Personal development review (PDR) process and staff motivation – a case study investigation in a manufacturing firm

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Abstract
Purpose – The academic literature and motivational theory recognise the positive role of motivation on organisational performance and considers personal development as a key motivational factor. In practice, most organisations employ a Personal Development Review (PDR) process to drive and plan the development of their staff. This paper investigates the interrelation and impact of the PDR process, and its elements, on staff motivation.
Design/methodology/approach – The study is based on a case study research approach carried out in two large manufacturing-engineering departments of a world-class manufacturing organisation. A survey questionnaire was designed, validated and distributed to the engineering staff and its results were analysed using descriptive statistics.
Findings – The study's results indicate that in most of the cases, a PDR process does not by itself motivate staff. But it argues that a poorly designed and conducted PDR process may make motivation, through personal development, difficult to achieve.
Practical implications – This paper provides manufacturing managers with an opportunity to understand whether a common business process (i.e. PDR), and the elements that comprise it, can be employed as a method to aid in the motivation of their staff.
Original value – This research expands the current knowledge on motivational and manufacturing management theory by performing an initial and exploratory study that establishes the impact of the PDR process on staff motivation. It is among the very first investigations that correlate the PDR process and motivation, especially in the manufacturing industry.

Keywords: Manufacturing, Staff motivation, Personal Development Review, PDR
Paper type: Research paper

1. Introduction

Nowadays manufacturing organisations are facing ever more demanding and competitive environments and markets. To effectively face these current challenges, manufacturing firms have mainly turned to the improvement of their operations and quality of their products as a strategy to gain competitive strength. In this context, extensive evidence suggests that manufacturing organisations have embraced operations and quality improvement approaches such as lean manufacturing (Hines *et al*., 2004; Taj, 2008; Forrester *et al.*, 2010), Six Sigma (Black and Revere, 2006; Antony, 2004), lean Six Sigma (Sharma, 2003; Kumar *et al*., 2006), Total Quality Management (Wali *et al*., 2003; Sharma and Kodali, 2008), ISO 9000 (Briscoe *et al.*, 2005; Mo and Chan, 1997), among others. However, although evidence also suggests that such operational and quality improvement approaches do help manufacturing organisations to become more competitive, their "readily available" nature may not make their deployment a differentiating factor among manufacturing competitors.

According to Peteraf (1993), Barney (1995), Teece *et al.* (1997) and Harrison (2003), competitive advantage and differentiation arise from a firm's specific resources and capabilities. In particular, *employees* are considered a specific resource and organisation's capability which provides an essential competitive advantage (Clulow *et al.*, 2007). This is particularly true for manufacturing organisations, where in most of the cases employees develop highly specialised technical knowledge, competencies and skills. Schiller (1996) suggests, however, that in order for employees to contribute and provide a sustained competitive advantage to their organisations, they have to be motivated. Catteeuw *et al.* (2007) mention that motivated employees continually strive to add value to their organisation while Suff (2008) comments that motivated employees are willing to "go above and beyond".

According to Mullins (2007), an important employees' motivational factor is personal development. Personal development is a strategy that provides staff with learning experiences, internal and external, of the workplace, so business goals and organisational growth can be achieved (Harrison, 1997). The development of personnel is considered not only a key driver of sustainable competitive technological advantage over increasingly developing competition but also a motivational strategy that harnesses innovation and 'blue-sky' thinking (Browell, 2000). Lifeskills International (1999) mentions that in an organisational setting, employee personal development is most effectively encouraged and managed through a Personal Development Review (PDR). A PDR is a business process that aids organisations to develop their employees' specific personal and technical skills which are relevant to the employee's position and future growth within an organisation (Lifeskills International, 1999).

However, although it is well accepted in the academic literature and motivational theory that personal development acts as a motivational factor (Mullins, 2007; Newell and Grashina 2004; Browne *et al.*, 2006), the impact of the instrument used to promote, plan and monitor such personal development (i.e. PDR process) on employee's motivation is unclear. Therefore, this research investigates the relationship between the PDR process and the personal motivation of the engineering staff of a world-class manufacturing organisation. A number of empirical studies focussing on baseline process performance of operational PDRs have been carried out by a number of researchers; Coutts and Schneider (2004), Farmer and Campbell (1997) and Appelbaum *et al*. (2005). However, this research is among the very first studies focusing on investigating the effect of a PDR process on employees' motivation, particularly in the manufacturing sector. The research assumes that an effectively designed and conducted PDR process contributes to the motivation of employees, which will positively impact on the overall performance of an organisation (Rothbard, 2001; Robertson-Smith and Markwick, 2009; Kahn, 1990; Leary-Joyce, 2004). Therefore, the research argues that it is

important for manufacturing organisations to complement the implementation of process and quality improvement approaches such as lean manufacturing, Six Sigma, lean Six Sigma, Total Quality Management (TQM), etc. with an effectively designed and managed PDR process in order for them to enhance their internal capabilities and gain a sustainable differentiating advantage through the development of their employees.

2. Literature review on staff's motivation, personal development and the PDR process – a manufacturing perspective

2.1 Motivation

Mullins (2007) defines motivation as a driving force which encourages individuals to pursue some goal in order to fulfil some need or expectation. Bartol and Martin (1998), on the other hand, define motivation as a force that energises and gives direction to behaviour while underlying the tendency to persist. In organisational terms, this driving force, when present and/or developed within employees, contributes to improve the performance of organisations. Kahn (1990) suggests that motivation positively affects performance in different organisational areas and aspects. For example, Leary-Joyce (2004) argues that motivation fosters innovation and creativity by providing a challenge and offering support to succeed. In addition, Leary-Joyce (2004) also suggests that motivated employees are more likely to promote their organisations as a positive place to work, thus attracting more dynamic and high calibre staff. Robertson-Smith and Markwick (2009) and Hewitt Associates (2004) comment that motivation is positively related to organisational commitment and staff retention as well as it promotes improved productivity, higher sales and higher customer satisfaction. According to Robertson-Smith and Markwick (2009), motivation also provides an increase in an employee's sense of self efficacy and an opportunity to invest themselves in their work. Finally, Rothbard (2001) affirms that motivation in the workplace may result in positive effects to health and feeling towards work and the organisation.

In particular, some authors have highlighted the importance of motivation for manufacturing organisations, especially for the successful implementation of operations and quality improvement strategies that help them to become more competitive. For instance, Cheser (1998) argues that employee motivation is one of the main responsibilities of manufacturing management. On the other hand, Kiemele (2005) identified motivation as one of the successful factors for the implementation of lean Six Sigma while McAdam and Laffert (2004) also agree that motivation plays a critical role in the success of Six Sigma projects. Furthermore, Antony (2011), Hilton and Sohal (2012) and Aboelmaged (2010) suggest that in most of the cases, cultural change is required for the effective implementation of approaches such as lean manufacturing and Six Sigma. In this context, Pfeffer (1998) comments that employees' motivation is vital for the successful transition into a new organisational culture. Therefore, motivation can be considered a critical element for the transition into a lean or Six Sigma's culture. This emphasises the importance of motivated staff, specifically in the manufacturing industry, where the deployment of these approaches has become a key factor for the survival and success of organisations.

