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The relation between employees' involvement and quality improvement

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ABSTRACT

The main aim of this study is analysis Employees' involvement and quality improvement in Iranian small and medium enterprises (SMEs). This research is conducted based on descriptive and surveying method; to collect data, was chosen through questionnaire. For research's purposes, a distinction was made between small firms (fewer than 50 employees) and medium-sized ones (between 50 and 250 employees), questionnaires was mailed to 600 Iranian SME randomly selected. The questionnaire was pre-tested and validated with the help of a panel of two academics/researchers on quality management issues and two quality managers in SME. Out of the sample, a total of 95 questionnaires were completed and returned. Data gathered through questionnaires were submitted to a set of statistical analyses tools, using SPSS (Statistical Package for Social Sciences), and punctually, some of Microsoft Excel's statistics and data bases tools. In accordance with research purposes, univariate analyses were performed on issues strictly descriptive, while bivariate analysis tools were used on issues based on means comparison (Student's T test and Chi-square test). Findings: showed that in considered society, most SME developed training programs specifically focused on quality improvement, suggesting that, beyond fostering quality improvement awareness, SME supply their employees with tools necessary to develop their skills and(or acquire new insights needed to improve their performance. These evidences may indicate that top management is aware about the importance of training and development focused on quality improvement, for effective employees' participation in quality continuous improvement initiatives.

Introduction

Several authors have been "preaching" its importance for firms' performance, as a way to improve competitiveness; others, studied how TQM has been applied in different kinds of organizations and/or different economic contexts; many of them searched for the main negative factors behind the lack of success of TQM' implementation in several cases; some of them attempted to develop frameworks for TQM's development in different kinds of organizations (very small firms, SME, large companies) and/or different economic sectors (both industries and services). In fact, several researches have been conducted over a couple of decades, attempting to clarify TQM's concept, exploring empirically the theory behind the philosophy and looking for the main critical success factors in its principles' implementation.

Through a thorough analysis of literature published essentially by the called quality gurus and other quality issues experts, the pioneer study carried out by Saraph et al. (1989) performed a previous extraction of one hundred and twenty organizational prescriptions for an effective TQM implementation and subsequently clustered them into eight categories of critical success factors (CSF), defining these, as critical issues in managerial planning/action that must be practiced to achieve an effective quality management.

The aim of this research focused on a set of concerns regarding HR initiatives focused on employees' commitment and quality awareness, developed in smaller firms. These concerns gave rise to the research's main focus and got materialized through the following purposes: (i) to study HR initiatives focused on employees' commitment and consciousness/awareness about the importance of quality improvement in firms' competitiveness; (ii) to compare employees' attitudes toward specific issues related to quality improvement, in small firms and in medium sized ones; (iii) to test if SME' dimension influence, somehow, initiatives developed towards employees' commitment and quality awareness.

According to Pun and Chin (1999), TQM added a new dimension to quality management issues: the redefinition of quality from the customer's viewpoint, based on marketplace evidences. As stressed by the authors, through such dramatic shift in perspective, quality may be seen as a powerful competitive weapon and included in firms' strategic planning. In fact, as highlighted by Brah et al. (2002), TQM can't be seen as a quick fix way, stressing that its success involves a long-term paradigm shift through significant organizational changes.

Over last few decades several holistic management philosophies, involving extensive change processes (Total Quality Management, Business Reengineering, Lean Management), have been emphasizing employees' role, through an increased participation in the process for change. In fact, the influence of employees' involvement in firms' changing processes has been extensively reported in both academic and practitioner journals which strongly highlight its importance and potential on organizational changes (Sun et al., 2000; Chiu, 1998; Wilkinson, 1998; Dale, et al., 1997; Hackman & Wageman, 1995; Marchington, 1995) through personal involvement on problem-solving and decision-making.

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As enhanced by Gunasekaran et al. (1998) or Kanji (1990), among others, Total Quality Management may be defined as a management philosophy based on people and with a strong emphasis on continuous improvement seeking at achieving total quality through a full participation of everyone in organizations. Deming (1986) and other quality gurus have characterized human resources' (HR) management as a significant driver of total quality management's implementation, emphasizing its implications in quality continuous improvement. Wilkinson (1995) defined it as a model focused on total customer satisfaction, through employees' high involvement in decision making. In fact, as stressed by Welikala and Sohal (2008), employees' involvement in decision making is intrinsically at the heart of the TQM concept.

