The Personalities of Sustainable Eaters

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Abstract

The purpose of this study is to explore the characteristics of sustainable eaters by analyzing the annual Sustainability Literacy Survey data collected by Emory University's Office of Sustainability Initiatives (OSI) from the years 2016 and 2017. This paper investigates the common behavioral traits of sustainable eaters (people who make sustainable food choices) by comparing three variables of interest—connection to nature, tendency to collaborate on sustainability issues, and knowledge of sustainability issues—to an individual's tendency to eat sustainably. Linear regression analysis reveals that sustainable eating has a positive effect on each of the three variables of interest. The results of this study allow us to present several recommendations to OSI regarding programming and data collection which may improve the prevalence of sustainable eating on campus. Notably, we suggest to OSI the implementation of more collaborative programming and programming that encourages students to engage with nature in creative and constructive ways.

1. Introduction

1.1. Sustainable Food Practices on Campus

Sustainability is a multi-faceted concept, ill-described by any single practice or guideline. The United Nations Commission on Environment and Development website deems that sustainable development is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs"; the United States Environmental Protection Agency website states that "to pursue sustainability is to create and maintain the conditions under which humans and nature can exist in productive harmony to support present and future generations." While the

definition of sustainability can differ slightly between people and organizations, generally all agree that, at its core, sustainability is the concept of supporting a way of life for the present generation that does not harm the natural environment in such a way that disadvantages future generations.

Adding to the debate on the precise meaning of sustainability, the University's Office of Sustainability Initiatives (OSI) website defines a sustainable community as one in which "economic, social, and environmental systems provide a healthy, productive, and meaningful life for all community residents, present and future." Employing this definition of sustainability, the University states that its sustainability vision is "to help restore the global ecosystem, foster healthy living, and reduce the University's impact on the local environment."

The University particularly emphasizes the significance of community and locality in both its formal definition and in its applied sustainability practices. One avenue through which the University incorporates the notions of both community and locality seamlessly is through its interaction with food on campus. In fact, "Emory's sustainability vision sets an ambitious goal of 75 percent local or sustainably grown food in its hospitals and cafeterias by 2025." The University defines "local" as fitting into one of two tiers, giving highest priority to Georgia farmers and second priority to farmers in an eight-state region, which includes Georgia, Florida, South Carolina, North Carolina, Tennessee, Kentucky, Alabama, and Mississippi. Given the University's sustainability vision, the importance of patronizing local food producers on campus cannot be overstated. Buying local food helps support small farms, decreases harmful emissions associated with food transport, provides consumers with healthier food, and gives consumers a strong connection point to their community.

Several sustainability initiatives on campus allow University students, faculty, and staff to consume and produce locally-grown food. The Emory Farmers Market is a weekly event on campus that "supports smaller Georgia farmers and their products, while providing the ideal space for consumers to establish a relationship with the people who grow their food." The Emory Food Gardens—eight small educational gardens on the Druid Hills campus maintained by volunteers—"offer opportunities to grow local, seasonal, diverse, and healthy food." Over 150 students at Emory's Oxford College work at the University-owned 11-acre Organic Farm adjacent to campus, helping grow produce that funds the farm through a Community Supported Agriculture (CSA) program which sells produce to the local community, as well

as being served in Oxford's own dining hall. Each fall semester, students enrolled in a one-credit anthropology course on the Druid Hills campus hold a Sustainable Food Fair, "a lively midday event [which] features music and roughly 40 stands of locally grown fresh food for sale, chefs offering delectable samples, stores featuring sustainably grown foods and other products, and nonprofits in the Emory area that are part of the sustainable food movement." In addition to these events, OSI and the University's Sustainable Food Committee spearhead numerous other initiatives which facilitate community engagement with locally-grown food.

The University's food-related initiatives are representative of Emory's assessment of the progress of its sustainability efforts using the environmental, economic, and social "triple bottom line." In the 2016 Sustainability Literacy Survey conducted by OSI, approximately two-thirds of student respondents reported that their sustainability-related behavior increased at least by a "moderate amount" since starting at Emory. By the numbers, the University's community-driven approach to fostering sustainable practices on campus has proven successful.

