

Article

Land Grant University Participants' Eurocentric Attitudes about Agriculture: An Ideological Constraint to Achieving the 2030 Agenda for Sustainable Development

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Abstract: Socio-cultural Eurocentric views about agriculture may diminish educational efforts to globalize the curricula at land grant institutions in the United States of America. While many U.S. inhabitants have historical and/or cultural ties to Europe, the modern U.S. agricultural industry is dependent upon contributions from diverse agricultural origins. Recognizing ideological origins in agriculture helps educators prepare curricula and teach others through inclusive and equitable education that is consistent with the goals of the 2030 Agenda for Sustainable Development. The purpose of this study was to explore postsecondary students' and employees' Eurocentric attitudes about agriculture at a large southern U.S. land grant university. A cross-sectional design and random samples constituted the study population. Eurocentric attitudes existed primarily among undergraduate students and staff members. Respondents with family actively engaged in agriculture and those enrolled in the college of agriculture had stronger levels of Eurocentric beliefs, as did respondents with at least one previous international experience. Efforts to lessen Eurocentric attitudes about agriculture are needed in postsecondary education. Additional study of the origins of belief systems and factors affecting attitudinal formation may provide useful insights for replacing outdated ideals and achieving cognitive consistency in understanding the global agricultural industry.

Keywords: Eurocentrism; agriculture; postsecondary education; inclusive; equitable



Citation: Jordan, S.; Baker, C.C.; Wingenbach, G.; Landaverde, R. Land Grant University Participants' Eurocentric Attitudes about Agriculture: An Ideological Constraint to Achieving the 2030 Agenda for Sustainable Development. *Sustainability* **2024**, *16*, 2410. <https://doi.org/10.3390/su16062410>

Academic Editor: Changhyun Roh

Received: 27 January 2024

Revised: 2 March 2024

Accepted: 12 March 2024

Published: 14 March 2024



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1. Introduction

Eurocentrism is defined as having an attitude or belief system that centers on European origins as the primary, and sometimes only, valid belief system for understanding how the world works [1,2]. Those accepting the Eurocentric premise without questioning its validity undervalue and ignore non-Western views contrary to the European/North American standard. Of particular concern is how often Eurocentric attitudes persist unknowingly in society at large. "Embedded in present-day thought, values, and education, Eurocentrism is naturalized as common sense that underscores non-Western values and ways of knowing" [3] (p. 355).

Eurocentrism may affect postsecondary educational environments and educators' beliefs about food and agricultural knowledge systems. Eurocentric perspectives have operated as ideological censors that benefited Americans of European descent while denying legitimacy to others' views [4]. In traditional curriculum development, European-American standards are perpetuated and intertwined because of their historical ties to knowledge creation and instruction in higher education [4–6].

Many postsecondary education-level agricultural science textbooks were written by or derived from authors who may have held Eurocentric views about agriculture. The Eurocentric narrative lacks complexity and excludes alternative voices (i.e., attitudes, beliefs, and practices) from a more realistic story about agricultural development in the United

States [7]. Hence, Eurocentric attitudes about agriculture may be perpetuated through the teaching of agricultural topics based on a strict Eurocentric narrative. In contrast, equivalent non-Eurocentric attitudes about agriculture remain missing in the curriculum. This study concerns a large southern U.S. land grant university and its mission in developing positive perceptions about the global nature of agriculture. Land grant universities play critical roles as state-supported institutions of higher education, which educate more than 1.7 million students in 109 colleges/universities [8].

1.1. Eurocentrism in Light of the 2030 Agenda for Sustainable Development

The United Nations General Assembly unanimously adopted Resolution 70/1, *Transforming Our World: The 2030 Agenda for Sustainable Development*, during the 70th session on 25 September 2015 [9]. The 2030 Agenda seeks to eradicate poverty; “including extreme poverty, is the greatest global challenge and an indispensable requirement for sustainable development” (p. 1 [9]). Within the vision of the 2030 Agenda is a “world with universal literacy... a world with equitable and universal access to quality education at all levels” (p. 1 [9]). Consistent with the aims of *Sustainable Education and Approaches*, we believe that “Education in diverse forms and multiple contexts provides the means whereby each generation passes on its culture, discoveries, successes and failures to the next. Without inter-generational education, very little in a human context can be sustainable” (para. 1 [10]). Discussions about inclusive, equitable, and quality education for all help us sustain our ways of knowing, being, and doing.

The 2030 Agenda for Sustainable Development has 17 Sustainable Development Goals and 169 targets, which build upon the original Millennium Development Goals. Goal 4 is to “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” (p. 14 [9]). What then constitutes inclusiveness in an equitable and quality education, so as to foster intercultural understanding, tolerance, mutual respect, and an ethic of global citizenship and shared responsibility (p. 10 [9])? We argue that multiple ideologies and perspectives must be represented in the creation and instruction of agricultural education knowledge systems. Sustainable development in agriculture and/or other disciplines cannot be built upon a single narrative, a single ideology that permeates all thought, belief, and action about said discipline. To perpetuate belief systems based upon one ideology (Eurocentrism) contradicts the very premise of education in diverse forms and multiple contexts. Hence, we believe that an inclusive, equitable, and quality education for all is dependent upon recognizing contributions from diverse perspectives about agriculture’s history. We portend that the 2030 Agenda for Sustainable Development will be achieved with the recognition and deconstruction of unsustainable ideologies—such as Eurocentrism—of agriculture.

1.2. U.S. Land Grant System

The U.S. land grant system was initiated with the passage of the Morrill Act of 1862. The system integrates postsecondary education institutions focused on teaching agriculture, engineering, and science in every U.S. state and other national territories [8]. The Morrill Act was intended to provide a majority of the population with practical education that directly related to their daily lives. In Texas, the land grant institution created was Texas A&M University, established in 1876 [11]. Over the years, U.S. land grant postsecondary education evolved through federal legislation to include the Morrill Act of 1890 and the Equity in Educational Land-Grant Status Act of 1994. These Acts integrated historically black colleges and universities (Morrill Act of 1890) and tribal colleges and universities (TCUs), respectively [12].

Another key component of the U.S. land grant system was the establishment of the agricultural experiment station program, created by the Hatch Act of 1887. The Hatch Act authorized federal payments through granting programs to each state to establish experimental research in agriculture, which was connected with the teaching functions at each state’s respective land grant university or college. Hatch Act research programs

greatly increased U.S. agricultural production efficiencies, making agriculture the leading industry nationwide.

The final piece of the U.S. land grant system, the dissemination of information derived from agricultural experiment station research, was realized with the passage of the Smith-Lever Act of 1914, which created the U.S. Cooperative Extension Service. Extension services offer non-formal education and technical assistance in agriculture and other disciplines to communities and stakeholders through state- and county-based offices [13]. Hence, U.S. land grant colleges and universities partner with the three governmental levels (federal, state, and county) to operationalize the system's agricultural teaching, research, and extension pillars [11].

1.3. Cognitive Dissonance Theory (CDT)

Cognitive dissonance, in simple terms, is an inner drive to maintain harmony between our attitudes or thoughts and our resultant behaviors. When attitudes and behaviors contradict each other, we experience disharmony or dissonance. CDT, developed by Festinger [14], maintains that when experiencing cognitive dissonance, people seek to eliminate it by changing attitudes or behaviors to achieve harmony, thereby achieving cognitive consistency. In our case, land grant college and university educators may know about Eurocentrism in curricula, but change their teaching behaviors by including other ideologies while teaching about the agricultural sciences.

