Homework 2

Summary Report for the Mushroom Dataset

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目錄

1.Variable Definition

Variable Name	Data Type	Definition
family	character	String of the name of the family of mushroom species
name	character	String of the of the mushroom species
class	categorical	poisonous=p, edibile=e
cap-diameter	numerical	float number(s) in cm, two values = min-max, one value = mean
cap-shape	categorical	bell = b, conical = c, convex = x, flat = f, sunken = s, spherical = p, others = o
cap-surface	categorical	fibrous = i, grooves = g, scaly = y, smooth = s, shiny = h, leathery = l, silky = k, sticky = t, wrinkled = w, fleshy = e
cap-color	categorical	brown = n, buff = b, gray = g, green = r, pink = p, purple = u, red = e, white = w, yellow = y, blue = l, orange = o, black = k
does-bruise-bleed	categorical	bruises-or-bleeding = t, no = f
gill-attachment	categorical	adnate = a, adnexed = x, decurrent = d, free = e, sinuate = s, pores = p, none = f, unknown = ?
gill-spacing	categorical	close = c, distant = d, none = f
gill-color	categorical	see cap-color + none = f
stem-height	numerical	float number(s) in cm, two values = min-max, one value = mean
stem-width	numerical	float number(s) in mm, two values = min-max, one value = mean
stem-root	categorical	bulbous = b, swollen = s, club = c, cup = u, equal = e, rhizomorphs = z, rooted = r
stem-surface	categorical	see cap-surface + none = f
stem-color	categorical	see cap-color + none = f
veil-type	categorical	partial = p, universal = u
veil-color	categorical	see cap-color + none = f
has-ring	categorical	ring = t, none = f
ring-type	categorical	cobwebby = c, evanescent = e, flaring = r, grooved = g, large = l, pendant = p, sheathing = s, zone = z, scaly = y, movable = m, none = f, unknown = ?
spore-print-color	categorical	brown = n, buff = b, gray = g, green = r, pink = p, purple = u, red = e, white = w, yellow = y, blue = l, orange = o, black = k
habitat	categorical	grasses = g, leaves = l, meadows = m, paths = p, heaths = h, urban = u, waste = w, woods = d
season	categorical	spring = s, summer = u, autumn = a, winter = w

圖 1: Variable Definition

2.Data Description

```
library(reticulate)
library(Hmisc)

data <- read.csv("D:\\Desktop\\2025Spring\\2025Spring_Statistical_Consulting\\Homework2\\mushroom\\prima
latex(describe(data), file="", options=list(tabenv="longtable"))
```

data
23 Variables 173 Observations

family

n	missing	distinct
173	0	23

```
lowest : Amanita Family     Bolbitius Family   Bolete Family      Bracket Fungi      Chanterelle Family
highest: Russula Family     Saddle-Cup Family  Stropharia Family  Tricholoma Family  Wax Gill Family
```

name

n	missing	distinct
173	0	173

```
lowest : Amethyst Deceiver        Aniseed Funnel Cap       Apricot Fungus           Bare-toothed Russula     Bay Bolete
highest: Yellow-gilled Russula    Yellow-staining Mushroom Yellow-stemmed Bell Cap  Yellow Swamp Russula     Yellow Wax cap
```

class

n	missing	distinct
173	0	2

Value	e	p
Frequency	77	96
Proportion	0.445	0.555

cap.diameter

n	missing	distinct
173	0	51

```
lowest : [0.4, 1]   [0.5, 1.5] [0.5, 1]   [0.7, 1.3] [1, 1.5]
highest: [8, 14]    [8, 15]    [8, 20]    [8, 25]    [8, 30]
```

cap.shape

n	missing	distinct
173	0	27

```
lowest : [b, f, s] [b, f]    [b, x, f] [b, x]    [b]
highest: [x, f]    [x, o]    [x, p]    [x, s]    [x]
```