Tqm's advocates, like Pun & Chin (1999), usually highlight that the more organizations apply employee involvement initiatives, the more positive results they will gain, and the more profitable and competitive they will become, through higher employee satisfaction, and quality of life at work, among other factors. Dow et al. (1999) concluded that workforce commitment had a significant positive association with organizational performance. According to Dale et al. (1997), results suggest a positive correlation between high employee involvement and companies' productivity and long-term financial performance.

Employees' empowerment and involvement at all levels is important to gain competitive advantages and business overall success. As enhanced by Pace (1989), employees' empowerment and involvement is crucial to problems' solving and therefore to quality continuous improvement, since employees involved and focused in their job, at their level, are in the best position to make decisions to have control over processes' improvement. Bayazit's (2003) research, based on a survey conducted on 250 Turkish organizations, enhanced that, among other factors, employees' involvement/commitment, and quality training and development are key factors for TQM's successful implementation. Increasingly, companies' shift toward philosophies focused on quality continuous improvement like TQM, lead firms to develop and implement initiatives directed at employees' training and development.

According to Ross (1993), higher involvement means, more responsibility, which requires specific skills, generally reached through training and development programs. In fact, it is believed that training and development programs are powerful agents both to develop personal capabilities and skills, and to improve firms' growth/profitability. Juran and Gryna (1993) stressed that training and development are a key factor in any quality continuous improvement program, enhancing that employees should be provided with the main skills and knowledge compatible with the role they are concerned with, searching higher commitment levels towards quality improvement, and in the last instance, higher levels of efficiency and effectiveness.

Delaney and Huselid (1996) concluded that training was significantly related to organizational performance. Chandler and McEvoy (2000) highlighted that a total quality management strategy was most effective when supported by significant training, founding support for the frequently claimed prescription that more training is helpful in TQM's implementation, since there is a strong commitment to TQM' principles, otherwise investment and commitment to training won't have significant impact on firms' earnings.

HR initiatives directed at quality improvement in SME

As already referred, several researches have been looking for key factors, crucial for a successful TQM principles' implementation. Unfortunately most of these focused essentially on large firms and few paid special attention to smaller firms. According to Yusof and Aspinwall (1999), both realities are quite different, but some key dimensions are common to both types of firms, enhancing HR management and training/education. However, as stressed by Yusof and Aspinwall (1999), among other researchers, comparing with larger firms, SME face particular problems which may hinder their progress through TQM, namely regarding capital, human and technical resources.

Existing management literature acknowledges that there are significant operational differences between SME and large firms, and researchers concerned with organizational size noticed that what applies to larger organizations may not apply to SME. In fact, researchers like Yusof and Aspinwall (1999), or Price and Chen (1993), among others, pointed out that some characteristics of quality management are suitable to smaller firms, while other are more in line with larger organizations, highlighting that TQM principles such as employee participation, flexibility, and closeness to customers could be more successfully applied in smaller firms than in larger ones.

Regarding specifically HR management like training and development, researchers worried with the effects of firms' dimension on human resources management noted that differences in attitude towards employee training may be attributed to firm's dimension. In fact, it seems that, as firm size generally increases, more formal training and development programs may be provided. As highlighted throughout literature, as firms grow, training and development initiatives turn more structured and formal (Barrett and Mayson, 2007), being usually delegated to specialists inside or outside the firm (Kotey and Slade, 2005; Hornsby and Kuratko, 1990).

Several researchers, like Reid and Harris (2002) enhanced that most successful SME provide more employees' training and development programs than the average. However, despite the perceived importance of training and development for improvements in productivity, and for firms' sustained competitive advantage, expressed throughout literature, authors like Kotey and Folker (2007), and Storey (2004), observed that there is a general reluctance among SME to provide formal employee training. In fact several reasons have been pointed out throughout literature, in order to try to explain such perception.

