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Do economic incentives alter ethical attitudes to vulnerable stakeholders in developing countries? Lessons from a controlled experiment

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Scholars argue that studies in business administration, more than other fields of study, expose self-interest and narrow economic assumptions. This can have negative consequences for ethical attitudes to stakeholders beyond a firm’s shareholders. To study this, we carried out a controlled experiment and examined if economic incentives affected a cohort of business students’ ethical attitudes to vulnerable stakeholders in a developing country as compared to a cohort of engineering students. For the business students, we found that economic incentives tended to legitimize an ethically questionable investment on issues that were related to relativism and egoism. The results were the opposite for the engineering students. Women were more ethically sensitive than men on issues that were related to universal fairness. The study discusses the findings’ implications for management theory, education, and practice.

Key words: Balance theory, controlled experiment, economic incentives, ethical attitudes, gender, vulnerable stakeholders, developing country.

INTRODUCTION

Ghoshal (2005) argues that a limited focus on shareholder values in business education can harm other stakeholders. In a similar vein, other scholars question the content in business education for holding a narrow focus on economic assumptions (MacLellan and Dobson, 1997; McPhail, 2001; Mitroff, 2004; Pfeffer, 2005; Kashyap et al., 2006). Following this line of reasoning, one could expect that business education is having a negative effect on ethical attitudes, and the research literature gives some empirical support to this concern (O’Clock and Oklesehen, 1993; James and Cohen, 2004; McCabe et al., 2006; Klein et al., 2007; Lamsae et al., 2008). Other research, however, is unable to detect such tendencies (Borkowski and Ugras, 1998; Neubaum et al., 2009). Lopez et al. (2005) found that the tolerance of unethical behavior decreases with formal business education.

All in all, research on the link between business education and ethical attitudes is inconclusive. This study therefore asks if contextual features in terms of economic incentives, explain why some contributions indicate that business studies are having a negative impact on ethical attitudes. An implication of Ghoshal and colleagues’ arguing is that business students are more exposed to a supposedly narrow focus on self-interest in their education than other students. This motivated us to carry out a controlled experiment on a sample of undergraduate business and engineering students, in which we examined if economic incentives had divergent effects on the cohorts’ ethical attitudes. Many of today’s business and engineering students will become tomorrow’s decision makers, both as managers and board members. The gaining of knowledge about possible consequences of incentive based compensation on ethical attitudes is accordingly essential beyond the context of undergraduate education, we argue.

Scholars debate the potential disadvantages of relating economic incentives to management risk behavior (Beatty and Zajac, 1994). The Enron and the WorldCom collapses – along with other industrial scandals – add further doubt about using economic incentives to align management and shareholder interests (Fogarty et al., 2009). In addition, research detects weak or even insignificant relationships between CEO pay and firm performance (Kerr and Bettis, 1987; Jensen and Murphy, 1990). Thus, all in all, there are legitimate reasons to question the link between management incentives and

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shareholder values.

In this paper we furthermore ask if economic incentives can influence ethical attitudes to stakeholders beyond the management group. More specifically, the study examines if economic incentives might alter students' ethical attitudes to vulnerable stakeholders in a developing country. Vulnerable stakeholders are groups or individuals that have few resources to offset any possible negative consequences of managerial decisions. Moreover, they are relatively incapable of profiting from possible benefits in any way. Research on vulnerable stakeholders is rare (Rengasamy et al., 2003), and the few studies we have found investigating the effects of incentive based compensation on stakeholders beyond the shareholder group are inconclusive (McGuire et al., 2003; Mahoney and Thorne, 2005).

THEORY AND LITERATURE REVIEW

An attitude can be defined as a person's “learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object” (Fishbein and Ajzen, 1975). Through the conceptual lenses of Heider’s (1946) classical balance theory and Festinger’s (1957) theory of cognitive dissonance, one can argue that ethical attitudes are subject to change as a function of economic incentives. If we assume that a CEO at the outset has a negative attitude to an ethically questionable investment, relating an economic incentive to the investment can alter his or her attitude. If the person has a positive attitude to the use of economic incentives, this will trigger cognitive imbalance between affective elements (that is, a negative attitude to the investment but a positive attitude to economic incentives). To regain cognitive balance, the CEO can change his or her attitude to the investment in a favorable direction, that is, the person becomes more in favor of the ethically questionable investment. On the other hand, if we assume that the CEO has a collectivistic or egalitarian value system and accordingly, a negative attitude to the use of personal bonuses, relating an economic incentive to the investment may not trigger cognitive imbalance. As consequence, the presence of economic incentives may not alter his or her ethical attitudes to the investment.