Cap.surface

n	missing	distinct
133	40	40

```
lowest : [d, e, y, i] [d, k, s]    [d, k]       [d, s]       [d]
highest: [t]          [w, t]       [w]          [y, s]       [y]
```

cap.color

n	missing	distinct
173	0	67

```
lowest : [b, p, e, y]    [b, u]          [b]             [e, n, p, w]    [e, n, y]
highest: [y, n]          [y, o, g, n, r] [y, o, r, n]    [y, o]          [y]
```

does.bruise.or.bleed

n	missing	distinct
173	0	2

Value	[f]	[t]
Frequency	143	30
Proportion	0.827	0.173

gill.attachment

n	missing	distinct
145	28	8

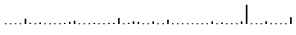
Value	[a, d]	[a]	[d]	[e]	[f]	[p]	[s]	[x]
Frequency	8	32	25	16	10	17	16	21
Proportion	0.055	0.221	0.172	0.110	0.069	0.117	0.110	0.145

gill.spacing

n	missing	distinct
102	71	3

Value	[c]	[d]	[f]
Frequency	70	22	10
Proportion	0.686	0.216	0.098

gill.color



n	missing	distinct
173	0	59

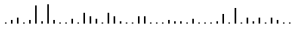
lowest : [b, p, w] [b, u] [b] [e] [f]
highest: [y, o, e] [y, r, k] [y, r] [y, w] [y]

stem.height

n	missing	distinct
173	0	46

lowest : [0] [1, 2] [1, 3] [10, 12] [10, 15], highest: [8, 12] [8, 15] [8, 20] [8, 25] [8, 30]

stem.width



n	missing	distinct
173	0	48

lowest : [0.5, 1] [0] [1, 2] [1, 3] [1] , highest: [7, 15] [8, 12] [8, 15] [8, 18] [8, 20]

stem.root

n	missing	distinct
27	146	5

Value	[b]	[c]	[f]	[r]	[s]
Frequency	9	2	3	4	9
Proportion	0.333	0.074	0.111	0.148	0.333

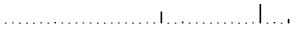
stem.surface

n	missing	distinct
65	108	14

Value	[f]	[g]	[h]	[i, s]	[i, t]	[i, y]	[i]	[k, s]	[k]	[s, h]	[s]	[t]
Frequency	3	5	1	1	1	1	11	1	4	1	15	7
Proportion	0.046	0.077	0.015	0.015	0.015	0.015	0.169	0.015	0.062	0.015	0.231	0.108

Value	[y, s]	[y]
Frequency	1	13
Proportion	0.015	0.200

stem.color



n	missing	distinct
173	0	41

lowest : [b, u] [e, n] [e, u, y] [e, y] [e]
highest: [w] [y, e, n] [y, n] [y, o, k] [y]

veil.type

n	missing	distinct	value
9	164	1	[u]

Value	[u]
Frequency	9
Proportion	1

veil.color

n	missing	distinct
21	152	7

Value	[e, n]	[k]	[n]	[u]	[w]	[y, w]	[y]
Frequency	1	1	1	1	15	1	1
Proportion	0.048	0.048	0.048	0.048	0.714	0.048	0.048

has.ring

n	missing	distinct
173	0	2

Value	[f]	[t]
Frequency	130	43
Proportion	0.751	0.249

ring.type

n	missing	distinct
166	7	13

Value	[e, g]	[e]	[f]	[g, p]	[g]	[l, e]	[l, p]	[l, r]	[l]	[m]	[p]	[r]
Frequency	1	6	137	2	2	1	1	2	2	1	2	3
Proportion	0.006	0.036	0.825	0.012	0.012	0.006	0.006	0.012	0.012	0.006	0.012	0.018

