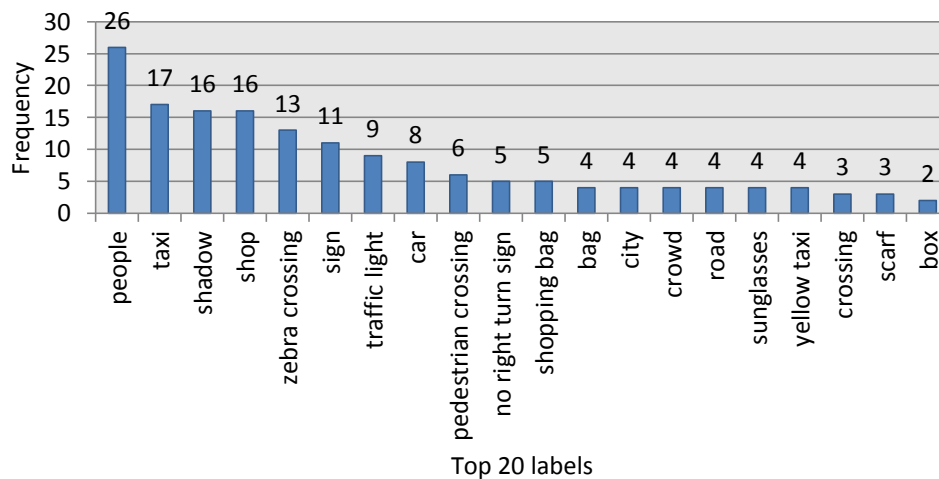


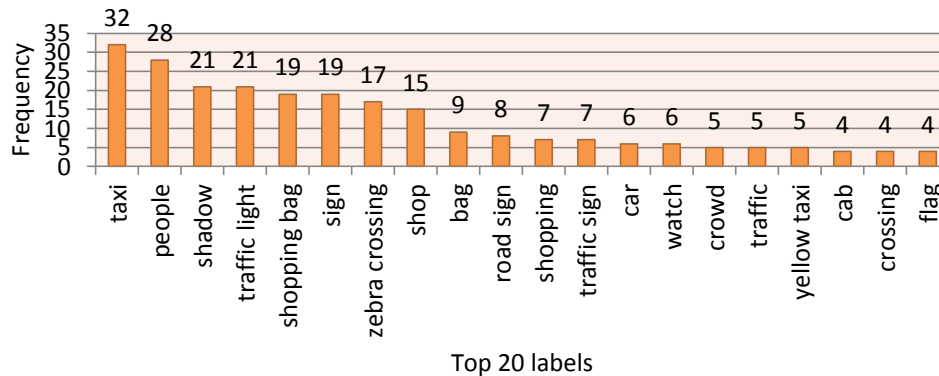
## Image 1

### Top 20 most frequent annotations

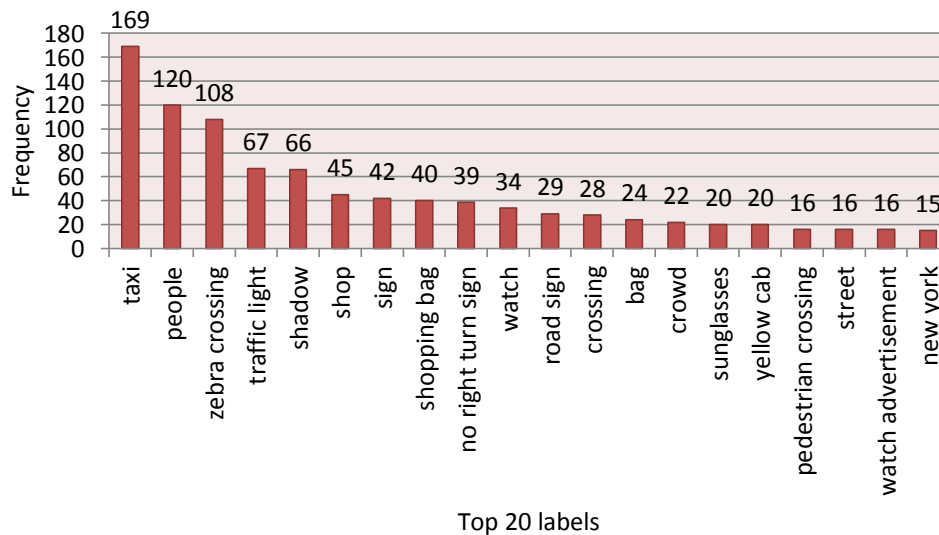
#### High/ Secondary School - Image 1



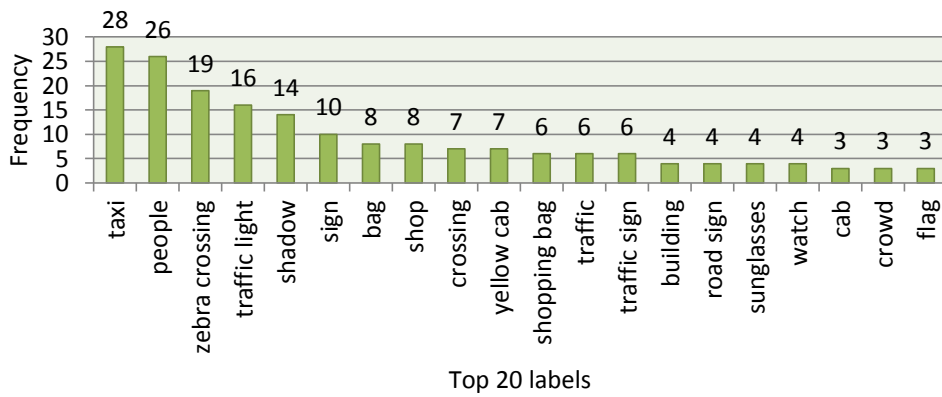
#### Higher education (Year 12 & 13) - Image 1



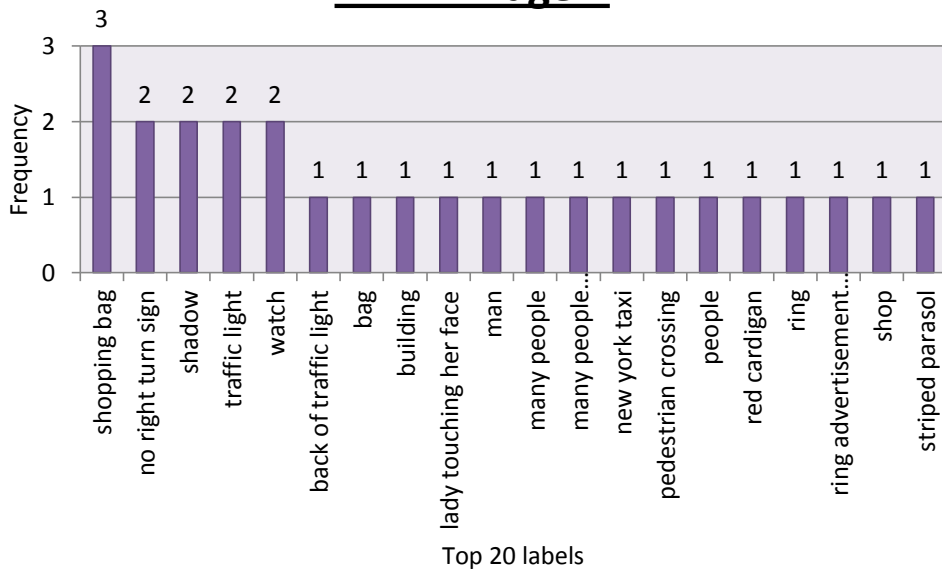
#### University/ College (Undergraduate) - Image 1



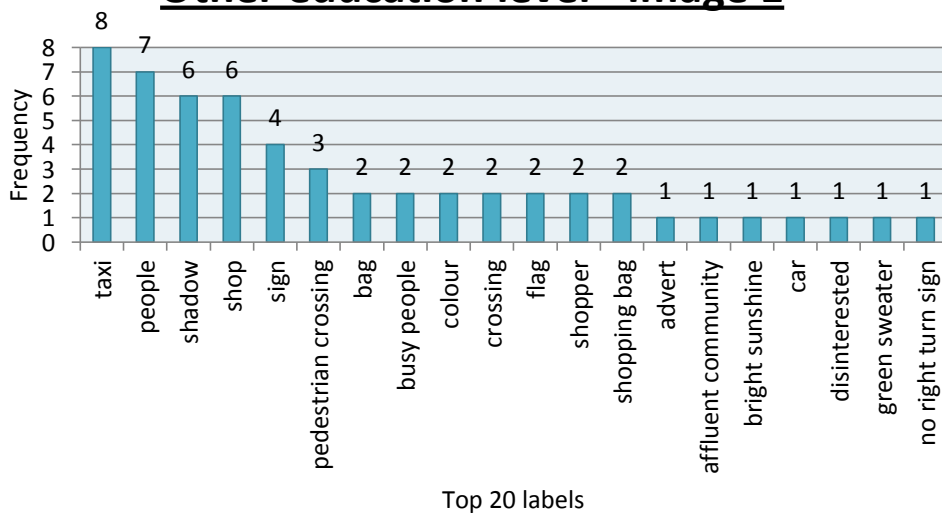
### University/ College (Postgraduate) - Image 1



