

Ch3. 논비건, 비건 특징 분석

4 조

2022 5 13

앞서 식품 카테고리 중 고기, 생선, 유제품을 줄이면 **약 66%의 온실가스 배출량을 줄일 수 있음**을 확인했습니다. 이번 챕터에서는 앞으로의 온실가스 배출량을 줄이기 위한 식품 섭취를 제안하기 위해 **논비건과 비건의 특징을 비교하여 분석**하였습니다.

Ch3. Changes in Vegan's Diet and Demographic Characteristics

Survey Results Analysis (Visualization)

Raw-Data 출처

Diet Change and Demographic Characteristics of Vegans, Vegetarians, Semi-Vegetarians, and Omnivores

Contributors: Nick Cooney Amit Steinberg Gary Shapiro Shelley Hurwitz

Date created: 2020-03-11 05:54 AM | Last Updated: 2020-06-23 02:25 AM

Category: Project

License: CC-By Attribution 4.0 International

1) 인구 특성별 특징 분석

라이브러리 로드

```
library(readxl)
library(dplyr)
```

```
library(ggplot2)
library(descr)
```

비건 데이터파일 불러오기 및 확인

```
vegan_raw <- read_xlsx("C:/Rstudy/miniprojectR/only_vegan.xlsx")

str(vegan_raw)

sum(is.na(vegan_raw))
```

논비건 데이터파일 불러오기 및 확인

```
vegan_raw <- read_xlsx("C:/Rstudy/miniprojectR/only_vegan.xlsx")

vegan_raw3 <- read_excel("C:/Rstudy/miniprojectR/vegan_Raw_data_c.xls")
vegan_raw1 <- vegan_raw3 %>% filter(!(eat_beef == "Never" & eat_chicken == "Never" & eat_dairy == "Never" & eat_eggs == "Never" & eat_fish_seafood == "Never" & eat_pork == "Never"))
#vegan_raw1 에 논비건 데이터 할당됨
```

Vegan 의 성별 분석

데이터 확인

```
str(vegan_raw$gender)

## chr [1:1491] "Male" "Female" "Female" "Female" "Male" "Female" "Male" ...

str(vegan_raw$gender)

## chr [1:1491] "Male" "Female" "Female" "Female" "Male" "Female" "Male" ...
```

결측치 skip 값으로 변환

```
vegan_raw$gender <- ifelse(is.na(vegan_raw$gender), "skip", vegan_raw$gender)
```

class2 라는 변수에 여자/남자 응답수 확인

```
class2<- margin.table(x= table(vegan_raw$gender), margin=1)
class2

##
##      Female      Male Non-gendered      skip
##      1091      212      24      164
```

응답자 수 비율 구하기

#class.pct2 변수에 응답비율 할당

```
class.pct2 <- round(class2/sum(class2)*100, 1)
class.pct2
```

```
##
##      Female      Male Non-gendered      skip
##      73.2      14.2      1.6      11.0
```

응답자수와 비율 포함한 라벨

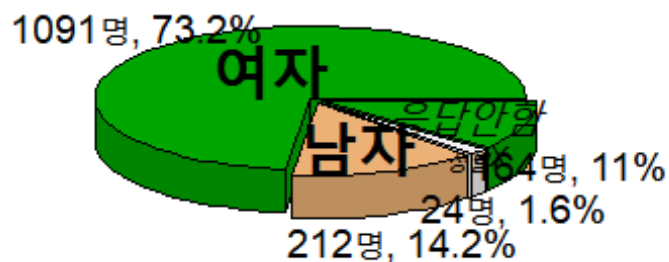
```
lbl2 <- paste( class2, "명, ", class.pct2, "%", sep= "")
lbl2
```

```
## [1] "1091 명, 73.2%" "212 명, 14.2%" "24 명, 1.6%" "164 명, 11%"
```

성별- 3D 파이차트 만들기

```
library(plotrix)
pie3D(class2, labels= lbl2, explode= 0.03, labelcex= 1.2, col =terrain.colors
(3), main = "성별", cex.main=2.5, col.main= "darkgreen" )
text(-0.2, 0.25, "여자", cex=2.2, font=2)
text(0.2, -0.1, "남자", cex=2.2, font=2)
text(0.7, 0.043, "응답안함", cex=1.5, font=3)
text(0.75, -0.15, "성별 X", cex=0.8 , font=3)
```

성별



여자 > 남자 > 응답안함 > Non-gendered

Non-Vegan 의 성별 분석

데이터 확인

```
str(vegan_raw1$gender)
## chr [1:1765] "Female" "Male" "Female" "Male" "Female" "Male" ...
```

결측치 skip 값으로 변환

```
vegan_raw1$gender <- ifelse(is.na(vegan_raw1$gender), "skip", vegan_raw1$gender)
```

여자/남자 응답수 확인

```
##
##      Female      Male Non-gendered      skip
##      1231      265      13      256
```

응답자 수 비율 구하기

```
##
##      Female      Male Non-gendered      skip
##      69.7      15.0      0.7      14.5
```

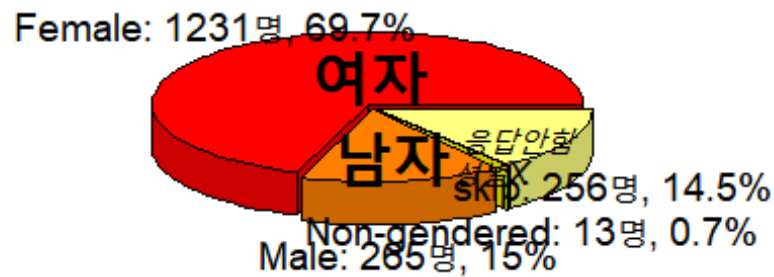
응답자수와 비율 포함한 라벨

```
lb15 <- paste(names(class5), ":", class5, "명", class.pct5, "%", sep=" ")
lb15

## [1] "Female: 1231 명, 69.7%"      "Male: 265 명, 15%"
## [3] "Non-gendered: 13 명, 0.7%"  "skip: 256 명, 14.5%"
```