Value	[z]
Frequency	6
Proportion	0.036

Spore.print.color

n	missing	distinct
18	155	8

Value	[g]	[k, r]	[k, u]	[k]	[n]	[p, w]	[p]	[w]
Frequency	1	1	1	5	3	1	3	3
Proportion	0.056	0.056	0.056	0.278	0.167	0.056	0.167	0.167

habitat

n	missing	distinct
173	0	21

lowest :	[d, h]	[d]	[g, d, h]	[g, d]	[g, h, d]
highest:	[m, d]	[m, h]	[m]	[p, d]	[w]

season

n	missing	distinct
173	0	10

Value	[a, w]	[a]	[s, a, w]	[s, u, a, w]	[s, u, a]	[s, u]
Frequency	15	16	1	13	5	3
Proportion	0.087	0.092	0.006	0.075	0.029	0.017

Value	[s]	[u, a, w]	[u, a]	[u]
Frequency	1	12	106	1
Proportion	0.006	0.069	0.613	0.006

3.Table 1

```
# import pandas as pd
# import numpy as np
# import warnings
# warnings.filterwarnings('ignore')
# df = pd.read_csv('primary_data.csv', sep = ';')
# all_cols = df.columns
# chr_cols = ["family", "name", "class"]
# num_cols = ["cap-diameter", "stem-height", "stem-width"]
# cat_cols = [col for col in all_cols if col not in (chr_cols + num_cols)]
# for col in num_cols:
#     clean_list = []
#     for list_value in df[col].to_numpy():
```

```
#         list_value = list_value.strip('[]').split(',')
#         list_value = [float(v.strip()) for v in list_value]
#         # value = (min + max)/2 if has two values
#         clean_list.append((list_value[0] + list_value[1])/2 if len(list_value)==2 else list_value[0])
#     df[col] = clean_list
# for col in cat_cols:
#     variable_set = set()
#     for list_value in df[col].to_numpy():
#         if pd.isna(list_value):
#             list_value = []
#         elif isinstance(list_value, str):
#             list_value = list_value.strip('[]').split(',')
#             list_value = [v.strip() for v in list_value]
#         variable_set.update(list_value)
#
#     # Create One-Hot Encoded Columns
#     for ele in variable_set:
#         df[f'{col}.{ele}'] = df[col].apply(lambda x: "T" if isinstance(x, str) and ele in x else "F")
#
#     df.drop(columns=[col], inplace=True)
# df.to_csv('cleaned_data.csv', index=False)

library(table1)
df <- read.csv("D:\\Desktop\\2025Spring\\2025Spring_Statistical_Consulting\\Homework2\\mushroom\\cleaned
chr_cols <- c("family", "name", "class")
table1_cols <- setdiff(colnames(df), chr_cols)
formula <- as.formula(paste("~", paste(table1_cols, collapse = " + "), " | class"))
table1(formula, data = df)
```

	e	p	Overall
	(N=77)	(N=96)	(N=173)
cap.diameter			
Mean (SD)	7.81 (6.26)	5.88 (3.85)	6.74 (5.14)
Median [Min, Max]	6.50 [1.00, 50.0]	5.00 [0.700, 19.0]	6.00 [0.700, 50.0]
stem.height			
Mean (SD)	7.05 (3.48)	6.22 (3.05)	6.59 (3.26)
Median [Min, Max]	6.00 [2.50, 25.0]	5.50 [0, 17.5]	6.00 [0, 25.0]
stem.width			
Mean (SD)	14.4 (10.8)	10.4 (8.66)	12.2 (9.86)
Median [Min, Max]	12.5 [1.00, 70.0]	7.50 [0, 40.0]	10.0 [0, 70.0]
cap.shape.c			
Yes	4 (5.2%)	4 (4.2%)	8 (4.6%)
No	73 (94.8%)	92 (95.8%)	165 (95.4%)
cap.shape.f			
Yes	36 (46.8%)	38 (39.6%)	74 (42.8%)
No	41 (53.2%)	58 (60.4%)	99 (57.2%)
cap.shape.p			
Yes	10 (13.0%)	5 (5.2%)	15 (8.7%)
No	67 (87.0%)	91 (94.8%)	158 (91.3%)
cap.shape.x			
Yes	54 (70.1%)	56 (58.3%)	110 (63.6%)
No	23 (29.9%)	40 (41.7%)	63 (36.4%)
cap.shape.b			

