Examining the Impact of Collectivism on Environmental Beliefs and Attitudes of Business Students: A Cross-cultural Study

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Research indicates that concern for the environment has grown rapidly in recent years among environmental stakeholders. However, in the context generally of global trade, and particularly of NAFTA, the environmental concern of business and marketing has been found wanting. Furthermore, there is little research focused on the environmentally concerned beliefs and attitudes (ECBA) and their antecedents among potential NAFTA players—tomorrow's business and marketing managers, namely business students. The purpose of this study is to conduct an empirical investigation of ECBA and their antecedent, collectivism, among business students in two NAFTA member countries, the U.S.A. and Mexico. A survey conducted among students at two business schools, one in the U.S.A., and the other in Mexico (n= 435) reveals a significantly lower mean score on collectivism as well as ECBA in the U.S.A., compared to Mexico. The model explained about 62 per cent of the variance in ECBA. Support was found for the main effects of collectivism on ECBA. Moreover, support was found for the main effects of country and student standing on ECBA. The study also discusses implications for business schools in strengthening ECBA to improve NAFTA's green agenda, and offers directions for future research and towards that goal.

1. Introduction

Concern for the environment has grown rapidly in the past few decades (Bhuian, Joonas and Dávila 2007; Egri and Herman 2000; Polonsky 2001; Thanika, Pudaruth and Marie Monique 2012), among environmental stakeholders such as consumer groups, business and marketing, and government (e.g., Miles and Colvin 2000). In response, global trade associations such as NAFTA have provided environmental guidelines for businesses in member countries (Manakkalathil and Rudolph 2002; Sanchez 2002). Realizing the increasing importance of environmental emphasis, Association to Advance Collegiate Schools of Business (AACSB) has directed business schools to focus on environmental issues along with globalization. How much of this environmental focus of NAFTA and AACSB has filtered down in forming environmentally concerned beliefs and attitudes of business students has not been adequately examined. More specifically, what is the state of environmentally concerned beliefs and attitudes of business students in the U.S.A.? Do

environmentally concerned beliefs and attitudes of business students in the U.S.A. differ from that of her NAFTA partner, Mexico? How are environmentally concerned beliefs and attitudes of business students formed? These questions beg for answers that are vital not only for devising effective environmental education of business students but also for effective corporate environmentalism, which as future business managers business students are likely to steer.

The purpose of this study is to investigate the similarities and differences in environmentally concerned beliefs and attitudes of business students in two NAFTA member countries, the U.S.A. and Mexico. Whether culture plays a role in forming environmentally concerned beliefs and attitudes will also be examined and compared between U.S. and Mexico.

The significance of this study lies in the fact that business students are potential business decision-makers (Bhuian 1997; Bhuian et al. 2001; Varadarajan and Thirunarayana 1995) who are likely to deal with environmental issues that concern both domestic stakeholders and international trade partners. In cognizance, AACSB (2001) mandates the incorporation of environmental sensitivity in business schools' undergraduate and graduate curricula, the effectiveness of which could be understood and enhanced from findings generated in this study. Furthermore, in today's economy, there is a need for compatibility of the knowledge base of a potentially global workforce. A comparison of the environmentally concerned beliefs and attitudes of business students in the two member countries of NAFTA would help identify and address lacunae in the dissemination of environmental knowledge.

2. Literature Review and Hypotheses

Environmentally Concerned Beliefs and Attitudes (ECBA)

Researchers' interest in ECBA stems from the belief that ECBA is primarily responsible for the development of pro-environmental behaviors. This is because, according to theories of reasoned action and planned behavior, human beings usually behave sensibly, that is, in consistent with their attitudinal dispositions. From early on, the conceptualization of ECBA has been following the essence of new environmental paradigm (NEP) that seeks to integrate human with the environment (Dunlap and Van Liere 1978; Egri and Herman 2000; Gooch 1995; Roberts and Bacon 1997). The NEP is the antithesis of the earlier environmental paradigm known as dominant social paradigm, which purports that human beings are above and exempt from nature (Hallin 1995). In light of NEP, several authors have attempted to define ECAB. According to a broad conceptualization, ECBA is a strong positive attitude towards preserving the environment (Crosby, Gill, and Taylor 1981). Zimmer, Stafford, and Stafford (1994) referred to ECAB as people's feelings about many different green issues. Some others characterized ECBA in terms of the degree of emotionality, the amount of specific factual knowledge, the level of willingness as well as the extent of the outcomes of these (like behavioral intent, recycling behavior, and purchase intent) on pollution-environment issues (Maloney and Ward 1973).

