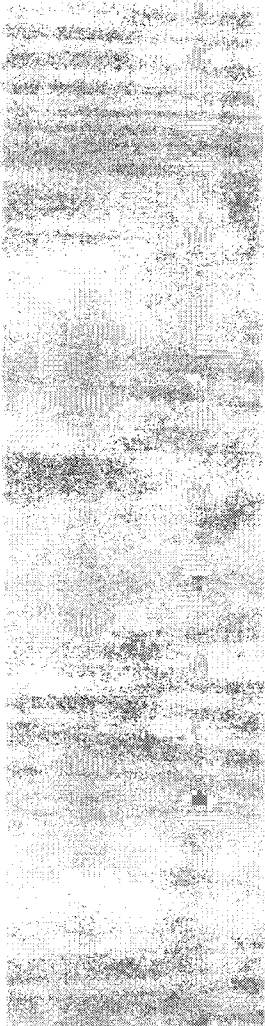


# The Need to Accumulate Human Capital Across Levels of Export Intensity: Activating Resources that are Increasingly Difficult to Mobilise



## Abstract

With increasing levels of export intensity, firms begin to face new demands. The first set of resources brought to bear on the issues, and those resources that are most quickly mobilised, are the employees. Indeed, higher levels of exporting require activating relatively less mobile resources through the building of organisational structures and mechanisms for managing repositories of knowledge (particularly organisational specialisation and selectively hiring appropriately skilled staff). This paper explores the management of human capital across different levels of export activity in Australian manufacturing firms. Analyses were based on 90 Australian-headquartered manufacturing exporters that responded to a survey. Overall, the results support the notion that firms need to accumulate knowledge as they internationalise. These results are discussed in terms of their consequences for HRM practices.

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## INTRODUCTION

Human resources (HR) have been proposed as one of the most important sources of competitive advantage in the global environment (Barney 1991). Consequently, it is crucial that people management issues are considered in the management processes of international firms for them to achieve competitive advantage (Welch & Welch 1994). Despite the growing literature in the field of international management and global strategy (see the review by Chng & Pangarkar 2000), surprisingly little is known about how internationalising firms manage their HR (Welch 1994), especially those firms in the earlier stages of internationalisation, such as that of exporting. The latter is perceived to be the most common way of doing business internationally (Luostarinen & Welch 1990) and consequently, is an important component of Australia's international balance of payments.

Empirical evidence arising from research into the management of HR by international firms in the Australian context has been limited (De Cieri & Dowling 1997). A continuing examination of human resource management (HRM) issues in the international setting is encouraged in a context of corporate challenges and new opportunities as business activity transcends national borders (Dowling & Schuler 1990, De Cieri & Dowling 1997). The growing awareness of the importance of HR management in the global arena is recognised, yet a better understanding is vital in terms of globalisation, benchmarking, recruitment and training issues. Therefore, this study aims to contribute to relevant theory by examining the nature of the management of HR and organisational design issues in Australian manufacturing firms across levels of exporting.

This paper first examines exporting as a key component of internationalisation and the potential impact of HR practices on human capital. Other potentially important influences on the management of exporting firms are reviewed, such as elements of an organisation's structure and the involvement of unions. Together with some manipulation checks, these factors represent the range of elements that are examined in this study to determine the key variables that differentiate between firms of varying export intensity.

## MANAGEMENT OF HUMAN CAPITAL AND DEGREES OF EXPORTING

### Degrees of Exporting

The strategic management of manufacturing firms has been the topic of many recent studies (Orr 1999, *Productivity Commission* 1999, Dow 2000). There is also an increasing focus on the internal structures of manufacturing firms, specifically the linkage between manufacturing strategies and HR practices (Snell & Dean 1992). Furthermore, there is a demand for research into the internationalisation of Australian manufacturing firms, especially how firms utilise strategic HRM to enhance the human stock as they became involved in more exporting. Therefore, the current study addresses these gaps by examining the relationship between export intensity, human capital-enhancing HR practices, the decentralisation of decision making and unionisation in Australian manufacturing firms.

In a global environment of reductions in trade barriers, many industries are less likely to be considered as multi-domestic industries. Indeed, exporting is becoming increasingly important to world economic affairs due to the globalisation of markets (Young 1995). Given the problems

inherent in measuring the degree of internationalisation (see the debate between Sullivan 1994, 1996, and Ramaswamy, Kroeck & Renforth 1996), a focus on one key variable will avoid many of the problems associated with the investigation of the more complex, overarching concept of internationalisation. Exporting is the most common foreign market entry mode (Luostarinen & Welch 1990), particularly due to minimised business risks, the low resource commitment and high flexibility (Young, Hamill, Wheeler & Davies 1989).

