Forum ON THE Workplace of the Future

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High Performance Work Systems in Ireland – The Economic Case

University of Kansas

University of Limerick

National Centre for Partnership Performance

Professor Flood and Professor Guthrie, and their team of researchers at the University of Limerick have conducted a very useful study for the Irish economy. Having served as the Associate Dean of Executive Education at the Whitman School of Management at Syracuse University and advised many corporations concerning Strategic Management, I find the results of this study to have many practical insights for any global business. Being a frequent visitor to Ireland and having conducted executive seminars and published with Irish professors, I find the results and conclusions of this study to be required reading for any manager of a business in Ireland who wants to increase productivity and retain a high performance work force.

Professor Denis Gillen, Syracuse University

I am very pleased to endorse the joint University of Limerick and University of Kansas research on high performance work systems.

The authors of this exciting research build a persuasive case for the economic impact of human resource management. High performance work systems remain an untapped resource in many companies and as such provide a very important basis for sustained competitive advantage. In today's high paced digital economy high performance work systems are a must and an important leverage to firm success.

Ken G. Smith, University of Maryland

The research group is making a substantial and rigorous contribution to our understanding of the factors that determine the effectiveness of organisations and the well being of employees. The research is also highly relevant to the business context in Ireland specifically and in work organisations internationally. The group's work is likely to continue to inform researchers, policy makers and business leaders about the emerging factors most likely to influence excellent business performance.

Michael West
Professor of Organisational Psychology
Head of Research, Aston University

High Performance Work Systems in Ireland – The Economic Case

Authors

Professor Patrick Flood
Wenchuan Liu
Sarah MacCurtain
Kemmy Business School
University of Limerick
Limerick, Ireland
T +353 (0)61 202929
Patrick.Flood@ul.ie

Professor James P. Guthrie
School of Business
University of Kansas
Lawrence, Kansas
United States
T +1 785 864 7546
JGuthrie@ku.edu

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The research group

Patrick Flood is currently Associate Professor at the Kemmy Business School, University of Limerick, where he also directs the strategic leadership research programme. He received his doctorate from the London School of Economics. Previous appointments include EU Postdoctoral Fellow at London Business School, Fulbright Scholar at the R.H. Smith School of Business, University of Maryland at College Park, Academic Visitor and British Council scholar at the London School of Economics, and Visiting Professor at the Australian Graduate School of Management.

James P. Guthrie is Professor of Human Resource Management and Charles W. Oswald Research Fellow at the University of Kansas School of Business in Lawrence, Kansas. He was Visiting Associate Professor with the Department of Strategic Management and Leadership, University of Waikato in Hamilton, New Zealand, and Visiting Professor at University of Limerick. He received his B.A. (Psychology) and M.B.A. from the State University of New York at Buffalo and his PhD from the University of Maryland, College Park. His teaching and research focus on the effective management of people, or, more formally, human resource management.

Sarah MacCurtain received her PhD from Aston University. She is a lecturer with the Kemmy Business School, University of Limerick. She is co-author of *Effective Top Teams* (2001, Blackhall) and *Managing Knowledge Based Organisations* (2002, Blackhall).

Victor (Wenchuan) Liu is a full-time doctoral student at Kemmy Business School, University of Limerick. He is also Assistant Professor at the School of Business Administration, Northeastern University, China. He is co-author of *Business Culture* (2002, Liaohai).

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Foreword

The launch of this report and its research findings on High Performance Workplaces in Ireland is timely following the recent launch by the Taoiseach of the final report of the Forum on the Workplace of the Future.

The Forum, established by the National Centre for Partnership and Performance at the request of the Government, assessed how well Ireland's workplaces are equipped to meet the challenges of the twenty-first century and charted a course for their future development.

The final report, *Working to our Advantage: A National Workplace Strategy*, outlines a vision of the workplace of the future and five strategic priorities for organisations that wish to meet the challenges of workplace innovation. During its work, the Forum found that there is strong appreciation of the need for workplace innovation and change among employers, unions and employees and evidence that significant changes are already occurring.