As stressed by Lee and Oakes (1995), smaller organizations usually recognize the need for training; however, most of these don't have a clear understanding about what is required and lack resources to carry out effective training programs. As a result, as highlighted by Hill and Stewart (2000), SME lack systematic approaches to employees' training and development programs which are usually qualified as informal, unplanned, reactive, and short-term oriented. Mac Mahon and Murphy (1999) observed that smaller firms seldom perform formal training needs analyses. As stressed by Hill and Stewart (2000), smaller firms focus essentially on informal training and development initiatives since these can be easily integrated into daily operations, are centered on employees' specific needs, and involve lower costs. According to Gibb (1997), informal training is often qualified as reactive rather than proactive. As stressed by Mabey and Thomson (2001), in smallest firms, where the owner-manager may have a direct control over work performance, training and development initiatives are essentially

provided on-the-job. According to Smith et al. (2002), on-the-job training and development initiatives allow employees to learn, integrated in the real context, where skills are daily used. Furthermore, as enhanced in literature, training programs in smaller firms are essentially developed on-the-job paying little attention to employee development (Marlow and Patton, 1993).

This study was developed as part of a wider research project conducted under the scope of how Iranian manufacturing SME cope with quality improvement issues and how their relationship, with the main stakeholders, foster/hinder efforts developed toward quality continuous improvement. In fact, as been highlighted above, management literature suggests significant operational differences between SME and large firms, stressing that can be applied to large companies may not be suitable to SME. However, regarding quality management issues, few researches focused specifically on comparative analyses between SME and larger firms, and even less between small firms and medium-sized ones. This may correspond to a sensitive gap in literature, attending to the great direct impact SME have in economies in most of Asian countries, through outputs and employment provided, Furthermore, most economies are also influenced indirectly through SME's power on larger firms' performance, since quality improvement efforts' success in larger organizations depends highly on suppliers' quality improvement success, and frequently most of these suppliers are small or medium-sized firms. Thus, researches focused specifically on quality concerns in SME may represent a field where research can expand.

Furthermore, the literature review enhanced the importance of employees' involvement in quality continuous improvement issue, and highlighted that training and development initiatives focused on quality management issues may be important to promote employees' commitment and foster workforce's quality awareness, key factors in any quality continuous improvement program.

Accordingly, the main aim of this research focused on a set of concerns regarding HR initiatives focused on employees' commitment and quality awareness, developed in smaller firms. These concerns gave rise to the research's main focus and got materialized through the following purposes: *(i)* to study HR initiatives focused on employees' commitment and consciousness/awareness about the importance of quality improvement in firms' competitiveness; (ii) to compare employees' attitudes toward specific issues related to quality improvement, in small firms and in medium sized ones; (iii) to test if SME' dimension influence, somehow, initiatives developed towards employees' commitment and quality awareness. Considering such purposes, arguments and concerns highlighted throughout literature focusing on SME, the following hypotheses were established:

- Hypothesis H1 - Training programs focused on quality management and driven to HR assume different preponderances in SME according to firms' size.
- Hypothesis H2 - Initiatives driven to HR directed at quality improvement assume different preponderances in SME according to firms' size.

Data Collection and analysis

Regarding the methodology to be chosen, since an early stage it was obvious that secondary data needed to perform the research initially designed was mostly inexistent. Accordingly, the methodology was driven to a data gathering method, able to collect information directly in SME. Attending to factors like research's time horizon and the nature of information needed to perform the study, the method chosen, to collect data, was the survey through questionnaire, based both on a previous deep literature review and on results of previous case studies. For research's purposes, a distinction was made between small firms (fewer than 50 employees) and medium-sized ones (between 50 and 250 employees). The survey, focusing on quality management issues and the nature of relations between SME and the main stakeholders, was mailed to 600 Iranian SME randomly selected. The questionnaire was pre-tested and validated with the help of a panel of two academics/researchers on quality management issues and two quality managers in SME. Out of the sample, a total of 95 questionnaires were completed and returned, performing a final useful survey response rate around 16 per cent, considered satisfactory since other studies analyzed during the literature review and focusing on production/operations management or quality management, were based on similar response rates. Respondents in all cases were quality managers or, in alternative, SME' senior managers. Data gathered through questionnaires were submitted to a set of statistical analyses tools, using SPSS (Statistical Package for Social Sciences), and punctually, some of Microsoft Excel's statistics and data bases tools. In accordance with research purposes, univariate analyses were performed on issues strictly descriptive, while bivariate analysis tools were used on issues based on means comparison (Student's T test and Chi-square test).