2. Proposal

2.1. Sustainability Literacy Survey: Research Questions

In many ways, sustainability-related behavior is easy to adopt at Emory. Automatic lights, motion-sensor activated faucets, water bottle filling stations, bike paths, and bus routes are just some of the initiatives that Emory has led which are both sustainable and convenient. In fact, making an unsustainable decision when faced with a sustainable alternative that is just as convenient is often looked down upon by those in the Emory community; a stigma surrounds the choice to not recycle waste correctly, or to keep the faucet running while brushing one's teeth, or to use disposable water bottles. However, making dietary choices for sustainability reasons is inconvenient for most, and this behavior is prided on campus to a lesser extent than other sustainable behaviors. This raises the question: how do the personalities of those who make dietary choices for sustainability reasons compare to those who do not?

To answer this question, we examine survey data from the annual Sustainability Literacy Survey issued by OSI to Emory undergraduate and graduate students. In addition to collecting student information and demographic

information, the survey asks questions relevant to students' sustainability-related behaviors, their connection to nature, and their knowledge of sustainability issues.

We intend to investigate the relationships between several variables of interest in the survey data from 2016 and 2017. We use 1,007 of the 1,101 observations in the 2016 survey data and 1,043 of the 1,177 observations in the 2017 survey data, as some students left questions of interest unanswered. We choose to include only these years in our analysis because our project focuses on behavioral, not longitudinal, trends. The variable *food_choices* is the response for Q1.e[1]. This variable captures an individual's tendency to make dietary changes for sustainability reasons. The variable *nature_connection.Ave* is the average of responses for Q2.b, Q2.c, and Q2.d. This variable measures an individual's connectedness to nature. The variable *teamwork_value.Ave* is the average of responses for Q1.f, Q1.g, and Q3.m. This variable measures an individual's belief that sustainability issues are best dealt with via collaboration. The variable *topical_knowledge.Ave* is the average of responses for Q3.a, Q3.b, Q3.c, Q3.d, Q3.e, Q3.f, Q3.g, Q3.h, Q3.i, Q3.j, Q3.k, and Q3.l. This variable measures an individual's knowledge of topical sustainability issues. (Questions from Q3 were measured on a scale of 1-5, but were corrected to a scale 0-7.)

The following three research questions seek to investigate the relationships between these three variables. In relation to students who do not often make dietary changes for sustainability reasons:

1. Are sustainable eaters more likely to feel connected to nature?
2. Do sustainable eaters prefer to work collaboratively towards sustainability issues?
3. Are sustainable eaters more knowledgeable about sustainability issues?

2.2. Conjectures

Shultz (2002), Nisbet et. al (2009), and Zelenski (2015) found that inclusion with nature from a young age instills a sustainable mindset in individuals (6)(5)(7). We expect that individuals who make dietary changes for sustainability reasons are more likely to feel connected to nature. In fact, we found that the correlation between *food_choices2016* and *nature_connection2016.Ave* is 0.51; the correlation between *food_choices2017* and *nature_connection2017.Ave*

[1]All of the relevant survey questions are listed in Appendix A.

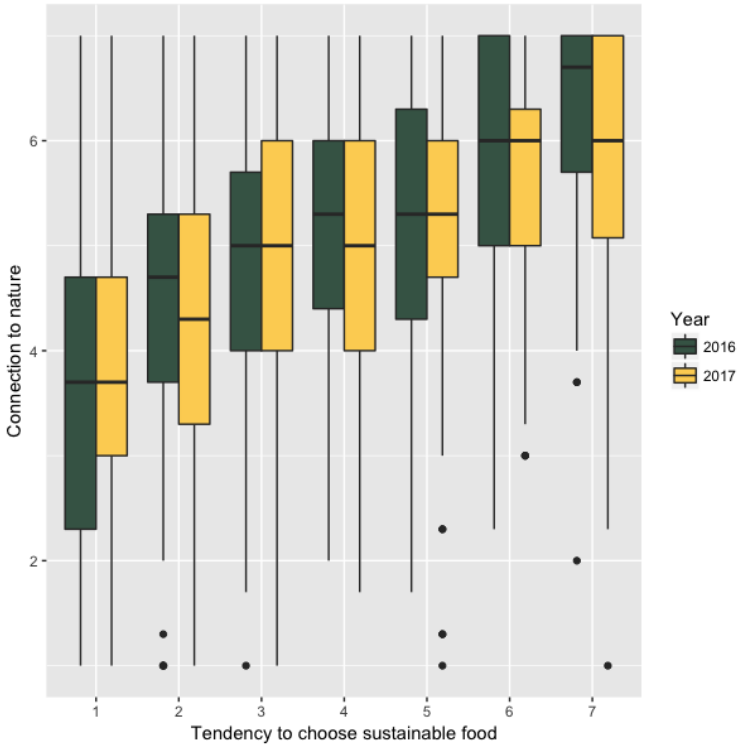

Figure 1: Connection to nature explained by one's tendency to eat sustainably for 2016 and 2017 data.

is 0.42. This strong positive correlation for both years is shown in Figure 1, a box plot showing *nature_connection.Ave* as a variable explained by *food_choices*. Both years show the same general trend given by these correlation coefficients, although the 2017 data appears to have greater variance.

