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1  ''' This script was use to perform the analysis on the MapTheSeas survey and create
    the plots
    used in Shannon Hoy's Thesis.  Created in March 2018.'''
2
3
4  #Import Necessary Packages
5  import pandas as pd
6  import seaborn as sbn
7  from matplotlib import pyplot as plt
8
9  # Import Processed Dataset
10 file = '/home/mapper/SurveyMonkey/MapTheSeas/EditedData/ProcessedResponses.csv'
11
12 # Set up Pandas Dataframe
13 df = pd.read_csv(file)
14 total = float(len(df))
15
16
17 # Set Style for figures
18 def set_style():
19     import seaborn as sbn
20
21     # This sets reasonable defaults for font size for
22     # a figure that will go in a paper
23     sbn.set_context("paper")
24
25     # Set the font to be serif, rather than sans
26     sbn.set(font='serif')
27
28     # Make the background white, and specify the
29     # specific font family
30     sbn.set_style("whitegrid", {
31         "font.family": "serif",
32         "font.serif": ["Times", "Palatino", "serif"]})
33
34
35 # Question 2: Response Demographic
36 # Set up figure
37 set_style()
38 # Subplots for 3 demographic questions
39 f, (ax1, ax2, ax3) = plt.subplots(ncols=3, sharey=True)
40 f.suptitle('Response Demographics', fontweight='bold')
41 f.set_size_inches(8, 5)
42 # sbn.set_palette('GnBu_d')
43 # USA or International Subplot
44 Question2A = sbn.countplot(x="U.S.A. or International", data=df, ax=ax1)
45 for p in Question2A.patches:
46     height = p.get_height()
47     Question2A.text(p.get_x()+p.get_width()/2., height + 3, '{:1.0f}'.format(height),
48                    ha="center")
49 Question2A.xaxis.set label text("U.S. or International", fontweight='bold')
50 Question2A.yaxis.set label text("counts", fontweight='bold')
51 # East or West Coast Subplot
52 Question2B = sbn.countplot(x="U.S. East or West Coast", data=df, ax=ax2)
53 for p in Question2B.patches:
54     height = p.get_height()
55     Question2B.text(p.get_x()+p.get_width()/2., height + 3, '{:1.0f}'.format(height),
56                    ha="center")
57 Question2B.xaxis.set label text("U.S. Location", fontweight='bold')
58 Question2B.yaxis.set label text("counts", fontweight='bold')
59 # Lake or Sea Subplot
60 Question2C = sbn.countplot(x="Lake or Sea", data=df, ax=ax3)
61 for p in Question2C.patches:
62     height = p.get_height()
63     Question2C.text(p.get_x()+p.get_width()/2., height + 3, '{:1.0f}'.format(height),
64                    ha="center")
65 Question2C.xaxis.set label text("Lake or Sea", fontweight='bold')
66 Question2C.yaxis.set label text("counts", fontweight='bold')
67 # Export Figure

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68 filename =
69     '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question2.png'
70 f.savefig(filename, dpi=300, format='png')
71
72 # Question 3: How long do you typically go out for
73 f, ax1 = plt.subplots(ncols=1)
74 f.suptitle('Typical Duration of Trip', fontweight='bold')
75 f.set size inches(7, 5)
76 sbn.set palette('GnBu d')
77 Question3 = sbn.countplot(x="Question 3", data=df, order=['A few hours',
78                                                         'Overnight trips',
79                                                         'An entire day',
80                                                         'All of the above'])
81 Question3.xaxis.set label text(" ", fontweight='bold')
82 Question3.yaxis.set label text("counts", fontweight='bold')
83 for p in Question3.patches:
84     height = p.get height()
85     Question3.text(p.get x()+p.get width()/2., height + 1, '{:1.0f}'.format(height),
86                  ha="center")
87 # Export Figure
88 filename =
89     '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question3.png'
90 f.savefig(filename, dpi=300, format='png')
91
92 # Question 3: Subplots
93 f, (ax1, ax2, ax3) = plt.subplots(nrows=3)
94 f.suptitle('Typical Duration of Trip', fontweight='bold')
95 f.set size inches(7, 10)
96 sbn.set palette('deep', 2)
97 # U.S.A. vs International
98 Question3A = sbn.countplot(x="Question 3", ax=ax1, data=df, hue='U.S.A. or
99 International',
100                          order=['A few hours', 'An entire day', 'Overnight trips',
101                                'All of the above'])
