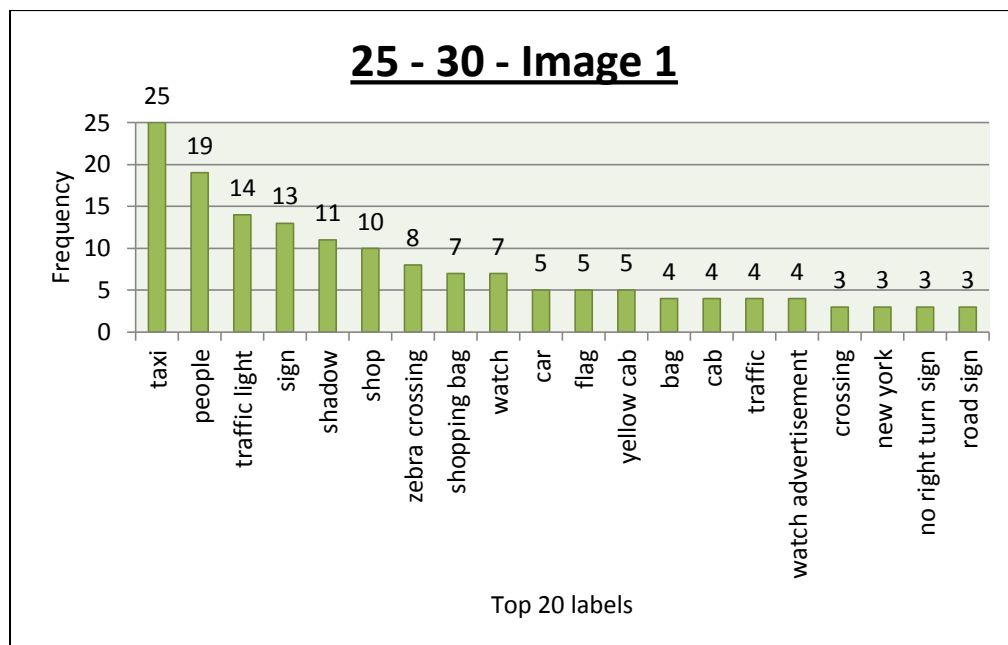
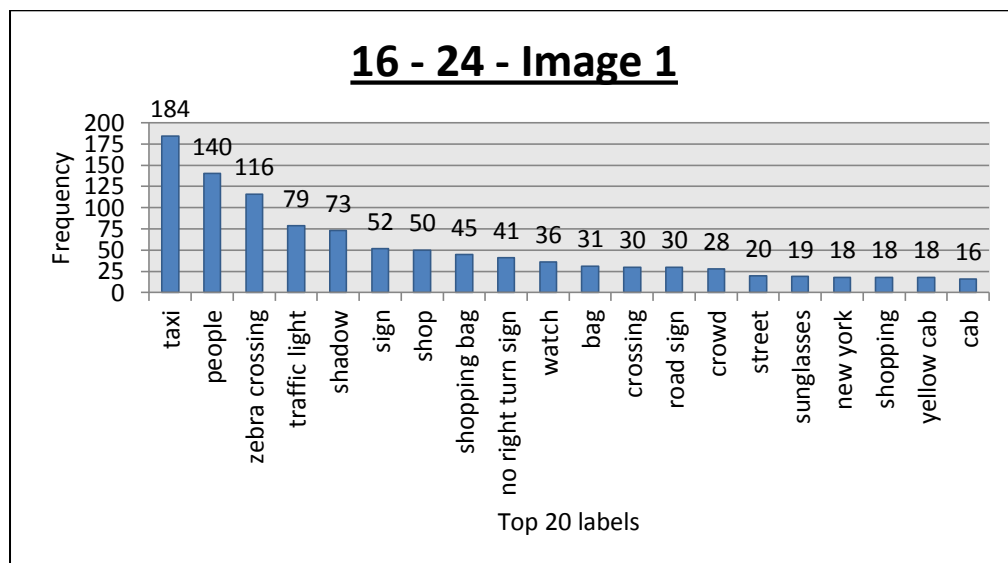
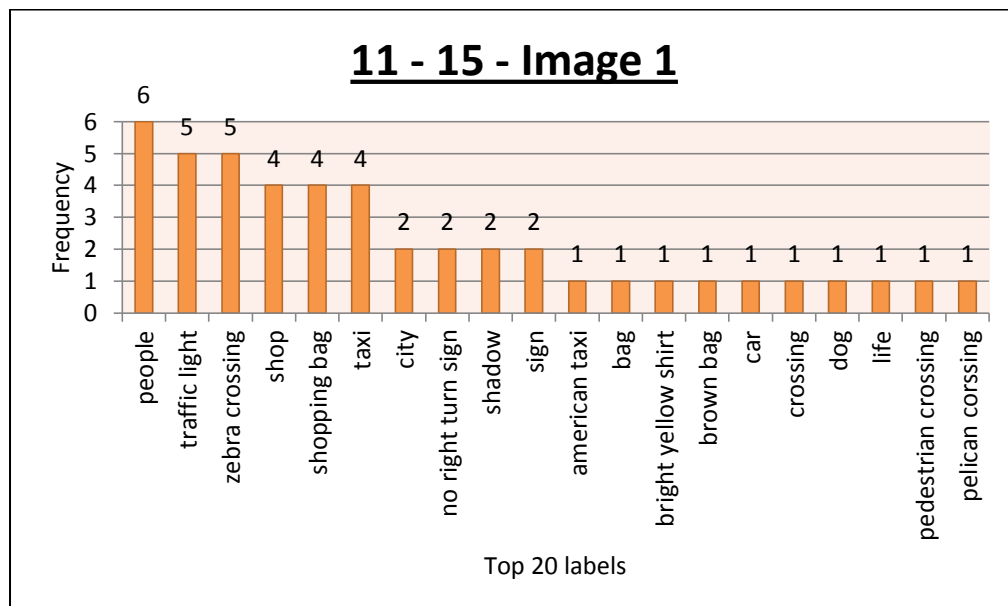
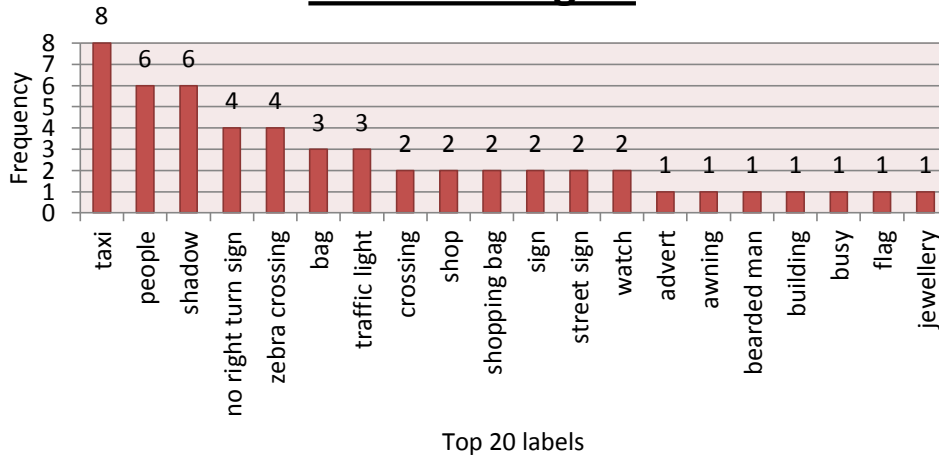


Image 1

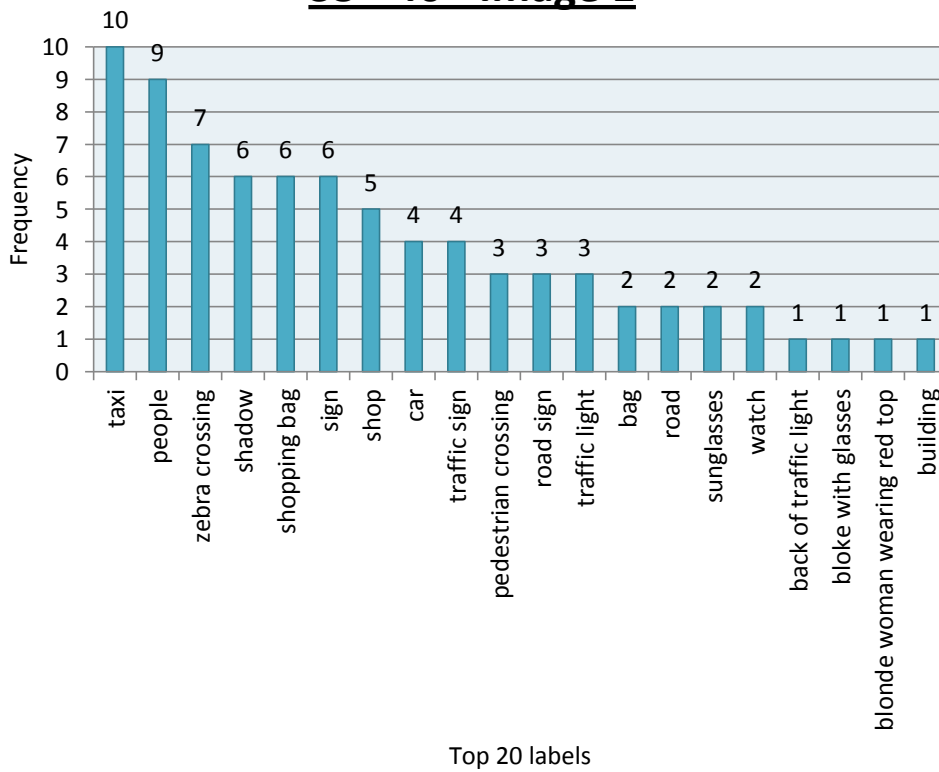
Top 20 most frequent annotations



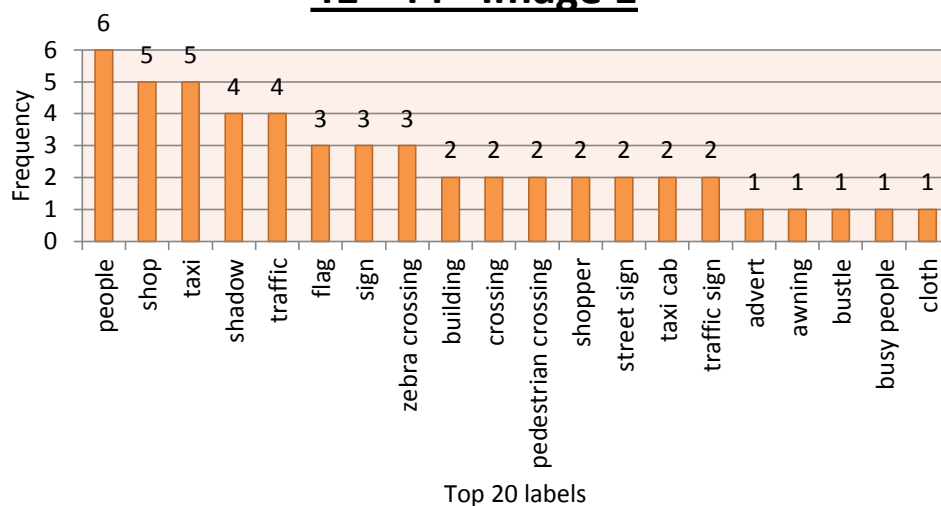
31 - 34 - Image 1



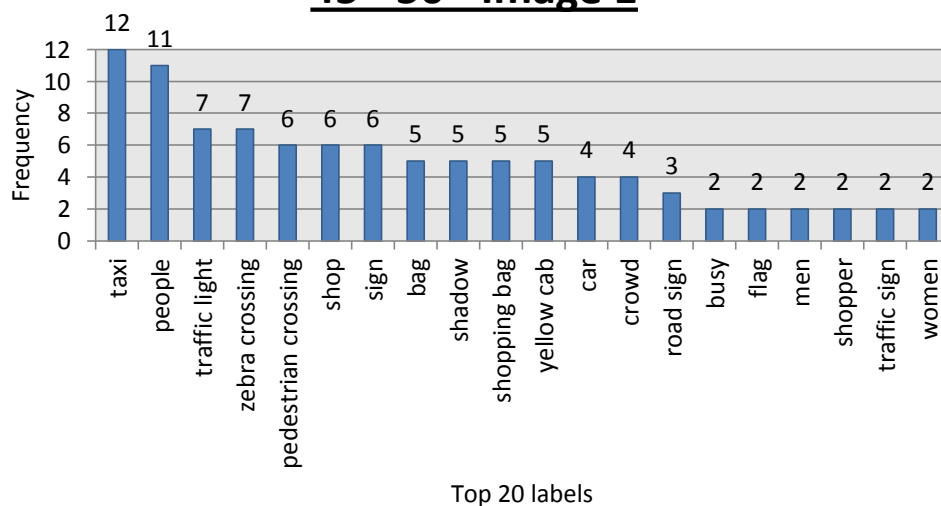
35 - 40 - Image 1



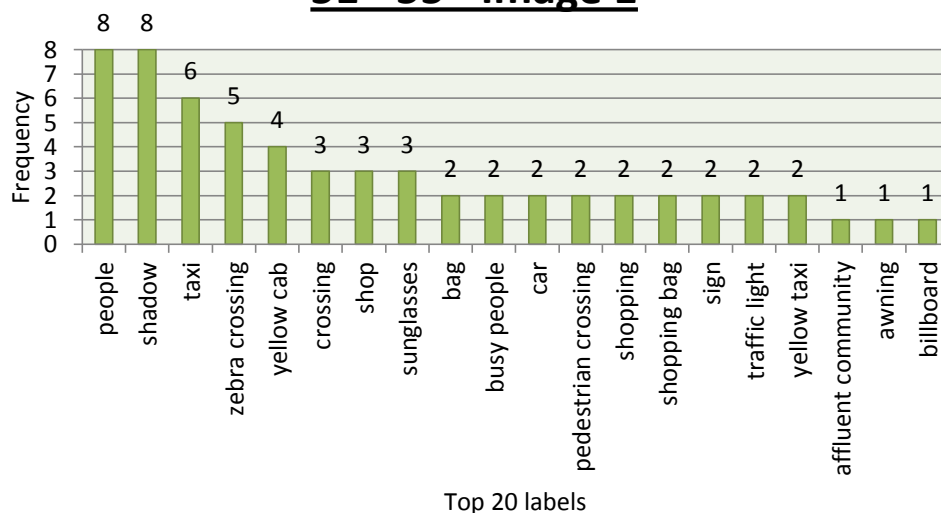
41 - 44 - Image 1



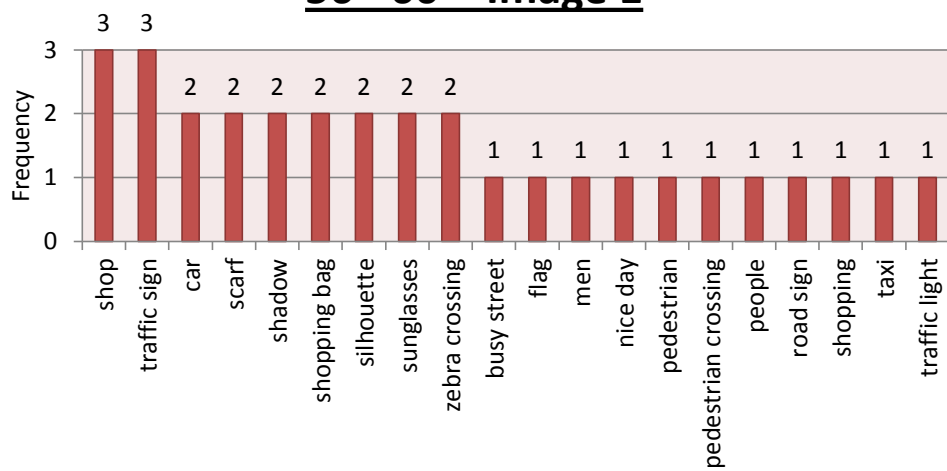
45 - 50 - Image 1



51 - 55 - Image 1

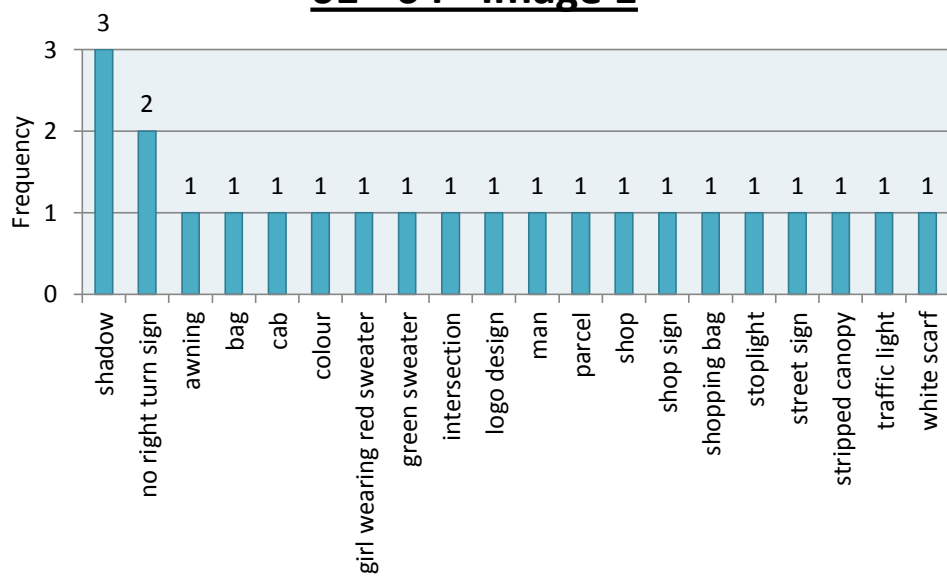


56 - 60 - Image 1



Top 20 labels

61 - 64 - Image 1



Top 20 labels

Collocation results

11-15		
Stem	Collocation	Frequency
traffic light	2	5
zebra crossing	2	5
shopping bag	2	4
no right turn sign	4	2
bright yellow shirt	3	1
watch advertisement	2	1
brown bag	2	1
pedestrian crossing	2	1
american taxi	2	1
pelican crossing	2	1
taxi cab	2	1