However, in the increasingly challenging competitive environment that we now face, businesses and public services must achieve sustained improvements in productivity and performance. The Forum found that Irish organisations are not realising the full potential associated with innovative workplace practices. The adoption by organisations of comprehensive 'bundles' of work practices which have been shown to be associated with high performance and innovation remains quite limited.

This report is therefore a timely and important contribution. It provides an insight on best practice by describing innovative human resource management across a wide cross-section of Irish enterprise. It will facilitate increased application of high performance work systems (HPWS) because it defines in very clear terms the components of these systems. It is also a persuasive blueprint for employers and management, as it outlines the financial benefits enjoyed by those companies who have implemented high performance work systems.

I would like to congratulate Professor Flood and Professor Guthrie, and their team of researchers at University of Limerick. The National Centre for Partnership and Performance is delighted to be associated with this work. The report will form an important part of the NCPP's ongoing efforts to develop diagnostic tools to support and benchmark the incidence of workplace innovation and the diffusion of high performance work systems across the private and public sectors of the Irish economy.

Lucy Fallon-Byrne
Director
National Centre for Partnership and Performance

Executive summary

This report summarises major findings from a survey of 165 Irish business organisations. The survey was conducted from June to October 2004 and collected information on human resource (HR) and general management (GM) practices.

This report presents two types of information. First, descriptive summaries are presented on the prevalence of particular HR practices within the organisations surveyed. Second, the report presents an overview of statistical findings based on multivariate analyses. These findings summarise the antecedents and consequences associated with the use of a set of HR practices labelled High Performance Work Systems (HPWS).

In terms of consequences, the relationship between the use of these HPWS and the firm outcomes of employee turnover and productivity are analysed.

Overview of findings

There were 165 organisational participants in the survey. The median firm had 234 employees and €75 million in annual sales.

In terms of *staffing practices*, while a majority of employees (62%) are hired based on a structured approach to interviewing, relatively few employees (22%) are hired based on validated employment tests. Approximately 42% of employees receive internal promotions on the basis of performance as opposed to seniority. There are relatively high levels of reported job security with respondents indicating that, on average, 54.3% of their employees have jobs that are "almost guaranteed".

In terms of *performance management and remuneration*, a majority of employees receive formal performance evaluations on a routine basis (63.2%). Approximately one-fourth of employees (25.8%) receive multi-source performance feedback with one-half (48.3%) receiving merit or incentive pay based upon individual performance. Fewer still (39.3%) are part of company or group-based incentive plans. Less than one fifth of employees (19.7%) participate in employee stock ownership plans. A substantial portion (26.6%) are paid on the basis of skill or knowledge-based pay systems, a fairly recent alternative to traditional job-based pay systems. In terms of variable pay, the average employee has 18.7% of their total annual remuneration contingent on performance.

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The average training received by a typical employee during the course of a year is 32.1 hours.

In the area of *training and development*, a significant number of firms' employees (46.4%) have received cross-training or are cross-utilised. The percentage of training in company-specific skills (65.2%) is far higher than training provided in general skills such as communication, problem-solving, etc. (33.2%). The average training received by a typical employee during the course of a year is 32.1 hours.

In terms of *employee communication*, 34.9% are involved in formal programmes designed to elicit participation or suggestions. Companies report sharing information with a substantial portion of employees: 72% are provided relevant operating performance information, 56% are provided relevant financial information and 61% are provided "strategic" information (mission, goals, etc.).

Firms having greater workforce unionisation are somewhat less likely to utilise HPWS.

In relation to *work structure*, 37.5% of employees are organised as part of a team in performing a major part of their work roles.

Firms utilising a set of HR practices labelled HPWS tend to invest more in R&D, compete more on the basis on differentiation (not cost), be somewhat larger and consider the HR function to be of greater competitive importance. The research also found that firms having greater workforce unionisation are somewhat less likely to utilise HPWS.