논비건 성별- 3D 파이차트 만들기

성별



여자 > 남자 > 응답안함 > Non-gendered

Vegan 의 학생 비율 분석

결측치 "skip"으로 변경하고 확인

```
vegan_raw$student <- ifelse(is.na(vegan_raw$student), "skip", vegan_raw$student)
```

```
str(vegan_raw$student)
```

```
## chr [1:1491] "No" "No" "No" "No" "No" "Yes" "Yes" "No" "skip" "No" "Yes" ...
```

그래프 형태로 확인하여보기

```
freq(vegan_raw$student, plot = T, col = "green", main = ' 학생인가요 ? ')
```



```
## vegan_raw$student
##      Frequency Percent
## No          1019   68.34
## skip           180   12.07
## Yes           292   19.58
## Total        1491  100.00
```

class 라는 변수에 각항목 응답수 확인

```
class <- margin.table(x= table(vegan_raw$student), margin=1)
class

##
##   No skip Yes
## 1019 180 292
```

응답수 + 비율 표시된 파이차트

응답수 - 비율 구하기

```
#class.pct 라는 변수에 응답비율할당
class.pct <- round(class/sum(class)*100, 1)
class.pct
```

```
##  
## No skip Yes  
## 68.3 12.1 19.6
```

그래프에 응답수와 비율 같이 표시하기

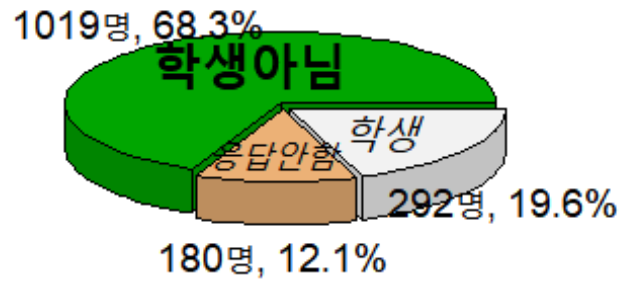
```
lbl <- paste( class, "명, ", class.pct, "%", sep= "")  
lbl  
  
## [1] "1019 명, 68.3%" "180 명, 12.1%" "292 명, 19.6%"
```

시각화- 3D 파이차트

```
library(plotrix)  
  
pie3D(class, labels= lbl,explode= 0.03, labelcex= 1.2,  
      col =terrain.colors(3), main = "직업 (학생인가요?)", cex.main=2.5, col.m  
ain= "darkgreen" )  
text(-0.15, 0.3, "학생아님", cex=1.8, font=2)  
text(0.45, -0.005, "학생", cex=1.5, font=3)  
text(-0.05, -0.1, "응답안함", cex=1.3, font=3)
```

학생 > 학생아님 > 응답안함

직업 (학생인가요?)

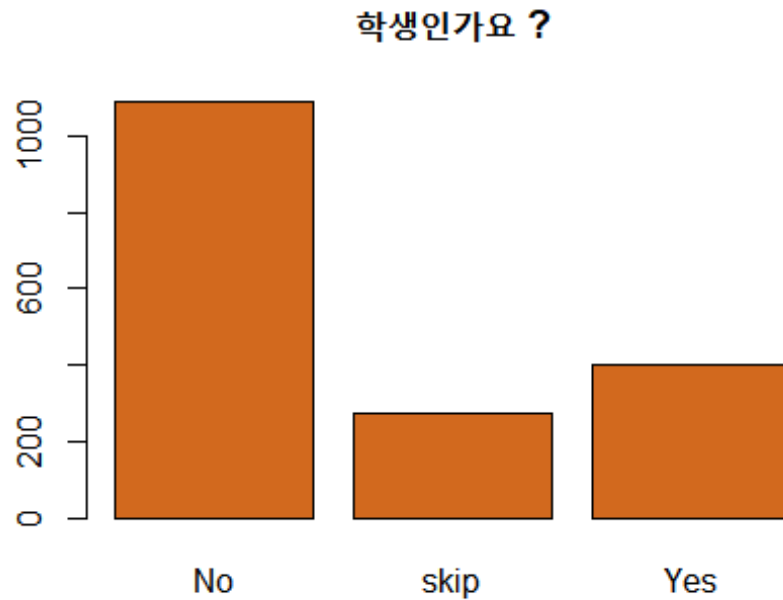


Non-Vegan 의 학생 비율 분석

결측치 "skip"으로 변경하고 확인

```
## chr [1:1765] "No" "No" "No" "No" "No" "Yes" "Yes" "No" "Yes" "skip" "No"  
...
```


그래프 형태로 확인하여보기



```
## vegan_raw1$student
##      Frequency Percent
## No          1089   61.70
## skip         274   15.52
## Yes          402   22.78
## Total       1765  100.00
```

각항목 응답수 확인

```
##
##   No skip Yes
## 1089 274 402
```

응답수 - 비율 구하기

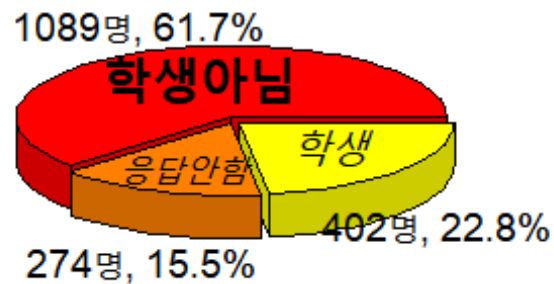
```
##
##   No skip Yes
## 61.7 15.5 22.8
```

그래프에 응답수와 비율 같이 표시하기

```
## [1] "1089 명, 61.7%" "274 명, 15.5%" "402 명, 22.8%"
```

Non-Vegan 의 학생 비율 시각화- 3D 파이차트

직업 (학생인가요?)

