

Institutional Ownership and Corporate Social Performance: Empirical Evidence from Indonesian Companies

Hasan Fauzi

Faculty of Economics
Sebelas Maret University, Indonesia

Lois Mahoney

College of Business
Eastern Michigan University, USA

Azhar Abdul Rahman

Faculty of Accountancy
University Utara Malaysia, Malaysia

Abstract

Prior research on the relationships of institutional ownership and corporate social responsibility has focused on North American (U.S. and Canada) and European companies. With the passage of Indonesian Law No. 40 in 2007, Indonesian companies are now obligated to conduct CSP. As these companies objected to the passage of this law, awareness of how CSP may benefit Indonesian companies in terms of its positive impact on institutional investors needs to be investigated. Thus, this paper examines the relationships of IO and CSP for Indonesian companies. Unfortunately, contrary to the results for North American and European companies, we found no relationships between institutional ownership and corporate social responsibility for Indonesian companies. This finding suggests that most institutional investors do not include CSP as part of their investment decisions.

Keywords: *Institutional ownership, Corporate social performance (CSP), corporate social responsibility (CSR), Indonesian companies*

Hasan Fauzi is Director of Indonesian Center for Social and Environmental Accounting Research and Development (ICSEARD) at Faculty of Economics of Sebelas Maret University, email: hfauzi2003@indo.net.id. Lois Mahoney is Associate Professor at Department of Accounting and Finance at College of Business Eastern Michigan University, USA, email: lois.mahoney@emich.edu. Azhar Abdul Rahman is Associate Professor at Faculty of Accountancy of University Utara Malaysia, email: Azhar258@e-web.uum.edu.my.

Introduction

Since the inception of the triple bottom line concept in 1990s (Elkington, 1998), many investors consider corporate social performance (CSP) an important component of their investment decisions. Many investors demand that the corporations they invest in have high levels of CSP. Coffey & Fryxell (1991) found that corporations with high levels of CSP are attractive to investors, especially institutional investors. Consistent with these findings, Waddock & Graves (1994) found that institutional investors and CSP are significantly positively related. The growing dominance of institutions in the capital market is reflective of the concentration and increasing wealth of these institutional investors (Brancato & Gaughan, 1991). As a result, institutional investors' decisions in the capital market would likely impact companies stock values. Thus, companies that are concerned about their financial performance should also be concerned about maintaining high levels of CSP. Hence, corporate social activities are becoming part of normal company operations considerations.

Prior research on the relationships of institutional ownership (IO) and CSP has focused on North American (U.S. and Canada) and European companies (Mahoney & Roberts, 2007, Graves & Waddock, 1994 and Consolandy et al. 2006). Indonesian Law No. 40, passed in 2007, now obligates Indonesian companies to conduct CSP. Indonesian companies objected to the passage of this law as they felt it would lead to decrease profitability and stated that they were not ready to implement it. Therefore awareness that CSP may benefit Indonesian companies in terms

of its positive impact on institutional investors and profitability needs to be provided. Thus, this paper examines the relationships of IO and CSP for Indonesian companies.

Theory and Research Question

Corporate Social Performance

In an effort to meet all stakeholder expectation, companies need to improve CSP while also improving financial performance. Waddock & Graves (1994) put forward two theories to explain the causality relationship between CSP and financial performance: *slack resource theory* and *good management theory*. Under *slack resource theory*, a company's improved financial performance may result in the availability of excess funds that can be used for CSP activities. Thus, conducting CSP requires the use of funds obtained from the success of financial performance. According to this theory financial performance comes first. The *good management theory* holds that CSP come first. Based on this theory, a company perceived by its stakeholders as having a good CSP reputation will be more attractive in such a way that it will lead to improved financial performance through market mechanism.

Unlike financial performance indicators, CSP is difficult to measure. As a result, previous research on the relationship between CSP and financial performance have focused on using independent indexes and self-reported information in measuring CSP. Itkonen (2003, p.5) summarizes the different approaches of CSP in the Table 1. These approaches include eight attributes of reputation