In an attempt to unify all these diversified but highly related conceptualizations, some authors have defined ECBA as those beliefs and attitudes that reflect concern for the preservation and conservation of natural resources, the pollution of air and

water, and ways to control them; plant and animal life, environmental consequences of product manufacturing and consumption, and recycling (Dunlap and Van Liere 1978; Hallin 1995; Stern, Dietz and Guagnano 1995). That is, an individual with a high level of ECBA will consider nature as delicate and vulnerable to injudicious production and consumption activities. Further, the individual will have high concern that air and water pollution can jeopardize plant and animal life. The same individual will also be highly in favor of conservation and preservation activities. In sum, such an individual will be pro-environmental and a subscriber of NEP.

ECBA encapsulates the possible negative consequences that environmental changes might have for people themselves, for non-human species, and the biosphere, and represent "directly experienced environmental degradation". When individuals experience at first hand, the consequences of environmental degradation, such as the health hazards brought on by air and water pollution, it strengthens ECBA (e.g., Egri and Herman 2000; Ling-yee 1997; Stern, Dietz and Guagnano 1995). In Mexico, there has been considerable neglect of the environmental consequences of the economic surge over the last few decades (http://www.eia.doe.gov/emeu/cabs/mexenv.html). For instance, air pollution causes over a third of disease, and about half of minor mortality in that country. The problem is compounded by the high pressure of population on the land (55 persons per square kilometer). Whereas this represents the national average, rapid population increases have been experienced in urban areas, straining city infrastructure (http://www.immigration-usa.com/wfb2004/ mexico/mexico_geography.html). These direct experiences of the consequences of environmental degradation are expected to strengthen ECBA in Mexico.

Additionally, it is more common for people to have a perception of local environmental problems within their immediate living environment, such as pollution of air and water sources. A perception of local environmental problems would strengthen ECBA (Chan 1996; Gooch 1995; Ling-yee 1997; Minton and Rose 1997). Mexico City, for instance, ranks among the most populous, as well as the most polluted, cities of the world (http://www.eia.doe.gov/emeu/cabs/mexenv.html). The mega city is situated in a valley and surrounded by mountains that trap pollution. Ozone levels for 300 days a year exceed the safe limits set by the World Health Organization. Several other urban centers follow a similar pattern of pollution, for example, carbon levels across Mexico in 1998 were about 60 percent higher than in 1980. Although the government has declared lack of clean water and deforestation to be serious national security issues, environmental regulation is still in its infancy (http://www.immigration-usa.com/wfb2004/mexico/mexico_geography.html).
Perceptions of such adverse local environmental conditions are expected to heighten ECBA in Mexico.

Across the border, the U.S.A. has its share of environmental woes, primarily as the world's leading emitter of carbon dioxide from the burning of fossil fuels (http://www.photius.com/wfb/wfb1999/united_states/united_states_geography.html). In contrast to Mexico, however, the demarcation of industrial sites from residential ones, the relatively low population density (32 persons per square kilometer), and the suburban sprawl tend to diffuse pollution. Furthermore, the Environmental Protection Agency (EPA), established in 1970 by the White House and Congress to develop and enforce regulations that implement environmental laws, deals with issues such as pollution, treatment of waste, and hazardous materials

(http://www.epa.gov/epahome/aboutepa.html). With such stringent measures in operation, there is less of a negative environmental impact of economic growth. This would result in less awareness of the possible consequences of environmental degradation. Similarly, there is a lower perception of adverse local environmental conditions. Both these factors would result in a weakening of ECBA in the U.S.A. Hence, we hypothesize that

H_1: The level of ECBA of business students will be significantly lower in the U.S.A. than in Mexico.

Collectivism

The construct of collectivism comes from Hofstede's (1980) cultural typology and it is the most used cultural factor in environmental research (e.g., Ling-yee 1997; Roberts and Bacon 1996). Collectivist orientation is a socio-cultural value, described in terms of cooperation, helpfulness, and consideration for group goals (Hofstede 1980). It also describes societies in which people from birth onwards are integrated into strong, cohesive in-groups. Additionally, in a collectivist society, there is intense social contact, hence maintaining harmony through a commonality of beliefs is of paramount importance in all facets of life (Hofstede 1997).