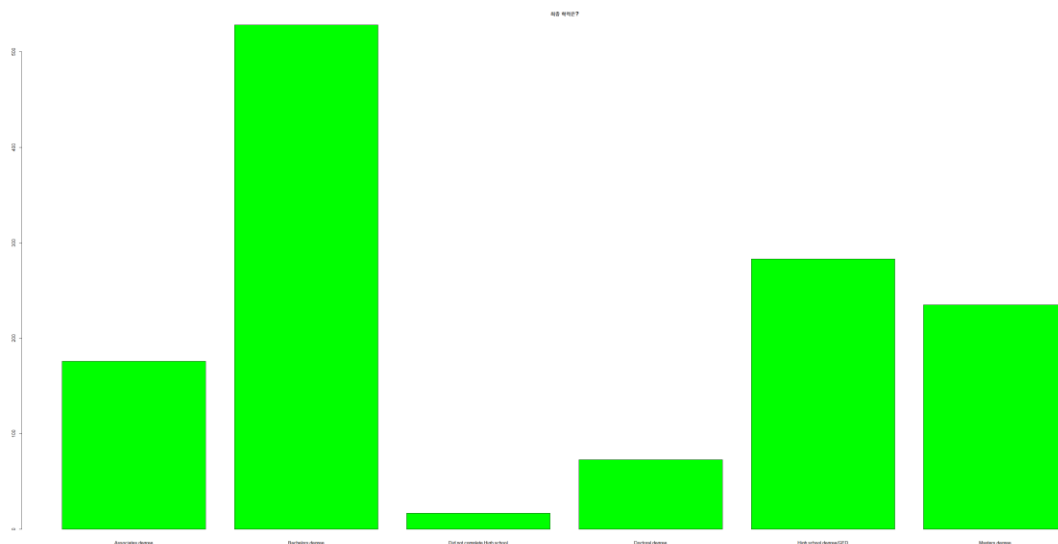


학생아님 > 학생 > 응답안함

Vegan 의 교육수준 분석

그래프 미리보기

```
freq(vegan_raw$education, plot = T, col = "green", main = '최종 학력은?')
```



```
## vegan_raw$education
##
## Associates degree      Frequency Percent Valid Percent
## Associates degree      176      11.804      13.415
```

## Bachelors degree	528	35.412	40.244
## Did not complete High school	17	1.140	1.296
## Doctoral degree	73	4.896	5.564
## High school degree/GED	283	18.981	21.570
## Masters degree	235	15.761	17.912
## NA's	179	12.005	
## Total	1491	100.000	100.000

결측치 skip 으로 변경

```
vegan_raw$education <- ifelse(is.na(vegan_raw$education), "skip", vegan_raw$education)
```

파이차트 만들기

class1 라는 변수에 각항목 응답수 확인

```
class1 <- margin.table(x= table(vegan_raw$education), margin=1)
class1
```

##		
##	Associates degree	Bachelors degree
##	176	528
## Did not complete High school		Doctoral degree
##	17	73
## High school degree/GED		Masters degree
##	283	235
##	skip	
##	179	

학력 시각화-pie 차트

#응답비율 구하기

```
class.pct1 <- round(class1/sum(class1)*100, 1)
class.pct1
```

##		
##	Associates degree	Bachelors degree
##	11.8	35.4
## Did not complete High school		Doctoral degree
##	1.1	4.9
## High school degree/GED		Masters degree
##	19.0	15.8
##	skip	
##	12.0	

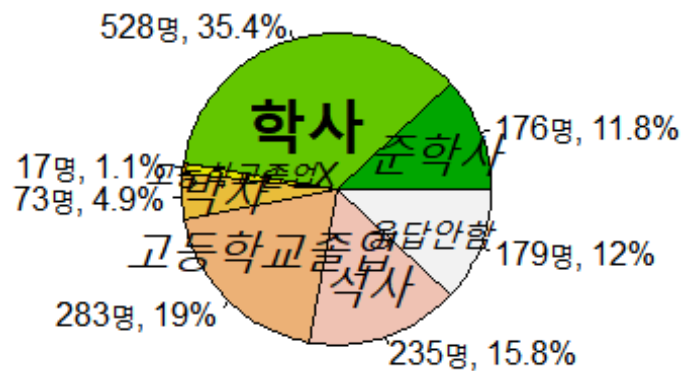
```
lbl1 <- paste( class1, "명, ", class.pct1, "%", sep= "")
lbl1
```

```
## [1] "176 명, 11.8%" "528 명, 35.4%" "17 명, 1.1%" "73 명, 4.9%" "283 명, 19%"
## [6] "235 명, 15.8%" "179 명, 12%"

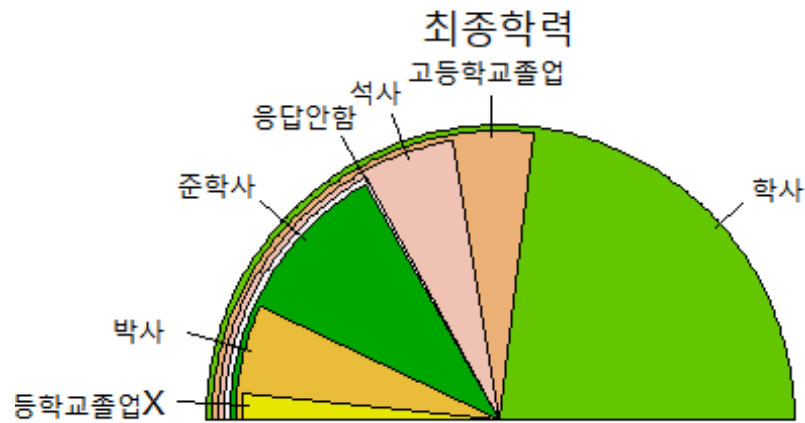
#파이차트 그리기
pie(class1, labels= lbl1, main ="최종학력", col =terrain.colors(7), cex.main=
2, col.main= "darkgreen" )

text(-0.15, 0.35, "학사", cex=2.2, font=2)
text(0.5, 0.2, "준학사", cex=1.7, font=3)
text(0.47, -0.2, "응답안함", cex=1.3, font=3)
text(0.15, -0.48, "석사", cex=1.7, font=3)
text(-0.4, -0.3, "고등학교졸업", cex=1.7, font=3)
text(-0.6, 0.003, "박사", cex=1.7, font=3)
text(-0.5, 0.08, "고등학교졸업 x", cex=1, font=3)
```

