Corporate Social Responsibility and Sustainability’s Effect on the Relationship Between Technological Companies’ Stakeholders and Performance

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This study analyses the role played by stakeholders in technology companies. These companies can contribute to building sustainable economies through proactive strategies including innovations in products and services with socially positive impacts. However, the role of stakeholders in these firms has not been studied in detail. In addition, the effect of corporate social responsibility (CSR) on competitive success is greater in more competitive industries, such as the technology sector. This research thus focused on the mediating effect of CSR on the relationship between technology companies’ stakeholders and performance. A structural equations model was used to conduct the analysis. The results show that the influence of stakeholders on these companies’ performance is enhanced by CSR strategies.

Keywords: Corporate Social Responsibility, Sustainability, Stakeholders, Technological Companies, Mediating Effect, Performance

Introduction

The paradigm of sustainable development presents multiple challenges to companies, requiring the adoption of strategies that meet the needs of these firms and their stakeholders while protecting and preserving the resources essential to their future success.1 Managers who seek to balance the different interests of various stakeholders face a quandary that constantly presents management challenges.2 Therefore, the present study’s objective was to understand how firms operating in increasingly complex contexts can integrate the equally complex goal of economic, social and environmental sustainability into their innovation strategies.1 Corporate social responsibility (CSR) is defined as organisational behaviours that go beyond serving purely economic interests to generate benefits for stakeholders.3 The effects of CSR on competitive success is greater in sectors with high levels of competitiveness, including the technology sector, and for companies that follow proactive strategies rather than reactive ones.4 Despite the significant role of Technology Companies (TCs) in environmental management, sustainability and CSR, this involvement is still in its early stages.5 TCs can contribute to building a sustainable economy with proactive strategies promoting innovation in products and services that are not only commercially attractive and environmentally sound but also those that have positive social impacts.6 Nonetheless, the role of stakeholders has not been studied in detail in these firms. Therefore, the present study sought to achieve three related objectives. These were (1) to study the relationship between TCs’ CSR strategies and performance, (2) to analyse the role played by stakeholders in these companies’ performance and (3) to examine whether CSR strategies have a positive effect on TCs’ stakeholders.

Hypotheses development

Stakeholders are any group of individuals which can affect or be affected [by the] achievement of the organization’s objectives and can refer to shareholders, workers, suppliers, clients, local communities, creditors and even the media7. The resulting effects of different stakeholders on organisations have been analysed separately8. However, no previous research has considered the effects of all stakeholders at the same time or determined which are the most important groups for TCs. The first hypothesis of the present study was thus formulated as follows:
H1: Stakeholders have a positive influence on technological firms’ performance, and this effect can be enhanced by CSR strategies. TC managers must consider the characteristics of their business environment, remaining sensitive to the increasing pressure exerted by a wide variety of stakeholders. This awareness eventually gives rise to proactive corporate social behaviours. Managers need to seek to address stakeholders’ requirements actively and aim to balance multiple stakeholders’ interests.

Clearly, stakeholders should guide CSR strategies, so the second hypothesis was developed as follows:

H2: Technology firms’ stakeholders have a positive effect on CSR strategies. CSR has a positive relationship with financial benefits, particularly for the technology industry, as economic performance can be strengthened by CSR strategies.

However, the effects of CSR on firm performance can vary depending on organisational culture. Thus, the last hypothesis formulated for the present study was as follows:

H3: CSR strategies have a positive effect on technology firms’ performance. This study, therefore, developed a research model that examined TCs’ stakeholders and their relationship with company performance, including this connection’s antecedents and mediators. CSR strategy was included as a mediating variable.