Results

Overview of employees' main demographic characteristics

Data gathered show that, in most of SME, employees' mean age range "between 21 and 40 years old". Results obtained also show that in many firms, most of the employees live in the same locality as the firm they work on: in about 70% of firms, close to 60% of employees live in the same place they work on.

Concerning HR' formal education, data collected show that near 50% of employees' educational level is equal or below the 5th grade. According to results, in almost 10% of SME, the percentage of employees with an education level under the 5th grade doesn't exceed 15%. In contrast, in almost one third of SME, around 70 % of employees have an education level under the 5th grade. If on one side the lower limit (zero) predicts good perspectives for those firms, on the other hand, cases like firms with 97% of their HR with an educational level below the 6th grade may be worrying attending to the possible implications on quality continuous improvement. In fact, due to the importance recognized to training and development programs directed at all the employees in the search of quality continuous improvement, the low academic formation degree may have a direct influence on quality improvement strategies, even if some researches like Collins (1995) suggested that formal education may not be a success factor for the development of high-performance teams.

HR awareness regarding Quality Issues

As stressed by Dale (1994), firms embracing TQM principles must make sure that every collaborator has a clear vision about what the organization expects from him and about the way his tasks fit into the overall activities.

Information gathered shows that 88,4 % of firms develop plans in order to raise collaborators' levels of consciousness/awareness about the importance of quality improvement measures in firms' competitiveness. Such observation suggest clear concerns from most of SME about quality matters, in general, and about the importance of every collaborator's involvement in programs oriented toward quality improvement, in particular.

Statistical analysis through Pearson chi-square test of independence (p = .005) and crosstab analysis suggest that SME' propensity to develop initiatives directed at promoting quality importance decrease as employees' mean age increases. In fact, results show that in SME with a lower employees' mean age, the percentage of firms that promote employees' awareness regarding the importance of quality in firms' competitiveness is larger. This observation can suggest that in SME with younger employees, these may accept such initiatives with greater naturalness; younger employees may be more open-minded regarding organizational changes, in general, and quality improvement needs, in particular, corroborating theories and empirical evidences highlighted in researches published throughout literature, stressing that youngest employees are usually less resistant to changes.

Accordingly, results suggest clearly that SME' propensity to develop awareness initiatives directed at promoting quality importance is significantly correlated with employees' mean age. Thus data suggest that employees' mean age may hinder the implementation of initiatives directed to quality improvement, and that youngest employees may accept changes more naturally, comparing with oldest ones.

Hypothesis H1 - Training programs focused on quality management and driven to HR assume different preponderances in SME according to firms' size.

Literature published stresses the importance of training and development programs specifically focused on quality improvement, for an effective labor's awareness and participation in quality continuous improvement projects. Concerning training and development, information shows that 80% of SME developed training programs focused on quality improvement specifically directed to labor, suggesting that, beyond fostering quality improvement awareness, most of SME supply their collaborators with tools necessary to their performance. In fact, as highlighted by Dale (1994), it is not enough to specify what is expected from labor; workers' training and development assumes a preponderant role when attempting to assure that labor's general vision concerning quality issues is compatible with the philosophy of continuous improvement.

Suspecting that SME' propensity to develop training and development programs directed to labor may be influenced somehow by firms' dimension, a crosstab analysis was performed. Results showed a significant relationship between both variables; such evidence is reinforced statistically, attending to results of the Pearson chi-square test of independence (signif. - 0.027). In fact, considering smaller firms, data show that one third didn't develop training and development programs focused on labor's needs, while in medium-sized firms the percentage don´t surpass 14%. As a matter of fact, the information gathered suggest that medium-sized firms seem to have a higher propensity to assure training and development programs to better face difficulties raised during the quality improvement process.