Feenstra (1997), Feenstra (2002), and Barlett (2011) found that participation in a local food system, such as the one which Emory facilitates on campus, creates an environment in which sustainability is viewed as a collaborative effort (3)(4)(1). We expect that individuals who make dietary changes for sustainability reasons are more likely to take on sustainability issues as part of a team. In fact, we found that the correlation between *food_choices2016* and *teamwork_value2016.Ave* is 0.29; the correlation between *food_choices2017* and *teamwork_value2017.Ave* is 0.33. This weak positive correlation for both years is shown in Figure 2, a box plot show-

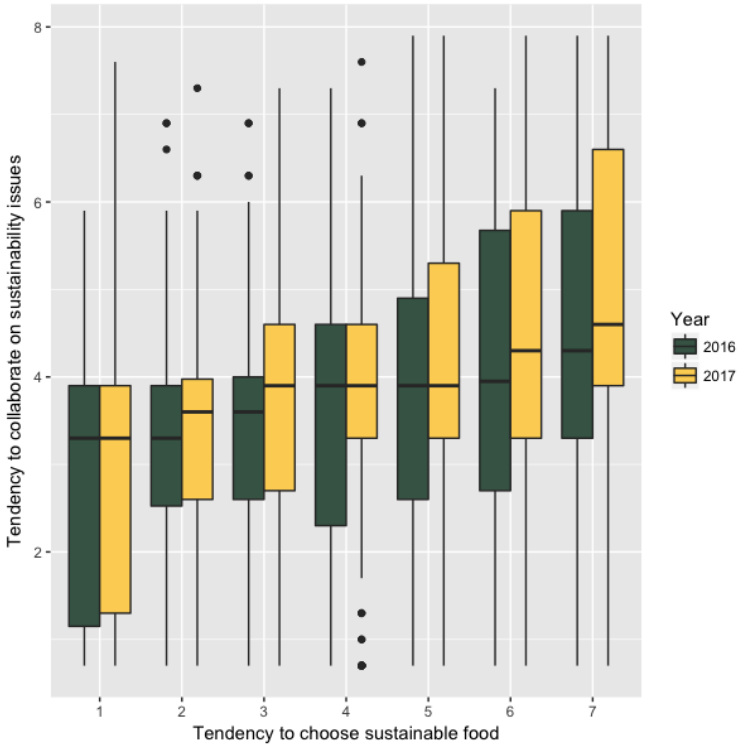

Figure 2: Preference to seek collaboration on sustainability issues explained by one's tendency to eat sustainably for 2016 and 2017 data.

ing *teamwork_value.Ave* as a variable explained by *food_choices*. We observe a nearly identical trend in the data between these two years.

Jones et. al. (2010) and Bromley et. al. (2016) found that individuals educated in sustainability issues are significantly more likely to adopt sustainable behaviors than those who are not (2). From the table above, we expect that individuals who make dietary changes for sustainability reasons are more likely to be knowledgeable about sustainability issues. In fact, we found that the correlation between *food_choices2016* and *topical_knowledge2016.Ave* is 0.27; the correlation between *food_choices2017.Ave* and *topical_knowledge2017.Ave* is 0.27. This weak positive correlation for both years is shown in Figure 3, a box plot showing *topical_knowledge.Ave* as a variable explained by *food_choices*. Both years show the same general trend given by these correlation coefficients, although the 2016 data appears to have greater variance.