2.2 Personal Development

As previously established, Mullins (2007) considers personal development as an important motivational factor. This is supported by Pfeffer (1998), who suggests that employee motivation can be achieved through personal or staff development. According to Zepeda (1999), personal, or staff, development is an organisational activity that facilitates the growth of individuals and organisations alike. Some of the most common benefits, for organisations, associated with staff development include: increase rate of employee retention, increase

productivity and sales, lower rate of employee absenteeism, as well as higher cooperation and ability to adapt to organisational changes (Phillips, 1997; Conway *et al.*, 2003).

Similarly as motivation, employee development is an important part of world class manufacturing practices (Flynn *et al.*, 1999). For instance, Schonberger (1990) emphasizes the importance of employee development in the manufacturing industry while Buxbaum (1995) and Cole (1995) mention that more than ever, manufacturers recognise the performance benefits of investing in human capital. Particularly, a study carried out by Stewart (1995) estimated that structured and systematic investments in training and personal development can provide twice the return of investment in technologies. It is for this reason that Giffi *et al.* (1990) suggest that the development of employee skills in the manufacturing industry should progress in tandem with the development of technology. Similarly, another study performed by Upton (1995) found that organisational flexibility does not emanate from investments in automation but from a cross-trained workforce. Therefore, Schonberger (1990) indicates that employee development in manufacturing organisations must be primarily focused on internal means such as cross-training, job rotation and reinforcement of employee development accomplishments, for example, through rewards and recognition. This seems to be the personal development's trend in the manufacturing industry as Flynn *et al.* (1999) argue that the focus of employee development in manufacturing firms has moved from pure training to include job rotation, cross-training, rewards and recognition, and linkages with the firm's strategy.

2.3 PDR Process

Staff development is commonly carried out as a planned programme of organisational and employee improvement (Cascio and Boudreau, 2011), which in many cases is referred as Personal Development Review (PDR). Lifeskills International (1999) mentions that a PDR process is an approach used by organisations in order to most effectively encourage and manage the development of their employees. Although it may vary among organisations, Lifeskills International (1999) suggests that a PDR process is traditionally carried in the form of a meeting between a manager and his/her employee, where three main elements are reviewed, namely: (1) employee's performance; (2) employee's career and/or skills development; and (3) employee's reward.

In terms of the performance review, it is ideally linked to the business plan. Therefore, the performance review element of a PDR process allows managers to evaluate their employees' performance in relation to the organisation's business plan and set new objectives, also aligned to such business plan and overall organisational objective (Lifeskills International, 1999). On the other hand, unlike the performance review, the objective of the PDR's element of career and/or skills development review is to help employees work through specific and professional development stages within the context of an organisation's broader development policy. According to Lifeskills International (1999), a career and/or skills development review is also aligned to the organisation's business plan. Technical and personal employee's skills traditionally developed by manufacturing organisations through the PDR's career and/or skills development element include: technical skills and functional expertise, courage, common sense, breath, influence, delivery and team work. Finally, reward review is an element of the PDR process that allows managers to evaluate and communicate decisions related to annual base pay adjustment and/or performance pay levels (Shields, 2007).

Figure 1 illustrates a PDR within the context of an organisational business process that consists of an *input* (i.e. manager and employee's views, opinions, etc. regarding the three elements reviewed – performance, career and/or skills development and reward), *transformational process* (i.e. review of employee's performance, career and/or skills

development plan and reward) and *output* (i.e. manager's feedback to his/her employee in relation to his/her performance and reward as well as agreement in relation to his/her career and/or skills development plan). Figure 1 also illustrates the positive correlation that exists between personal development and motivation as well as the interaction between the instrument used to manage and encourage personal development (i.e. PDR process) and motivation. The investigation of the interaction of these two factors (i.e. PDR and motivation) is the main aim of this paper.

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3. Research methodology

The PDR process used as the basis for this research is that employed by a world-class manufacturing organisation to evaluate the performance, define a development plan and adjust the annual base pay of its more than 39,000 employees worldwide. Within the context of this research, two large manufacturing-engineering departments, based in the UK, of the organisation studied were considered. The PDR process employed by this organisation, and particularly by the manufacturing-engineering departments under investigation, is a labour intense and structured process. It is mainly carried out between the appraisers, in this case the Manufacturing Engineering Managers, and the appraises, in this case the Engineering staff. Figure 2 illustrates the PDR process used as the basis for this investigation as well as the different stages, sequence and activities it comprises.

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3.1 Research and data collection methods

As this study is an empirical inquiry that investigates a particular phenomenon (i.e. impact of a PDR process on staff motivation) within an individual and real-life context (Yin, 1994), the research method followed in this investigation is that of a case study (Remenyi *et al.*, 1998). Cameron and Price (2009) consider a single detailed case study a valid research approach, particularly when the focus of the study can not be detached from the organisational context where it occurs. Even though a single case study might be considered a limited approach to investigate and establish the interaction between a PDR process and staff motivation, if it is replicated again in other organisations and/or industries, a generalisation and validation of findings can be achieved. In addition, although it is accepted that robust conclusions can not be inferred from a single case study approach, the case study is a very popular research method in business investigations (Yin, 1994). Therefore, it would fall to a future research agenda to expand the investigation of the effects of a PDR process on staff motivation through the use of multiple case studies in other organisations and/or industries.

On the other hand, Houser (2008) comments that an appropriate and effective data collection method is integral to support the research approach followed, and thus to produce reliable evidence. As this research intended to systematically and directly gather information related to the experiences, attitudes and perceptions of the manufacturing-engineering staff, of the two departments investigated, in relation to the PDR process (Rea and Parker, 1997), a survey was considered as the most appropriate data collection method. Houser (2008) regards surveys as the most widely used method for collecting primary data and comments that they can be categorised into two broad areas: questionnaires and interviews. In the case of this research, a survey questionnaire was selected due to it was thought it would increase the reliability of the data collected by limiting the involvement of the researchers and thus maintaining the anonymity of the manufacturing-engineering staff investigated.

3.2 Survey questionnaire development

A questionnaire is defined by Oppenheim (1992) as a "lists of questions used to find out what people think or feel about an issue, product or service". Gillham (2007) categorises questions into two types: open or closed. An open question requires the consideration of a response and the respondent to write an answer. Closed questions, on the other hand, present the respondent with predetermined possible answers (Gillham, 2007). In the case of this research, a decision was taken to design the survey questionnaire based on closed questions. According to Vinten (1995), this method of questioning demands minimal time and effort from the respondents. Consideration of time was important for the design of this survey questionnaire as the manufacturing-engineering staff investigated would fill the questionnaire within their working hours.