Results obtained showed a close relation between both factors, suggesting differences among firms of different dimension, statistically supported. Besides, the percentage analysis showed that medium-sized firms have, in fact, a higher propensity to assure labor's training and development on quality issues, allowing a better way to overcome difficulties raised from quality improvement processes; thus hypothesis H1 may be confirmed.

Data showed some insights about addressees of training and development programs undertaken by SME inquired in this research and focused in quality improvement. As highlighted by Besterfield et al. (1999), the core objective of TQM is to guarantee that everyone is conscious that he belongs to a relationship customer-supplier and that his full involvement is essential in the prosecution of quality improvement. Furthermore, higher involvement means, according to Ross (1993), more responsibility, which requires specific skills, generally reached through training and development programs. Information showed that 83% of SME provide training and development programs focused on quality improvement for shop floor employees. In fact, data also enhance that about one third of SME focus their training and development programs directed to quality improvement, exclusively to collaborators from the lower hierarchy level. Regarding top management, less than half of SME provide training and development programs focused on quality management and directed to this hierarchical level. Finally, data gathered enhanced that almost a third of SME inquired use to follow equitable training and development policies, developing plans that cover all hierarchical levels, acting thus in consonance with the basic TQM principles. Therefore, summarizing, information collected seems to suggest that training and development programs undertaken by inquired SME, and focused on quality improvement issues, are directed preferentially at lower hierarchical levels, possibly because generally such employees have lower and de velopment programs design, the information obtained shows that more than eighty percent of SME define their own programs and courses; in fact, only 18.9% of SME use packages developed by third parties. Such observation seems quite positive, since data gathered suggests clearly that the great majority of inquired SME, develop their own packages, defined academic qualifications.

Concerning training attending to the real needs of each firm, avoiding generic training plans designed by others which may not attend to the real nature and specificities of each SME. Furthermore, it may be enhanced that the relation between this variable and SME' dimension (number of employees) is not statistically significant. In fact, the crosstab analysis performed between both variables and the results of the Pearson chi-square test of independence (signif. - 0.459) didn't reveal information statistically supported which may indicate that small firms and medium-sized ones may act differently regarding how training and development programs are designed.

Another positive observation deals with workforce being previously enlighten about general training and development programs' importance. In fact, data gathered shows that 86,3% of SME worry about elucidating collaborators about these programs' importance. Such initiatives are important, since explaining previously workforce about programs' purposes may, somehow, contribute to motivate them, highlighting the importance both for worker's own development, and for SME' improvement through higher levels of efficiency and effectiveness. Furthermore, it may also be referred that the relation between this variable and SME' dimension (number of employees) was not statistically significant. The crosstab analysis performed and results of the Pearson chi-square test of independence (signif. - 0.566) didn't reveal any sign statistically supported which may indicate that small firms and medium-sized ones may act differently regarding such initiatives.

Beyond this analysis, a further attempt was conducted to check if SME which provide training and development programs specifically oriented to quality improvement issues and those which provide only general programs, act differently

regarding collaborators' previous awareness concerning training and development' importance. The information obtained through a crosstab analysis performed, shows that 94,7% of SME which provide training and development programs specifically focused on quality improvement issues demonstrates clear concerns in providing previous explanations concerning training and development's importance. In opposition, regarding SME which only provide general training and development programs, only 52,6% of those make sure that collaborators are previously enlighten about programs' importance.

The tendency observed through table's analysis is supported statistically through results of the Pearson chi-square test of independence (signif. - 0.000). In fact, all the information obtained allow to suggest clearly that SME which provide training and development programs specifically focused on quality improvement issues are more sensitive to the importance of workforce's previous enlightening about programs' purposes and how it may contribute to worker's own development, and improve SME' levels of efficiency and effectiveness.

Regarding training and development programs' appraisal, results showed that almost one third of SME inquired doesn't use to develop evaluation initiatives. Results also suggest that such tendency may not be related to firms' size, attending to results of the Pearson chi-square test of independence (signif. - 0.575).