Exports, as the critical first stage(s) of the internationalisation process, allow the firm to accumulate international business experience and knowledge. Similarly, the process models of internationalisation, especially the cumulative models, such as that of Bilkey and Tesar (1977), emphasise exporting as the vehicle for accumulating knowledge of, and experience in, international business. The notion of stages within the exporting process is compatible with the possibility that variables associated with export activity may not necessarily be linear (Gomes & Ramaswamy 1999). As the level of export activity increases, export firms would have to accumulate further knowledge, particularly if they venture into markets that are further away in terms of geographical distance (Dow 2000). The knowledge required to conduct export activities is a dimension of a firm's HR (Andersen 1993).

## Human Capital

Specific HR practices could be used to enhance the human capital of employees. Indeed, such practices are indicators of a firm's investment in HR (Snell & Dean 1992). With the increasing focus on the management of knowledge, as a source of competitive advantage, the human capital approach provides the opportunity for emphasising the intellectual aspects of capital (Petty & Guthrie 2000). Others (e.g., Rowden 1995, Jayaram, Droge & Vickery 1999) have also concluded HR practices are related to a firm's performance in the manufacturing industry.

To increase productivity through human capital, the firm needs to harness the potential contribution of the employees. This human capital must then be developed and managed as a core competency of the firm, and a potential source of competitive advantage (Barney 1991). A key mechanism for harnessing the human capital is by using appropriate HR practices (Youndt, Snell, Dean & Lepak 1996). Indeed, the importance of HR practices in international business operations and the significance of understanding the differences in employment relations cannot be underestimated (Bamber & Lansbury 1993).

HR practices can also be used to match the firm's HR characteristics with the specific stage of internationalisation. Exporting is generally used as a vehicle for manufacturing firms to accumulate knowledge of, and experience in, international business (Bilkey & Tesar 1977). Organisations can put in place the internal systems to encourage and enhance the accumulation of knowledge. Empirical evidence has demonstrated that human capital-enhancing HR practices are important as a mechanism for enhancing the accumulation of knowledge (Snell & Dean 1992, Youndt et al. 1996).

A key mechanism for harnessing the human capital is by using appropriate HRM practices (Youndt et al. 1996). Similarly, human capital-enhancing HR practices have been found to be positively correlated with the adoption of advanced manufacturing technologies (Snell & Dean 1992). For instance, the adoption of HR practices which focused on selective staffing was

shown to contribute towards the development and maintenance of employees who were able to adapt to the demands and pressures of internationalisation. The use of HR to develop and harness knowledge is consistent with the human capital theoretical approach, which argues the skills, knowledge, and abilities possessed by the HR would provide economic value to organisations (Schultz 1961, Parnes 1984). Proponents of human capital theories argue that when complemented by the adoption of HR practices, there is a positive relationship between firm investment in human capital and performance (Youndt et al. 1996).

Within the manufacturing management literature, manufacturing strategy has been described as the match between employee competencies and the extent of competitiveness in the market (Orr 1999). This notion of a match between HR and a firm's internal and external structures is consistent with the literature on strategic HRM (Schuler, Dowling & De Cieri 1993). The emphasis for exporters is on the effectiveness of strategic HR practices and human capital-enhancing HR practices to manage the knowledge required to conduct export activities (Andersen 1993). The level of knowledge acquired would, in part, rely on the types of HR practices used to enhance learning. Therefore, it is expected that organisations will adopt more human capital-enhancing HR practices as the level of export intensity increases.

***Hypothesis 1:** There are significant differences in the adoption of human capital-enhancing HR practices across firms with different levels of export intensity.*

## **Internal and External Structural Factors and Exporting Firms**

The volatility of the international business environment also requires the internal operations of the firm to be flexible (Buckley & Casson 1998). Internationalised firms face a number of pressures in the international business environment, such as the need to achieve co-ordination and the decentralisation of organisational practices and cross-cultural management issues (De Cieri & Dowling 1999). There are also a number of organisational-level constraints on the HRM practices of the local subsidiary including an organisation's structure and degree of control exercised by the parent or corporate office (Campbell, Gould & Alexander 1995). Subsequently, there is a need for MNCs to maintain a balance between co-ordination, control and autonomy to ensure international competitiveness (Bartlett & Ghoshal 1987, Garland, Farmer & Taylor 1990). These 'structural' factors have been said to be one of the fundamental problems in the management of multinational corporations (Taggart 1992).