	e	p	Overall
Yes	5 (6.5%)	18 (18.8%)	23 (13.3%)
No	72 (93.5%)	78 (81.3%)	150 (86.7%)
cap.shape.o			
Yes	4 (5.2%)	8 (8.3%)	12 (6.9%)
No	73 (94.8%)	88 (91.7%)	161 (93.1%)
cap.shape.s			
Yes	17 (22.1%)	19 (19.8%)	36 (20.8%)
No	60 (77.9%)	77 (80.2%)	137 (79.2%)
Cap.surface.i			
Yes	2 (2.6%)	7 (7.3%)	9 (5.2%)
No	75 (97.4%)	89 (92.7%)	164 (94.8%)
Cap.surface.l			
Yes	2 (2.6%)	2 (2.1%)	4 (2.3%)
No	75 (97.4%)	94 (97.9%)	169 (97.7%)
Cap.surface.g			
Yes	7 (9.1%)	9 (9.4%)	16 (9.2%)
No	70 (90.9%)	87 (90.6%)	157 (90.8%)
Cap.surface.d			
Yes	8 (10.4%)	10 (10.4%)	18 (10.4%)
No	69 (89.6%)	86 (89.6%)	155 (89.6%)
Cap.surface.w			
Yes	3 (3.9%)	5 (5.2%)	8 (4.6%)
No	74 (96.1%)	91 (94.8%)	165 (95.4%)
Cap.surface.k			
Yes	1 (1.3%)	9 (9.4%)	10 (5.8%)
No	76 (98.7%)	87 (90.6%)	163 (94.2%)
Cap.surface.t			
Yes	15 (19.5%)	22 (22.9%)	37 (21.4%)
No	62 (80.5%)	74 (77.1%)	136 (78.6%)
Cap.surface.h			
Yes	13 (16.9%)	13 (13.5%)	26 (15.0%)
No	64 (83.1%)	83 (86.5%)	147 (85.0%)
Cap.surface.y			
Yes	12 (15.6%)	11 (11.5%)	23 (13.3%)
No	65 (84.4%)	85 (88.5%)	150 (86.7%)
Cap.surface.e			
Yes	4 (5.2%)	7 (7.3%)	11 (6.4%)
No	73 (94.8%)	89 (92.7%)	162 (93.6%)
Cap.surface.s			
Yes	18 (23.4%)	15 (15.6%)	33 (19.1%)
No	59 (76.6%)	81 (84.4%)	140 (80.9%)
cap.color.u			
Yes	5 (6.5%)	5 (5.2%)	10 (5.8%)
No	72 (93.5%)	91 (94.8%)	163 (94.2%)
cap.color.r			
Yes	2 (2.6%)	11 (11.5%)	13 (7.5%)
No	75 (97.4%)	85 (88.5%)	160 (92.5%)
cap.color.l			
Yes	4 (5.2%)	2 (2.1%)	6 (3.5%)
No	73 (94.8%)	94 (97.9%)	167 (96.5%)
cap.color.g			
Yes	14 (18.2%)	14 (14.6%)	28 (16.2%)