HPWS is associated with significant reductions in employee turnover and increases in firm productivity.

Increased use of HPWS is associated with significant reductions in employee turnover and increases in firm productivity. The increase in productivity associated with greater use of these HR practices is particularly striking. For example, if a firm were to increase its relative use of the set of high performance HR practices from "average" to "above average" it would increase employee sales productivity by 15.61%.

For the median firm in the sample, this represents an additional €50,032 in revenue per employee. For the typical firm in the sample, this aggregates to an additional €11,707,488 in total revenue due to increased labour productivity.

1. *More specifically, "above average" is one standard deviation above the mean.*

Section 1

Purpose and background

This study was undertaken to examine the "state of the art" human resource management in Irish business organisations. First, the survey sought to broadly describe both the HR practices being utilised and the extent to which the human resources function is viewed strategically by participating organisations. Second, the survey data were examined to determine whether or not human resource practices impact firm outcomes, notably employee turnover and productivity. Third, the survey was designed to explore the relationship between HPWS and corporate entrepreneurship and the relative use of HPWS among companies of different national "origins".[2]

Human resource management: A source of competitive advantage

A number of researchers have found positive relationships between human resource management systems and organisational performance. Variously called high involvement,[3] high commitment,[4] high performance[5] or sophisticated work practices,[6] there is a common theme in this developing literature. There is an emphasis on utilising a system of management practices giving employees the skills, information, motivation and latitude resulting in a workforce which is a source of competitive advantage, rather than a cost to be minimised. Placing a primary emphasis on the strategic role of a HRM system is a considerably different perspective for practitioners. For HR managers and the HRM function, it means new competencies and perhaps competing roles, requiring both value-enhancement and cost containment.

Although traditional sources of competitive advantage such as natural resources, technology, economies of scales, and so forth, create value, these resources are increasingly easy to imitate.[7] Therefore, human resources may be an especially important source of sustained competitive advantage. While there is debate[8] as to the specific configuration of practices which constitute "high performance" human resource management there is a growing set of prescriptive writing and empirical evidence suggesting that high performance work systems can enhance organisational performance.[9]

2. *This third element is not addressed in this report but interested readers can contact the authors.*
3. *Guthrie, 2001; and Lawler, 1992.*
4. *Arthur, 1992.*
5. *Huselid, 1995.*
6. *Delaney, Lewin & Ichniowski, 1989; and Koch & McGrath, 1996.*
7. *Pfeffer, 1994.*
8. *Becker & Gerhart, 1996.*
9. *See for example: Arthur, 1994; Datta, Guthrie & Wright, 2005; Huselid, 1995; Koch & McGrath, 1996; Kochan and Osterman, 1994; Levine, 1995; MacDuffie, 1995; Pfeffer, 1994; and Guthrie, 2001.*

Participating companies

Findings presented here are based on responses from 165 companies. While there was a great deal of variation in size, the median responding organisation had 234 employees and €75 million in sales revenue. In the three-year period prior to the survey, the average firm's workforce grew by 13%, while sales increased by approximately 34%. Responding organisations represented a variety of industries. As a percentage of the entire sample, companies designated the following industries as their "primary" industry:

Industries	Frequency
Agriculture/forestry/fishing	6.1%
Energy & water	1.8%
Chemical products	4.3%
Metal mfg.	15%
Other mfg.	33%
Building & civil engineering	17%
Retail & distribution; hotels	13%
Transport & communication	7%
Banking; finance, insurance; business services	15%
Personal, domestic, recreational services	4%
Health services	9%
Other services	6%
Others	24%

The average firm had been established for slightly over 37 years. Of the companies that responded, 42.9% are subsidiaries of foreign companies, including those from the USA (16%), Europe (24.5%), Asia (1.2%), and Canada (1.2%).

In this report we only include those companies with responses to both the human resource practices and general management questionnaires (165 companies).