102 Question3A.xaxis.set label text(" ", fontweight='bold')
103 Question3A.yaxis.set label text("counts", fontweight='bold')
104 Question3A.legend(loc='upper right', title='U.S. or International')
105 for p in Question3A.patches:
106     x = p.get bbox().get points()[0]
107     y = p.get bbox().get points()[1]
108     Question3A.annotate('{:1.0f}'.format(y), (x.mean(), y),
109                      ha='center', va='bottom')
110 # East vs. West
111 sbn.set palette('deep', 3)
112 Question3B = sbn.countplot(x="Question 3", ax=ax2, data=df, hue='U.S. East or West
113 Coast',
114                          order=['A few hours', 'An entire day', 'Overnight trips',
115                                'All of the above'])
116 Question3B.xaxis.set label text(" ", fontweight='bold')
117 Question3B.yaxis.set label text("counts", fontweight='bold')
118 for p in Question3B.patches:
119     x = p.get bbox().get points()[0]
120     y = p.get bbox().get points()[1]
121     Question3B.annotate('{:1.0f}'.format(y), (x.mean(), y),
122                      ha='center', va='bottom')
123 Question3B.legend(loc='upper right', title='U.S. Location')
124 # Sea vs. Lake
125 sbn.set palette('deep', 2)
126 Question3C = sbn.countplot(x="Question 3", ax=ax3, data=df, hue='Lake or Sea',
127                          order=['A few hours', 'An entire day', 'Overnight trips',
128                                'All of the above'])
129 Question3C.xaxis.set label text(" ", fontweight='bold')
130 Question3C.yaxis.set label text("counts", fontweight='bold')
131 Question3C.legend(loc='upper right', title='Sea or Lake')
132 for p in Question3C.patches:
133     x = p.get_bbox().get_points()[0]

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132     y = p.get bbox().get points()[1, 1]
133     Question3C.annotate('{:1.0f}'.format(y), (x.mean(), y),
134         ha='center', va='bottom')
135 # Export Figure
136 filename =
137     '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question3 subplots.
138     png'
139 f.savefig(filename, dpi=300, format='png')
140
141 # Question 4: Do you go out year round?
142 f=plt.figure()
143 f.suptitle('Do you go out year round?', fontweight='bold')
144 set style()
145 f.set size inches(7, 5)
146 sbn.set palette('GnBu d')
147 Question4 = sbn.countplot(x="Question 4", data=df)
148 Question4.xaxis.set label text(" ", fontweight='bold')
149 Question4.yaxis.set label text("counts", fontweight='bold')
150 for p in Question4.patches:
151     x = p.get bbox().get points()[1, 0]
152     y = p.get bbox().get points()[1, 1]
153     Question4.annotate('{:1.0f}'.format(y), (x.mean(), y),
154         ha='center', va='bottom')
155 # Export Figure
156 filename =
157     '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question4.png'
158 f.savefig(filename, dpi=300, format='png')
159
160 # Month's Active
161 filename = '/home/mapper/SurveyMonkey/MapTheSeas/EditedData/ActiveMonths.csv'
162 months = pd.read csv(filename)
163 sbn.set palette('inferno', 12)
164 set style()
165 list(months)
166 x = ['Jan', 'Feb', 'Mar', 'Apr', 'May', 'Jun', 'Jul', 'Aug', 'Sep', 'Oct', 'Nov', 'Dec']
167 y = [(months['Jan'] == 'Y').sum(), (months['Feb'] == 'Y').sum(),
168     (months['Mar'] == 'Y').sum(), (months['Apr'] == 'Y').sum(),
169     (months['May'] == 'Y').sum(), (months['Jun'] == 'Y').sum(),
170     (months['Jul'] == 'Y').sum(), (months['Aug'] == 'Y').sum(),
171     (months['Sep'] == 'Y').sum(), (months['Oct'] == 'Y').sum(),
172     (months['Nov'] == 'Y').sum(), (months['Dec'] == 'Y').sum())
173 fig = plt.figure()
174 fig.set size inches(8, 5)
175 ax = plt.axes()
176 monthplt = sbn.barplot(x=x, y=y, color='0.35')
177 for p in monthplt.patches:
178     x = p.get bbox().get points()[1, 0]
179     y = p.get bbox().get points()[1, 1]
180     monthplt.annotate('{:1.0f}'.format(y), (x.mean(), y),
181         ha='center', va='bottom')
182 ax.set title('Months Active', fontsize=16, fontweight='bold')
183 ax.set xlabel('Month', fontweight='bold')
184 ax.set ylabel('counts', fontweight='bold')
185 # Export Figure
186 filename =
187     '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/MonthsActive.png'
188 f.savefig(filename, dpi=300, format='png')
189
190 # Question 5: Do you have depth sounding equipment?