Recent studies (such as De Cieri & Dowling 1997) have provided evidence for the importance of different national contexts. Argument has been made that future research into strategic international HRM should focus on the issue of centralisation-decentralisation in organisational and HRM structure. As organisations grow and become more international in outlook, decentralised decision-making is a structural feature worthy of consideration to ensure the various parts of the organisation are integrated.

***Hypothesis 2:** There are significant differences in the decentralisation of people management-related decision-making and the levels of vertical hierarchy across firms with different levels of export intensity.*

Local institutions, one of the strongest of which may be unions, have an impact on the choice of HR practices (Kitay & Lansbury 1997, Morehead, Steele, Alexander, Stephen & Duffin 1997). Indeed, the salience of HR practices in international business operations and the importance of understanding the differences in employment relations cannot be underestimated (Bamber & Lansbury 1993). Trade unions have been active in ensuring that the impacts of globalisation have been taken into consideration in HR strategies. The entry of international competitors can have a negative impact on the trade unions' ability to maintain and recruit new members while industries that have a high export intensity tend to have higher union density than those industries which export less (Blumenfeld, Crawford & Walsh 1999). Therefore, a significant difference is expected in the degree of unionisation across firms with different levels of export intensity.

***Hypothesis 3:*** *There are significant differences in the degree of unionisation across firms with different levels of export intensity.*

Previous research (such as Bonaccorsi 1992, Calof 1993, Wolff & Pett 2000) has shown that organisational size has an impact on internationalisation. More specifically, firm size has been found to be associated with export intensity, although the relationship is often inconsistent (Bonaccorsi 1992). In addition, size has also been found to influence the adoption of HR practices in manufacturing firms (Golhar & Deshpande 1997). Size has been typically seen as either input-oriented, in terms of number of employees, or output-oriented, in terms of overall revenue (Beamish, Karavis, Goerzen & Lane 1999). To ensure a comprehensive assessment of size, both indicators need to be examined.

***Hypothesis 4:*** *There are significant differences in organisational size and overall revenue across firms with different levels of export intensity.*

In summary, the current study examines the adoption of human capital-enhancing HR practices across different levels of export activity in the Australian manufacturing industry. Firm structure and potential influences from local institutions, particularly in terms of unionisation will also be examined. The aim is to explore a range of organisational issues in order to incorporate a human capital perspective into the management of the exporting stages of internationalisation.

## METHODOLOGY

### Context

One of the objectives of government policy in Australia since the mid-1980s has been to increase and to diversify Australia's exports earnings (DITC 1991). Although there has been a decline in the manufacturing industry, Australia's exports of manufacturing goods and services have been growing for the last decade after a period of relative stability (ABS 1999). In the ten years from 1987-88 to 1997-98, Australia's income-based measure of gross domestic product increased at an average of six point five per cent while exports increased at a notably higher rate of eight per cent per year. Similarly, the increase in manufactured goods exports averaged 14 per cent over this period. Most of these exports were to Japan, the United States (US), the Republic of Korea, New Zealand, and the Association of South East Asian Nations countries.

## Sample

The sample was drawn from a Dunn and Bradstreet list of companies in the selected industries with more than 50 employees. The respondents were drawn from the following manufacturing industries (as selected at the two-digit Standard Industry Classification, or SIC, level), comprising printing, publishing and allied manufacturing (SIC 27), chemical manufacturing (SIC 28), primary metal manufacturing (SIC 33), fabricated metal manufacturing (SIC 34), and industrial machinery and computer manufacturing (SIC 35). The survey was typically sent to the Managing Director or General Manager.

Research has shown that the country of origin of the parent country has an influence on the adoption of HR practices (e.g., McGraw 2002). For instance, a recent study has found that workplaces with headquarters in Australia, Japan, the UK and the US in different regions of the Pacific Rim, employed distinctive employee relations practices (Rodwell & Teo 1999). In order to minimise the variety of influences that may impact on the firms that are outside the current study's scope, especially headquarter-subsidary issues, only firms that had their company headquarters in Australia were selected for the current research.