16-24		
Stem	Collocation	Frequency
zebra crossing	2	116
traffic light	2	79
shopping bag	2	45
no right turn sign	4	41
road sign	2	30
new york	2	18
yellow cab	2	18
watch advertisement	2	16
yellow taxi	2	15
pedestrian crossing	2	13
traffic sign	2	11
man wearing sunglasses	3	9
street sign	2	9
sign post	2	8
cross walk	2	6
green jumper	2	6
paper bag	2	6
busy street	2	5
no turn sign	3	4
brown paper bag	3	4

25-30		
Stem	Collocation	Frequency
traffic light	2	14
zebra crossing	2	8
shopping bag	2	7
yellow cab	2	5
watch advertisement	2	4
new york	2	3
no right turn sign	4	3
road sign	2	3
cross walk	2	2
crowd of people	3	2
do not turn sign	4	2
hot blonde	2	2
shop sign	2	2
street sign	2	2
traffic sign	2	2
back of traffic light	4	1
busy place	2	1
dots of bright colour	4	1
girl with small carton box	5	1
green jumper	2	1

31-34		
Stem	Collocation	Frequency
no right turn sign	4	4
zebra crossing	2	4
traffic light	2	3
shopping bag	2	2
street sign	2	2
shadow of people on pavement	5	1
lady wearing white shirt	4	1
woman carrying paper bag	4	1
line of cabs	3	1
person carrying box	3	1
road sign	2	1
white scarf	2	1
pedestrian crossing	2	1
yellow cab	2	1
bearded man	2	1

35-40		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
zebra crossing	2	7
shopping bag	2	6
traffic sign	2	4
pedestrian crossing	2	3
road sign	2	3
traffic light	2	3
red and white striped awning	5	1
blonde woman wearing red top	5	1
woman wearing white scarf	4	1
new york taxi cab	4	1
lady touching her face	4	1
back of traffic light	4	1
sunlight on road	3	1
crowd of people	3	1
bloke with glasses	3	1
new york taxi	3	1
cross walk stripe	3	1
sign post	2	1
yellow cab	2	1
times square	2	1

45-50		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
zebra crossing	2	7
traffic light	2	7
pedestrian crossing	2	6
shopping bag	2	5
yellow cab	2	5
road sign	2	3
traffic sign	2	2
no right turn road sign	5	1
red and white awning	4	1
woman wearing green jumper	4	1
woman wearing bright top	4	1
no right turn sign	4	1
strip shop blind	3	1
hustle and bustle	3	1
man wearing sunglasses	3	1
new york cab	3	1
nice day	2	1
yellow taxi	2	1
busy street	2	1
red jumper	2	1

41-44		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
zebra crossing	2	3
pedestrian crossing	2	2
traffic sign	2	2
taxi cab	2	2
street sign	2	2
man wearing sunglasses	3	1
lime green top	3	1
darth vader	2	1
pink object	2	1
white scarf	2	1
shop awning	2	1
road sign	2	1
busy people	2	1
shopping bag	2	1
shop front	2	1
yellow vehicle	2	1
cross walk	2	1

51-55		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
zebra crossing	2	5
yellow cab	2	4
shopping bag	2	2
pedestrian crossing	2	2
traffic light	2	2
busy people	2	2
yellow taxi	2	2
many people wearing sunglasses	4	1
woman wearing green cardigan	4	1
crowd of people	3	1
road sign	2	1
white face	2	1
affluent community	2	1
bright sunshine	2	1
traffic sign	2	1
striped parasol	2	1

56-60		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
traffic sign	2	3
zebra crossing	2	2
shopping bag	2	2
woman wearing brown coat	4	1
nice day	2	1
busy street	2	1
pedestrian crossing	2	1
road sign	2	1
traffic light	2	1
yellow car	2	1

61-64		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
no right turn sign	4	2
girl wearing red sweater	4	1
yellow sedan cab	3	1
yellow hatchback cab	3	1
green sweater	2	1
white scarf	2	1
shop sign	2	1
yellow cab	2	1
traffic light	2	1
zebra crossing	2	1
stripped canopy	2	1
street sign	2	1
shopping bag	2	1
logo design	2	1

Over 65		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
yellow taxi	2	3
people with shopping	3	1
traffic signal	2	1
traffic light	2	1
traffic crossing	2	1
road crossing	2	1
four cars	2	1
five men	2	1
pedestrian crossing	2	1
road sign	2	1

Co-occurrence

11 - 15		
Count	Stem1	Stem2
4	traffic light	zebra crossing
3	people	traffic light
3	people	zebra crossing
3	shopping bag	taxi
3	taxi	traffic light
2	city	people
2	people	shop
2	people	shopping bag
2	people	sign
2	people	taxi

25 - 30		
Count	Stem1	Stem2
13	people	taxi
11	people	shop
9	people	sign
8	shop	sign
7	shadow	sign
7	advert	taxi
7	bag	sunglasses
7	building	taxi
7	crossing	traffic light
7	people	yellow cab

35 - 40		
Count	Stem1	Stem2
4	shadow	taxi
4	taxi	zebra crossing
3	car	people
3	car	sign
3	people	shop
3	people	sign
3	people	taxi
3	people	zebra crossing
3	shadow	shopping bag
3	shadow	zebra crossing

16 - 24		
Count	Stem1	Stem2
97	people	taxi
72	taxi	zebra crossing
55	people	zebra crossing
55	taxi	traffic light
35	shadow	taxi
34	people	traffic light
33	sign	taxi
33	traffic light	zebra crossing
32	people	shop
32	people	sign

31 - 34		
Count	Stem1	Stem2
5	people	taxi
4	shadow	taxi
3	people	shadow
3	shadow	stripe
3	taxi	zebra crossing
2	bag	shadow
2	bag	taxi
2	crossing	taxi
2	no right turn sign	taxi
2	people	shop

41 - 44		
Count	Stem1	Stem2
4	people	taxi
3	people	shop
3	shop	taxi
2	crossing	people
2	crossing	taxi
2	pedestrian crossing	shop
2	pedestrian crossing	traffic sign
2	people	shadow
2	people	sign
2	shadow	taxi

45 - 50		
Count	Stem1	Stem2
6	people	taxi
5	people	traffic light
5	people	zebra crossing
4	bag	sign
4	bag	taxi
4	car	people
4	pedestrian crossing	taxi
4	people	shop
4	taxi	traffic light
4	traffic light	zebra crossing

56 - 60		
Count	Stem1	Stem2
2	scarf	shop
2	scarf	silhouette
2	scarf	sunglasses
2	scarf	traffic sign
2	shadow	zebra crossing
2	shop	silhouette
2	shop	sunglasses
2	shop	traffic sign
2	silhouette	sunglasses
2	silhouette	traffic sign

51 - 55		
Count	Stem1	Stem2
4	people	taxi
3	people	shadow
3	people	zebra crossing
3	shadow	taxi
3	shadow	zebra crossing
3	sunglasses	yellow cab
2	car	people
2	crossing	shadow
2	crossing	shop
2	crossing	taxi

Over 65		
Count	Stem1	Stem2
5	shadow	yellow taxi
4	people	shadow
4	people	yellow taxi
2	people	road crossing
2	people	traffic crossing
2	people	traffic light
2	people	traffic signal
2	road crossing	shadow
2	road crossing	yellow taxi
2	shadow	sign

Co-occurrence PMI

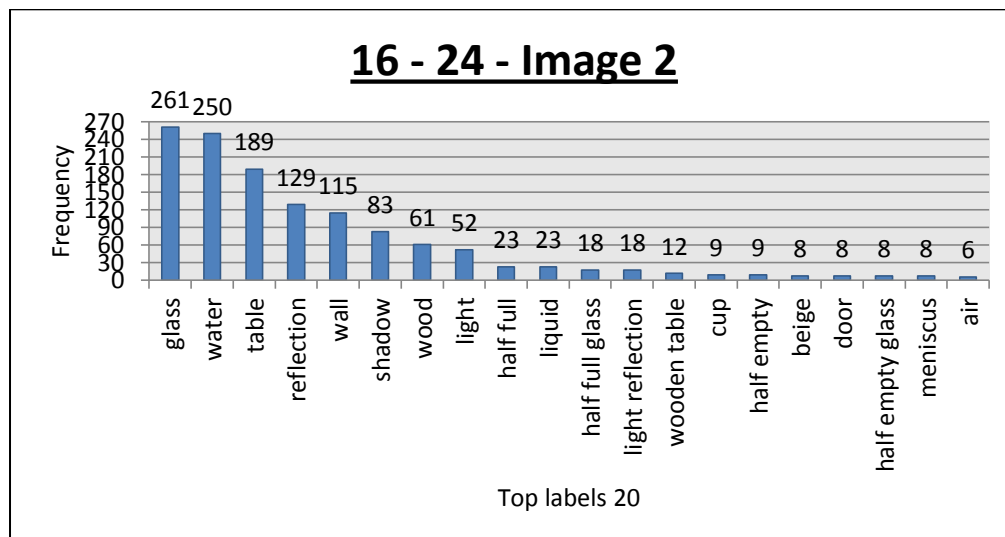
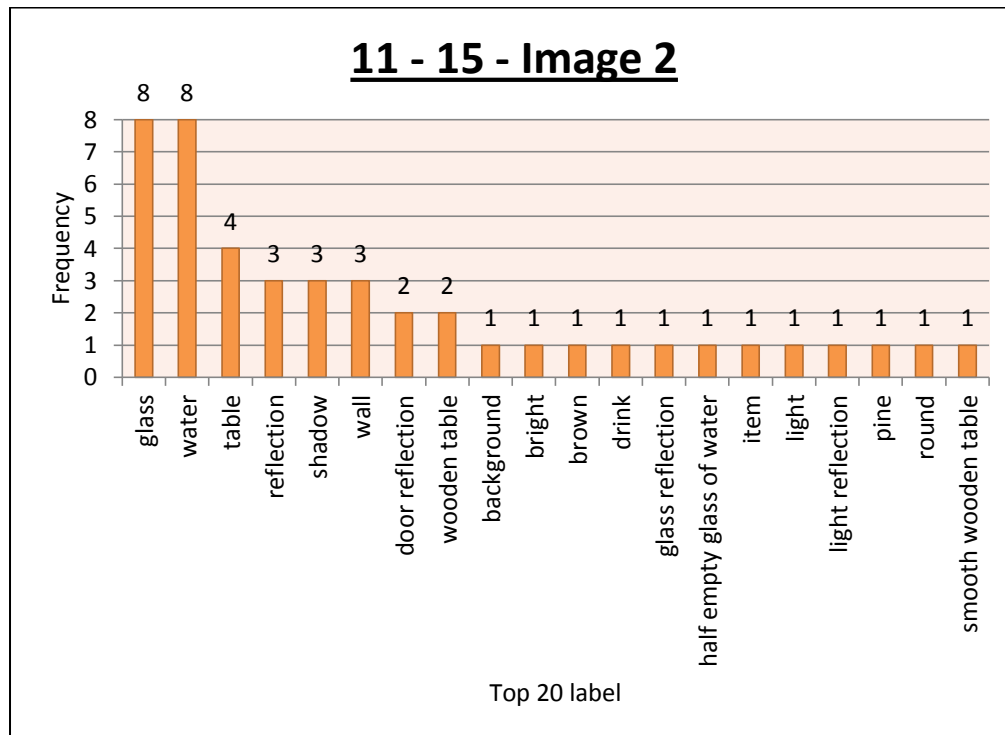
S1 = Stem1 frequency, S2 = S2 frequency, C = co-occurrence frequency

11-15						16-24					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
shopping bag	taxi	4	4	3	0.97	arrow	war	2	1	8	3.80
city	people	2	6	2	0.92	hat	road	1	12	7	2.97
people	sign	6	2	2	0.92	man	women	7	3	1	2.92
traffic light	zebra crossing	5	5	4	0.90	light	war	6	1	3	2.90
taxi	traffic light	4	5	3	0.88	men	women	2	3	3	2.90
shop	zebra crossing	4	5	3	0.88	light	movement	6	2	2	2.42
people	traffic light	6	5	3	0.70	advertisement for watch	store	3	4	2	2.42
shop	traffic light	4	5	2	0.70	brown coat	traffic light	3	79	4	2.36
shopping bag	traffic light	4	5	2	0.70	pedestrian	traffic light	5	79	5	2.35
taxi	zebra crossing	4	5	2	0.70	many people	watch advertisement	4	16	8	2.30
25-30						31-34					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
human	traffic	2	4	9	2.4	shadow	stripe	6	1	2	1.4
flag	traffic	5	4	1	2.1	crossing	taxi	2	8	5	1.3
cab	traffic	4	4	5	1.9	shadow	sign	6	2	3	1.2
light	shadow	2	11	6	1.8	shop	taxi	2	8	4	1.2
cab	human	4	2	2	1.8	shopping bag	zebra crossing	2	4	2	1.2
human	watch advertisement	2	4	2	1.8	people	shop	6	2	2	1.1
bag	traffic light	4	14	3	1.7	people	sign	6	2	2	1.1
flag	human	5	2	2	1.7	sign	taxi	2	8	2	0.9
cab	watch advertisement	4	4	3	1.7	bag	shadow	3	6	2	0.9
no right turn sign	traffic light	3	14	7	1.6	taxi	zebra crossing	8	4	3	0.8
35-40						41-44					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
sign	sunglasses	6	2	2	1.3	pedestrian crossing	traffic sign	2	2	3	1.7
car	sign	4	6	3	1.2	pedestrian crossing	shop	2	5	2	1.1
people	road	9	2	2	1.1	shop	shopper	5	2	2	1.1
road sign	shadow	3	6	2	1.1	crossing	taxi	2	5	2	1.1
pedestrian crossing	shopping bag	3	6	2	1.1	shop	traffic sign	5	2	2	1.1
pedestrian crossing	sign	3	6	2	1.1	crossing	people	2	6	2	1.1
car	shop	4	5	2	1.1	people	sign	6	3	3	1.1
bag	taxi	2	10	2	1.1	shadow	zebra crossing	4	3	2	1.1
road sign	zebra crossing	3	7	2	1	people	taxi	6	5	4	1
shadow	shopping bag	6	6	3	1	shadow	taxi	4	5	2	0.8