A further attempt was conducted to check if SME which provide training and development programs specifically focused on quality improvement issues and those which provide only general programs, act differently regarding programs' appraisal. The information obtained through a crosstab analysis performed, shows that more than 80% of SME that provide training and development programs directed to quality improvement, undertake some efforts towards such initiatives' appraisal. On the other hand, from companies that don't provide programs directed to quality improvement (19), less than one third (6) carry out training and development programs' appraisal. Such tendency, observed through descriptive data, is supported through the results of the Pearson chi-square test of independence (signif. - 0.000). All this seems to suggest that SME where collaborators are provided with training on quality improvement, are more sensitive and demonstrate clear concerns about the importance of appraisals in continuous improvement planning.

A further crosstab analysis was performed in order to check if SME which undertook efforts towards training and development programs' appraisal, and those which don't, acted differently, regarding attempts to previously foster collaborators' awareness concerning training and development' importance.

As may be observed, only one of the 67 SME which perform training and development programs' appraisal (1,5%) doesn't worry with collaborators' previous enlightening concerning the importance of such programs for both firms and employees' development. Analyzing the table through another angle, it can also be observed that among the 82 firms which demonstrate some concerns in providing previous explanations concerning training and development programs' importance, 66 use to carry out such initiatives' appraisal. Both previous observations are supported statistically through results of the Pearson chi-square test of independence (signif. - 0.000). All this seems to suggest that SME which generally undertake efforts to complete training and development programs with a further evaluation, use to carry out previous sessions focused on explanations about training and development programs' importance and scope, showing a relative sensitivity to the importance of employees' previous enlightening about programs' purposes and how it may contribute to their own development, and simultaneously improve SME' levels of efficiency and effectiveness, demonstrating clear concerns about its importance for continuous improvement policies.

In order to clarify some issues inherent to employees' characteristics, a set of propositions was included in the questionnaire sent to SME, which had to be weighted attending to a scale from "Total agreement" (5) to "Total disagreement" (1), assessing how each one corresponded to an initiative currently implemented in SME. One of the purposes of this study was to check if these propositions presented significant differences according to firms' dimension. Thus, beside a descriptive analysis, a T test was also performed. Data analysis allowed information, which enhance for each proposition, both means and standard deviations for each one of the two groups of firms, as well as the results of the appropriate mean's comparison statistical test.

As may be observed, information gathered is not conclusive; however, some considerations may be approached. First of all, it should be enhanced that inquired SME disagree regarding the proposition which suggested that "*employees face quality issues negatively*", showing that employees are conscious about quality's importance to SME' survival, facing such inevitability with positive attitude, especially because those SME seem to agree that "*most of the best ideas about how to improve come up from employees*".

Regarding documentation, SME also disagree, although less significantly, with other two propositions: "*processes' documentation is faced by employees as waste of time*" and "*employees feel that processes' documentation may turn them dispensable*". Those observations contrast somehow with of some ideas spread in literature focused on management research, namely those referred in Ghobadian and Gallear (1997), which enhance that in SME, most of processes' activities are executed by a single employee, who frequently resist to document his/her know-how for two main reasons. According to Ghobadian and Gallear (1997) such documentation may be faced by employees as a waste of time; furthermore employees may be afraid that processes and procedures' documentation could turn them dispensable.

The inquired SME also disagree about the idea that "*employees face training and development programs with resistance*". What data computed seems to suggest is that "*workers' overload hinders frequently training and development programs' implementation*". Furthermore it should also be enhanced that "*younger employees accept changes more easily*". Data gathered reinforce somehow results obtained before,, namely regarding the previous observation that SME' propensity to develop awareness initiatives directed at promoting quality importance was significantly correlated with employees' mean age, suggesting that age may hinder the implementation of initiatives directed to quality improvement, and that youngest employees may accept changes more naturally, comparing with oldest ones, being more open-minded about quality improvement issues and organizational changes in general. Such remarks approach some management theories which stress that youngest employees are usually less reluctant regarding changes.