Upon telephone follow-up, more than 20 per cent of the organisations were excluded from the list as they had erroneous information (e.g., number of employees, core business SIC). Altogether, 26 per cent of the organisations responded to the survey. The responses were limited by applying constraints associated with the key demographic variables of country of headquarters, number of employees, and export revenues. After excluding cases with missing responses, 90 cases were used in the analyses.

## Measures

HR practices that support and develop a firm's human capital were assessed using three of the scales developed by Snell and Dean (1992). Specifically, the human capital measures used were: *Selective Staffing* (seven items) with a Cronbach's alpha of 0.73, *Comprehensive Training* (eight items) with a Cronbach's alpha of 0.87 and *Equitable Reward Systems* (eight items), with a Cronbach's alpha of 0.52.

The structural elements of the organisation were measured by constructing two scales adopted from Delaney and Huselid (1996). The first scale, *Decentralisation*, was based on an eight-item scale and is presented in Appendix A (Cronbach's alpha of 0.88). The anchors were adjusted to those of Miller and Droge (1986). The decentralisation scale examined decision-making authority for eight management-related decisions and each item was scored from zero (0), "the decision is made at the level of the board" through to five (5), "the decision is made by operatives on the shop floor". The *Vertical Hierarchy* scale is the single item measure used by Delaney and Huselid (1996). The degree of *Unionisation* in the firm was assessed by asking "approximately what percentage of your employees are members of a union?"

Foreign sales are a meaningful first-order indicator of a company's involvement in international business (Sullivan 1994) and have been used in previous studies into the internationalisation of exporting firms (e.g., Wolff & Pett 2000). Consequently, firms were also asked to provide their export revenue for the prior year. The *Export Intensity* measure

was obtained by calculating the percentage of overall revenue that was obtained from exports. The exporting stage of the firm was operationalised by three levels of export intensity - low, medium and high - based on natural groupings in the degree of exporting index that was reflected by step function changes in frequency by value (in a similar manner to the assessment of scree plots or changes in differentials).

## Manipulation Checks

There are two manipulation checks as given with hypothesis four. The two manipulation checks are related to the size of the firm in terms of overall revenue, and the number of employees. The manipulation checks will assist in confirming that any differences present on the main variables of interest are not effects due to differences in size or revenue, but are due to the respective variables of interest. The number of employees was obtained by asking the firms "approximately how many full-time equivalent employees are there in your organisation?" and a similarly direct question was used to obtain their overall revenue for the prior year.

## Analyses

The differences in the extent to which human capital based HR practices varied across the export intensity levels were tested using one-way analyses of variance (ANOVA). The specific variable means that were significantly different from each other across categories were determined using Bonferroni post hoc tests. All analyses were undertaken by using the Statistical Package for the Social Sciences.

## RESULTS

The key grouping variable, representing the increasing levels of exports, categorised the proportion of the company's revenue into three categories - low exports (0.01 to 9%), moderate exports (10 to 19%), and high exports (20 to 95%). The three categories had, from the low category to the high category respectively, 45, 20, and 25 cases. The overall revenue, from low to high category, is \$45.03 M, \$21.15M and \$205.59M (expressed in Australian dollars) respectively.

Table 1 reports the assessed variables of human capital practices, structural features, and corporate properties across categories of export intensity. Each assessed variable is shown as a category mean together with omnibus ANOVA scores as well as results of substantial mean differences. The significant differences are provided in the right hand column of Table 1. It is demonstrated in Table 1 that the use of selective staffing increased with export intensity and the use of comprehensive training by firms in the higher export categories was greater. Indeed, comprehensive training in the moderate export intensity firms was substantially different than in the low exporting firms. The high export firms had rewards that were seen to be significantly more equitable than firms with moderate export activity. Interestingly, decentralisation was non-significantly different across levels of export intensity whereas moderate and high export intensity firms reported significantly different levels of vertical hierarchy. There were non-significant differences in the degree of unionisation, number of employees and overall revenue.

