

Slash and Burn or nip and tuck ? Downsizing, Innovation and Human Resources

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Abstract

Workforce downsizing has become a popular HR practice by management over the last few decades. But surprisingly its impact on a number of organizational outcomes remains ambiguous. In this study we examine the link between different types of employee downsizing and organizational innovativeness. Our results, based on a survey of UK firms, indicate that the impact of workforce downsizing on innovation is contingent on the speed of implementation and the motive for downsizing. Contrary to expectations, the results reveal that the size of workforce reduction has no significant impact on innovation.

Keyword: Workforce reduction, downsizing, innovation, product innovation, human resources.

Every year thousands of companies lay off their workers in the hope of enhancing organizational efficiency, reducing cost and improving organizational performance. Research on the impact of downsizing, however, is inconclusive and a large number of companies rather than become “lean and mean, often end up lean and lame” as a result of downsizing (Henkoff 1994, p. 58). In this paper we focus on the impact of employee downsizing on organizational innovativeness. A number of scholars have demonstrated the importance of innovation to organizational competitiveness in the current challenging and rapidly changing business environment (Brown and Eisenhart, 1995; Cefis and Marsili, 2005; Christensen, 1997; Cumming, 1999; Dougherty, 1992; Franco, 1989; Higgins, 1995; Hitt et al., 1996; Tushman and O'Reilly, 1997). The Resource Based View (RBV) and dynamic capability literatures consistently refer to organizational innovation as one of the critical organizational capabilities for achieving and sustaining competitive advantage (Prahalad and Hamel, 1990; Teece and Pisano, 1994; Teece et al., 1997; Verona, 1999; Winter, 2003). Indeed, many firms make innovation their guiding strategic imperative (Hitt et al., 1991). Further, a core thesis of the strategic human resource management (SHRM) literature is that, in the current knowledge based economy, the durability of competitive advantage depends to a large extent on the value of human assets and intellectual capital and ability to capture and use tacit knowledge which requires a stable work environment (Wilkinson et al 2001 ,Guthrie and Datta, 2008: 109).

In parallel to the increasing importance of innovation, downsizing - defined in this paper as a significant reduction of workforce (Burton et al., 1996)- has gained legitimacy and has become a widely practiced cost cutting strategy (Baumol et al., 2003; Cameron et al., 1991; Cascio, 1993; Cascio et al., 1997; Chorely, 2002; Fisher and White, 2000; Love and

Nohria, 2005; Luthans and Sommer, 1999; McKinley et al., 1995; Mone et al., 1998, Said et al 2007, Wilkinson 2005). The assertion that downsizing affects organizational innovation has long been espoused but has not been theoretically conceptualized, nor has it been empirically tested (Cascio and Young, 2003) although work does exist on the negative consequences of downsizing especially on morale and organisational memory(Boomer and Jalajas1999, Amabile and Conti 1995 and Dougherty and Bowman 1995)Given the pivotal importance of innovation, the widespread practice of downsizing and the potential impact the latter has on the former, there is a practical and theoretical need to examine the link between the two.

Yet, surprisingly, despite its importance, our understanding of the association between downsizing and innovation is very limited. This study takes a critical step to close this research gap by examining the relationship between downsizing and innovation output measured by new product development. In line with previous empirical research that showed that the outcome of downsizing is influenced by the type of downsizing (see Love and Nohria, 2005; Cameron et al., 1993; and Cameron, 1994), in this study we address the relationship between downsizing and innovation by examining the impact of different downsizing methods on innovation. Specifically, we aim to answer the following question: what is the link between the speed of downsizing, level of downsizing and reason for downsizing and innovation output and what are the implications of HR in this process? The relationship between downsizing and innovation output is measured by the variation in new products produced by the firm before and after it downsized. By using new product development as a measure of innovation output, our study is in line with past research (e.g.