191 f = plt.figure()
192 f.suptitle('Do you have depth sounding equipment?', fontweight='bold')
193 f.set size inches(7, 5)
194 sbn.set palette('GnBu d')
195 Question5 = sbn.countplot(x="Question 5", data=df)

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196 Question5.yaxis.set label text("counts", fontweight='bold')
197 Question5.xaxis.set label text(" ", fontweight='bold')
198 for p in Question5.patches:
199     x = p.get bbox().get points()[0, 0]
200     y = p.get bbox().get points()[1, 1]
201     Question5.annotate('{:1.0f}'.format(y), (x.mean(), y),
202                        ha='center', va='bottom')
203 # Export Figure
204 filename =
205     '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question5.png'
206 f.savefig(filename, dpi=300, format='png')
207
208
209 # Question 5: Type of Sonar
210 f = plt.figure()
211 f.suptitle('Make of Depth Sounder', fontweight='bold')
212 f.set size inches(7, 5)
213 sbn.set palette('GnBu_d')
214 Question5A = sbn.countplot(y="Question 5 Add", data=df, color='0.35',
215                           order=df['Question 5 Add'].value counts().index)
216 Question5A.yaxis.set label text(" ", fontweight='bold')
217 Question5A.xaxis.set label text("counts", fontweight='bold')
218 for p in Question5A.patches:
219     x = p.get bbox().get points()[1, 0]
220     y = p.get bbox().get points()[0, 1]
221     Question5A.annotate('{:1.0f}'.format(x), (x, y.mean()),
222                        ha='left', va='center')
223 # Export Figure
224 filename =
225     '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question5A.png'
226 f.savefig(filename, dpi=300, format='png')
227
228
229 # Question 5: Type of Sonar by Lake or Sea
230 f = plt.figure()
231 f.suptitle('Make of Depth Sounder', fontweight='bold')
232 f.set size inches(8, 6)
233 sbn.set palette('deep', 2)
234 Question5B = sbn.countplot(y="Question 5 Add", data=df,
235                           order=df['Question 5 Add'].value counts().index,
236                           hue='Lake or Sea')
237 Question5B.yaxis.set label text(" ", fontweight='bold')
238 Question5B.xaxis.set label text("counts", fontweight='bold')
239 Question5B.legend(loc='lower right', title='Sea or Lake')
240 for p in Question5B.patches:
241     x = p.get bbox().get points()[1, 0]
242     y = p.get bbox().get points()[0, 1]
243     Question5B.annotate('{:1.0f}'.format(x), (x, y.mean()),
244                        ha='left', va='center')
245 # Export Figure
246 filename =
247     '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question5B.png'
248 f.savefig(filename, dpi=300, format='png')
249
250
251 # Question 5: Type of Sonar by U.S. or International
252 f = plt.figure()
253 f.suptitle('Make of Depth Sounder', fontweight='bold')
254 f.set size inches(8, 6)
255 sbn.set palette('deep', 2)
256 Question5C = sbn.countplot(y="Question 5 Add", data=df,
257                           order=df['Question 5 Add'].value counts().index,
258                           hue='U.S.A. or International')
259 Question5C.yaxis.set label text(" ", fontweight='bold')
260 Question5C.xaxis.set label text("counts", fontweight='bold')

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260 Question5C.legend(loc='lower right', title='U.S. or International')
261 for p in Question5C.patches:
262     x = p.get_bbox().get_points()[1, 0]
263     y = p.get_bbox().get_points()[0, 1]
264     Question5C.annotate('{:1.0f}'.format(x), (x, y.mean()),
265                          ha='left', va='center')
266 # Export Figure
267 filename =
268     '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question5C.png'
269 f.savefig(filename, dpi=300, format='png')
270
271
272 # Question 5: Type of Sonar by U.S. or International
273 f = plt.figure()
274 f.suptitle('Make of Depth Sounder', fontweight='bold')
275 f.set_size_inches(8, 6)
276 sbn.set_palette('deep', 3)
277 Question5D = sbn.countplot(y="Question 5 Add", data=df,
278                             order=df['Question 5 Add'].value_counts().index,
279                             hue='U.S. East or West Coast')
280 Question5D.yaxis.set_label_text(" ", fontweight='bold')
281 Question5D.xaxis.set_label_text("counts", fontweight='bold')
282 Question5D.legend(loc='lower right', title='U.S. Location')
283 for p in Question5D.patches:
284     x = p.get_bbox().get_points()[1, 0]
285     y = p.get_bbox().get_points()[0, 1]
286     Question5D.annotate('{:1.0f}'.format(x), (x, y.mean()),
287                          ha='left', va='center')
288 # Export Figure
289 filename =
290     '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question5D.png'
291 f.savefig(filename, dpi=300, format='png')
292
293
294 # Question 6: Do you have a GPS on your vessel?
