2010; Shaw et al., 2005).

## **Perceptions of Justice and Fairness**

Employees are more likely to accept decisions about pay structure if they are deemed to be fair (Bloom, 1999; McFarlin & Sweeney, 1992). Relating the organisational justice literature to pay, procedural justice relates to *how* one is paid, and distributive justice concerns *what* one is paid. In this respect, compensation systems tap into issues surrounding procedural justice. The HMIC report on the state of policing (HMIC, 2014) identifies the need for fair treatment of employees as an important factor that affects police officer and staff attitudes which will in turn influence their behaviours. Our review indicates that perceptions of a scheme's fairness inform employee attitudes towards it, which in turn influences whether it is likely to be successful.

Whether performance is deemed sufficient for PRP to be merited is usually decided in a performance appraisal (Campbell et al., 1999). A problem with this approach is that employees generally do not agree with their performance appraisals, particularly when the evaluation is lower than their appraisal of their own work (Campbell & Lee, 1988). As a

result, many people do not believe that merit-based pay truly rewards performance (Campbell et al., 1999; Kim, 2016; Kanter, 1987; Marsden 2000; 2015). Indeed, in a recent study conducted in the aftermath of reform programmes in six US state governments, Kim (2016) found that the effectiveness of PRP initiatives was influenced by the perceived fairness of performance appraisals. Issues surrounding perceived unclear performance appraisal measures and the politicisation of performance appraisals (i.e. the perception that office politics has more weight in performance appraisals than actual performance) were both significantly and negatively associated with PRP effectiveness.

In education, Marsden (2015) found that teachers feared that a new PRP system introduced in schools in England and Wales would lead to unfairness. Almost 70% of staff surveyed thought that leaders would use PRP to reward their favourites. Marsden (2000) asked the same question in a survey conducted before the introduction of the Threshold system introduced in 2000, the initiative that the new approach replaced in 2013. While the Threshold system was broadly unpopular among teachers (Marsden, 2000), 15% fewer respondents believed that leaders would use the PRP aspect of the scheme to reward their favourites (55%), compared to those surveyed in 2014 regarding the new system.

Regarding SBP, the results of a study by Lee et al. (1999) indicated that the SBP plan characteristics of training and understanding were positively associated with perceptions of SBP plan fairness, which in turn were important factors in affecting positive organisational and individual outcomes. Specifically, pay satisfaction and SBP benefits (i.e. skill growth for individuals, workforce flexibility, greater teamwork, better career opportunities, better pay opportunities, and increased productivity for the company). Questions around training related to (a) whether employees believed there were adequate training opportunities available to develop the skills required to advance through the SBP system, and (b) whether there was enough job rotation available to enable them to learn new skills. Questions related to the understanding of the process asked whether employees believed that communication about how the SBP initiative worked was clear, and whether they understood (a) how SBP was determined, and (b) how SBP pay raises were tied to tests of skill level. Thus, perceptions of SBP plan fairness positively influenced relationships between (a) training and the desired outcomes, and (b) understanding and the desired outcomes.

Participative schemes that include employees in the design of merit-based measures and targets have been shown to be more effective than systems in which employees had no input (Eijkenaar et al., 2013; Schmidt et al., 2011; Shaw et al., 2005; Van Herck et al., 2010). Also, the Quality and Outcomes Framework (QOF), previously mentioned, was developed by the British Medical Association and a small number of clinical advisors. A central premise of the framework was that the indicators should be based on evidence-based guidelines to gain professional support (Roland & Guthrie, 2016). Indeed, research suggests that general practitioners believe the QOF acted as an incentive to continue what they thought to be good clinical practice (Lester et al., 2013; McDonald et al., 2007). For SBP, Shaw and colleagues (2005) showed that employee involvement in the design of a SBP initiative was positively associated with productivity, flexibility, and SBP initiative survival. Although these studies do not explicitly explore the role of fairness, it is likely that participative schemes will lead to higher levels of perceived fairness and procedural justice than those designed without any form of employee collaboration. In turn, we expect them to be more effective than non-collaborative schemes.