For the *human resource practices* questionnaire:

- 61% of the respondents were human resource executives/managers (e.g., Human Resource Director, Human Resource Administrator)
- 39% of the respondents were senior executives (e.g., Managing Director, Chief Executive Officer) and other senior officers (e.g., Financial Officer, Operation Officer, etc.).

For the *general management* questionnaire:

- 73.9% of respondents were senior executives (e.g., Managing Director, Chief Executive Officer, Director of Country Business, Chairperson)
- 26.1% were other executive officers (e.g., Financial Officer, Operation Officer, Accounting Officer, Project Manager, Marketing Manager, etc.).

Section 2

Description of HR practices

Respondents were asked to describe, in four broad areas, the HR practices in existence in their firms during 2003-04. The four areas were:

- Staffing
- Performance management and remuneration
- Training and development
- Communication and participation.

Since practices vary across employee groups, questions relating to HR practices were asked separately for two categories of employees.

- **Group A** comprised production, maintenance, service and clerical employees
- **Group B** comprised executives, managers, supervisors and professional/technical employees.

Respondents indicated the proportion of each group covered by each practice. For each firm, these proportions were used in conjunction with the number of employees in each category to compute a weighted average. This approach provides a fairly sensitive indication of both the breadth and depth of practice implementation. Higher scores for a particular practice (i.e., closer to 100%), indicate more intensive use of that practice.

For example, one of the first results reported below indicates that the average response to the question: *What proportion of your employees are administered one or more employment tests prior to hiring* was 28.2%. This indicates that, for the average firm, 28.2% of employees are covered by this practice (i.e., are hired on the basis of one or more selection tests).

Findings

Human resources practices in Irish companies

1. Staffing

What proportion of your employees...	Score
Are interviewed during the hiring process using structured, standardised interviews (e.g., behavioural or situational interviews), as opposed to unstructured interviews?	63.2%
Are administered one or more employment tests (e.g., skills tests, aptitude tests, mental/cognitive ability tests) prior to hiring?	28.2%
Are hired for entry level jobs based on employment test(s) which have been analysed in terms of the test's ability to predict job success (i.e., the tests have been validated)?	22.0%
Are hired on the basis of intensive/extensive recruiting efforts resulting in many qualified applicants?	51.6%
Hold jobs which have been subjected to a formal job analysis to identify position requirements (such as required knowledge, skills or abilities)?	58.4%
Hold non-entry level jobs as a result of internal promotions (as opposed to hired from outside of the organisation)?	35.8%
Hold non-entry level jobs due to promotions based upon merit or performance, as opposed to seniority?	41.9%
Have job security: employment with the firm is almost guaranteed?	54.3%

2. Performance management and remuneration

What proportion of your employees....	Score
Receive formal performance appraisals or evaluations on a routine basis?	63.2%
Receive formal performance feedback from more than one source (i.e., feedback from several individuals such as supervisors, peers etc.)?	25.9%
Receive compensation partially contingent on individual merit or performance?	48.3%
Receive compensation partially contingent on group performance (e.g., profit-sharing, gainsharing, team-based)?	39.3%
Own shares of your organisation's stock (e.g., an employee stock ownership plan)?	19.7%
Are paid primarily on the basis of a skill or knowledge-based pay system versus a job-based system? (That is, pay is primarily determined by a person's skill or knowledge level as opposed to the particular job that they hold.)	26.6%
What proportion of the average employee's total annual remuneration is contingent on performance?	18.7%

Findings *cont'd*

Human resources practices in Irish companies

3. Training and development

What proportion of your employees....	Score
Have been trained in a variety of jobs or skills (are "cross trained") and/ or routinely perform more than one job (are "cross utilised")?	46.4%
Have received intensive/extensive training in company-specific skills (e.g., task or firm-specific training)?	65.2%
Have received intensive/extensive training in generic skills (e.g., problem-solving, communication skills, etc.)?	33.2%
What is the average number of hours of training received by a typical employee per year?	32hrs