295 f = plt.figure()
296 f.suptitle('Do you have a GPS on your vessel?', fontweight='bold')
297 f.set_size_inches(7, 5)
298 sbn.set_palette('GnBu_d')
299 Question6 = sbn.countplot(x="Question 6", data=df)
300 Question6.yaxis.set_label_text("counts", fontweight='bold')
301 Question6.xaxis.set_label_text(" ", fontweight='bold')
302 for p in Question6.patches:
303     x = p.get_bbox().get_points()[0, 1]
304     y = p.get_bbox().get_points()[1, 1]
305     Question6.annotate('{:1.0f}'.format(y), (x.mean(), y),
306                          ha='center', va='bottom')
307 # Export Figure
308 filename =
309     '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question6.png'
310 f.savefig(filename, dpi=300, format='png')
311
312
313 # Make of GPS Equipment
314 df2 = df[['Question 6P', 'Question 6P2', 'Question 6P3']].copy()
315 Counts = df2.apply(pd.Series.value_counts)
316 Counts['Sum'] = Counts.sum(axis=1)
317 f = plt.figure()
318 f.suptitle('Make of GPS', fontweight='bold')
319 f.set_size_inches(7, 5)
320 Question6A = sbn.barplot(x=list(Counts['Sum']), y=list(Counts.index), data=Counts,
321                           color='0.35',
322                           order=['Garmin', 'Raymarine', 'Furuno', 'Lowrance',
323                                   'B & G', 'Simrad', 'Standard Horizon', 'Hummingbird',
324                                   'Airmar', 'Bad Elf', 'Digital Yacht', 'Navman', 'Si-Tex'])

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325 Question6A.yaxis.set label text(" ", fontweight='bold')
326 Question6A.xaxis.set label text("counts", fontweight='bold')
327 for p in Question6A.patches:
328     x = p.get bbox().get points()[1, 0]
329     y = p.get bbox().get points()[1, 1]
330     Question6A.annotate('{:1.0f}'.format(x), (x, y.mean()),
331                         ha='left', va='center')
332 # Export Figure
333 filename =
334     '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question6A.png'
335 f.savefig(filename, dpi=300, format='png')
336
337
338 # Question 7: Do you have an AIS unit?
339 f = plt.figure()
340 f.suptitle('Do you have an AIS?', fontweight='bold')
341 f.set size inches(7, 5)
342 sbn.set palette('GnBu d')
343 Question7 = sbn.countplot(x="Question 7", data=df)
344 Question7.yaxis.set label text("counts", fontweight='bold')
345 Question7.xaxis.set label text(" ", fontweight='bold')
346 for p in Question7.patches:
347     x = p.get bbox().get points()[1, 0]
348     y = p.get bbox().get points()[1, 1]
349     Question7.annotate('{:1.0f}'.format(y), (x.mean(), y),
350                        ha='center', va='bottom')
351 # Export Figure
352 filename =
353     '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question7.png'
354 f.savefig(filename, dpi=300, format='png')
355
356
357 # Question 8: What do you use for navigation?