최종학력

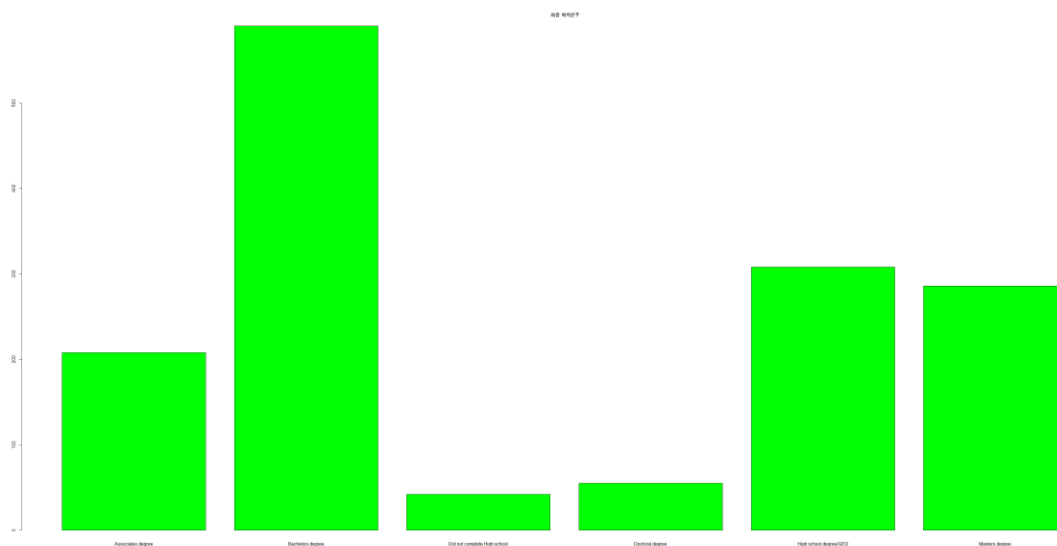


```
lbl1_5 <- paste(c("준학사", "학사", "고등학교졸업 x", "박사", "고등학교졸업", "석사", "응답안함" ))
fan.plot(class1, labels= lbl1_5, col =terrain.colors(7), main="최종학력", cex.m
ain=2.5, col.main= "darkgreen", align='left', max.span=pi)
```



Non-Vegan 의 교육수준 분석

그래프 미리보기



```
## veg1$education
```

	Frequency	Percent	Valid Percent
## Associates degree	208	11.785	13.969
## Bachelors degree	590	33.428	39.624
## Did not complete High school	42	2.380	2.821
## Doctoral degree	55	3.116	3.694
## High school degree/GED	308	17.450	20.685
## Masters degree	286	16.204	19.208

## NA's	276	15.637	
## Total	1765	100.000	100.000

결측치 skip 으로 변경

파이차트 만들기

class7 라는 변수에 각항목 응답수 확인

```
##
##           Associates degree           Bachelors degree
##                208                590
## Did not complete High school           Doctoral degree
##                42                55
##           High school degree/GED           Masters degree
##                308                286
##                skip
##                276
```

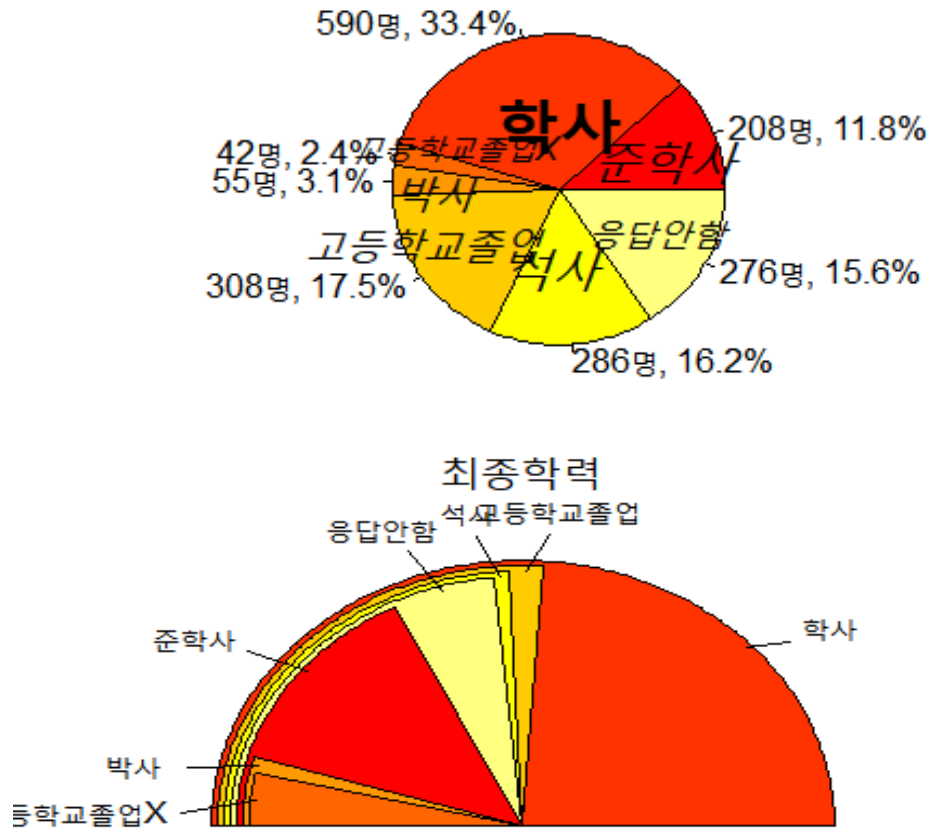
Non-vegan 학력 시각화-pie 차트

#응답비율 구하기

```
##
##           Associates degree           Bachelors degree
##                11.8                33.4
## Did not complete High school           Doctoral degree
##                2.4                3.1
##           High school degree/GED           Masters degree
##                17.5                16.2
##                skip
##                15.6

## [1] "208 명, 11.8%" "590 명, 33.4%" "42 명, 2.4%"  "55 명, 3.1%"  "308 명,
17.5%"
## [6] "286 명, 16.2%" "276 명, 15.6%"
```