It appears that the conceptual domain of collectivism inherently includes a pro-environmental slant. For instance, a collectivist society is likely to place a higher value on preserving common community resources over personal wants and epicurean desires. Further, many of the environmental issues, such as the dissemination of knowledge regarding products and services, conservation programs, recycling programs, and raising organizational support, are conducted in groups with family-like ties based on strong shared values among individuals who are not biological relatives. A congruence of individual beliefs and collective aspirations would be a testimony of group loyalty, a deference to group paramountcy. Further, a collectivist society is likely to have positive attitudes towards preserving and protecting the environment in order to maintain social harmony. In the same token, collectivist societies are described as "shame" cultures, and to hold views supporting a violation of the environment would result in "loss of face" for both, the transgressing member, and the family, while upholding views that promote the integrity of the environment would elevate both member and family to honor status (Hofstede 1997). Finally, in the collectivist society, members have other-dependent lifestyles, and rely on the social network as the prime source of information, as is often demanded by environmental affiliations.

The U.S.A. is considered an individualistic as opposed to a collectivist country. This is because individuals are the cornerstones of a capitalist country. Individuals in the U.S. are driven by self-interest, which serves as the engine of economic prosperity of the society. By rewarding individual ingenuity, enterprise, and talent, a capitalist society achieves economic progress and thereby other societal goals. In contrast, Mexico has opted for social democracy, seeking to protect the individual's interests through elaborate industrial and other regulatory systems. It aims to alleviate poverty through social security measures, and promotes state-supported programs for universal healthcare and education. There is deference to group interests over personal gain, and an egalitarian sharing of societal resources that limits private enterprise. In its inclusiveness, the Mexican model reveals collectivist moorings.

Empirically, Hofstede (1980) found U.S. to be low on collectivism and high on individualism (Individualism or IDV rating=91), whereas Mexico scored high on collectivism but low on individualism (IDV rating=30). The score ranged from zero to 100 corresponding to collectivism to individualism. Thus, we hypothesize

H_2: The level of collectivism of business students will be significantly lower in the U.S.A. than in Mexico.

Influence of Collectivism on Environmentally Concerned Beliefs and Attitudes
The role of cultural factors in the formation of beliefs and attitudes has been discussed at length in the literature. For instance, Hofstede (1980, 1997) concluded that national culture or world-view affect individuals' understanding of social realities, and in turn, their beliefs and attitudes. Further, as described earlier, the essence of pro-environmental beliefs and attitudes are inherent in the conceptual domain of collectivism. Specifically, by focusing on group goals, a collectivist society is likely to value the preservation of common societal resources, which could include natural resources. In addition, the fundamentals of ECBA such as pollution control, conservation and preservation of natural resources, recycling programs and pro-environmental production and consumption efforts are conducted in groups based on strong shared values and attitudes among individuals that exemplify collective orientation. Furthermore, while Hofstede (1980, 1997, 2001) presents a graphic account of the structure, function, norms and behaviors in collectivist societies, his typology is consistent with earlier theories recognizing the role of social forces that shape individual beliefs, attitudes, and behavior. In a collectivist society, individual beliefs and attitudes (Ajzen and Fishbein1980; Fishbein and Ajzen 1975) are derived and non-biologically inherited from the group (Hofstede 1980, 1997, 2001). Based on the preceding, we hypothesize that

H_3: Collectivism will be significantly and positively related to ECBA, i.e., the higher the level of collectivism, the greater will be the level of ECBA.

Demographics as Control Variables: Even though results are equivocal, past research often included demographics as likely determinants of environmentally concerned beliefs and attitudes (e.g., Hallin 1995; Stern, Dietz, and Guagnano 1995). As such, the following demographics were included in the present study as "control" variables

Gender*:* Female qualities of nurturing, protecting, and procreating, have long been associated with Mother Nature's regenerative powers (e.g., Bhuian 1997). Literature is equivocal on the effects of gender on ECBA; however, some studies (e.g., Joonas 1994) evidenced such beliefs and attitudes as related to being female.

Age: Furthermore, ECBA are a function of the information that individuals have about the world around them (e.g., Heberlein 1981, 1989). The accumulation of such information is expected to increase with age, resulting in a concomitant increase in ECBA. The influence of age on ECBA was found in some studies (e.g., Joonas 2004). Additionally, the birth cohort under study belongs largely to Generation Y (i.e., born between 1979 and 1994), and is expected to have a high level of social and environmental awareness (cf. Coeyman 1998).