Cognitive dissonance can be caused by many things, for example, when one receives new information or acquires new knowledge during purchasing decisions [10]. Also, family status, customs, religious values, culture, and peer influence can affect one's cognitive dissonance when making purchasing decisions [15–17]. Likewise, international experiences have been shown to cause cultural dissonance because exposure to new cultures and/or ideals challenges one's previous understanding of the world [18]. In particular, students participating in education abroad programs may experience cognitive dissonance when encountering cultural differences and/or similarities that confound their previously held assumptions/expectations of culture in foreign locations. For this study, Festinger's [14] theory of cognitive dissonance helps us understand differences in respondents' Eurocentric attitudes about agriculture when compared by education level, family status, and/or previous participation in international activities.

1.4. Eurocentrism in Agriculture

Many Western and Eurocentric philosophies remain dominant in university curricula [19]. When implementing agriculture production strategies, Eurocentric/western methods of sustainable agriculture development are not always the most superior or effective [20]. Boogaard [21] contends that the need to connect a culture's philosophy with its agricultural development strategies shows Eurocentrism represents a bias in perpetuating the suppression of other agriculture production ideologies.

In the United States, land grant universities have struggled with implementing agricultural community educational efforts that include more Indigenous sciences and knowledge systems [22]. The faculty expressed more Western epistemology, noting that "...the Western scientific perspective has created large gaps in the knowledge environment, thereby limiting the possibility for exchange and recreating colonial tendencies around knowledge subjugation" [22] (p. 325).

Persaud et al. [23] investigated students' Eurocentric attitudes toward agriculture at a U.S. land grant institution. They found freshmen had higher rates of Eurocentric attitudes than did seniors. Rouse et al. [24] expanded on these findings by replicating the study with a much larger student population. They found upperclassmen were less likely to agree with Eurocentric propositions about agriculture, showing possible significant connections existed between age or education level and Eurocentric attitudes.

2. Materials and Methods

The purpose of this study was to explore land grant university students' and employees' Eurocentric attitudes about agriculture. The objectives were to (1) assess Eurocentric attitudes toward agriculture, and (2) determine if significant differences existed in those attitudes when compared by selected demographics or international experiences. Some methods were part of a larger project wherein similar designs and demographics were reported [25,26]; however, all are described fully herein.

We used a descriptive cross-sectional survey to collect quantitative dichotomous, categorical, and continuous data. Cross-sectional surveys [27,28] are common forms of research, especially in educational settings [29]. The study population ($N \approx 75,000$) represented students, faculty, and staff at a large southern U.S. land grant university in spring 2021. The accessible population ($n = 4100$) included students ($n = 3150$) enrolled in one or more of 75 courses with "global" or "international" among the course attributes, and the faculty and staff ($n = 950$) associated with those courses. For this study, all students', faculty, and staff's responses were used for data analysis. Stratified random samples were drawn from the 75 courses after receiving Texas A&M University ethics review board approval (IRB2020-1445M). A sample of 351 would represent 4100; we rounded the sample to 400. Repeated email reminders [30] produced a response rate of 82% ($n = 328$), which was reduced to 45% ($n = 181$) after removing invalid and incomplete responses.

According to Dillman et al. [30], sampling and nonresponse error are two of the four possible sources of error in survey research. We used the Lindner and Wingenbach [31] method of comparing early to late respondents. We defined respondents based on waves of email invitations/reminders, counting all responses from the last week of February 2021 as early; those received after March 1 were coded as late. Independent samples *t*-tests were used to test for nonresponse error. We compared summed Eurocentric attitudes for early ($n = 61$) vs. late ($n = 120$) respondents. No significant differences existed between early ($M = 55.44$, $SD = 13.60$) and late ($M = 52.38$, $SD = 12.97$) respondents; $t(179) = 1.50$, $p = 0.14$. These results suggest that respondents' Eurocentric attitudes about agriculture were not affected by response type, which are indicative of nonrespondents and, therefore, are representative of the target population.

The research instrument, Perceptions of International Agricultural Issues (see Supplementary Materials), had two sections. The first assessed respondents' Eurocentric attitudes about agriculture using Landes' 16 propositions about North American and European agriculture [32]. The Eurocentric attitudes section was adapted from previous studies [23,24], which were based on Landes' work [32], *The Wealth and Poverty of Nations: Why some are so rich and some so poor*. Table 1 shows the 16 propositions with adapted keywords. A six-point scale (1 = strongly disagree, 2 = somewhat disagree, 3 = disagree, 4 = agree, 5 = somewhat agree, and 6 = strongly agree) was used to measure respondents' self-reported agreement levels with each Eurocentric proposition. A post-hoc reliability test revealed a highly reliable Cronbach's coefficient alpha ($\alpha = 0.90$).

The second section included demographic questions (e.g., sex, race, college) that were used to describe the respondents as a group. Three questions relative to family background (active engagement in agriculture), career (current or future career in agriculture), and previous international experience (e.g., international youth exchange in 4-H, FFA, other; study or work abroad) were included to aid in understanding whether differences existed in the variables of interest when compared by these selected demographics.

Data were gathered with an online survey (Qualtrics). Data collection began in late February and concluded in mid-March (about 21 days). Descriptive statistics were used to report the data for Objective 1. Data for Objective 2 were analyzed using ANOVA with partial Eta squared (η^2) as a measure of effect size. All significance tests were conducted with an a priori alpha level of 0.05.

Table 1. 16 propositions about North American/Eurocentric agriculture [32].

Propositions	Keywords *
The climate of North America/Europe is more favorable for agriculture than climates of other continents.	Favorable Climate
The climate of North America/Europe is better for human comfort than climates of other continents.	Comfortable Climate
The soils in North America/Europe are more fertile than in other continents.	Fertile Soils
North America/Europe suffers less from natural disasters than do other continents.	Less Natural Disasters
Historically, North America/Europe was less affected by human diseases than in other continents.	Less Disease-ridden
The stability of North American/European agricultural productivity can be explained largely by differentiation of distinct ecological zones.	Distinct Ecozones
Historically, North America/Europe avoided land degradation caused by overpopulation.	Less Land Degradation
Culturally, North America/Europe avoided overpopulation because their capitalistic/free enterprise ethic counteracted such tendencies.	Capitalism
North American agriculture flourished because European immigrants were particularly inventive.	Inventive Immigrants
North American agriculture flourished because European immigrants were particularly venturesome.	Venturesome Immigrants
North American agriculture flourished because European immigrants were particularly capable of scientific thought.	Scientific Immigrants
North American agriculture flourished because European immigrants held strong democratic values.	Democratic Values
North American agriculture flourished because European immigrants' family structure was particularly well suited to agricultural development.	Family Structure
North American agriculture flourished partly because European immigrants brought the institution of free markets.	Free Market
North American agriculture flourished partly because European immigrants brought the institution of private property rights.	Private Property
Christianity among European immigrants contributed significantly to North America's agricultural development.	Christianity

* Keywords from Rouse et al. [24], which were derived from Persaud et al. [23].

3. Results

Participants ($N = 181$) were categorized by race/ethnicity, sex, class, college, family status in agriculture, career plans in agriculture, and previous international experience. The majority described themselves as white (78%), female (60%), undergraduate (54%), seniors (19%), and in the college of agriculture (33%) (Table 2). By a ratio of 2:1, respondents' families were not engaged (66%) in the agricultural industry, and 71% of respondents were not planning a career in agriculture. The majority (51%, $n = 92$) had not participated in at least one international experience, but for those who did, the majority had participated in study (23%, $n = 42$) or work (23%, $n = 41$) experiences abroad.