This study has referred to scholars’ concern about business schools’ supposedly limited focus on shareholder values and for holding a narrow focus on economic assumptions (MacLellan and Dobson, 1997; McPhail, 2001; Mitroff, 2004; Ghoshal, 2005; Pfeffer, 2005; Kashyap et al., 2006). It is therefore likely to assume that business education can alter the students' ethical attitudes to self-interests at the expense of a broader set of interests, and below we review studies which give support to this line of reasoning. Following this review, we argue how business studies can cause relatively positive attitudes to economic incentives, which — according to our reasoning above — can induce the candidates to become less sensitive in their ethical attitudes.

In a study from Finland, Lamsae et al. (2008) found that MBA candidates who are close to graduation emphasize to a larger extent the importance of maximizing shareholder values than students in the early phase of their MBA studies. They furthermore find that the students at the end of the program are less concerned about the importance of equal-opportunity employment than their peers who have just begun the MBA study. The authors conclude that the educational context is creating an undesirable tendency among future business professionals. It is also somewhat disappointing to find — according to O’Clock and Okleshen (1993) — that MBA students holding an undergraduate degree in business administration are more tolerant of unethical actions, such as stealing from the company, than undergraduate business students. These contributions accordingly indicate that the business students adopt negative ethical attitudes as a function of the length of study in the field of business administration.

Along the lines of the studies cited earlier, Frank et al. (1993) find that economics students are more likely to defect in a prisoner’s dilemma game than non-economics students. They argue that economics students are “[not] more self-interested to begin with”, but — they claim in a later paper — “economics training encourages the view that people are motivated by self interest that leads people to expect others to defect in social dilemmas” (Frank et al., 1996). In a follow up study, James and Cohen (2004) find that training in ethics increases cooperation, which indicates that it is the content — or lack thereof — in business education that affects the students' value-systems and not pre-dispositional factors.

Contributions also investigate business students' attitude to cheating, and Klein et al. (2007) find that "while business school students actually cheated no more or less than students in other professional schools, their attitudes on what constitute cheating are more lax than those of other professional school students.” McCabe et al. (2006) actually find that graduate business students report to cheat more than non-business students. Altogether, the review indicates that business studies can alter ethical attitudes, as well as actual behavior, but a meta-analysis by Borkowski and Ugras (1998) — along with a recent publication by Neubaum et al. (2009) — is unable to detect such tendencies. And as reported, Lopez et al. (2005) even find that the tolerance of unethical behavior decreases with formal business education.

This study therefore speculates that contextual features in terms of economic incentives may explain why some contributions indicate that business studies are having a negative impact on ethical attitudes. MBA studies induce the candidates to focus on shareholder values at the expense of other stakeholders (Lamsae et al., 2008). A reason for this — we argue — is that numerous business programs address the issue of aligning management and shareholder interests. The review also indicates that studies in business and economics tend to induce a tolerant attitude to stealing, cheating, and competitive behavior at the expense of cooperation (Frank et al., 1993; O’Clock and Okleshen, 1993; McCabe et al., 2006; Klein et al., 2007). One way to interpret these findings is that a
focus on egoism, self-interest, and competition in the education, motivate the students to pursue goals in which personal gains are central elements. In line with this reasoning, Schweitzer et al. (2004) find that people with unmet goals are more likely to engage in unethical behavior than people attempting to do their best. Taken together, Schweizer, et al.'s study may indicate that business students – directly or indirectly pursuing personal gains – are not relatively unethical in their attitudes per se. However, when being framed with economic incentives, this might induce them to pursue such goals at the expense of ethical considerations.

All in all, we conclude that business students will have a positive attitude to economic incentives. As a consequence, being framed with such incentives may lead to a harmful change in ethical attitudes. Engineering students – being less exposed to business topics – will have a less positive attitude to economic incentives, and the effect of economic incentives on their ethical attitudes will correspondingly be more modest. In this following, a controlled experiment is carried out, which empirically tests these arguments.

METHODOLOGY

Research context

The candidates for the experiment were undergraduate business and engineering students at a midsize college in Norway. Most of them were early in the second semester of their first year of study. At the time of the data collection, the business students had completed business courses in organization theory, accounting, information management, and had just started to study topics in marketing, financial management, and microeconomics. The majority of the engineering student had completed an introductory course in business management.

The experiment was carried out in an ordinary class for each group of students. The students were not informed about the study in advance, but immediately before conducting the experiment we briefly and in general terms informed them that we wanted to gain some knowledge about their opinions on a few issues. Altogether, this gave us a good command of the experimental situation, and carrying out the study in a classroom setting reduced the problem of non-responsive bias.