Country*:* Nationality was used as a predictor of environmental concern, based on Hofstede's (1980, 1997, and 2001) studies. Higher levels of ECBA were expected in countries that are high on collective orientation and vice versa. However, empirical studies in countries including China, Estonia, Latvia, Sweden, and U.S.A. produced equivocal findings (Chan 2001; Dunlap and Van Liere 1978; Minton and Rose 1997). However, support for this predictor was found in some studies (e.g., Joonas 2004; Ling-yee 1997; McCarty and Shrum 1994).

Student Standing*:* Earlier studies have used student standing as a predictor of environmentally concerned beliefs and attitudes (e.g., Bhuian, 1997). It was expected that students at higher levels would have received a higher cumulative exposure to environmental attitudes in the business school, predisposing a stronger alignment with such attitudes.

Below is described the methodology adopted for the present study.

3. Methodology

Sample Design and Data Collection

The survey was conducted in two business schools, one in the U.S.A., and the other in Mexico. The two schools share some similarities. They are located near large metropolitan areas, and are aiming at accreditation with the AACSB. Both schools focus on AACSB mandates concerning globalization and environmental concerns. In addition, as the U.S.A. and Mexico are NAFTA partners, the business schools therein are likely to reveal a globalization emphasis.

The survey was conducted during summer 2005 in randomly selected classes, 14 in Mexico, and 18 in the U.S.A. Two hundred thirty-five questionnaires were distributed to all the students in the classes. The survey was voluntary, anonymous, and structured. A cover letter described the objectives of the study and assured confidentiality. Although English is the medium of education in the Mexican school, a Spanish translation was included for further convenience. The translation was prepared by a panel comprising three independent, qualified translators. It was pre-tested among seven graduate students in Mexico, and revised accordingly. All students participated in the study, yielding 218 responses from the U.S.A. and 217 from Mexico.

Instrument

A voluntary, anonymous, objective type, paper-and-pencil survey was used. The accompanying cover letter from the researcher stated the objectives of the survey, and the confidential nature of the findings. Although the medium of instruction at the Mexico school was English, for convenience, the survey was administered in a bilingual format. A Spanish translation was prepared with the help of three qualified independent translators, pre-tested among some graduate students at the school in Mexico, and revised before administration.

Measures

The dependent variable ECBA were measured with a scale from Minton and Rose (1997), which reported Cronbach's $\alpha = .95$. The scale comprised 16 items, rated on a seven-point Likert-type scale, with one representing "strongly disagree" (very low) and seven representing "strongly agree" (very high), with four representing neither

agree nor disagree (indifference). Thus, on a particular item, a score of six would be interpreted as "high", 5 as "moderately high, 3 as "moderately low", and 2 as "low". The independent variable collectivism was measured with a scale adapted from Ling-yee (1997), which reported Cronbach's α= .76. The four-item scale was rated as described above. Control variables were treated as categorical predictors, and were dummy coded (e.g., for gender, male= zero, female= 1).

4. Statistical Analysis and Testing of Hypotheses

Data were collated and analyzed with the use of SPSS software. Reverse coded items were rectified. Missing values were substituted by "trend at a point". Diagnostic tests were undertaken; extreme values were ≤.05 percent of observations, expected cumulative frequencies of ECBA were found to approximate those of collectivism, evidencing normality; no pattern was observed in the distribution of error terms, and the Variance Inflation Factor (VIF) value was well below the limit of 10. Psychometric assessment of measurement scales was also undertaken: scale dimensionality through factor analysis using Principal Component Analysis, and Varimax rotation with Kaiser Normalization, and scale reliability through item-total correlations and Cronbach's α. The samples were compared through mean, standard deviation, and t-test for the summated scores for collectivism and ECBA. Hierarchical regression analysis and analysis of variance were conducted to examine the direct linkage between collectivism and ECBA. In $Model_1$, the dependent variable, summated score SUMECBA, was first regressed against the control variables gender, age, country, and student standing. In $Model_2$, SUMECBA was regressed against the control variables and the independent variable, summated score SUMCOLLECT, collective orientation. The best-fit model was assessed through comparing R^2, change in R^2, change in Regression F with the level of significance, and Model F, along with the level of significance.

Description of the Sample: The combined sample was almost equally divided among males and females (U.S.A. males 54 per cent, Mexico males 45 per cent). The median age was 21-23 years (combined sample 62 per cent, U.S.A. 60 per cent, Mexico 68 per cent). In the combined sample, 86 per cent of students were undergraduates (U.S.A. 75 per cent, Mexico 97 per cent), and the rest were graduates (Table 1).