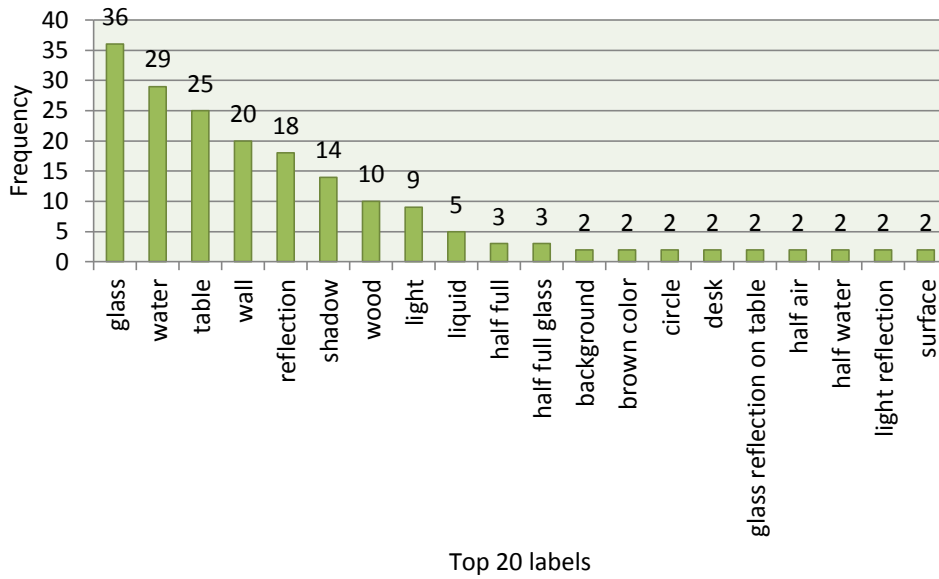
45-50						51-55					
<i>Stem1</i>	<i>Stem2</i>	<i>S1</i>	<i>S2</i>	<i>C</i>	<i>PMI</i>	<i>Stem1</i>	<i>Stem2</i>	<i>S1</i>	<i>S2</i>	<i>C</i>	<i>PMI</i>
men	women	2	2	3	2	shopping bag	sunglasses	2	3	2	1.4
shadow	shopper	5	2	2	1.4	shopping bag	zebra crossing	2	5	3	1.4
shopper	yellow cab	2	5	2	1.4	shopping bag	yellow cab	2	4	2	1.3
road sign	zebra crossing	3	7	4	1.4	crossing	shop	3	3	2	1.2
car	shop	4	6	4	1.4	crossing	taxi	3	6	4	1.2
men	taxi	2	12	4	1.4	shopping	zebra crossing	2	5	2	1.2
people	road sign	11	3	4	1.2	people	shopping	8	2	3	1.2
shadow	yellow cab	5	5	3	1.2	shop	taxi	3	6	3	1.1
bag	crowd	5	4	2	1.1	shopping	taxi	2	6	2	1.1
road sign	traffic light	3	7	2	1.1	sunglasses	yellow cab	3	4	2	1.1
56-60						Over 65					
<i>Stem1</i>	<i>Stem2</i>	<i>S1</i>	<i>S2</i>	<i>C</i>	<i>PMI</i>	<i>Stem1</i>	<i>Stem2</i>	<i>S1</i>	<i>S2</i>	<i>C</i>	<i>PMI</i>
scarf	silhouette	2	2	2	1.2	shadow	traffic crossing	4	1	4	1.5
scarf	sunglasses	2	2	2	1.2	road crossing	yellow taxi	1	3	2	1.3
silhouette	sunglasses	2	2	2	1.2	traffic crossing	yellow taxi	1	3	2	1.3
shadow	zebra crossing	2	2	2	1.2	traffic light	yellow taxi	1	3	2	1.3
scarf	shop	2	3	2	1.1	traffic signal	yellow taxi	1	3	2	1.3
shop	silhouette	3	2	2	1.1	people	road crossing	4	1	2	1.2
shop	sunglasses	3	2	2	1.1	road crossing	shadow	1	4	2	1.2
scarf	traffic sign	2	3	2	1.1	people	traffic crossing	4	1	2	1.2
silhouette	traffic sign	2	3	2	1.1	people	traffic light	4	1	2	1.2
sunglasses	traffic sign	2	3	2	1.1	shadow	traffic light	4	1	2	1.2

Image 2

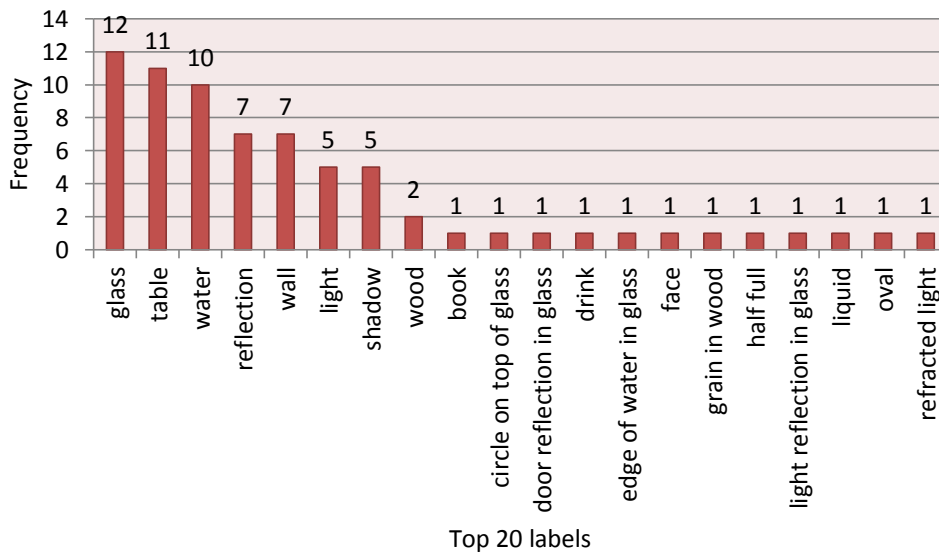
Top 20 most frequent annotations



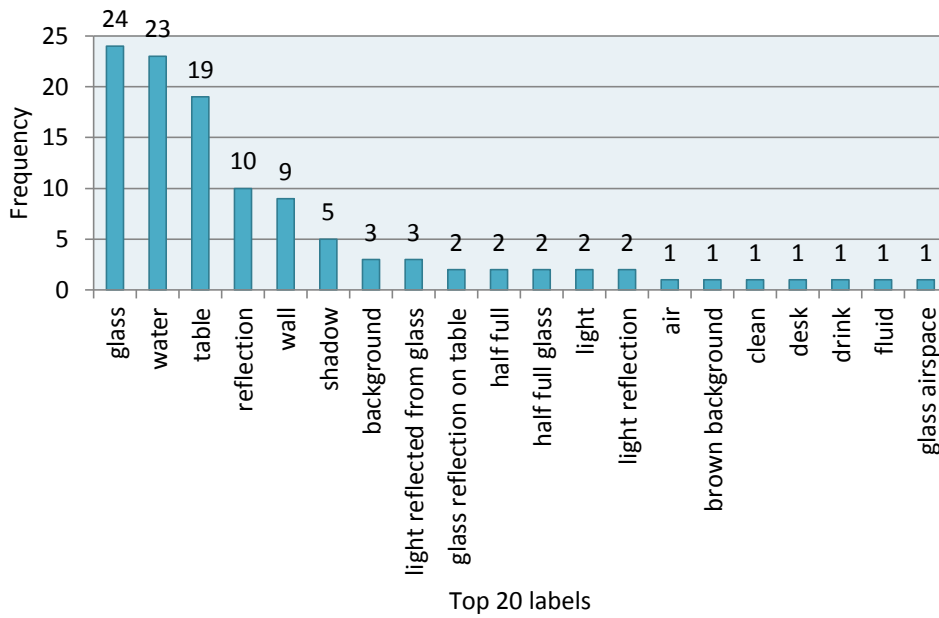
25 - 30 - Image 2



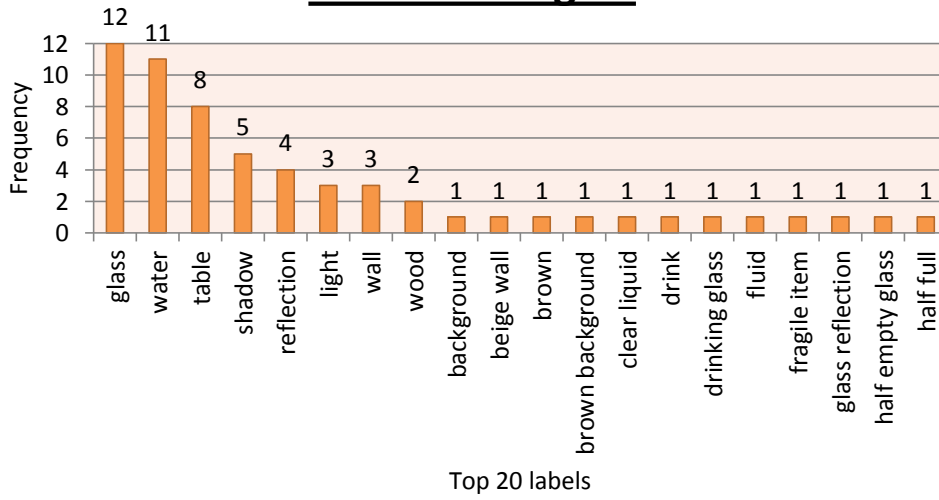
31 - 34 - Image 2



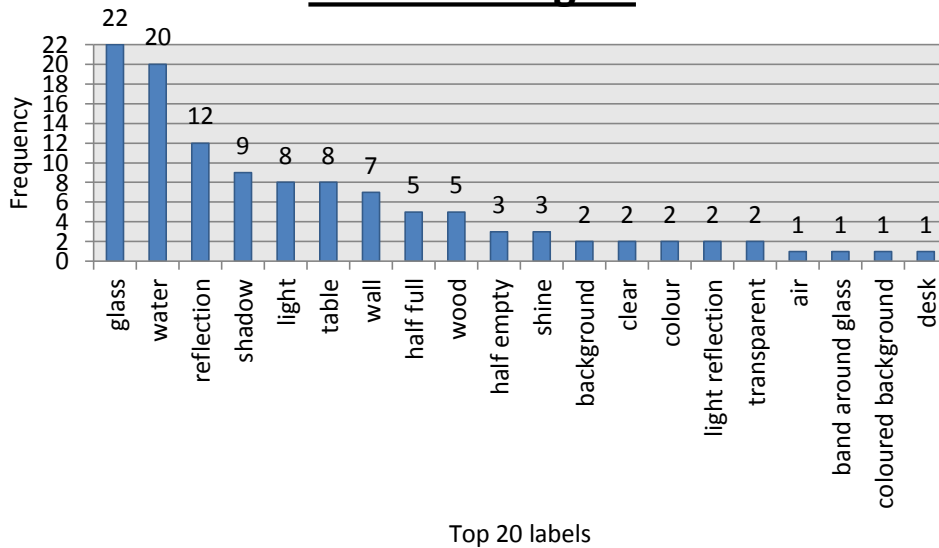
35 - 40 - Image 2



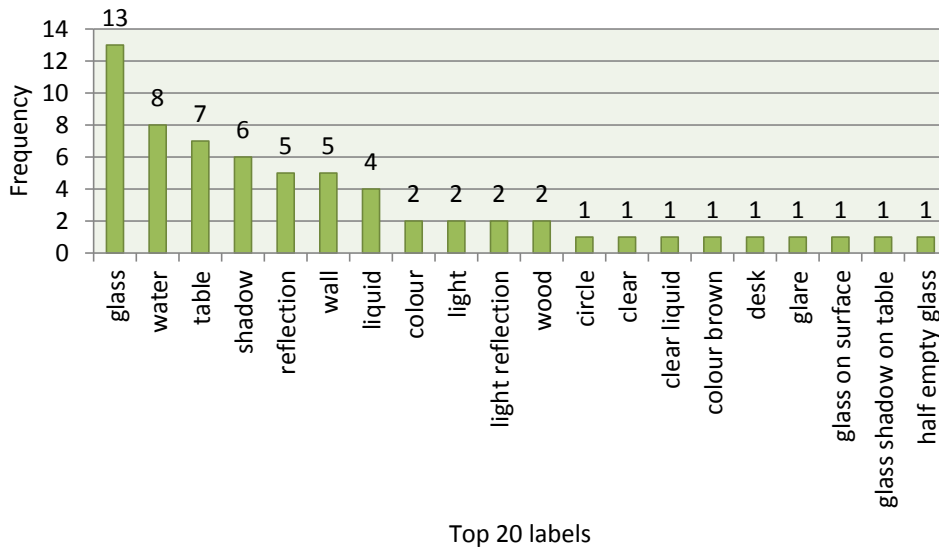
41 - 44 - Image 2



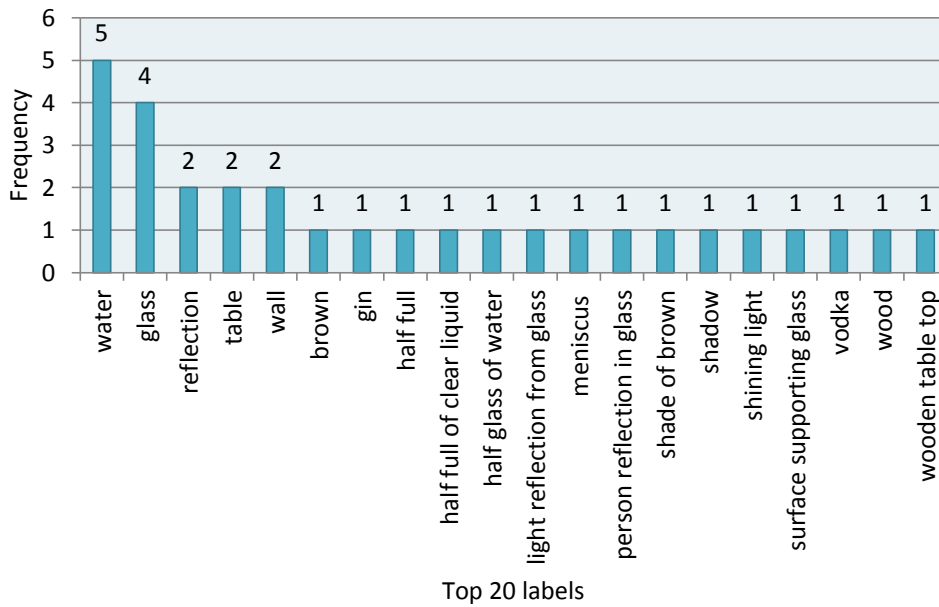
45 - 50 - Image 2



51 - 55 - Image 2



61 - 64 - Image 2



Collocations

11-15		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
wooden table	2	2
door reflection	2	2
half empty glass of water	5	1
smooth wooden table	3	1
light reflection	2	1
wooden surface	2	1
glass reflection	2	1
wood grind	2	1
white background	2	1

25-30		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
half full glass	3	3
half full	2	3
glass reflection on table	4	2
light reflection	2	2
transparent	2	2
half air	2	2
half water	2	2
brown color	2	2
half full glass of water	5	1
two marks on glass rim	5	1
vertical light reflection in water	5	1
face reflection in glass	4	1
wood reflection in glass	4	1
horizontal line in wood	4	1
water level line	3	1
clean drinking water	3	1
glass of water	3	1
shadow on table	3	1
glass shadow	2	1
table surface	2	1

16-24		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
half full	2	23
half full glass	3	18
light reflection	2	18
wooden table	2	12
half empty	2	9
half empty glass	3	8
half full glass of water	5	6
door reflection in glass	4	6
glass reflection	2	6
reflection on table	3	5
wooden surface	2	5
white wall	2	5
shadow of glass	3	4
clear liquid	2	4
glass reflection on table	4	3
glass of water	3	3
door reflection	2	3
half full half empty	4	2
light from above	3	2
shadow behind glass	3	2

31-34		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
circle on top of glass	5	1
edge of water in glass	5	1
door reflection in glass	4	2
light reflection in glass	4	1
shine on table	3	1
grain in wood	3	1
rim of glass	3	1
refracted light	2	1
half full	2	4
wood grain	2	1

35-40		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>

41-44		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>

light reflected from glass	4	3
glass reflection on table	4	2
half full glass	3	2
half full	2	2
light reflection	2	2
glass position on table surface	5	1
half full container	3	1
half empty glass	3	1
reflection on table	3	1
wooden surface	2	1
brown background	2	1
glass airspace	2	1
white background	2	1

half empty glass	3	3
half full glass	3	3
shadow of glass	3	2
vertical stripe	2	1
horizontal grain	2	1
transparent	2	1
half full	2	4
beige wall	2	1
fragile item	2	1
solid surface	2	1
drinking glass	2	1
brown background	2	1
hard surface	2	1
clear liquid	2	3
glass reflection	2	2
table top	2	1

45-50		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
half full	2	5
half empty	2	3
light reflection	2	2
half empty glass	3	1
square glass bottom	3	1
band around glass	3	1
wooden worktop	2	1
empty glass	2	1
coloured background	2	1
wooden surface	2	1
painted background	2	1
table top	2	1

51-55		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
light reflection	2	2
light shining in glass	4	1
glass shadow on table	4	1
half empty glass	3	1
half full glass	3	1
glass on surface	3	1
wall in background	3	1
clear liquid	2	1
wooden surface	2	1
horizontal line	2	1
colour brown	2	1
water line	2	1
work surface	2	1

56-60		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
halo around glass	3	1
clear fluid	2	1
work surface	2	1
half full	2	4

Over 65		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
yellow line	2	1
white line	2	1
table top	2	2

61-64		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
half full of clear liquid	5	1
half glass of water	4	1
person reflection in glass	4	1
light reflection from glass	4	1
surface supporting glass	3	1
shade of brown	3	1
wooden table top	3	1
shining light	2	1
half full	2	4

Co-occurrence

11 - 15		
Count	Stem1	Stem2
8	glass	water
4	glass	table
4	table	water
3	glass	reflection
3	glass	wall
3	reflection	water
3	wall	water
2	glass	wooden table
2	table	wall
2	water	wooden table

16 - 24		
Count	Stem1	Stem2
227	glass	water
174	glass	table
170	table	water
111	glass	reflection
107	glass	wall
106	wall	water
100	reflection	water
95	table	wall
78	reflection	table
71	glass	shadow

25 - 30		
Count	Stem1	Stem2
28	glass	water
24	glass	table
19	glass	wall
19	table	water
18	wall	water
15	table	wall
12	glass	reflection
12	glass	shadow
10	reflection	water
10	shadow	water

31 - 34		
Count	Stem1	Stem2
11	glass	table
10	glass	water
9	table	water
6	glass	wall
5	glass	reflection
5	reflection	table
5	table	wall
5	wall	water
4	light	reflection
4	reflection	water