Data instrument

The students were first presented an identical text, which was phrased as a scenario, and worded as follows (our translation from Norwegian):

“You are CEO at a Norwegian industrial enterprise. The management group has recently been evaluating an investment project in a developing country. Independent analyses show that the investment could lead to a considerable increase in sales and profits for the enterprise.

The industrial enterprise is a cornerstone firm, that is, it is situated in a local community, in which employment opportunities in other businesses are limited. Accordingly, the investment project could lead to a positive outcome and prospects for the future for the whole local community.

It appears, however, that the potential, major partner enterprise makes use of child labor and that the employees furthermore work under miserable conditions. At the same time, there is no other potential, major partner enterprise. The country in which the potential, major partner enterprise is situated does not have its own legislation that regulates the use of child labor and other work conditions.”

After giving the students a few minutes to read the text, we requested that they turn to the next page of the data instrument. At the top of this page, another sentence was presented, which was also identical for all the candidates: “The board of your enterprise has decided that if the investment project fails, there will be no negative consequences for you personally.” Prospect theory shows that the attitudes to gains and losses are asymmetrical (Kahneman and Tversky, 1979), so, this information was added to avoid that the candidates might consider a downside risk for them personally.

Next, the following sentence was added for the experimental group: “Moreover, you will receive a large bonus and a considerable increase in salary if the investment project is successful.” For the control group, the following sentence was added: “There will, however, not be any bonus or permanent increase in salary for you if the investment project is successful.” In other words, for the experimental group, we related a possible positive outcome of the investment to an economic incentive, whereas such an incentive was explicitly absent for the control group. This was the only difference in the instrument to which the experimental and the control group were randomly exposed.

To gain data on ethical attitudes, we then asked the candidates to indicate on a 5-point Likert scale to what extent they agreed or disagreed with seven different statements or issues that were related to the investment and the vulnerable stakeholders (1 = strongly disagree, 5 = strongly agree) (the statements are reported in Table 1.) A low score indicates a sensitive ethical attitude, whereas a high score indicates the opposite.

Research shows that women are more ethically sensitive than men (Borkowski and Ugras, 1998; Lamae et al., 2008). In the business class, the majority of the students were women, whereas the majority was men in the engineering class. The study, therefore, controlled for the respondents' gender.

RESULTS

Identifying dimensions of ethical attitudes

Altogether, the study received 168 usable responses from the participants (79 engineering students and 89 business students). Research shows that ethical attitudes are multidimensional (Reidenbach and Robin, 1988, 1990; Singhapakdi et al., 1996; Etheredge, 1999; Ge and Thomas, 2008). The study therefore carried out an explorative factor analysis on the responses of the seven statements, which identified two dimensions or factors (factor 1 and factor 2). Table 1 reports the statements, and satisfactory factor loadings and reliability coefficients (Cronbach’s alpha) was observed. (Extraction method: Principal component analysis. Rotation method: varimax with Kaiser normalization. Total variance explained is 60.65% Eigenvalue is 1.85).

Factor 1 is related to the concept of universal fairness (Reidenbach and Robin, 1988, 1990), this study argues. More specifically, the factor deals with whether it is legitimate to sanction the investment by referring to the lack of better options for the vulnerable stakeholders (1), a possible inferior situation by not investing (2), and the possibility to actually improve their working conditions (5).

Factor 2 is related to the concepts of relativism and
egoism (Reidenbach and Robin, 1988, 1990). More specifically, this study argues that statements 6 and 7 tap into the concept of relativism. Being in favor of or against an ethically questionable investment relates to whether local legislation regulates the use of child labor and working conditions (7), or the level of economic development in the targeting country (6). Thus, an attitude dealing with these issues is not necessarily universally valid, but may vary according to local legislation and economic development. Statements 3 and 4, on the other hand, are related to egoism, this study argues. Legitimizing a questionable investment, by referring to the possibility of foregoing an economic gain to a competitor (3), deals with selfishness. The same argument goes for legitimizing the investment by considering the positive extended effects the investment could have for the Norwegian local community (4).

The study focuses on the two dimensions identified. For the purpose of statistical analyses, the study models each of them by calculating the average of each respondent’s responses on the respected items or issues.

**Correlations**

Table 2 reports mean values, standard deviations (SD) and correlates between the variables for the whole sample. The experimental group (EG) was coded 1, and the control group was coded 0. The engineering class was coded 1 and the business class was coded 0. Male students were coded 1 and female students were coded 0. Unsurprisingly, factor 1 and 2 were significantly correlated. Furthermore, in accordance with what we noted earlier, the correlation between the class and the gender variable showed that the majority of the students in the engineering class were males, whereas the opposite was the case for the business class.