358 f = plt.figure()
359 f.suptitle('What do you use for navigation?', fontweight='bold')
360 f.set size inches(8, 5)
361 sbn.set palette('GnBu d')
362 y = [int(df['Question 8S1'].value counts()), int(df['Question 8S2'].value counts()),
363      int(df['Question 8S3'].value counts()), int(df['Question 8S4'].value counts()),
364      int(df['Question 8S5'].value counts())]
365 x = [df['Question 8S1'].value counts().index.tolist()[0],
366      df['Question 8S2'].value counts().index.tolist()[0],
367      df['Question 8S3'].value counts().index.tolist()[0],
368      df['Question 8S4'].value counts().index.tolist()[0],
369      df['Question 8S5'].value counts().index.tolist()[0]]
370 Question8 = sbn.barplot(x=y, y=x, data=df, order=['GPS Chart Plotter',
371          'Phone or Tablet Application',
372          'Paper Charts',
373          'Navigational Software on Laptop',
374          'None of the Above'])
375 Question8.xaxis.set label text("counts", fontweight='bold')
376 Question8.yaxis.set label text(" ", fontweight='bold')
377 for p in Question8.patches:
378     x = p.get bbox().get points()[1, 0]
379     y = p.get bbox().get points()[1, 1]
380     Question8.annotate('{:1.0f}'.format(x), (x, y.mean()),
381                        ha='left', va='center')
382 # Export Figure
383 filename =
384     '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question8.png'
385 f.savefig(filename, dpi=300, format='png')
386
387
388 # Navigation Software
389 df2 = df[['Question 8P1', 'Question 8P2', 'Question 8P3']].copy()

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390 Counts = df2.apply(pd.Series.value counts)
391 Counts['Sum'] = Counts.sum(axis=1)
392 f = plt.figure()
393 f.suptitle('Navigational Software', fontweight='bold')
394 f.set size inches(7, 5)
395 Question8A = sbn.barplot(x=list(Counts['Sum']), y=list(Counts.index), data=Counts,
396                          color='0.35',
397                          order=['Navionics', 'Garmin BlueChart', 'OpenCPN', 'C-MAP',
398                                'iNavX', 'MX Mariner', 'Nobeltec', 'Coastal Explorer',
399                                'Free Charts', 'Google Maps', 'iSailGPS', 'Marine Navigator',
400                                'Nautic Insight', 'Skipper', 'TRANSAS ECDIS'])
401 Question8A.yaxis.set label text(" ", fontweight='bold')
402 Question8A.xaxis.set label text("counts", fontweight='bold')
403 for p in Question8A.patches:
404     x = p.get bbox().get points()[1, 0]
405     y = p.get bbox().get points()[1, 1]
406     Question8A.annotate('{:1.0f}'.format(x), (x, y.mean()),
407                          ha='left', va='center')
408 # Export Figure
409 filename =
410 '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question8A.png'
411 f.savefig(filename, dpi=300, format='png')
412
413
414 # Question 9: Do you pay for your navigation service?
415 f = plt.figure()
416 f.suptitle('Do you pay for your navigation service?', fontweight='bold')
417 f.set size inches(7, 5)
418 sbn.set palette('GnBu_d')
419 Question9 = sbn.countplot(x="Question 9", data=df)
420 Question9.yaxis.set label text("counts", fontweight='bold')
421 Question9.xaxis.set label text(" ", fontweight='bold')
422 for p in Question9.patches:
423     x = p.get bbox().get points()[1, 0]
424     y = p.get bbox().get points()[1, 1]
425     Question9.annotate('{:1.0f}'.format(y), (x.mean(), y),
426                          ha='center', va='bottom')
427 # Export Figure
428 filename =
429 '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question9.png'
430 f.savefig(filename, dpi=300, format='png')
431
432
433 # Question 9A: How much?
434 f = plt.figure()
435 f.suptitle('How much do you pay for your navigation service?', fontweight='bold')
436 f.set size inches(7, 5)
437 set style()
438 sbn.set palette('deep', 2)
439 Question9A = sbn.countplot(x="Question 9P2", data=df, hue="Question 9P1",
440                            order=['0 - 25', '25 - 50', '50 - 100', '100 - 200',
441                                    '200 - 300'])
442 Question9A.xaxis.set label text("Dollars", fontweight='bold')
443 Question9A.yaxis.set label text("counts", fontweight='bold')
444 for p in Question9A.patches:
445     x = p.get bbox().get points()[1, 0]
446     y = p.get bbox().get points()[1, 1]
447     Question9A.annotate('{:1.0f}'.format(y), (x.mean(), y),
448                          ha='center', va='bottom')
449 Question9A.legend(loc='upper right', title='')
450 # Export Figure
451 filename =
452 '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question9A.png'
453 f.savefig(filename, dpi=300, format='png')
454

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455
456 # Question 10: Do you always have a smartphone on the boat with you?
