SOCIAL RESPONSIBILITY OF MULTINATIONAL CORPORATIONS TO TRAIN THEIR PERSONNEL. AN EVALUATION OF EXPLANATORY VARIABLES FOR A TELECOMMUNICATIONS COMPANY

Basarab Gogoneță*
The Bucharest Academy of Economic Studies, Romania

Abstract
Corporate social responsibility in the field of employee-employer relation has enjoyed a growing attention in recent years. In this context, workplace training plays an essential role for the harmony of interdependence between community and company. This paper provides a top-down analysis of training effects and a model for an empirical evaluation of explanatory variables for training intensity in the case of a multinational telecommunications company. The analysis of training effects revealed that there are important motivational, social and functional benefits for the employee. Empirical results were dependent on the calculation method of training intensity. Thus, the percentage of employees from a subsidiary, which participates in a training program, is related to the degree of market development but not to the average labour productivity. Nevertheless, when training intensity is expressed as the number of hours of training compared to the total person-hours worked, there is empirical evidence that both labour productivity and market development can be accepted as explanatory variables. The examination of results has highlighted significant discrepancies in personnel training between developed countries and less developed ones.

Keywords: corporate social responsibility, workplace training, multinational corporations, labour productivity, development of telecommunications market

JEL Classification: M14, M53, F23, L96

Introduction
It can be argued that the question whether corporate social responsibility (CSR) should or not exist has become less relevant. Companies have already integrated CSR in their strategies (The Economist, 2008) and concepts like corporate citizenship (Toma, 2008) or business ethics (Stohl, et al. 2007; Dinu, 2008; Botescu, et al., 2008) are ubiquitous. However, after the voluntary adoption of CSR there are still controversial details concerning its communication and implementation. For example, some authors argued that

* Author’s contact: e-mail: basarab.gogoneata@economie.ase.ro
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the communication often includes irrelevant facts (Porter and Kramer, 2006) or heterogeneous information (Maignan and Ralston, 2002) or data that are hardly comparable across firms (Gray, et al., 1995; Jenkins and Yakovleva, 2006; Golob and Bartlett, 2007). Implementation puts in a critical light first the multinational “mammoths” (Doane, 2005) that appear to purposely have lower social and environmental standards in less developed countries (United Nations, 2007; Muller, 2006), many voices calling for an increased pressure from regulatory authorities (Husted and Allen, 2006; Unerman and O'Dwyer, 2007; Hart 2009).

From the vast literature devoted to CSR, we pick the following trends as relevant for this research. First, there is a growing attention for social CSR measures, whereas the employer-employee relationship plays a key role. While Perrini (2005) suggested that in understanding of European companies, the idea of social responsibility is stronger related to environment and community, later, Steurer and Konrad (2009) argued that European companies’ CSR reports show clear efforts to improve the internal social environment for growing employees’ motivation and ability. Secondly, there is a positive trend of increasing adoption of CSR indicators from the Global Reporting Initiative (GRI) catalog (Brown, et al., 2009), which allows comparability of data and creates a transparency that stimulates the managers to act more responsible (Adams and Frost, 2008). The initiative to introduce the ISO 26000 standard this year is a significant step in this direction too (International Standards Office, 2010). The third trend is given by the steady supply of research for understanding the framework in which multinational enterprises define their CSR policies, for finding proposals for increasing their performance (Porter and Kramer, 2006; Turban and Greening, 1997; Bhattacharya, et al., 2008; Şerbânică and Militaru, 2008).

The objectives of the paper are in harmony with these trends. First, it aims to highlight the importance of workplace training for a harmonious interplay between community and company. In order to do so, we adapt the model of Bhattacharya, et al. (2009) which provides a comprehensive analysis of the relationship between stakeholders and company in the context of CSR activity. Another objective is related to the task of understanding the determinants of CSR strategy for personnel training in a multinational company. The paper proposes an empirical model for analyzing the personnel training intensity using explanatory variables concerning the economic performance and competition environment.

The empirical analysis uses data about personnel training at several subsidiaries of a large telecommunications multinational. The following reasons explain the choice of the telecom sector. It is an extremely dynamic industry where the pace of technological change requires constant investment in human and intellectual capital. Multinational telecommunications companies offer a comparable range of services through their subsidiaries in different countries. Thus, actions taken at the subsidiary level are also comparable. By nature of their business, the CSR actions of these companies are less related to the environment and more focused on social issues.