Table 1 *Description of the Sample*

		U.S.A.		Mexico		Total	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
Gender	male	117	53.7	98	45.2	215	49.4
	female	101	46.3	119	54.8	220	50.6
	Total	218	100.0	217	100.0	435	100.0
Age	18-20 years	25	11.5	36	16.6	61	14.0
	21-23 years	124	56.9	147	67.7	271	62.3
	24 years and over	69	31.7	34	15.7	103	23.7
	Total	218	100.0	217	100.0	435	100.0
Standing	undergraduate	164	75.2	211	97.2	375	86.2
	graduate	54	24.8	6	2.8	60	13.6
	Total	218	100.0	217	100.0	435	100.0

Scales Assessment

Discriminant Validity*:* Discriminant validity (Table 2) was assessed through a correlation analysis. This ruled out a high correlation (≥ .4) among the study variables that, based on theory, should not be highly correlated.

Table 2 *Correlations among Study Variables (N= 435)*

		GENDER	AGE	COUNTRY	STAND	SUM-COLLECT	SUM-ECBA
GENDER	Pearson Correlation	1	.006	.085	.089	.036	.030
	Sig. (2-tailed)	.	.905	.076	.064	.449	.530
AGE	Pearson Correlation	.006	1	-.174(**)	.409(**)	.042	-.022
	Sig. (2-tailed)	.905	.	.000	.000	.384	.645
COUNTRY	Pearson Correlation	.085	-.174(**)	1	-.319(**)	.184(**)	.362(**)
	Sig. (2-tailed)	.076	.000	.	.000	.000	.000
STAND	Pearson Correlation	.089	.409(**)	-.319(**)	1	-.138(**)	-.253(**)
	Sig. (2-tailed)	.064	.000	.000	.	.004	.000
SUM-COLLECT	Pearson Correlation	.036	.042	.184(**)	-.138(**)	1	.751(**)
	Sig. (2-tailed)	.449	.384	.000	.004	.	.000
SUMECBA	Pearson Correlation	.030	-.022	.362(**)	-.253(**)	.751(**)	1
	Sig. (2-tailed)	.530	.645	.000	.000	.000	.

** *Correlation is significant at the 0.01 level (2-tailed).*

Unidimensionality*:* Data were confirmed to be adequate for factor analysis of the ECBA scale (KMO Measure= .941, Bartlett's test of sphericity: approx. χ^2= 4326.871, df= 120, p=.000). With initial communalities ≥1, and item loadings ≥.4, factor analysis yielded two factors for ECBA. Thirteen ECBA items, reflecting personal beliefs, loaded on Factor 1. Three items, ECBA8, ECBA9, and ECBA13, which dealt with beliefs about public policy issues, loaded on Factor 2 (Table 3). In the current study, because the two factors were highly correlated, we combined and treated them as a single construct. However, a clearer picture of the relationship between collectivism and ECBA might be obtained through further investigation of scale dimensionality. Furthermore, data were confirmed to be adequate for factor analysis of the collectivism scale (KMO Measure= .789, Bartlett's test of sphericity: approx. χ^2= 683.049, df= 6, p=.000). With initial communalities ≥1, and item loadings ≥.4, factor analysis yielded a single factor (Table 4).

Table 3 *Factor Analysis: ECBA*

ECBA N= 16	Component	
	1	2
ECBA1 I think we are not doing enough to save scant natural resources from being used up	.594	.329
ECBA2 Natural resources must be preserved even if people must do without some products	.478	.295
ECBA3 I feel sorry that the government does not do more to help control pollution of the environment	.781	.167
ECBA4 Much more fuss is being made about air and water pollution than is really justified (reverse coded)	.553	.251
ECBA5 I feel angry and frustrated when I think about the harm being done to plant and animal life by pollution	.755	.163
ECBA6 I feel the government should devote more energy toward supporting conservation and environmental programs	.801	.263
ECBA7 Consumers should be interested in the environmental consequences of the products that they purchase	.734	.329
ECBA8 Consumers should pay higher prices for the products which pollute the environment	.212	.832
ECBA9 Non-recyclable containers should be taxed to reduce waste	.254	.853
ECBA10 The government should be required to use recyclable materials in their operations whenever possible	.750	.323
ECBA11 Manufacturers should be required to use recyclable materials in their operations whenever possible	.722	.382
ECBA12 Commercial advertising should be required to mention the disadvantages of products	.623	.364
ECBA13 Products which pollute the environment during manufacture or consumption should be taxed	.543	.627
ECBA14 Public schools should require all students to take a course dealing with the environment and conservation problems	.595	.382
ECBA15 I feel angry and frustrated when I think of the ways industries are polluting the environment	.728	.313
ECBA16 Environmental problems are overrated and do not concern me (reverse coded)	.753	.211