457 f = plt.figure()
458 f.suptitle('Do you always have a smartphone on the boat with you?', fontweight='bold')
459 f.set size inches(7, 5)
460 set style()
461 sbn.set palette('GnBu d')
462 Question10 = sbn.countplot(x="Question 10", data=df, order=['Yes', 'No', 'Does not
own '
463                                     'smart
device'])
464 Question10.yaxis.set label text("counts", fontweight='bold')
465 Question10.xaxis.set label text(" ", fontweight='bold')
466 for p in Question10.patches:
467     x = p.get bbox().get points()[0]
468     y = p.get bbox().get points()[1]
469     Question10.annotate('{:1.0f}'.format(y), (x.mean(), y),
470                          ha='center', va='bottom')
471 # Export Figure
472 filename =
'/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question10.png'
473 f.savefig(filename, dpi=300, format='png')
474
475
476
477 # Question 11: Would you be willing to share location information
478 # from your phone/tablet or other navigation system?
479 f = plt.figure()
480 f.suptitle('Would you be willing to share location information \n from your '
481           'phone/tablet or other navigation system?', fontweight='bold')
482 f.set size inches(7, 5)
483 set style()
484 sbn.set palette('GnBu d')
485 Question11 = sbn.countplot(x="Question 11", data=df)
486 Question11.yaxis.set label text("counts", fontweight='bold')
487 Question11.xaxis.set label text(" ", fontweight='bold')
488 for p in Question11.patches:
489     x = p.get bbox().get points()[0]
490     y = p.get bbox().get points()[1]
491     Question11.annotate('{:1.0f}'.format(y), (x.mean(), y),
492                          ha='center', va='bottom')
493 # Export Figure
494 filename =
'/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question11.png'
495 f.savefig(filename, dpi=300, format='png')
496
497
498
499 #Question 12: What acquisition method would you prefer?
500 f = plt.figure()
501 f.suptitle('What acquisition method would you prefer?', fontweight='bold')
502 f.set size inches(7, 5)
503 set style()
504 sbn.set palette('GnBu d')
505 Question12 = sbn.countplot(y="Question 12", data=df, order=[
506     'Active data collection', 'Passive data collection',
507     'Option to switch'])
508 Question12.yaxis.set label text(" ", fontweight='bold')
509 Question12.xaxis.set label text("counts", fontweight='bold')
510 for p in Question12.patches:
511     x = p.get bbox().get points()[1, 0]
512     y = p.get bbox().get points()[0, 1]
513     Question12.annotate('{:1.0f}'.format(x), (x, y.mean()),
514                          ha='left', va='center')
515 # Export Figure
516 filename =
'/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question12.png'
517 f.savefig(filename, dpi=300, format='png')

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518
519
520
521 #Question 13: What method of data delivery would you be most likely to use?
522 f = plt.figure()
523 f.suptitle('What method of data delivery would you be most likely to use?',
524           fontweight='bold')
525 f.set size inches(7, 5)
526 set style()
527 sbn.set palette('GnBu d')
528 Question13 = sbn.countplot(x="Question 13", data=df)
529 Question13.xaxis.set label text(" ", fontweight='bold')
530 Question13.yaxis.set label text("counts", fontweight='bold')
531 for p in Question13.patches:
532     x = p.get bbox().get points()[0, 0]
533     y = p.get bbox().get points()[1, 1]
534     Question13.annotate('{:1.0f}'.format(y), (x.mean(), y),
535                        ha='center', va='bottom')
536 # Export Figure
537 filename =
538 '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question13.png'
539 f.savefig(filename, dpi=300, format='png')
540
541 #Question 14: Would you be willing to slightly detour to collect
542 # data if a site of interest showed up along your route?