Further consideration of minimal time and effort for the completion of the questionnaire and analysis of responses was met by considering a Likert scale in most of the questions. Bartikowski *et al.* (2010) comment that a Likert scale allows the respondents to indicate their degree of agreement with positively or negatively worded statements of survey questions. Adoption of the Likert scale questioning technique combined with a survey questionnaire arguably present a straightforward method for response and data analysis. Therefore, this method of questioning demands minimal time and effort from the respondents and researchers (Bartikowski *et al.,* 2010). In addition, Gillham (2007) mentions that the respondents may be more inclined to complete the survey if it is simple and quick. Therefore, the design of questions based on a Likert was not only used as a strategy to minimise the time taken to fill the questionnaire and analyse its responses but also as a strategy to increase the response rate. Particularly, the Likert scale used for this research and questionnaire consisted of ratings from 5 to 1, which respectively meant: strongly agree (5), agree (4), neutral (3), disagree (2) and strongly disagree (1).

3.3 Survey questionnaire's structure

In terms of the questionnaire's structure and content, it was divided into three parts. Part one of the survey questionnaire established the general profile of the manufacturing-engineering staff (i.e. age, job role and length of service in this role, as well as the time of service to the company). In addition, part one of the questionnaire also helped to explore the effect of some of these staff's attributes (i.e. age and time of service to the company) on the PDR process and staff's feeling towards whether it motivates them. On the other hand, part two of the questionnaire investigated the relationship between motivation and the PDR process based on its *input* and the three elements that comprise it – performance, career and/or skills development and reward. Similarly, part three also investigated the relationship between motivation and the PDR process based on these three elements but from the PDR process'

output point of view. Figure 3 illustrates the questionnaire's structure and the research areas investigated.

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3.4 Survey questionnaire validation

Robson (1993) comments that the validation of a survey questionnaire can be completed through a pilot study before it is distributed to the participants. Therefore, after completing the survey questionnaire, a small scale pilot study was conducted by distributing, through paper copies, the questionnaire to several Manufacturing and Quality Engineers that worked within a comparable manufacturing department to the main body of this research. The main motives behind carrying out this pilot study were:

- To eliminate any irrelevant questions from the questionnaire.
- Based on the pilot study's feedback, to add any question(s) that were believed could enhance the understanding of the Personal Development Review (PDR) process and its relationship to staff motivation.
- To refine the language of the survey questionnaire in order to provide an easy to follow and understand questionnaire to the participants.
- To receive general feedback from the respondents in terms of the questionnaire structure, logic and language.

3.5 Questionnaire distribution and data collection

The chosen distribution method for the survey questionnaire was paper copies delivered to the manufacturing-engineering staff by hand, by one of the researchers. The questionnaires were filled and returned by following the instructions provided within the survey questionnaire. As one of the authors of this research is an Engineer, working in the world-class manufacturing organisation where the body of this research project was centred, every member of the sample could be contacted in person by this researcher. Han *et al.* (2009) comment that personal delivery of a questionnaire generates trust between the sample and the researcher, which contributes to improve the quality of the responses as well as increase the response rate.

All Engineers (i.e. 61) directly working in the two manufacturing-engineering departments of the world-class manufacturing organisation studied were asked to participate in the research. Out of the 61 Engineers, a total of 35 responses were obtained. This resulted in a 57 percent response rate being achieved, which is higher than the minimum response rate of about 30-35 percent suggested by Cohen *et al*. (2007) as a statistically significant and representative sample from where reliable analyses and conclusions can be drawn. Although the sample is obviously not representative of all the Engineers and staff within the organisation studied but only of the departments included in the study, the responses provided sufficient data for an initial and general exploratory analysis of the PDR process and its effect on staff motivation.

4. Survey results, analysis and discussion

4.1 Manufacturing-engineering staff's profile

As previously commented, part one of the survey questionnaire intended to establish the general profile of the manufacturing-engineering staff that participated in the study. In particular, this section focused on identifying the following attributes of the Engineers surveyed: (1) their current job role, (2) how long they had been employed by the company, (3) how long they had performed their current job role, as well as (4) their age.

In terms of their job role, the majority of the respondents (83 percent) were Manufacturing Engineers while 9 percent were Manufacturing Process Owners (i.e. team leaders). The remaining respondents included Quality Engineers (3 percent), Coordinate Measuring Machines (CMM) programmers (3 percent) and Material Resource Planning (MRP) controllers (2 percent).

With respect to the time of services to the company, an employment range in excess of 5 years represented 66 percent of the total staff surveyed; followed by 0 – 2 years (9 percent) and 2 – 5 years representing the remaining 25 percent of the employee's time of service to the company. On the other hand, a large proportion of the questionnaire (60 percent) was completed by employees with over 2 years spent in their current job role. The remaining 40 percent of respondents were split with time in their current job roles varying from 0 – 6 months (17 percent), 6 months – 1 year (9 percent) and between 1 and two years (14 percent).

Finally, in relation to the manufacturing-engineering staff's age, 29 percent of them were over 51 years old while another 29 percent fell within a range of between 16 – 25 years old. In addition, 17 percent of the manufacturing-engineering staff was between 41 and 50 years old while the remaining 14 and 11 percent fell within the ranges of between 31 to 40 and 26 to 30 years old respectively. The data collected and presented in this section is illustrated in Figure 4.

<u>Take in Figure 4 here</u>

4.2 Manufacturing-engineering staff's profile and its effect on the PDR process and motivation

Baker *et al.* (2011) comment that profile related questions, such as the ones included in part one of the survey questionnaire, are normally used by researchers to explore if the respondents differ in behaviours, attitudes and/or believes based on various attributes. Therefore, besides establishing the general profile of the manufacturing-engineering staff that participated in the study, part one of the survey also allowed the researchers to collect information to explore the effect of two attributes of the manufacturing-engineering staff (i.e. age and time of service to the organisation) on the PDR process and motivation. In regards to the age attribute, 80 percent of the respondents over 51 years old were not motivated by the overall PDR process while 60 percent of the respondents aged 16 – 25 years old returned a contrasting agreement that the PDR process motivated them. Gellerman (1963) mentions that "young people will be motivated primarily by what their future seems to hold for them", which in this case can be clearly indicated and guided through a PDR process. In general terms, this study indicates that while a PDR process can be used by manufacturing organisations to motive their young Engineers and staff, a different alternative and/or strategy would need to be sought for more experienced and older staff. The search of effective

methods to motivate more experienced and older staff should be of primary concern for manufacturing companies. Similarly as in the case of the world-class manufacturing organisation studied, the percentage of employees in the age group of between 50 to 60 years old in the manufacturing industry will significantly increase in the following years (Slagter, 2007).

In relation to the attribute of time of service to the organisation, a high percentage (about 66 percent) mentioned a time of service above 5 years. On the other hand, 34 percent of the survey population had 0 – 5 years of service. This may be considered significant when reviewed in the context of employee motivation and its relation to the PDR process as Woodford and Maes (2002) argue that evaluations lead to higher turnover rates and add discontent of employees who loathe the time, paperwork, and discomfort that accompany the evaluation process. Therefore, higher years of service held by staff may reduce the motivational effect of the PDR process and thus the impact of the personal development factor on motivation. In the case of this study, the results corroborated the Woodford and Maes (2002) suggestion. The results indicated that staff with a length of service ranging from 0 – 5 years felt motivated (about 83 percent) by the PDR process while employees with more than 10 years of service (about 95 percent) did not feel motivated by the PDR process. Similarly as with staff's age, the results of this study indicate that the PDR process acts as a positive motivational approach for employees with short periods of service (i.e. 0 – 5 years) while this is not the case for employees serving longer periods of time to an organisation.