### PhD - Image 1



### Other education level - Image 1



## Collocation

High / Secondary School		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
zebra crossing	2	13
traffic light	2	9
pedestrian crossing	2	6
no right turn sign	4	5
shopping bag	2	5
yellow taxi	2	4
nice day	2	2
busy street	2	2
traffic sign	2	2
new york	2	2
road crossing	2	2
yellow cab	2	2
road sign	2	2
red and white striped cover	5	1
no right turn road sign	5	1
green traffic light man	4	1
red and white awning	4	1
bright yellow shirt	3	1
blue t shirt	3	1
commercial for watch	3	1

Middle school		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
woman wearing white scarf	4	1
cross walk	2	1
paper bag	2	1

Higher education (Year 12 & 13)		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
traffic light	2	21
shopping bag	2	19
zebra crossing	2	17
road sign	2	8
traffic sign	2	7
yellow taxi	2	5
no right turn sign	4	4
yellow cab	2	4
pedestrian crossing	2	3
paper bag	2	2
green jumper	2	2
new york	2	2
street sign	2	2
shadow of people on pavement	5	1
blonde lady wearing red jumper	5	1
woman wearing neon jumper	4	1
woman wearing brown coat	4	1
woman wearing white scarf	4	1
lady wearing white shirt	4	1
woman wearing red shirt	4	1

University / College (Undergraduate)		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
zebra crossing	2	108
traffic light	2	67
shopping bag	2	40
no right turn sign	4	39
road sign	2	29
yellow cab	2	20
pedestrian crossing	2	16
watch advertisement	2	16
new york	2	15
yellow taxi	2	12
street sign	2	10
traffic sign	2	9
man wearing sunglasses	3	8
sign post	2	8
busy street	2	5
white scarf	2	5
new york city	3	4
brown paper bag	3	4
green jumper	2	4
brown coat	2	4

University / College (Postgraduate)		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
zebra crossing	2	19
traffic light	2	16
yellow cab	2	7
shopping bag	2	6
traffic sign	2	6
road sign	2	4
no right turn sign	4	3
man wearing sunglasses	3	3
watch advertisement	2	3
street sign	2	3
new york	2	3
do not turn sign	4	2
pedestrian crossing	2	2
shop sign	2	2
white scarf	2	2
taxi cab	2	2
cross walk	2	2
red and white striped awning	5	1
girl with small carton box	5	1
woman wearing green jumper	4	1

Other		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
pedestrian crossing	2	3
shopping bag	2	2
busy people	2	2
no right turn sign	4	1
yellow cab	2	1
green sweater	2	1
white scarf	2	1
traffic light	2	1
watch advertisement	2	1
stripped canopy	2	1
street sign	2	1
taxi cab	2	1
shop awning	2	1
road sign	2	1
white face	2	1
affluent community	2	1
bright sunshine	2	1
zebra crossing	2	1
road mark	2	1

PhD		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
shopping bag	2	3
no right turn sign	4	2
traffic light	2	2
ring advertisement on billboard	4	1
lady touching her face	4	1
back of traffic light	4	1
many people wearing sunglasses	4	1
woman wearing green cardigan	4	1
new york taxi	3	1
striped shop canopy	3	1
traffic sign	2	1
pedestrian crossing	2	1
many people	2	1
red cardigan	2	1
yellow cab	2	1
striped parasol	2	1

Without education		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
seasonal clothing	2	1
shopping bag	2	1

## Co-occurrence

High / Secondary School		
Count	Stem1	Stem2
91	taxi	zebra crossing
50	sign	taxi
47	traffic light	zebra crossing
44	shop	taxi
40	shopping bag	taxi
35	crossing	taxi
24	shop	traffic light
23	shopping bag	traffic light
19	shadow	shopping bag
17	pedestrian crossing	taxi
15	car	shop
13	no right turn sign	shadow
13	shop	shopping bag
12	sunglasses	taxi
12	taxi	watch advertisement
11	watch advertisement	zebra crossing
10	bag	shadow
9	crossing	traffic light
9	pedestrian crossing	shop
9	people	yellow taxi

Middle school		
Count	Stem1	Stem2
4	paper bag	taxi
2	taxi	woman wearing white scarf

Higher education (Year 12 & 13)		
Count	Stem1	Stem2
51	people	sign
25	people	road sign
23	shop	sign
19	bag	sign
16	sign	traffic light
15	people	road
12	crossing	sign
12	road	taxi
11	bag	traffic light
11	no right turn sign	watch
10	car	shadow
10	sign	watch
10	taxi	traffic sign
9	road sign	traffic light
8	no right turn sign	yellow cab
8	people	traffic
8	shopping bag	sign
7	shopper	traffic light
7	taxi	woman
6	flag	no right turn sign

University / College (Undergraduate)		
Count	Stem1	Stem2
135	people	taxi
73	people	zebra crossing
71	taxi	traffic light
60	people	shop
55	shadow	taxi
51	people	shadow
51	people	traffic light
31	shadow	zebra crossing
30	bag	taxi
29	road sign	taxi
28	crossing	people
26	car	people
26	shadow	sign
25	taxi	watch
22	no right turn sign	taxi
21	shadow	traffic light
21	shop	zebra crossing
19	bag	people
19	road sign	zebra crossing
19	sign	zebra crossing

University / College (Postgraduate)		
Count	Stem1	Stem2
29	people	shopping bag
29	shopping bag	zebra crossing
18	yellow cab	zebra crossing
16	pedestrian crossing	people
13	sunglasses	zebra crossing
12	people	yellow cab
9	traffic light	yellow cab
7	shopping bag	sunglasses
7	taxi	white scarf
7	taxi	women
6	men	women
6	shopping bag	yellow cab
5	crossing	no right turn sign
5	man wearing sunglasses	zebra crossing
5	people	sunglasses
5	sunglasses	yellow cab
4	crowd	traffic
4	flag	traffic
4	men	taxi
4	people	street sign

Other		
Count	Stem1	Stem2
17	shadow	shop
13	crossing	shadow
11	shadow	yellow cab
7	shadow	shopper
6	shop	yellow cab
5	shopper	yellow cab
4	flag	people
4	flag	sunglasses
4	flag	taxi
3	no right turn sign	white scarf
3	shadow	white scarf
3	shop	shopper
2	colour	shadow
2	colour	shop
2	colour	sign
2	crossing	yellow cab
2	flag	shop awning
2	overcrowding	shopper

PhD		
Count	Stem1	Stem2
11	shadow	sunglasses
3	no right turn sign	sunglasses
2	bag	man
2	bag	woman
2	building	shadow
2	man	yellow

Without education		
Count	Stem1	Stem2
4	flag	shopping bag
2	advert	shopping
2	busy	yellow
2	cloth	people

# Co-occurrence PMI

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

## High/ Secondary School

## Higher education (12&13)

<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>
busy street	nice day	2	2	47	3.4411 06	coat	crossing	2	4	5 1	3.342299
bag	cab	4	2	91	3.4270 19	advertisement	crowd	1	5	2 5	3.236789
busy street	pedestrian	2	2	40	3.3710 68	green jumper	paper bag	2	2	1 5	3.11185
busy	car	1	8	50	3.1669 48	busy	crowd	3	5	2 3	2.723456
new york	no right turn sign	2	5	44	3.0145 21	pedestrian crossing	shopper	3	2	7	2.604766
building	street light	1	1	4	2.9731 28	flag	no right turn sign	4	4	1 6	2.537819
busy street	pedestrian crossing	2	6	35	2.8359 55	cab	crowd	4	5	1 9	2.515543
nice day	pedestrian crossing	2	6	24	2.6720 98	crowd	shopper	5	2	8	2.440909
cab	street light	2	1	4	2.6720 98	america	people	1	28	1 2	2.169842
new york	shopping	2	2	6	2.5471 59	pavement	people	1	28	1 1	2.132054