In a similar vein to participation in the design of a pay system, Marsden (2004) argued that *renegotiation* is central to the success of a new pay system. Specifically, management, using goal-setting and performance appraisal systems, can redefine established performance norms, ideally with the explicit or implicit agreement of as many stakeholders as possible. With renegotiation theory, although employees may not claim to be motivated by PRP, an improvement in performance may still occur. Indeed, while many teachers surveyed by Marsden and Belfield (2006) had reservations over some of the financial aspects of the Threshold PRP scheme introduced in 2000 (i.e. whether they would be worse off than they were before) a number did indicate that it improved performance management systems. This finding was particularly evident in cases where schools took an integrative bargaining approach to performance management. That is, rather than being viewed as a top-down process in which management imposed objectives, management and teachers would work together to attempt to find solutions to problems. Through this process of integrated bargaining, staff could reach a “best alternative”. Marsden and Belfield (2006) identified proactive schools that used such an integrated bargaining system and saw performance management to improve management systems and set clear, coordinated goals. On the

other hand, they also identified reactive schools that used performance management as a form-filling exercise to give pay rises to staff to solve retention problems, or to impose objectives on teachers to try to improve performance. Unsurprisingly, attitudes towards PRP in the proactive schools tended to be more favourable than those in the reactive schools.

## **The Importance of Taking a Holistic Approach to Human Resource Systems**

The mechanism by which pay is administered is just one aspect of an overarching human resource (HR) strategy. If this mechanism is not strategically aligned with other organisational structures, systems, and processes, it is unlikely to succeed. Indeed, Shaw and colleagues (2005: 44) stress the importance of an integrated approach to the design of complex HR systems. They argue that the specifics of a system in isolation are not the only determinates of its success, rather “the care with which these details are designed, the commitment with which they are implemented, and the extent of their fit with the organizational context relate to the success of such innovations”. Focusing on SBP plans, Shaw et al. (2001: 382) suggested that the effectiveness of such initiatives can be enhanced when coupled with “actions, policies, or programmes that promote joint activities and interdependence”. They argued that, although not examined in their study, the congruence of other HR systems with compensation systems is likely to be important. Mitra et al. (2011) showed that the extent of the congruence between any kind of pay plan, whether it be skills-, market-, or job-based, and the organisational culture and climate in which it operates is particularly influential in predicting pay plan success. These arguments indicate the necessity of taking a holistic approach to HR, one in which structures, policies and practices are integrated rather than considered as independent of each other.

As discussed in the previous section, Marsden and Belfield (2006) echo these sentiments in demonstrating occasions when PRP systems were associated with good performance management in teaching. They found that proactive schools in which policies were implemented in a systematic, integrated manner were more successful than reactive schools that saw the Threshold system as a form-filling exercise to get their teachers pay

rises. It appears that the former schools took a holistic approach to the implementation of the programme, but the latter did not.

The design of a merit-based pay system, whether based around PRP, SBP, or a combination of the two, must pay close attention to the performance appraisal process. As stated previously, perceptions of performance appraisal fairness are integral attitudinal responses to the system (Campbell et al., 1998; Kim, 2016), and transitioning from time-served to a merit-based system places a greater onus on performance appraisals. Managers often do not possess the requisite skills to undertake appraisals in a manner that is deemed to be valuable and fair (Campbell et al., 1998). Thus, it is important for organisations to understand this and ensure that the performance appraisal process is equitable and useful for both employees and the company itself. Achieving these objectives is often difficult (Campbell et al., 1998), but providing managers with performance appraisal training and using objective rather than subjective measures may make it easier to do so.

**In conclusion**, the weight of evidence suggests that the design and implementation of merit-based pay systems play an integral role to the results they obtain. Including process indicators of performance in a PRP framework may reap greater benefits than solely measuring outcomes, providing they are evidence-based and linked to desirable outcomes. Perceptions of fairness appear to be particularly important, and such perceptions may be strengthened by taking a collaborative approach to scheme design. Finally, taking an integrated, holistic approach to pay plan implementation is likely to be fundamental to the success of the initiative.