4.3 PDR process input and its effect on staff's motivation

In this part of the survey questionnaire the manufacturing-engineering staff was asked to provide information to explore the ability of the PDR process' *input* to act as a motivator through its elements of performance, career and/or skills development and reward.

In relation to the performance element, it was considered in the context of clarifying expectations (Seijits and Crim, 2006; Robertson-Smith and Markwick, 2009), roles and objectives within the organisation (Woodford and Maes, 2002). In this case, 67 percent of the Engineers surveyed agreed that the clarification and clear definition of expectations, roles and objectives in a PDR process does not act as a motivational factor. On the other hand, the remaining 33 percent of the manufacturing-engineering staff returned a positive response of the ability of a PDR process to motivate them if their expectations, roles and objectives are clearly defined and communicated. This indicates that although in some cases staff can feel motivated by a clear definition of what the company expects from them as well as their role and objectives, this is not the case for everyone. Even though the clarification of these may not act as a motivational factor for the majority of the staff, it is still important for managers to clearly define them and communicate them to their staff during the PDR process as Buckingham and Coffman (1999) suggest that too little or poor clarification of these could create confusion, turnover and frustration.

On the other hand, the investigation of the career and/or skills development element of the PDR process' *input* on staff motivation was measured based on the manufacturing-engineering staff's perception of the PDR process of providing them with an effective framework to achieve their personal development objectives. In this context, it was assumed that if the staff felt that the PDR process offered them such development framework, they would be motivated. The survey results indicated that only 17 percent of the respondents believed that the PDR process provided them with an effective structure to develop their career. Therefore, the rest of the manufacturing-engineering staff (83 percent) did not consider the PDR process as a career and/or skills development motivational factor. Thomson and Mabey (1994) identify the need for a PDR to deliver development-driven objectives and

methods. For this reason, manufacturing organisations should assure that PDR processes do not only act as a mere review of personal development activities but also as a framework to encourage and guide staff to engage with and plan such activities. This will result in the PDR's element of career and/or skills development to act as a motivational factor for staff.

Finally, the reward element of the PDR process' *input* was considered in the context of whether the manufacturing-engineering staff felt that the PDR process gives them full opportunity to effectively document and present their performance in order to achieve appropriate recognition. Based on this, it was assumed that the manufacturing-engineering staff would feel motivated by the PDR process if it were able to document and present their performance so it could later be reviewed and the appropriate recognition given, if appropriate. The survey's results indicated that only 23 percent of the manufacturing-engineering staff believed that the PDR process is an effective method to document and present their performance for evaluation. Therefore, the rest of the manufacturing-engineering staff (77 percent) did not feel motivated by such organisational process as it could not be used as an effective platform and/or aid to gain a reward (i.e. pay increase, bonus, etc.) or recognition. Gordon and Miller (2012) comment that the documentation of performance is important as it helps to authenticate the performance review exercise, which is an integral part of the PDR process, and lay the ground for its continuance.

4.4 PDR process output and its effect on staff's motivation

Section three of the survey questionnaire requested the manufacturing-engineering staff to provide information to explore the ability of the PDR process' *output* (i.e. feedback) to act as a motivator through its elements of performance, career and/or skills development and reward.

In relation to the performance element, it was considered in the context of providing employees with constructive and clear feedback to help them perform their job as effectively and efficiently as possible in line with the needs of the organisation (Walters, 1995). In the case of this research, 64 percent of the Engineers surveyed mentioned that a constructive and clear feedback during the PDR process would encourage them to perform better in relation to their job objectives. The rest of the respondents (36 percent), on the other hand, do not consider a constructive and clear feedback as a motivational driver. The results obtained from this investigation are in line with the statements of Seijts and Crim (2006) and Robertson-Smith and Markwick (2009), who suggest that a clear and constructive feedback on job performance is a key motivational driver. In practical terms this indicates that manufacturing organisations should not only encourage the clear definition of their employees' objectives but also to provide them with regular constructive feedback about whether they are in the right path for their achievement. Formulating strategies and deploying methods based on performance criteria for staff to self-assess their performance may also help manufacturing organisations to keep their staff motivated and thus continue providing a strong and critical contribution towards the achievement of organisational goals.

In terms of the career and/or skills development element of the PDR process' *output* on staff motivation, it was measured based on the degree of engagement of the manufacturing-engineering staff on career development activities after the PDR process. In this context, although 57 percent of respondents did not disagree with the fact that the PDR process allows them to identify career development opportunities, only 25 percent of the Engineers surveyed agreed that they engage on career development activities after the PDR process has taken place. This suggests that the career and/or skills development element embedded within the PDR process does not act as a motivational factor that encourages staff to pursue personal development. Therefore, manufacturing organisations should define and implement effective

strategies, supported by the PDR process, to encourage their staff to get involved in personal development as it is an integral part for their success. Harris (2010a) suggests, for example, the implementation of an Individual Development Plan (IDP) – "a plan to record and give direction to planned and agreed development activities" – to provide a formal framework to plan, agree and assess progress towards personal development objectives. Furthermore, Harris (2010b) also suggests the use of an Individual Learning Plan (ILP) to help in the prioritisation of development aspirations based on top-level business critical objectives.

Finally and for this investigation, the reward element of the PDR process' *output* was considered in the context of contribution of the PDR process to trigger performance related benefits (e.g. pay increase, bonuses, etc.). Therefore, it was assumed that an employee who recognises the contribution of the PDR process to trigger performance related benefits would be motivated by such process. For example, Bowen (2000) suggests that reward and recognition are factors that can most influence workers' attitude, productivity and organisational competitiveness while Romero and Kleiner (2000) mention that reward and recognition are key to motivation. Particularly, the survey's results suggested that only 12 percent of the respondents believed that the PDR process could generate performance related rewards. Therefore, only these staff would be motivated by the reward element of the PDR process' *output* while for the rest (88 percent), this would not act as a motivational factor. The inability of the PDR process to motivate staff to pursue performance rewards through the achievement of defined performance objectives should be of concern for manufacturing organisations as Nichol (1992) suggests that motivating employees through reward ensures they exceed expectations.