최종학력



채식주의자(Vegan)의 소득 분석

#결측치 값 skip 으로 변환

```
vegan_raw$income <- ifelse(is.na(vegan_raw$income), "skip", vegan_raw$income)
```

```
income <- gsub("250000", "$250,000+", vegan_raw$income)
```

#class3 변수에 응답수 할당

```
class3 <- margin.table(x= table(income), margin=1)
class3
```

```
## income
## $100,000-$250,000  $25,000-$50,000  $25,000 or under  $250,000+
##                228                297                294                27
##  $50,000-$100,000                skip
##                394                251
```

#class.pct3 변수에 응답비율 할당

```
class.pct3 <- round(class3/sum(class3)*100, 1)
class.pct3
```

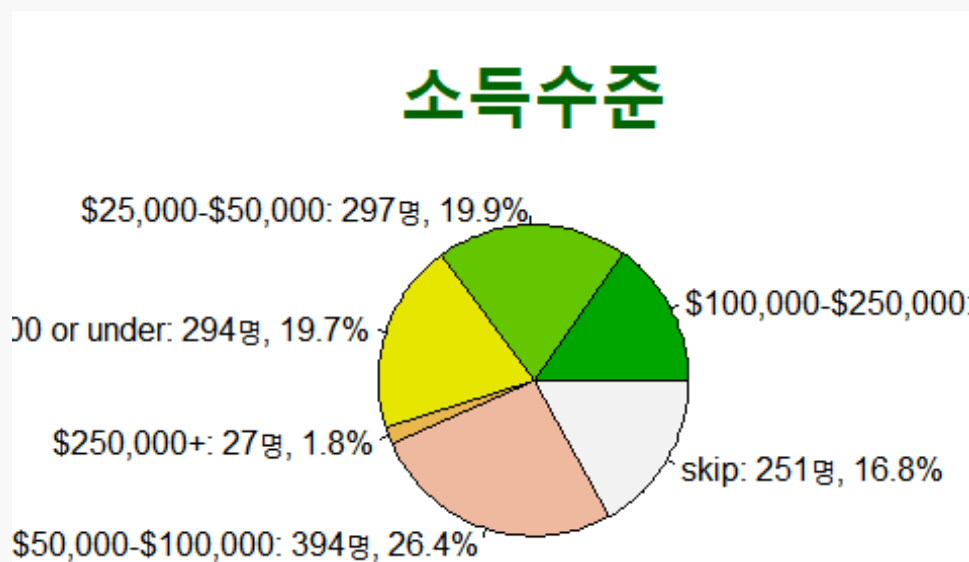
```
## income
## $100,000-$250,000    $25,000-$50,000    $25,000 or under    $250,000+
##           15.3           19.9           19.7           1.8
## $50,000-$100,000    skip
##           26.4           16.8
```

소득 시각화- pie 차트

```
lbl3 <- paste(names(class3), ":", class3, "명, ", class.pct3, "%", sep= "")
lbl3
```

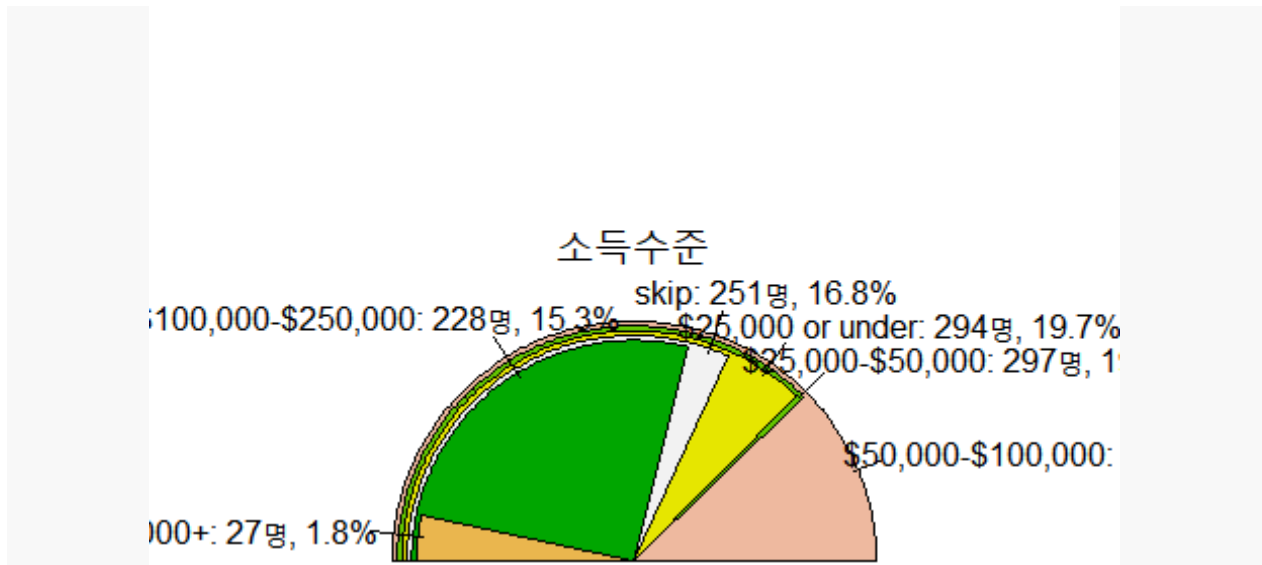
```
## [1] "$100,000-$250,000: 228 명, 15.3%" "$25,000-$50,000: 297 명, 19.9%"
## [3] "$25,000 or under: 294 명, 19.7%"  "$250,000+: 27 명, 1.8%"
## [5] "$50,000-$100,000: 394 명, 26.4%"  "skip: 251 명, 16.8%"
```

```
pie(class3, labels= lbl3, main = "소득수준", col =terrain.colors(6), cex.main=
2.5, col.main= "darkgreen")
```



소득 시각화- fanplot 차트

```
fan.plot(class3, labels= lbl3, col =terrain.colors(6), main="소득수준", cex.mai
n=2.5, col.main= "darkgreen", align='left', max.span=pi)
```

Non-Vegan 의 소득 분석

결측치 skip 으로 변경

#응답자수

income

##	\$100,000-\$250,000	\$25,000-\$50,000	\$25,000 or under	\$250,000+
##	254	367	317	31
##	\$50,000-\$100,000	skip		
##	429	367		