Table 2. Respondents' demographic characteristics ($N = 181$).

Characteristics	Categories	<i>f</i>	%
Race/ethnicity ^a	White	141	77.9
	Hispanic	24	13.3
	Asian	11	6.1
	Another race/ethnicity	3	1.7
	Black	2	1.1

Table 2. Cont.

Characteristics	Categories	<i>f</i>	%
Sex	Female	109	60.2
	Male	68	37.6
	Another	4	2.2
Status	Undergraduate	98	54.1
	Staff	47	26.0
	Graduate	23	12.7
	Faculty	13	7.2
	Senior	35	19.3
Class	Junior	23	12.7
	Graduate	23	12.7
	Sophomore	16	8.8
	Freshman	9	5.0
	Agriculture	59	32.6
College	Another college ^b	31	17.1
	Liberal Arts	24	13.3
	Engineering	17	9.4
	Sciences	17	9.4
	Business	12	6.6
	Health Sciences	11	6.1
	Education	8	4.4
	Law	1	0.6
	No family is engaged in agriculture	119	65.7
Family in agriculture	Yes, my family is engaged in agriculture	62	34.3
Career in agriculture	Not planning a career in agriculture	129	71.3
	Yes, I am planning a career in agriculture	52	28.7
International experiences ^c	Did not participate in an international experience	92	50.8
	Yes, at least one experience (e.g., study/work abroad)	89	49.2

Frequencies may not equal 100% because of missing data. ^a Another race/ethnicity included multiple races.

^b Another college did not require specific input. ^c International experience included international youth exchange (4-H, FFA, other), study abroad, work abroad, semester or longer study abroad at a non-U.S. university/college, and virtual study abroad (participant at a U.S. campus location).

3.1. Eurocentric Attitudes toward Agriculture

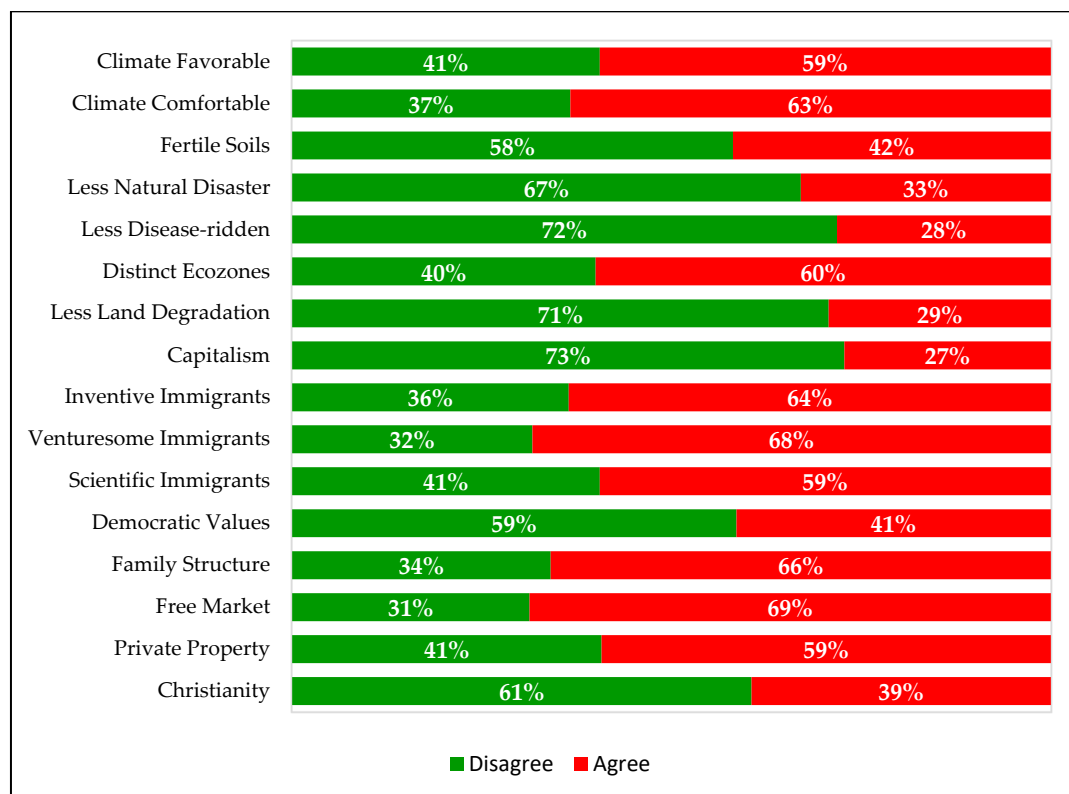
The first objective was to assess respondents' Eurocentric attitudes about agriculture. Participants indicated their agreement with 16 propositions about North American and European agriculture using a six-point scale (Table 3). As a group, respondents' Eurocentric attitudes ranged from somewhat disagree with the proposition that North America/Europe was less affected by human diseases than in other continents ($M = 2.68$, $SD = 1.29$) to somewhat agree with the proposition that North American agriculture flourished because European immigrants were particularly venturesome ($M = 3.84$, $SD = 1.35$). Individual groups' responses ranged from faculty disagreeing ($M = 2.23$, $SD = 1.09$) with "capitalism", to staff somewhat agreeing with "venturesome immigrants" ($M = 4.09$, $SD = 1.12$).

Figure 1 shows a comparison of the respondents who disagreed (green) vs. those who agreed (red) with each of the 16 propositions about North American and European agriculture. The propositions, as originally conceived (see Table 1), are stated in positive format, resulting in stronger tendencies to hold Eurocentric attitudes if agreeing with the proposition. For example, if agreeing more than disagreeing with the proposition, "The climate of North America/Europe is more favorable for agriculture than climates of other continents", one would hold a Eurocentric bias toward North American/European climates being better for agricultural production than climatic conditions elsewhere (e.g., Africa, Asia, South America). Hence, we coded disagreement percentages green because ideally, respondents should disagree more than agree (red) with all 16 propositions.

Table 3. Descriptive statistics for Eurocentric attitudes toward agriculture by group ($N = 181$).