4.5 Summary of research findings

Table 1 summarises the research findings. The investigation's results summarised in Table 1 indicate that in general terms, most of the elements that comprise a PDR process (i.e. performance review, skills and/or development plan review and reward reviewed) do not have a positive effect on the motivation of staff. As suggested by Seijts and Crim (2006) and Robertson-Smith and Markwick (2009), the only element that this research's results indicate contributes to motivate staff through the PDR process' *output* is a clear and constructive feedback in relation to their job performance. Although in overall terms the PDR process seems not to provide manufacturing organisations with a method to motivate staff, especially older and those with a long time of service to the organisation, the lack of an effectively designed and conducted PDR may act as a motivational barrier. As illustrated in Figure 1, the PDR process can be considered as the "conductor" that will allow the personal development factor to act as a motivational driver. If this "conductor" is ineffective, instead of being a facilitator channel it can become a barrier. Therefore, it can be concluded that a PDR process does not by itself motivate staff. But a poorly designed and conducted PDR process may make motivation, through personal development, very difficult to achieve.

Attribute	Results' summary	
Age	• In general, older staff does not feel motivated by the overall PDR process' experience while younger staff consider it as a motivational driver.	
Time of service to the company	• Staff with few years of service to the organisation is motivated by the PDR process while staff with more than 10 years does not feel that it acts as a motivational factor.	
PDR's Input		
Element	**Considered in the context of**	**Investigation results**
Performance	Clarification of expectations, roles and objectives	• Most of the staff does not feel motivated by the clarification of such factors.
Career and/or skills development	PDR provision of an effective framework to achieve personal development objectives	• Majority of the staff does not believe the PDR process provide a framework for personal development. Thus, it does not act as a motivational factor in relation to career and or/skills development.
Reward	PDR provision of opportunity to effectively document and present job performance	• Majority of the staff does not believe the PDR process is an effective method to document their performance. Thus, it does not act as a motivational factor to seek reward or recognition.
PDR's Output		
Element	**Considered in the context of**	**Investigation results**
Performance	Constructive and clear feedback	• Most of the staff feels motivated by a constructive and clear feedback from their managers.
Career and/or skills development	Degree of engagement on career development activities after the PDR process	• Most of the staff does not get engaged in personal development activities post the PDR. Thus, this element does not act as a motivational driver.
Reward	Contribution of the PDR process to generate performance related benefits	• Most of the staff does not consider that the PDR helps to generate performance related benefits. Thus, it does not act as a motivational factor to seek reward or recognition.

Table 1. Summary of research findings

5. Conclusions

Over the last few decades, the implementation of operations and quality improvement approaches such as lean manufacturing, Six Sigma, lean Six Sigma, TQM, and many others, has been part of the agenda and strategy followed by manufacturing organisations to remain competitive and survive. This paper argues that although these approaches have helped, in many cases, manufacturing organisations to become more competitive, an equally important internal capability that such organisations should focus on developing and motivating, not only to support the deployment of these approaches but also to gain a competitive and a

distinctive strategic advantage, is their staff. The positive effects of personal development and motivated staff on organisational performance as well as the positive correlation between personal development and motivation have been widely documented in the academic literature. However, no research regarding the effect of the instrument (i.e. PDR process) used by organisations to encourage and manage staff development on staff motivation had been performed. This paper focused on investigating the impact of the PDR process on staff motivation.

The research conducted and presented in this paper is based on a case study research approach centred in two large engineering departments, based in the UK, of a world-class manufacturing organisation with a labour force of more than 39,000 employees based across 50 countries. Due to the nature of the single case study research approach, the results obtained from this study, and discussed in Section 4, must be interpreted with reservation as no generalisations can be drawn. However, similar studies can be conducted in other organisations and/or industries by following a multi case study approach, which can lead to the generalisation of findings. In addition, although the population's size and response rate used in this study are statistically valid, they can also be considered limited. Therefore, similar studies conducted by following a multi case study research approach and using a larger population's size and a higher response rate are considered part of the agenda for further research proposed by this paper. Nevertheless, despite the limitation of the research approach and population's size used as well as the response rate obtained, this study has provided an initial and general exploratory analysis of the PDR process as an instrument to achieve employee motivation. This research can be used by manufacturers to understand how the PDR process, and the elements that comprise it, may contribute to create positive encouragement for their staff to pursue their personal and organisational goals. Finally, this paper also suggests the use of inference statistics, including correlation and regression analyses, as a method for the analysis of data in future and similar studies to validate the data collected and strengthen the conclusions obtained.

References

Aboelmaged, M. G. (2010), "Six Sigma quality: a structured review and implications for future research", *International Journal of Quality and Reliability Management*, Vol. 27, No. 3, pp. 268-317.

Antony, J. (2004), "Some pros and cons of Six Sigma: an academic perspective", *The TQM Magazine*, Vol. 16, No. 4, pp. 303-306.

Antony, J. (2011), "Six Sigma vs. lean: some perspectives from leading academics and practitioners", *International Journal of Productivity and Performance Management*, Vol. 60, No. 2, pp.185-190.

Appelbaum, S.H., Molson, J., Adam, J., Javeri, N., Lessard, M., Lion, J., Simard, M, and Sorbo, S. (2005), "A case study analysis of the impact of satisfaction and organizational citizenship on productivity", *Management Research News*, Vol. 28, No. 5, pp. 1-26.

Baker, K., Singleton, J.C. and Veit, E.T. (2011), *Survey research in corporate finance: bridging the gap between theory and practice*, Oxford University Press, NY.

Barney, J.B. (1995), "Looking inside for competitive advantage", *Academy of Management Executive*, Vol. 9, No. 4, pp. 49-61.

Bartikowski, B., Katsuyuki, K. and Jean-Louis, C. (2010), "A verbal rating scale to measure Japanese consumers' perceptions of product quality", *Asia Pacific Journal of Marketing and Logistics*, Vol. 22, No. 2, pp. 179-195.

Bartol, K.M. and Martin, D.C. (1998), *Management*, 3rd edition, McGraw-Hill, New York, NY.

Black, K. and Revere, L. (2006), "Six Sigma arises from the ashes of TQM with a twist", *International Journal of Health Care Quality Assurance*, Vol. 19, No.3, pp. 259-266.

Briscoe, J.A., Fawcett, S.A. and Todd, R.H. (2005), "The implementation and impact of ISO 9000 among small manufacturing enterprises", *Journal of Small Businesses Management*, Vol. 43, No. 3, pp. 309-330.

Bowen, R.B. (2000), *Recognizing and rewarding employees*, McGraw-Hill, Madison, WI

Browell, S. (2000), "Staff development and professional education: a cooperative model", *Journal of Workplace Learning*, Vol. 12, No. 2, pp. 57-65

Browne, D., Baross, M., Davies, W. and Dransfield, R. (2006), *Heinemann business studies for AS level*, Heinemann Educational Publishers, Oxford.

Buckingham, M. and Coffman, C. (1999), *First break all the rules: what the world's greatest managers do differently*, Simon & Schuster Australia, Sydney.

Buxbaum, P. A. (1995), "The rewards of investing in human capital", *Transportation and Distribution*, Vol. 36, pp. 76.

Cameron, S. and Price, D. (2009), *Business research methods: a practical approach*, Chartered Institute of Personal and Development, London.

Cascio, W. and Boudreau, J. (2011), *Investing in people: financial impact of human resources initiatives*, 2nd edition, FT Press, Pearson Education, New Jersey.