## University/ College (Undergraduate)

## University/ College (Postgraduate)

<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	movement	7	2	22	3.3594 56	cab	human	3	2	2 9	3.146645
city	movement	8	2	25	3.3569 81	cab	flag	3	3	2 9	2.970553
cross walk	new york city	4	4	19	3.2377 95	flag	human	3	2	1 8	2.939519
cab	cross walk	13	4	60	3.2253 09	crossing	light	7	1	1 6	2.82142
building	cab	10	13	13 5	3.1795 52	man wearing sunglasses	pedestrian crossing	3	2	9	2.638489
advertisement for watch	store	2	3	4	2.9870 7	awning	street sign	2	3	5	2.383217
building	car	10	13	71	2.9004 76	bag	pedestrian crossing	8	2	1 2	2.337459
city	light	8	7	26	2.8299 47	life	shop	1	8	6	2.337459
line of cabs	no right turn sign	1	39	15	2.7481 88	crossing	no right turn sign	7	3	1 3	2.254122
advert	crossing	6	28	55	2.6782 15	life	traffic	1	6	3	2.161368

## PhD

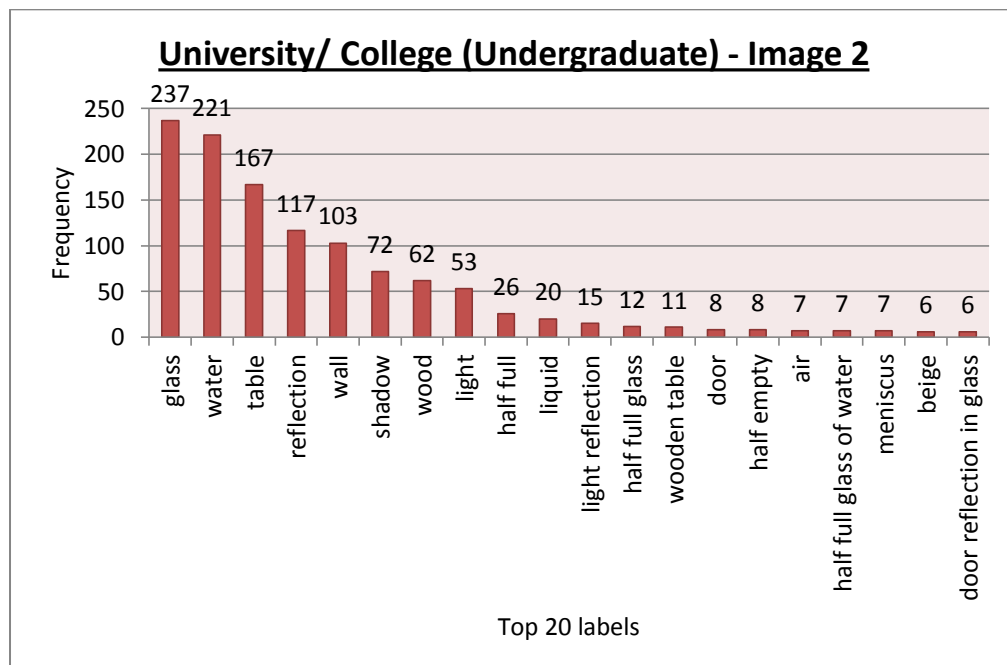
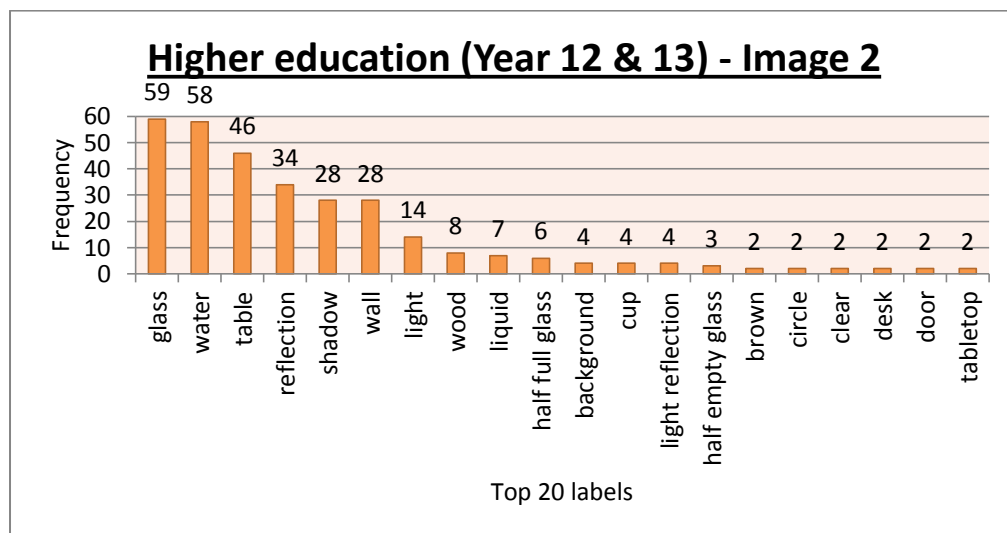
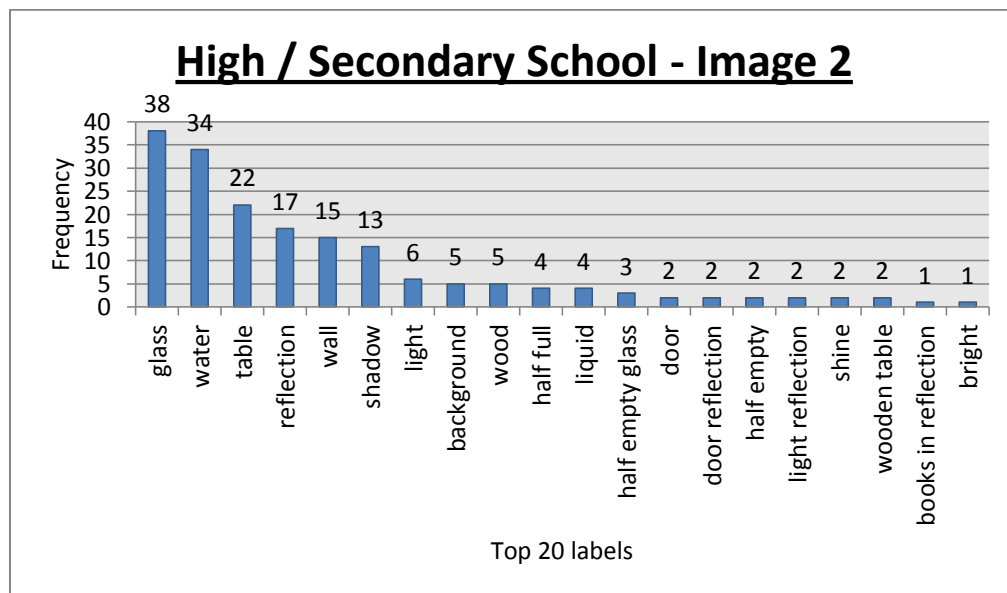
<i>Stem1</i>	<i>Stem2</i>	<i>S1</i>	<i>S2</i>	<i>C</i>	<i>PMI</i>
bag	man	1	1	11	2.5854 61
building	shadow	1	1	3	2.0211 89
shadow	sunglasses	1	1	2	1.8450 98
bag	woman	1	1	2	1.8450 98
man	yellow	1	1	2	1.8450 98
no right turn sign	sunglasses	2	1	2	1.5440 68

Middle School						Other education level					
<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>S<sub>1</sub></i>	<i>S<sub>2</sub></i>	<i>C</i>	<i>PMI</i>
paper bag	taxi	1	1	4	1.30103	flag	shop awning	2	1	5	2.273001
taxi	woman wearing white scarf	1	1	2	1	overcrowding	shopper	1	2	4	2.176091
Without education						no right turn sign	white scarf	1	1	2	2.176091
<i>Stem1</i>	<i>Stem2</i>	<i>S1</i>	<i>S2</i>	<i>C</i>	<i>PMI</i>	flag	sunglasses	2	1	3	2.051153
cloth	people	1	2	2	1.176091	flag	people	2	7	7	1.959382
busy	yellow	1	1	2	1.477121	colour	shadow	2	6	3	1.909823
flag	shopping bag	1	1	2	1.477121	crossing	yellow cab	2	1	2	1.875061
advert	shopping	1	1	4	1.778151	shopper	yellow cab	2	1	2	1.875061
						crossing	shadow	2	6	1	1.837273
						colour	shop	2	6	7	1.640978