Table 4 *Factor Analysis: Collect*

COLLECT N= 4	Component
	1
COLLECT1 Human beings need to understand the rule of nature and act accordingly	.874
COLLECT2 We should do unto others as we would do unto ourselves	.748
COLLECT3 We should pursue the conscience inherent in human nature	.873
COLLECT4 For the sake of public interest, private interest can be curbed	.758

Reliability Analysis*:* Scale reliability was assessed by using the alpha method (Table 5). For ECBA, with n=16, F= 27.510, p=.000, and Cronbach's α= .939 (.95

reported by Minton and Rose 1997), all items were retained on the scale. For collectivism, with n= 4, F= 69.548**,** p=.000, and Cronbach's α= .827 (.76 reported by Ling-yee 1997), all items were retained on the scale (Table 6).

Table 5 *Reliability Analysis: ECBA N= 435, Cases Excluded Listwise*

Scale items	**α**	**Corrected Item-Total Correlation**
ECBA Scale (n= 16, F= 27.510, p=.000)	.939	
ECAB1 I think we are not doing enough to save scant natural resources from being used up		.632
ECBA2 Natural resources must be preserved even if people must do without some products		.514
ECBA3 I feel sorry that the government does not do more to help control pollution of the environment		.708
ECBA4 Much more fuss is being made about air and water pollution than is really justified (reverse coded)		.554
ECBA5 I feel angry and frustrated when I think about the harm being done to plant and animal life by pollution		.683
ECBA6 I feel the government should devote more energy toward supporting conservation and environmental programs		.780
ECBA7 Consumers should be interested in the environmental consequences of the products that they purchase		.757
ECBA8 Consumers should pay higher prices for the products which pollute the environment		.568
ECBA9 Non-recyclable containers should be taxed to reduce waste		.615
ECBA10 The government should be required to use recyclable materials in their operations whenever possible		.766
ECBA11 Manufacturers should be required to use recyclable materials in their operations whenever possible		.774
ECBA12 Commercial advertising should be required to mention the disadvantages of products		.673
ECBA13 Products which pollute the environment during manufacture or consumption should be taxed		.753
ECBA14 Public schools should require all students to take a course dealing with the environment and conservation problems		.661
ECBA15 I feel angry and frustrated when I think of the ways industries are polluting the environment		.745
ECBA16 Environmental problems are overrated and do not concern me (reverse coded)		.706

Table 6 *Reliability Analysis: Collectivism N= 435, Cases Excluded Listwise*

Scale Items	α	Corrected Item-Total Correlation
Collectivism Scale (n= 4, F= 69.548, p=.000)	.827	
COLLECT1 I think we are not doing enough to save scant natural resources from being used up		.742
COLLECT2 Natural resources must be preserved even if people must do without some products		.565
COLLECT3 I feel sorry that the government does not do more to help control pollution of the environment		.740
COLLECT4 Much more fuss is being made about air and water pollution than is really justified (reverse coded)		.580

Comparison of Means*:* A comparison of the mean summated scores for collectivism and ECBA was undertaken (Table 7).

Table 7*Means, Standard Deviations and t-Tests N (U.S.A.) = 218, N (Mexico) = 217*

		Group statistics		t-Test for equality of means Equal variance assumed	
Item	Country	Mean	Std. Deviation	t-value	Sig. (2-tailed)
SUMECBA	U.S.A.	4.783	1.0008	-8.219	.000
	Mexico	5.640	1.2021		
SUMCOLLECT	U.S.A.	5.170	1.0132	-3.902	.000
	Mexico	5.625	1.3840		

Hypothesis H_1 suggested that ECBA would be significantly lower in the U.S.A. than in Mexico. A comparison of means for ECBA in the two countries provided support for hypothesis H_1. ECBA were found to be moderately high in the U.S.A., significantly lower than the high score in Mexico (Mean $_{U.S.A.}$ = 4.783, Mean $_{Mexico}$= 5.640, *t*= -8.219, df= 433, $p \leq .001$).

Hypothesis H_2 suggested that collectivism would be significantly lower in the U.S.A. than in Mexico. A comparison of means for collectivism in the two countries provided support for hypothesis H_2. Collectivism was found to be moderately high in the U.S.A., significantly lower than the high score in Mexico (Mean $_{U.S.A.}$ = 5.170, Mean $_{Mexico}$= 5.625, df= 433, *t*= -3.902, $p \leq .001$).