## **Implications for Policing**

The evidence presented in previous sections gives an overview of the outcomes, attitudinal responses, and design implications for performance-related pay (PRP) and skills-based pay (SBP) plans. One limitation of the existing literature is that, for PRP, the majority of studies have been conducted in the health, civil service, and education sectors. There are research gaps in frontline services such as the police, prison services, and armed forces (The Work Foundation, 2014). The limited empirical evidence relating to SBP comes primarily from the private sector. Thus, for both PRP and SBP, there is a lack of occupational coverage.

We were only able to find one empirical investigation of general pay satisfaction in policing. In a study conducted in the United States, Mas (2006) demonstrated a link between perceptions of fairness in pay and police officer behaviour. When police officers lost an arbitration case against their employers, crime rates rose, and arrest rates and average sentence length decreased in comparison to when they won. Strikingly, the greater the gap between the union's demands and the wage awarded in "lost" cases (i.e. cases in which the granted wage was less than what the union demanded), the larger the decrease in performance was, supporting the argument that perceptions of fairness influence workplace behaviours.

### **The Use of Process and Skills-Based Pay Measures**

Besanko et al. (2006, in Bajorek & Bevan, 2015: 96) argued that contracting for results was not feasible in the police force given the complexity of different outcomes. Evidence from education may support this view, given that the outcome measures that tend to see improvements from PRP tend to be objective and observable (i.e. test scores). However, research in the health sector has shown that process measures can have more substantial, positive effects than outcome measures in an area that has complex and multidimensional outcomes. Such measures may be more appropriate in the policing context than solely considering outcome measures. Including SBP as part of an overarching pay scheme may also be fruitful in the policing context, given that SBP has been associated with proactive

behaviour when employees need to work well under circumstances of uncertainty and constant change (Díaz-Fernández et al., 2013), as is often the case in policing. Taking a process- and skill-based approach may also reduce the potential for gaming behaviour and misallocation of effort to occur, as there will be greater, broader opportunities to receive merit-based payments.

## **The Importance of a Holistic, Integrated Human Resource System**

Evidence from both the public and private sectors indicate that merit-based pay systems are more likely to survive and produce desirable organisational results when they are deemed to be fair and when they are understood and accepted by employees. Marsden and Belfield (2006) discussed the implementation of a PRP system in a context where output is hard to measure. They suggested that through integrative negotiation:

“A way is opened to addressing changing [...] priorities on a long-term basis. Recognising this is important, because professional groups [...] bring expert knowledge to their work that is not always accessible to management” (Marsden & Belfield, 2006: 20).

Marsden and Belfield (2006: 20) conclude that integrative negotiation allows for management and employees to discuss mutual objectives, how to achieve them, and the support needed to do so, arguing that “agreement to goals is arguably the more appropriate means of gaining commitment to fulfil them”. This approach may negate the issues raised by Besanko and colleagues in their objection to incentivising outcomes in policing.

Finally, taking a hybrid PRP and SBP approach to merit payments may be useful in encouraging staff to think about remuneration redistribution as a long-term strategic necessity that, rather than being an immediate threat to their pay, will ultimately reward them for good practice, open up communication systems, and encourage personal development. For such a plan to be successful, however, it should be implemented as part of an overarching HR strategy that takes performance management and appraisal seriously, communicates the mechanics of and reasoning behind the system clearly, and offers a range of opportunities for staff to receive merit-based payments in a manner that is congruent

with organisational and individual goals. In short, it is important that forces “buy in” to any kind of change in remuneration policy. Without organisational support, any such change is unlikely to succeed.

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# Appendices

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## Appendix 1: Summary of Empirical Performance-Related Pay Evidence