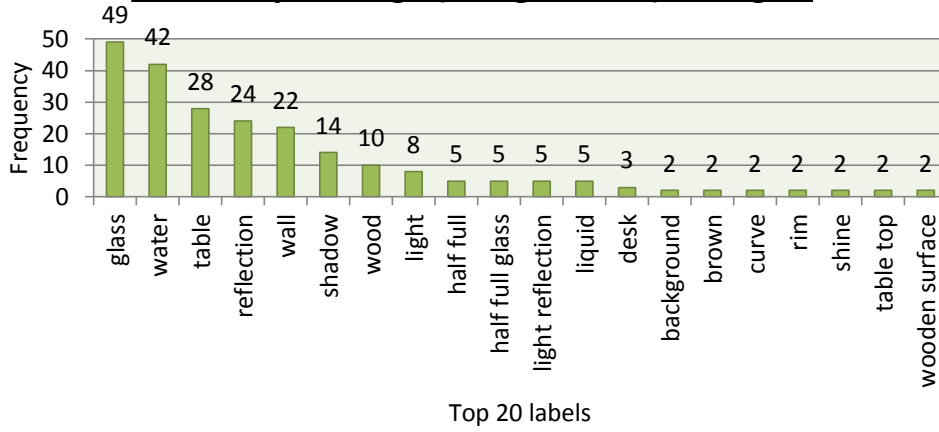


## Image 2

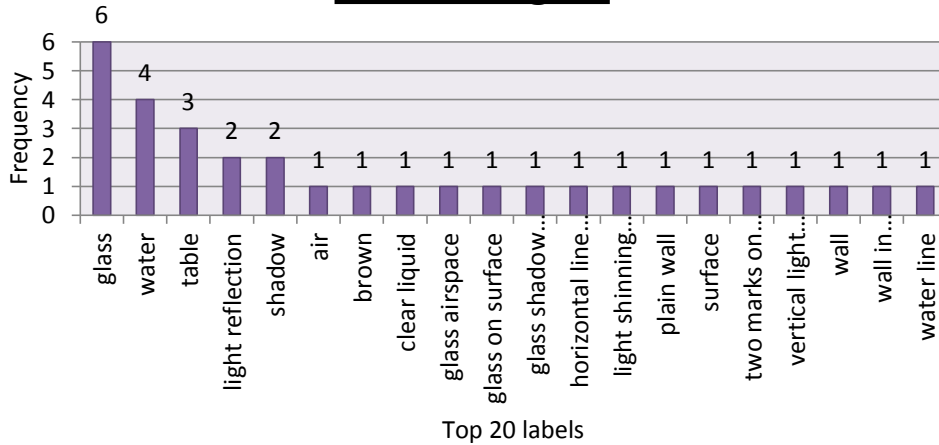
### Top 20 most frequent annotations



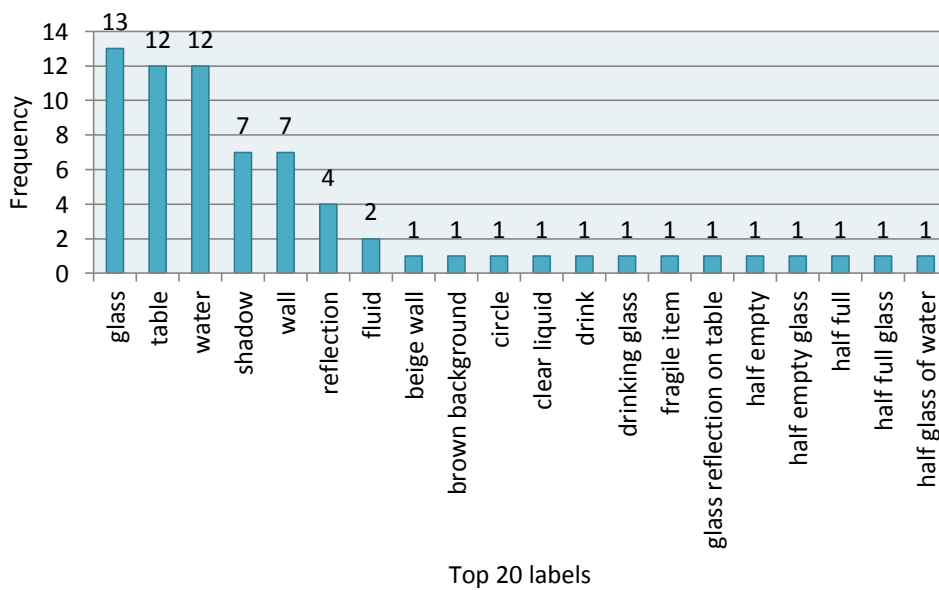
### University/ College (Postgraduate) - Image 2



### PhD - Image 2



### Other education level - Image 2



## Collocation

High / Secondary School		
Stem	Collocation	Frequency
half full	2	4
half empty glass	3	3
wooden table	2	2
door reflection	2	2
light reflection	2	2
half empty	2	2
half empty glass of water	5	1
light reflection on table	4	1
smooth wooden table	3	1
water level line	3	1
books in reflection	3	1
nicely varnished table	3	1
half full glass	3	1
wooden worktop	2	1
wooden surface	2	1
cup reflection	2	1
lonely reflection	2	1
calm background	2	1
yellow line	2	1
white line	2	1

University / College (Undergraduate)		
Stem	Collocation	Frequency
half full	2	26
light reflection	2	15
half full glass	3	12
wooden table	2	11
half empty	2	8
half full glass of water	5	7
door reflection in glass	4	6
glass reflection on table	4	6
reflection on table	3	6
glass reflection	2	6
wooden surface	2	6
glass of water	3	4
half empty glass	3	4
shadow of glass	3	4
clear liquid	2	4
white wall	2	4
door reflection	2	3
light reflected from glass	4	2
light reflection from glass	4	2

Higher education (Year 12 & 13)		
Stem	Collocation	Frequency
half full glass	3	6
light reflection	2	4
half empty glass	3	3
edge of water in glass	5	1
line between space and liquid	5	1
door reflection in glass	4	1
light reflection in glass	4	1
half full half empty	4	1
shine of reflected light	4	1
cup reflection on table	4	1
shadow on table	3	1
reflection of glass	3	1
grain in wood	3	1
rim of glass	3	1
half full cup	3	1
water surface	2	1
table top	2	1
blank wall	2	1
half full	2	1
half empty	2	1

PhD		
Stem	Collocation	Frequency
light reflection	2	2
two marks on glass rim	5	1
vertical light reflection in water	5	1
wood reflection in glass	4	1
horizontal line in wood	4	1
light shining in glass	4	1
glass shadow on table	4	1
glass on surface	3	1
wall in background	3	1
plain wall	2	1
clear liquid	2	1
water line	2	1
glass airspace	2	1
white background	2	1

University / College (Postgraduate)		
Stem	Collocation	Frequency
half full glass	3	5
half full	2	5
light reflection	2	5
wooden surface	2	2
table top	2	2
circle on top of glass	5	1
glass position on table surface	5	1
light reflected from glass	4	1
shine on table	3	1
shadow of glass	3	1
glass shadow	2	1
table surface	2	1
clear liquid	2	1
refracted light	2	1
shining light	2	1
vertical stripe	2	1
horizontal grain	2	1
painted background	2	1
wood grain	2	1

Without education		
Stem	Collocation	Frequency
half empty glass	3	2
square glass bottom	3	1
band around glass	3	1
empty glass	2	1
coloured background	2	1

Other		
Stem	Collocation	Frequency
half glass of water	4	1
glass reflection on table	4	1
half empty glass	3	1
half full glass	3	1
surface supporting glass	3	1
shade of brown	3	1
shine off glass	3	1
meniscus	2	1
half empty	2	1
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	1
half full	2	1

## Co-occurrence

High / Secondary School		
Count	Stem1	Stem2
263	glass	table
248	table	water
166	glass	wall
158	wall	water
105	reflection	table
29	glass	half full
23	half full	water
15	background	water
14	background	glass
12	background	table
10	door	water
10	glass	wooden table
9	cup	water
9	door	glass
9	door	table
9	glass	half empty
9	half empty	water
9	light reflection	shadow
9	light reflection	wall
9	water	wooden table

Higher education (Year 12 & 13)		
Count	Stem1	Stem2
113	glass	shadow
98	shadow	water
79	shadow	table
37	light	table
29	glass	liquid
21	liquid	table
20	liquid	reflection
19	light	shadow
11	liquid	wall
10	brown	glass
10	glass	half full glass
10	half full glass	table
8	half full glass	reflection
8	liquid	wood
6	glass	tabletop
6	half empty glass	table
6	half full glass	shadow
5	background	shadow
5	reflection	tabletop
5	tabletop	wall