	Undergrads ($n = 97$)	Grads ($n = 23$)	Staff ($n = 47$)	Faculty ($n = 13$)	Total ($N = 181$)
Propositions	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Climate favorable	3.84 (1.17)	3.09 (1.12)	3.45 (1.23)	3.62 (1.12)	3.62 (1.20)
Climate comfortable	4.05 (1.20)	3.30 (1.29)	3.36 (1.26)	3.31 (0.95)	3.72 (1.26)
Fertile soils	3.51 (1.11)	2.61 (1.03)	3.09 (1.08)	3.15 (0.99)	3.26 (1.12)
Less natural disaster	3.31 (1.25)	2.57 (1.08)	2.51 (0.98)	2.69 (1.11)	2.96 (1.21)
Less disease-ridden	2.76 (1.41)	2.13 (1.01)	2.83 (1.15)	2.54 (1.05)	2.68 (1.29)
Distinct ecozones	3.87 (1.08)	3.22 (1.20)	3.37 (1.02)	3.31 (0.95)	3.62 (1.10)
Less land degradation	2.88 (1.28)	2.65 (1.50)	3.04 (1.14)	2.31 (1.03)	2.85 (1.26)
Capitalism	2.85 (1.36)	2.26 (1.10)	2.96 (1.16)	2.23 (1.09)	2.76 (1.28)
Inventive immigrants	3.64 (1.38)	3.09 (1.44)	3.81 (1.24)	3.15 (1.28)	3.58 (1.36)
Venturesome immigrants	3.97 (1.40)	3.17 (1.44)	4.09 (1.12)	3.23 (1.17)	3.84 (1.35)
Scientific immigrants	3.69 (1.30)	3.04 (1.46)	3.70 (1.21)	2.85 (1.28)	3.55 (1.32)
Democratic values	3.17 (1.24)	2.74 (1.48)	3.32 (1.34)	2.46 (1.05)	3.10 (1.30)
Family structure	3.82 (1.41)	3.41 (1.37)	3.81 (1.01)	3.31 (1.38)	3.73 (1.31)
Free market	3.80 (1.11)	3.43 (1.53)	3.93 (1.24)	2.92 (1.44)	3.73 (1.25)
Private property	3.65 (1.35)	3.65 (1.40)	3.80 (1.29)	3.23 (1.30)	3.66 (1.34)
Christianity	3.10 (1.55)	2.65 (1.47)	3.23 (1.43)	3.00 (1.22)	3.07 (1.49)

Six-point scale; responses ranged from disagree to somewhat agree.

**Figure 1.** Percentage of respondents ($N = 181$) disagreeing vs. agreeing with the 16 propositions about North American/European agriculture.

3.2. Differences in Eurocentric Attitudes about Agriculture

The second objective was to determine if significant differences existed in Eurocentric attitudes about agriculture when compared by selected demographics or previous international experience. The first demographic comparison focused on respondent group status (undergraduate, graduate, staff, or faculty). Among the 16 propositions, significant differences between groups were found in eight (50%) of the propositions, including climate favorable, climate comfortable, fertile soils, less natural disaster, distinct ecozones, venturesome immigrants, scientific immigrants, and free market (Table 4).

Table 4. One-way ANOVA results for 16 Eurocentric propositions by group ($N = 181$).

Propositions	SS	df	MS	F	Sig.	η^2
Climate favorable	12.43	3	4.14	2.99 *	0.03	0.048 ^a
Climate comfortable	22.88	3	7.63	5.18 **	0.00	0.081 ^b
Fertile soils	17.36	3	5.79	4.90 **	0.00	0.077 ^b
Less natural disaster	25.94	3	8.65	6.50 ***	<0.001	0.100 ^b
Less disease-ridden	8.82	3	2.94	1.80	0.15	
Distinct ecozones	13.88	3	4.63	4.02 **	0.01	0.064 ^b
Less land degradation	6.54	3	2.18	1.38	0.25	
Capitalism	11.91	3	3.97	2.50	0.06	
Inventive immigrants	10.79	3	3.60	1.98	0.12	
Venturesome immigrants	19.47	3	6.49	3.71 **	0.01	0.059 ^b
Scientific immigrants	15.35	3	5.12	3.03 *	0.03	0.049 ^a
Democratic values	11.08	3	3.69	2.22	0.09	
Family structure	5.74	3	1.92	1.11	0.35	
Free market	12.93	3	4.31	2.85	0.04	0.047 ^a
Private property	3.37	3	1.12	0.62	0.60	
Christianity	5.45	3	1.82	0.82	0.49	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Eta squared: ^a small ($\eta^2 = 0.01$), ^b medium ($\eta^2 = 0.059$).

Table 5 displays the results of the post hoc tests (Tukey HSD) only for those eight propositions where significant differences between respondent groups arose. The first difference occurred in “climate favorable”, $F(3, 176) = 2.99$, $p = 0.03$ ($\eta^2 = 0.048$, indicating a small effect). Tukey’s HSD post hoc test showed graduate students disagreed ($M = 3.09$, $SD = 1.12$) significantly more so than did undergraduate students ($M = 3.84$, $SD = 1.17$). Significant differences existed for “climate comfortable”, $F(3, 176) = 5.18$, $p = 0.002$ ($\eta^2 = 0.081$, medium effect). Tukey’s HSD post hoc test showed undergraduate students agreed ($M = 4.05$, $SD = 1.20$) significantly more so than did graduate students ($M = 3.30$, $SD = 1.29$) or staff ($M = 3.36$, $SD = 1.26$). Significant differences existed for “fertile soils”, $F(3, 175) = 4.90$, $p = 0.003$ ($\eta^2 = 0.077$, medium effect). Tukey’s HSD post hoc test showed graduate students disagreed ($M = 3.51$, $SD = 1.11$) significantly more so than did undergraduate students ($M = 2.61$, $SD = 1.03$). Significant differences existed for “less natural disaster”, $F(3, 175) = 6.50$, $p < 0.01$ ($\eta^2 = 0.100$, medium effect). Tukey’s HSD post hoc test showed graduate students disagreed ($M = 2.57$, $SD = 1.08$) significantly more than did undergraduate students ($M = 3.31$, $SD = 1.25$) or staff ($M = 2.51$, $SD = 0.98$). Significant differences existed for “distinct ecozones”, $F(3, 176) = 4.02$, $p = 0.09$ ($\eta^2 = 0.064$, medium effect). Tukey’s HSD post hoc test showed graduate students disagreed ($M = 3.22$, $SD = 1.20$) significantly more than did undergraduate students ($M = 3.87$, $SD = 1.08$) or staff ($M = 3.37$, $SD = 1.02$). Significant differences existed for “venturesome immigrants”, $F(3, 176) = 3.71$, $p = 0.013$ ($\eta^2 = 0.059$, medium effect). Tukey’s HSD post hoc test showed graduate students disagreed ($M = 3.17$, $SD = 1.44$) significantly more than did staff ($M = 4.09$, $SD = 1.12$). Significant differences existed for “scientific immigrants”, $F(3, 176) = 3.03$, $p = 0.031$ ($\eta^2 = 0.049$, indicating a small effect). Tukey’s HSD post hoc test showed faculty disagreed ($M = 2.85$, $SD = 1.28$) significantly more than did graduate students ($M = 3.04$, $SD = 1.46$) or undergraduate students ($M = 3.69$, $SD = 1.30$). Significant differences existed for the proposition “free market”, $F(3, 175) = 2.85$, $p = 0.039$ ($\eta^2 = 0.047$, indicating a small effect). Tukey’s HSD post hoc test showed faculty disagreed ($M = 2.92$, $SD = 1.44$) significantly more with the proposition than did staff ($M = 3.93$, $SD = 1.24$).

Table 5. Post hoc tests (Tukey HSD) of the 16 Eurocentric propositions by group ($N = 181$).