543 f = plt.figure()
544 f.suptitle('Would you be willing to slightly detour to collect data if a \n site of
545           ' showed up along your route?', fontweight='bold')
546 f.set size inches(7, 5)
547 set style()
548 sbn.set palette('GnBu d')
549 Question14 = sbn.countplot(x="Question 14", data=df, order=['Yes', 'No', 'It would
550 depend.'])
551 Question14.xaxis.set label text(" ", fontweight='bold')
552 Question14.yaxis.set label text("counts", fontweight='bold')
553 for p in Question14.patches:
554     x = p.get bbox().get points()[0, 0]
555     y = p.get bbox().get points()[1, 1]
556     Question14.annotate('{:1.0f}'.format(y), (x.mean(), y),
557                        ha='center', va='bottom')
558 # Export Figure
559 filename =
560 '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question14.png'
561 f.savefig(filename, dpi=300, format='png')
562
563 #Question 15: Would you be willing to go to locations where data is needed,
564 # even if they were out of your way?
565 f = plt.figure()
566 f.suptitle('Would you be willing to go to locations where data is needed, \n'
567           'even if they were out of your way?', fontweight='bold')
568 f.set size inches(7, 5)
569 set style()
570 sbn.set palette('GnBu d')
571 Question15 = sbn.countplot(x="Question 15", data=df, order=['Yes', 'No'])
572 Question15.xaxis.set label text(" ", fontweight='bold')
573 Question15.yaxis.set label text("counts", fontweight='bold')
574 for p in Question15.patches:
575     x = p.get bbox().get points()[0, 0]
576     y = p.get bbox().get points()[1, 1]
577     Question15.annotate('{:1.0f}'.format(y), (x.mean(), y),
578                        ha='center', va='bottom')
579 # Export Figure
580 filename =

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581 '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question15.png'
582 f.savefig(filename, dpi=300, format='png')
583
584
585 #Question 16: What is the maximum distance you would be willing to
586 # travel out of the way to collect data?
587 f = plt.figure()
588 f.suptitle('What is the maximum distance you would be willing to \n '
589           'travel out of the way to collect data?', fontweight='bold')
590 f.set size inches(7, 5)
591 set style()
592 sbn.set palette('GnBu d')
593 Question16 = sbn.countplot(x="Question 16", data=df, order=['1 nm', '2 nm', '5 nm',
594           'More'])
595 Question16.xaxis.set label text("Nautical Miles ", fontweight='bold')
596 Question16.yaxis.set label text("counts", fontweight='bold')
597 for p in Question16.patches:
598     x = p.get bbox().get points()[0, 0]
599     y = p.get bbox().get points()[1, 1]
600     Question16.annotate('{:1.0f}'.format(y), (x.mean(), y),
601           ha='center', va='bottom')
602 # Export Figure
603 filename =
604 '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question16.png'
605 f.savefig(filename, dpi=300, format='png')
606
607
608 # Question 17: What sort of incentives would motivate you to collect
609 # this crowd-sourced data? (select all that apply)
610 f = plt.figure()
611 f.suptitle('What sort of incentives would motivate you to collect \n '
612           'this crowdsourced data?', fontweight='bold')
613 f.set size inches(8, 5)
614 sbn.set palette('GnBu d', 8)
615 y = [int(df['Question 17S1'].value counts()), int(df['Question 17S2'].value counts()),
616       int(df['Question 17S3'].value counts()), int(df['Question 17S4'].value counts()),
617       int(df['Question 17S5'].value counts()), int(df['Question 17S6'].value counts()),
618       int(df['Question 17S7'].value counts()), int(df['Question 17S8'].value counts())]
619 x = [df['Question 17S1'].value counts().index.tolist()[0],
620       df['Question 17S2'].value counts().index.tolist()[0],
621       df['Question 17S3'].value counts().index.tolist()[0],
622       df['Question 17S4'].value counts().index.tolist()[0],
623       df['Question 17S5'].value counts().index.tolist()[0],
624       df['Question 17S6'].value counts().index.tolist()[0],
625       df['Question 17S7'].value counts().index.tolist()[0],
626       df['Question 17S8'].value counts().index.tolist()[0]]
627 Question17 = sbn.barplot(x=y, y=x, data=df, order=['Updated Data', 'Increased
628 Knowledge',
629           'Streamlined Navigational App',
630           'Social Network',
631           'Monetary Reward',