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**Table 1. Factor analysis.**

<table>
<thead>
<tr>
<th>#</th>
<th>Text</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The investment is defendable since the employees at the potential, major partner enterprise would not be better off if we cancel the investment.</td>
<td>0.854</td>
<td>0.169</td>
</tr>
<tr>
<td>2</td>
<td>In many developing countries, the alternative to income-producing work is prostitution or unemployment for both children and adults, and the investment is therefore defendable.</td>
<td>0.829</td>
<td>0.212</td>
</tr>
<tr>
<td>5</td>
<td>The investment is defendable since through cooperation we can put pressure on the potential, major partner enterprise to reduce the use of child labor and to improve the working conditions.</td>
<td>0.781</td>
<td>0.140</td>
</tr>
<tr>
<td>7</td>
<td>The investment is defendable since there is no local legislation that regulates the use of child labor and other working conditions.</td>
<td>0.093</td>
<td>0.802</td>
</tr>
<tr>
<td>6</td>
<td>Until developing countries have achieved a certain economic growth, we cannot make similar demands on working conditions and the use of child labor as we do in western countries.</td>
<td>0.139</td>
<td>0.717</td>
</tr>
<tr>
<td>4</td>
<td>Despite that the potential, major partner enterprise makes use of child labor and offers miserable working conditions, the positive extended effects the investment can have for the Norwegian local community should also be taken into account when considering such an investment.</td>
<td>0.131</td>
<td>0.620</td>
</tr>
<tr>
<td>3</td>
<td>The investment is defendable since one of our competitors could invest at the potential, major partner enterprise if we do not do it.</td>
<td>0.399</td>
<td>0.616</td>
</tr>
</tbody>
</table>

Cronbach’s alpha 0.805 0.674

**Table 2. Correlation matrix.**

<table>
<thead>
<tr>
<th>Mean</th>
<th>SD</th>
<th>Variable</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>EG</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.084</td>
<td>0.909</td>
<td>Factor 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.088</td>
<td>0.731</td>
<td>Factor 2</td>
<td>0.478***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.488</td>
<td>0.501</td>
<td>Experimental group (EG)</td>
<td>-0.025</td>
<td>0.008</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.470</td>
<td>0.501</td>
<td>Class</td>
<td>0.079</td>
<td>0.227**</td>
<td>0.034</td>
<td></td>
</tr>
<tr>
<td>0.530</td>
<td>0.501</td>
<td>Gender</td>
<td>0.215**</td>
<td>0.204**</td>
<td>0.109</td>
<td>0.577***</td>
</tr>
</tbody>
</table>

N=168; †p<0.10; *p<0.05; **p<0.01; ***p<0.001 (two-tailed tests).
Table 3. OLS regression analyses.

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Model 1A</th>
<th>Model 1B</th>
<th>Model 2A</th>
<th>Model 2B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Factor 1</td>
<td>Factor 1</td>
<td>Factor 2</td>
<td>Factor 2</td>
</tr>
<tr>
<td>Experimental group (EG)</td>
<td>-0.051</td>
<td>-0.051</td>
<td>-0.001</td>
<td>-0.010</td>
</tr>
<tr>
<td></td>
<td>(-0.67)</td>
<td>(-0.67)</td>
<td>(-0.12)</td>
<td>(-0.14)</td>
</tr>
<tr>
<td>Class</td>
<td>-0.070</td>
<td>-0.071</td>
<td>0.163&lt;sup&gt;†&lt;/sup&gt;</td>
<td>0.156&lt;sup&gt;†&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>(-0.75)</td>
<td>(-0.76)</td>
<td>(1.76)</td>
<td>(1.72)</td>
</tr>
<tr>
<td>EG*Class</td>
<td>-0.056</td>
<td>-0.220**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-0.74)</td>
<td>(-2.97)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>0.261**</td>
<td>0.264**</td>
<td>0.111</td>
<td>0.124</td>
</tr>
<tr>
<td></td>
<td>(2.78)</td>
<td>(2.81)</td>
<td>(10.19)</td>
<td>(1.36)</td>
</tr>
<tr>
<td>F-ratio</td>
<td>2.97**</td>
<td>2.37*</td>
<td>30.46*</td>
<td>4.92***</td>
</tr>
<tr>
<td>R&lt;sup&gt;2&lt;/sup&gt;</td>
<td>0.052</td>
<td>0.055</td>
<td>0.059</td>
<td>0.108</td>
</tr>
<tr>
<td>Adj. R&lt;sup&gt;2&lt;/sup&gt;</td>
<td>0.034</td>
<td>0.032</td>
<td>0.042</td>
<td>0.086</td>
</tr>
</tbody>
</table>

N=168; <sup>†</sup>p<0.10; <sup>*</sup>p<0.05; <sup>**</sup>p<0.01; <sup>***</sup>p<0.001(two-tailed tests).