Author(s)	Region	Public Service	Study Aims	Methodology	Main Findings
Anderfuhren-Biget et al. (2010)	Switzerland	Civil Service	To determine the extent to which PSM is able to explain work motivation in the public sector compared to material incentives and team relation and support.	Observational study – data collected through a survey of 3,754 civil servants and analysed using structural equation modelling.	Results show that PSM is particularly relevant to work motivation in the public sector. Socio-relational factors also appear to be important. Both appear to be more influential than material incentives in explaining work motivation.
Atkinson et al. (2009)	UK	Education	To measure student attainment pre- and post-Threshold system to measure the scheme's impact.	Observational study – authors observed differences in test scores once before the Performance Threshold was implemented and once after, comparing the results for eligible and ineligible teachers. Data were collected from 18 schools, covering 180 teachers and almost 23,000 pupils.	The scheme did improve test score gains, by about half a grade per pupil. However, results varied across subject teachers, with maths teachers showing no improvement in test score gains.
Belfield & Heywood (2008)	USA	Education	Three hypotheses tested: a) PRP among teachers is more likely to be observed when there is evidence of team production. b) Teachers receiving PRP will earn more in total than teachers not earning PRP. c) Teachers receiving PRP will have higher job satisfaction than teachers not receiving PRP.	Observational study – sample of 56,354 public sector school teachers across 8,893 schools gathered using the 2000 Schools and Staffing survey.	Hypotheses results were as follows: a) Team production does strongly predict PRP. b) Teachers receiving PRP do earn more in total than those not receiving PRP. c) Job satisfaction is lower for teachers earning PRP than those not earning it.

	<b>Region</b>	<b>Public Service</b>	<b>Study Aims</b>	<b>Methodology</b>	<b>Main Findings</b>
Bellé (2015)	Italy	Health	To develop experimental evidence on the effects of PRP on public sector worker motivation and performance.	Randomised control trial – experiment conducted with 300 nurses who were randomly assigned to one of twelve groups, each consisting of 25 units. The participants were randomly assigned to receive one of three types of rewards: fixed pay (n = 100), fixed pay plus a performance-contingent monetary reward (n = 100), fixed pay plus a symbolic reward (n = 100).	Results suggest that monetary reward may crowd out pro-social behaviour, and that financial incentives may be less effective when they are made public compared to when they are kept private. Moreover, the negative motivational issues found in the monetary reward group were not found in the symbolic reward group.
Bellé & Cantarelli (2015)	Italy	Civil Service	To investigate the effects of monetary rewards on effort among civil service and how, if at all, motivation type (explicit, implicit, and public service) influence the relationship between monetary reward and effort.	Randomised control trial – vignette experiment with 296 public managers in the Italian civil service.	Monetary reward had no effect on the work effort of employees. However, explicit motivation had a negative influence on this relationship, while implicit motivation had a positive influence. Public service motivation had no influence on the relationship.
Binderkrantz & Christensen (2011)	Denmark	Civil Service	Do incentive effects improve public sector management?	Data consists of the full set of performance contracts and executive contracts for Danish public sector agency heads between 2000 and 2008. Pay to agency heads is the outcome variable, and goal achievement (operationalised by demands in performance contracts and whether the goal was achieved as evidenced in the agencies' annual reports).	Results suggest that incentive effects do not improve public sector management.

	<b>Region</b>	<b>Public Service</b>	<b>Study Aims</b>	<b>Methodology</b>	<b>Main Findings</b>
Burgess et al. (2004)	UK	Civil Service	To analyse the implementation of a team-based PRP incentive across Jobcentre Plus offices.	90 Jobcentre Plus offices were analysed. Job entry was measured as a quantity outcome, and customer service was measured as a quality outcome. Results were examined across incentivised and non-incentivised offices.	There were no overall effects of the PRP initiative on overall staff performance, but this may have been because positive effects for smaller teams were counterbalanced by negative results for larger teams. There was some evidence of “gaming”, as there were effects on quantity but not quality outcomes. The authors attribute this to strategic behaviour by the employees as quality outcomes were measured with less precision than quantity ones, and were thus more difficult to obtain.
Burgess et al. (2010)	UK	Civil Service	To determine the impact of team-based incentives on productivity, and if any effects are indicative of increased effort or strategic resource allocation.	Randomised control trial – Three teams of employees in the HMRC were analysed. Teams 1 and 2 (containing 129 and 124 workers, respectively) were treatment groups which were each recipients of a different incentive structure. Team 3 (containing 197 workers) was a control group that did not receive any financial incentive.	Financial incentives did increase productivity, but the authors found that managers disproportionately allocated efficient workers to incentivised tasks. They found that such reallocation was the more important contributor to the overall outcome.