Hitt et al., 1991; Teece and Pisano, 1994; Kusunoki et al., 1998; Winter, 2003) that identified product innovation as the key dynamic capability underpinning competitive advantage of firms. For instance Teece and Pisano (1994:541) defined dynamic capabilities as ‘the subset of the competences/capabilities which allow the firm to create new products and processes and respond to changing market during the circumstances’. Similarly, Winter (2003: 992) classified new product development as “a prototypical example of a first-order’ dynamic capability”.

While there are clearly implications for HRM given its and growing prominence this aspect of HRM rarely merits treatment in the texts (Guthrie and Datta, 2008). In those few texts that recognize its existence the focus is usually on a discussion of how to avoid the legal pitfalls when reducing the workforce or a simple attempt to quantify its use. Much rarer is any discussion that examines the nature, significance and aftermath of making people redundant. This neglect is a serious and somewhat puzzling one (Redman and Wilkinson 2009) .As Chadwick et al (2004) note successful performance following downsizing requires HR practices that continue to promote discretionary efforts of employees, retain valuable human capital and reconstruct valuable organisation structures. Similarly, scholars that looked at the other side of the coin – employment stability – (c .f. Pfeffer 1998) argue that, in the long run, employment stability yields healthy work environment and improves organizational innovativeness.

Extant Literature and Research Gap

Extant research on the association between workforce reduction and a plethora of factors that are associated with organizational innovativeness has produced conflicting results. On the one hand, a large body of extant literature contends that downsizing has a deleterious impact on the human resources factors that facilitate and support innovation. Arguing that downsizing damages social networks (Shah, 2000), leads to loss of knowledge (Cole, 1993), and disrupts learning capacity (Fisher and White, 2000: 249), it views downsizing as a practice that is harmful to organizational innovation capability as it produces a work environment that inhibits innovation. For instance, several scholars argue that given that downsizing is often associated with cutting costs, downsizing firms may provide less training for their employees, and recruit less externally (Bommer and Jalajas, 1999). Consequently, downsizing could negatively affect the level of knowledge and skills brought into the firm, which subsequently affects, for example, the firm's ability to absorb and modify new technologies (Hoffman et al., 1998). As a result, downsizing could "hollow out" the firm's skills capacity and subsequently its ability to innovate (Littler and Inns, 2003: 93). In addition, employees may be negatively affected by the stress and uncertainty created by downsizing (Amabile and Conti, 1999; Greenhalgh, 1983; Brockner et al., 1987) and may react with reduced organisational commitment, less job involvement, and reduced work efforts (Brockner, 1988; Byrne, 1994; Greenhalgh, 1983) as a result of downsizing.

On the other hand, several scholars have suggested that downsizing can spawn innovative activities when it is associated with formation of multi-skilled teams and flatter organizations structures (Baumol et al., 2003). Boone (2000: 595) notes that while generally downsizing is bad for innovation "there are examples of successful downsizing operations which substantially improved a firm's innovation record". Similarly, Hammer

(1996) argued that downsizing often results in better teamwork and an empowered multi-skilled workforce which encourage new idea generation, ingredients which are necessary for innovation. Further, elimination of positions and management layers by downsizing may create an internal environment favorable to the generation and survival of new innovative ideas (Ross, 1974). Employees working in flat organizations with few layers of management tend to work in diverse teams bringing together complementary skills, frequently exchange ideas across teams, and have better communication channels than those working in centralized and hierarchical organizations, which in turn generate high level of new ideas (Subramanian and Nilakanta, 1996). We hope to reconcile these conflicting and competing view points by examining the link between different types of downsizings and innovation output.

Effectively managing work force reduction is thus of increasing importance in HRM practice not least because of its greater scale and frequency but also because of the potentially serious negative effects of its miss-management (Thornhill and Saunders (1998; Wilkinson 2005). The mis-management of work force reduction can clearly cause major damage to both the organization's employment and general business reputations. Damage to the former can seriously effect an organization's selection attractiveness with potential future employees by producing an uncaring, hire and fire image and affect the employer brand (Dewettinck and Buyens, 2002). Similarly bad publicity over retrenchment can cause customers to worry that the firm may go out of business or give rise to problems in the continuity or quality of supplies and services.