Table 1 CSP Index Measures

Measure	Dimensions	Judges	Source
Fortune	Eight attributes of reputation	Financial analysts, senior executives and outside managers	Griffin & Mahon, 1997
KLD	Five attributes of CSP focusing on key stakeholder relations, three on topics with which companies have recently experienced external pressures	External audiences	Waddock & Graves, 1997
TRI	Quantitative measures of companies' environmental discharges to water, air and landfills and disposal of hazardous waste	No external judges needed, companies themselves give the data	Griffin & Mahon, 1997
Corporate Philanthropy	Quantitative measure of companies philanthropy, how much money spent in the charitable activities	No external judges needed, companies themselves give the data	Griffin & Mahon, 1997
Best Corporate Citizen	Three-year average shareholder return and six social measures: company's influences on customers, employees, community, environment, minorities and non-U.S. stakeholders	Social investment research firms	Murphy, 2002

(Fortune index), five aspects focusing on key stakeholders and three pressure variables (KLD Index), quantitative measure of environmental aspect (TRI measure), quantitative aspect of company philanthropy (Corporate philanthropy measure), and return and six social measure on customer, employee, community, environment, minority, and non US stakeholder (best corporate citizen). While these approaches may use similar methods in arriving at a CSP values, these values may differ due to the evaluators' perspective or bias.

Because of the complexity in measuring CSP and the lack of CSP indexes available, some researchers have used social disclosures contained in Corporate Annual Report (CAR) as a proxy for CSP (Waddock & Graves, 1997). In an effort

to investigate the pattern of environment disclosures, Thomas & Kenny (1997), O'Donovan & Gibson (2000), and Cunningham (2002) developed environment indexes calculated from environment disclosure in CARs. Mangos and O'Brien (2002) used the CSP index (environmental aspect included) in their attempt to relate this index to economic performance. Regarding the use and role of CAR to evaluate the transparency of management as a good corporate governance principle, Beattie et al. (2002) reported amount and quality of company disclosures based on the number of text units of certain thematic contained in the CAR. Furthermore, Stanton and Stanton (2002) examined the use of CAR's in studies that have been conducted by researchers from 1990 onward. In their work, they put forward perspectives

(political economy, legitimacy, accountability, and marketing), subject of analysis, and focus used for each study conducted by the researchers. Iu & Clowes (2001) also supported the importance of evaluating narrative disclosure of accounting by using a method called texture index, developed by Sydserff & Weedman (1999). The texture index is a part of content analysis research methodology originally developed in communication science.

Institutional Ownership

According to Pound (1988), institutional owners' investments are so large that they have less ability than individual shareholders to move quickly in and out of investments without affecting share prices. As a result, these institutional investors have a strong interest not only in the financial performance of the firm in which they invest in, but also in the strategies, activities, and other stakeholders of the firm (Fortune, 1993; Gilson & Kraakman, 1991; Holdderness & Sheena, 1988; Pound, 1992; Smith 1996; Johnson & Greening, 1999 and Mahoney & Robert, 2007). Thus institutional investors may see the long-term benefits of a firm's involvement in CSP (i.e.: maintaining product quality, being responsive to the natural environment, community and people they employ) (Turban and Greening, 1997).

Spicer (1978) and Mahoney & Robert (2007) argue that institutional investors consider low CSP firms to be riskier investment. This risk arises from the possibility of costly sanctions resulting from adverse legislative or regulatory actions, judicial decisions, or consumer retaliation. The likelihood of such actions

leads investors to revise their perceptions of the probability distributions of future cost and revenues (Shane & Spicer, 1983 and Mahoney and Robert, 2007). Investors are assumed to consider both risk and return and high levels of CSP may reduce firm risk, thus providing an incentive for company managers to invest in positive CSP activities. By choosing a similar socially responsible company, an investor might achieve the same return with less risk.

Coffey & Fryxell (1991) found mixed results in their study between IO and CSP. While they found no significant relationship between IO and charitable giving they did find a significant positive relationship to a component of CSP; the number of women on a board of directors. Graves & Waddock (1994) and Mahoney and Robert (2007), using the KLD measures of CSP for a sample of U.S. firms, found a significant positive relationship between the number of institutions owning shares and CSP. Thus, based upon the above arguments and the results of Graves & Waddock (1994) and Mahoney & Roberts (2007), we expect that for Indonesian firms, CSP will be significantly positively related to the number of institutions owning its shares.

Research Method

Data and Sample Selection

Data for this study was obtained from CARs for manufacturing and non manufacturing companies that were registered on the Jakarta Stock Exchange (JSX) and issued an annual report (including financial statements) in 2005. A total of 339 companies were registered on the JSX. Of these companies, 325 issued

CARs in 2005. One CAR was unreadable, resulting in a final sample size of 324 companies. Of these 324 companies, 138 were manufacturing and 188 were non manufacturing.