Catteeuw, F., Flynn, E., and Vonderhorst, J. (2007), "Employee engagement: boosting productivity in turbulent times", *Organization Development Journal*, Vol. 25, No. 2, pp. 151-157.

Cheser, R.N. (1998), "The effect of Japanese kaizen on employee motivation in U.S. manufacturing", *International Journal of Organizational Analysis*, Vol. 6, No. 3, pp.197-217.

Clulow, V., Barry, C. and Gerstman, J. (2007), "The resource-based view and value: the customer-based view of the firm", *Journal of European Industrial Training*, Vol. 31, No. 1, pp. 19-35.

Cohen, L., Manion, L. and Morrison, K. (2007) *Research methods in education*, 6th edition, Routledge, Oxford.

Cole, N. (1995), "How employee empowerment improves manufacturing performance", *Academy of Management Executive*, Vol. 9, pp. 80-84.

Conway, M., Blair, A.K. and Gibbons, C. (2003), "Investigating demand side outcomes: literature review and implications" *The Aspen Institute*, March.

Coutts, L.M., and Schneider, F.W. (2004), "Police officer performance appraisal systems – how good are they?", *American Journal of Police*, Vol. 27, No. 1, pp. 67-81.

Farmer, J. and Campbell, F. (1997), "Information professionals, CPD and transferrable skills", *Library Management*, Vol. 18, No. 3, pp. 129-134.

Flynn, B.B., Schroeder, R.G. and Flynn, E.J. (1999), "World class manufacturing: an investigation of Hayes and Wheelwright's foundation", *Journal of Operations Management*, Vol. 17, pp. 249-269.

Forrester, P.L., Shimizu, U.K., Soriano-Meier H., Garza-Reyes, J.A. and Cruz Basso, L.F. (2010), "Lean production, market share and value creation in the agricultural

machinery sector in Brazil", *Journal of Manufacturing Technology Management*, Vol. 21, No. 7, pp. 853-871.

Gellerman, S. W. (1963), *Motivation and productivity*, American Management Association, N.Y.

Giffi, C., Roth, A. and Seal, G.M. (1990), *Competing in world class manufacturing: America's 21st century challenge*, Business One Irwin, Homewood, IL.

Gillham, B. (2007), *Developing a questionnaire*, 2nd edition, Continuum International Publishing Group, London, UK.

Gordon, M.E. and Miller, V.D. (2012), *Conversations about job performance: a communication perspective on the appraisal process*, Business Experts Press, NY.

Han, V., Albaum, G., Wiley, J.B. and Thirkell, P. (2009), "Applying theory to structure respondents' stated motivations for participating in web surveys", *Qualitative Market Research: An International Journal*, Vol. 12, No. 4, pp. 428-442.

Harris, J. (2010a), "Individual development plan" available at: http://www.peoplenet.infocentre.rolls-royce.com/ukperformance/emp/career_planning/individual_dev_plan.htm (accessed 11 April 2012).

Harris, J. (2010b), "Business plan deployment" available at: http://www.peoplenet.infocentre.rolls-royce.com/ukperformance/emp/setting_objectives/bpd.htm (accessed 11 April 2012)

Harrison, R. (1997), *Employee development*, The Cromwell Press, Wiltshire, UK

Harrison, J.S. (2003), *Strategic management of resources and relationships*, Wiley, New York.

Hewitt Associates (2004), "Hewitt Associates study shows more engaged employees drive improved business performance and return", *Press Release*, May.

Hilton, R. J. and Sohal, A. (2012), "A conceptual model for the successful deployment of Lean Six Sigma", *International Journal of Quality and Reliability Management*, Vol. 29, No. 1, pp. 54-70.

Hines, P., Holweg, M. and Rich, N. (2004), "Learning to evolve: a review of contemporary lean thinking", *International Journal of Operations and Production Management*, Vol. 24, No. 10, pp. 994-1011.

Houser, J. (2008), *Nursing research: reading, using, and creating evidence*, Jones and Bartlett Publishers, Sudbury, MA.

Kahn, W.A. (1990), "Psychological conditions of personal engagement and disengagement at work", *Academy of Management Journal*, Vol. 33, No. 4, pp. 692-724.

Kiemele, M.J. (2005), "Critical success factors for deploying and implementing lean Six Sigma", USA Armor School Research Library (March 2006), available at: www.amc.army.mil/amc/ pe/documents/sestrng/Kiemele.ppt/ (accessed 4 March 2008).

Kumar, M., Antony, J., Singh, R.K., Tiwari, M.K. and Perry, D. (2006), "Implementing the Lean Sigma framework in an Indian SME: a case study", *Production Planning and Control*, Vol. 17, No.4, pp. 407-423.

Leary-Joyce, J., (2004), *Becoming an employer of choice: make your organisation a place where people want to do great work*, Chartered Institute of Personnel and Development, London, UK.

Lifeskills International (1999), *Managing for development: developing your staff, planning and running a development review, acting as a coach*, Gower Publishing Ltd., Hampshire, UK.

McAdam, R. and Laffert, B. (2004), "A multilevel case study critique of Six Sigma: statistical control or strategic change?", *International Journal of Operations and Production Management*, Vol. 24, Nos. 5-6, pp. 530-549.

Mo, J.P.T and Chan, A.M.S. (1997), "Strategy for the successful implementation of ISO 9000 in small and medium manufacturers", *The TQM Magazine*, Vol. 9, No. 2, pp.135-145.

Mullins, L.J. (2007), *Management and organisational behaviour*, 8th edition, FT Prentice Hall, Essex, UK.

Newell, M.W. and Grashina, M.N. (2004), *The project management question and answer book*, American Management Association, New York, NY.

Nichol, G. (1992), "Motivating employees", *Managing Service Quality*, Vol. 2, No. 5, pp. 259-261.

Oppenheim, A.N. (1992), *Questionnaire design, interviewing and attitude management*, Printer, London.

Peteraf, M.A. (1993), "The cornerstones of competitive advantage: a resource-based view", *Strategic Management Journal*, Vol. 14, No. 3, pp. 179-191.

Pfeffer, J. (1998), *The Human Equation: Building profits by putting people first*, Harvard Business School Press, Boston, MA

Phillips, J.J. (1997), *Return on investment in training and performance improvement programs*, Gulf Publishing Company, Houston.

Rea, L.M. and Parker, R.A. (1997), Designing and conducting survey research: a comprehensive guide, 2nd edition, Jossey-Bass, San Francisco, CA.

Remenyi, D., Williams, B., Money, A. and Swartz, E. (1998), *Doing research in business and management: an introduction to process and method*, Sage Publications Ltd., London, UK.

Robertson-Smith, G. and Markwick, C. (2009), *Employee engagement: a review of current thinking*, Institute for Employment Studies, Brighton, BN.

Robson, C. (1993), *Real world research – a resource for social scientists and practitioner researchers*, Blackwell, Oxford, UK.

Romero, J. and Kleiner, B.H. (2000), "Global trends in motivating employees", *Management Research News*, Vol. 23, No. 7/8, pp. 14-17.