35 - 40		
Count	Stem1	Stem2
24	glass	water
21	glass	table
20	table	water
10	glass	reflection
9	glass	wall
9	reflection	water
8	wall	water
7	reflection	table
7	table	wall
5	glass	light reflected from glass

41 - 44		
Count	Stem1	Stem2
11	glass	water
8	glass	table
8	table	water
5	glass	shadow
5	shadow	table
5	shadow	water
3	glass	light
3	glass	wall
3	light	water
3	wall	water

45 - 50		
Count	Stem1	Stem2
18	glass	water
9	glass	reflection
8	glass	table
7	glass	shadow
7	reflection	water
6	glass	light
6	glass	wall
6	light	water
6	shadow	water
6	table	water

56 - 60		
Count	Stem1	Stem2
4	glass	table
4	glass	water
4	table	water
3	glass	reflection
3	reflection	table
3	reflection	water
3	shadow	table
2	door	glass
2	door	reflection
2	door	table

Over 65		
Count	Stem1	Stem2
6	glass	water
5	glass	wall
5	reflection	wall
5	wall	water
4	glass	reflection
4	glass	tabletop
4	reflection	tabletop
4	reflection	water
4	tabletop	wall
4	tabletop	water

51 - 55		
Count	Stem1	Stem2
8	glass	water
7	glass	table
6	table	water
5	glass	reflection
5	glass	shadow
5	glass	wall
3	glass	liquid
3	reflection	wall
3	shadow	water
3	table	wall

61 - 64		
Count	Stem1	Stem2
3	glass	water
2	glass	table
2	glass	wall
2	reflection	water
2	table	water
2	wall	water

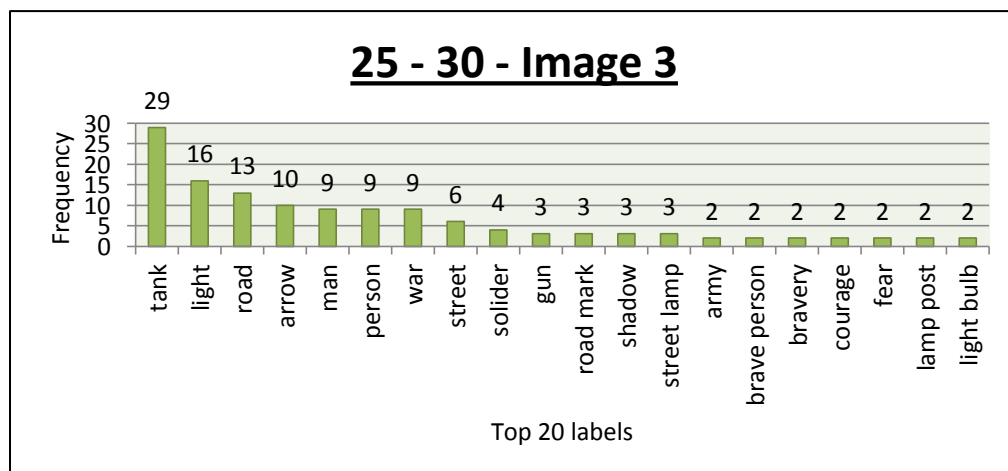
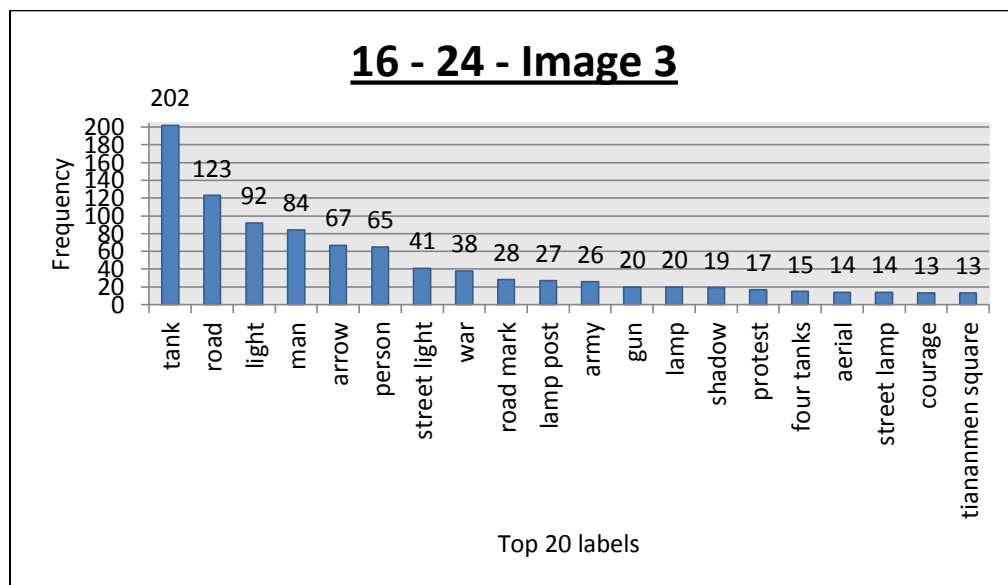
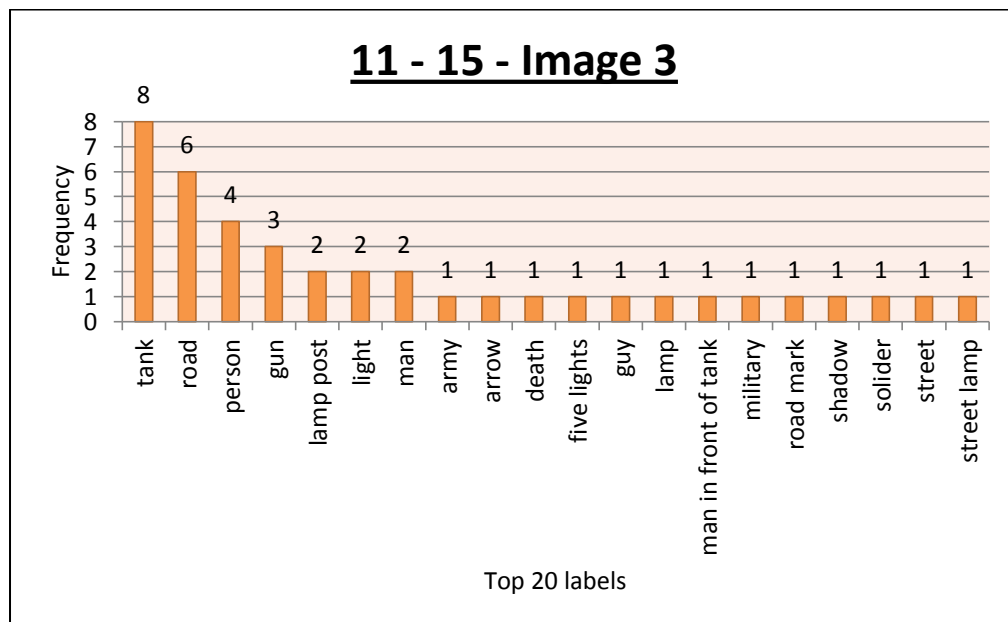
Co-occurrence PMI

S1 = Stem1 frequency, S2 = S2 frequency, C = co-occurrence frequency											
11-15						16-24					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
table	wall	4	3	2	0.92	paint	shoe	1	1	41	4.82
glass	reflection	8	3	3	0.80	glass of water	reflection on table	3	5	6	2.81
glass	table	8	4	4	0.80	glass	wood surface	261	2	170	2.72
glass	wall	8	3	3	0.80	door reflection in glass	shadow of glass	6	4	7	2.67
glass	water	8	8	8	0.80	shadow	wooden surface	83	5	106	2.61
glass	wooden table	8	2	2	0.80	cup	cup reflection	9	2	4	2.55
reflection	water	3	8	3	0.80	cup	surface	9	3	6	2.55
table	water	4	8	4	0.80	half	wood	5	61	63	2.52
wall	water	3	8	3	0.80	circle	wood	4	61	49	2.51
water	wooden table	8	2	2	0.80	glass reflection	table	6	189	174	2.39
25-30						31-34					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
reflection	surface	18	2	2	2.19	light	shadow	5	5	6	1.26
brown color	half air	2	2	2	2.06	glass	wood	12	2	5	1.19
brown color	half water	2	2	2	2.06	glass	shadow	12	5	11	1.14
half air	half water	2	2	2	2.06	wall	wood	7	2	2	1.03
brown color	table	2	25	1	1.94	wall	water	7	10	9	0.98
surface	water	2	29	1	1.60	water	wood	10	2	2	0.88
half air	table	2	25	8	1.57	light	reflection	5	7	3	0.81
reflection	transparent	18	2	5	1.50	light	wall	5	7	3	0.81
shadow	wood	14	10	1	1.47	glass	table	12	11	10	0.75
half full glass	water	3	29	1	1.42	table	wall	11	7	5	0.69
35-40						41-44					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
half full container	light reflected from glass	1	3	2	1.94	glass	wall	12	3	11	1.33
glass reflection on table	light reflected from glass	2	3	2	1.64	wall	water	3	11	8	1.23
light	reflection	2	10	5	1.51	shadow	wall	5	3	2	0.97
light	water	2	23	9	1.41	table	wall	8	3	3	0.94
glass	shadow	24	5	2	1.36	glass	wood	12	2	3	0.94
background	table	3	19	9	1.31	shadow	water	5	11	5	0.80
half full container	table	1	19	3	1.31	water	wood	11	2	2	0.80
half full	water	2	23	7	1.30	glass	light	12	3	3	0.77
half full container	water	1	23	3	1.23	glass	shadow	12	5	5	0.77
glass	half full container	24	1	3	1.21	glass	table	12	8	8	0.77

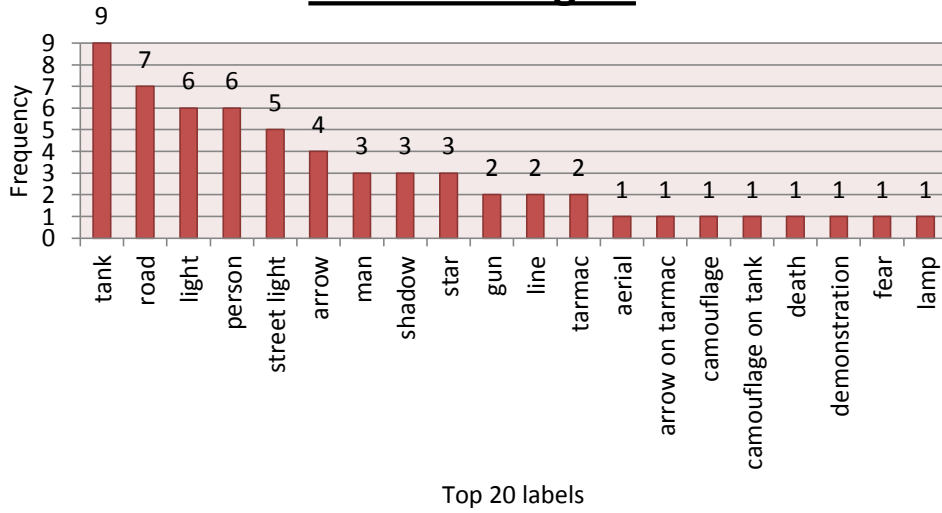
45-50						51-55					
<i>Stem1</i>	<i>Stem2</i>	<i>S1</i>	<i>S2</i>	<i>C</i>	<i>PMI</i>	<i>Stem1</i>	<i>Stem2</i>	<i>S1</i>	<i>S2</i>	<i>C</i>	<i>PMI</i>
clear	transparent	2	2	3	2.01	colour	shadow	2	6	5	1.49
reflection	shine	12	3	8	1.83	light	shadow	2	6	5	1.49
shine	wood	3	5	4	1.56	liquid	shadow	4	6	8	1.40
background	table	2	8	4	1.53	colour	liquid	2	4	2	1.27
light reflection	water	2	20	7	1.37	liquid	reflection	4	5	5	1.27
light reflection	shadow	2	9	3	1.35	wall	water	5	8	6	1.05
background	water	2	20	6	1.31	light reflection	water	2	8	2	0.97
half empty	half full	3	5	2	1.26	water	wood	8	2	2	0.97
half full	wood	5	5	3	1.21	liquid	wall	4	5	2	0.88
half full	reflection	5	12	6	1.13	glass	shadow	13	6	7	0.83
56-60						61-64					
<i>Stem1</i>	<i>Stem2</i>	<i>S1</i>	<i>S2</i>	<i>C</i>	<i>PMI</i>	<i>Stem1</i>	<i>Stem2</i>	<i>S1</i>	<i>S2</i>	<i>C</i>	<i>PMI</i>
shadow	wall	3	2	2	1.07	glass	water	4	5	3	0.65
door	reflection	2	4	2	0.94	reflection	water	2	5	2	0.78
door	table	2	5	2	0.85	table	water	2	5	2	0.78
table	wall	5	2	2	0.85	wall	water	2	5	2	0.78
door	water	2	5	2	0.85	glass	table	4	2	2	0.88
wall	water	2	5	2	0.85	glass	wall	4	2	2	0.88
shadow	table	3	5	3	0.85						
door	glass	2	6	2	0.77						
table	water	5	5	4	0.75						
reflection	table	4	5	3	0.72						
Over 65											
<i>Stem1</i>	<i>Stem2</i>	<i>S1</i>	<i>S2</i>	<i>C</i>	<i>PMI</i>						
reflection	tabletop	3	1	4	1.60						
tabletop	wall	1	4	4	1.48						
tabletop	water	1	4	4	1.48						
glass	tabletop	5	1	4	1.38						
reflection	wall	3	4	5	1.10						
reflection	water	3	4	4	1.00						
wall	water	4	4	5	0.97						
glass	water	5	4	6	0.95						
glass	reflection	5	3	4	0.90						
glass	wall	5	4	5	0.88						