Methodology
The study population was composed of firms located in Spanish science and technology parks in order to reduce heterogeneity among the companies under study. To analyse the relationships between the constructs shown in Figure 1, an original questionnaire was developed that used a Likert five-point scale (i.e. 1 = ‘totally disagree’ and 5 = ‘strongly agree’). This approach was selected because many items referred to issues that cannot be quantified with a specific value. In general, the questionnaire included items related to CSR strategies, stakeholders and company performance in line with surveys used in other studies. The data collection phase included a total of 489 invitations sent via email, providing access through a link to the questionnaire. Eventually, 98 companies completed the survey, which represents a response rate of 20.04%. The survey data collected were analysed using a two-step structural equation modelling (SEM) approach to test the hypotheses proposed. SEM consists of constructing two submodels: the measurement model, which specifies the relationships between constructs and their indicators, and the structural model, which contains the relationships between constructs. The specific technique chosen within the SEM approach was partial least squares, and the software used was Smart PLS 3.0.

Results and Discussion
Measurement model
Individual items’ reliability can be assessed by analysing their standardised loadings (λ). A standardised loading over 0.7 is desirable. Even if the λ is greater than 0.6, the result is significant, but the item will be considered adequate. If a loading's confidence interval includes zero, this provides evidence that the loading is not statistically significant, making the item a candidate for removal from the measurement model. The items used in the final version of this study’s questionnaire are showed in Table 1. Construct reliability is usually assessed using composite reliability (ρc), Cronbach’s alpha (α) and Dijkstra-Henseler’s rho (ρA). The α, ρA and ρc must be higher than 0.70 and below 0.95. Table 2 shows the values obtained, thus confirming the measurement model’s internal consistency. A factor has discriminant validity when its heterotrait-monotrait ratio of correlation (HTMT) is less than 0.85. In the present study, all HTMTs are lower than 0.85, as shown in Table 2.

Structural model
The criteria used to assess the structural model were path coefficients (β) and their confidence intervals, namely, coefficient of determination (R²). First, when the β is less than 0.2, no causality exists, and the hypothesis is rejected. Bootstrapping (i.e. 5,000 resamples) was used to generate standard
errors, t-statistics and confidence intervals. This then enabled an assessment of the statistical significance of the path coefficients. At the same time, the bootstrapping confidence intervals of standardised regression coefficients were used to accept or reject the hypotheses (Figure 1). Second, the goodness of fit of the proposed model was determined by the strength of each structural path. This analysis was done using the $R^2$ values (i.e. explained variance) for the dependent latent variables. For each path between constructs, the desirable values needed to be at least equal to or higher than 0.1. Each $R^2$ is shown in Figure 1 above. Currently, the standardised root mean square residual (SRMR) is accepted as proof of a model’s goodness of fit if its value is less than 0.08 for both the measurement and structural models. In this case, all the SRMRs are lower than 0.08. The SRMR value for the measurement model is 0.079, and its confidence intervals – presented in brackets – are [0.059, 0.101], while the values for the structural model are 0.080 and [0.060, 0.101].
Mediation effect

Mediation occurs when a third mediator variable intervenes between two other related constructs. Thus, a direct effect is the relationship linking two constructs with a single arrow (Figure 1). An indirect effect is a relationship that involves a sequence of relationships with at least one intervening construct involved. The effects are shown in Table 3. Taking into account these indirect effects, the relationship between stakeholders and company performance is positive so that $\beta_1$ increases from 0.222 to 0.431, which is also significant (p $\leq$ 0.001). This relationship can be mediated by CSR, so testing explicitly for this potential mediating effect is considered worthwhile for two reasons. First, specific indirect effects have to be examined in order to know the effects’ level of significance. Second, if indirect effects are significant, a partial mediation (i.e. complementary or competitive) could exist. In this case, the indirect effect is 0.209 (p $\leq$ 0.001). Last, to estimate the magnitude of the indirect effect, the variance accounted for (VAF) value was computed, as this represents the ratio of the indirect effect to the total effect. This final step yielded a VAF value of 0.484, which suggests that CSR partially mediates the relationship between stakeholders and company performance. This result indicates that at least 48% of the total effect of stakeholders on TCs’ performance is explained by the indirect effect of CSR strategies. Partial mediation occurs when the VAF is greater than 0.2 but less than 0.8. Thus, CSR partially mediates the relationship between stakeholders and company performance.

Conclusions

This study proposed a model to explain stakeholders’ influence on TCs’ CSR strategies, as well as the observed mediating effect occurs in other countries.