	<b>Region</b>	<b>Public Service</b>	<b>Study Aims</b>	<b>Methodology</b>	<b>Main Findings</b>
Eijkenaar et al. (2013)	Mainly UK and US	Health	To review previous reviews of PRP initiatives in health, their cost effectiveness, effects of different design features, potential unintended consequences, effect on equality of care, and the effect of combining financial and non-financial incentives.	A systematic review of 22 existing systematic reviews.	The authors find a wide range of effects, but evidence across studies is very mixed. PRP may be cost effective, but conclusive evidence is lacking. Several design features appear to be important in reaching desired effects, including employee participation and targeted behaviours that are obvious and easy to track. Larger effects were found for process measures than outcome measures, and although it was not possible to disentangle effects, the authors posit that the combination of financial and non-financial incentives may be more beneficial than financial incentives alone.
Fairbrother et al. (1999)	USA	Health	To examine the effects of three incentives: a cash bonus for the practice, enhanced fee for service, and feedback on immunisation coverage	60 inner-city paediatricians were given incentives at four-month intervals over the course of one year. At each interval, the charts of 50 randomly selected children between 3 and 35 months of age were checked by the physician.	Bonuses increased immunisation coverage in medical records, however the authors believe this was down to better documentation than better immunisation practices.
Fairbrother et al. (2001)	USA	Health	The effects of two incentives were measured: a cash bonus for the practice and an enhanced fee for service on documented immunisation rates.	Incentives were given to 57 inner-city paediatricians at four-month intervals over the course of one year based on the coverage of 50 randomly selected children.	Both financial incentives produced an increase in coverage levels. Financial incentives appeared to motivate physicians but were not sufficient to overcome entrenched behaviours, and increases were primarily due to better documentation rather than better immunisation practices.

	<b>Region</b>	<b>Public Service</b>	<b>Study Aims</b>	<b>Methodology</b>	<b>Main Findings</b>
Gillam et al. (2012)	UK	Health	A review into the impact of the Quality and Outcomes Framework on primary care in the UK	A systemic review of 94 studies.	Incentivised conditions showed an improvement in quality over the first year of the initiative, but subsequently returned to prior rates of improvement. Achievements for unincentivised conditions were lower during the initial stages of the initiative than before, and worsened over time. There were modest, cost-effective reductions in mortality and hospital admission rates in some areas, and some doctors reported better record keeping and teamwork.
Gius (2013)	USA	Education	To determine the influence of a district-level pay system on teacher job satisfaction.	Observational study – Using the 2007, Schools and Staffing Survey, data on around 32,020 full-time teachers were collected and results were obtained using ordered probit and regression analyses.	Results indicate that teachers working in districts with incentives were no less satisfied with their job than those working in districts with no incentive scheme. However, teachers in incentivised districts were less enthusiastic, did not think teaching was important, and were more likely to leave for better pay than their unincentivised counterparts.

	<b>Region</b>	<b>Public Service</b>	<b>Study Aims</b>	<b>Methodology</b>	<b>Main Findings</b>
Greene (2013)	Australia	Health	To examine the impact of Australia's voluntary PRP programme for general practitioners.	Observational study comprised of three components: Tracking trends in the provision of incentivised services pre- and post-PRP intervention. Using a panel dataset of 1,131 GPs followed from 2001 to 2009, the author tracked the extent to which changes in the GPs PRP programme participation were related to the provision of diabetes testing and cervical cancer screening. A qualitative study of perceptions of programme impact using interviews with 13 GPs and 2 practice managers.	There was a short-term spike in diabetes testing and cervical cancer screening after the programme was implemented, however, this was true across practices, not just in those that had adopted the initiative. There was no association between either signing on to the programme nor claiming the incentives with increases in the provision of the aforementioned services. GPs believed that the incentives did not alter their behaviour, due to both the modest size of the bonus payments and the complexity in tracking patients and claiming payments.
Hasnain et al. (2014)	Multiple	Multiple	To review the literature on PRP in the public sector, disaggregating the evidence by different public sector contexts, quality of study, and economic context (OECD setting or developing country).	A systematic review of 153 studies into PRP in the public sector.	Findings from high quality studies (based on a scoring method for internal and external validity) imply generally positive results, showing that explicit performance standards linked to bonus payments can result in substantial improvements in desired organisational outcomes. However, most of the evidence comes from areas such as teaching and healthcare, where outcomes are explicit and measurable. There is little evidence from core civil service contexts, and little investigation of the long-term effects of PRP programmes.