University / College (Undergraduate)		
Count	Stem1	Stem2
347	glass	water
165	glass	reflection
145	reflection	water
136	table	wall
76	glass	wood
65	glass	light
62	light	water
62	water	wood
61	reflection	wall
55	shadow	wall
40	reflection	shadow
40	reflection	wood
38	light	reflection
21	wall	wood
20	light reflection	water
18	light	wall
18	light	wood
17	half full	table
17	shadow	wood
15	light reflection	table

PhD		
Count	Stem1	Stem2
21	glass	light reflection
3	light reflection	wood
2	brown	shadow

Without education		
Count	Stem1	Stem2
2	glass	thirsty
2	table	thirsty
2	thirsty	water

University / College (Postgraduate)		
Count	Stem1	Stem2
27	table	wood
7	half full	wall
5	desk	shadow
3	glass	shadow of glass
3	half full glass	liquid
3	liquid	shine
3	reflection	rim
3	shadow of glass	water
3	wall	wooden surface
2	bright	glass
2	brown	liquid
2	clear liquid	wooden surface
2	drink	half full
2	glass	pink
2	glass	space
2	glass	transparent
2	glass	wood grain
2	glass	worktop
2	half full	light reflection
2	half full	simplicity

Other		
Count	Stem1	Stem2
15	half full glass	water
7	glass	half empty glass
6	circle	glass
5	half empty glass	half full glass
5	meniscus	water
4	circle	water
3	circle	shadow
3	circle	table
3	half full glass	light
2	beige wall	glass
2	beige wall	shadow
2	beige wall	water
2	fluid	table
2	half empty	table
2	half glass of water	table

# Co-occurrence PMI

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

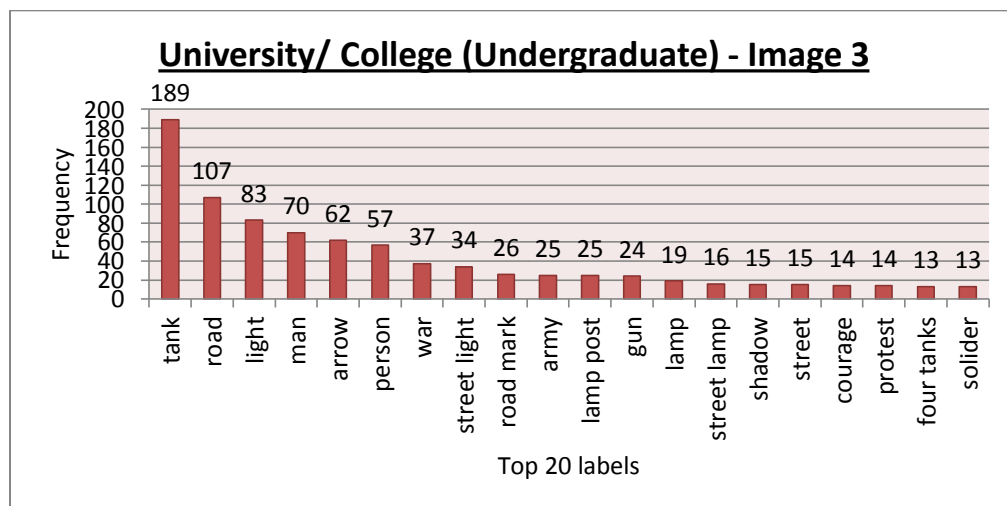
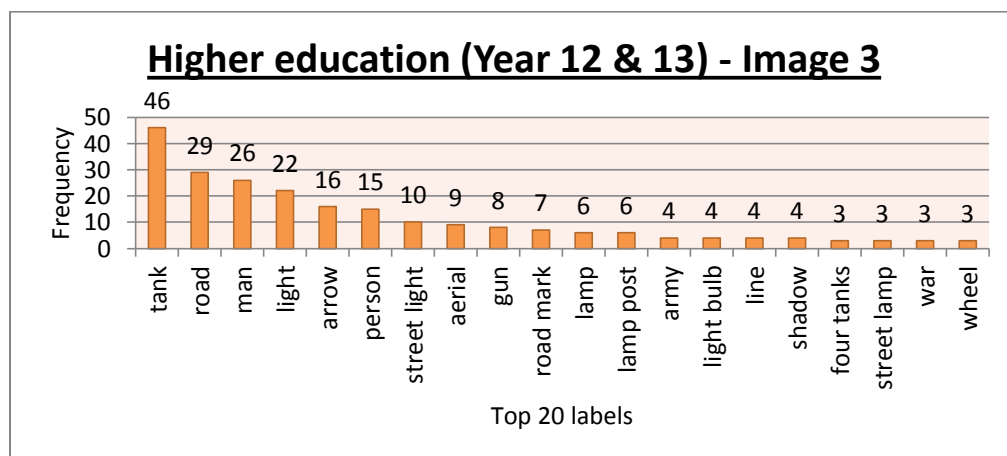
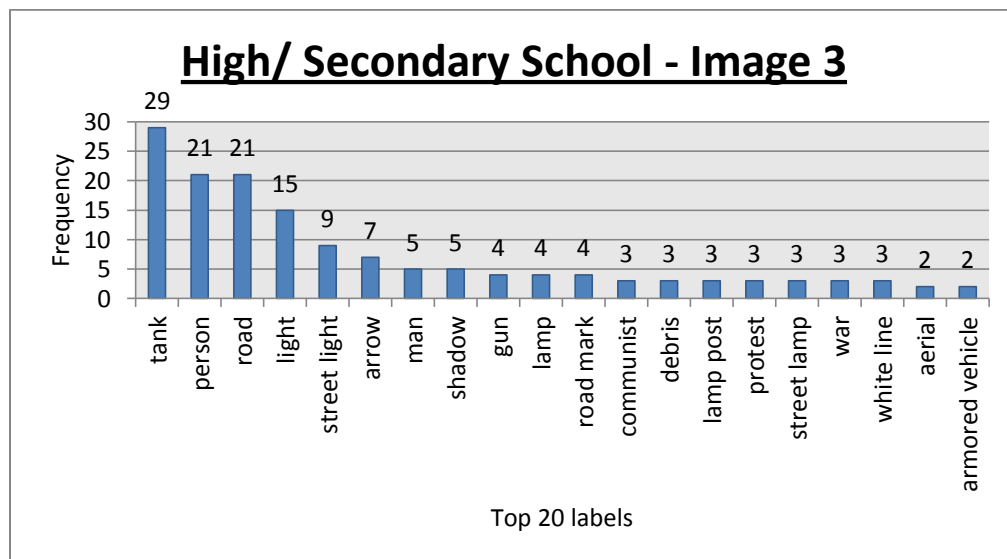
High/ Secondary School						Higher education (12&13)					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
cup	cup reflection	1	1	26 3	4.7721 38	clear	half empty	1	1	21	3.878 522
colour	glass	1	38	16 6	2.9925 07	half full	transparent	1	1	3	3.033 424
colour brown	glass	1	38	15 8	2.9710 56	clean	glass	1	59	98	2.776 677
door reflection	light reflection	2	2	12	2.8293 04	curve	light	1	14	19	2.688 928
half empty	half full	2	4	14	2.5952 21	clear	glass	1	59	79	2.683 078
door	glass	2	38	10 5	2.4925 58	cup	surface	4	1	4	2.556 303
background	glass	5	38	24 8	2.4678 81	brown	glass	2	59	11 3	2.537 499
colour	shadow	1	13	9	2.1924 82	curve	glass	1	59	29	2.247 848
oval	reflection	1	17	9	2.0759 76	brown backgroun d	reflection	1	34	10	2.024 824
purity	reflection	1	17	9	2.0759 76	curve	reflection	1	34	8	1.927 914
University/ College (Undergraduate)						University/ College (Postgraduate)					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
brown color	half air	2	2	21	3.8857	drink	half full	1	5	7	2.600 973
brown color	half water	2	2	15	3.7395 72	clear liquid	wooden surface	1	2	2	2.454 845
half full container	light reflected from glass	1	2	7	3.7096 09	bright	glass	1	49	27	2.196 013
glass reflection on table	half full glass of water	6	1	17	3.6178 39	half full	simplicity	5	1	2	2.056 905
half air	half water	2	2	9	3.5177 24	brown	liquid	2	5	3	1.931 966
colour	shine	2	3	4	2.9894 5	light	white wall	8	1	2	1.852 785
beige background	glass	1	23 7	14 5	2.9521 61	half full	light reflection	5	5	5	1.755 875
glass reflection on table	light reflected from glass	6	2	7	2.9314 58	liquid	shine	5	2	2	1.755 875
clear	transparent	3	4	3	2.5634 81	half full glass	liquid	5	5	3	1.534 026
air	glass	7	23 7	34 7	2.4860 24	rim	wood	2	10	2	1.454 845
PhD											
Stem1	Stem2	S1	S2	C	PMI						
glass	light reflection	6	2	21	1.7871 06						
light reflection	wood	2	1	3	1.7201 59						
brown	shadow	1	2	2	1.5440 68						