Regression analyses

Table 3 reports ordinary least square regression analyses (standardized coefficients and T-values in parentheses). Factor 1 is the dependent variable in model 1A and B, and factor 2 is the dependent variable in model 2A and B.

There was no significant difference between the experimental group and the control group on factors 1 or 2 for any of the reported models. Furthermore, in model 1B, the interaction effect between the dummy variables for the experimental group and the class was absent on factor 1, but in model 2B, the same interaction effect was significantly negative on factor 2 (interaction terms were mean-centered in accordance with Cronbach’s (1987) recommendations).

The model fit was also strongly significant in model 2B. The least square mean plot in figure 1 was adapted from the interaction term in model 2b. The figure shows that for the business students, economic incentives tended to increase the value on factor 2 (that is, they were less ethically sensitive), whereas the effect was the opposite for the engineering students (that is, they were more ethically sensitive) (the interaction term between the experimental group and the class variable was strongly significant when the gender variable was deleted in an unreported model. In another unreported model, it was also controlled for an interaction between gender and the experimental group. This effect, however, was absent whereas the effect reported above was significant. In other unreported models, it was finally conducted separate analyses for each group of students. The presence of economic incentives was significantly positive on Factor 2 for the business class, and significantly negative for the engineering class; p<.05; two-tailed tests).

In addition, models 2A and B show that engineering students overall had a somewhat higher score on factor 2 than the business students (that is, the business students were in general more ethically sensitive than the engineering students), but the effect was weak and barely significant. Finally, models 1A and B show that men had higher scores than women on factor 1 (that is, female students were more ethically sensitive than male students), whereas the gender effect was absent or insignificantly marginal at the best on factor 2 (models 2A and B).

All in all, the regression analyses show that for the business students, economic incentives tended to legitimize an ethically questionable investment on issues that were related to relativism and egoism. That is, the business students were less ethically sensitive when being framed with economic incentives. The result was the opposite for the engineering students. Yet, despite this, business students were, in general, slightly more sensitive than engineering students on ethical attitudes related to relativism and egoism. Male students were less ethically sensitive than female students on issues that were related to universal fairness.
DISCUSSION

Scholars express concern about business schools’ curricula for having a limited focus on economic assumptions and shareholder values at the expense of other stakeholders (MacLellan and Dobson, 1997; McPhail, 2001; Mitroff, 2004; Ghoshal, 2005; Pfeffer, 2005; Kashyap et al., 2006). Following this line of reasoning, one could expect that business studies would harm the candidates’ ethical attitudes, and the research literature gives some support to this argument (O’Clock and Okleshen, 1993; James and Cohen, 2004; McCabe et al., 2006; Klein et al., 2007; Lamsae et al., 2008). Other research, however, is unable to detect such tendencies (Borkowski and Ugras, 1998; Neubaum et al., 2010; Lopez et al., 2005) even find that the tolerance of unethical behavior decreases with formal business education.

In this paper, we have asked if contextual features in terms of economic incentives may explain why some contributions indicate that business education is having a negative impact on the students’ ethical attitudes. An implication of Ghoshal and colleagues’ arguing is that business students are more exposed to a supposedly narrow focus on self-interest in their education than other students. This study has therefore, argued that business students may have a positive attitude to economic incentives. As a consequence, being framed with such incentives may lead to a harmful change in their ethical attitudes. Engineering students – being less exposed to business topics – may correspondingly have a less positive attitude to economic incentives, and the effect of economic incentives on their ethical attitudes may be more modest.

To test these arguments, this study carried out a controlled experiment on a sample of undergraduate business and engineering students, in which we examined if economic incentives had divergent effects on the groups’ ethical attitudes to vulnerable stakeholders. For the business students, we found that economic incentives tended to legitimize an ethically questionable investment on issues that were related to relativism and egoism. For the engineering students, we actually found that economic incentives induced them to be more ethically sensitive on these issues than otherwise. Below these divergent effects are discussed.