Measures

CSP

This study uses the approach of measuring CSP as developed by Jantzi Research Inc. (JRI), (2008) by evaluating the CSR disclosures in Indonesian CARs for each of JRI's dimensions to arrive at a CSP index. JRI is a research institution that prepares and generates information on CSP for Canadian firms and developed and maintains the Canadian Social Investment Database. This database is comparable to the KLD database developed by KLD Research & Analytics for U.S. companies. JRI has a long-standing research partnership with KLD where they exchange research and have collaborated on numerous research projects (JRI, 2008). For the purpose of measuring CSP, JRI prepared a guideline of CSP measures containing the following dimensions: community and society, corporate governance, customers, employees, environment, human rights and controversial business activities. Each of these dimensions has subsections addressing areas such as reporting, management systems, programs and initiatives, and other performance data (JRI, 2008). (See Appendix A for further information on each of these dimensions) JRI gives each of these dimensions two ratings, one for strength and one for weakness, on a scale of zero to two.

Using the guideline as indicated in Ap-

pendix A and following the approach of JRI, data from each CAR was assessed on a scale of zero to two for both strength and weakness for each dimension. A -2 rating for any dimension indicates major concern, -1 indicates a notable concern, 0 indicates no notable or major strength and concern, +1 indicates a notable strength and +2 indicates a major strength (Mahoney & Robert, 2007). The CSP index was then calculated by summing all dimensions scores for each company. The ratings were conducted by one researcher and verified by a second researcher. Any discrepancies in ratings were resolved between agreements of the two researchers.

Institutional Ownership

Consistent with prior research (Mahoney & Robert, 2007) IO was measured by the number of institutions owning shares in each company. This information was obtained from the Institutional Ownership in Indonesia Listed Companies Directory.

Control Variables

Some difference in CSP may result from financial performance, firm size and industry and need to be controlled for (Waddock & Graves, 1997, Mahoney & Roberts, 2007). Consistent with prior research (Mahoney & Roberts 2007) ROE and ROA are used as a proxy for financial performances and total assets as a proxy for firm size. Firm industry is represented by a dummy variable based upon whether the company is a manufacturing or non manufacturing company.

Table 2 Means and Standard Deviations

Variables	N	Min	Max	Mean	Std Dev
CSP	324	0	30	8.07	5.631
IO	324	0	18	2.82	2.052
ROE	324	-796.8	363.66	-3.24	74.853
ROA	324	-431.67	93.65	0.919	27.506
TA	324	8382	3E+008	5310086	21321240
Industry	324	0	1	0.57	0.495

Analytical Model

Analytical model used to test the hypotheses is a regression model:

$$CSP_i = \beta_0 + \beta_1 IO_i + \beta_2 ROA_i + \beta_3 ROI_i + \beta_4 SIZE_i + \beta_5 INDUSTRY_i + e$$

Where:

i: firm 1..... (number of sample firms – 1)

β: regression coefficient

CSP = Corporate Social Responsibility

IO= Institutional ownership

ROA=Return on Assets

ROI =Return on Investment

Size =Total Assets

Industry = 0 if, 1 otherwise

Findings and Discussion

Table 2 presents the descriptive statistics for the entire sample. The mean of IO is 2.82 with a standard deviation of 2.052. The company with the highest number of institutional owners (18) is PT. Kawasan Industri Jababeka and the companies with the lowest number of institutional owners (zero) are PT. Beton Manunggal, PT. Intan Wijaya, and Jakarta International. The mean CSP score is 8.07 with the standard deviation of 5.631. The

company with the highest CSP score of 30 is PT. Holcim Indonesia. Eleven companies had the lowest CSP score of zero (such as Ades Waters and Pt. Alumindo).

The data was tested for multicollinearity. The result of our tests indicated that no independent variables (ROE, ROA, total assets, IO and industry) had tolerance values less than 0.10, indicating that no correlation among independent variables exists. These results are supported by the VIF values for each independent variable as they are all less than ten. Thus we concluded that no multicollinearity exists among the independent variables.

Table 3 presents the results of our regression equation. This model is significant at p<.000 level, meaning that it can be used to predict the variability of CSP resulting from the change in the IO.