	e	p	Overall
No	63 (81.8%)	82 (85.4%)	145 (83.8%)
cap.color.w			
Yes	17 (22.1%)	18 (18.8%)	35 (20.2%)
No	60 (77.9%)	78 (81.3%)	138 (79.8%)
cap.color.k			
Yes	3 (3.9%)	6 (6.3%)	9 (5.2%)
No	74 (96.1%)	90 (93.8%)	164 (94.8%)
cap.color.p			
Yes	4 (5.2%)	7 (7.3%)	11 (6.4%)
No	73 (94.8%)	89 (92.7%)	162 (93.6%)
cap.color.o			
Yes	7 (9.1%)	15 (15.6%)	22 (12.7%)
No	70 (90.9%)	81 (84.4%)	151 (87.3%)
cap.color.b			
Yes	5 (6.5%)	2 (2.1%)	7 (4.0%)
No	72 (93.5%)	94 (97.9%)	166 (96.0%)
cap.color.y			
Yes	16 (20.8%)	28 (29.2%)	44 (25.4%)
No	61 (79.2%)	68 (70.8%)	129 (74.6%)
cap.color.e			
Yes	7 (9.1%)	18 (18.8%)	25 (14.5%)
No	70 (90.9%)	78 (81.3%)	148 (85.5%)
cap.color.n			
Yes	53 (68.8%)	57 (59.4%)	110 (63.6%)
No	24 (31.2%)	39 (40.6%)	63 (36.4%)
does.bruise.or.bleed.f			
Yes	63 (81.8%)	80 (83.3%)	143 (82.7%)
No	14 (18.2%)	16 (16.7%)	30 (17.3%)
does.bruise.or.bleed.t			
Yes	14 (18.2%)	16 (16.7%)	30 (17.3%)
No	63 (81.8%)	80 (83.3%)	143 (82.7%)
gill.attachment.e			
Yes	10 (13.0%)	6 (6.3%)	16 (9.2%)
No	67 (87.0%)	90 (93.8%)	157 (90.8%)
gill.attachment.f			
Yes	4 (5.2%)	6 (6.3%)	10 (5.8%)
No	73 (94.8%)	90 (93.8%)	163 (94.2%)
gill.attachment.x			
Yes	9 (11.7%)	12 (12.5%)	21 (12.1%)
No	68 (88.3%)	84 (87.5%)	152 (87.9%)
gill.attachment.p			
Yes	12 (15.6%)	5 (5.2%)	17 (9.8%)
No	65 (84.4%)	91 (94.8%)	156 (90.2%)
gill.attachment.a			
Yes	16 (20.8%)	24 (25.0%)	40 (23.1%)
No	61 (79.2%)	72 (75.0%)	133 (76.9%)
gill.attachment.d			
Yes	14 (18.2%)	19 (19.8%)	33 (19.1%)
No	63 (81.8%)	77 (80.2%)	140 (80.9%)
gill.attachment.s			
Yes	7 (9.1%)	9 (9.4%)	16 (9.2%)
No	70 (90.9%)	87 (90.6%)	157 (90.8%)