There have also been increasing recent concerns about the organizational effectiveness of the post-downsized "anorexic organisation". The benefits, which

organizations claim to be seeking from downsizing centre on savings in labour costs, speedier decision making, better communication, reduced product development time, enhanced involvement of employees and greater responsiveness to customers (De Meuse et al, 1997, p 168). However, some writers draw attention to the 'obsessive' pursuit of downsizing to the point of self starvation marked by excessive cost cutting, organ failure and an extreme pathological fear of becoming inefficient. Hence 'trimming' and 'tightening belts' are the order of the day (Tyler and Wilkinson 2007).

The potential negative impact of downsizing is not restricted to those who leave but it has also a major effect on the remaining employees. Such employees are by their very nature now much more important to the employer. The impact of downsizing on the remaining employees is such that commentators now talk of “the survivor syndrome” (Brockner, 1992). The needs of those who remain post-downsizing appear to be often overlooked. For example, a survey of financial services found 79% of firms provided outplacement services for those employees who left but less than half gave support to the “lucky” ones whom remained (Doherty and Horstead, 1995). Yet we have increasing evidence that such forgotten employees are often in need of support and counselling. For example, there is considerable evidence that remaining employees feel shocked, embittered towards management, fearful about their future and guilty about still having a job whilst colleagues have been laid. The effects of such feelings are not difficult to predict. Such employees are more likely to have lower morale and increased stress levels, be less productive, and less loyal with increased quit levels. Sennett describes survivors as behaving as though “they lived on borrowed time, feeling they had survived for no good reason” (1997: 125). Indeed, the threat of further downsizing may create difficulties in that

the most able seek alternative employment. Moreover, employees may be asked to do jobs they are untrained or ill qualified to do.

A number of downsized companies have recognized such problems and have set up training courses for managers in how to deal with downsizing effects, and by providing counselling programmes and help lines. One study found that the response of survivors is closely linked to the treatment received by those laid off (Brockner *et al*, 1987). Survivors react most negatively when they perceive their colleagues to have been badly treated and poorly recompensed.

Devine et al note that job control is important in terms of occupational stress and employee outcomes when dealing with downsizing (see also Niehoff, Moorman, Blakely & Fuller, 2001; Spreitzer & Mishra, 2002). Being laid off and having to attain new employment is not necessarily more negative than “surviving” the downsizing as displaced individuals who gain new employment have a greater sense of control and, subsequently, fewer negative strains. Survivors feel less in control due to witnessing past layoffs and not knowing if they may be the next to go (Devine et al, 2003, p121). In some cases headcount may have gone down but labour costs have increased as companies were forced to re-hire, often ex-employees, as consultants, temps and interims.

HRM clearly has an important role in the process. Indeed Chadwick et al (2004) confirm that downsizing is more likely to be effective in the longer term when accompanied by accompanied by practices that reinforce the contribution of HR to financial success (e.g. extensive communication, respectful treatment of redundant employees and attention to survivors concerns over job security

Theoretical Framework and Hypotheses

In this paper we concentrate on three key factors that have a significant influence on the way downsizing impacts innovation: speed of downsizing, level of downsizing and motive for downsizing. Below we discuss the rationale for selecting the factors and hypothesize the impact each factor has on innovation.

Like most strategic initiatives, the impact of downsizing is significantly influenced by the way it is implemented. The way organizations implement downsizing varies from a shock and awe or big-bang style where downsizing is implemented in a concentrated time frame to a gradual implementation approach where downsizing is implemented over an extended period. McCune et al (1988) found that 94% of the human resource managers had less than two months to plan and implement downsizing within their organization and as a result they were forced to use a big bang style. On an overall basis, top managers typically strive for speed in implementing downsizing to limit the effects of resistance to it which could delay or derail it.

Cameron et al., (1993: 32) describe the big bang strategy as “similar to throwing a grenade into a crowded room, closing the door, and expecting the explosion to eliminate a certain percentage of the workforce. It is difficult to predict exactly who will be eliminated and who will remain”. Because of the speedy implementation, it is reasonable to argue that management would not have time to think the strategy through and communicate it properly to employees. Furthermore, under pressure of time, managers may decide who to downsize in an arbitrary way or use a crude rule of thumb such as seniority, an salary

levels. This may also result in downsizing the “wrong people” such as highly skilled employees .