Other education level					
<i>Stem1</i>	<i>Stem2</i>	<i>S1</i>	<i>S2</i>	<i>C</i>	<i>PMI</i>
half empty glass	half full glass	1	1	5	2.60206
half full glass	light	1	1	5	2.60206
beige wall	glass	1	13	15	1.965238
beige wall	shadow	1	7	4	1.660052
circle	glass	1	13	7	1.634245
Without education					
	glass	13	1	6	1.567298
<i>Stem1</i>	<i>Stem2</i>	<i>S1</i>	<i>S2</i>	<i>C</i>	<i>PMI</i>
	circle	1	7	3	1.535113
table	thirsty	1	1	2	1.477121
circle	table	1	12	3	1.30103
glass	thirsty	2	1	2	1.176091
half empty	table	1	12	2	1.124939
thirsty	water	1	2	2	1.176091
half glass of water	table	1	12	2	1.124939

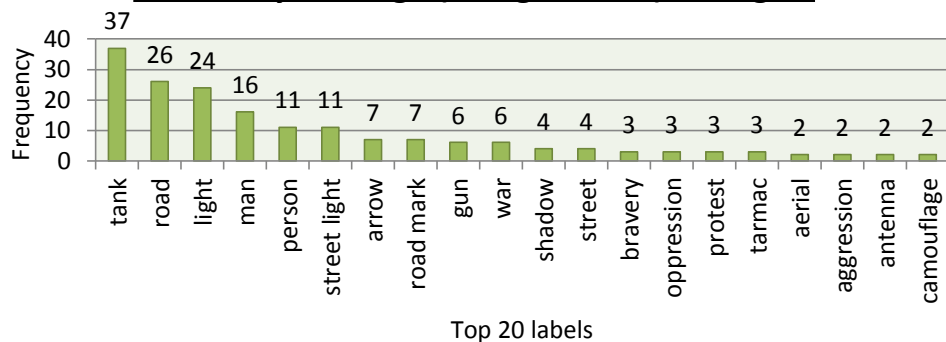


## Image 3

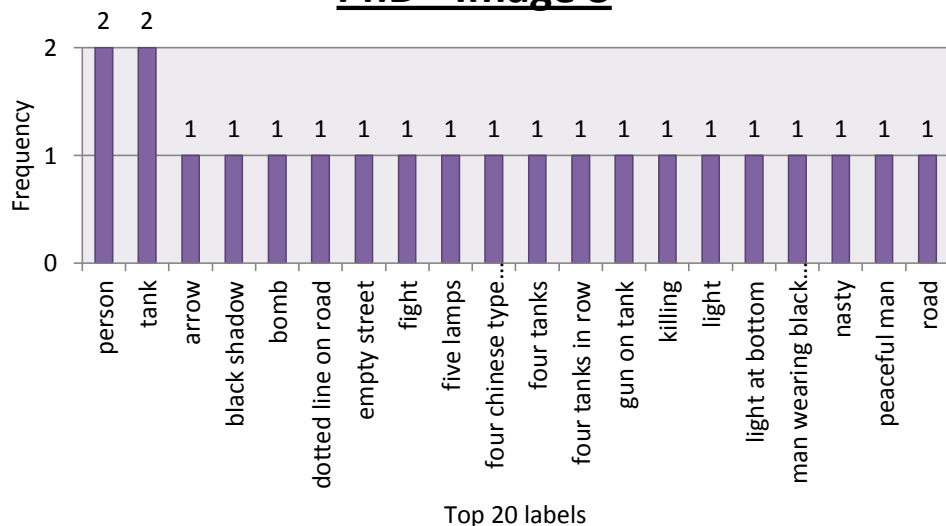
### Top 20 most frequent annotations



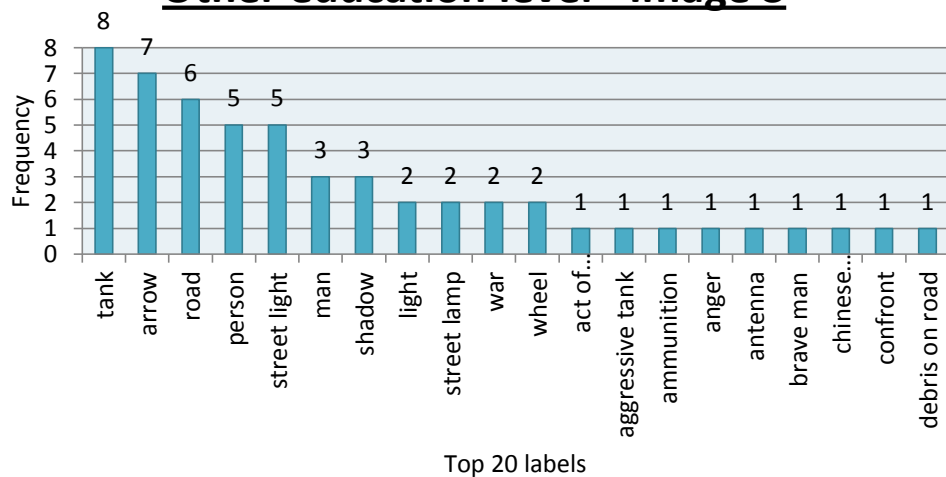
### University/ College (Postgraduate) - Image 3



### PhD - Image 3



### Other education level - Image 3



## Collocation

High / Secondary School		
Stem	Collocation	Frequency
street light	2	9
road mark	2	4
white line	2	3
lamp post	2	3
street lamp	2	3
piece of wood	3	2
armored vehicle	2	2
red star	2	2
road arrow	2	2
tiananmen square	2	2
four tanks	2	2
man standing up for rights	5	1
man in front of tank	5	1
authorities ruling people	3	1
sub machine gun	3	1
member of public	3	1
arrow on road	3	1
item on road	3	1
man in tank	3	1
military bullying	2	1

University / College (Undergraduate)		
Stem	Collocation	Frequency
street light	2	34
road mark	2	26
lamp post	2	25
street lamp	2	16
four tanks	2	13
tiananmen square	2	12
arrow on road	3	6
red star	2	6
army tank	2	5
star on tank	3	3
four army tanks	3	3
shadow of tree	3	3
white line	2	3
road sign	2	3
light bulb	2	3
man stood in front of tanks	6	2
man stood out of tank	5	2
person in front of tanks	5	2
man in tank	3	2
person at front	3	2

Higher education (Year 12 & 13)		
Stem	Collocation	Frequency
street light	2	10
road mark	2	7
lamp post	2	6
light bulb	2	4
street lamp	2	3
four tanks	2	3
piece of wood	3	2
road sign	2	2
tiananmen square	2	2
person wearing white in front of tanks	7	1
guy standing in front of tanks	6	1
person in front of tanks	5	1
red communist star on tank	5	1
person standing in way	4	1
man wearing white shirt	4	1
tiananmen square protests 1989	4	1
standing up for rights	4	1
white bulbed street lamp	4	1
defiance towards government	3	1
shadow of tree	3	1

PhD		
Stem	Collocation	Frequency
four chinese type 59 tanks	5	1
dotted line on road	4	1
four tanks in row	4	1
man wearing black hat	4	1
shadow of tree	3	1
wood on road	3	1
white light bulb	3	1
gun on tank	3	1
star on tank	3	1
light at bottom	3	1
stick on road	3	1
road with tanks	3	1
road mark	2	1
empty street	2	1
peaceful man	2	1
tank antenna	2	1
street lamp	2	1
white arrow	2	1
tank driver	2	1
street light	2	1

University / College (Postgraduate)		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
street light	2	11
road mark	2	7
light bulb	2	2
street lamp	2	2
tiananmen square	2	2
four tanks	2	2
person standing in front of tanks	6	1
convoy of four army tanks	5	1
figure in front of tanks	5	1
tiananmen square protests of 1900	5	1
red star on tank	4	1
man wearing white shirt	4	1
power of the individual	4	1
five rounded white lights	4	1
red and yellow star	4	1
chinese army logo	3	1
star on tank	3	1
pro democracy campaigner	3	1
arrow on tarmac	3	1
debris on road	3	1

Without education		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
no fear	2	1

Other		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
street light	2	5
street lamp	2	2
chinese intolerance to change	4	1
debris on road	3	1
road arrow direction	3	1
four red stars	3	1
four military tanks	3	1
individual looking on	3	1
depth of feeling	3	1
act of desperation	3	1
line on road	3	1
stupid student	2	1
lamp post	2	1
aggressive tank	2	1
brave man	2	1
light bulb	2	1
street marking	2	1
tank direction	2	1