	Region	Public Service	Study Aims	Methodology	Main Findings
Hillman et al. (1998)	USA	Health	To evaluate whether giving a financial incentive and written feedback to physicians improved their compliance in the provision of cancer screening tests for women aged 50 years or older.	Randomised control trial – 52 primary care sites in Philadelphia were assigned to either a treatment (n = 26) or control condition (n = 26). The treatment condition received a financial bonus and written feedback for the provision of cancer screening, and the control group received no bonus or written feedback.	Cancer screening rates doubled during the period of study, but there were no significant differences between the treatment and control groups, indicating that financial incentives and written feedback did not influence physician behaviour relating to compliance in the provision of cancer screening.
Hillman et al. (1999)	USA	Health	To determine whether incentives could improve the provision of paediatric preventative care.	Randomised control trial – Primary care sites were randomly assigned to one of three conditions: 1) Feedback condition – site received written feedback on care provision. 2) Feedback and financial incentive condition. 3) Control condition – site received neither written feedback nor a financial incentive for care provision.	Neither treatment condition showed an improvement in the provision of paediatric preventative care compared to the treatment group. Compliance did improve dramatically during the study period, but no significant differences occurred between the groups. The authors posit that the lack of treatment effects may be due to the magnitude of the financial incentive, and a lack of physician awareness of the programme.
Houle et al. (2012)	USA, Canada, UK and Germany	Health	To assess the use of PRP for individual healthcare practitioners on patient outcomes.	A systematic review of 30 studies.	PRP modestly improved preventative outcomes (e.g. vaccination rates, cancer screening), but there was little evidence of positive effects in other areas. The authors caution that there is insufficient evidence to support widespread implementation of PRP schemes in healthcare.

	<b>Region</b>	<b>Public Service</b>	<b>Study Aims</b>	<b>Methodology</b>	<b>Main Findings</b>
Jones (2013)	USA	Education	To assess how teachers respond to PRP initiatives.	Observational study – data collected using the 2003 and 2007 waves of the Schools and Staffing Survey. Dataset comprised of around 58,000 teachers, of which about 15% work in districts that use PRP initiatives.	Teachers work fewer hours per week under a team-based incentive plan. They are less likely to engage in unpaid cooperative school activities under PRP schemes. Work effort increased when PRP is limited to the individual level rather than team level, and male teachers are more likely to respond positively to PRP than are females.
Kontopantelis et al. (2014)	UK	Health	To determine the effect of withdrawing QOF incentives on recorded quality of care	Retrospective longitudinal study comprising of data collected from 644 general practices from 2004 to 2012.	Performance levels in areas that had incentives removed generally remained stable, and other outcome measures remained unaffected. However, these aspects of care remain partly or indirectly linked to other indicators in the QOF.
Kouides et al. (1998)	USA	Health	To investigate the effect of PRP on the influenza immunisation rate in primary care physicians' offices.	Randomised control trial – 54 practices were randomly assigned to either a treatment (n = 27) or control (n = 27) condition. The treatment condition practices received an additional \$.80 or \$1.20 per immunisation shot performed if the immunisation rate of 70% or 85%, respectively, was attained.	Despite a pre-existing high immunization rate, a modest financial incentive was responsible for a 7% increase in immunisation rate for the elderly.