The paper includes the following main parts. First, there is a formal presentation of importance, effects and costs of employees training as a CSR activity. After it, there is a description of the model for analyzing the training intensity. The paper concludes with a discussion of empirical results and the main findings.
1. Training of employees in context of CSR

Workplace training plays a fundamental role for the individual development of the employee (Van Marrewijk and Timmers, 2003). The model from figure no. 1 adapts the one proposed by Bhattacharya, et al. (2009) and starts with a description of the perception of employee, a main stakeholder, towards training in the context of CSR. Further, it can be observed how this perception determines the quality of relationship with the company, as well as the behavioural outcomes that may affect the company either directly or indirectly.

Figure no. 1: Top-down analysis of relationships between the effects of personnel training within the framework of CSR strategy

The employee’s perception on the company’s motivation and its capacity to signal accountability and support for the staff holds a high position in the top-down analysis of training impact. Values are superior attributes that employees wish to associate with themselves and the company they work for. Functional benefits are improvements related to the employee’s functional role in the company. The quality of relationship between employee and company covers, in fact, the power relationship between the two social entities. Trust not only reflects the expectation that the company will keep its promises, but includes the hope that there is a degree of gratitude from the employer side, people distinguishing between "being used" and being a part of a community.

Employee identification with the company is very important in some cultures (Sage, 2009). If the link is strong, then the employee will be involved in supporting corporate objectives. The link will motivate him to express values that he perceives as shared by the company. He will seek to support instruction in other related spheres, such as motivating the peers to train or allocating spare time for self-education. Membership to a group influences human actions on the behaviour, intentions and values of others (Brewer and Kramer, 1985). Therefore, the feeling of belonging to the company as a social group favours a more friendly behaviour toward other persons that are connected to the group, e.g., the customers.

An important idea that can be drawn from the above is that the returns for employees precede the benefits for the company. In fact, taking into account the findings of Cermak and McGurk (2010), training can be painstakingly for companies for a whole range of reasons:

- it is costly because it involves not only explicit costs related to organization, but also the opportunity cost of time that would be otherwise used for productive activities;
- it is a lost investment or sometimes even an aid to competitors when trained employees leave the company;
- it has a hardly measurable impact, as questionnaires distributed at the end of courses with questions like "how useful was this course" do not represent a reliable source of information;
- it involves a difficult choice of topics, because in addition to training new employees with the specific of their work, companies offer courses in leadership skills, communication, performance management, efficient operations, etc.;
- creates the potential for moral hazard, because of information asymmetry between employer and employee on the effective increase in work skills, as employees may decide after training to actually work less;

In light of the above, we see three key features of personnel training:

- It has a significant social impact on employees, which is generally strongly positive, being part of the responsible contribution that the company makes to community welfare;
- It is essential in the global, super-competitive, knowledge based economy, where all organizations need highly qualified personnel (see McKinsey, 2010);
- It is costly and can be risky for the company.
Especially in economically turbulent periods, companies optimize their efforts in achieving a sensible trade-off between costs and benefits of this activity. Nevertheless, they should not forget the principles of sustainability (State and Popescu, 2008).

2. A model for the evaluation of explanatory variables for personnel training intensity in the case of a telecommunications multinational company

2.1 Model identification

According to Fernandez and Usero (2009), competition in telecommunications industry has two main strategic directions. The first one relates to the prices of services and the trend to reduce them. The second one is the differentiation of supply with the introduction of innovative products and high quality services. The decline of prices increases the pressure to streamline all operations and reduce indirect costs. Differentiation requires the adoption of new technologies that need a highly qualified staff.

According to each of these directions, we seek an explanatory variable (Olaru, et al., 2010). Tariff reductions impose an increase in labour efficiency. Thus, we can consider the average labour productivity as a relevant variable in determining the training budget. As regards the differentiation of supply, it is primarily correlated with the development of the local market. Based on these assumptions we define the following model:

\[ TRAIN = f(WL, IS) \]

where \( TRAIN \) is the endogenous variable represented by an indicator of personnel training intensity, \( WL \) is a measure of labour productivity in a subsidiary and \( IS \) is an indicator of local telecommunications market sophistication and development. Signs indicated below formula show the expected dependence between variables.

The \( TRAIN \) indicator can be estimated as share of trained workers in total employment. This implies that training intensity is quantifiable using the number of beneficiaries. For example, for training programs that award a certification, the percentage of workforce that holds that certification is useful information in assessing the intensity of training.