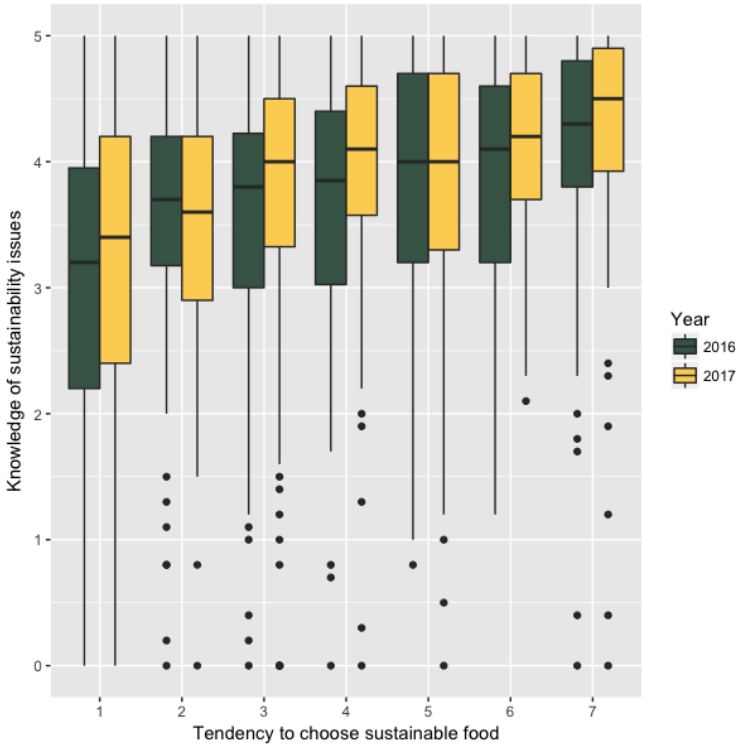

Figure 3: Knowledge of sustainability issues explained by one's tendency to eat sustainably for 2016 and 2017 data.

3. Methods

3.1. Participants & Design

Participants in the survey were Emory University undergraduate and graduate students. Survey data for the years 2016 and 2017 was used in the analysis. Of the participants in the 2016 survey, 40% were undergraduate students, 64% were women, and 47% were non-white. Of the participants in the 2017 survey, 38% were undergraduate students, 63% were women, and 47% were non-white.

The Sustainability Literacy Survey, conducted annually by OSI, asks questions regarding students' sustainability-related behaviors, connectedness with nature, and knowledge of sustainability behaviors. OSI uses the responses to this survey to understand the longitudinal impact of their initiatives on different student demographics. Questions for the years 2016 and 2017 are identical. The 2016 survey received responses from 1,101 of the

14,769 students enrolled in the University for the Fall 2015 semester; we use 1,007 of the observations, as some contain crucial missing values. The 2017 survey received responses from 1,177 of the 15,055 students enrolled for the University in the Fall 2016 semester; we use 1,043 of the observations.

3.2. Measures & Procedure

We examined the 2016 and 2017 survey data to test three questions of interest:

1. Can we predict students' connectedness to nature given their tendency to eat sustainably?
2. Can we predict students' preference to work collaboratively toward sustainability issues given their tendency to eat sustainably?
3. Can we predict students' knowledge of sustainability issues given their tendency to eat sustainably?

To answer these questions, we regress our three dependent variables—*nature_connection.Ave*, *teamwork_value.Ave*, and *topical_knowledge.Ave*—on our independent variable, *food_choices*.

To determine the extent to which we can predict our variables of interest given our independent variable, we run three simple linear regressions:

1. We regress *nature_connection.Ave* on *food_choices* for 2016 and 2017.
2. We regress *teamwork_value.Ave* on *food_choices* for 2016 and 2017.
3. We regress *topical_knowledge.Ave* on *food_choices* for 2016 and 2017.

We expect that, as our independent variable increases, the prediction for each of its three regressors will increase. For each simple linear regression, if the coefficient estimate for a regressor is positive (and not close to zero), then we observe a notable positive correlation between this regressor and the independent variable, and we consider such a result successful.

4. Results

For each independent variable—connectedness to nature, preference to work collaboratively on sustainability issues, and knowledge of sustainability issues—a simple linear regression was calculated to predict participants' tendency to eat sustainably.

For each linear regression model that we calculated, we observed large F values in comparison to our small p values. Therefore, our results are

significant. Given our large F values and small p values, we reject the null hypotheses that feeling connected to nature, holding a preference of working collaboratively toward sustainability issues, or being knowledgeable about sustainability issues have no effect on students' tendency to make dietary choices for sustainability reasons. We instead conclude that each of these three traits has a positive effect on students' tendency to make dietary choices for sustainability reasons.