	<b>Region</b>	<b>Public Service</b>	<b>Study Aims</b>	<b>Methodology</b>	<b>Main Findings</b>
Lavy (2009)	Israel	Education	To examine the influence of PRP on teachers' pedagogy, effort and productivity, measured by pupil achievement and teachers' grading ethics.	Quasi-experiment – schools were included in the bonus scheme if their matriculation rate equal to or below 45%. However, due to measurement error, some ineligible schools were included in the trial, allowing for a quasi-randomised experiment to take place. Panel data were used to analyse differences between schools in this natural experiment.	Incentives led to several improvements, including test taking rates, pass rates, and mean test scores. Further, they also appeared to influence teachers' pedagogical effort, increasing non-paid after-school effort and attention to students' needs. No evidence was found of manipulation of student test scores by teachers.
Li et al. (2014)	Canada	Health	To analyse the impact of PRP on the provision of a number of primary care services in Ontario, Canada.	Natural experiment consisting of a sample of 2,154 GPs.	Results indicate that effects were modest, and physicians responded to financial incentives for some services but not others.
Marsden (2000)	UK	Education	To explore the expected impact of the "Threshold" system on teachers' motivation and performance.	Observational study – a survey sample of just under 5,000 classroom teachers.	Results suggest the potential for widespread de-motivation, and a serious concern that the new system would not be implemented fairly.
Marsden (2015)	UK	Education	To explore the expected impact of a new PRP system implemented in 2014.	Observational study – a survey sample of just under 3,000 classroom teachers in England.	Similar results to those obtained by Marsden (2000) were found. That is, teachers appear to have broadly negative expectations regarding the new performance pay scheme. However, a more positive view was found for the role of the performance appraisal.

	Region	Public Service	Study Aims	Methodology	Main Findings
Marsden & Belfield (2006)	UK	Education	To determine whether teachers' impressions of the "Threshold" system have changed over time.	Longitudinal survey – The original panel, distributed in 2000, included responses from around 4,000 teachers and 1,000 head teachers. The authors were able to track responses from around 1,000 teachers and 300 head teachers in a follow-up survey distributed in 2004.	Results indicate that both teachers' and head teachers' views have changed considerably over time, from initial scepticism and opposition to a more favourable perspective of the "Threshold" system. This was particularly apparent for head teachers. The authors argue that the adoption of an integrative bargaining approach is the reason why a growing number of schools have improved goal setting and student attainment levels as they have implemented performance management.
McDonald et al. (2007)	UK	Health	To investigate the impact of the QOF on practice organisation, individual autonomy, and individual motivation of GPs and nurses.	An ethnographic study set in two general practices and involving 12 GPs, nine nurses, four healthcare assistants and four administrative staff.	Nurses expressed more concern than doctors about changes to their clinical working practices, but they did appear to appreciate greater involvement in delivering on targets in particular areas. Most doctors did not question the targets, nor did they regard them as a threat to their individual autonomy.
Muralidharan & Sundararaman (2009)	India	Education	The authors used a randomised control trial to explore questions relating to the effects of PRP on student achievement, if there are negative consequences to PRP based on student test scores on student achievement, how group-level incentives compare to individual-level incentives, how PRP influences teacher behaviour, and whether the schemes are cost-effective.	Randomised control trial – 300 schools randomly assigned to an individual (n = 100) or team (n = 100) incentive scheme, or a control group (n = 100) that received no incentive.	Results indicate support for the effects of PRP on student performance in both "mechanical" and "conceptual" components of tests, and such effects were also found in subjects with non-incentivised tests, indicating some positive spill-over effects. Both group- and individual-level incentive schools performed equally well in the first year of the programme, with individual-level schools outperforming both group-level and control schools in year two.

	<b>Region</b>	<b>Public Service</b>	<b>Study Aims</b>	<b>Methodology</b>	<b>Main Findings</b>
Roland & Guthrie (2016)	UK	Health	The authors assess the successes and failures of the QOF.	Review.	The authors argue that, in terms of the quality of delivery of care, the QOF has resulted in limited improvements. They note, however, that the initiative has reduced socioeconomic inequalities in the delivery of care.
So & Wright (2012)	Mixed	Health	Does PRP improve quality of care?	Systematic review of 73 studies.	PRP appeared to positively influence process, and to a lesser extent, outcome measures of care. Clinician involvement in the development of the initiative and outcomes measured seemed to increase the likelihood of positive results.
Springer et al. (2012)	USA	Education	To test the notion that rewarding teachers for improved student test scores would improve test scores.	Randomised control trial – 296 teachers enrolled on the Project of Incentives in Teaching (POINT) programme, which ran for three years. 148 remained for the entirety of the experiment. In year one, there were 143 teachers in the treatment group, 105 in year two, and 84 in year three. Teachers in the treatment group could obtain bonuses of \$5,000, \$10,000, or \$15,000 depending on student results. All teachers also received a stipend of \$750 per year of participation in the study in an effort to ensure control group teachers would also participate in data collection activities. The stipend sum would decrease if participants did not engage in all activities.	The hypothesis was generally not supported, as students taught by teachers randomly assigned to the treatment group did not outperform those who were taught by teachers in the control group over the period of study.