A further attempt was conducted to analyze if there were significant differences between small firms' responses and medium-sized ones'. Comparing both groups' means regarding each proposition, it may be noticed that groups' means computed are not significantly different. In fact, differences more significant correspond to the following propositions: *(i) workers' overload hinders frequently training and development programs' implementation* (0,49), *(ii) processes' documentation is faced by employees as waste of time* (0,41) and *(iii) employees face quality issues negatively* (0,41). Such observation is reinforced through results obtained from the appropriate mean's comparison statistical test, suggesting that differences between small firms and medium-sized ones are not statistically significant (at least for a .95 significance level). Even reducing the significance level to .9, differences are only statistically different for the three propositions already enhanced. However it may be highlighted that propositions' agreement levels are higher for medium-sized firms, suggesting that, human resources in small firms are more open-minded regarding changes involved in quality improvement procedures' implementation.

Firms' size and HR initiatives directed at quality improvement

The main literature review performed enhanced the significant importance of HRM within TQM philosophy, namely concerning how employees develop their potential to pursue firms' overall quality, involving areas such as HR' planning, employees' involvement, employees' training and development, and employee's expectations and satisfaction. Results from the research carried out by Magjuka (1994) suggested significant relationships between employees' involvement practices (assessed through team-work conceptions, goals setting, and access to information) and performance regarding quality improvement. Thus, as reinforced by Ahire et al. (1995), HRM is a key factor in TQM and can be responsible for significant differences in firms' performance (even among firms with similar technical capabilities).

Hypothesis H2 - *Initiatives driven to HR directed at quality improvement assume different preponderances in SME according to firms' size.*

In order to test if the main initiatives directed at improving quality differed according to firms' dimension, a T test was applied. Results obtained from data processing, showing averages and standard deviations for each one of the initiatives previously considered.

Regarding HRM, among the 14 initiatives considered, data enhance significant statistical differences in four cases: *(i) working conditions (hygiene and organization) are duly controlled, (ii) employees are surveyed about possible improvements, (iii) employees are provided with sufficient power to develop their full potential, and (iv) employees are duly surveyed about their satisfaction level*. Furthermore, it can be seen that averages computed for small firms are higher than those computed for medium-sized ones in most of the initiatives considered, suggesting that, concerning quality improvement, HR initiatives may be generally more preponderant in smaller firms. In fact, data suggest that, in smaller organizations, it may be easier to foster an atmosphere able to benefit employees' personal growth, motivating them to submit new ideas able to improve or expand the business. Results suggested also that, in small firms, employees work daily in an atmosphere more familiar, allowing maybe some freedom to mold work conditions and act by their own initiative, when justified.

Results shows, for each variable, means for both groups, frequencies by groups (and for each one of the scale's levels), and results of appropriate means comparison statistical tests. The means computed range essentially from 3,5 (slightly suitable) to 4 (suitable), suggesting that HR related initiatives have a moderate relevance regarding quality continuous improvement in SME. The lower mean computed correspond to information about firm's business provided to employees. Considering the importance of this initiative for employees' motivation and involvement, such result can be explained by a misunderstanding of the inherent advantages of an efficient communication policy from top management. Furthermore, literature focused on smaller firms enhances the difficulty that SME face frequently to maintain specialized employees. Thus the fear of losing specialized employee to competitors or through spin-offs may inhibit SME from opening too much the business to employees. Regarding the remaining variables, data suggest that, generally, these initiatives belongs to SME' routine, namely concerning such issues like working conditions' control, delimitation and clarification of every employee's tasks, attention paid to employees' opinion about possible improvements, discussion about operational subjects with employees, training and development programs undertaken based on previous survey and analysis of formation needs, among others.

One of the main purposes of this study was to analyze if within SME, both small firms and medium-sized ones behave according similar patterns. According to results of the T test computed and highlighted, small firms and medium-sized ones seem to behave differently in 4 cases (attending to a 0,05 significance level): (i) working conditions (hygiene and organization) are duly controlled, (2) employees are surveyed about possible improvements, (3) employees are provided with sufficient power to develop their full potential, and (4) employees are duly surveyed about their satisfaction level.

Data shows that means computed for smaller firms are higher than those computed for larger firms, not only in cases with significant statistical differences, but also in most of all the remaining cases, suggesting, therefore, that HRM has a stronger relevance in smaller firms, in what concerns to quality improvement. Thus, attending to the apparent proximity between small firms' top management and employees, and in line with other studies, like Ghobadian and Gallear (1997), or Cook et al. (1998), data gathered seem to suggest that, in smaller firms, it may be easier to foster an atmosphere which could benefit employees' personal growth, stimulating them to submit ideas capable to contribute to quality improvement. Results also suggest that, in smaller firms, employees work under an atmosphere more familial, allowing them a relative degree of freedom to mold their work conditions and to act on their own initiative, when necessary.