	e	p	Overall
gill.spacing.f			
Yes	4 (5.2%)	6 (6.3%)	10 (5.8%)
No	73 (94.8%)	90 (93.8%)	163 (94.2%)
gill.spacing.d			
Yes	13 (16.9%)	9 (9.4%)	22 (12.7%)
No	64 (83.1%)	87 (90.6%)	151 (87.3%)
gill.spacing.c			
Yes	29 (37.7%)	41 (42.7%)	70 (40.5%)
No	48 (62.3%)	55 (57.3%)	103 (59.5%)
gill.color.u			
Yes	3 (3.9%)	4 (4.2%)	7 (4.0%)
No	74 (96.1%)	92 (95.8%)	166 (96.0%)
gill.color.r			
Yes	2 (2.6%)	6 (6.3%)	8 (4.6%)
No	75 (97.4%)	90 (93.8%)	165 (95.4%)
gill.color.f			
Yes	4 (5.2%)	6 (6.3%)	10 (5.8%)
No	73 (94.8%)	90 (93.8%)	163 (94.2%)
gill.color.g			
Yes	10 (13.0%)	13 (13.5%)	23 (13.3%)
No	67 (87.0%)	83 (86.5%)	150 (86.7%)
gill.color.w			
Yes	38 (49.4%)	35 (36.5%)	73 (42.2%)
No	39 (50.6%)	61 (63.5%)	100 (57.8%)
gill.color.k			
Yes	6 (7.8%)	9 (9.4%)	15 (8.7%)
No	71 (92.2%)	87 (90.6%)	158 (91.3%)
gill.color.p			
Yes	12 (15.6%)	16 (16.7%)	28 (16.2%)
No	65 (84.4%)	80 (83.3%)	145 (83.8%)
gill.color.o			
Yes	5 (6.5%)	8 (8.3%)	13 (7.5%)
No	72 (93.5%)	88 (91.7%)	160 (92.5%)
gill.color.b			
Yes	3 (3.9%)	2 (2.1%)	5 (2.9%)
No	74 (96.1%)	94 (97.9%)	168 (97.1%)
gill.color.y			
Yes	17 (22.1%)	27 (28.1%)	44 (25.4%)
No	60 (77.9%)	69 (71.9%)	129 (74.6%)
gill.color.e			
Yes	2 (2.6%)	4 (4.2%)	6 (3.5%)
No	75 (97.4%)	92 (95.8%)	167 (96.5%)
gill.color.n			
Yes	15 (19.5%)	32 (33.3%)	47 (27.2%)
No	62 (80.5%)	64 (66.7%)	126 (72.8%)
stem.root.r			
Yes	0 (0%)	4 (4.2%)	4 (2.3%)
No	77 (100%)	92 (95.8%)	169 (97.7%)
stem.root.c			
Yes	0 (0%)	2 (2.1%)	2 (1.2%)
No	77 (100%)	94 (97.9%)	171 (98.8%)
stem.root.f			

	e	p	Overall
Yes	0 (0%)	3 (3.1%)	3 (1.7%)
No	77 (100%)	93 (96.9%)	170 (98.3%)
stem.root.b			
Yes	6 (7.8%)	3 (3.1%)	9 (5.2%)
No	71 (92.2%)	93 (96.9%)	164 (94.8%)
stem.root.s			
Yes	4 (5.2%)	5 (5.2%)	9 (5.2%)
No	73 (94.8%)	91 (94.8%)	164 (94.8%)
stem.surface.i			
Yes	5 (6.5%)	9 (9.4%)	14 (8.1%)
No	72 (93.5%)	87 (90.6%)	159 (91.9%)
stem.surface.f			
Yes	0 (0%)	3 (3.1%)	3 (1.7%)
No	77 (100%)	93 (96.9%)	170 (98.3%)
stem.surface.g			
Yes	0 (0%)	5 (5.2%)	5 (2.9%)
No	77 (100%)	91 (94.8%)	168 (97.1%)
stem.surface.k			
Yes	2 (2.6%)	3 (3.1%)	5 (2.9%)
No	75 (97.4%)	93 (96.9%)	168 (97.1%)
stem.surface.t			
Yes	4 (5.2%)	4 (4.2%)	8 (4.6%)
No	73 (94.8%)	92 (95.8%)	165 (95.4%)
stem.surface.h			
Yes	0 (0%)	2 (2.1%)	2 (1.2%)
No	77 (100%)	94 (97.9%)	171 (98.8%)
stem.surface.y			
Yes	5 (6.5%)	10 (10.4%)	15 (8.7%)
No	72 (93.5%)	86 (89.6%)	158 (91.3%)
stem.surface.s			
Yes	11 (14.3%)	8 (8.3%)	19 (11.0%)
No	66 (85.7%)	88 (91.7%)	154 (89.0%)
stem.color.u			
Yes	2 (2.6%)	5 (5.2%)	7 (4.0%)
No	75 (97.4%)	91 (94.8%)	166 (96.0%)
stem.color.r			
Yes	1 (1.3%)	3 (3.1%)	4 (2.3%)
No	76 (98.7%)	93 (96.9%)	169 (97.7%)
stem.color.l			
Yes	1 (1.3%)	1 (1.0%)	2 (1.2%)
No	76 (98.7%)	95 (99.0%)	171 (98.8%)
stem.color.g			
Yes	7 (9.1%)	7 (7.3%)	14 (8.1%)
No	70 (90.9%)	89 (92.7%)	159 (91.9%)
stem.color.f			
Yes	0 (0%)	3 (3.1%)	3 (1.7%)
No	77 (100%)	93 (96.9%)	170 (98.3%)
stem.color.w			
Yes	43 (55.8%)	31 (32.3%)	74 (42.8%)
No	34 (44.2%)	65 (67.7%)	99 (57.2%)
stem.color.k			
Yes	1 (1.3%)	3 (3.1%)	4 (2.3%)