Economic incentives’ divergent effects on business and engineering students

Business students

Finding that economic incentives induced the business students to be less ethically sensitive, is in accordance with what we expected. This can imply that these students had an overall positive attitude to economic incentives. Data was gathered from undergraduate students early in the second semester of their first year of study, which indicates that the positive attitude to economic incentives was salient and had negative consequences for the business students’ ethical attitudes even at an early stage in their training. Yet having said this; our findings by no means showed that business students overall had inferior ethical attitudes as compared to the engineering students. On the contrary, at the outset, the business students actually tended to be more ethically sensitive than the engineering students on issues that were related to relativism and egoism.

All in all, the literature review – along with our findings – indicates that business training in certain aspects can have a negative impact on students’ ethical attitudes. A possible narrow focus on the use of financial instruments – for example, economic incentives and self-interest – may induce the business students to become vulnerable when confronted with ethical issues that require reasoning beyond hard-core economic thinking. It might be that business students have a predisposition toward down-playing ethical issues when confronted with economic incentives, but the studies reported earlier indicate that ethical reasoning is downplayed as function of the length of training in the field of business administration (Frank et al., 1993; O’Clock and Okleshen, 1993; Frank et al., 1996; James and Cohen, 2004; Lamsae et al., 2008). Further, additional qualitative and anecdotal data is presented, which might shed further light on how business students tend to reason when being confronted with potentially sensitive ethical issues.

In a marketing course, the business students were presented with a case about a tobacco company, which was considering extending its business into a developing country. They were next given a group assignment in which they were asked to address issues that they considered to be of importance when evaluating such a project. About 20 groups participated in the assignment, but none of these even mentioned that the investment could have negative health effects on the local population. Instead, they by and large focused on how to successfully undertake such an investment in purely economic and marketing terms. The students were not explicitly requested to address ethical issues, and this indicates that they tended to apply a limited focus on economic reasoning, unless asked to do otherwise. Accordingly, this paper argues that there is no reason to claim that business students are less ethically sensitive at the outset than other students. It seems, however, that they believe that their evaluations and decisions should be merely grounded on purely economic reasoning – and little or nothing else – when confronted with supposedly “business-like” situations. It might also explain the findings reported in this paper. Initially, the business students were actually slightly more ethically sensitive than their peers in the engineering class, but introducing economic incentives – which explicitly and implicitly is an integral part of their training – induced the business students to downplay certain ethical issues.

In another class in strategic management, the business students were asked to play a repetitious prisoner’s dilemma-like strategy game. More than 30 Dyads participated. It was expected that many students would...
discover the benefits of a tit-for-tat strategy (Axelrod, 1984) or other cooperative strategies, but about a third of the dyads were genuinely competitive all the time. The average outcome was furthermore close to the minimum outcome of the strategy game. Most surprisingly, however, when the students were confronted with these results, they apparently refused to acknowledge that cooperation would be beneficial. Some actually claimed that they preferred the Nash equilibrium, in which both players act competitively, since they otherwise would be cheated by the other player of the game. In the class discussion, some students also referred to having adopted this knowledge during their training in the business program. Granted, this case is not directly related to the topic of ethical attitudes, but it illustrates our argument that the issue of self-interest and "narrow" economic thinking takes a strong hold on the students' reasoning through their education. It is furthermore in line with Frank, et al.'s (1993) study, which we have reviewed earlier in this paper.

Further anecdotal evidence regarding business students' focus on self-interest and incentive mechanisms, was the discovery that the student body at the Norwegian School of Economics and Business Administration (NHH) – one of the major business schools in Norway – was discussing the implementation of incentive-based compensation to its participating subgroups. A final and rather curious anecdotal evidence is the business student at NHH who sued another student for 36 million Norwegian kroner – more than 5 million US dollars at the time of this writing – for having bitten his ear (the case concluded with a compensation of 5,465 Norwegian Kroner). It is believed that it is not accidental that the student suing another student for such an amount of money was enrolled in a business program.

**Engineering students**

Due to less exposure to "business like" education, we expected that economic incentives would have a more modest impact on the engineering students than the business students. Somewhat surprisingly, however, we found that economic incentives actually induced the engineering students to be more ethically sensitive than otherwise. This indicates that economic incentives were a negatively loaded concept, which arouses a sense of justice for this cohort. It might be counterintuitive to infer that a group of people can have a negative attitude to the use of economic incentives, but we must bear in mind that this study was carried out in a Scandinavian context, which strongly emphasizes egalitarian and collectivistic cultural values (Hofstede, 1980). In Norway, the variations in salary between different employment groups are among the smallest in the world, and in the mass media, management bonuses and the like are practically always negatively framed.