The relatively low R^2 values for these models suggest that there is high variability in the data, but this is not detrimental to the interpretation of our results. We are not concerned with finding a precise model, but rather with the relationship between our variables of interest. In this context, the exact values of the intercept and slope for each model are not important under a literal interpretation, but the signs of these values are important.

We also observed a 0.444 increase[2] in the intercept of Model 1 from 2016 to 2017. These intercept results of the linear regression model are interesting because they report a relatively substantial change of the regression lines for 2016 and 2017, given that we expect very similar regression output for 2016 and 2017. We can assign the following interpretation to this result: at the default level of one's tendency to eat sustainably (a score of 0), participants of the 2017 survey generally feel more connected to nature than those of the 2016 survey.

Table 1 and Table 2 below summarize the results for each model.

Table 1: 2016 Simple Regression Results

Output	Model 1	Model 2	Model 3
F	344.2	180.8	81.68
p	$<.001$	$<.001$	$<.001$
R^2	.255	.153	.075
intercept	0.531*	1.726	1.849
slope	0.635	0.584	0.353

[2]Calculated by taking the difference of the values marked by * in Table 1 and Table 2.

Table 2: 2017 Simple Regression Results

Output	Model 1	Model 2	Model 3
F	222.2	232.8	83.17
p	<.001	<.001	<.001
R^2	.176	.183	.074
intercept	0.975*	1.603	1.800
slope	0.547	0.611	0.348

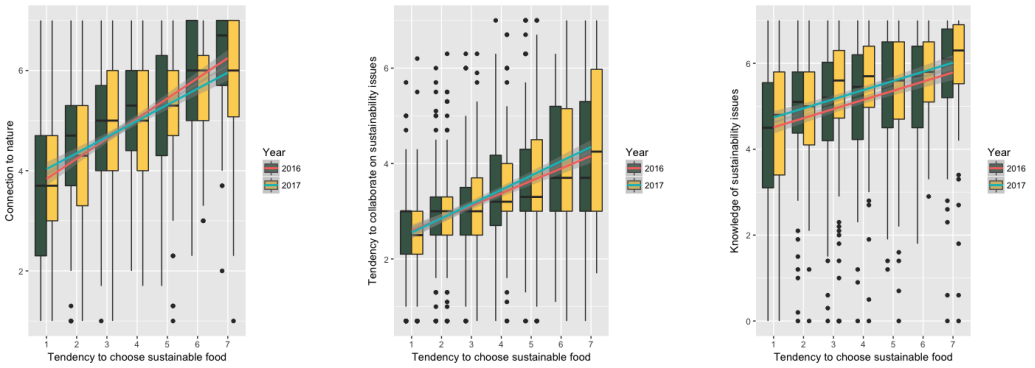

Figure 4: From left to right: (Model 1) regression between eating sustainably and connection to nature for 2016 and 2017 data; (Model 2) regression between eating sustainably and preference to seek collaboration on sustainability issues for 2016 and 2017 data; (Model 3) regression between eating sustainably and knowledge of sustainability issues for 2016 and 2017 data.

5. Conclusions

We conclude that all three of our variables of interest have a positive effect on our dependent variable. Based on our analysis, we would like to make the following suggestions to OSI:

1. In addition to asking questions about how often students participate in sustainability-related activities and courses, feedback from these events and classes should be obtained in separate surveys. These data could help student organizations and academic departments improve the quality of future event-planning and course designs.
2. Hands-on sustainability experiences are effective in encouraging students to make dietary changes for sustainability reasons. Educational events related to sustainable food—such as gardening, planting, farm-

ing, and weeding—should be promoted on campus. Students should also be encouraged to share their experiences with nature through writing, photography, and other forms of art in an effort to express their connection to nature via different forms of media.

3. Targeted academic and co-curricular programs (e.g., courses, concentrations, and internships) can allow students to learn more about sustainability. Encouraging students to pursue an academic path in sustainability (i.e., by inviting more alumni graduating with an Environmental Science major or pursuing a career in sustainability to hold informational sessions, workshops, coffee chats, etc.) can facilitate undergraduate research in the field of sustainable food.
4. Building a nationwide network which promotes sustainable food consumption between universities could provide a platform for students to tackle sustainability issues via innovative competitions.
5. Giving students the option to receive regular informational emails about sustainable food on campus and creating a special subsection within the email as a space to submit written pieces about their experiences with sourcing and eating sustainable food can be effective ways to foster a culture of sustainable food awareness at Emory.