Hierarchical regression analysis*:* Hierarchical regression analysis (Cohen and Cohen 1978, 1983) was undertaken. Parameter estimates for the best model fit are presented in Table 8 below (Model$_2$, R^2= .619, R^2_{change}= .448, F_{change}= 503.926, $p \leq .001$, F_{model}= 139.245, $p \leq .001$). According to Model$_2$, at the .001 level of

significance, about 62 per cent of the variation in ECBA was explained by collectivism, country, and student standing. The regression equation for this model was:

SUMECBA= 1.152+ .657 SUMCOLLECT + .503 COUNTRY -.384 STAND

Where,

SUMECBA= summated score ECBA
SUMCOLLECT= summated score collectivism
COUNTRY= country
STAND= student standing.

Table 8 *Results of Hierarchical Regression Analysis Predicting SUMECBA*

	Model 1		Model 2	
	b	*t*-value	*b*	*t*-value
Constant	4.264	12.672***	1.152	6.654***
Control Variables				
Gender	n.s.	n.s.	n.s.	n.s.
Age	.257	2.726*	n.s.	n.s.
Standing	-.714	-3.290***	-.384	-3.251***
Country	.761	6.601	.503	6.654***
Main Effects				
Sumcollect	--	--	.657	22.448***
Change statistics				
R^2	.171		.787	
R^2 Change	.171		.448	
F Change	22.159***		503.926***	
Model fit				
Degrees of freedom-1	4		1	
Degrees of freedom-2	430		429	
F-Model	22.159***		139.245***	

**** Significance ≤ .001, * significance ≤ .01, n.s. = not significant*

Hypothesis H_3 suggested that collectivism would be significantly and positively related to ECBA. The regression results provided support for hypothesis H_3. Collectivism (b= .657, t= 22.448, $p\leq$ .001) was evidenced to be significantly and positively related to ECBA. Regression results also indicate that the country (b= .503, t= 6.654, $p\leq$ .001) in which the school is located is significantly and positively related to ECBA. Further, results show that student standing is significantly and negatively related to ECBA (b= -.384, t= -3.251, $p\leq$ .001).

5. Discussion and Conclusion

Hypothesis H_1 suggested that ECBA would be significantly lower for the U.S.A. than for Mexico. Empirical results supported this hypothesis. Results are in line with extant literature (e.g., Joonas 2004, Hofstede 1980, 1997, 2001; Ling-yee 1997; McCarty and Shrum 1994).

Furthermore, the cultural divide between business students in the two countries, and its direct effects, are brought into focus. Hypothesis H_2 suggested that collectivism would be significantly lower for the U.S.A. than for Mexico. Empirical results supported this hypothesis. Results are in conformity with extant literature (e.g., Joonas 2004; Hofstede 1980, 1997, 2001; Ling-yee 1997; McCarty and Shrum 1994).

Finally, hypothesis H_3 suggested that there would be a significant and positive relationship between collectivism and ECBA. Results supported this hypothesis. It was evidenced that, at the .001 level of significance, a unit increase in collectivism would results in a 65.7 per cent increase in ECBA. Results are in conformity with existing research (e.g., Heberlein 1981, 1989; Hofstede 1980, 1997, 2001; Stern, Dietz, and Guagnano 1995).

Among the control variables, gender was found to be of no significance in the making of ECBA. This may be accounted for by the myriad of societal changes that are taking place. For instance, in the U.S.A., married-couple households comprise only about 51 per cent of the total; women constitute 40 per cent of the workforce (http://ask.census.gov), and between 82 and 95 per cent of Americans feel that fathers should perform parenting chores (Gardyn 2002). As a result, erstwhile "feminine" qualities such as of nurturing, caring, preserving and protecting are now being increasingly assigned to both genders.

In the U.S.A., the age cohort under study belongs to Generation Y, born between 1979 and 1994. This is "the first generation to be really environmentally aware", partly due to the wide media coverage of multinational corporate scandals such as the Nike sweatshops. The Generation Y cohort is not likely to patronize an organization that does not present an environmentally friendly orientation (cf. Coeyman 1998). This, however, was not borne out by results of the present study. It was pointed out above that the level of ECBA in the U.S.A. was "moderately high", compared to a "high" level in Mexico. Furthermore, the control variable age was evidenced to have no significant effect on ECBA.