	e	p	Overall
No	76 (98.7%)	93 (96.9%)	169 (97.7%)
stem.color.p			
Yes	1 (1.3%)	3 (3.1%)	4 (2.3%)
No	76 (98.7%)	93 (96.9%)	169 (97.7%)
stem.color.o			
Yes	5 (6.5%)	7 (7.3%)	12 (6.9%)
No	72 (93.5%)	89 (92.7%)	161 (93.1%)
stem.color.b			
Yes	1 (1.3%)	0 (0%)	1 (0.6%)
No	76 (98.7%)	96 (100%)	172 (99.4%)
stem.color.y			
Yes	9 (11.7%)	23 (24.0%)	32 (18.5%)
No	68 (88.3%)	73 (76.0%)	141 (81.5%)
stem.color.e			
Yes	3 (3.9%)	8 (8.3%)	11 (6.4%)
No	74 (96.1%)	88 (91.7%)	162 (93.6%)
stem.color.n			
Yes	27 (35.1%)	43 (44.8%)	70 (40.5%)
No	50 (64.9%)	53 (55.2%)	103 (59.5%)
veil.type.u			
Yes	3 (3.9%)	6 (6.3%)	9 (5.2%)
No	74 (96.1%)	90 (93.8%)	164 (94.8%)
veil.color.u			
Yes	0 (0%)	1 (1.0%)	1 (0.6%)
No	77 (100%)	95 (99.0%)	172 (99.4%)
veil.color.w			
Yes	8 (10.4%)	8 (8.3%)	16 (9.2%)
No	69 (89.6%)	88 (91.7%)	157 (90.8%)
veil.color.k			
Yes	0 (0%)	1 (1.0%)	1 (0.6%)
No	77 (100%)	95 (99.0%)	172 (99.4%)
veil.color.y			
Yes	2 (2.6%)	0 (0%)	2 (1.2%)
No	75 (97.4%)	96 (100%)	171 (98.8%)
veil.color.e			
Yes	0 (0%)	1 (1.0%)	1 (0.6%)
No	77 (100%)	95 (99.0%)	172 (99.4%)
veil.color.n			
Yes	0 (0%)	2 (2.1%)	2 (1.2%)
No	77 (100%)	94 (97.9%)	171 (98.8%)
has.ring.f			
Yes	60 (77.9%)	70 (72.9%)	130 (75.1%)
No	17 (22.1%)	26 (27.1%)	43 (24.9%)
has.ring.t			
Yes	17 (22.1%)	26 (27.1%)	43 (24.9%)
No	60 (77.9%)	70 (72.9%)	130 (75.1%)
ring.type.z			
Yes	0 (0%)	6 (6.3%)	6 (3.5%)
No	77 (100%)	90 (93.8%)	167 (96.5%)
ring.type.r			
Yes	3 (3.9%)	2 (2.1%)	5 (2.9%)
No	74 (96.1%)	94 (97.9%)	168 (97.1%)