As shown in Table 2, IO is not significant (p<.0165) indicating that IO does not impact on CSP. This finding is inconsistent with prior research in North American companies, which provide support of the relationship between IO and CSP. Graves and Waddock (1994) and Mahoney and Robert (2007) using samples from American companies and

Table 3 Regression Result

Descrip- tion	Sum of Square	Degrees of Free	Mean Square	F	Significance
Regression	1421	5	284.22	10.246	0.000
Residual	8821	318	27.739		
Total	10242.22	323			

Variable	Coefficient	Std of Err	t-value	Sig	R2
Constant	7.149	0.597	11.971	0.000	0.125
IO	0.200	0.144	1.390	0.165	
ROE	0.009	0.004	2.265	0.024	
ROA	0.027	0.011	2.487	0.013	
TA	8.47	0.000	2.487	0.013	
Industry	-0.148	0.598	-0.247	0.805	

Canadian companies, respectively, found a significant positive relationship between IO on CSP. This current study is also not consistent with the study of Consolandy et al. (2006), where they also found a positive relationship between IO and CSP for European companies.

A possible reason for the difference in the relationship of CSP or CSP could be the way that Indonesian companies view CSP. For Indonesian companies, CSP is always thought of as to philanthropic activities only. The activities to maintain their commitment to customers and suppliers for example is not commonly view by Indonesian companies as being part of CSP. The differences of the views may contribute to the different result. Additionally, Indonesian companies by protesting that they are not ready to apply CSP as required by Law 40, provide support for Graves & Waddock's (1994) slack resource theory.

Interesting, though, our research does indicate a positive significant relation-

ship between both measures of financial performance and CSP. These findings support slack resource theory, indicating that a good financial performance leads to an increase in CSP.

Conclusion

Our research failed to find a significant relationship between IO and CSP for Indonesian companies. The implication of the finding implies that the potential actions of institutional investors can not use as means to encourage CSP activities in Indonesian companies. Furthermore, this finding would suggest that most institutional investors do not include CSP as part of their investment decisions.

A limitation of this study may be the use of only one year annual report compared to the previous studies including more than one year. Future research may want to consider CSP over a period of several years. The possibility of bias also exists from researchers conducting

the content analysis. Future research may want to combine content analysis with qualitative approach to improve research results.

References

- Beattie, V., B. McInnes & Fearnley, S. (2002) "Narrative Reporting by Listed UK Companies: A Comparative Within-Sector Topic Analysis", <http://www.stir.ac.uk/Departments/Management/Accountancy/stfpages/mcinnnes/page.htm>.
- Brancato, C.K. & Gaughan, P. (1991) *Institutional Investors and Capital Markets: 1991 Update* (Columbia Law School Institutional Investor Project, New York, New York).
- Coffey, B.S. & Fryxell, G.E. (1991) "Institutional Ownership of Stock and Dimensions of Corporate Social Performance: An Empirical Examination", *Journal of Business Ethics*, Vol. 10, No. 6, pp. 437-44.
- Consolandy, C., Nascenzib, P. & Jaiswal -Dale, A.(2008) "Ownership Concentration and Corporate Social Performance: An Empirical Evidence for European Firms". <http://www.crrconference.org>
- Cuningham, S. & Gaddene, D. (2003) "Do corporation perceive mandatory publication of pollution information for key stakeholders as a legitimacy treath?", *Journal of Environmental Assessment Policy and Management*, Vol. 5, No. 4, pp. 523-549
- Elkington, J. (1998) *Cannibals with Forks: The Triple Bottom Line of 21st Century*. Gabriola Island, BC: Stony Creek, CT.
- Fortune. 1999. "What Activist Investors Want". Vol. 127, No. 5, pp. 59-63.
- Gilson, R.J. & Kraakman, R. (1991) "Reinventing the Outside Director: An Agenda for Institutional Investors", *Sanford Law Review*, Vol. 4, pp. 863-906.
- Graves, S.B., & Waddock, S.A. (1994) "Institutional owners and corporate social performance", *Academy of Management Journal*, Vol. 37, No. 4, pp. 1034-46.
- Griffin, J. J., & Mahon, J. F. (1997) "The Corporate Social Performance and Corporate Financial Performance Debate", *Business and Society*, Vol. 36, No. 1, pp. 5-31.
- Holderness, C.G. & Sheehan, D.P. (1988) "The Role of Majority Shareholders in Publicly Held Corporations: An Exploratory Analysis", *Journal of Financial Economics*, Vol. 20, pp. 317-46.
- Itkonen, L. (2003) "Corporate Social Responsibility and Financial Performance". Hilsinki: Institute of Strategy and International Business
- Iu, J. & Clowes, C. (2001) "An Approach to Evaluating Accounting Narratives: A Corporate Social Responsibility Perspective". <http://www.ssrn.com>
- Johnson, R.A. & Greening, D.W. (1999) "The Effects of Corporate Governance and Institutional Ownership Types on Corporate Social Performance", *Academy of Management Journal*, Vol. 42, No. 5, pp. 564-76.
- Mahoney L & Roberts, R. (2007) "Corporate Social and Environ-