In contrast to the big bang strategy, when management take time to implement downsizing, they can consciously, communicate the reasons and method of implementation to employees and by so doing ensure that employees’ positions and opinions are brought to bear on level and method of downsizing. It is likely that consensus would be enhanced under longer term implementation since employees feel that some of their issues have been addressed. Consensus among the different parties is essential to reaching the level of mutual commitment, acceptance and support necessary for successful implementation of strategic initiatives (Quinn, 1980). Dooley and Fryxell (1999) reported that when teams take time to resolve dissent during the implementation of strategic initiatives they tend to have higher commitment to the decision, and favorable attitudes to change thereby increasing the change of a successful implementation. Presumably, the above mentioned negative implications of speedy downsizing would be less when downsizing is implemented over a longer period of time. In addition, research by Dougherty and Bowman (1995) found that when downsizing was introduced over a long period of time, employees were able to reconstruct their innovation networks and linkages and had time to repair the network when it lost key players. Consequently, firms were not only able to neutralize the negative effects of downsizing on innovation, but were likely to enhance their innovation capability (Dougherty and Bowman, 1995). Based on the above, we propose that downsizing over a short period of time is more harmful to innovation output than that implemented over a long period of time. Thus, we posit that:

H1. Speed of downsizing is negatively associated with innovation output.

Extant research suggests that the magnitude of downsizing exacerbates its impact (Sutton and Kahn, 1987; Mellahi and Wilkinson, 2006). Research shows that higher downsizing is likely to trigger high anxiety and anger among surviving employees (De Meuse et al., 1994: 160), and may lead to lower employees' morale, higher role stress, and lower job security than smaller downsizing (Brockner et al, 1987; Brockner, Grover and Blonder, 1988; Tombaugh and White, 1990), which may adversely affect innovation. Vahtera et al., (1997) study's of the impact of downsizing on ill health in local governments workers in south-western Finland found that stress caused by major downsizing was 2.3 times higher to that of minor or small downsizing. Another study by Cody et al., (1987) found that severe downsizing of 30-50% resulted in a significant decrease in employees' morale and commitment and a significant increase in role stress. Similarly, a study on the relationship between downsizing and performance (De Meuse et al. 2004) found that organizations that conducted large-scale layoffs significantly under-performed compared with those organizations that conducted less layoffs. Also, severe downsizing leads to an increase in workload which may influence the time and efforts employees spend on innovation activities (Cheng & Kesner, 1997; De Meuse et al., 1994: 160). In addition, while the financial gains from severe downsizings resulting from the cut in the wage bill are potentially large, the chances of misplacing it are considerable as well (Rama, 1999). From a social capital perspective (Budros 1999) significant reductions of staff will have a major impact on work relations as trust and networks are damaged. In brief, these writings imply that larger downsizings are more harmful to innovation than low level downsizings.

H2. The size of workforce reduction is negatively associated with innovation output.

The motives or the reasons for downsizing are significantly related to the outcome of the downsizing (Burton et al., 1996). In this study we look at whether downsizing was implemented to cut cost or to focus the organization on its core activities. Firms downsize to primarily cut cost for two reasons; 1) as a reaction to an actual or potential financial difficulty; or 2) to increase efficiency (Chadwick et al, 2004). Firms that downsized to cut cost have a tendency to maintain their product scope and focus on productivity gains and cost reduction throughout the organization (Chalos and Chen, 2002). In addition, when firms downsize to cut cost they tend to focus predominately on the reduction of the number of employees (Cameron, 1994), resulting in an increase of work load which may restrict the time and efforts employees spend on innovative activities. Chalos and Chen (2002: 851) argued that a cost cutting downsizing strategy is often accompanied by trimming R&D activities and outsourcing activities associated with innovation. Given that most firms adopting this type of downsizing are reacting to financial stress, the short term gains from downsizing are more likely to be channelled towards activities that yield short term gains at the expense of activities, such as innovation because of the risk entailed and length of time required to produce sufficient returns from innovation (Hill and Snell, 1989).