Attending to results obtained, it may be reasonable to suggest that the hypothesis *H2* is partially confirmed. In fact, although results only show 4 cases with significant statistical differences, smaller firms are usually associated with higher means in the remaining cases, suggesting that, in smaller firms, the eventual proximity between top management and employees assumes a great importance in the construction and consolidation of an atmosphere conducive to the full participation as well as to the personal and organizational growth, corroborating results of other researches like Ghobadian and Gallear (1997).

Conclusions

The main aim of this research was to analyze at what extent smaller firms are really conscious, in a first place, about the importance of raising employees' awareness about quality improvement issues, as key factors affecting firms' competitiveness and, in a second place, about the importance of fostering every employee's involvement in programs oriented toward quality improvement. Moreover, the research tested if training programs focused on quality management, and driven to HR, in particular, and initiatives driven to HR, directed at quality improvement, in general, assumed different preponderances in SME according to firms' size.

First of all, it should be enhanced that results suggest clear concerns from most SME about raising employees' levels of consciousness/awareness about the importance of quality improvement issues on firms' competitiveness, fostering every collaborator's involvement in programs oriented toward quality improvement, Such observation is extremely positive and suggests that top management develops initiatives to guarantee that all employees are conscious that they belong to an internal dyad customer-supplier and that their full involvement is crucial for quality continuous improvement.

Findings showed that most SME developed training programs specifically focused on quality improvement, suggesting that, beyond fostering quality improvement awareness, SME supply their employees with tools necessary to develop their skills and(or acquire new insights needed to improve their performance. These evidences may indicate that top management is aware about the importance of training and development focused on quality improvement, for effective employees' participation in quality continuous improvement initiatives.

Management literature acknowledges that there are significant operational differences between SME and larger firms, and researchers concerned with organizational size noticed that what applies to larger organizations may not apply to SME. Results in this specific study suggest that, even within SME, differences in attitude towards HRM initiatives focused on quality improvement may be attributed to organizational size. Considering researches published and specifically those focused on SME, it would be expected, or at least, reasonable to assume, that, HR initiatives driven at quality improvement may be generally more preponderant in medium-sized firms, in comparison with small firms, specially attending to the claimed lack of resources generally connoted to smaller organizations. However, findings reached from this research, show exactly the opposite. In fact, smaller firms showed a higher propensity to develop HR initiatives directed to quality improvement. Such results may suggest that, in smaller organizations, it may be, in fact, easier to foster an atmosphere able to benefit employees' personal growth, and motivate them to submit new ideas able to improve or expand the business, corroborating ideas spread throughout literature (see Yusof and Aspinwall, 1999; Price and Chen, 1993), highlighting that smaller firms are commonly characterized by a lean structure based on a close relation between hierarchical levels, resulting in a higher flexibility, and an atmosphere more familiar

Regarding training and development, specifically, data gathered suggested that medium-sized firms seem to have a higher propensity to assure employees' training and development programs on quality issues, to better face and overcome difficulties raised during the quality improvement process, corroborating findings from other studies which suggest that differences in attitude towards employee training may be attributed to firm's dimension. Such results may be explained by the so preached resources' scarcity in smaller firms. In fact, as stressed by several authors, smaller organizations don't have generally the necessary resources and expertise, facing strong difficulties to gain economies of scale (Reid et al., 2002; McEvoy, 1984). Furthermore, according to Westhead and Storey (1996), benefits may be underestimated by smaller firm managers, partially because they are usually gained in the long-term, turning investments in such initiatives unattractive to SME, since these operate generally in a short time horizon. As a result, it seems that, effectively, smaller firms lack systematic approaches to training programs, corroborating results highlighted by Hill and Stewart (2000), or MacMahon and Murphy (1999) who enhanced that training initiatives developed in smaller firm are usually qualified as informal, unplanned, reactive, and short-term oriented.

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