Table 1: Means Contrasts Across Export Intensity

Variables	Export Intensity			ANOVA		Means Contrasts
	Low 45	Moderate 20	High 25	F	p<	p>0.05
Selective Staffing	29.83 (4.66)	31.11 (4.40)	34.00 (4.03)	6.7	.01	L < H
Comprehensive Training	33.51 (8.10)	40.18 (5.28)	36.24 (6.70)	5.3	.01	L < M
Equitable Rewards	34.53 (4.01)	32.30 (4.41)	35.36 (3.30)	3.6	.05	M < H
Decentralisation	15.15 (4.05)	17.13 (6.30)	18.17 (5.03)	3.1	.10	n.s.
Vertical Hierarchy	4.49 (1.44)	3.90 (0.79)	5.12 (2.22)	3.3	.05	M < H
Unionisation (%)	17.60 (22.6)	29.60 (35.0)	30.50 (27.8)	2.3	.11	n.s.
No. of Employees	187.64 (336.01)	98.92 (75.38)	386.04 (770.35)	2.3	.11	n.s.
Overall Revenue (\$)	45,028,889 (115,868,840)	21,150,000 (18,176,836)	205,586,800 (793,453,035)	1.4	.24	n.s.

**Notes:**

- a. Values in parentheses are the standard deviations of the means.
- b. L = Low, M = Moderate, H = High levels of export intensity.
- c. n.s. = non-significantly different.

## DISCUSSION

The current study examined the adoption of three important HR practices in Australian manufacturing firms. There were significant differences in the support and development of human capital across the three levels of export activity. Generally, the results show that as the export activities of the firms grew, so did their adoption of HRM practices that support and develop human capital. The non-linear relationships may be a factor of sample sizes. The focus on various elements of human capital at different levels of export activity appears to broadly follow the processes given by international management researchers. Therefore, there was some support for the first hypothesis.

Surprisingly, there was scant support for the other hypotheses. For instance, decentralisation, unionisation, firm size, and the overall revenue did not appear to have any significant impact on the choice of human capital-building HRM practices. The results of Table 1 provide



relatively weak support for the second hypothesis. Specifically, the results show a non-significant difference in the decentralisation of people management-related decision making but the levels of vertical hierarchy was significantly different between moderate and high export intensity firms. Finally, there was a lack of support for hypotheses three and four with unionisation, firm size and overall revenue not having statistically significant differences. Nevertheless, the study findings do reveal relativities between HRM practices and the facilitation of export intensity. These reflections are presented as Table 2.

Table 2: Nature of Human Capital Requirements Across Levels of Export Intensity

Differences between firms with low and moderate export activity	Differences between firms with moderate and high export
<p>Increase training; Less equitable rewards.</p> <p><b>Implication:</b> At the moderate level, the organisation is straining to perform the export activities on top of its domestic activities.</p>	<p>More selective staffing; More levels of hierarchy.</p> <p><b>Implication:</b> At the high level, the importance and size of the export activity is being recognised, and strategically prepared for, through the addition of new layers of co-ordination and more sophisticated selection practices.</p>

The progression across the categories of export activity first emphasises an increase in selective staffing especially between the low and high export activity categories. The gradually increasing use of comprehensive training becomes noticeably different between the low and moderate export activity levels. Finally, firms with high levels of export activity introduce more equitable rewards and more levels of hierarchy than firms with moderate levels of export activity.

The progressive increase in the use of practices that develop human capital supports the parallel contentions in the international management literature. As firms gain more experience in international business operations, they tend to adopt HRM practices that ensure that the firm has the appropriate international skills and competencies, or human capital, appropriate for international business operations (Welch & Welch 1994). The findings of this study also indicate that firms show a progression through the levels of exporting and that they do so from a low human capital base which is potentially a reflection of how exporting is one of the most common international market entry modes, particularly for firms with less international experience (Luostarinen & Welch 1990). These export firms are probably new entrants into the international business arena. As such, their emphasis could still be in the domestic market, rather than in the international arena. In contrast, the moderate and high export firms are increasingly serious about developing their human capital through the adoption of sophisticated HR practices, a development which they see as being integral to their being able to participate in the arena of international business.

For the issues of control and coordination, there were non-significant differences in the extent of decentralisation. Australian manufacturing firms at all three levels of exporting had similar levels of decentralisation in their decision making, despite the increasing number of levels in their hierarchy. In turn, the increasing number of levels of hierarchy across the levels of export activity appears to reflect the necessity of greater coordination effort and

specialisation. The significant differences in the adoption of equitable rewards and increasing vertical hierarchy between moderate and heavy exporting firms indicate the importance of linking a firm's compensation strategies with its overall business objectives (Balkin & Gomez-Mejia 1990). Surprisingly, contrary to the literature, there were non-significant differences in the degree of unionisation across the various levels of export intensity. A possible explanation could be attributed to the declining strength of the trade unions in Australian industry, especially in manufacturing (Morehead et al. 1997). As a result, trade unions might not have the necessary influence over the recruitment of new members in the manufacturing industry. In addition, due to the nature of the industrial relations systems and processes in the Australian arena, manufacturing firms have an established process of consultation with the trade unions. As such, they may not be as influential in the employment relations-related issues caused by internationalisation.