4. Communication and participation

What proportion of your employees....	Score
Are involved in programmes designed to elicit participation and employee input (e.g., quality circles, problem-solving or similar groups)?	34.9%
Are provided with relevant operating performance information (e.g., quality, productivity, etc.)?	72.0%
Are provided with relevant financial performance information?	56.1%
Are provided with relevant strategic information (e.g., strategic mission, goals, tactics, competitor information, etc.)	61.4%
Are routinely administered attitude surveys to identify and correct employee morale problems?	32.4%
Have access to a formal grievance/complaint resolution procedure?	89.5%
Are organised in self-directed work teams in performing a major part of their work roles?	37.5%

Section 3

High performance systems: The impact on companies

This chapter provides a definition of High Performance Work Systems and constructs a single index which measures the extent of HPWS in a company. The chapter then shows the impact of this index of high performance on two key business concerns: employee turnover rates and productivity.

Defining and measuring High Performance Work Systems

A number of authors have argued that sustainable competitive advantage will accrue to those firms adopting a set of "high involvement" or "high commitment" human resource practices.

Based on practices recommended in the literature,[10] a number of those described in this survey were combined to form a single index representing a measure of *High Performance Work Systems*. Figure 1 identifies the specific practices in the areas of staffing, performance management, training and development and communication and participation.

Survey responses indicated the proportion of each employee group covered by each high performance work practice (0-100%). Using the number of employees in each group, a weighted average for each practice was computed.

In this approach, firms may vary in both the number of the above practices utilised and the extensiveness of employee coverage. In theory, organisations may range from those making no use of HPWS to those using *all* of the practices for *all* employees. A high score on the HPWS measure indicates relatively intensive use and investment in "high commitment" or "high involvement" human resource practices.

If proponents of these practices are correct, then their intensive use should lead to a highly motivated, skilled and empowered workforce whose goals are closely aligned with those of management, and positive organisational outcomes. On the other hand, less intensive use of high performance work systems indicates a more traditional, control-oriented approach to management.[11]

Firms having greater workforce unionisation are somewhat less likely to utilise HPWS.

Characteristics of organisations adopting HPWS

Statistical analyses revealed that the following organisational factors predict relative use of HPWS:

- Firms which compete in their product or service markets on the basis of differentiation (emphasising unique product or services) are more likely to utilise HPWS, than firms competing on the basis of low cost
- Firms that report the HR function to be of greater competitive importance are more likely to utilise HPWS
- Firms that invest more in research and development (R & D) are more likely to utilise HPWS.

10. *Guthrie, 2001; Datta et al., 2005.*

11. *Arthur, 1994: 673.*

Table 1 Building High Performance Work Systems: Key practices

High Performance Work Systems

Staffing	Performance management and remuneration	Training and development	Communication and participation
One or more employment tests administered prior to hiring	Access to a formal grievance and/or complaint resolution system	Intensive/extensive training in company specific skills	Routinely administered employee attitude surveys
Non-entry level jobs held as a result of internal promotions	Formal performance appraisal and feedback from more than one source	Intensive/extensive training in generic skills	Involvement in programs designed to elicit participation and employee input
Promotions are primarily based upon merit or performance, as opposed to seniority	Compensation partially contingent on group performance	Training in a variety of jobs or skills	Provided with information on operating performance
Hiring following intensive/extensive recruiting	Shares held by employees	Average number of hours of training	Provided with information on financial performance
	Pay based on a skill or knowledge based system	Self-directed teams major part of employees' work roles	Provided with information on strategic plans
	Total remuneration relative to the market		

- Larger firms are somewhat more likely to utilise HPWS
- Firms in the agriculture/forestry/fishing industry sector and the building & civil engineering industry tend to have low HPWS utilisation rates
- Firms in the chemical products sector tended to have high HPWS utilisation rates
- Firms having greater workforce unionisation are somewhat less likely to utilise HPWS.[12]

The relationship between HPWS and organisational effectiveness

HR management practices do not directly influence corporate performance, but rather do so indirectly by influencing the motivation, behaviour and performance of employees. This section describes the relationship of human resource practices with two important outcome measures: employee turnover rates and firm productivity.