#응답비율

income

##	\$100,000-\$250,000	\$25,000-\$50,000	\$25,000 or under	\$250,000+
##	14.4	20.8	18.0	1.8
##	\$50,000-\$100,000	skip		
##	24.3	20.8		

Non-Vegan 소득 시각화- pie 차트

```
## [1] "$100,000-$250,000: 254 명, 14.4%" "$25,000-$50,000: 367 명, 20.8%"
## [3] "$25,000 or under: 317 명, 18%" "$250,000+: 31 명, 1.8%"
```

[5] "\$50,000-\$100,000: 429 명, 24.3%" "skip: 367 명, 20.8%"

소득수준

A pie chart titled '소득수준' (Income Level) showing the distribution of income levels. The chart is divided into six segments with the following labels and percentages: '\$25,000-\$50,000: 367명, 20.8%' (orange), '\$100,000-\$250,000:' (red), 'skip: 367명, 20.8%' (yellow), '\$50,000-\$100,000: 429명, 24.3%' (yellow), '\$250,000+: 31명, 1.8%' (yellow), and ',000 or under: 317명, 18%' (orange).

Income Level	Count	Percentage
\$25,000-\$50,000	367	20.8%
\$100,000-\$250,000		
skip	367	20.8%
\$50,000-\$100,000	429	24.3%
\$250,000+	31	1.8%
,000 or under	317	18%

Non-Vegan 소득 시각화- fanplot 차트

Vegan 의 반려동물 분석

```
#pet 이라는 변수로 반려동물 응답종류 묶고 확인
pet= c(vegan_raw$h_bird, vegan_raw$h_cat, vegan_raw$h_dog, vegan_raw$h_reptile,
vegan_raw$h_small_m, vegan_raw$h_none_of_the_above)
str(pet)

## chr [1:8946] "Bird(s)" NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA
...

# 결측치 skip 값으로 변경
vegan_raw <-ifelse(is.na(pet), "skip", pet)
```

#pet 이라는 변수로 반려동물 응답종류 묶고 확인

```
pet= c(vegan_raw$h_bird, vegan_raw$h_cat, vegan_raw$h_dog, vegan_raw$h_reptile,
vegan_raw$h_small_m, vegan_raw$h_none_of_the_above)
str(pet)
```

```
## chr [1:8946] "Bird(s)" NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA
...

```

```
# 결측치 skip 값으로 변경
```

```
vegan_raw <- ifelse(is.na(pet), "skip", pet)
```

각항목 응답수, 응답비율 확인

#응답수

```
class4<- margin.table(x= table(pet), margin=1)
class4
```

```
## pet
##
## Bird(s)
## 76
## Cat(s)
## 671
## Dog(s)
## 665
## None of the above
## 401
## Reptile(s)
## 47
## Small mammal(s) (ex. Rabbit, guinea pig, rat, etc.)
## 118
```

#응답비율

```
class.pct4 <- round(class4/sum(class4)*100, 1)
class.pct4
```

```
## pet
##
## Bird(s)
## 3.8
## Cat(s)
## 33.9
## Dog(s)
## 33.6
## None of the above
## 20.3
## Reptile(s)
## 2.4
## Small mammal(s) (ex. Rabbit, guinea pig, rat, etc.)
## 6.0
```

vegan 의 반려동물 시각화- pie 차트

#라벨

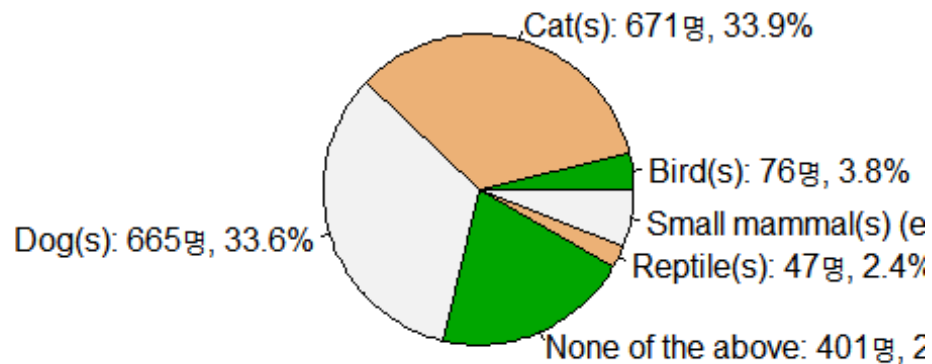
```
lbl4 <- paste(names(class4), ": ", class4, "명, ", class.pct4, "%", sep= "")
lbl4
```

```
## [1] "Bird(s): 76 명, 3.8%"
## [2] "Cat(s): 671 명, 33.9%"
## [3] "Dog(s): 665 명, 33.6%"
```

```
## [4] "None of the above: 401 명, 20.3%"
## [5] "Reptile(s): 47 명, 2.4%"
## [6] "Small mammal(s) (ex. Rabbit, guinea pig, rat, etc.): 118 명, 6%"

#파이차트
pie(class4, labels= lbl4,col =terrain.colors(3), main = "반려동물들", cex.main
=2.5, col.main= "darkgreen")
```

반려동물들



Vegan 의 반려동물 시각화-fanplot 차트

```
lbl5 <- paste(c("파충류", "고양이", "강아지", "키우지 않음", "새", "작은 포유류"),
": ", class4, "명, ", class.pct4, "%", sep= "")
lbl5

## [1] "파충류: 76 명, 3.8%"      "고양이: 671 명, 33.9%"
## [3] "강아지: 665 명, 33.6%"   "키우지 않음: 401 명, 20.3%"
## [5] "새: 47 명, 2.4%"        "작은 포유류: 118 명, 6%"

fan.plot(class4,labels= lbl5 ,col =terrain.colors(6), main="반려동물들", cex.
main=2.5, col.main= "darkgreen", align='left',max.span=pi)
```



```
## pet
##
## Bird(s)
## 4.4
## Cat(s)
## 32.1
## Dog(s)
## 30.5
## None of the above
## 24.7
## Reptile(s)
## 2.6
## Small mammal(s) (ex. Rabbit, guinea pig, rat, etc.)
## 5.7
```