Appendix A

Office of Sustainability Initiatives
SUSTAINABILITY LITERACY SURVEY

Part I. Your Sustainability-Related Behaviors

During the academic year, how often did you act in the following ways? (See ex-amples provided for each item).

1 Never 2 3 Sometimes 4 5 Often 6 7 Always

Q1.e Make dietary choices for sustainability reasons (choose organic food, buy Fair Trade, eat less meat, reduce portion size to avoid waste).

Q1.f Engage in Emory sustainability-related activity (club, volunteer activity, Green Networking night, movie-showing).

Q1.g Seek out a course because of its sustainability-related focus.

Part II. About You

How "true" of you are each of the following statements?

1 Not at all true of me 2 3 4 5 6 7 Completely true of me

Q2.b I think of myself as a part of nature, not separate from it.

Q2.c Being a part of the ecosystem is an important part of who I am.

Q2.d I feel that I have roots to a particular geographic location that had a significant impact on my development.

Part III. Knowledge of Sustainability Issues

Please indicate the extent to which you find the following statements to be accurate:

0	1	2	3	4	5
I don't know	Not at all		Moderately		Completely

Q3.a Power generation that relies heavily on fossil fuels, such as in Georgia, can involve mountaintop removal, fracking, and other practices that negatively impact natural habitats, public health, and quality of life in rural communities.

Q3.b Conserving water is urgent in Atlanta because high water use in the city reduces water available to downstream communities and fisheries.

Q3.c Another form of water conservation involves the reuse of water?such as Emory?s WaterHub, which uses bio-mimicry methods of water cleaning to reduce the university?s demand for purified water by 40%.

Q3.d Landfill waste produces methane, a potent greenhouse gas.

Q3.e Another problem with landfills is that they are frequently placed in poor neighborhoods, contributing to environmental inequities in quality of life.

Q3.f Policies to preserve forest canopy, such as Emory?s commitment to campus woodlands and the No Net Loss of Forest Canopy policy, help reduce the urban heat island effect.

Q3.g Using public transportation, carpooling, walking, or biking reduces the burning of fossil fuels to address climate change.

Q3.h Biofuel made from used cooking oil can replace fossil fuels, as seen with Emory?s Cliff Shuttle system.

Q3.i Making sustainable food choices redirects food dollars to farmers who are building healthier soils, reducing environmental harms with lower pesticide use, as well as treating farm workers ethically through fair wages and working conditions.

Q3.j Choosing Fair Trade coffee supports democratic cooperatives of small farmers through higher prices and economic development projects.

Q3.k Raw materials extraction has harmful effects on public health and the environment in many parts of the world, and thus personal action to reduce consumption, recycle, or reuse items reduces these harms.

Q3.l The federal Clean Air and Clean Water Acts have led to cleaner air and improved water quality across the US over the last 30 years.

Q3.m Beyond making ethical personal choices, actions in groups?such as teamwork, helping institutions to change, and strengthening political systems to deal with sustainability challenges?are also strategies to contribute to solving sustainability dilemmas.