An alternative measure for \( TRAIN \) could be the ratio between training hours and total person-hours worked. A first advantage is that it avoids the issue of lack of homogeneity for the group of trained workers. Another advantage is that it provides a more accurate picture of the actual intensity of efforts made by the company for its employees, as the average number of hours worked can significantly vary across countries. Thus, for example a two-hour instruction program reflects a more intensive training in a country where the average weekly working time is 36 hours, compared to another country where the average week has 42 hours. A disadvantage is the difficulty of estimating the average number of person-hours worked in each country. While the total number of employees is easily observable, the total person-hours worked can only be roughly and indirectly estimated using some weekly or annual averages from various statistical databases.

As an indicator of labour productivity, we use turnover per labour unit. Labour productivity is highly dependent on available capital stock. Therefore, we can anticipate the need to
include also a measure of capital endowment per labour unit. For a telecommunications company, we can assume that the most important part of capital consist of electronic hardware. It consumes electricity, hence electricity consumption is not just an essential input but it can be used as a proxy for the quantity of technical equipment used too. Therefore the capital indicator will be the electricity consumption per labour unit.

The average number of Internet users per 100 inhabitants will give sophistication and development of telecommunications market.

Data on training intensity and energy consumption were taken from the 2009 CSR report of a multinational European telecommunications company. Turnover for each country comes from the company website. Data on the average number of Internet users per 100 inhabitants was taken from the statistical section of the The World Bank, 2010 website. Information on the average number of person-hours worked in each country was extracted from the OECD Statistics, 2010, ILO Statistics, and Databases, 2010 websites. The selection of the company was determined by the large number of countries from different continents where the company has subsidiaries in mobile telephony, fixed telephony and internet access services. Data availability has also played a key role. The sample includes data for 14 countries located on four continents, where the company holds major telecommunications subsidiaries.

2.2 Regression model

For an empirical test of the model presented by function (1), it is necessary to take into account any constraints imposed by the variables used. We can anticipate two such constraints. The first one is the fact that labour productivity can be itself seen as an endogenous variable in the model, because the literature has already demonstrated the intuitive relationship where training increases the labour productivity (Conti, 2005; Dearden, et al., 2006; Colombo and Stanca, 2008). In other words, we can say that labour productivity explains their training budgets and training influences labour productivity.

The second restriction concerns the potential collinearity between the two explanatory variables in the model. It can be assumed that there is interdependence between the development of telecommunications market and the labour productivity in a company that controls a significant percentage of the market. The existence of a linear relationship between the independent variables of the model increases variance and covariance of least squares estimates and makes hypotheses testing less precise. The situation is complicated by the small size of available sample. As stated by Kmenta (1986 cited in Gujarati, 1995, p. 335), multicollinearity is an issue of degree and not of presence or absence. In other words, the question is what degree of multicollinearity can be considered as acceptable in the estimation of a model. Concerning our model, since the sample size is very small, the acceptable level of collinearity should be rather low.

Using equation (1) the regression model will have the following form:

\[
TRAIN_i = \beta_{11} + \beta_{12} \ln(WL_i) + \beta_{13} \ln(IS_i) + u_i
\]
We are interested in the sign and the significance of $\beta_{12}$ and $\beta_{13}$ which will help us understand the distribution of social responsibility efforts in training personnel between subsidiaries from different countries.

For taking into account the potential endogenous nature of $WL$, the literature on the impact of training programs on labour productivity (Dearden et al., 2006; Colombo and Stanca, 2008) gives us the following regression equation, derived from Cobb-Douglas production function:

$$\ln(WL_i) = \beta_{21} + \beta_{22}TRAIN_i + \beta_{23} \ln(K_i) + u_{2i}$$

(3)

where $K$ is capital per labour unit.

2.3 Model estimation

Combining (2) and (3) we obtain a simultaneous-equation system that can be estimated using the method of two-stage least squares (Gujarati, 1995, p. 686). Estimation results are presented in table no. 1.

Table no. 1: Econometric estimation results

<table>
<thead>
<tr>
<th>No.</th>
<th>Training intensity variable</th>
<th>Econometric model</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>$TRAIN = \text{Ratio of trained employees in total employees}$</td>
<td>$TRAIN_i = 1,0041^{<strong>} + 0,0271\ln(WL_i) + 0,1299^{</strong>}\ln(IS_i)$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$t=(8,5130)$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$F\text{ Test}=4,3891^{**}$</td>
</tr>
<tr>
<td>1.2</td>
<td>$TRAIN = \text{Ratio of person-hour training in total person-hours worked}$</td>
<td>$TRAIN_i = 0,5801 + 0,2400\ln(WL_i) + 0,2845\ln(IS_i)$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$t=(0,2866)$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$F\text{ Test}=3,3876*$</td>
</tr>
</tbody>
</table>

** indicates that the test is significant at 5% significance level
* indicates that the test is significant at 10% significance level

VIF = variance inflation factor

For a better understanding of the intensity of interdependence between variables, table no. 2 provides a correlation analysis.