In contrast, when downsizing is implemented to focus the firm on its core activities, management focuses predominately on the reduction of work, rather than the number of employees (Cameron, 1994; Cameron et al., 1993). The concept of downsizing to focus the organization on its core activities is slightly different from downscoping (Hoskinson and

Hitt, 1991; Hoskinson et al., 1994). Downscoping is a reduction in “over” diversification through divestiture of assets and businesses that are unrelated to the organization’s core business. In contrast, downsizing to focus the organization on its core activities refers exclusively to significant workforce reductions to reduce the scope of operations (Zyglidopoulos, 2005). When a firm downsizes to focus its activities, it does so by eliminating unnecessary managerial levels, focusing the firm on the core product, and reducing overall work level (Luthans and Sommer, 1999). Chalos and Chen (2002) reported that firms that downsize to focus their activity are likely to redirect the savings from downsizing unprofitable or unrelated lines of activities towards their core activities. Therefore, we propose that:

H3. Cost cutting downsizing strategy is negatively associated with innovation output. Focus downsizing strategy is positively associated with innovation output.

Methods

Sample Selection

The initial sample for this study consisted of the whole UK population of firms that met four key criteria: 1) the firm had to be a single business located in the UK in order to eliminate the risk of including firms that reduced the number of their employees in the UK as a result of relocating their activities abroad and not because they downsized, and we chose to focus on single business firms in order to exclude firms that downsized in one line of business but expanded or did not change the other lines; 2) the firm must be at least a medium-sized firm employing 250 employees or more because small firms are sensitive to

the usual small fluctuations in the number of their employees that would have shown as downsizing; 3) the firm must have downsized by at least 5 % in any given year during the observed period of 1996-2004- our 5 % cut off point is in line with previous research that consider this level as a significant reduction of workforce (see Cascio et al., 1997); 4) the firm must have at least one accepted patent during the observed period and thus our sample included only firms that had evidence of innovation. We combined data from two major datasets to identify the targeted sample. Downsized firms were identified from FAME (Financial Analysis Made Easy) database.

Only firms that met our fourth criteria were selected for the survey. 466 UK firms met our criteria and were surveyed. The first wave of the survey was sent out in September 2005. 84 firms responded with 63 responses deemed usable. In November 2005, we sent a second wave to firms that did not respond and obtained 19 responses giving a total response rate of 17%. While our survey was administered in 2005, respondents gave information on product development subsequent to downsizing events dating back to 2000. Respondents were asked to report the change in product development since the last time they downsized. Our respondents were top managers of their respective firms. Although the study collected data from a single source, which we acknowledge as a limitation, this approach is consistent with extant studies on organizational innovativeness (Santarelli and Piergiovanni, 1996). Also, we used top managers who are better placed to provide accurate information on both downsizing and innovation output. We could obtain higher response rate by surveying functional managers, but we believe data would have not be accurate because functional managers are only able to provide information on their specific function.

As put by Mellahi and Wilkinson (2008: 686) “Given that downsizing strategies are developed and executed by top management and the fact that the impact of downsizing is often felt in different departments — human resources, operations, R&D, finance and so forth — general managers are ideally positioned to provide reliable information on all the issues examined here”. They added that “while R&D managers might be able to report on investment in research and innovation climate in their particular department, they would not be able to report on issues located in other departments such as morale of employees, and loss of skilled people throughout the organisation” (pp-686-687).

Measures

Dependent variables. We used *product innovation* as a measure to capture the output of the innovation process subsequent to downsizing (see Diamanpour, 1991). A large number of studies have found that the level of new product introduced by the firm is a robust measure of innovation output (Santarelli and Piergiovanni, 1996: 690; Eisenhardt and Tabrizi, 1995). Top managers of participating firms were asked to report whether after the firm had downsized, the firm abolished all new product development projects (coded as 1), the number of new products decreased (coded as 2), did not change (coded as 3), or increased (4).