Appendix B

```
data2016_coded1 <-
data2016_coded[!is.na(data2016_coded$Q1.e) &
!is.na(data2016_coded$Q2.b) & !is.na(data2016_coded$Q2.c) &
!is.na(data2016_coded$Q2.d) & !is.na(data2016_coded$Q1.f) &
!is.na(data2016_coded$Q1.g) & !is.na(data2016_coded$Q3.a) &
!is.na(data2016_coded$Q3.b) & !is.na(data2016_coded$Q3.c) &
!is.na(data2016_coded$Q3.d) & !is.na(data2016_coded$Q3.e) &
!is.na(data2016_coded$Q3.f) & !is.na(data2016_coded$Q3.g) &
!is.na(data2016_coded$Q3.h) & !is.na(data2016_coded$Q3.i) &
!is.na(data2016_coded$Q3.j) & !is.na(data2016_coded$Q3.k) &
!is.na(data2016_coded$Q3.l) & !is.na(data2016_coded$Q3.m),]

data2017_coded1 <-
data2017_coded[!is.na(data2017_coded$Q1.e) &
!is.na(data2017_coded$Q2.b) & !is.na(data2017_coded$Q2.c) &
!is.na(data2017_coded$Q2.d) & !is.na(data2017_coded$Q1.f) &
!is.na(data2017_coded$Q1.g) & !is.na(data2017_coded$Q3.a) &
!is.na(data2017_coded$Q3.b) & !is.na(data2017_coded$Q3.c) &
!is.na(data2017_coded$Q3.d) & !is.na(data2017_coded$Q3.e) &
!is.na(data2017_coded$Q3.f) & !is.na(data2017_coded$Q3.g) &
!is.na(data2017_coded$Q3.h) & !is.na(data2017_coded$Q3.i) &
!is.na(data2017_coded$Q3.j) & !is.na(data2017_coded$Q3.k) &
!is.na(data2017_coded$Q3.l) & !is.na(data2017_coded$Q3.m),]

## Removed rows with N/A data in variables of interest.

data2016_coded1$Q3.a <- (7/5)*data2016_coded1$Q3.a
data2016_coded1$Q3.b <- (7/5)*data2016_coded1$Q3.b
data2016_coded1$Q3.c <- (7/5)*data2016_coded1$Q3.c
data2016_coded1$Q3.d <- (7/5)*data2016_coded1$Q3.d
data2016_coded1$Q3.e <- (7/5)*data2016_coded1$Q3.e
data2016_coded1$Q3.f <- (7/5)*data2016_coded1$Q3.f
data2016_coded1$Q3.g <- (7/5)*data2016_coded1$Q3.g
data2016_coded1$Q3.h <- (7/5)*data2016_coded1$Q3.h
data2016_coded1$Q3.i <- (7/5)*data2016_coded1$Q3.i
data2016_coded1$Q3.j <- (7/5)*data2016_coded1$Q3.j
data2016_coded1$Q3.k <- (7/5)*data2016_coded1$Q3.k
data2016_coded1$Q3.l <- (7/5)*data2016_coded1$Q3.l
data2016_coded1$Q3.m <- (7/5)*data2016_coded1$Q3.m

## All of our other variables of interest are rated 1-7, so
## we scale this variable from 1-5 to be in the same 1-7 range
## as other variables.
```

```
food_choices2016 <- data2016_coded1$Q1.e
nature_connection2016.Ave <- rowSums(data2016_coded1[,20:22])/3
teamwork_value2016.Ave <- rowSums(data2016_coded1[, c(15,16,38)])/3
topical_knowledge2016.Ave <- rowSums(data2016_coded1[,26:37])/12

## Declare variables of interest.

cor2016_1 <- cor(food_choices2016, nature_connection2016.Ave,
use = "complete.obs")
cor2016_2 <- cor(food_choices2016, teamwork_value2016.Ave,
use = "complete.obs")
cor2016_3 <- cor(food_choices2016, topical_knowledge2016.Ave,
use = "complete.obs")

nature_connection2016.Ave <- round(nature_connection2016.Ave,
digits = 1)
teamwork_value2016.Ave <- round(teamwork_value2016.Ave,
digits = 1)
topical_knowledge2016.Ave <- round(topical_knowledge2016.Ave,
digits = 1)

## We eliminate non-terminating decimals and make the box plots
## easier to read by rounding.

data2016_snipped = cbind.data.frame(food_choices2016,
nature_connection2016.Ave, teamwork_value2016.Ave,
topical_knowledge2016.Ave)

## We aggregate our vector variables in this snipped dataframe.

## The same data transformation procedures performed for the 2016 data
## are performed for the 2017 data below.

data2017_coded1$Q3.a <- (7/5)*data2017_coded1$Q3.a
data2017_coded1$Q3.b <- (7/5)*data2017_coded1$Q3.b
data2017_coded1$Q3.c <- (7/5)*data2017_coded1$Q3.c
data2017_coded1$Q3.d <- (7/5)*data2017_coded1$Q3.d
data2017_coded1$Q3.e <- (7/5)*data2017_coded1$Q3.e
data2017_coded1$Q3.f <- (7/5)*data2017_coded1$Q3.f
data2017_coded1$Q3.g <- (7/5)*data2017_coded1$Q3.g
data2017_coded1$Q3.h <- (7/5)*data2017_coded1$Q3.h
data2017_coded1$Q3.i <- (7/5)*data2017_coded1$Q3.i
data2017_coded1$Q3.j <- (7/5)*data2017_coded1$Q3.j