Variables	Groups (I)	Groups (J)	MD(I-J)	S.E.	Sig.	95% CI	
						Lower	Upper
Climate favorable	Undergrad	Graduate	0.748 *	0.273	0.034	0.04	1.46
		Faculty	0.220	0.348	0.922	−0.68	1.12
		Staff	0.388	0.209	0.251	−0.15	0.93
	Graduate	Undergrad	−0.748 *	0.273	0.034	−1.46	−0.04
		Faculty	−0.528	0.408	0.568	−1.59	0.53
		Staff	−0.360	0.300	0.627	−1.14	0.42
	Faculty	Undergrad	−0.220	0.348	0.922	−1.12	0.68
		Graduate	0.528	0.408	0.568	−0.53	1.59
		Staff	0.169	0.369	0.968	−0.79	1.13
	Staff	Undergrad	−0.388	0.209	0.251	−0.93	0.15
		Graduate	0.360	0.300	0.627	−0.42	1.14
		Faculty	−0.169	0.369	0.968	−1.13	0.79
Climate comfortable	Undergrad	Graduate	0.747 *	0.281	0.043	0.02	1.48
		Faculty	0.744	0.358	0.165	−0.19	1.67
		Staff	0.690 *	0.216	0.009	0.13	1.25
	Graduate	Undergrad	−0.747 *	0.281	0.043	−1.48	−0.02
		Faculty	−0.003	0.421	1.000	−1.10	1.09
		Staff	−0.057	0.309	0.998	−0.86	0.74
	Faculty	Undergrad	−0.744	0.358	0.165	−1.67	0.19
		Graduate	0.003	0.421	1.000	−1.09	1.10
		Staff	−0.054	0.380	0.999	−1.04	0.93
	Staff	Undergrad	−0.690 *	0.216	0.009	−1.25	−0.13
		Graduate	0.057	0.309	0.998	−0.74	0.86
		Faculty	0.054	0.380	0.999	−0.93	1.04
Fertile soils	Undergrad	Graduate	0.902 *	0.252	0.003	0.25	1.56
		Faculty	0.357	0.321	0.684	−0.48	1.19
		Staff	0.425	0.194	0.128	−0.08	0.93
	Graduate	Undergrad	−0.902 *	0.252	0.003	−1.56	−0.25
		Faculty	−0.545	0.377	0.473	−1.52	0.43
		Staff	−0.476	0.277	0.315	−1.19	0.24
	Faculty	Undergrad	−0.357	0.321	0.684	−1.19	0.48
		Graduate	0.545	0.377	0.473	−0.43	1.52
		Staff	0.069	0.341	0.997	−0.81	0.95
	Staff	Undergrad	−0.425	0.194	0.128	−0.93	0.08
		Graduate	0.476	0.277	0.315	−0.24	1.19
		Faculty	−0.069	0.341	0.997	−0.95	0.81
Less natural disaster	Undergrad	Graduate	0.747 *	0.268	0.030	0.05	1.44
		Faculty	0.620	0.341	0.268	−0.26	1.50
		Staff	0.802 *	0.205	0.001	0.27	1.33
	Graduate	Undergrad	−0.747 *	0.268	0.030	−1.44	−0.05
		Faculty	−0.127	0.400	0.989	−1.17	0.91
		Staff	0.055	0.293	0.998	−0.71	0.82
	Faculty	Undergrad	−0.620	0.341	0.268	−1.50	0.26
		Graduate	0.127	0.400	0.989	−0.91	1.17
		Staff	0.182	0.361	0.958	−0.76	1.12
	Staff	Undergrad	−0.802 *	0.205	0.001	−1.33	−0.27
		Graduate	−0.055	0.293	0.998	−0.82	0.71
		Faculty	−0.182	0.361	0.958	−1.12	0.76
Distinct ecozones	Undergrad	Graduate	0.650 *	0.249	0.047	0.01	1.29
		Faculty	0.560	0.317	0.293	−0.26	1.38
		Staff	0.498 *	0.192	0.050	0.00	1.00
	Graduate	Undergrad	−0.650 *	0.249	0.047	−1.29	−0.01
		Faculty	−0.090	0.372	0.995	−1.06	0.88
		Staff	−0.152	0.274	0.945	−0.86	0.56
	Faculty	Undergrad	−0.560	0.317	0.293	−1.38	0.26
		Graduate	0.090	0.372	0.995	−0.88	1.06
		Staff	−0.062	0.337	0.998	−0.94	0.81
	Staff	Undergrad	−0.498 *	0.192	0.050	−1.00	0.00
		Graduate	0.152	0.274	0.945	−0.56	0.86
		Faculty	0.062	0.337	0.998	−0.81	0.94

Table 5. Cont.

Variables	Groups (I)	Groups (J)	MD(I-J)	S.E.	Sig.	95% CI	
						Lower	Upper
Venturesome immigrants	Undergrad	Graduate	0.795	0.307	0.050	0.00	1.59
		Faculty	0.738	0.391	0.236	−0.28	1.75
		Staff	−0.116	0.235	0.960	−0.73	0.49
	Graduate	Undergrad	−0.795	0.307	0.050	−1.59	0.00
		Faculty	−0.057	0.459	0.999	−1.25	1.13
		Staff	−0.911 *	0.337	0.037	−1.78	−0.04
	Faculty	Undergrad	−0.738	0.391	0.236	−1.75	0.28
		Graduate	0.057	0.459	0.999	−1.13	1.25
		Staff	−0.854	0.415	0.170	−1.93	0.22
	Staff	Undergrad	0.116	0.235	0.960	−0.49	0.73
		Graduate	0.911 *	0.337	0.037	0.04	1.78
Scientific immigrants	Undergrad	Graduate	0.647 *	0.301	0.142	−0.13	1.43
		Faculty	0.845 *	0.384	0.127	−0.15	1.84
		Staff	−0.011	0.231	1.000	−0.61	0.59
	Graduate	Undergrad	−0.647	0.301	0.142	−1.43	0.13
		Faculty	0.197	0.451	0.972	−0.97	1.37
		Staff	−0.659	0.331	0.195	−1.52	0.20
	Faculty	Undergrad	−0.845	0.384	0.127	−1.84	0.15
		Graduate	−0.197	0.451	0.972	−1.37	0.97
		Staff	−0.856	0.407	0.156	−1.91	0.20
	Staff	Undergrad	0.011	0.231	1.000	−0.59	0.61
		Graduate	0.659	0.331	0.195	−0.20	1.52
Free market	Undergrad	Graduate	0.369	0.285	0.567	−0.37	1.11
		Faculty	0.881	0.363	0.076	−0.06	1.82
		Staff	−0.131	0.220	0.934	−0.70	0.44
	Graduate	Undergrad	−0.369	0.285	0.567	−1.11	0.37
		Faculty	0.512	0.427	0.628	−0.60	1.62
		Staff	−0.500	0.314	0.386	−1.31	0.31
	Faculty	Undergrad	−0.881	0.363	0.076	−1.82	0.06
		Graduate	−0.512	0.427	0.628	−1.62	0.60
		Staff	−1.012 *	0.386	0.047	−2.01	−0.01
	Staff	Undergrad	0.131	0.220	0.934	−0.44	0.70
		Graduate	0.500	0.314	0.386	−0.31	1.31
		Graduate	1.012 *	0.386	0.047	0.01	2.01

* $p < 0.05$.

Figure 2 illustrates the overall group response, which was calculated by subtracting the percent of agreement from the percent of disagreement, for each of the 16 propositions about North American and European agriculture. Group responses below the zero line indicate that overall disagreement was greater than agreement for the selected proposition, meaning less bias about North American/European agriculture existed in the group responses. Those disagreeing with a proposition may have less cognitive dissonance between thought and behavior about that proposition. The distance between each overall group response and the zero line indicates the magnitude of that difference. When group agreement outweighed disagreement, the overall group response would plot above the zero line. Ideally, groups' Eurocentric attitudes about North American/European agriculture should plot below the zero line for all 16 propositions.

Although all four groups varied almost equally among the 16 propositions, undergraduates and staff mirrored each other's group response most often, except for the proposition of less natural disasters. Likewise, graduate students and faculty were relatively equal in response, except for climate favorable, climate comfortable, inventive/venturesome immigrants, and family structure. Figure 2 shows distinct group separation on variables where statistical differences existed, typically above and below the zero line (see Table 5).