Image 3

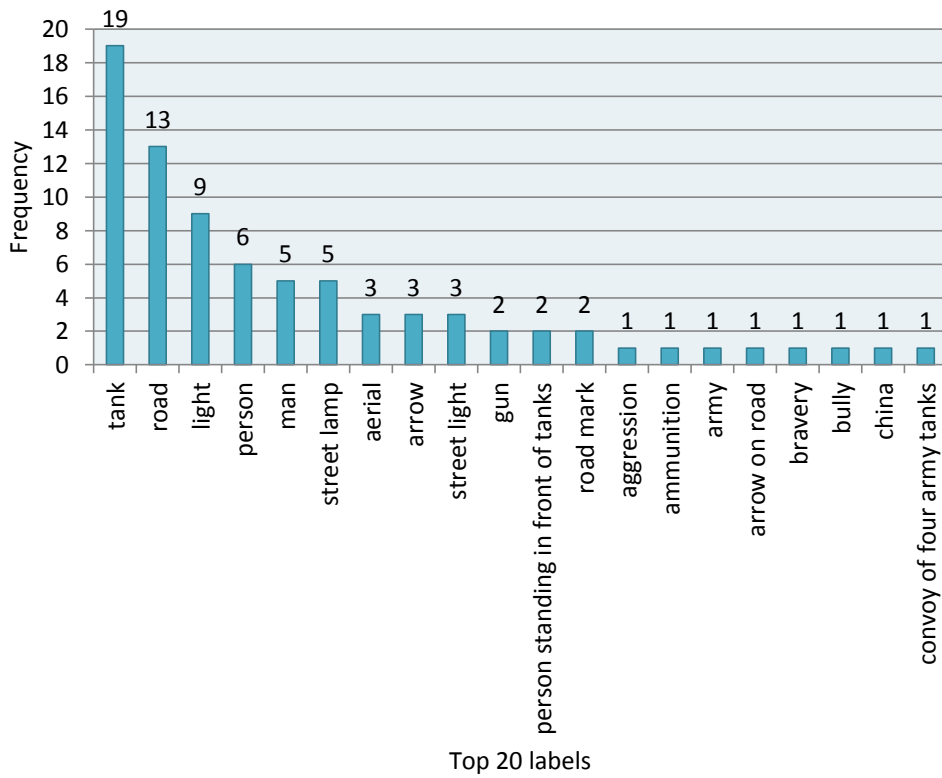
Top 20 most frequent annotations



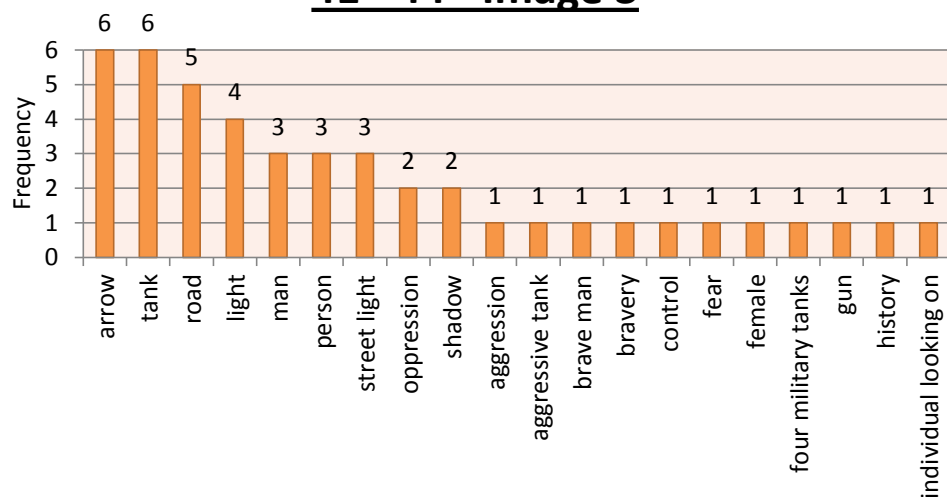
31 - 34 - Image 3



35 - 40 - Image 3

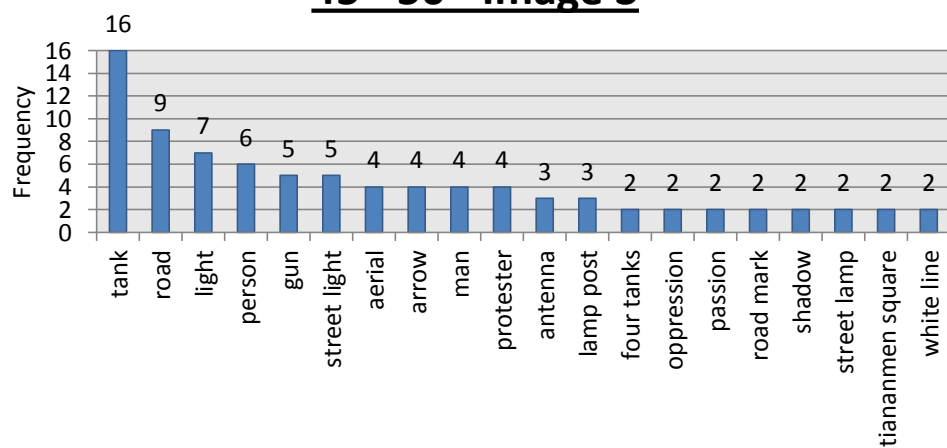


41 - 44 - Image 3



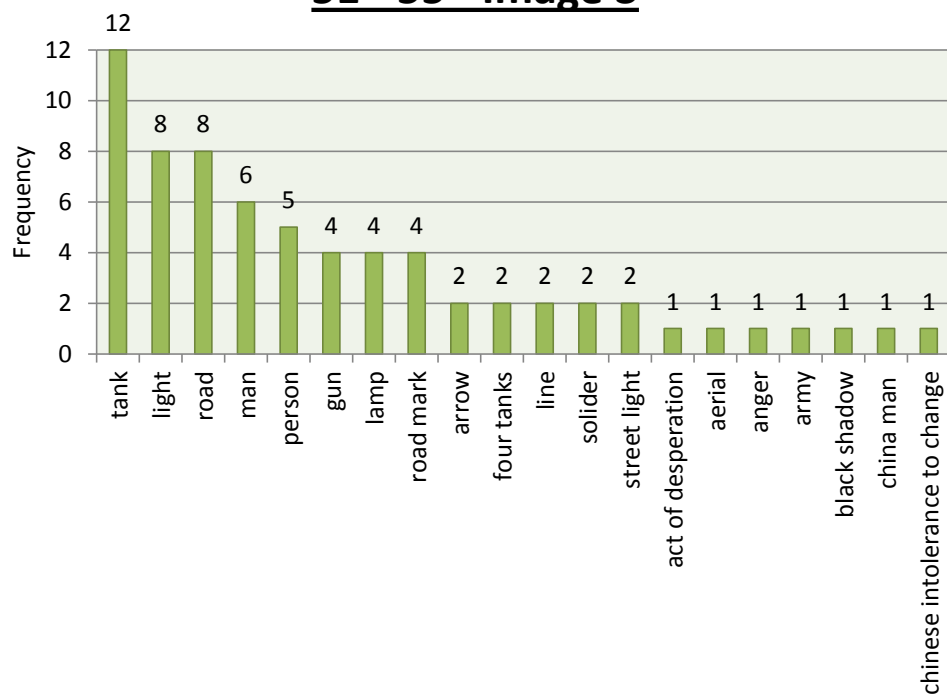
Top 20 labels

45 - 50 - Image 3



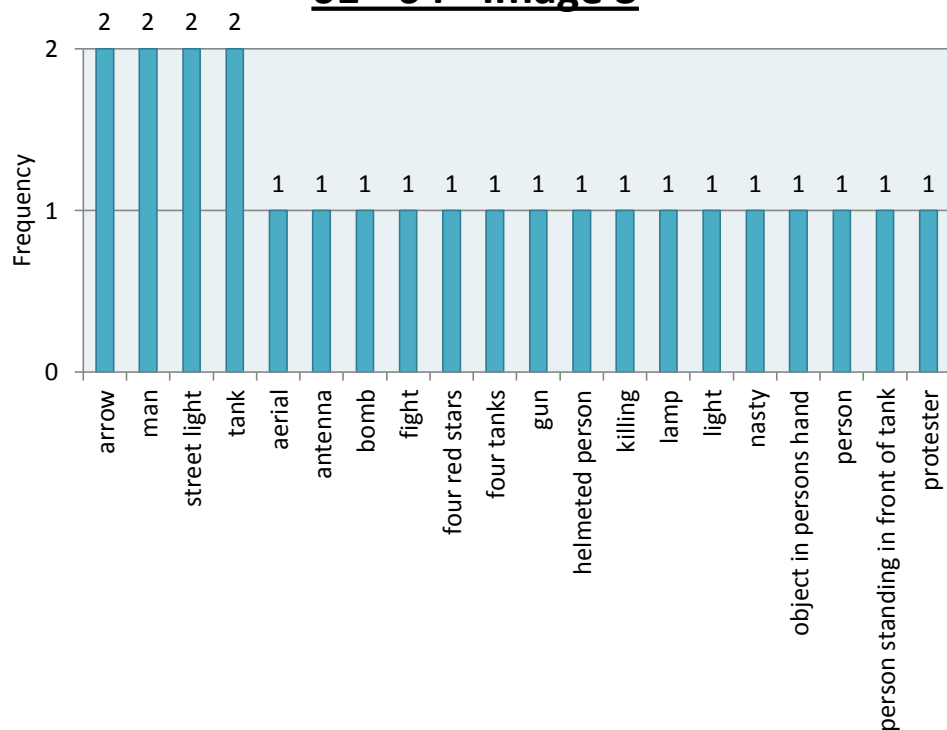
Top 20 labels

51 - 55 - Image 3



Top 20 labels

61 - 64 - Image 3



Top 20 labels

Collocation

11-15		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
lamp post	2	2
man in front of tank	5	1
street light	2	1
white top	2	1
white line	2	1
five lights	2	1
street lamp	2	1
road mark	2	1
street line	2	1

25-30		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
road mark	2	3
street lamp	2	3
star on tank	3	2
light bulb	2	2
brave person	2	2
lamp post	2	2
red star	2	2
tiananmen square protests of 1900	5	1
man wearing white shirt	4	1
power of the individual	4	1
man wearing black hat	4	1
five rounded white lights	4	1
dotted line on road	4	1
man looking at tank	4	1
chinese army logo	3	1
piece of wood	3	1
stick on road	3	1
five street lamps	3	1
fancy street lamp	3	1
size of men	3	1

16-24		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
street light	2	41
road mark	2	28
lamp post	2	27
four tanks	2	15
street lamp	2	14
tiananmen square	2	13
arrow on road	3	6
army tank	2	6
light bulb	2	6
shadow of tree	3	4
road sign	2	4
red star	2	4
white line	2	4
star on tank	3	3
man in tank	3	3
four army tanks	3	3
white arrow	2	3
man stood in front of tanks	6	2
man stood out of tank	5	2
piece of wood	3	2

31-34		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
street light	2	5
person in front of tanks	5	1
red star on tank	4	1
arrow on tarmac	3	1
person wearing hat	3	1
camouflage on tank	3	1
man carrying object	3	1
three green tanks	3	1
road mark	2	1
tank barrel	2	1
street lamp	2	1

35-40		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
street lamp	2	5
street light	2	3
person standing in front of tanks	6	2
road mark	2	2
convoy of four army tanks	5	1
four tanks in row	4	1
man wearing black hat	4	1
man in front	3	1
member of public	3	1
arrow on road	3	1
item on road	3	1
debris on road	3	1
stick on road	3	1
tiananmen square	2	1
light bulb	2	1
road line	2	1
human right	2	1
empty street	2	1
peaceful man	2	1
tank antenna	2	1

45-50		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
street light	2	5
lamp post	2	3
street lamp	2	2
white line	2	2
road mark	2	2
tiananmen square	2	2
four tanks	2	2
figure in front of tanks	5	1
person standing in way	4	1
pro-democracy campaigner	3	1
debris on road	3	1
servicemen on guard	3	1
ready for action	3	1
military bullying	2	1
communist army	2	1
no traffic	2	1
big boy	2	1
stupid student	2	1
caterpillar wheel	2	1
no fear	2	1

41-44		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
street light	2	3
four military tanks	3	1
individual looking on	3	1
radio communication mast	3	1
single male	2	1
lamp post	2	1
aggressive tank	2	1
brave man	2	1
street marking	2	1
tank direction	2	1
road surface	2	1
road mark	2	1
tiananmen square	2	1
light bulb	2	1

51-55		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
road mark	2	4
four tanks	2	2
street light	2	2
person in front of tanks	5	1
chinese intolerance to change	4	1
depth of feeling	3	1
act of desperation	3	1
china man	3	1
road with tanks	3	1
road sign	2	1
clear road	2	1
single protester	2	1
tiananmen square	2	1
five lamps	2	1
black shadow	2	1

56-60		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
street light	2	5
armoured vehicle	2	2
red star	2	2
road arrow	2	2
road mark	2	1

Over 65		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
street light	2	2
piece of wood	3	1
road line	2	1
street lamp	2	1
road mark	2	1

61-64		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
street light	2	2
person standing in front of tank	6	1
street light with five bulbs	5	1
object in persons hand	4	1
road arrow direction	3	1
four red stars	3	1
four tanks	2	1
helmeted person	2	1

Co-occurrence

11 - 15		
Count	Stem1	Stem2
6	road	tank
4	person	road
4	person	tank
2	gun	road
2	gun	tank
2	lamp post	road
2	lamp post	tank
2	light	tank
2	man	tank

16 - 24		
Count	Stem1	Stem2
103	road	tank
72	light	tank
65	man	tank
49	light	road
48	arrow	tank
48	person	tank
45	person	road
42	man	road
34	light	man
32	arrow	light

25 - 30		
Count	Stem1	Stem2
12	light	tank
12	road	tank
8	man	tank
7	light	person
7	light	road
6	arrow	tank
6	person	tank
5	person	road
5	tank	war
4	street	tank

31 - 34		
Count	Stem1	Stem2
6	road	tank
5	light	tank
4	arrow	star
4	light	road
4	person	road
4	person	tank
3	man	road
3	man	tank
3	street light	tank
2	arrow	person

35 - 40		
Count	Stem1	Stem2
13	road	tank
9	light	tank
8	light	road
6	person	tank
5	man	tank
5	person	road
5	street lamp	tank
3	aerial	tank
3	arrow	tank
3	man	road

41 - 44		
Count	Stem1	Stem2
4	light	tank
3	arrow	light
3	arrow	road
3	arrow	tank
3	light	road
3	man	tank
3	person	tank
3	road	tank
2	arrow	person
2	arrow	shadow

45 - 50		
<i>Count</i>	<i>Stem1</i>	<i>Stem2</i>
9	road	tank
5	light	tank
5	street light	tank
4	gun	tank
4	light	road
4	person	tank
3	aerial	tank
3	antenna	tank
3	light	man
3	light	person

56 - 60		
<i>Count</i>	<i>Stem1</i>	<i>Stem2</i>
4	person	street light
4	road	tank
2	armored vehicle	person
2	armored vehicle	red star
2	armored vehicle	road arrow
2	armored vehicle	street light
2	light	road
2	light	shadow
2	light	tank
2	person	red star

Over 65		
<i>Count</i>	<i>Stem1</i>	<i>Stem2</i>
3	person	tank
2	arrow	street light
2	arrow	tank
2	man	tank
2	street light	tank

51 - 55		
<i>Count</i>	<i>Stem1</i>	<i>Stem2</i>
7	light	tank
6	man	tank
6	road	tank
5	light	road
5	man	road
4	gun	tank
4	light	man
3	gun	light
3	gun	man
3	gun	road

61 - 64		
<i>Count</i>	<i>Stem1</i>	<i>Stem2</i>
2	arrow	man

Co-occurrence PMI

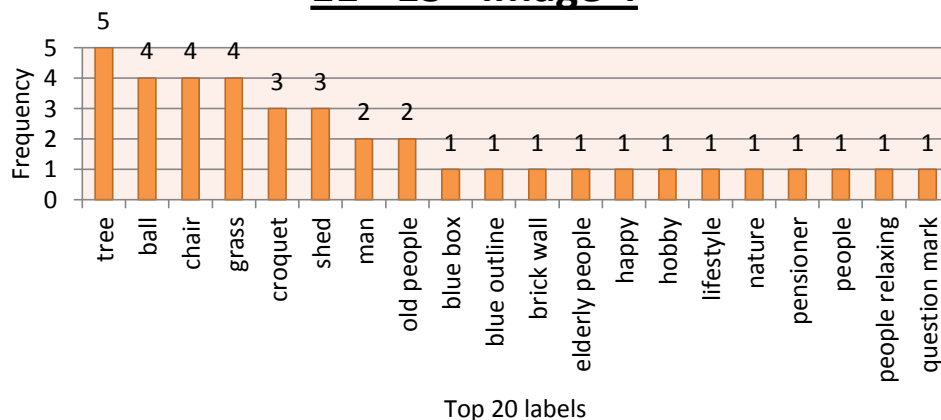
S1 = Stem1 frequency, S2 = S2 frequency, C = co-occurrence frequency											
11-15						16-24					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
lamp post	road	2	6	2	0.875061	arrow on road	lamp post	1	27	12	2.825931
person	road	4	6	4	0.875061	arrow	little	67	1	27	2.783402
lamp post	tank	2	8	2	0.750123	camouflage	line	8	7	22	2.772348
light	tank	2	8	2	0.750123	four tanks	stick	15	3	13	2.638844
man	tank	2	8	2	0.750123	gun	violence	20	4	23	2.636751
person	tank	4	8	4	0.750123	communist	corrupt	9	2	4	2.524901
road	tank	6	8	6	0.750123	conflict	man	3	84	48	2.457954
gun	road	3	6	2	0.69897	bravery	fear	9	5	8	2.427991
gun	tank	3	8	2	0.574031	green	light	2	92	32	2.418445
						protest	tyranny	17	2	5	2.345604
25-30						31-34					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
lamp post	shadow	2	3	7	2.409369	light	man	6	3	4	1.221849
person	road mark	9	3	7	1.756157	gun	tank	2	9	4	1.221849
red star	solider	2	4	2	1.740363	line	tank	2	9	4	1.221849
brave person	war	2	9	4	1.68921	street light	tarmac	5	2	2	1.176091
road	wheel	13	2	5	1.626419	man	road	3	7	4	1.154902
light	red star	16	2	6	1.615424	gun	light	2	6	2	1.09691
brave person	tank	2	29	8	1.482085	line	person	2	6	2	1.09691
light	street	16	6	12	1.439333	arrow	star	4	3	2	1.09691
shadow	street	3	6	2	1.38818	person	road	6	7	5	0.950782
arrow	star	10	2	2	1.342423	tank	tarmac	9	2	2	0.920819
35-40						41-44					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
person	street lamp	6	5	8	1.486667	arrow	shadow	6	2	3	1.210853
arrow	person	3	6	3	1.282547	light	man	4	3	2	1.034762
road	street lamp	13	5	9	1.202027	arrow	person	6	3	3	1.034762
aerial	man	3	5	2	1.185637	light	person	4	3	2	1.034762
gun	tank	2	19	5	1.179884	man	tank	3	6	3	1.034762
arrow	tank	3	19	5	1.003793	person	tank	3	6	3	1.034762
man	tank	5	19	6	0.861125	man	road	3	5	2	0.937852
aerial	tank	3	19	3	0.781944	arrow	light	6	4	3	0.909823
road	tank	13	19	13	0.781944	arrow	tank	6	6	4	0.858671
street lamp	tank	5	19	5	0.781944	arrow	road	6	5	3	0.812913
45-50						51-55					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
person	white line	6	2	5	1.716699	line	person	2	5	3	1.380211
person	street lamp	6	2	2	1.318759	line	tank	2	12	6	1.30103
four tanks	light	2	7	2	1.251812	road	road mark	8	4	7	1.243038
gun	street light	5	5	3	1.176091	four tanks	person	2	5	2	1.20412
street light	tank	5	16	9	1.148063	light	line	8	2	3	1.176091
man	road	4	9	4	1.142668	gun	man	4	6	3	1
light	man	7	4	3	1.126873	lamp	man	4	6	3	1
antenna	tank	3	16	5	1.114639	lamp	road	4	8	4	1
aerial	gun	4	5	2	1.09691	man	road	6	8	5	0.920819
gun	light	5	7	3	1.029963	light	man	8	6	4	0.823909