Additionally, the influence of the country on ECBA was found to be second in importance to that of collectivism. Regression results indicate that, at the .001 level of significance, ECBA for students in Mexico will be 50.3 per cent higher than ECBA for their U.S.A. counterparts. This conforms to extant literature (e.g., Joonas 2004; Hofstede 1980, 1997, 2001; Ling-yee 1997; McCarty and Shrum 1994). The country effects on ECBA would represent a composite of the subjects' position in the

social structure, institutional constraints, and incentive systems in relation to environmental concern in that country (e.g., Stern, Dietz and Guagnano 1995).

Finally, student standing was found to be negatively related to ECBA. Results evidenced that graduate students' ECBA will be 38.4 per cent lower than undergraduate students' ECBA. In other words, more recent business student cohorts have higher levels of ECBA compared to their predecessors. One reason for this may be the recent decision of both schools to obtain AACSB accreditation, which accounted for a phased implementation of standards on environmental perspectives. This area would merit further investigation.

Implications for Business Education: Part of the unexplained variation in ECBA might be explained by Institutional Theory, which posits that institutional norms originating from public opinion, educational systems, professions, ideologies, certification and accreditation bodies (Scott 1987), act as unwritten rules of proper social conduct to which organizations must adhere. For instance, AACSB (2001: 17) lays down the standards relating to environmental issues for business school accreditation:

"C.1.1: Both undergraduate and graduate curricula should provide an understanding of perspectives that form the context for business. Coverage should include… the influence of political, social, legal and regulatory, environmental and technological issues…

Interpretation: The perspectives indicated above might be addressed via individual courses with titles that explicitly identify the perspective being treated. However, it is not the intent of this standard to require a separate course for any one or for any combination of these perspectives. Schools may approach any or all of these topics by interweaving them throughout other required curricular elements."

Furthermore, the role of educational institutions in inculcating environmental values and beliefs among business students has also been theorized and empirically evidenced in current research (e.g., Bhuian 1997; Bhuian et al. 2001; Varadarajan and Thirunarayana 1995; Whitehead 1994; http://www.ucd.ie).

It may be noted that, whereas both the Mexico school and the U.S.A. school were actively pursuing accreditation with the AACSB, the Mexico school enshrined the goal of sustainable development in its mission statement. Such commitment at the university level is likely to heighten ECBA among students:

"TOWARDS MISSION 2015: The mission of (school) is to produce people with integrity, ethical standards, and a humanistic outlook, who are internationally competitive in their professional fields; and at the same time are good citizens committed to the economic, social, and cultural development of their community, and to the sustainable use of natural resources."

The dissemination of knowledge relating to environmental perspectives, including environmental ethics, legal requirements, and strategic managerial aspects of processes, products, waste disposal, distribution, promotion, might be achieved through core business courses. In the context of international business, a more focused channel for environmental perspectives would include specific courses in international management and marketing. Furthermore, there are specialized Centers that operate under the aegis of business schools, such as the Centers for International Business and Education and Research (CIBER's), and Small Business Development

Centers (SBDC's). The latter would be particularly suited to the diffusion of environmental knowledge in business, marketing, and general media.

The sections below cover the limitations of the current study, directions for future research, and conclusions drawn.

Limitations of the study: The current research is not free from limitations. Firstly, compared to the U.S.A. sample, the Mexico sample comprised a marginal proportion of graduate students. To that extent, results may not be strictly comparable between the two schools. Secondly, the sample included only one educational institution in each country. This is likely to restrict the generalizability of the study.

Directions for future research: An extension exercise, including a larger number of schools in each country, would be in order. Additionally, the student profile would be better approximated through a stratified sample. Further, there is a need to study the causative factors responsible for the making of environmental beliefs and attitudes, such as collectivist orientation, and quality of environmental education. Additionally, the inclusion of school indicators among control variables, such as the nature of the funding (public or private), school size, and adherence to AACSB environmental perspectives, would shed light on their role in the making of ECBA. While the present study was restricted to the U.S.A. and Mexico, obtaining some data from Canada would offer a more complete picture of NAFTA's ecological prospects. Finally, a longitudinal study would help track long-term changes in the environmental beliefs and attitudes of business student cohorts.

In sum, the results of this study evidence that overall, environmental beliefs and attitudes are stronger among business students in Mexico than in the U.S.A. There is a need to utilize business educational institutions in both countries, especially the U.S.A., toward a formal and focused dissemination of environmental knowledge, to increase ECBA among business students and other constituents. Improved levels of ECBA would inculcate a shared environmental orientation among potential stakeholders. This would help strengthen an alignment to the green agenda of NAFTA and other international trade agreements.

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