Rothbard, N.P. (2001), "Enriching or depleting? The dynamics of engagement in work and family roles", *Administrative Science Quarterly*, Vol.46, pp. 655-684.

Schiller, Z. (1996), "A model incentive", *Business Week*, 22 January, pp. 89-90.

Schonberger, R.J. (1990), *World class manufacturing: the next decade*, Free Press, New York.

Seijts, G.H. and Crim, D. (2006), "What engages employees the most or, the ten C's of employee engagement", *Ivey Business Journal Online*, March/April.

Sharma, U. (2003), "Implementing lean principles with the Six Sigma advantage: how a battery company realized significant improvements", *Journal of Organizational Excellence*, Vol. 22, No. 3, pp. 43-52.

Sharma, M. and Kodali, R. (2008), "TQM implementation elements for manufacturing excellence", *The TQM Journal*, Vol. 20, No. 6, pp. 599-621.

Shields, J. (2007), *Managing employee performance and reward*, Cambridge University Press, Sydney.

Slagter, S. (2007) "Knowledge management among the older workforce", *Journal of Knowledge Management*, Vol. 11, No. 4, pp. 82-96.

Stewart, T.A. (1995), "How a little company won big by betting on brainpower", *Fortune*, 4 September, pp. 121-122.

Suff, R. (2008), "Vodafone's entertaining employee-engagement strategy", *IRS Employment Review*, No. 896, 18 April.

Taj, S. (2008), "Lean manufacturing performance in China: assessment of 65 manufacturing plants", *Journal of Manufacturing Technology Management*, Vol. 19, No. 2, pp. 217-234.

Teece, D.J., Pisano, G. and Shuen, A. (1997), "Dynamic capabilities and strategic management", *Strategic Management Journal*, Vol. 18, No. 7, pp. 509–533.

Thomson, R. and Mabey, C. (1994), *Developing human resources*, Butterworth-Heinemann Ltd, Oxford.

Upton, D.M. (1995), "What really makes factories flexible", *Harvard Business Review*, Vol. 73, pp. 74-84.

Vinten, G. (1995), "Open versus closed questions - an open issue?", *Management Decisions,* Vol. 33, No. 4, pp. 27-31.

Wali, A.A., Deshmukh, S.G. and Gupta, A.D. (2003), "Critical success factors of TQM: a select study of Indian organizations", *Production Planning & Control*, Vol. 14, No. 1, pp. 3-14.

Walters, M. (1995), *Performance management handbook*, Institute of Personnel and Development, London.

Woodford, K. and Maes, J.D. (2002), "Employee performance evaluations: administering and writing them correctly in the multi-national setting", *Equal Opportunities International*, Vol. 21, No. 7, pp. 1-8.

Yin, R.K. (1994), *Case study research, in: design and methods*, 2nd ed., Sage Publications, Beverly Hills, CA.

Zepeda, S.J. (1999), *Staff development: practices that promote leadership in learning communities*, Eye on Education, Inc., Larchmont, NY.

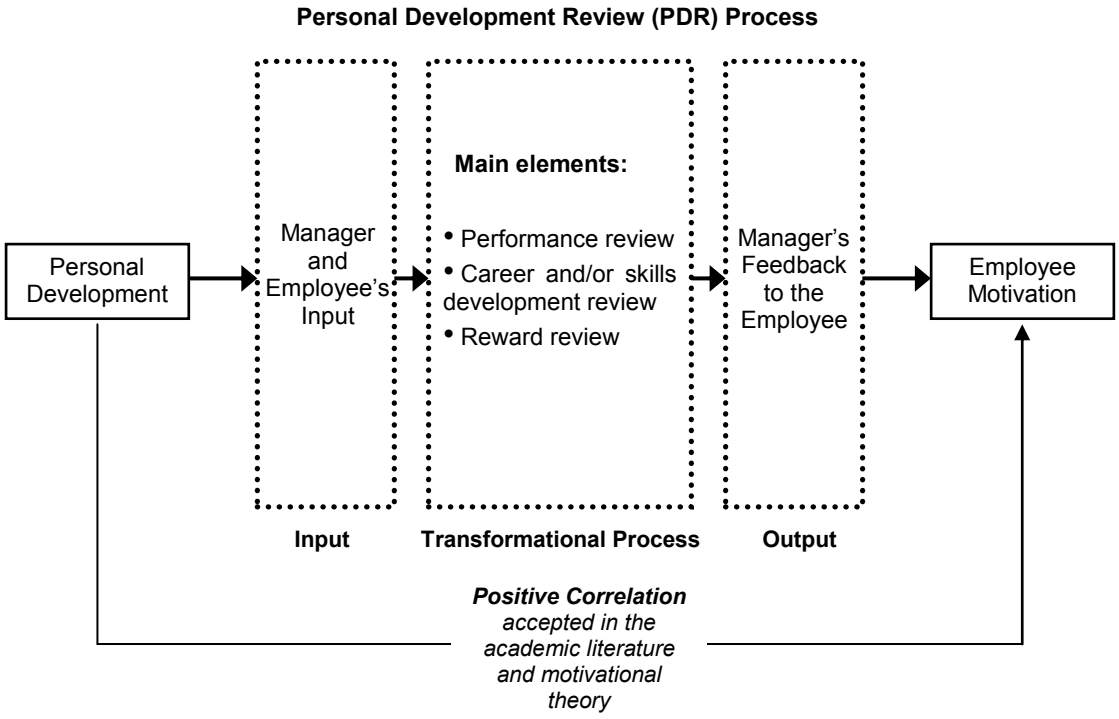

Figure 1. Illustration of the PDR process and its interaction with personal development and motivation