56-60						61-64					
<i>Stem1</i>	<i>Stem2</i>	<i>S1</i>	<i>S2</i>	<i>C</i>	<i>PMI</i>	<i>Stem1</i>	<i>Stem2</i>	<i>S1</i>	<i>S2</i>	<i>C</i>	<i>PMI</i>
light	shadow	2	1	2	1.544068	arrow	man	2	2	2	1.176091
armoured vehicle	red star	2	2	2	1.243038						
armoured vehicle	road arrow	2	2	2	1.243038	Over 65					
red star	road arrow	2	2	2	1.243038	<i>Stem1</i>	<i>Stem2</i>	<i>S1</i>	<i>S2</i>	<i>C</i>	<i>PMI</i>
light	road	2	4	2	0.942008	arrow	street light	2	2	2	1.09691
light	tank	2	4	2	0.942008	arrow	tank	2	5	2	0.69897
armoured vehicle	person	2	5	2	0.845098	man	tank	2	5	2	0.69897
person	red star	5	2	2	0.845098	person	tank	3	5	3	0.69897
person	road arrow	5	2	2	0.845098	street light	tank	2	5	2	0.69897
armoured vehicle	street light	2	5	2	0.845098						

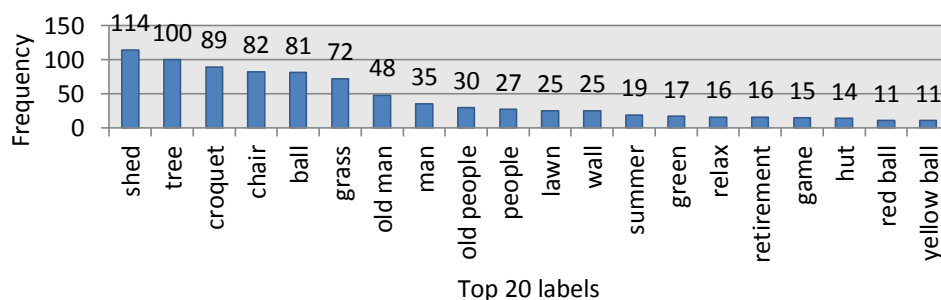
Image 4

Top 20 most frequent annotations

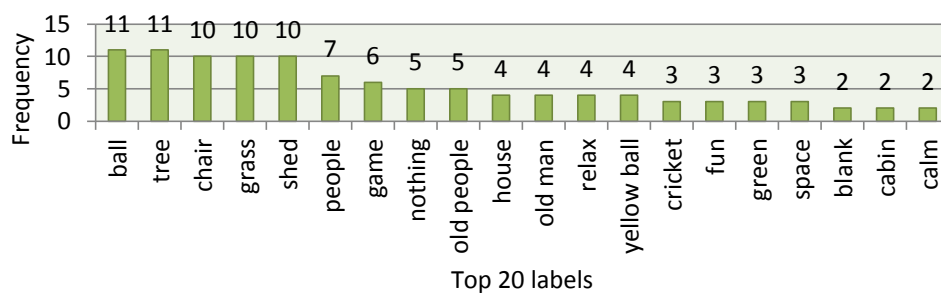
11 - 15 - Image 4



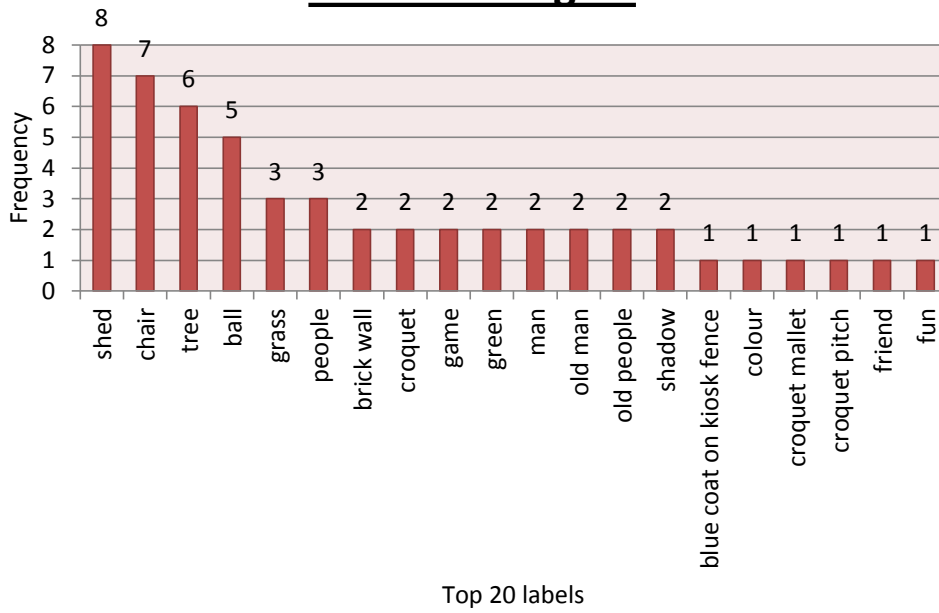
16 - 24 - Image 4



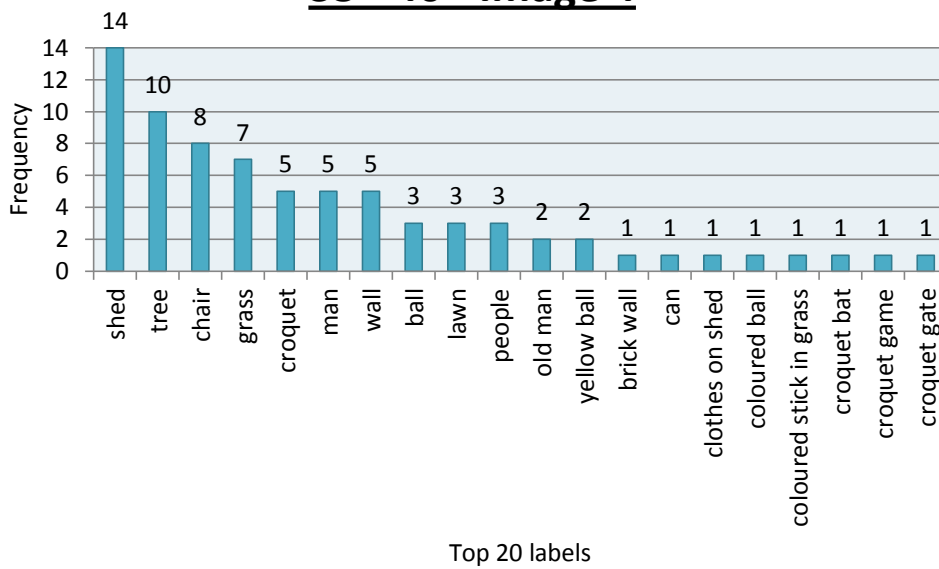
25 - 30 - Image 4



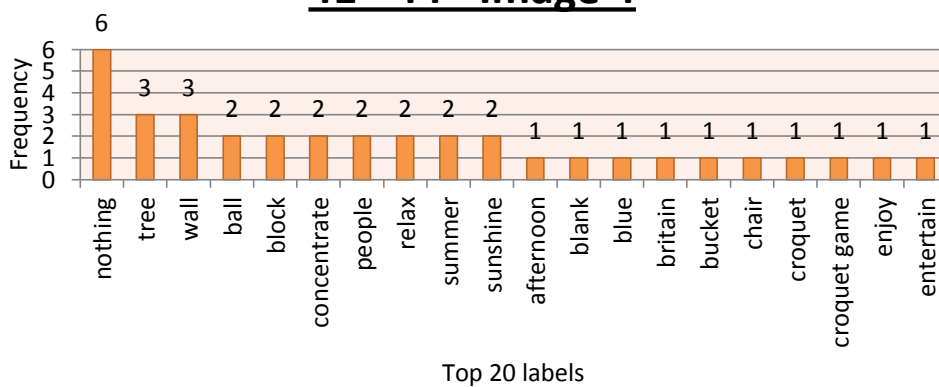
31 - 34 - Image 4



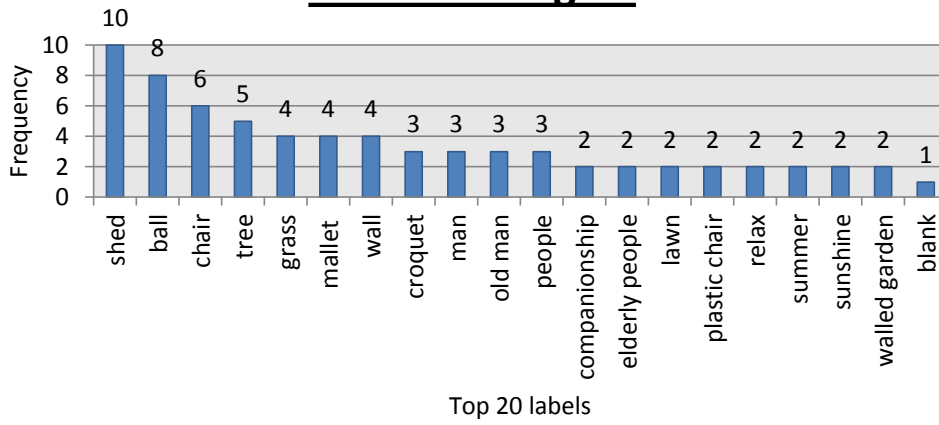
35 - 40 - Image 4



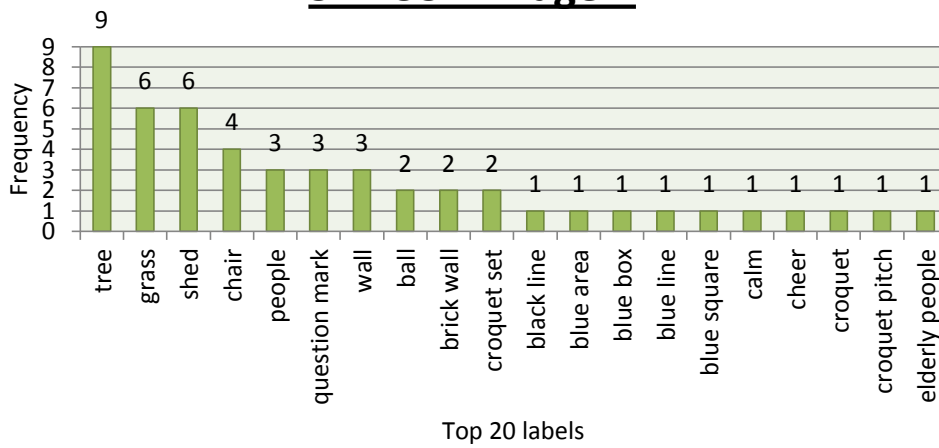
41 - 44 - Image 4



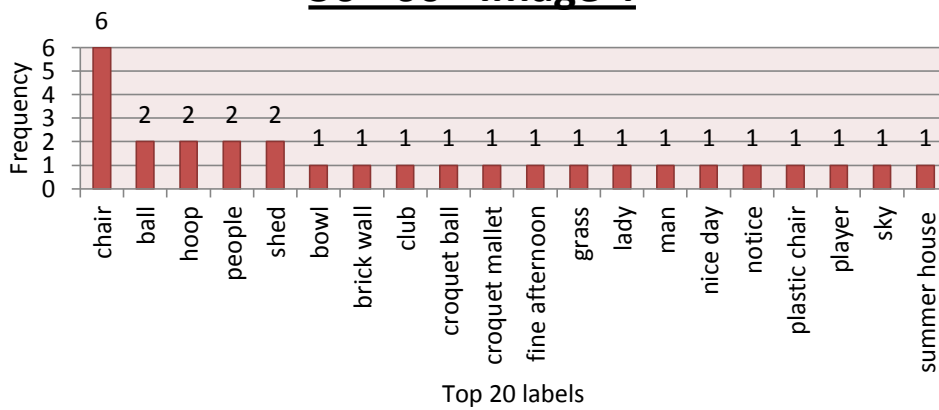
45 - 50 - Image 4



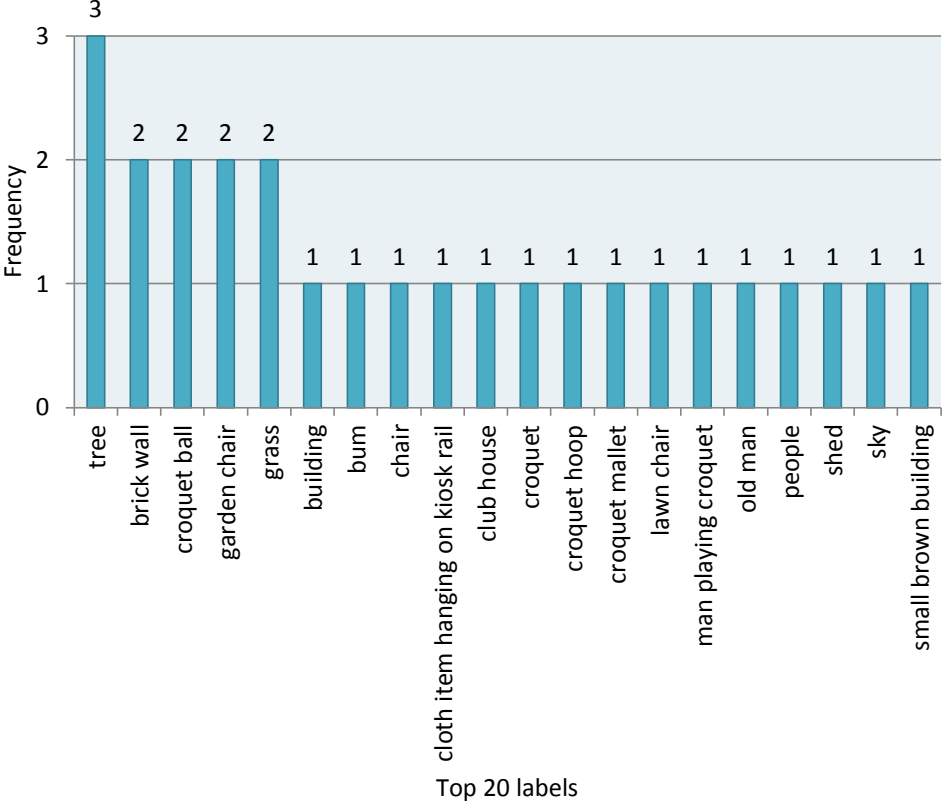
51 - 55 - Image 4



56 - 60 - Image 4



61 - 64 - Image 4



Collocation

11-15		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
old people	2	2
summer house	3	1
brick wall	2	1
white background	2	1
question mark	2	1
blue outline	2	1
blue box	2	1
white writing	2	1
wooden house	2	1
elderly people	2	1
people relaxing	2	1
wooden pavilion	2	1

25-30		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
old people	2	5
old man	2	4
yellow ball	2	4
summer house	3	2
croquet stick	2	2
garden shed	2	2
old couple	2	2
five chairs	2	2
ladies sitting on white chairs	5	1
blue jumper over shed rail	5	1
old man playing croquet	4	1
two elderly women friends	4	1
white sign on shed	4	1
couple sitting down	3	1
woman wearing sunglasses	3	1
ray of sunlight	3	1
old women	2	1
bent back	2	1
relaxing atmosphere	2	1
warm day	2	1

16-24		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
old man	2	48
old people	2	30
red ball	2	11
yellow ball	2	11
mallet	2	10
summer house	3	8
brick wall	2	8
plastic chair	2	6
croquet mallet	2	6
elderly people	2	6
wooden house	2	6
croquet ball	2	5
garden shed	2	5
wooden shed	2	5
croquet hoop	2	5
lawn chair	2	4
three old people	3	3
croquet bat	2	3
people sitting	2	3
garden chair	2	3

31-34		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
old man	2	2
old people	2	2
brick wall	2	2
blue coat on kiosk fence	5	1
two elderly people on chairs	5	1
people sitting in background	4	1
mow lines in grass	4	1
mallet leaning against kiosk	4	1
man playing croquet	3	1
stripes of grass	3	1
tree in background	3	1
tall wall	2	1
green grass	2	1
plastic chair	2	1
croquet pitch	2	1
croquet mallet	2	1

35-40		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
old man	2	2
yellow ball	2	2
two people sitting on garden chairs	6	1
people sitting on chair	4	1
coloured stick in grass	4	1
two people sitting down	4	1
clothes on shed	3	1
person playing croquet	3	1
man playing croquet	3	1
croquet bat	2	1
brick wall	2	1
lawn chair	2	1
mown lawn	2	1
elderly people	2	1
wooden hut	2	1
other people	2	1
croquet match	2	1
coloured ball	2	1
croquet set	2	1
garden shed	2	1