Independent variables. We used three direct measures to operationalize the type of downsizing used by the firm. To assess the planning and speed of downsizing we asked respondents to report the length of time it took the firm to carry out the downsizing from

planning to implementation. We categorized downsizing into three different categories: short-term – less than 6 months; medium term- 6 months to one year; long term- more than one year. This categorization is based on an informed judgment gained from our previous work on downsizing firms (see Mellahi and Wilkinson, 2008; 2009). The intensity of downsizing was measured by the percentage of workforce reduced. We categorized downsizing into high downsizing – more than 20 percent; medium downsizing – 10-19.99 percent; and low downsizing – 5-9.99 percent. (see Cody et al., 1987). Last, we asked respondents to report whether downsizing was necessary to cut cost (coded as 1) or to refocus the organization on its core activities (coded as 0) (Chadwick et al, 2004).

Control variables. We used five control variables. Past research shows that innovation output is different across sectors (Cefis, 2003). Thus, we used sector of activity as a control variable. We categorized sector of activity into three levels of innovativeness (*sector* = 1 if a firm is in low innovative sector; 2 if a firm is in medium innovative sector; and 3 if a firm is in high innovative sector). This categorization is based on the UK Department of Trade and Industry's compilation of International Top Ten sectors by proportion of total R&D where we defined the top five sectors as the high innovative sector, the next five sectors as the medium innovative sector, and the remaining sectors as the low innovative sector. Respondent firms were correspondingly grouped under these three categorizations based on their principal operating industry. The second control variable is firm's innovativeness. We used the percentage of sales provided by products less than 5 years old to measure the innovativeness of the firm (0 to 20% is low; 20 -50 medium and more than 50 percent is high). In addition, we used the percentage of sales under patent protection as an added

measure of firm innovativeness. Our third control variable is the size of the firm measured by the number of employees employed. Past research (see Chabchoub and Niosi, 2005) reported that the size of the firm has a positive and significant impact on the firm's ability to innovate. Extant research consistently shows that exporting firms tend to innovate more than non-exporting firms (Salomon and Shaver, 2005). Therefore we controlled for export measured by the average percentage of exports. Firm age is also included as a control variable in our sample. Finally, we controlled for total annual revenue.

Results

Descriptive Statistics

Descriptive statistics and partial correlations among the study variables appear in Tables 1. The analysis of the data showed that 12 % of the respondents reported that their organization abolished all product development projects after downsizing, 44 % reported a significant decrease in the introduction of new product, 28 % reported no significant change and only 15% reported an increase in the number of new products after downsizing. 44% downsized to reduce cost and 55% downsized to focus on their core activities. 48.1 % downsized over a period of 1 to 6 months, 22.2 % over a period of 6 to 12 months and 29.6% executed the downsizing over a period of no less than 12 months. Regarding the percentage of workforce reduced, 18 % reduced by 5% - 10%, 44.4 % reduced their workforce by 10% - 20 %, and 35.8 % reduced their workforce by more than 20%. Table 1 shows that the way and reason downsizing was introduced are correlated with innovation output.

INSERT TABLES 1 AND 2 HERE

Table 2 presents results of the regression analyses testing our predictions for the relationship between innovation output and length of time of downsizing (short term, medium term, and long term), level of downsizing (high, medium and low) and reason for downsizing (focus and cost). We used Ordinal Regression so called (PLUM) because our dependent variable is an ordinal variable. In models 1,2,3 we tested our four hypotheses by examining the direct effects of each of our independent variables with innovation output controlling for all our control variables. In model 4 we run the ordinal regression on all the dependent variables and control variables. With the exception of model 1, all models were statistically significant. With regard to Hypothesis 1, the results showed a negative and significant association between speed of downsizing and innovation output after downsizing (models 2 and 4, Table 2). As predicted, we found that implementing downsizing over a long period of time was associated positively and significantly with innovation output. In contrast, implementing downsizing over a short period of time was found to be associated negatively and significantly with innovation output. Our prediction that the size of workforce reduction would be negatively associated with innovation output (Hypothesis 2) was not supported (model 1, Table 2). We found that while low workforce reduction was positively associated with innovation output, medium and high levels of workforce reduction were not significantly associated with innovation output. Our prediction that cost cutting strategy would be negatively associated with innovation output (Hypothesis 3) was supported. Our results showed that cost cutting strategy was negatively and significantly associated with innovation output (models 3 and 4, Table 2).