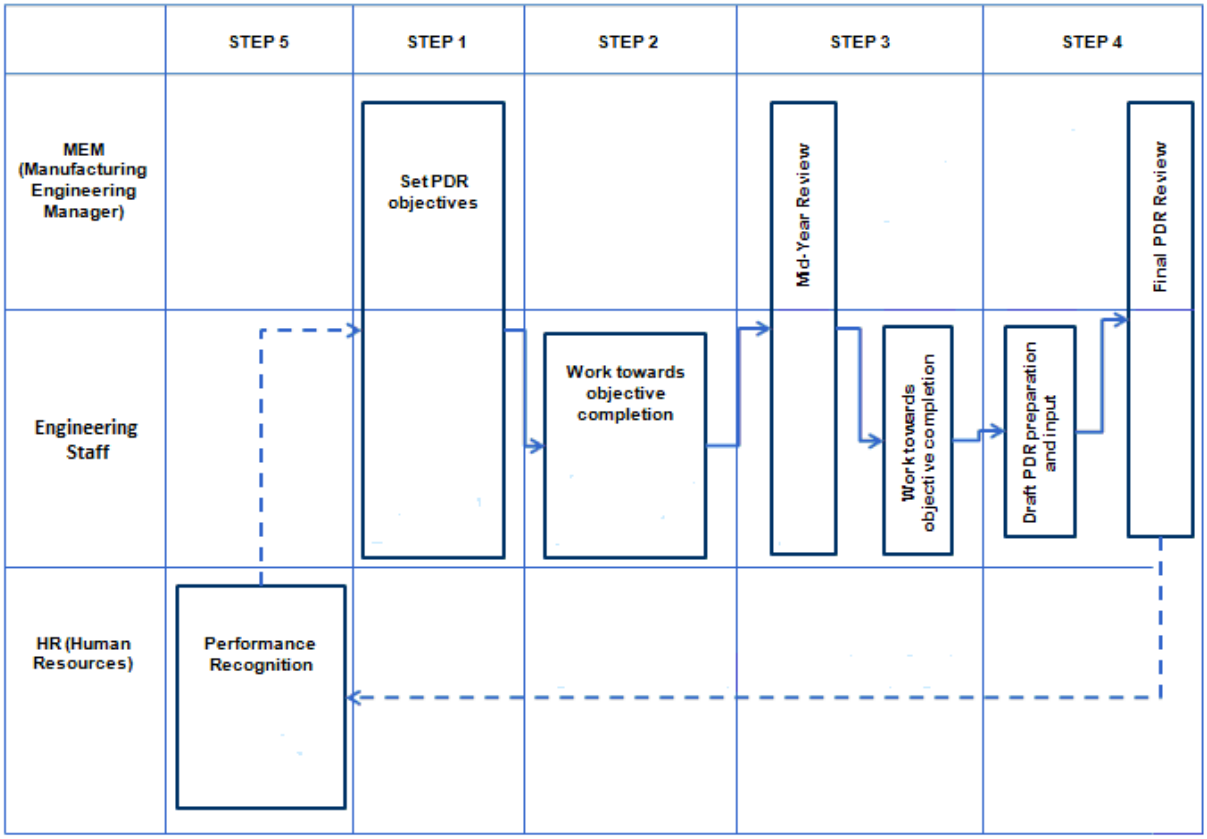

Figure 2. Illustration of the PDR process used as the basis for this investigation

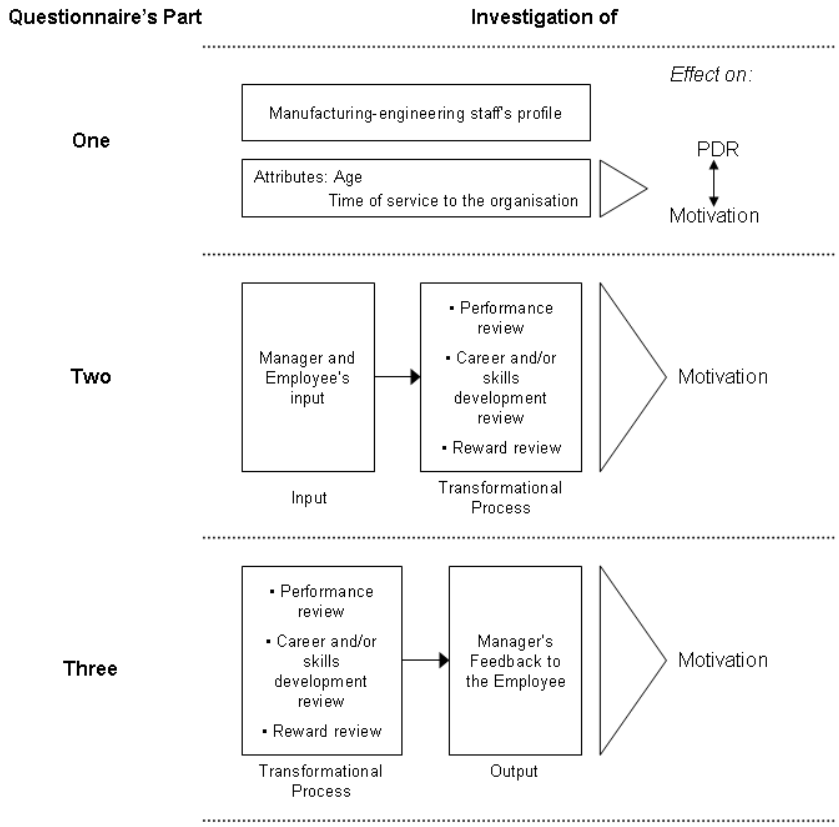

Figure 3. Illustration of the questionnaire's structure and areas investigated

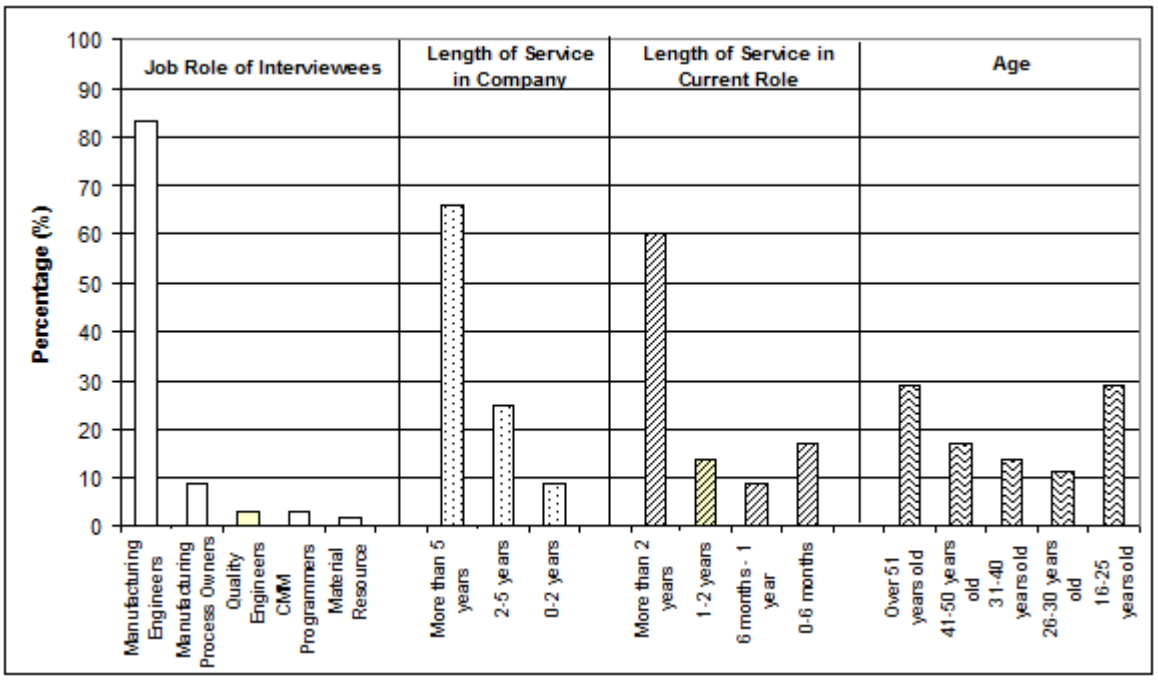

Figure 4. Manufacturing-engineering staff's profile