41-44		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
gentleman preparing to take shot	5	1
light blue background	3	1
two people watching	3	1
question mark	2	2
square border	2	1
small image	2	1
wooden hut	2	1
croquet game	2	1
garden shed	2	3
mallet	2	2
wooden building	2	1

45-50		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
mallet	2	4
old man	2	3
elderly people	2	2
plastic chair	2	2
walled garden	2	2
game of croquet	3	1
summer house	3	1
man playing croquet	3	1
stripes of grass	3	1
elderly figure playing	3	1
nice green	2	1
walled enclosure	2	1
nice day	2	1
club house	2	1
croquet stick	2	1
people watching	2	1
croquet club	2	1
croquet hoop	2	1
people relaxing	2	1
green lawn	2	1

51-55		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
question mark	2	3
brick wall	2	2
croquet set	2	2
old people enjoying life	4	1
man playing croquet	3	1
person hitting ball	3	1
old aged pensioner	3	1
garden chalet	2	1
three people	2	1
no image	2	1
black line	2	1
blue box	2	1
people sitting	2	1
wall boundary	2	1
elderly people	2	1
garden shed	2	1
garden chair	2	1
white background	2	1
grey line	2	1
blue line	2	1

56-60		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
summer house	3	4
brick wall	2	4
nice day	2	2
croquet ball	2	1
plastic chair	2	3
fine afternoon	2	1
croquet mallet	2	1

Over 65		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
coloured ball	2	2
plastic chair	2	3
three men	2	1
croquet set	2	2
mallet	2	2
croquet stick	2	3

61-64		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
croquet ball	2	2
garden chair	2	2
brick wall	2	2
two people sitting on lawn chairs	6	1
cloth item hanging on kiosk rail	6	1
small brown building	3	1
man playing croquet	3	1
croquet mallet	2	1
club house	2	1
summer house	2	1
old man	2	1
lawn chair	2	1
croquet hoop	2	1
white sign	2	1

Co-occurrence

11 - 15		
<i>Count</i>	<i>Stem1</i>	<i>Stem2</i>
3	ball	tree
3	chair	grass
3	shed	tree
2	ball	chair
2	ball	grass
2	ball	man
2	ball	shed
2	chair	tree
2	croquet	old people
2	croquet	shed

16 - 24		
<i>Count</i>	<i>Stem1</i>	<i>Stem2</i>
47	shed	tree
46	croquet	shed
42	ball	shed
40	grass	shed
38	chair	shed
34	ball	chair
34	ball	tree
32	chair	grass
32	chair	tree
27	croquet	grass

25 - 30		
<i>Count</i>	<i>Stem1</i>	<i>Stem2</i>
7	chair	tree
5	ball	grass
5	shed	tree
4	chair	people
4	chair	shed
4	grass	people
4	grass	tree
4	people	tree
3	ball	people
3	ball	shed

31 - 34		
<i>Count</i>	<i>Stem1</i>	<i>Stem2</i>
5	chair	shed
4	ball	chair
4	ball	shed
4	shed	tree
3	grass	shed
2	ball	grass
2	ball	man
2	ball	old man
2	ball	tree
2	chair	grass

35 - 40		
<i>Count</i>	<i>Stem1</i>	<i>Stem2</i>
6	chair	shed
6	shed	tree
5	grass	shed
5	grass	tree
5	man	shed
5	shed	wall
3	ball	shed
3	chair	man
3	chair	tree
3	croquet	lawn

41 - 44		
<i>Count</i>	<i>Stem1</i>	<i>Stem2</i>
2	concentrate	sunshine
2	people	tree
2	tree	wall

45 - 50		
<i>Count</i>	<i>Stem1</i>	<i>Stem2</i>
7	ball	shed
4	ball	chair
4	chair	shed
4	mallet	shed
3	ball	mallet
3	chair	wall
3	grass	shed
2	ball	grass
2	ball	man
2	ball	people

56 - 60		
<i>Count</i>	<i>Stem1</i>	<i>Stem2</i>
2	ball	chair
2	brick wall	chair
2	chair	hoop
2	chair	notice
2	chair	people
2	chair	tree

Over 65		
<i>Count</i>	<i>Stem1</i>	<i>Stem2</i>
2	ball	tree
2	croquet	tree
2	shed	tree

51 - 55		
<i>Count</i>	<i>Stem1</i>	<i>Stem2</i>
5	shed	tree
4	chair	tree
4	grass	tree
3	chair	grass
3	grass	shed
3	people	tree
3	tree	wall
2	ball	tree
2	brick wall	chair
2	brick wall	tree

61 - 64		
<i>Count</i>	<i>Stem1</i>	<i>Stem2</i>
2	brick wall	tree
2	garden chair	tree

Co-occurrence PMI

S1 = Stem1 frequency, S2 = S2 frequency, C = co-occurrence frequency

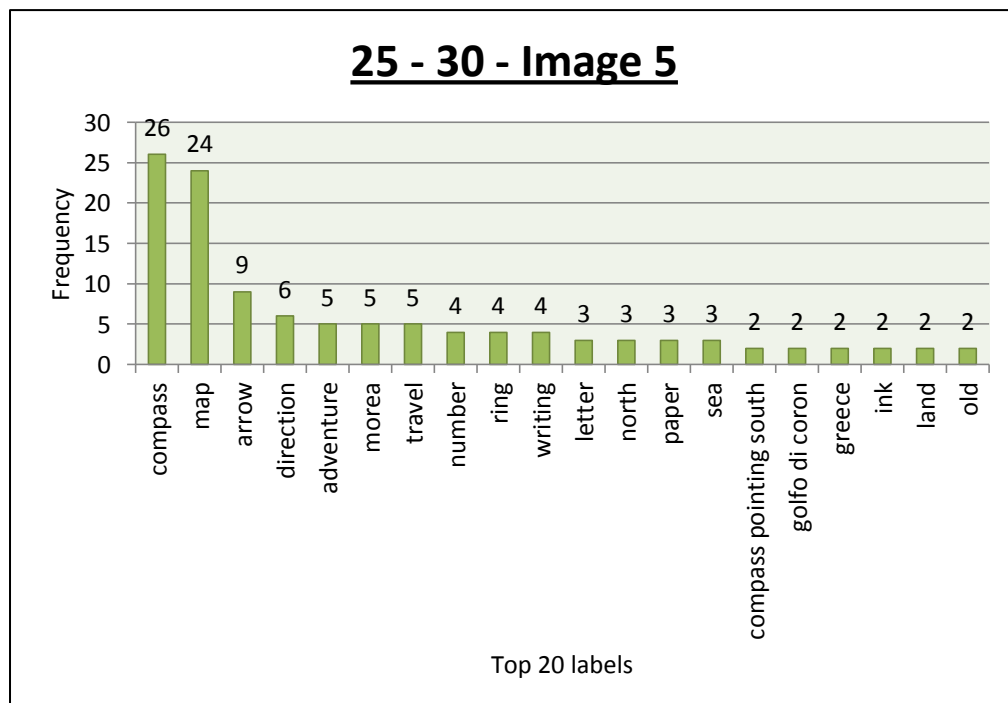
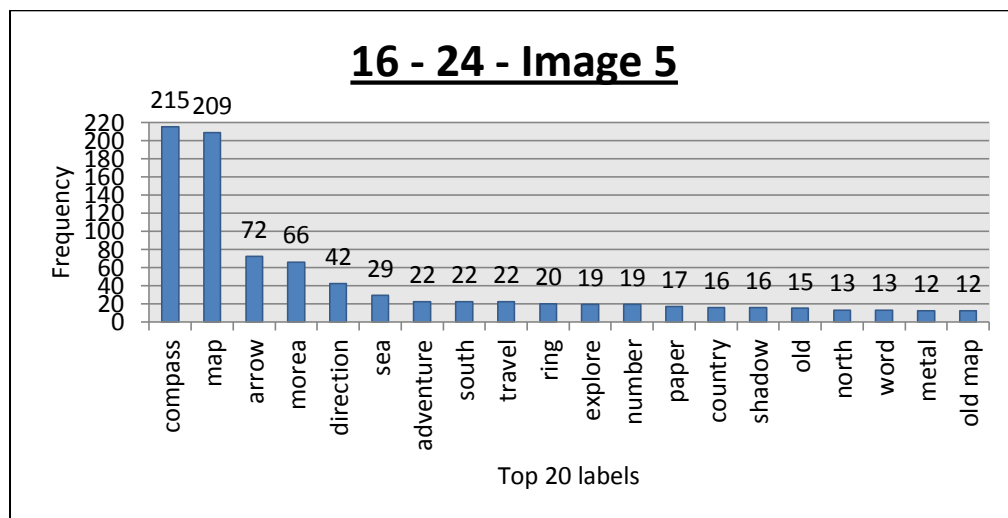
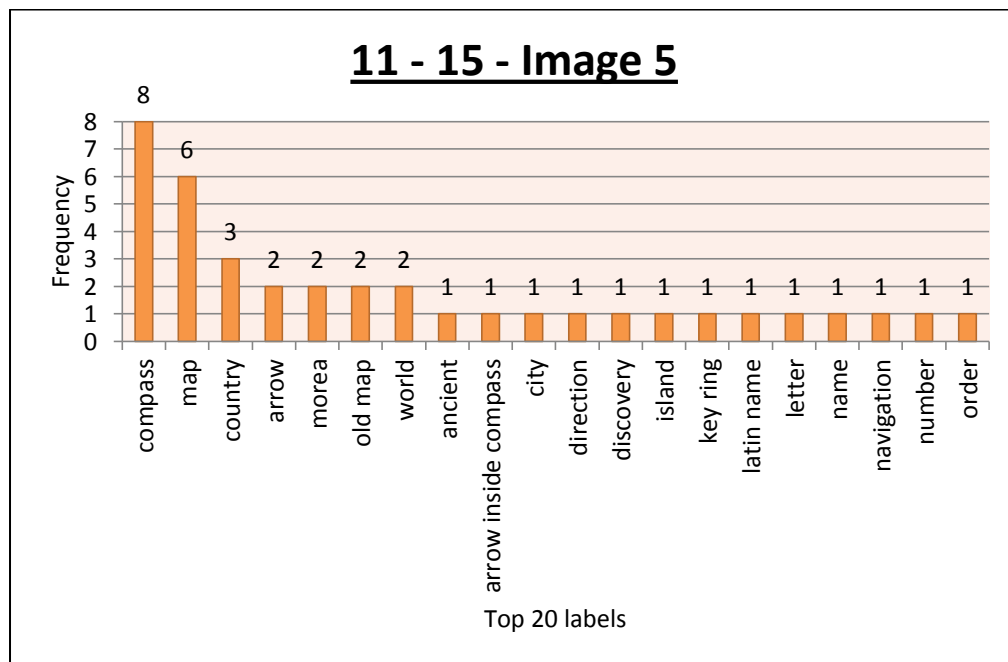
11-15						16-24					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
croquet	old people	3	2	3	1.35218 3	empty	space	1	1	7	4.00225 2
old people	shed	2	3	2	1.17609 1	blank	nothing	4	3	3	3.58312 3
ball	man	4	2	2	1.05115 3	jumper over deck rail	three old people	2	3	1	3.52513 4
ball	shed	4	3	3	1.05115 3	flat cap	white plastic chair	3	2	1	3.52513 4
croquet	shed	3	3	2	1	shoe	spaghetti	3	1	3	3.15715 4
man	tree	2	5	2	0.95424 3	shadow	towel	2	2	4	3.15715 4
old people	tree	2	5	2	0.95424 3	nice grass	three old people	2	3	4	2.98106 3
shed	tree	3	5	3	0.95424 3	jumper over deck rail	nice grass	2	2	2	2.85612 4
croquet	tree	3	5	2	0.77815 1	line	white	2	6	5	2.77694 3
ball	chair	4	4	2	0.75012 3	fun	time	5	1	2	2.75921 4
25-30						31-34					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
blank	white	2	2	4	2.31175 4	grass	man	3	2	2	1.39794
blank	space	2	3	3	2.01072 4	chair	man	7	2	4	1.33099 3
nothing	white	5	2	5	2.01072 4	ball	man	5	2	2	1.17609 1
grey frame	nothing	1	5	2	1.91381 4	ball	old man	5	2	2	1.17609 1
nothing	white space	5	1	2	1.91381 4	old people	tree	2	6	2	1.09691
space	white	3	2	2	1.83463 3	ball	grass	5	3	2	1
ball	player	11	2	7	1.81442 9	people	shed	3	8	3	0.97197 1
fun	game	3	6	5	1.75545 1	man	shed	2	8	2	0.97197 1
fun	relax	3	4	3	1.70969 4	ball	chair	5	7	4	0.93305 3
blank	nothing	2	5	2	1.61278 4	people	tree	3	6	2	0.92081 9
35-40						41-44					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
chair	people	8	3	6	1.44715 8	concentrate	sunshine	2	2	2	1.51188 3
croquet	lawn	5	3	3	1.35024 8	people	tree	2	3	2	1.33579 2
chair	wall	8	5	6	1.22530 9	tree	wall	3	3	2	1.15970 1
people	shed	3	14	5	1.12493 9						
shed	yellow ball	14	2	3	1.07918 1						
people	tree	3	10	3	1.04921 8						
ball	chair	3	8	2	0.97003 7						

chair	man	8	5	3	0.924279
ball	shed	3	14	3	0.90309
grass	tree	7	10	5	0.90309

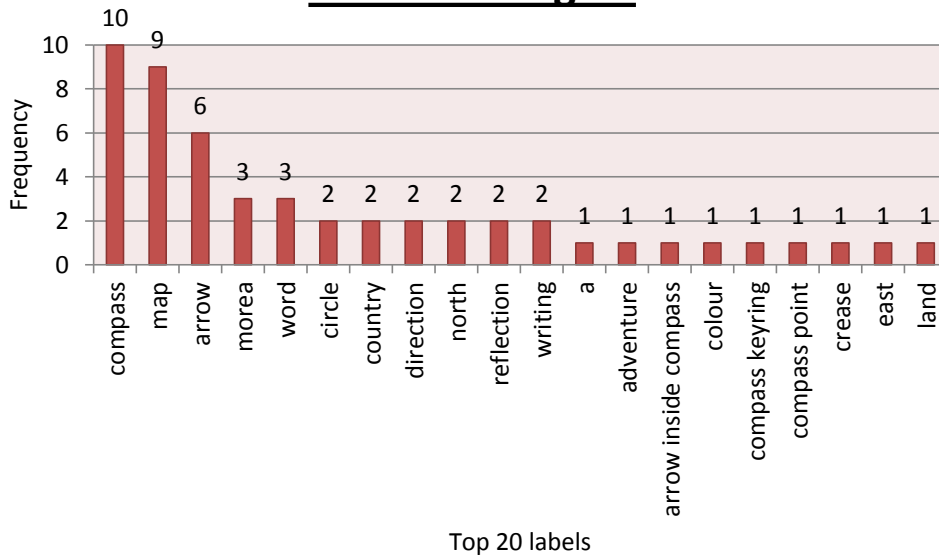
45-50						51-54					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
companion ship	summer	2	2	2	1.774517	brick wall	chair	2	4	2	1.273001
grass	man	4	3	2	1.297396	chair	wall	4	3	2	1.09691
people	tree	3	5	2	1.200486	chair	grass	4	6	3	0.971971
chair	wall	6	4	3	1.172457	ball	tree	2	9	2	0.920819
chair	man	6	3	2	1.121304	brick wall	tree	2	9	2	0.920819
grass	tree	4	5	2	1.075547	chair	tree	4	9	4	0.920819
tree	wall	5	4	2	1.075547	people	tree	3	9	3	0.920819
ball	shed	8	10	7	1.017555	grass	wall	6	3	2	0.920819
ball	chair	8	6	4	0.996366	shed	wall	6	3	2	0.920819
chair	grass	6	4	2	0.996366	tree	wall	9	3	3	0.920819
55-60						61-64					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
brick wall	chair	1	6	2	1	brick wall	tree	2	3	2	1
chair	notice	6	1	2	1	garden chair	tree	2	3	2	1
chair	tree	6	1	2	1						
ball	chair	2	6	2	0.69897						
chair	hoop	6	2	2	0.69897						
chair	people	6	2	2	0.69897						
Over 65											
Stem1	Stem2	S1	S2	C	PMI						
ball	tree	4	5	2	0.39794						
croquet	tree	4	5	2	0.39794						
shed	tree	4	5	2	0.39794						