12. *This effect is apparent even after controlling for the influence of industry, firm size and age. Looking at individual practices, firms having greater workforce union representation are less likely to utilise formal performance feedback, multi-source performance feedback, contingent compensation based on group performance, skill or knowledge-based pay or self-directed teams.*

Greater use of High Performance Work Systems has both statistical and practical effects on employee turnover and labour productivity.

Before providing greater detail, the summary conclusion is: Greater use of High Performance Work Systems has both statistical and practical effects on employee turnover and labour productivity.

In exploring the relationship of HR policies/practices with employee turnover and productivity, sophisticated multivariate statistical procedures were utilised.[13] In isolating and testing the impact of HPWS on turnover and productivity, a number of other variables were included in the analysis as "controls"; i.e., the effect of human resource practices discussed below is over and above the effect of the control variables. The control variables used in the analysis included the following:

- Firm size (based on numbers employed)
- Firm age
- Unionisation
- Primary industry.

HPWS and employee voluntary turnover

Employee voluntary turnover rates have been found to have important implications for firm performance.[14]

In general, firm performance suffers as voluntary turnover rates increase. In addition, previous work has suggested that use of HPWS can increase employee retention.[15]

In this study of Irish firms, the measure of firm employee voluntary turnover rates was taken directly from responses to the following survey question:

- Please estimate your annual voluntary employee turnover rate (per cent who voluntarily departed your organisation).

This question was asked separately for both categories of employees (*Group A*: production, maintenance, service, clerical; *Group B*: executives, managers, supervisors, professional/technical). A weighted average of these separate estimates was computed to represent the overall average rate of employee turnover for each firm.

After controlling for industry, size, age and union representation, the results suggest a fairly strong statistical relationship between the use of HPWS and increased employee retention. An increase of HPWS from the sample mean to one standard deviation above the sample mean decreases employee turnover by nearly 16% (from 6.36% to 5.36%).[16]

An increase of HPWS from the sample mean to one standard deviation above the sample mean decreases employee turnover by nearly 16%.

Research has shown that even modest decreases in employee turnover can sharply impact a variety of firm performance measures (e.g., accident rates, productivity, etc.).[17/18]

13. *A multiple regression procedure was used. This technique allows a researcher to test the influence of variables (e.g., relative use of a High Performance Work System) on an outcome of interest (e.g., firm productivity), while controlling for other variables that might influence this outcome (e.g., firm size, etc.).*
14. *Shaw, Gupta & Delery, 2005.*
15. *For example Guthrie, 2001; Huselid, 1995; Shaw et al., 1998.*
16. *Results indicate significant industry differences in turnover rates. In addition, results reveal the following significant relationships: Turnover was higher in larger firms and lower in older and more unionised firms.*
17. *Shaw et al., 2005.*
18. *In fact, analyses from the current study indicate that employee turnover strongly and negatively impacts firm productivity.*

It is worth noting here that the observed relationship between HPWS and employee turnover in the Irish results is almost entirely due to the ability of HR practices to reduce turnover among Group A employees (i.e., production, maintenance, service and clerical employees). The results suggest little or no association between HRM policies and practices and turnover rates among Group B employees (i.e., executives, managers, supervisors and professional/technical employees).

Greater use of HPWS may be more effective at retaining Group A employees because these HR policies and practices may be relatively unusual at this organisational level – making these firms more of an "employer of choice" for employees. [19]

Firms making greater use of HPWS are much more likely to experience higher rates of sales per employee.

HPWS and firm productivity

Labour productivity is generally defined as "total output divided by labor inputs". It indicates the extent to which a firm's human capital is efficiently creating output. While labour productivity *per se* does not guarantee long-term profitability and success, it is generally considered a necessary, if not sufficient, condition.