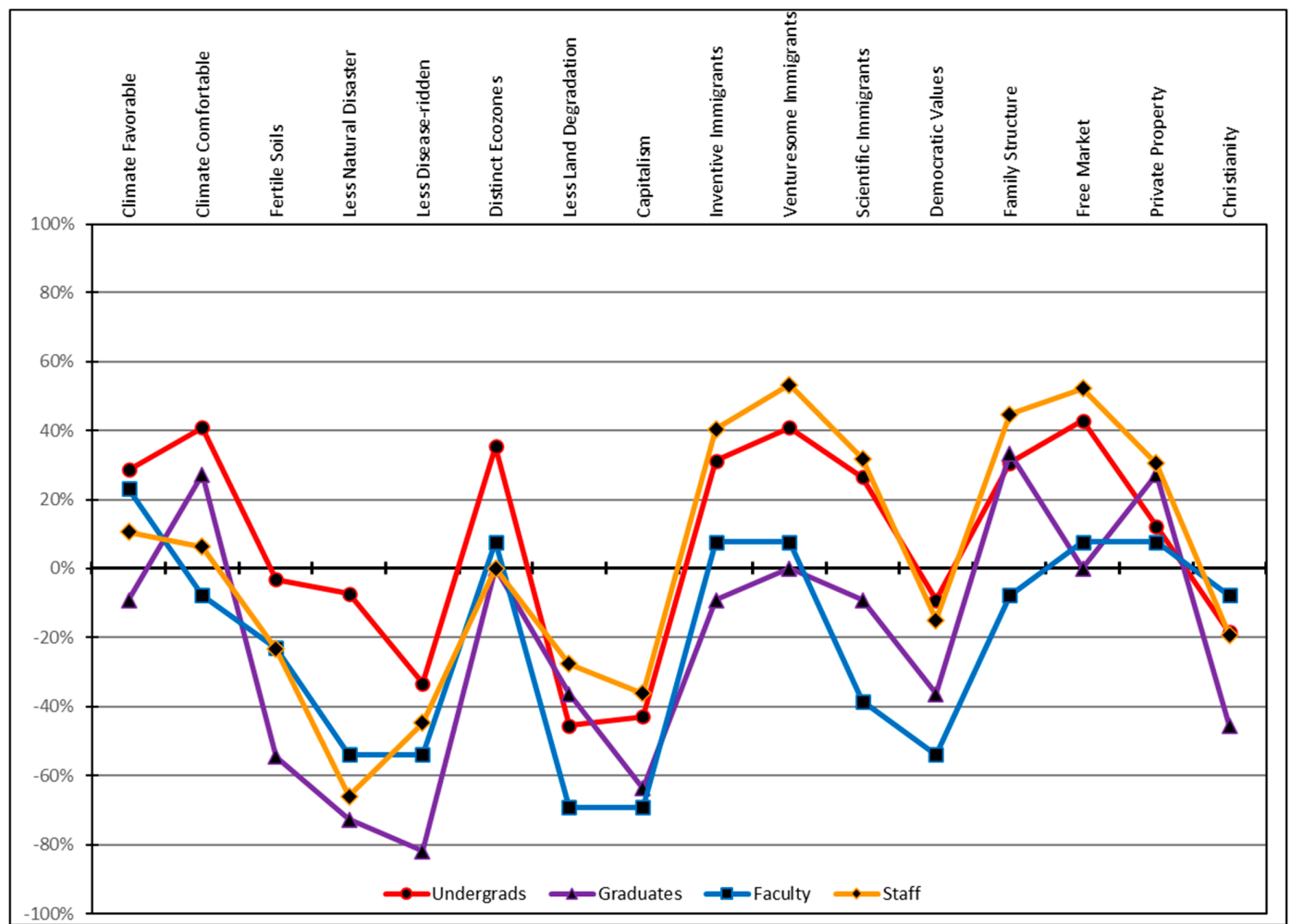


Figure 2. Percentage of group agreement minus percent of disagreement with the 16 propositions about North American/European agriculture for undergraduate students (red circle), graduate students (purple triangle), faculty (blue square), and staff (orange diamond) at a large southern U.S. land grant university.

3.2.1. Difference in Eurocentric Attitudes about Agriculture by College Status

The second demographic comparison focused on college type (agriculture vs. non-agriculture). The majority (67%, $n = 121$) of respondents were from non-agriculture colleges (e.g., Liberal Arts, Engineering, Sciences). Responses ranged from somewhat disagree ($M = 2.71$, $SD = 1.26$) for agricultural college responses to capitalism to somewhat agree ($M = 4.19$, $SD = 1.33$) for agricultural college responses to family structure. Independent samples t -tests revealed significant differences in eight of the 16 Eurocentric propositions about agriculture, including less natural disaster, less disease-ridden, distinct ecozones, inventive immigrants, venturesome immigrants, scientific immigrants, family structure, and free market (Table 6). In all cases, college of agriculture respondents rated those propositions significantly higher than did respondents from other colleges. Small ($d = 0.2$) to medium effects ($d = 0.5$) were noted as the practical differences between subgroups.

Table 6. Independent samples *t*-tests of 16 Eurocentric propositions by college type (*N* = 181).

Propositions	Agriculture (<i>n</i> = 59)	Non-Agriculture (<i>n</i> = 121)	<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)			
Climate favorable	3.73 (1.20)	3.57 (1.20)	0.85	0.397	
Climate comfortable	3.95 (1.33)	3.61 (1.21)	1.71	0.089	
Fertile soils	3.39 (1.16)	3.18 (1.10)	1.15	0.253	
Less natural disaster	3.39 (1.29)	2.75 (1.11)	3.43 ***	0.001	0.546 ^b
Less disease-ridden	3.00 (1.39)	2.52 (1.21)	2.37 **	0.019	0.376 ^a
Distinct ecozones	3.88 (1.18)	3.48 (1.05)	2.30 *	0.023	0.365 ^a
Less land degradation	3.00 (1.30)	2.78 (1.25)	1.11	0.268	
Capitalism	2.71 (1.26)	2.78 (1.29)	−0.34	0.733	
Inventive immigrants	3.98 (1.20)	3.38 (1.40)	2.84 **	0.003	0.451 ^a
Venturesome immigrants	4.14 (1.24)	3.70 (1.39)	2.04 *	0.043	0.323 ^a
Scientific immigrants	3.95 (1.09)	3.35 (1.39)	2.90 **	0.002	0.461 ^a
Democratic values	3.31 (1.21)	3.01 (1.34)	1.44	0.153	
Family structure	4.19 (1.33)	3.50 (1.25)	3.35 ***	0.001	0.532 ^b
Free market	4.03 (1.24)	3.58 (1.23)	2.28 *	0.024	0.364 ^a
Private property	3.76 (1.34)	3.61 (1.34)	0.70	0.486	
Christianity	3.27 (1.56)	2.97 (1.45)	1.29	0.200	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Cohen's *d*: ^a small ($d = 0.20$), ^b medium ($d = 0.50$).