	e	p	Overall
ring.type.l			
Yes	4 (5.2%)	2 (2.1%)	6 (3.5%)
No	73 (94.8%)	94 (97.9%)	167 (96.5%)
ring.type.g			
Yes	2 (2.6%)	3 (3.1%)	5 (2.9%)
No	75 (97.4%)	93 (96.9%)	168 (97.1%)
ring.type.f			
Yes	61 (79.2%)	76 (79.2%)	137 (79.2%)
No	16 (20.8%)	20 (20.8%)	36 (20.8%)
ring.type.m			
Yes	1 (1.3%)	0 (0%)	1 (0.6%)
No	76 (98.7%)	96 (100%)	172 (99.4%)
ring.type.p			
Yes	2 (2.6%)	3 (3.1%)	5 (2.9%)
No	75 (97.4%)	93 (96.9%)	168 (97.1%)
ring.type.e			
Yes	3 (3.9%)	5 (5.2%)	8 (4.6%)
No	74 (96.1%)	91 (94.8%)	165 (95.4%)
Spore.print.color.u			
Yes	0 (0%)	1 (1.0%)	1 (0.6%)
No	77 (100%)	95 (99.0%)	172 (99.4%)
Spore.print.color.r			
Yes	0 (0%)	1 (1.0%)	1 (0.6%)
No	77 (100%)	95 (99.0%)	172 (99.4%)
Spore.print.color.g			
Yes	1 (1.3%)	0 (0%)	1 (0.6%)
No	76 (98.7%)	96 (100%)	172 (99.4%)
Spore.print.color.w			
Yes	2 (2.6%)	2 (2.1%)	4 (2.3%)
No	75 (97.4%)	94 (97.9%)	169 (97.7%)
Spore.print.color.k			
Yes	1 (1.3%)	6 (6.3%)	7 (4.0%)
No	76 (98.7%)	90 (93.8%)	166 (96.0%)
Spore.print.color.p			
Yes	1 (1.3%)	3 (3.1%)	4 (2.3%)
No	76 (98.7%)	93 (96.9%)	169 (97.7%)
Spore.print.color.n			
Yes	0 (0%)	3 (3.1%)	3 (1.7%)
No	77 (100%)	93 (96.9%)	170 (98.3%)
habitat.u			
Yes	1 (1.3%)	0 (0%)	1 (0.6%)
No	76 (98.7%)	96 (100%)	172 (99.4%)
habitat.l			
Yes	11 (14.3%)	7 (7.3%)	18 (10.4%)
No	66 (85.7%)	89 (92.7%)	155 (89.6%)
habitat.g			
Yes	15 (19.5%)	23 (24.0%)	38 (22.0%)
No	62 (80.5%)	73 (76.0%)	135 (78.0%)
habitat.m			
Yes	8 (10.4%)	9 (9.4%)	17 (9.8%)
No	69 (89.6%)	87 (90.6%)	156 (90.2%)
habitat.w			

	e	p	Overall
Yes	1 (1.3%)	0 (0%)	1 (0.6%)
No	76 (98.7%)	96 (100%)	172 (99.4%)
habitat.p			
Yes	0 (0%)	2 (2.1%)	2 (1.2%)
No	77 (100%)	94 (97.9%)	171 (98.8%)
habitat.h			
Yes	5 (6.5%)	8 (8.3%)	13 (7.5%)
No	72 (93.5%)	88 (91.7%)	160 (92.5%)
habitat.d			
Yes	69 (89.6%)	82 (85.4%)	151 (87.3%)
No	8 (10.4%)	14 (14.6%)	22 (12.7%)
season.u			
Yes	61 (79.2%)	79 (82.3%)	140 (80.9%)
No	16 (20.8%)	17 (17.7%)	33 (19.1%)
season.a			
Yes	74 (96.1%)	94 (97.9%)	168 (97.1%)
No	3 (3.9%)	2 (2.1%)	5 (2.9%)
season.w			
Yes	25 (32.5%)	16 (16.7%)	41 (23.7%)
No	52 (67.5%)	80 (83.3%)	132 (76.3%)
season.s			
Yes	12 (15.6%)	11 (11.5%)	23 (13.3%)
No	65 (84.4%)	85 (88.5%)	150 (86.7%)