Discussion and Conclusion

The last decade or so has witnessed unmatched levels of work force reduction in many industrialized countries. Few organizations have not undergone some form of downsizing. A number of key questions remain about downsizing. These are not so much about its nature or the effects on the redundant or surviving employees, rather they are centered on whether organizations, and in turn whole economies, are now in better shape post-downsizing? Are such organizations leaner and fitter or understaffed and anorexic? Has downsizing resulted in increased competitive advantage for those companies who have undergone it? What are the drivers of continuing downsizing?

In this paper, we examined the relationship between downsizing and innovation output. Specifically, we examined the relationship between the different types of downsizings and product innovation. Overall, our findings provide a strong support for the premise that different types of downsizings have different associations with innovation output. We found that when downsizing was undertaken hastily and implemented quickly, downsizing associated negatively with innovation output. In contrast, our results revealed that taking time to plan and implement downsizing reduces the harm of downsizing on innovation output. Also, as predicted, we found that downsizing to cut cost was negatively associated with innovation output.

Firms that downsize to cut cost generally do so as a reaction to an actual or potential financial difficulty and as a result they tend to focus on the short term and tend to cut costs throughout the organization impacting negatively on innovation output. In contrast, firms

that downsize to focus on their core activities would channel the saving from downsizing into innovative activities to consolidate their position in their core business. For firms that downsize to focus their activities, creating new products is perhaps a primary path by which they cement their position in the new focused activities (Womack et al., 1999; Dougherty, 1992; Brown and Eisenhardt, 1995).

Surprisingly, our prediction that the level of downsizing or the relative number of people downsized would be negatively associated with innovation output was not supported. Our results showed that the three levels of downsizings had no significant bearing over the level of innovation output. This results challenge previous research that advocates that high level of downsizing leads to an increase of work load and consequently influences the time and efforts people spend on innovation activities resulting in low innovation output (see for example: Cheng and Kesner, 1997).

Implications for Theory and Practice

This study uniquely investigates the association between downsizing and innovation output. Specifically, it is the first study to examine how different types of downsizings affect innovation output. Previous research, focused mostly on the relationship between downsizing and innovation inputs or organizations ability to innovate, provided conflicting results. Overall, our results complement, refine and extend those of other studies that have examined the link between downsizing and innovation input (Boomer and Jalajas, 1999; Amabile and Conti, 1995; 1999; Dougherty and Bowman, 1995; Brockner et al., 1987; Mellahi and Wilkinson, 2009). Our results complement and refine past research by showing that the impact of downsizing is not straightforward but contingent on the type of

downsizing used and the way the firm implements downsizing. That is, why the firm downsizes, the type of downsizing used and the way it implements matter. In addition, our results extend past research by focusing on an important yet neglected area of research. By examining the relationship between downsizing and innovation output, this study looked at the actual impact of downsizing on innovation output rather than the potential impact. Overall, our results showed that, as far as new product innovation is concerned, what matters most are the length of time it takes to implement downsizing and the reason for downsizing. The longer it takes to execute the downsizing strategy, the less negative impact downsizing has on innovation output. Also, downsizing has a negative impact on innovation output when firms downsize to cut cost. Surprisingly, our results suggest that the percentage of work force reduction does not have a significant impact on innovation output. Our interpretation of this counterintuitive result is that savings from large downsizings are not channeled to R&D and other innovative activities that could improve innovation output (see Love & Nohria, 2005). Perhaps much may depend not just on the intensity of downsizing but how the firm deals with remaining employees, and treatment of laid off staff and attention to survivors concern over job security (Chadwick et al; 2004). Notwithstanding our explanations, this is an interesting and surprising result that needs further research.