632           'Increased Reputation',
633           'Gamification',
634           'Certificate of Recognition'])
635 Question17.xaxis.set label text("counts", fontweight='bold')
636 Question17.yaxis.set label text(" ", fontweight='bold')
637 for p in Question17.patches:
638     x = p.get bbox().get points()[1, 0]
639     y = p.get bbox().get points()[0, 1]
640     Question17.annotate('{:1.0f}'.format(x), (x, y.mean()),
641           ha='left', va='center')
642 # Export Figure
643 filename =
644 '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question17.png'
645 f.savefig(filename, dpi=300, format='png')
646

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644
645
646 #Question 18: Of these listed, which incentive would most interest you? (Insert Number)
647 df2 = df[['Question 18P1', 'Question 18P2']].copy()
648 Counts = df2.apply(pd.Series.value counts)
649 Counts['Sum'] = Counts.sum(axis=1)
650 y = ['Increased Knowledge', 'Updated Data', 'Streamlined App', 'Social Network',
651      'Increased Reputation', 'Certificate of Recognition', 'Gamification',
652      'Monetary Reward']
653 x = list(Counts['Sum'])
654 f = plt.figure()
655 f.suptitle('Which incentive would most interest you?', fontweight='bold')
656 f.set size inches(7, 5)
657 Question18 = sbn.barplot(x=x, y=y, data=Counts,
658                          color='0.35', order=['Updated Data', 'Streamlined App',
659                          'Increased Knowledge', 'Monetary Reward',
660                          'Social Network', 'Certificate of Recognition',
661                          'Gamification', 'Increased
662                          Reputation'])
663
664 Question18.yaxis.set label text(" ", fontweight='bold')
665 Question18.xaxis.set label text("counts", fontweight='bold')
666 for p in Question18.patches:
667     x = p.get bbox().get points()[1, 0]
668     y = p.get bbox().get points()[1, 1]
669     Question18.annotate('{:1.0f}'.format(x), (x, y.mean()),
670                        ha='left', va='center')
671 # Export Figure
672 filename =
673 '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question18.png'
674 f.savefig(filename, dpi=300, format='png')
675
676
677 # Question 19: Would you be willing to pay a small fee,
678 # if in exchange you received new hardware, local seafloor data,
679 # or the incentive of your choice?
680 f = plt.figure()
681 f.suptitle('Would you be willing to pay a small fee, if in exchange you \n'
682           'received new hardware, local seafloor data, or the'
683           'incentive of your choice?', fontweight='bold')
684 f.set size inches(7, 5)
685 set style()
686 sbn.set palette('GnBu d')
687 Question19 = sbn.countplot(x="Question 19", data=df, order=['Yes', 'No'])
688 Question19.xaxis.set label text(" ", fontweight='bold')
689 Question19.yaxis.set label text("counts", fontweight='bold')
690 for p in Question19.patches:
691     x = p.get bbox().get points()[1, 0]
692     y = p.get bbox().get points()[1, 1]
693     Question19.annotate('{:1.0f}'.format(y), (x.mean(), y),
694                        ha='center', va='bottom')
695 # Export Figure
696 filename =
697 '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question19.png'
698 f.savefig(filename, dpi=300, format='png')
699
700
701 # Question 20: Of these, for which would you most likely pay a small fee?
702 # (New Hardware or Updated Data)
703 f = plt.figure()
704 f.suptitle('Question 20: Of these, for which would you most '
705           'likely pay \n a small fee? (New Hardware or Updated Data)',
706           fontweight='bold')
707 f.set_size_inches(7, 5)

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705 set style()
706 sbn.set palette('GnBu d')
707 Question20 = sbn.countplot(x="Question 20", data=df)
708 Question20.xaxis.set label text(" ", fontweight='bold')
709 Question20.yaxis.set label text("counts", fontweight='bold')
710 for p in Question20.patches:
711     x = p.get bbox().get points()[0]
712     y = p.get bbox().get points()[1]
713     Question20.annotate('{:1.0f}'.format(y), (x.mean(), y),
714                         ha='center', va='bottom')
715 # Export Figure
716 filename =
717     '/home/mapper/SurveyMonkey/MapTheSeas/Products/SurveyResponsesPLTs/Question20.png'
718 f.savefig(filename, dpi=300, format='png')
719
720
721
722
723

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