- mental Performance and Their Relation to Financial Performance and Institutional Ownership: Empirical Evidence on Canadian Firms, with Robin Roberts". *Accounting Forum*, Vol. 31, No. 3, pp. 233-253.
- Mangos, N. & O'Brien, P. (2000) "Investigating Social Responsibility Reporting Practices of Global Australian firms and how those Practices enhance Economic Success", <http://www.iipe.org>
- Jantzi Research Incorporated (2008) http://www.jantziresearch.com/index.asp?section=7&level_2=34
- Murphy, E. (2002) "Best Corporate Citizens Have Better Financial Performance", *Strategic Finance*, Vol. 83, No. 7, pp. 20-21.
- O'Donovan, G. & Gibson, K. (2000) "Environmental Disclosures in the Corporate Annual Report: a Longitudinal Australian Study". <http://www.ssrn.com>
- Pound, J. (1988) "Proxy Contests and the Efficiency of Shareholder Oversight", *Journal of Financial Economics*, Vol. 20, pp. 237-65.
- _____ (1992) "Beyond takeovers: Politics comes to corporate control", *Harvard Business Review*, Vol. 70, No. 2, pp. 83-93
- Stanton & Stanton (2002) "Corporate Annual Reports: Research Perspective Used", *Accounting, Auditing, and Accountability Journal*, Vol. 15, No. 4, pp. 478-500.
- Smith, M.P. (1996) "Shareholder Activism by Institutional Investors: Evidence from CalPERS", *Journal of Finance*, 51(1): 227-52.
- Shane, P.B. & Spicer, B.H. (1983) "Market Response to Environmental Information Produced Outside the Firm". *Accounting Review*, Vol. 58, No. 3, pp. 521-36.
- Spicer, B.H. (1978) "Investors, Corporate Social Performance, and Information Disclosures: An Empirical Study", *Accounting Review*, Vol. 53, No. 1, pp. 94-111.
- Sydserrf, R. & Weedman, P. (1999) "A texture index for evaluating accounting narratives: An alternative to readability formulas", *Accounting, Auditing & Accountability Journal*, Vol. 12, No. 4, pp. 459-478.
- Turban, D.B. & Greening, D.W. (1997) "Corporate Social Performance and Organizational Attractiveness to Prospective Employees". *Academy of Management Journal*, Vol. 40, No. 3, No. 658-72.
- Thomas, P. B. & Kenny, S. Y. (1997) "Environmental Reporting: A Comparison of Annual Report Disclosures And Popular Financial Press Commentary". <http://www.les.man.ac.uk>.
- Waddock, S.A. & Graves, S.B. (1994) "Industry Performance and Investment in R&D and Capital Goods". *Journal of High Technology Management Research*, Vol. 5, No. 1, pp. 1-17.
- _____ & _____ (1997) "The Corporate Social Performance-Financial Performance Link", *Strategic Management Journal*, Vol. 18, No. 4, pp. 303-19.

Appendix: Indicators used to assess the corporate social performance in Corporate Annual Reports (adopted from MJRA)

DIMENSIONS	INDICATOR AND MICRO LEVEL INDICATORS
COMMUNITY AND SOCIETY	<p>Public Reporting:</p> <ul style="list-style-type: none"> -The company publicly reports on its community involvement <p>Charitable Donations Program</p> <ul style="list-style-type: none"> -Policy statement on community donations -Amount of cash donations -Cash donations as a percentage of pre-tax profit -Areas of focus -Program to support employee giving and volunteerism <p>Communication Relation</p> <ul style="list-style-type: none"> -Policy statement on engagement/consultation -Managerial structure and responsibility -Mechanism of community engagement/consultation -Benefit sharing agreement with local communities -Impact on or relation with local aboriginal communities <p>Aboriginal Relation</p> <ul style="list-style-type: none"> -Policy statement on aboriginal relation -Mechanisms of engagement/consultation -Benefits sharing agreements and joint ventures -Impact on / relations with local aboriginal communities <p>Impact on Society</p> <ul style="list-style-type: none"> -Policy statement on bribery and corruption -Involvement in bribery and corruption -Tax or trade -related controversies -Impact/initiatives related to marginalized groups -Other impact on society
CORPORATE	Management Systems
GOVERNANCE	<ul style="list-style-type: none"> -Statement of social responsibility principles or values -formal corporate governance principles -Code of business conduct -Management of ethical issues -Confidential proxy voting