Image 5

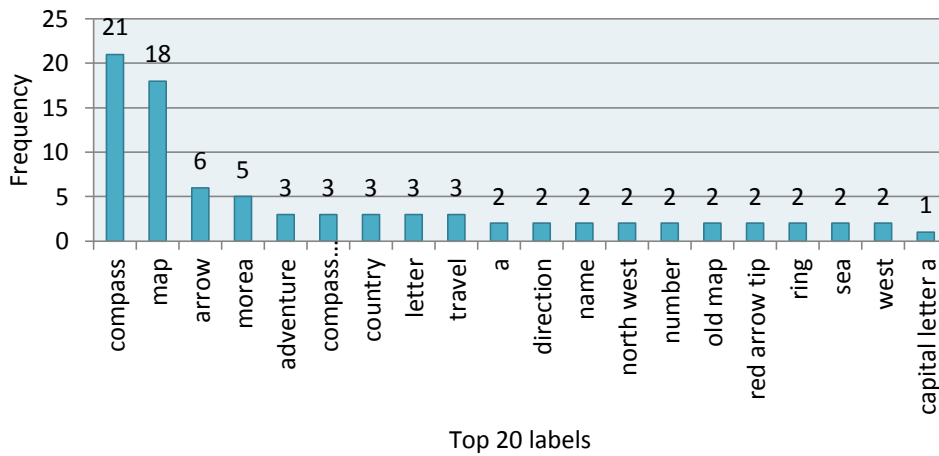
Top 20 most frequent annotations



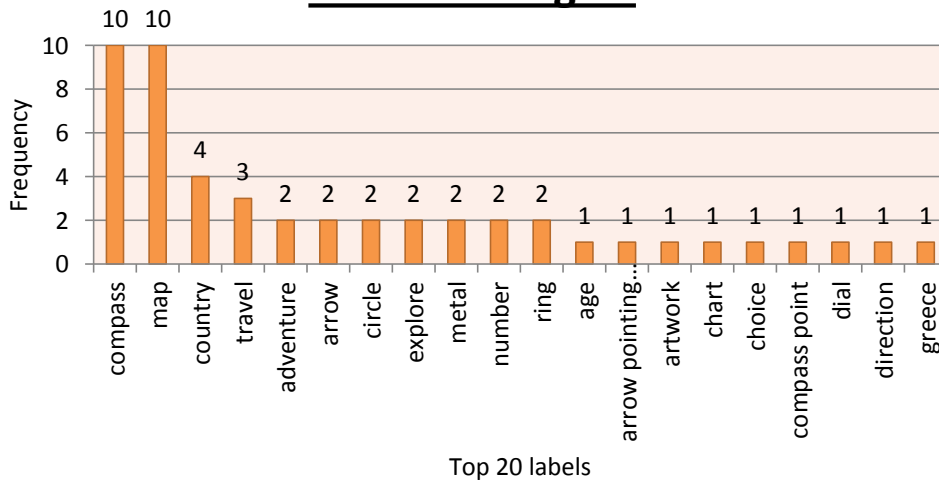
31 - 34 - Image 5



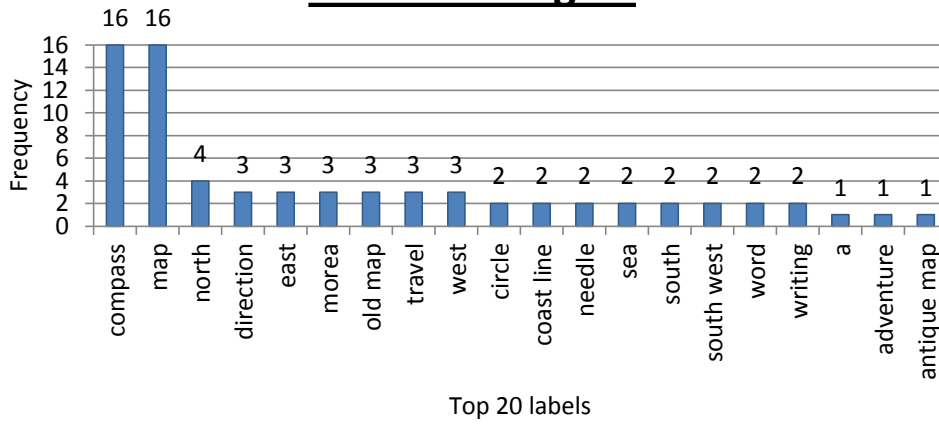
35 - 40 - Image 5



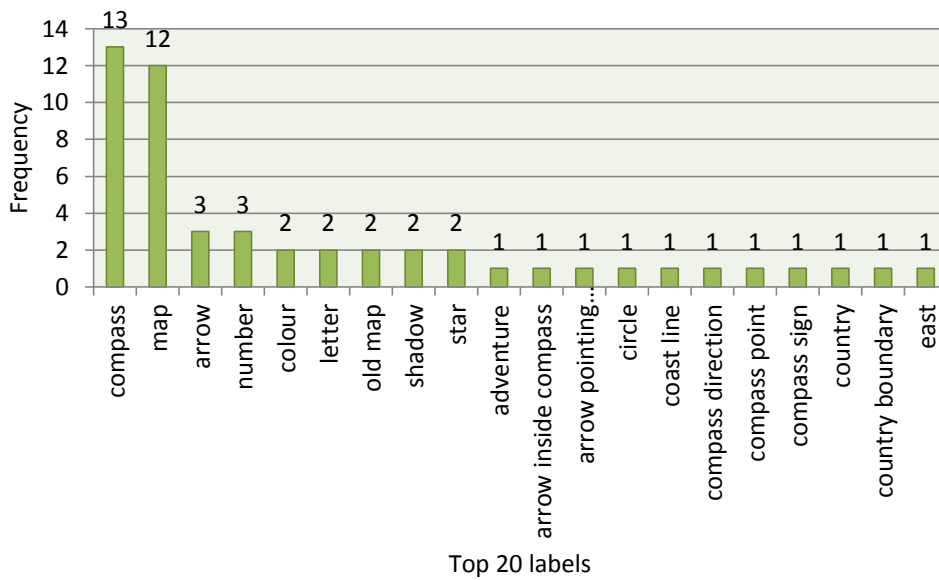
41 - 44 - Image 5



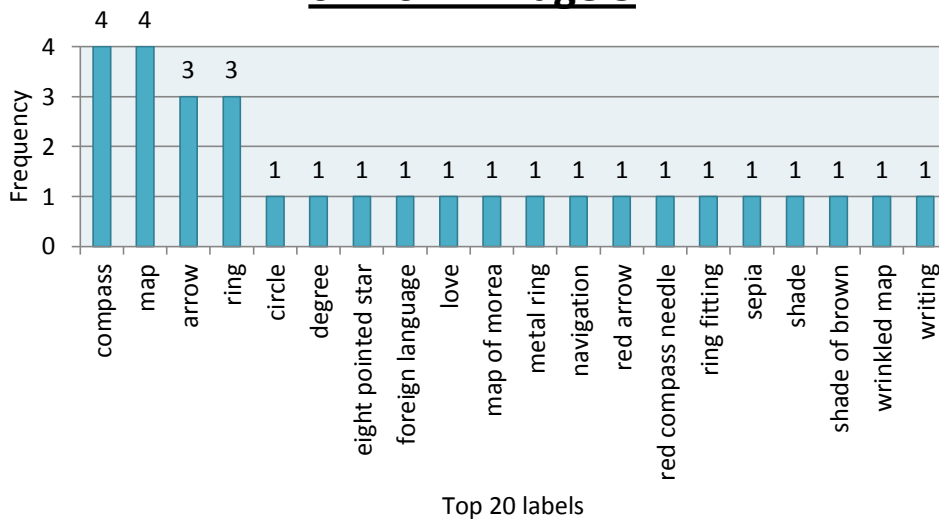
45 - 50 - Image 5



51 - 55 - Image 5



61 - 64 - Image 5



Collocation

11-15		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
old map	2	2
shadow of compass	3	1
arrow inside compass	3	1
round loop	2	1
latin name	2	1
key ring	2	1

25-30		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
compass pointing south	3	2
south south west	3	2
golfo di coron	3	2
red arrow	2	2
red light reflection on compass	5	1
capital letter a on map	5	1
outdated form of navigation	4	1
lord of the rings	4	1
drawing of a man	4	1
morea written on map	4	1
direction pointing south	3	1
map of morea	3	1
region called morea	3	1
loop on compass	3	1
red compass arrow	3	1
conquest of america	3	1
mysterious land	2	1
treasure hunt	2	1
territory outline	2	1
fancy writing	2	1

16-24		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
old map	2	12
south south west	3	9
golfo di coron	3	8
compass pointing south	3	6
capital letter a	3	6
compass pointing between south and south west	7	5
south west	2	5
map of morea	3	3
compass keyring	2	3
place name	2	3
coast line	2	3
drawing of a man	4	2
lord of the rings	4	2
keyring on compass	3	2
north west	2	2
gold ring	2	2
compass handle	2	2
compass arrow	2	2
key ring	2	2
red arrow	2	2

31-34		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
arrow inside compass	3	2
map of italy	3	1
south south west	3	1
compass keyring	2	1
south east	2	1
compass point	2	1
south west	2	1
red arrow	2	1
light reflection	2	1

35-40		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
compass pointing between south and south west	7	3
red arrow tip	3	2
north west	2	2
old map	2	2
dial pointing between south and south west	7	1
writing morea on map	4	1
drawing of a man	4	1
morea written on map	4	1
south south west	3	1
orange compass dial	3	1
name of place	3	1
name of ocean	3	1
golfo di coron	3	1
map of spain	3	1
capital letter a	3	1
place name	2	1
faraway place	2	1
south east	2	1
compass point	2	1
metal compass	2	1

45-50		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
old map	2	3
south west	2	2
coast line	2	2
fingers facing between south and west	6	1
going from place to place	5	1
arrow inside compass	3	1
arranging a holiday	3	1
image of god	3	1
foreign country	2	1
plan trip	2	1
pocket compass	2	1
old world	2	1
captain hook	2	1
sailing ship	2	1
place name	2	1
compass keyring	2	1
antique map	2	1
voyage plan	2	1
compass point	2	1
foreign language	2	1

41-44		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
arrow pointing between south and south west	7	2
south south west direction	4	1
old map	2	1
compass point	2	1
place name	2	1

51-55		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
old map	2	2
arrow pointing between south and south west	7	1
red tip of arrow	4	1
switch to set compass	4	1
red arrow point	3	1
arrow inside compass	3	1
gold metal ring	3	1
shadow of compass	3	1
compass direction	2	1
country boundary	2	1
hanging hook	2	1
compass sign	2	1
coast line	2	1
compass point	2	1
positive feeling	2	1
place name	2	1
nautical compass	2	1

56-60		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
south south west	3	1
french name	2	1
place name	2	1
red tip	2	1
unfamiliar place	2	1

Over 65		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
place name	2	1
old map	2	1
thermometer	2	1
compass setting	2	1
compass keyring	2	1
compass point	2	1
land mass	2	1

61-64		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
shade of brown	3	1
eight pointed star	3	1
map of morea	3	1
red compass needle	3	1
foreign language	2	1
red arrow	2	1
metal ring	2	1
ring fitting	2	1
wrinkled map	2	1

Co-occurrence

11 - 15		
Count	Stem1	Stem2
6	compass	map
3	compass	country
3	country	map
2	arrow	compass
2	arrow	map
2	compass	morea
2	compass	old map

16 - 24		
Count	Stem1	Stem2
193	compass	map
64	arrow	compass
62	arrow	map
52	compass	morea
52	map	morea
27	direction	map
23	compass	direction
23	map	sea
22	compass	sea
17	compass	ring

25 - 30		
Count	Stem1	Stem2
23	compass	map
4	arrow	compass
4	arrow	map
4	compass	morea
4	map	morea
4	map	travel
3	adventure	direction
3	arrow	number
3	compass	paper
3	compass	travel

31 - 34		
Count	Stem1	Stem2
8	compass	map
5	arrow	map
5	reflection	shadow
4	arrow	compass
2	arrow	circle
2	arrow	light
2	arrow	word
2	arrow	writing
2	compass	country
2	compass	direction

35 - 40		
Count	Stem1	Stem2
18	compass	map
6	arrow	compass
6	arrow	map
5	compass	morea
5	map	morea
3	compass	country
3	compass	letter
3	compass	travel
3	country	map
3	letter	map

41 - 44		
Count	Stem1	Stem2
9	compass	map
4	country	map
3	compass	country
2	arrow	map
2	compass	explore
2	compass	metal
2	compass	ring
2	compass	travel
2	country	number
2	explore	map

45 - 50		
<i>Count</i>	<i>Stem1</i>	<i>Stem2</i>
14	compass	map
3	compass	morea
3	east	north
3	east	west
3	map	morea
3	map	north
3	north	west
2	coast line	compass
2	compass	direction
2	compass	needle

56 - 60		
<i>Count</i>	<i>Stem1</i>	<i>Stem2</i>
5	compass	map
3	compass	shadow
3	map	shadow
2	arrow	compass
2	compass	island
2	island	map

Over 65		
<i>Count</i>	<i>Stem1</i>	<i>Stem2</i>
3	compass	map
2	map	pointer
2	map	ring
2	pointer	ring

51 - 55		
<i>Count</i>	<i>Stem1</i>	<i>Stem2</i>
12	compass	map
3	arrow	compass
3	arrow	map
3	compass	number
3	map	number
2	arrow	number
2	colour	compass
2	colour	map
2	compass	letter
2	compass	shadow

61 - 64		
<i>Count</i>	<i>Stem1</i>	<i>Stem2</i>
3	arrow	compass
3	arrow	map
3	compass	map
3	map	ring
2	arrow	ring
2	compass	ring

Co-occurrence PMI

S1 = Stem1 frequency, S2 = S2 frequency, C = co-occurrence frequency

11-15						16-24					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
arrow	map	2	6	2	0.875061	colour	shadow	1	16	13	3.0575
country	map	3	6	3	0.875061	ambition	direction	3	42	62	2.839697
arrow	compass	2	8	2	0.750123	gold ring	map	2	20	19	2.812057
compass	country	8	3	3	0.750123	east	south	5	22	23	2.468011
compass	map	8	6	6	0.750123	east	west	5	5	5	2.448706
compass	morea	8	2	2	0.750123	explore	knowledg e	19	3	8	2.294891
compass	old map	8	2	2	0.750123	ink	paper	4	17	9	2.26941
						germen	golfo di coron	4	8	4	2.244586
						old	sea	15	29	52	2.22519
						compass arrow	morea	2	66	15	2.203194
25-30						31-34					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
star	writing	1	4	2	1.993436	light	star	1	1	2	2.146128
arrow	line	9	1	3	1.817345	reflection	shadow	2	1	2	1.845098
ink	paper	2	3	2	1.817345	arrow	light	6	1	2	1.367977
old	travel	2	5	2	1.595496	map	writing	9	2	5	1.288796
map	morea	24	5	23	1.577013	compass	morea	10	3	8	1.271067
adventure	travel	5	5	4	1.498586	compass	direction	10	2	5	1.243038
number	writing	4	4	2	1.391376	arrow	circle	6	2	2	1.066947
arrow	land	9	2	2	1.340224	arrow	writing	6	2	2	1.066947
arrow	west	9	2	2	1.340224	country	map	2	9	2	0.890856
arrow	number	9	4	3	1.215285	map	reflection	9	2	2	0.890856
35-40						41-44					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
north west	west	2	2	2	1.759668	explore	travel	2	3	2	1.335792
country	letter	3	3	3	1.583577	country	number	4	2	2	1.210853
compass pointing between south and south west	map	3	18	18	1.583577	compass	ring	10	2	2	0.812913
adventure	travel	3	3	2	1.407485	map	ring	10	2	2	0.812913
morea	ring	5	2	2	1.361728	map	number	10	2	2	0.812913
arrow	name	6	2	2	1.282547	compass	metal	10	2	2	0.812913
compass	direction	21	2	6	1.2156	map	metal	10	2	2	0.812913
map	ring	18	2	5	1.203365	arrow	map	2	10	2	0.812913
arrow	country	6	3	2	1.106455	country	map	4	10	4	0.812913
arrow	letter	6	3	2	1.106455	explore	map	2	10	2	0.812913

45-50						51-54					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
north	south	4	2	3	1.634729	colour	compass	2	3	2	1.39794
east	south	3	2	2	1.583577	letter	number	2	3	2	1.39794
south	west	2	3	2	1.583577	arrow	number	3	3	2	1.221849
east	west	3	3	2	1.407485	arrow	map	3	12	3	0.79588
east	north	3	4	2	1.282547	colour	map	2	12	2	0.79588
north	west	4	3	2	1.282547	letter	map	2	12	2	0.79588
compass	south west	16	2	3	1.032669	map	number	12	3	3	0.79588
compass	writing	16	2	3	1.032669	map	shadow	12	2	2	0.79588
east	map	3	16	3	0.856578	map	star	12	2	2	0.79588
map	west	16	3	3	0.856578	arrow	compass	3	13	3	0.761118
55-60						61-64					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
island	map	2	5	2	0.778151	arrow	compass	3	4	3	0.875061
arrow	compass	2	6	2	0.69897	arrow	map	3	4	3	0.875061
compass	island	6	2	2	0.69897	map	ring	4	3	3	0.875061
compass	map	6	5	5	0.69897	arrow	ring	3	3	2	0.823909
map	shadow	5	5	3	0.556303	compass	map	4	4	3	0.750123
compass	shadow	6	5	3	0.477121	compass	ring	4	3	2	0.69897
Over 65											
Stem1	Stem2	S1	S2	C	PMI						
pointer	ring	2	2	2	1.09691						
map	pointer	4	2	2	0.79588						
map	ring	4	2	2	0.79588						
compass	map	4	4	3	0.670941						