In this research sales *per employee* was used as a measure of labour productivity. Data on the most recent estimates of total sales and total employment were collected via the questionnaire. As with turnover, this analysis controlled other important factors, including primary industry in which firms compete, firm size, firm age, and union rates. [20]

Increased use of high performance HR practices would increase per employee sales productivity by 15.61%

In terms of statistical results, relative use of HPWS is associated with differences in labour productivity. Firms making greater use of HPWS are much more likely to experience higher rates of sales per employee. In practical terms, the results are striking. For example, holding all other variables (e.g., industry, firm size, etc.) at their respective means, the statistical model (i.e., regression results) predicts that if a firm were to increase its relative use of HPWS from "average" to "above average" (one standard deviation above the mean), this increased use of high performance HR practices would increase per employee sales productivity by 15.61%. For the median sample firm, this represents an additional €50,032 in revenue per employee. In aggregate, greater use of HPWS for the median sample firm would yield an additional €11,707,488 in sales revenue due to increased labour productivity.

A number of factors argue for caution in interpreting these results. First, we cannot claim that the use of particular HR practices *causes* firm productivity, since data on HR practices and these firm outcomes were collected simultaneously from the same source (the survey). Second, whenever survey response rates are less than 100%, bias may be introduced into the data.

However, despite these reservations, the magnitude of the relationships between the use of HPWS and productivity, coupled with the similarity of these findings to those of other studies[21] leads to the following simple, yet powerful conclusion: *Effective people management can be a significant source of competitive advantage.*

19. *Although not reported formally here, the study also collected data on employee absenteeism. Statistical (i.e., regression) analysis reveal a similar pattern: After controlling for the influence of industry, union representation, size and age, greater use of HPWS significantly reduces rates of employee absenteeism.*

20. *As the reader might expect, there were large productivity differences across industries.*

21. *Datta et al., 2005; Guthrie, 2001; Huselid, 1995.*

21. *Datta et al., 2005; Guthrie, 2001; Huselid, 1995.*

Section 4

Conclusions

A substantial number of the 165 Irish firms participating in this survey are utilising a broad range of sophisticated human resource practices for a significant percentage of their workforce. In addition, many organisations report taking a fairly strategic approach to human resource management; that is, HR issues and policies are integrated into the general business planning process.

Based on a number of authors' prescriptions, several of the surveyed HR practices were combined to form a measure of high performance work systems.

Consistent with prescriptions in the literature, analytical results indicated that greater use of HPWS reduced employee turnover and were associated with statistically and practically significant increases in firm productivity. While these analyses do not address the relationship between HR practices and "bottom line" measures of firm profitability or market value, the productivity effects are substantial enough to infer a positive relationship.

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National Centre for Partnership and Performance

16 Parnell Square
Dublin 1, Ireland

Telephone 353.1.814 63 00
www.ncpp.ie

Forum on the Workplace of the Future

It is now accepted that the key to Ireland's future economic and social success lies in moving quickly to high value-added and high skilled activities.

To make this transition, we need workplaces that are innovative, dynamic and capable of adapting to change; workplaces that enjoy the creative commitment of employers and employees.

Our workplaces must be capable of creating new opportunities in an increasingly competitive global environment.

To foster in-depth discussion and analysis on how we can support the development of such workplaces in Ireland, the National Centre for Partnership and Performance, at the request of the Irish Government, established a Forum on the Workplace of the Future.

The Forum has helped to build a clearer picture of the changes that are needed in workplaces in both the public and private sectors, in order to compete successfully in a modern knowledge economy.

It has developed an ambitious vision for Ireland's workplaces and an integrated set of recommendations, which together constitute a new **National Workplace Strategy**.

The Forum has assembled a wealth of information and analysis on Irish workplaces and workplace change generally. This can be accessed at the Forum's website **www.ncpp.ie/forum**. An Irish language version of this document is also available on the Forum website.