Table no. 2: Correlation analysis

<table>
<thead>
<tr>
<th>Training intensity variable</th>
<th>Pearson correlation coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>$TRAIN = \text{Ratio of trained employees in total employees}$</td>
<td>$\ln(WL_i)$</td>
</tr>
<tr>
<td>$TRAIN$</td>
<td>0,285</td>
</tr>
<tr>
<td>$\ln(WL_i)$</td>
<td></td>
</tr>
<tr>
<td>$TRAIN = \text{Ratio of person-hour training in total person-hours worked}$</td>
<td>$\ln(WL_i)$</td>
</tr>
<tr>
<td>$\ln(WL_i)$</td>
<td>0,591**</td>
</tr>
<tr>
<td>$\ln(IS_i)$</td>
<td></td>
</tr>
</tbody>
</table>

** indicates that the coefficient is significant at 5% significance level
The problem of collinearity is investigated using the $t$ and $F$ test results, the VIF from table no. 1, as well as the correlation coefficients from table no. 2. When $TRAIN$ is estimated as share of trained workers in total employment, there is not strong enough evidence for the presence of a collinearity issue. Things are different when $TRAIN$ is measured as the ratio of person-hour training in total person-hours worked. The model (1.2) from table no. 1 shows that although none of $t$-tests are significant, $F$ test is significant at 10% confidence level. VIF value is greater than one, and although apparently small, this value must be interpreted with caution taking into account the small sample size. Thus we can note the first evidence for a collinearity issue when using person-hour in $TRAIN$ measurement. This conclusion is further supported by the correlation coefficients (table no. 2). The correlation between labour productivity and the degree of development of the telecommunications market is higher than 0.5 and is significant at 5% confidence level. At the same time, $TRAIN$ variable is significantly correlated with both labour productivity and the degree of market development, although regression model seems to indicate that none of these variables influence it.

Gujarati (1995, p. 339) provides some measures to mitigate the effects of collinearity. These measures include restrictions on parameters, data transformation, larger samples, and model adjustment by dropping explanatory variables etc. From these measures we chose the method of dropping explanatory variables, since the amount of data currently available is extremely limited and our interest is primarily related to the sign and significance of parameters.

According to the conclusions from above concerning the collinearity degree, we have estimated simplified models only for the case where the person-hour is used as labour unit measure.

The estimation results of simplified models are found in table no. 3. This time the coefficients are significant. However, simplifying the model by removing the variables exposes us to the risk of a model specification error. The estimate of included variable may be overestimated and must be interpreted with caution.

**Table no. 3: Econometric estimation results for simplified models**

<table>
<thead>
<tr>
<th>No.</th>
<th>Training intensity variable</th>
<th>Econometric model</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>$TRAIN = \text{Ratio of person-hour training in total person-hours worked}$</td>
<td>$TRAIN = -1.3406 + 0.5308*\ln(WL) \quad t = (-0.9068) \quad (1.9122)$</td>
</tr>
<tr>
<td>3.2</td>
<td>$TRAIN = \text{Ratio of person-hour training in total person-hours worked}$</td>
<td>$TRAIN = 1.9599** + 0.3665**\ln(IS) \quad t = (7.3164) \quad (2.4297)$</td>
</tr>
</tbody>
</table>

** indicates that the test is significant at 5% significance level  
* indicates that the test is significant at 10% significance level

3. Discussion of empirical results

According to estimation results from table no. 1 and table no. 3 in all cases the coefficients have had the expected signs. Regarding the significance of parameters, we analyze separately the two variants of calculation of training intensity.
In the first case, using the number of workers as a basis, model (1.1) from table no. 1 suggested that only the sophistication of the telecommunications market is a relevant factor for training intensity. This result is supported by correlation analysis. Table no. 2 shows a relatively high and statistically significant correlation coefficient only for the pair TRAIN - IS. Collinearity does not seem to be a major issue in this case. Therefore, the estimation of simplified models was not considered as being necessary. The lack of collinearity is justified by the fact that in less developed markets, a large number of workers can benefit from basic training in infrastructure operation and sales of relatively simple products. Of course, the number of hours devoted to such forms of training will be lower than for sophisticated markets. Therefore, collinearity should be an issue for the other calculation method of TRAIN.