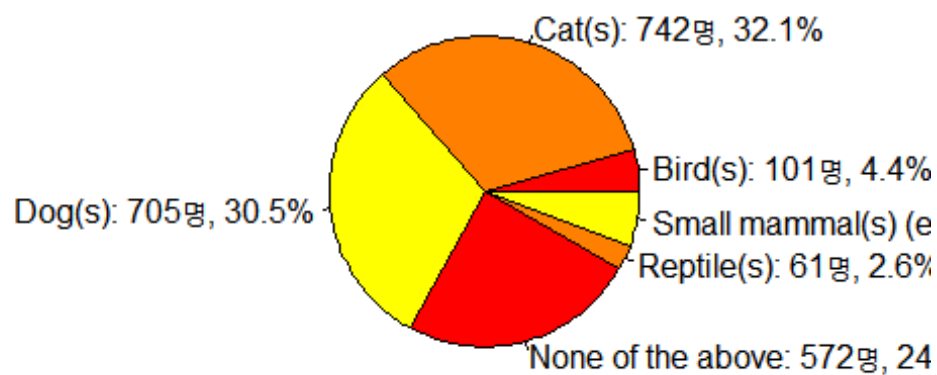
Non-vegan 의 반려동물 시각화- pie 차트

#라벨

```
## [1] "Bird(s): 101 명, 4.4%"
## [2] "Cat(s): 742 명, 32.1%"
## [3] "Dog(s): 705 명, 30.5%"
## [4] "None of the above: 572 명, 24.7%"
## [5] "Reptile(s): 61 명, 2.6%"
## [6] "Small mammal(s) (ex. Rabbit, guinea pig, rat, etc.): 131 명, 5.7%"
```

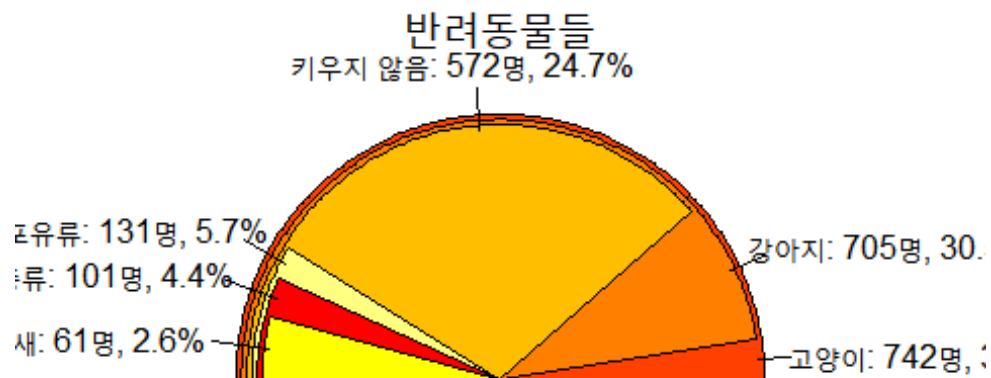
#파이차트

반려동물들



Non-vegan 의 반려동물 시각화-fanplot 차트

```
## [1] "파충류: 101 명, 4.4%"      "고양이: 742 명, 32.1%"
## [3] "강아지: 705 명, 30.5%"     "키우지 않음: 572 명, 24.7%"
## [5] "새: 61 명, 2.6%"          "작은 포유류: 131 명, 5.7%"
```



다음은 연령별 남자와 여자 수를 시각화해보았습니다.

라이브러리 로드

```
library(readxl)
library(dplyr)
library(ggplot2)
```

원본 데이터 파일 불러오기 및 필요 행 추출 - non_vegan

```
vegan_raw <- read_excel("C:/Rstudy/mini_team1/data/vegan_Raw_data_c.xls")

vegan_raw1 <- vegan_raw %>% filter(!(eat_beef == "Never" & eat_chicken == "Never" & eat_dairy == "Never")&
```

```
eat_eggs == "Never" & eat_fish_seafood == "Never" & eat_pork == "Never"))
```

원본 데이터 파일 불러오기 및 필요 행 추출 - vegan

```
vegan_raw2 <- read_excel("C:/Rstudy/mini_team1/data/only_vegan.xlsx")
```

데이터 확인 - non-vegan

```
str(vegan_raw1$gender)
str(vegan_raw1$age)
```

데이터 확인 - vegan

```
str(vegan_raw2$gender)
str(vegan_raw2$age)
```

결측치 확인 및 대체 - non-vegan

```
table(vegan_raw1$age)
vegan_raw1$gender <- ifelse(is.na(vegan_raw1$gender), "skip", vegan_raw1$gender)
vegan_raw1$age <- ifelse(is.na(vegan_raw1$age), "skip", vegan_raw1$age)
```

결측치 확인 및 대체 - vegan

```
table(vegan_raw2$age)
vegan_raw2$gender <- ifelse(is.na(vegan_raw2$gender), "skip", vegan_raw2$gender)
vegan_raw2$age <- ifelse(is.na(vegan_raw2$age), "skip", vegan_raw2$age)
```

이상치 대체 및 제거 확인- non-vegan

연령대별이 필요하기 때문에 정확할 필요는 없음 -> 40 대냐 50 대냐가 중요

```
vegan_raw1$age <- gsub(" years old", "", vegan_raw1$age)
vegan_raw1$age <- gsub("yrs", "", vegan_raw1$age)
vegan_raw1$age <- gsub(" years", "", vegan_raw1$age)
vegan_raw1$age <- gsub("Sixty four", 64, vegan_raw1$age)
vegan_raw1$age <- gsub(" yo", "", vegan_raw1$age)
vegan_raw1$age <- gsub("sixty-four", 64, vegan_raw1$age)
vegan_raw1$age <- gsub("20 and a half", 20, vegan_raw1$age)
vegan_raw1$age <- gsub("mid-50s", 55, vegan_raw1$age)

vegan_raw1$age <- gsub(" ", "", vegan_raw1$age)

vegan_raw1$age <- ifelse(vegan_raw1$age %in% c(1:120), vegan_raw1$age, "skip")

table(vegan_raw1$age)
```



```
str(vegan_raw1$age)
str(vegan_raw1$gender)
```