## Co-occurrence

High / Secondary School		
Count	Stem1	Stem2
163	road	tank
97	man	tank
84	person	tank
44	street light	tank
33	road	street light
24	lamp post	tank
21	person	street light
16	lamp post	road
16	shadow	tank
13	lamp	man
13	road	shadow
13	solider	tank
12	arrow	street light
12	protester	tank
11	lamp post	person
9	china	tank
7	four tanks	road
6	aerial	person
6	arrow	street lamp
6	four tanks	light

Higher education (Year 12 & 13)		
Count	Stem1	Stem2
49	light	man
30	arrow	man
18	road	road mark
13	aerial	light
13	man	road mark
12	road mark	street light
11	road	street lamp
10	arrow	shadow
10	arrow	star
9	aerial	man
9	arrow	lamp
8	aerial	arrow
7	courage	tank
6	fear	tank
5	four tanks	man
5	light	star
5	man	street lamp
4	arrow	piece of wood
4	death	tank
4	road	wheel

University / College (Undergraduate)		
Count	Stem1	Stem2
119	light	tank
84	light	road
70	person	road
67	arrow	tank
61	man	road
54	light	person
44	arrow	light
38	arrow	road
35	arrow	person
32	road mark	tank
25	tank	war
23	army	tank
22	lamp	tank
21	street lamp	tank
18	aerial	tank
17	light	road mark
16	man	street light
15	lamp	road
15	road	war
13	army	road

PhD		
Count	Stem1	Stem2
2	fight	war

Without education		
Count	Stem1	Stem2
4	person	war

University / College (Postgraduate)		
Count	Stem1	Stem2
36	gun	tank
19	gun	light
19	gun	road
10	tank	tiananmen square
9	gun	man
8	man	shadow
7	light	street
7	light bulb	tank
6	light	war
6	tank	tarmac
5	gun	road mark
5	light bulb	man
4	aerial	gun
4	light bulb	road
3	hat	tank
3	light	protester
3	light	tiananmen square
3	oppression	tiananmen square
2	army tank	road sign
2	camouflage	light

Other		
Count	Stem1	Stem2
8	light	line
8	line	person
7	antenna	tank
7	fear	war
7	gun	street light
7	man	war
4	arrow	war
2	ammunition	tank
2	antenna	gun
2	antenna	street light
2	arrow	fear
2	arrow	wheel
2	debris on road	street light
2	protest	street lamp

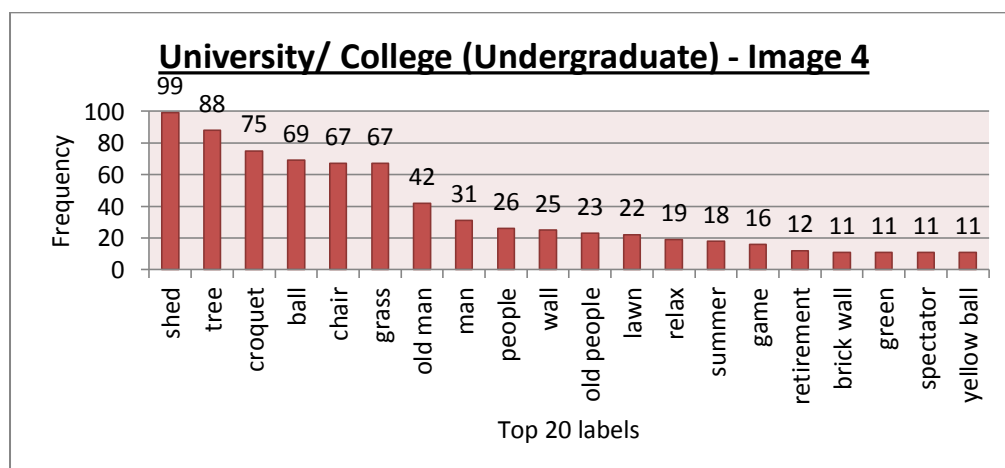
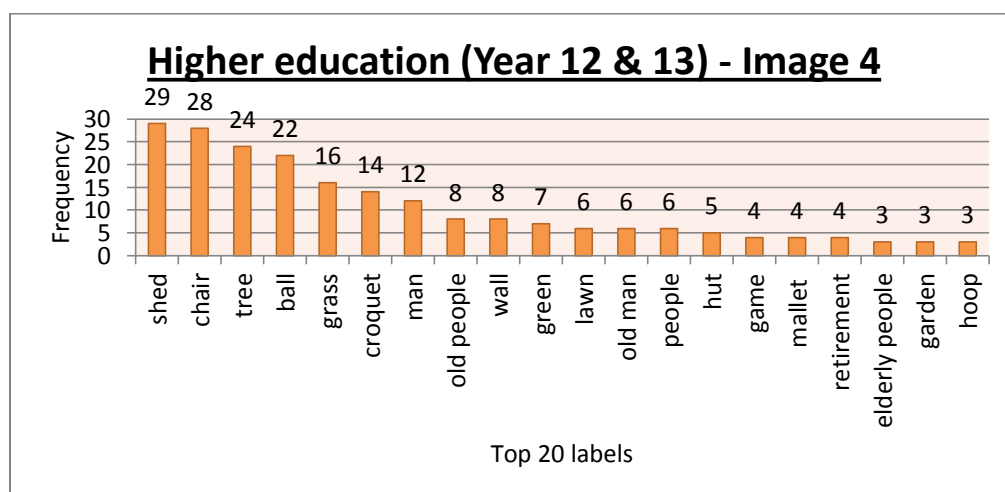
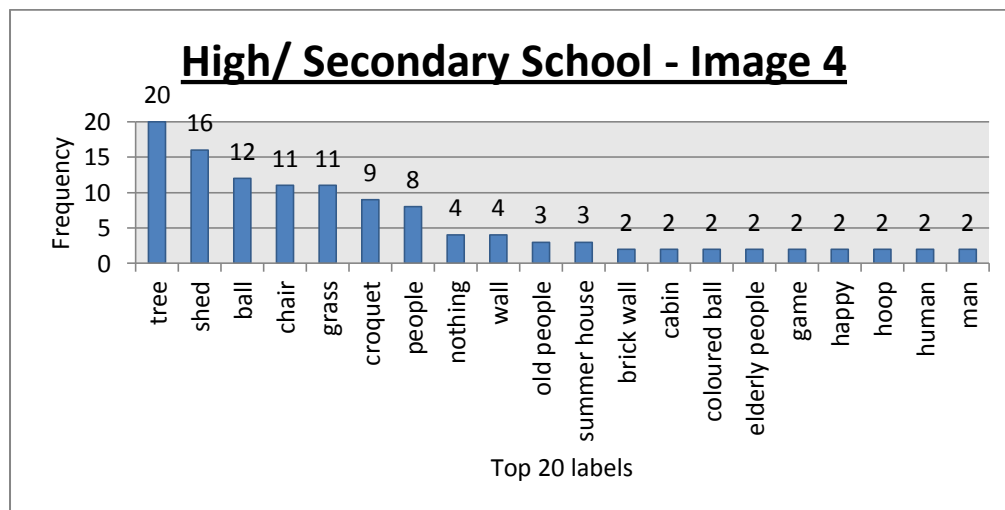
# Co-occurrence PMI