The research provides insight for downsizing firms. They suggest that managers, before they downsize, they need to consider the implications of downsizing on their innovation output. Our results suggest that organizations that downsize to reduce cost are likely to experience a reduction in their innovation output. Managers who are aware and understand this association may be better able to deal with low innovative capability after

downsizing. Forming and entering into strategic alliances could help firms with damaged innovative capabilities sustain their innovative output and more importantly keep abreast of new innovations in their products and services. For example, one of the firms interviewed by the authors lost its internal innovative capability to produce new products but sustained its innovativeness after downsizing by entering into strategic alliances with universities, research centres and competitors to share the cost and risk of new products development. Our results also suggest that rushed downsizing is associated negatively and significantly with innovation output. Thus, managers need to avoid “the grenade type” downsizing and implement it over stages to minimize its negative impact on the firm’s ability to innovate. Finally, while we could not find evidence to support our proposition that large downsizings impact innovation output negatively, we warn that this result should not be taken on face value and we suggest that more work needs to be done to understand why and how the percentage of work force reduction is not associated significantly with innovation output.

Finally, we hope our findings provide impetus for a more concerted research focus on the conditions under which and how downsizing impact organizational core competencies and firm’s ability to sustain its competitive advantage rather than using work force reduction as the sole variable. Also, we need to learn more about the process of implementing downsizing and how it impacts organizational innovativeness. The effects and experience of downsizing are likely to be different in organizations that handle the downsizing process well and those that do not. Nor do we not take into consideration the types of jobs being downsized. So future research should distinguish between downsizings that target innovation activities such as R&D staff and downsizings that cut across the

whole organization, and downsizings that target part-time workers and those that target core employees or both.

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Table 1. Correlations for Dependent and Independent Variables (Controlling for Control variables)

Variables	Mean	SD	1	2	3
1. Innovation Output	2.46	.89			
2. Level of Workforce Reduction	2.16	.73	-.21		
3. Length/Time of Downsizing	1.81	.87	.37**	.003	
4. Reason for Downsizing	.44	.50	.53***	-.32**	.24*

N= 81; *p<.05; **p<.01; ***p<.001

Table 2. Results of Ordinal Regression (PLUM) Analysis

	Model 1		Model 2		Model 3		Model 4	
Innovation = 1	-.021	(1.09)	-2.01	(1.14)	-1.59	91.11)	-2.23	(1.21)
Innovation = 2	2.47*	(1.11)	.65	(1.10)	1.43	(1.10)	.95	(1.19)
Innovation= 3	4.15***	(1.18)	2.44	(1.14)	3.48**	(1.16)	3.14*	(1.25)
% Product covered by Patents	.002	(.01)	.00	(.01)	-.00	(.01)	.00	9.01)
% of sales of NP less than 5 yrs old	.016	(.01)	.02	(.01)	.01	(.01)	.02	(.01)
Annual revenue	.000	(.00)	4.8E-05	(.00)	.00	(.00)	.00	(.00)
Size	-2.8E-05	(.00)	-8.3E-06	(.00)	-1.3E-05	(.00)	1.3E-07	(.00)
Age	.009	(.05)	.01	(.05)	.012*	(.01)	.01	(.01)
% of Export	.003	(.01)	.00	(.010)	.01	(.01)	.01	(.01)
Sector	.243	(.27)	.14	(.278)	.38	(.28)	.34	(.29)
Low workforce reduction	1.20*	(.60)					.49	(.65)
Medium workforce reduction	.434	(.50)					-.04	(.54)
Short time			-1.94**	(.57)			-1.45*	(.59)
Medium time			-.85	(.62)			-.67	(.65)
Reason to Downsize/Cost					-2.52***	(.53)	-2.23***	(.55)
Pseudo R ²	.16		.26		.39		.45	
X ²	13.4		21.6**		36.26***		43.27***	
Log Likelihood	203.96		182.2		167.70		160.69	

Standard errors are in parentheses.

N=81

*p<.05

** p<.01

*** p<.001