The findings of this study provide some support for the literature on the strategic function of the international HRM function in international business operations (Schuler et al. 1993). The findings reported in this paper also support previous research in Australia (Welch 1994, Fisher, Dowling & Garhnam 1999), specifically, that HR departments are becoming more involved in strategic decision-making. The study findings also contribute to the Uppsala Internationalisation Model of international management theory (Johanson & Vahlne 1990). The evidence presented in this study suggests that as export intensity increases, Australian firms emphasise the buying of skills, experience and knowledge through selective staffing. That is, sophisticated human capital HR practices are adopted in the moderate and heavy export firms in their quest for international market share. As these firms became more experienced in international business, they placed more emphasis on using their international HRM function to achieve success in their global strategies. Alternatively, the development of their human capital may also have been a necessity for the survival of the firm, as well as providing them with a better competitive ability. The current study provided support to findings from previous Australian studies (e.g., Orr 1999, *Productivity Commission* 1999) especially in relation to the adoption of HR practices as a means to focus on the creation of human capital required for mastering new production techniques. These advanced manufacturing skills and abilities are related to components of human capital, and are important elements in enhancing export performance.

## Limitations

This study is not without limitations. The focus of this study on levels of export intensity could lead to a limitation whereby firms at higher export levels were not as specifically examined as they may warrant. Similar results to those reported in this paper were found when four categories, after splitting the highest category into two, were examined. However, the low numbers in the higher levels of export activities prevented their being examined in finer detail. Conversely, the low numbers of firms with very high levels of export activity reflects the nature of internationalisation, with highly internationalised firms moving toward using subsidiaries when their activity in a particularly country or region is high (Bartlett & Ghoshal 1987).

In this study, CEOs and General Managers were the main informants. A number of scholars (such as Tsui 1987, Galang 1999) argue that the HR function has multiple stakeholders who have different expectations of the department. They have demonstrated that multiple perspectives of HRM provide a comprehensive notion of the contribution of HRM towards performance. Future research should collect data from multiple stakeholders, including trade unions and customers, to explain the relationship between HR function and organisational performance.

## CONCLUSION

The results of this study show that increasing levels of export activity influenced HRM practices. Specifically, the evidence demonstrates firms progressively develop more HRM practices that support and develop their human capital. That is, just as the stage models of internationalisation emphasise accumulating experience in international business, firms increase their use of human capital-enhancing HR practices as they become more active exporters. The progression across the categories of export intensity, from low to high, first emphasises an increase in selective staffing, the use of more comprehensive training, and finally, the firms with high levels of export intensity introduce more equitable rewards across more levels of hierarchy.

The nature of these differences appears to indicate that as the firm faces the demands of exporting and comes under strain the first set of resources brought to bear on the issues, and those resources that are most quickly mobilised, are the employees. Specifically, the mechanism of training is used to increase the knowledge levels of employees and managers. Later increases in exporting are likely to be addressed through the building of organisational structures and mechanisms for managing repositories of knowledge. With exporting intensity, typically only the early phase of internationalisation, further research is required to examine the development of human capital across stages of increasing multinational activity.

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## Appendix A: The Questionnaire Decentralisation Items

Please indicate the level in your firm at which someone has the authority to make decisions about the following issues.

Who <i>actually</i> makes the <i>final</i> decision about:	>CEO (Board)	CEO	Dept head	Sub-dept head	Line manager	Operative
1. ... the number of people employed here?	0	1	2	3	4	5
2. ... which new employees to hire?	0	1	2	3	4	5
3. ... evaluating worker performance?	0	1	2	3	4	5
4. ... worker promotions?	0	1	2	3	4	5
5. ... wage rates or salary levels?	0	1	2	3	4	5
6. ... discharging or laying off employees?	0	1	2	3	4	5
7. ... work scheduling and overtime?	0	1	2	3	4	5
8. ... using subcontractors or temporary employees?	0	1	2	3	4	5

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