Results of econometric estimation using the number of person-hours worked for TRAIN calculation seem to confirm the above expectations regarding collinearity. Estimation of simplified models (table no. 2) suggests that both explanatory variables are relevant. It seems that for the decision regarding the duration of a training program, the multinational telecommunications company takes into account both the average revenue obtained from the branch, and the sophistication of the local telecommunications market. It should be noted that in this case empirical evidence is weaker, as simplified models may be exposed to the consequences of a potential model specification error.

We can summarize the findings in figure no. 2. Sampled countries were grouped by turnover per employee and the spread of Internet. Training intensity is strongly correlated with development of telecommunications market. Thus, at roughly the same average turnover per employee, the employees of a subsidiary from a developed market received in 2009 on average about 60% more training than the group peers from the seven least developed countries. In developed markets, a higher turnover per employee resulted in approximately 20% more training.

As we saw in figure no. 1 training creates significant psychosocial and functional benefits for the employee. In this framework, training is more than an investment for improving labour productivity and becomes a key factor for the quality of relationship between company and community.

The benefits from training, such as shared values, good feelings and satisfaction of personal skills growth build a sustainable link that integrates the company into the community. Therefore, in figure no. 2 one can show a stylized representation of worldwide distribution of company’s efforts toward training. This image confirms the documented pattern of multinational companies approach to CSR policies in other areas such as environmental protection or the attitude towards corruption. In developed countries, the standards adopted by these companies are usually much higher than in the poor regions. This reality supports the vicious circle in which poor people are less productive because of training deficiencies, which in turn cannot be eliminated because of insufficient income.
Conclusions

The paper discussed the issue of workplace training as a part of CSR strategy of a multinational telecommunications company, with the support of an empirical application. A first contribution was the adaptation of a general model designed to study the impact of CSR on stakeholders, which was proposed by Bhattacharya, et al. (2009) for explaining the effects of personnel training. The adapted model helped us draw the conclusion that training programs generate important motivational, social and functional benefits for employee and these gains precede the positive outcomes for the company. Training of personnel improves the quality of the link between community and business and contributes to the sustainability of the latter.

The second contribution is the proposal of an empirical model for studying the explanatory variables for the training intensity. The model employs the hypothesis that training is costly yet unavoidable, so companies will try to optimize this activity according to available resources and market characteristics. This hypothesis is in harmony with the conclusion of Porter and Kramer (2006) that CSR can be a source of competitive advantage. Estimation of the model revealed two interesting aspects. The first one was that the probability of an employee from a given subsidiary to participate in a training program depends on the local market development level and not on average labour productivity. The second one was that, when training intensity is expressed as number of hours of training related to the total of worked person-hours, there is some statistical evidence that both labour productivity and market development can be accepted as explanatory variables.

The contributions of this paper are important from at least three reasons. First, it provides a better understanding of the role of workplace instruction for developing a sustainable relationship between company and community. Secondly, the econometric framework supports new research directions on CSR activities of multinational companies related to labour, as the model can be relatively easily adapted to other data sets and industries. Thirdly, although the empirical results obtained for a telecom company have a limited representativeness, they contribute to extension of literature concerning the link between
CSR and globalization, particularly in relation to asymmetries between developed and less developed countries.

The main limitation of the research was the quality and volume of available data. GRI reporting standards are not sufficiently widespread and most companies only provide consolidated group level data. Therefore, empirical analysis was limited to a single company, leading to a reduced sample size and constraints imposed on econometric methodology. Once more data will be available, an important future research direction will be to test the model for larger samples of data. Another research direction may be based on introduction of new explanatory variables such as market share, dummy variables for industry, etc. Thus, interesting comparisons between multinational companies and between industries can be provided.

As a final remark it should be once again emphasized the great importance of workplace instruction for employees’ psycho-social and material aspirations fulfilment, as well as the need to involve all stakeholders to support it. According to the data used, the probability to be selected for a training program in one year can be up to three times smaller for an employee of the telecom company from an African country when compared to a peer from a rich western country. Some discrepancies will always exist. Nevertheless, in order to be able to praise socially responsible workplace training, such discrepancies should not be that large, their existence should be transparently justified in CSR reports, and particularly, there should be a tendency to reduce them on medium and long run.

References