	<ul style="list-style-type: none"> -Board committees -Board independence -Separate chairman and chief executive officer <p>Other Governance Data-</p> <ul style="list-style-type: none"> -Share structure -Compensation of highest-paid executive -Termination agreements -Governance controversies -Shareholder proposals
CUSTOMERS	Impact on Customers
	<ul style="list-style-type: none"> -Policy statement on safety of product/service -Policy statement on the treatment of customers -systems/programs to ensure product safety or fair treatment of customers <p>Impact on Customers</p> <ul style="list-style-type: none"> -Safety of product/service -Treatment of customers/clients -Illegal/controversial business practices -Marketing practices
EMPLOYEES	Employee Data
	<ul style="list-style-type: none"> -Total number of employees -Employee turnover -Change in employee total over last five years <p>Reporting</p> <ul style="list-style-type: none"> -The company publicly reports on employee issues <p>Employee Programs and Benefits</p> <ul style="list-style-type: none"> -Employee needs assessment/employee satisfaction surveys -Employee education and development -Work/life balance -Ownership program -Profit sharing program -Redeployment, retraining and/or outplacement services -Other programs/benefits

Diversity

- Policy on diversity/employment equity
- Public reporting on diversity issues
- Managerial structure and responsibility
- Employee training and communication
- Performance objectives and targets
- Systems to track diversity data
- Recruitment/retention/promotion programs
- Maternity/parental benefits
- Other diversity initiatives/benefits
- Percentage of women on the board
- Percentage of women among senior officers
- Diversity controversies

Health and Safety

- Policy on occupational health and safety
- Employee training and communication
- Occupational health and safety programs
- Employee wellness programs
- Health and safety record

Union Relations

- Percent unionized
- No. of strikes/lockouts in the last five years
- Description of relations

Other Employee Data

- Employee controversies

ENVIRONMENT

Exposure to Environmental Issues

- Potential environmental impacts

Management Systems

- Formal Environmental Management System
 - Environmental policy
 - Certification
 - Managerial structure and responsibility
 - Environmental aspects identified
 - Systems to measure and monitor environmental performance
-

- Audits
- Performance objectives and targets
- Employee training and communication
- Management review of EMS
- Sourcing practices
- Life -cycle analysis

Public Reporting

- Substantial environmental reporting
- The company's environmental reporting

Impact and Initiatives

- Resource use (energy, material, water)
- Pollution control
- Land use, biodiversity and/or remediation
- Other impact or initiatives

Regulatory Compliance

- Environmental penalties over the last five years
- Number of convictions over the last five years
- Incidents of non –compliance

Other Environmental Data

- Environmental liabilities
- Total environmental expenditures

HUMAN RIGHTS

Exposure to Human Rights Issues

- Exposure related to countries in which the company operates

Management Systems

- Human rights policy/code of conduct
- Systems/programs to manage human rights issues

Impact and Initiatives

- Community engagement
 - Implication in the abuse of human rights
-

**CONTROVERSIAL
BUSINESS ACTIVITIES**

Alcohol

- Level of involvement (% of annual revenues)
- Nature of involvement

Gaming

- Level of involvement(% of annual revenues)
- Nature of involvement

Genetic Engineering

- Nature of involvement

Tobacco

- Level of involvement (% of annual revenues)
- Nature of involvement

Use of animal

This academic article was published by The International Institute for Science, Technology and Education (IISTE). The IISTE is a pioneer in the Open Access Publishing service based in the U.S. and Europe. The aim of the institute is Accelerating Global Knowledge Sharing.

More information about the publisher can be found in the IISTE's homepage:

<http://www.iiste.org>

The IISTE is currently hosting more than 30 peer-reviewed academic journals and collaborating with academic institutions around the world. **Prospective authors of IISTE journals can find the submission instruction on the following page:**

<http://www.iiste.org/Journals/>

The IISTE editorial team promises to review and publish all the qualified submissions in a fast manner. All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Printed version of the journals is also available upon request of readers and authors.

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digital Library, NewJour, Google Scholar