data2017_coded1$Q3.k <- (7/5)*data2017_coded1$Q3.k
data2017_coded1$Q3.l <- (7/5)*data2017_coded1$Q3.l
```

```
data2017_coded1$Q3.m <- (7/5)*data2017_coded1$Q3.m

food_choices2017 <- data2017_coded1$Q1.e
nature_connection2017.Ave <-rowSums(data2017_coded1[,22:24])/3
teamwork_value2017.Ave <- rowSums(data2017_coded1[, c(16,17,39)])/3
topical_knowledge2017.Ave <- rowSums(data2017_coded1[, c(27:38)])/12

cor2017_1 <- cor(food_choices2017, nature_connection2017.Ave,
use = "complete.obs")
cor2017_2 <- cor(food_choices2017, teamwork_value2017.Ave,
use = "complete.obs")
cor2017_3 <- cor(food_choices2017, topical_knowledge2017.Ave,
use = "complete.obs")

nature_connection2017.Ave <- round(nature_connection2017.Ave,
digits = 1)
teamwork_value2017.Ave <- round(teamwork_value2017.Ave,
digits = 1)
topical_knowledge2017.Ave <- round(topical_knowledge2017.Ave,
digits = 1)

data2017_snipped = cbind.data.frame(food_choices2017,
nature_connection2017.Ave, teamwork_value2017.Ave,
topical_knowledge2017.Ave)

## We prepare our vector variables to be graphed using ggplot2.

library(ggplot2)

data2016_snipped$food_choices2016 <-
as.factor(data2016_snipped$food_choices2016)
y.data2016_snipped <- data2016_snipped
y.data2016_snipped$Year <- "2016"
y.data2017_snipped <- data2017_snipped
y.data2017_snipped$Year <- "2017"

library(data.table)

nms <- c("food", "nature", "teamwork", "knowledge", "Year")
setnames(y.data2016_snipped, nms)
setnames(y.data2017_snipped, nms)
data_snipped <- rbind(y.data2016_snipped, y.data2017_snipped)

## We see similar trends in all six box plots!
```

```
lm_1_1 <- lm(food_choices2016 ~ nature_connection2016.Ave)
summary(lm_1_1)
lm_1_2 <- lm(food_choices2017 ~ nature_connection2017.Ave)
summary(lm_1_2)

lm_2_1 <- lm(food_choices2016 ~ teamwork_value2016.Ave)
summary(lm_2_1)
lm_2_2 <- lm(food_choices2017 ~ teamwork_value2017.Ave)
summary(lm_2_2)

lm_3_1 <- lm(food_choices2016 ~ topical_knowledge2016.Ave)
summary(lm_3_1)
lm_3_2 <- lm(food_choices2017 ~ topical_knowledge2017.Ave)
summary(lm_3_2)

library(wesanderson)

## We enjoy the work of famed film director, Wes Anderson;
## we can use the color schemes of his films to create beautiful plots.

p1 <- ggplot(data_snipped, aes(food, nature))
      + geom_boxplot(aes(fill = Year)) +
## Here we add two regression lines to visualize the relationship
## between food and nature.

      geom_smooth(method="lm", se=TRUE, aes(group =Year, col = Year))+
      labs(y="Connection␣to␣nature",
      x="Tendency␣to␣choose␣sustainable␣food") +
      scale_fill_manual(values=wes_palette(n=2, name="Chevalier"))
##    ggtitle("Connection to nature by sustainable food choices")
p1

p2 <- ggplot(data_snipped, aes(food, teamwork))
      + geom_boxplot(aes(fill = Year)) +
      labs(y="Tendency␣to␣collaborate␣on␣sustainability␣issues",
      x="Tendency␣to␣choose␣sustainable␣food") +
## Here we add two regression lines to visualize the relationship between
## food and teamwork.

      geom_smooth(method="lm", se=TRUE, aes(group =Year, col = Year))+
      scale_fill_manual(values=wes_palette(n=2, name="Chevalier"))
##    ggtitle("Collaborative preferences by sustainable food choices")
p2

p3 <- ggplot(data_snipped, aes(food, knowledge))
```

```
428       + geom_boxplot(aes(fill = Year)) +
429 ## Here we add two regression lines to visualize the relationship between
430 ## food and knowledge.
431
432       geom_smooth(method="lm", se=TRUE, aes(group =Year, col = Year))+
433       labs(y="Knowledge␣of␣sustainability␣issues",
434       x="Tendency␣to␣choose␣sustainable␣food") +
435       scale_fill_manual(values=wes_palette(n=2, name="Chevalier"))
436 ##    ggtitle("Knowledge of sustainability issues by sustainable food choices")
437 p3
```

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