	<b>Region</b>	<b>Public Service</b>	<b>Study Aims</b>	<b>Methodology</b>	<b>Main Findings</b>
Van Herck et al. (2010)	Mixed	Health	To provide a summary of evidence of PRP effectiveness in healthcare and a summary of evidence on how initiative design choice characteristics influence these effects.	A systematic review of 128 studies.	The review found a broad spectrum of results, from absent or negligible to very beneficial. The authors indicate that effect findings are likely to be strongly influenced by PRP design characteristics and context.
Woessman (2011)	Multiple	Education	Cross-country analysis on whether students in countries that use PRP for educators outperform students in countries that do not.	Observational study consisting of a dataset of 190,000 children from 28 OECD countries.	Children in countries with PRP initiatives score one-quarter of a standard deviation higher on PISA international achievement tests than those in countries with no PRP.

## Appendix 2: Summary of Empirical Skills-Based Pay Evidence

Author(s)	Location	Sector	Study Aims	Methodology	Main Findings
Díaz-Fernández et al. (2013)	Spain	Manufacturing	To assess if strategic differences between firms influence employee competencies and how the design of compensation systems may best consider the competencies required by a firm.	Observation study with a sample consisting of 110 organisations.	Results indicate that skills-based pay is more strongly associated with competencies such as innovation, technical expertise and adaptability. PRP encouraged results-based competencies.
Dierdorff & Surface (2008)	USA	Military	The authors examine whether SBP actually promotes individual learning.	Observation study consisting of 2,105 individuals. Archival data describing individuals' SBP record and language skills over five years were used.	Results show that SBP is related to skill acquisition and maintenance.
Guthrie (2000)	New Zealand	Various	To explore the link between alternative pay practices (including SBP) and firm turnover rates.	Observation study of 153 New Zealand firms.	Results suggest that SBP improves employee retention.
Murray & Gerhart (1998)	USA	Manufacturing	To examine whether SBP has a positive impact on organisational outcomes.	Observational study consisting of a treatment plant that used SBP, and a control plant within the same organisation that did not. Data were examined over 37 months.	Results indicated greater productivity, lower labour cost per part, and favourable quality outcomes in the facility that used SBP.
Mitra et al. (2011)	USA	Manufacturing	To make a comparative analysis of different kinds of pay plan (Skills-based, market-based, and job-based) and their relationships with organisational outcomes.	Survey data were collected from 214 organisations. 58 used job-based pay, 58 market-based pay, and 98 had implemented SBP.	SBP appeared to be positively related to several organisational outcomes and workplace member behaviours, more so than either of the other two pay plans studied in this paper.

	<b>Location</b>	<b>Sector</b>	<b>Study Aims</b>	<b>Methodology</b>	<b>Main Findings</b>
Shaw et al. (2001)	USA	Manufacturing	To analyse the relationships between the use of integrated manufacturing (Total Quality Management and Advanced Manufacturing Technology) and compensation practices (SPB and seniority-based pay) in predicting several organisational outcomes in the concrete pipe industry.	Surveys were completed by 141 plant managers. In addition, 767 purchasers and 605 specifiers (engineers who specify pipes in development) also completed surveys based on plant and product satisfaction.	Results indicate that the integration of SBP and Total Quality Management was superior to PRP and Advanced Manufacturing Technology in predicting numerous organisational outcomes.
Shaw et al. (2005)	USA	Manufacturing and Service	To examine the success and survival rates of SBP plans in several facilities over time.	97 organisations were contacted twice over the course of seven years (Time 1 = 1991, Time 2 = 1998) and asked either via telephone survey or written questionnaire about the status of their SPB plan.	Results indicate that the design characteristics of SBP plans appear to influence their success and survival. Specifically, employee involvement in and supervisor support of the plan influenced productivity and flexibility success. Moreover, employee involvement was also a positive predictor of plan survival at Time 2. Facility type was the most consistent predictor of SBP plan success was facility type; more positive results were found in manufacturing settings than service settings.