3.2.2. Difference in Eurocentric Attitudes about Agriculture by Family in Agriculture

The third demographic comparison focused on family background in agriculture (active vs. non-active). Respondents indicated yes or no to the question, “Is your family engaged actively in agriculture?” (Table 7). The majority (66%, $n = 119$) of respondents' families were not actively engaged in agriculture. Responses ranged from somewhat disagree ($M = 2.54$, $SD = 1.23$) for non-agricultural family responses to less disease-ridden to somewhat agree ($M = 4.28$, $SD = 1.20$) for agricultural family responses to family structure. Independent samples *t*-tests showed significant differences in 9 of the 16 Eurocentric propositions about agriculture, including fertile soils, less disease-ridden, distinct ecozones, capitalism, scientific immigrants, democratic values, family structure, free market, and private property (Table 7). In all cases, respondents with families in agriculture rated those propositions significantly higher than did respondents whose families were not in agriculture. Small ($d = 0.2$) and medium effects ($d = 0.5$) were noted as the practical differences between subgroups.

Table 7. Independent samples *t*-tests of 16 Eurocentric propositions related to family in agriculture (*N* = 181).

Propositions	Yes (<i>n</i> = 62)	No (<i>n</i> = 119)	<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)			
Climate favorable	3.84 (1.27)	3.51 (1.15)	−1.73	0.086	
Climate comfortable	3.89 (1.29)	3.64 (1.23)	−1.25	0.213	
Fertile soils	3.54 (1.10)	3.11 (1.11)	−2.47 **	0.015	0.389 ^a
Less natural disaster	3.20 (1.33)	2.84 (1.12)	−1.90	0.060	
Less disease-ridden	2.95 (1.36)	2.54 (1.23)	−2.07 *	0.040	0.324 ^a
Distinct ecozones	4.15 (1.00)	3.34 (1.05)	−4.93 ***	<0.001	0.776 ^b
Less land degradation	3.11 (1.47)	2.71 (1.12)	−2.03	0.065	
Capitalism	3.15 (1.44)	2.55 (1.14)	−3.02 **	0.006	0.475 ^a
Inventive immigrants	3.84 (1.28)	3.45 (1.38)	−1.86	0.064	
Venturesome immigrants	4.06 (1.30)	3.73 (1.37)	−1.59	0.114	
Scientific immigrants	3.82 (1.22)	3.41 (1.35)	−2.02 *	0.045	0.317 ^a
Democratic values	3.37 (1.37)	2.97 (1.25)	−2.00 *	0.047	0.313 ^a
Family structure	4.28 (1.20)	3.45 (1.29)	−4.19 ***	<0.001	0.660 ^b

Table 7. Cont.

Propositions	Yes (<i>n</i> = 62)	No (<i>n</i> = 119)	<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)			
Free market	4.26 (1.09)	3.45 (1.24)	−4.33 ***	<0.001	0.682 ^b
Private property	4.18 (1.23)	3.39 (1.31)	−3.90 ***	<0.001	0.614 ^b
Christianity	3.31 (1.53)	2.95 (1.45)	−1.55	0.123	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Cohen's *d*: ^a small ($d = 0.20$), ^b medium ($d = 0.50$).

3.2.3. Difference in Eurocentric Attitudes about Agriculture by International Experience

Finally, we sought to determine if significant differences existed in Eurocentric attitudes when compared by the presence of at least one previous international experience (e.g., international youth exchange in 4-H, FFA, other; study or work abroad). Respondents' selections in response to the statement “check the international experiences you've had from this list,” were dummy-coded as 0 (no experience) and 1 (previous experience). The majority (51%) of respondents did not have at least one previous international experience. Those without previous international experience somewhat disagreed ($M = 2.57$, $SD = 1.20$) with the proposition less disease-ridden, while those with previous experience somewhat agreed ($M = 3.95$, $SD = 1.28$) with the proposition about family structure. Significant differences (independent samples *t*-tests) were found in three of the 16 Eurocentric propositions about agriculture (Table 8), including family structure, private property, and Christianity. In all cases, respondents with previous international experience rated those propositions significantly higher than did those without such experiences. Small ($d = 0.2$) effects were noted as the practical differences between subgroups.

Table 8. Independent samples *t*-tests of 16 Eurocentric propositions previous international experience ($N = 181$).

Propositions	Yes (<i>n</i> = 89)	No (<i>n</i> = 92)	<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)			
Climate favorable	3.59 (1.24)	3.65 (1.16)	0.34	0.732	
Climate comfortable	3.66 (1.30)	3.78 (1.21)	0.66	0.511	
Fertile soils	3.20 (1.22)	3.32 (1.03)	0.71	0.477	
Less natural disaster	3.01 (1.25)	2.91 (1.16)	−0.55	0.583	
Less disease-ridden	2.80 (1.37)	2.57 (1.20)	−1.22	0.225	
Distinct ecozones	3.54 (1.16)	3.69 (1.04)	0.93	0.352	
Less land degradation	2.83 (1.29)	2.87 (1.24)	0.20	0.840	
Capitalism	2.71 (1.32)	2.80 (1.24)	0.50	0.621	
Inventive immigrants	3.60 (1.33)	3.57 (1.39)	−0.15	0.881	
Venturesome immigrants	3.91 (1.27)	3.78 (1.44)	−0.63	0.532	
Scientific immigrants	3.50 (1.28)	3.60 (1.37)	0.50	0.621	
Democratic values	3.08 (1.31)	3.13 (1.30)	0.27	0.790	
Family structure	3.95 (1.28)	3.52 (1.32)	−2.26	0.025 *	0.337 ^a
Free market	3.74 (1.28)	3.71 (1.22)	−0.16	0.871	
Private property	3.87 (1.28)	3.46 (1.37)	−2.07	0.040 *	0.309 ^a
Christianity	3.30 (1.48)	2.85 (1.47)	−2.08	0.039 *	0.310 ^a

* $p < 0.05$. Cohen's *d*: ^a small ($d = 0.20$).

4. Discussion

Meeting the global demand for food, fiber, and energy requires networks, processes, and structures that maintain integrated agricultural production between different parts of the world [33]. Therefore, new agricultural professionals should be prepared to participate in globalized careers and work environments where cultural knowledge and global-mindedness is valued [34–36]. Higher education institutions must adapt their curricular offerings to meet the requirements and challenges posed by an increase in globalization [37]. However, several researchers have demonstrated that the Eurocentric theories of learning

and teaching on which educational systems are often based ignore other forms of knowledge, thereby reducing curricular richness and potentially resulting in narrow-minded professionals [23,38]. Our findings show that faculty and graduate students perceived themselves as being less Eurocentric than others (undergraduate students or staff); however, all groups were not free from having some Eurocentric attitudes about agriculture. A possible explanation may reside in variables such as group status, family in agriculture, type of university, and previous international experience. These independent characteristics may have affected self-reported Eurocentric attitudes. It is difficult to concretely explain differences in Eurocentric perspectives based on personal characteristics. However, other researchers surmised such differences as being a part of one's familial/cultural fabric. Persaud et al. [23] concluded that Eurocentric attitudinal differences could be because "...undoubtedly [it] reflects how ingrained and unconscious such biases (if, indeed, they are biases) may be" (p. 36).

Notable instances of self-perceived Eurocentric attitudes were found among undergraduate students, particularly for the propositions involving climate, environment and natural resources. Previous studies showed that Eurocentric diffusionism shapes ideological attitudes around politics, race, technology, and the environment. As proposed by Sundberg [1], sociocultural convictions are commonly shared among members of society and shape the collective vision of continuous or emerging phenomena, resulting in Eurocentric attitudes that shape social dynamics. For example, disagreement with the proposition that North America and Europe are less affected by human diseases may have been influenced by the recent COVID-19 pandemic, during which European and North American countries had more than 62% of the global total COVID-19 cases and deaths as of 31 January 2021 [39].