이상치 대체 및 제거 확인- vegan

```
vegan_raw2$age <- gsub(" years old", "", vegan_raw2$age)
vegan_raw2$age <- gsub("yrs", "", vegan_raw2$age)
vegan_raw2$age <- gsub(" yrs old", "", vegan_raw2$age)
vegan_raw2$age <- gsub(" year old", "", vegan_raw2$age)
vegan_raw2$age <- gsub("Twenty five.", 25, vegan_raw2$age)
vegan_raw2$age <- gsub("Sixty", 60, vegan_raw2$age)
vegan_raw2$age <- gsub(" old", "", vegan_raw2$age)
vegan_raw2$age <- gsub("I will be 46 next month.", 46, vegan_raw2$age)
vegan_raw2$age <- gsub("almost 54", 54, vegan_raw2$age)
vegan_raw2$age <- gsub("mid to upper 30's", 35, vegan_raw2$age)
vegan_raw2$age <- gsub("df", "", vegan_raw2$age)
vegan_raw2$age <- gsub("almost 54", 54, vegan_raw2$age)
vegan_raw2$age <- gsub("51 almost 52", 51, vegan_raw2$age)
vegan_raw2$age <- gsub("45-55", "skip", vegan_raw2$age)
vegan_raw2$age <- gsub("44.5", 44, vegan_raw2$age)
vegan_raw2$age <- gsub("40s", 40, vegan_raw2$age)
vegan_raw2$age <- gsub("25, also female is not a gender, it's a sex", 25, veg
an_raw2$age)
vegan_raw2$age <- gsub(" ", "", vegan_raw2$age)

vegan_raw2$age <- ifelse(vegan_raw2$age %in% c(1:120), vegan_raw2$age, "skip
")

table(vegan_raw2$age)

str(vegan_raw2$age)
str(vegan_raw2$gender)
```

skip 제거 및 필요 컬럼 추출- non-vegan

```
non_vegan_age_gender <- vegan_raw1 %>% select(age, gender) %>% filter(age !=
"skip" & gender != "skip" & gender != "Non-gendered")
str(non_vegan_age_gender)
```

skip 제거 및 필요 컬럼 추출- vegan

```
vegan_age_gender <- vegan_raw2 %>% select(age, gender) %>% filter(age != "ski
p" & gender != "skip" & gender != "Non-gendered")
str(vegan_age_gender)
```

연령대 나누기- non-vegan

```
non_vegan_ageg_gender <- non_vegan_age_gender %>% mutate(ageg = ifelse(
  age < 20, "10 대", ifelse(age < 30, "20 대", ifelse(age < 40, "30 대", ifelse
    (age < 50, "40 대",
                                                                ife
                                                                lse(age<60, "50 대",
                                                                ifelse(age<70, "60 대",
                                                                ifelse(age<80, "70 대"
                                                                ))))))))
))))))
```

연령대 나누기- non-vegan

```
vegan_ageg_gender <- vegan_age_gender %>% mutate(ageg = ifelse(
  age < 20, "10 대", ifelse(age < 30, "20 대", ifelse(age < 40, "30 대", ifelse
    (age < 50, "40 대",
                                                                ifelse(age<60, "50 대",
                                                                ifelse(age<70, "60 대",
                                                                ifelse(age<80, "70 대"
                                                                ))))))))
))))))
```

확인- non-vegan

```
table(non_vegan_ageg_gender)
```

확인- non-vegan

```
table(vegan_ageg_gender)
```

그룹화 및 요약- non-vegan

```
non_vegan_ageg_gender_g <- non_vegan_ageg_gender %>% group_by(ageg, gender) %
>% summarise(n6 = n())

## `summarise()` has grouped output by 'ageg'. You can override using the
## `.groups` argument.
```

그룹화 및 요약- vegan

```
vegan_ageg_gender_g <- vegan_ageg_gender %>% group_by(ageg, gender) %>% summa
rise(n6 = n())
```

```
## `summarise()` has grouped output by 'ageg'. You can override using the
## `.groups` argument.
```

남자, 여자 값 반대로 주기- non-vegan

```
non_vegan_ageg_gender_g$n6[non_vegan_ageg_gender_g$gender == "Female"] = -non_
_vegan_ageg_gender_g$n6

## Warning in non_vegan_ageg_gender_g$n6[non_vegan_ageg_gender_g$gender == :
number
## of items to replace is not a multiple of replacement length
```

남자, 여자 값 반대로 주기- vegan

```
vegan_ageg_gender_g$n6[vegan_ageg_gender_g$gender == "Female"] = -vegan_ageg_
gender_g$n6

## Warning in vegan_ageg_gender_g$n6[vegan_ageg_gender_g$gender == "Female"]
## = -vegan_ageg_gender_g$n6: number of items to replace is not a multiple of
## replacement length
```

그래프 시각화- non-vegan

```
library(ggplot2)
ggplot(non_vegan_ageg_gender_g, aes(x = ageg, y = n6, fill = gender)) + geom_
bar(stat = "identity", width = .9) +
  coord_flip() + scale_y_continuous(labels = abs) + ylim(-500,500) +
  theme_bw() +
  ggtitle("연령대별 남자 여자", subtitle = "non-vegan") +
  theme(plot.title = element_text(face = "bold", hjust = 0.5, size = 20, colo
r = "darkblue"),
        plot.subtitle = element_text(size = 15)) + xlab('연령대') + ylab('남자
여자 수')
```

그래프 시각화- vegan

```
library(ggplot2)
ggplot(vegan_age_gender_g, aes(x = age, y = n6, fill = gender)) + geom_bar(
  stat = "identity", width = .9) +
  coord_flip() + ylim(-500,500) + theme_bw() +
  ggtitle("연령대별 남자 여자", subtitle = "vegan") +
  theme(plot.title = element_text(face = "bold", hjust = 0.5, size = 20, color = "darkblue"),
        plot.subtitle = element_text(size = 15)) +
  xlab('연령대') + ylab('남자 여자 수')
```