This study has referred to O'Clock and Okleshen's (1993) study, which shows that MBA students holding an undergraduate degree in business administration are more tolerant of unethical actions, such as stealing from the company, than undergraduate business students are. Interestingly, however, the same study finds that MBA students holding undergraduate degrees in engineering are less tolerant than undergraduate engineering students of unethical acts that harm their co-workers. In other words, whereas a background in business studies induces the MBA candidates to become less ethically sensitive, undergraduate studies in engineering appear to increase the MBA students' ethical awareness. Borkowski and Ugras (1998) conclude that older students' exhibit stronger ethical attitudes than younger students do, and this might explain the difference between undergraduate engineering students and MBA students with an engineering background. However, interviewing undergraduate engineering students prior to giving an introductory course in ethics, Loui (2005) finds that the candidates "learn about the characteristics and responsibilities of professional engineers primarily by observing relatives and co-workers. According to the students, the ideal engineer is honest, conscientious, and confident, as well as technically competent." Furthermore, O'Clock and Okleshen (1993) find that engineering students are more sensitive to the issue of "whistle blowing" than business students. Thus, it appears that ethical awareness is conceived early in the education of engineers – perhaps even before matriculation – primarily from external sources such as relatives and co-workers. Our findings, along with O'Clock and Okleshen's (1993) study, indicate that such inputs bear fruit later on in the course of study or in a professional career.

Before concluding this section, we find it appropriate to present further anecdotal evidence about different attitudes to the use of economic incentives within the communities of education in business and engineering. Recently, two of the authors of this paper attended a meeting, in which one of the topics discussed was the implementation of incentive mechanisms related to the publication of research in international peer reviewed journals. Those involved in the discussion came from different engineering departments. Interestingly, all, except one person, strongly emphasized that if any form of incentives were to be implemented, it should benefit – not the individual authors of papers – but a collection of members engaged in the corresponding research project. It was furthermore strongly emphasized that incentive-based compensation should not be a part of the researchers' salary, but instead be reinvested into relevant research projects.

On the other hand, the Norwegian School of Economics and Business Administration (NHH) and BI Norwegian School of Business – the two largest and the most influential business schools in Norway – have implemented an incentive-based system in which the authors receive personal bonuses for publications in highly ranked journals. One of the participants at the meeting had previously worked at NHH, and he actually warned about the negative impacts of the use of incentive mechanisms in research that he had experienced there.
In sum, it appears that the attitude to economic incentives takes hold differently on employees involved in business and engineering studies, respectively, which may have secondary effects on how the students approach the same topic.

**IMPLICATIONS FOR BUSINESS EDUCATION AND PRACTICE**

Agency theory proposes that economic incentives can align management and shareholder interests. Scholars nevertheless debate the potential disadvantages of relating economic compensation to management risk behavior (Beatty and Zajac, 1994), and research detects weak relationships between CEO pay and firm performance (Kerr and Bettis, 1987; Jensen and Murphy, 1990). The data from this study, furthermore, showed that economic incentives can have a negative impact on business students’ ethical attitudes to vulnerable stakeholders in a developing country. In a similar vein, McGuire et al. (2003) find that management salary and long-term compensation are related to poor performance in terms of how well a firm met the expectations of different stakeholders.

Altogether, there are legitimate reasons to question the link between incentive based compensation and benefits for both shareholders and other stakeholders. Many of today’s business students will become tomorrow’s decision makers – both as managers and board members – and their gaining of knowledge about negative consequences of incentive based compensation is accordingly essential. Lesson from this research should therefore be disseminated in undergraduate, graduate, and executive business education.

Mahoney and Thorne (2005) nevertheless report findings that diverge from those reported by McGuire et al. (2003). Furthermore, Kurland (1995) studies if incentive based compensation affects insurance agents’ ethical intentions, but finds no significant effects. In the current study, we also found that economic incentives could actually have a positive effect on the engineering students’ ethical attitudes. Thus, research on the relationship between incentive-based compensation and ethics is inconclusive.

All in all, the authors of this paper by no means claim that economic incentives should be abandoned altogether. However, it is emphasized a sober attitude and a modest use of incentive based compensation and the like. Making educators, students and practitioners aware of potential pitfalls of incentive based compensation might also hamper their possible adverse consequences, we argue.

**Economic incentives and the multidimensionality of ethical attitudes**

Kohlberg (1969, 1976) develops three levels of cognitive moral development; the pre-conventional level, the conventional level, and the post-conventional level. At the pre-conventional level, moral reasoning is based on punishments and rewards, at the conventional level, the opinions and reactions of others dominate, and at the post-conventional level, personally integrated principles dominate. Reidenbach and Robin (1988, 1990) identify five ethical dimensions; egoism, relativism, formal justice or universal fairness, contractualism, and utility. Ge and Thomas (2008) suggest that Kohlberg’s pre-conventional level is related to Reidenbach and Robin’s concept of egoism, the conventional level is related to relativism, and the post-conventional reasoning is related to formal justice or universal fairness, contractualism, and utility.