Situating our results within discussions of Cognitive Dissonance Theory, it is possible to hypothesize that family status in agriculture significantly affected one's Eurocentric attitudes about agriculture. Time away from home creates an environment to explore alternative viewpoints [40]. Separation from home can create identity gaps in which one experiences tension (i.e., dissonance) with family or friends [41]. If some students experienced cognitive dissonance with their previously accepted home and family attitudes toward agriculture, then their reporting of Eurocentric attitudes may be inaccurate. Family tension, acquiescence bias, or a need to "agree" with the family's belief systems should be explored in future studies. Such research could examine the complex relationship between family structure and student experience to learn what universities can do, if anything, to help students achieve cognitive consistency between attitudes and action, as a result of participating in a postsecondary educational environment. Perhaps land grant and other universities can develop positive solutions to lessen Eurocentric beliefs about North American and European agriculture.

Our results, albeit exploratory, suggest that college status (agriculture versus non-agriculture) influenced respondents' Eurocentric attitudes about agriculture. Previous research [23,24] did not assess Eurocentric beliefs by college status; however, we found unique results in that respondents with more connections to agriculture held more pronounced Eurocentric attitudes toward agriculture. One possible explanation is that agricultural respondents had stronger Eurocentric beliefs because of family background (actively engaged in the agricultural industry) and/or pro-U.S. agriculture biases (i.e., college of agriculture studies, beliefs about U.S. agricultural markets). One possible avenue to counter these findings is to incorporate off-campus learning opportunities (e.g., international study or research experiences in agriculture) in colleges of agriculture curricula. The de-Westernization of curricula is needed to provide non-Western materials so that postsecondary education achieves more globalized curricula [42]. As Rouse et al. [24] suggested, curriculum updates are needed in secondary schools to promote broadened global agricultural perspectives at earlier ages. Studies are also needed to investigate what areas in the curriculum unduly influence Eurocentric mindsets among youth and adult learners.

Respondents with at least one prior international experience had stronger Eurocentric attitudes than did those without such experiences. Our results contradict those reported by Clarke [43], who found that exposure to people from other places and multicultural and foreign language curricula had a positive influence on students' global awareness. International experiences have been widely used in academia to develop critical thinking, interpersonal relationships, and problem-solving skills [44]. International experiences offer benefits such as intercultural awareness and personal and social growth [45–48]. Exposure to different cultures can help us become more empathetic, have a greater sense of cultural pride (in ourselves and others), and express our thoughts to those from other cultures [49]. People with strong views (i.e., perhaps nationalistic tendencies) and those raised in regions lacking diversity would benefit the most from cross-cultural experiences. Martin et al. [50] found that students who were the least open to experiencing new cultures believed they gained the most benefits from such experiences.

Another possible explanation for the difference in Eurocentric attitudes may be related to the location of previous international experiences. Other studies showed that foreign destinations influenced students' participation in international experiences [51]. Also, given the geographical factor of Eurocentrism, students' experiences in European countries could affirm and strengthen such views. Participation in international experiences led to students changing their perceptions of foreign destinations [46–48]. Therefore, universities should continue using international experiences to create dissonance in learners' Eurocentric attitudes (i.e., agricultural trade, foreign aid, immigration) to promote broader cultural views that affect food, energy, and fiber production; however, program planners should be mindful that the location of the international experience may strengthen, rather than weaken, Eurocentric beliefs. To further explore this premise, future studies should include locations of participants' international experiences. We recommend that Eurocentric attitudes be measured pre/post international experience to more accurately gauge the level of dissonance manifested or resolved as an outcome of the international experience.

Limitations

This study has limitations. We acknowledge that a single descriptive study cannot determine curricula, coursework, or experience that will create cognitive consistency between belief (attitude) and action, especially considering the diverse forms and multiple contexts that constitute the global agricultural industry. The limited sample (i.e., respondents from a single large southern U.S. land grant university) restricts the generalizability of the findings, although we believe they may represent other U.S. southern land grant universities. In the future, we plan to study individual cognitive dissonance levels and Eurocentric attitudes (pre/post) among participants and non-participants in postsecondary international field experiences and courses to determine if such interests produce cognitive dissonance and/or consistency. Respondents' self-reported attitudes toward Eurocentrism in agriculture may have limited this study vis-a-vis characteristic bias [29].

5. Conclusions

Students, faculty, and staff play crucial roles in cultivating an inclusive, equitable, and quality educational environment that fosters intercultural understanding, tolerance, mutual respect, and an ethic of global citizenship and shared responsibility [9]. Eurocentrism, ingrained in curricula and reflected in land grant university members' attitudes, perpetuates North American and European ideologies in teaching and learning about U.S. agriculture. Undergraduates and staff's high levels of agreement with Landes' 16 propositions about North American and European agriculture [32] underscore the necessity to change our curricula and instructional methods to encourage cognitive/cultural dissonance that challenges learners' understanding of the world [18]. Doing so may reduce their adherence to a single ideology and increase the likelihood of adopting multiple ideologies and perspectives about U.S. agriculture. Such changes can lead to true transformative learning [52]. That is, previous frames of reference (knowledge and/or emotional elements) are rejected

when new information and learning displaces old assumptions about our understanding of the world. Achieving Goal 4 of the 2030 Agenda for Sustainable Development is dependent on educational environments that promote global citizenship, especially among postsecondary educational institutions [53].

To facilitate curricular and instructional changes attuned to developing global mind-sets, postsecondary educators and institutions should assess students' Eurocentric attitudes about agriculture in their first year, with specific focus on factors such as family background and past experiences. These assessments will establish baselines from which changes in perspectives about global and/or sustainable development can be assessed annually. One possible intervention to ignite and sustain transformative learning would be achieved by requiring students to participate in international experiences (agricultural or other areas) in non-European and non-English-speaking countries. Depending on location, such experiences would deepen students' knowledge and understanding of cultures that offer alternative views to European and/or Western ideologies of development. International hosts, stakeholders, and U.S. postsecondary institutions should collaborate to identify and offer experiences aligned with diverse global agricultural production and consumption realities. Recognizing ideological origins in agriculture helps educators prepare curricula and teach others through inclusive and equitable educational methods that are consistent with the goals of the 2030 Agenda for Sustainable Development.

Supplementary Materials: The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/su16062410/s1>, Research Instrument: Perceptions of International Agricultural Issues.

Author Contributions: Conceptualization, G.W. and S.J.; methodology, G.W.; validation, S.J., G.W., R.L. and C.C.B.; formal analysis, G.W., S.J. and C.C.B.; investigation, G.W. and S.J.; data curation, G.W., S.J. and C.C.B.; writing—original draft preparation, S.J., G.W., R.L. and C.C.B.; writing—review and editing, G.W., S.J. and R.L.; visualization, G.W.; supervision, G.W. and R.L.; project administration, G.W. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: This study was conducted in accordance with the Declaration of Helsinki and was determined by the Institutional Review Board of Texas A&M University (IRB2020-1445M) on 11 December 2020 that this research met the criteria for Exemption in accordance with 45 CFR 46.104; the study was revalidated on 14 November 2023.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available for privacy reasons.

Acknowledgments: The authors acknowledge previous undergraduate students who discussed this topic in previous academic courses and experiential learning opportunities.

Conflicts of Interest: The authors declare no conflicts of interest.

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