This study showed that ethical attitudes related to relativism and egoism were sensitive to economic incentives, whereas ethical attitudes related to universal fairness were insensitive. It indicates that ethical attitudes resembling Kohlberg’s pre-conventional or conventional level of cognitive moral development were sensitive to economic incentives, whereas attitudes related to the post-conventional level were insensitive. We argue, however, that there are also good reasons to also relate our findings to system justification theory, which refers to “psychological processes contributing to the preservation of existing social arrangements …” (Jost and Banaji, 1994). According to Jost et al. (2003), system justification theory is consistent with Festinger's (1957) theory of cognitive dissonance in that “people are motivated to perceive existing social arrangements as fair, legitimate, justifiable, and rational, and perhaps even natural and inevitable”.

If the findings from this study are linked to system justification theory, it points out two interrelated issues. First, motivating factors play a crucial role in balancing cognitive and affective elements, and we have shown how economic incentives motivated business students to downplay ethical issues in order to legitimize a questionable investment. Second, and perhaps more interesting: economic incentives motivated the business students to justify their attitude by relating to issues along a dimension (Factor 2, Table 1), which emphasize structural and systematic differences between developed and developing countries, such as legislation (item 7) and macroeconomic development (item 6). Item 4 also constitute this dimension and deals with possible consequences the questionable investment can have for the local community in Norway. In our opinion, this latter issue also relates to the system justification theory by rationalizing the fairness of the investment.

Research shows that perceptions of uncertainty, fear, and threat are associated with system justification (Jost et al., 2003). This study, moreover, showed that for the business students, the presence of economic incentives led to the same effect. Granted, we cannot see that item 3, which also constitutes this dimension (factor 2), is directly related to the system justification theory, but Table 1 shows that item 3 also had a somewhat high factor loading on the other dimension identified (factor 1; factor loading 0.399). Therefore, in unreported models, we deleted this item from factor 2, but the results did not
deviate from those reported earlier.

Furthermore, it cannot be claimed that items 1, 2, and 5, which constitute the other dimension (factor 1, Table 1), are totally unrelated to the system justification theory. However, what we can say is that these issues do not deal with the preservation of existing social arrangements and perceive them as legitimate, justifiable, and inevitable in any direct way. On the contrary, item 5 actually proposes that it might be possible to reduce the use of child labor and improve the working conditions at the potential partner enterprise. Finally, there is need to emphasize that for the engineering students, the presence of economic incentives induced them to be less in favor of legitimizing a questionable investment along a factor that touches upon the perception of existing social arrangements as legitimate, justifiable, and inevitable. This may indicate that engineering students possessed a sense of honesty and conscientiousness, as reported by Loui (2005), and which the business students – unfortunately – tended to lack.

LIMITATIONS AND FUTURE RESEARCH

This study has shown that economic incentives had divergent effects on business and engineering students' ethical attitudes. It has inferred that this stems from the candidates’ different attitudes to the use of economic incentives in managerial situations. Future research should scrutinize this issue further and also gather information about attitudes to incentive-based compensation. Studies cited in this paper also indicate that ethical attitudes are reinforced in either a positive or negative direction as a function of the length of study (Frank et al., 1993; 1996; O’Clock and Okleshen, 1993; James and Cohen, 2004; Lamsae et al., 2008). Future contributions should accordingly deal with this issue and examine if the amount or length of studies in business administration or engineering may moderate the impact of incentive-based compensation. A parallel path of future study could be to investigate if economic incentives have different impact on students vs. those who are already pursuing a professional career. As noted, Borkowski and Ugras (1998) showed that age is positively correlated with ethical attitudes as a multidimensional concept, and systematize this may also contribute to current body of literature. All in all, it is suspected that these issues do not show no substantial difference at all (Derry, 1989; Ergeneli and Arikan, 2002). Since this study has uncovered gender differences along only one out of two dimensions of the concept, we suspect that this may also explain the inconclusive findings from the literature. As noted, research has been dealing with the multidimensionality of the concept of ethical attitudes (Reidenbach and Robin, 1988, 1990; Singhapakdi et al., 1996; Etheredge, 1999; Ge and Thomas, 2008), and this study also contributes to current body of literature. All in all, it is suggested that future research should approach ethical attitudes as a multidimensional concept, and systematize how the gender variable – in addition to economic incentives and numerous other predictor variables – might be associated with different facets of the concept.

REFERENCES


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