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

High/ Secondary School						Higher education (12&13)					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
communist	corrupt	3	1	97	3.83187	camouflage	direction	2	1	18	3.474071
china	communist	2	3	163	3.756256	five lamps	four tanks	1	3	13	3.15665
human	lamp	1	4	44	3.363612	death	fear	2	2	13	3.031711
aerial	lamp	2	4	84	3.343409	aerial	camouflage	9	2	30	2.741677
army	military	1	2	13	3.135133	camouflage	line	2	4	9	2.570981
five lights	man	1	5	16	2.827369	arrow	green	16	1	12	2.394889
armored vehicle	red star	2	2	9	2.674402	brave person	war	1	3	2	2.343737
arrow on road	light	1	15	33	2.664642	light bulb	street	4	1	2	2.218798
gun	military	4	2	13	2.533073	army	lamp	4	6	11	2.181009
armored vehicle	road arrow	2	2	6	2.498311	aerial	arrow	9	16	49	2.051662
University/ College (Undergraduate)						University/ College (Postgraduate)					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
bravery	fear	9	5	44	3.132003	aerial	gun	2	6	36	2.908485
communist	courage	5	14	61	3.081995	army tank	road sign	1	1	3	2.908485
army	fight	25	2	38	3.022577	history	oppression	1	3	8	2.857332
antenna	arrow	6	62	119	2.646767	lamp	protester	2	2	7	2.674402
army	death	25	7	54	2.631119	lamp post	solider	1	2	3	2.607455
hero	oppression	3	9	7	2.555498	military	protest	2	3	7	2.498311
red star	solider	1	13	3	2.504941	star on tank	street lamp	1	2	2	2.431364
army tank	arrow	5	62	70	2.4955	protester	tiananmen square	2	2	2	2.130334
aerial	four tanks	12	13	35	2.492707	solider	tiananmen square	2	2	2	2.130334
arrow on road	lamp	6	19	23	2.446586	camouflage	light	2	24	19	2.028876
PhD						Other education level					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
fight	war	1	1	2	1.845098	antenna	gun	1	1	8	2.80618
						light	line	2	1	7	2.447158
						protest	street lamp	1	2	7	2.447158
						line	person	1	5	7	2.049218
						antenna	street light	1	5	7	2.049218
Without education						arrow	fear	7	1	8	1.961082
Stem1	Stem2	S1	S2	C	PMI	fear	war	1	2	2	1.90309
person	war	2	1	4	1.477121	debris on road	street light	1	5	4	1.80618
						gun	street light	1	5	2	1.50515
						man	war	3	2	2	1.425969

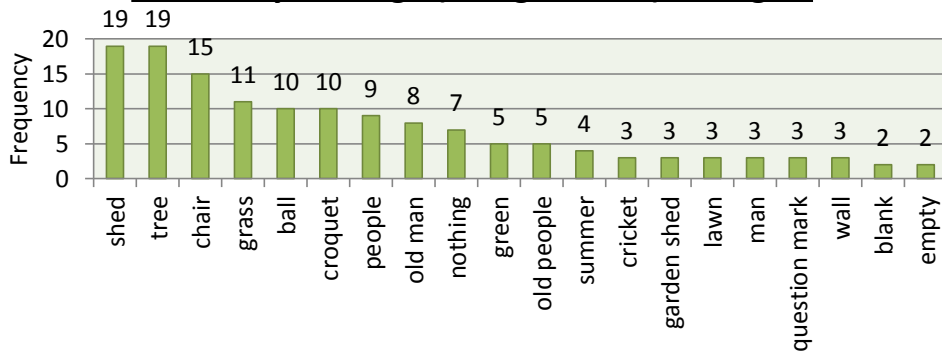
## Image 4

### Top 20 most frequent annotations



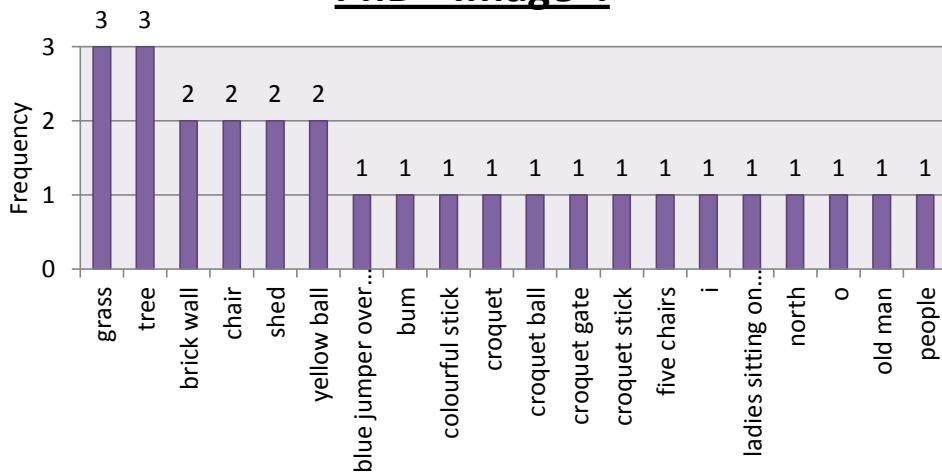


### University/ College (Postgraduate) - Image 4



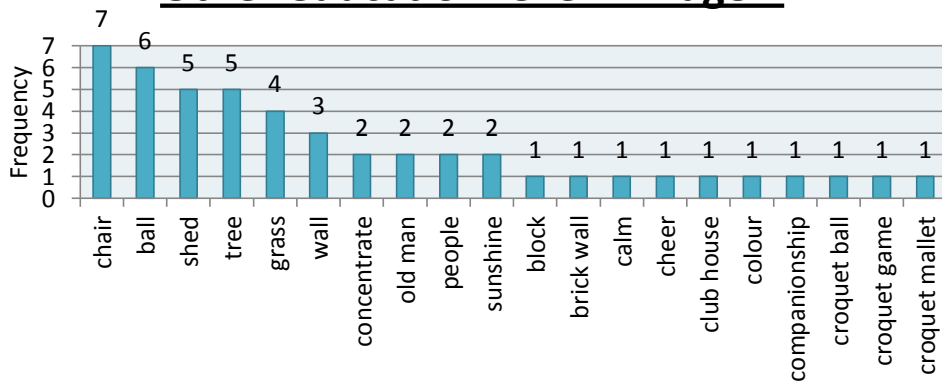
Top 20 labels

### PhD - Image 4



Top 20 labels

### Other education level - Image 4



Top 20 labels

## Collocation

High / Secondary School		
Stem	Collocation	Frequency
summer house	3	3
old people	2	3
man playing croquet	3	2
brick wall	2	2
elderly people	2	2
nice day	2	2
coloured ball	2	2
people watching	2	2
old people having a good time	6	1
people sitting on chair	4	1
coloured stick in grass	4	1
game of croquet	3	1
little tool shed	3	1
stripes of grass	3	1
old aged pensioner	3	1
clothes on shed	3	1
nice green	2	1
walled enclosure	2	1
white background	2	1
question mark	2	1

University / College (Undergraduate)		
Stem	Collocation	Frequency
old man	2	42
old people	2	23
brick wall	2	11
yellow ball	2	11
mallet	2	10
red ball	2	10
plastic chair	2	8
summer house	3	7
croquet hoop	2	6
croquet mallet	2	6
wooden house	2	6
croquet ball	2	5
garden shed	2	5
elderly people	2	5
lawn chair	2	4
wooden shed	2	4
man playing croquet	3	3
three old people	3	3
people sitting	2	3
croquet game	2	3

Higher education (Year 12 & 13)		
Stem	Collocation	Frequency
old people	2	8
old man	2	6
yellow ball	2	3
elderly people	2	3
summer house	3	2
red ball	2	2
brick wall	2	2
croquet set	2	2
garden shed	2	2
sunny day	2	2
blue coat on kiosk fence	5	1
two elderly people on chairs	5	1
couple sitting on chairs	4	1
old man playing game	4	1
mow lines in grass	4	1
mallet leaning against kiosk	4	1
old man bent over	4	1
people playing croquet	3	1
person hitting ball	3	1

PhD		
Stem	Collocation	Frequency
brick wall	2	2
yellow ball	2	2
blue jumper over shed rail	5	1
white sign on shed	4	1
white plastic chair	3	1
three pensioners	2	1
old man	2	1
colourful stick	2	1
croquet gate	2	1
red ball	2	1
croquet stick	2	1
croquet ball	2	1
five chairs	2	1

University / College (Postgraduate)		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
old man	2	8
old people	2	5
question mark	2	3
garden shed	2	3
man playing croquet	3	2
garden chair	2	2
mallet	2	2
green grass	2	2
two people sitting on garden chairs	6	1
people sitting in background	4	1
two elderly women friends	4	1
light blue background	3	1
summer house	3	1
stripes of grass	3	1
elderly figure playing	3	1
ray of sunlight	3	1
alice in wonderland	3	1
white plastic chair	3	1
brick wall	2	1
garden chalet	2	1

Other		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
old man	2	2
gentleman preparing to take shot	5	1
old people enjoying life	4	1
two people watching	3	1
two people sitting	3	1
croquet ball	2	1
croquet mallet	2	1
club house	2	1
garden chair	2	1
brick wall	2	1
croquet set	2	1
wooden hut	2	1
croquet game	2	1
summer day	2	1

Without education		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
croquet stick	2	1

## Co-occurrence

High / Secondary School		
Count	Stem1	Stem2
75	shed	tree
56	croquet	shed
35	croquet	tree
33	people	tree
18	croquet	old people
18	old people	shed
18	old people	tree
11	brick wall	tree
10	croquet	people
8	brick wall	chair
7	blank	white
7	nothing	white
6	blank	nothing
6	brick wall	shed
6	game	tree
6	plastic chair	shed
5	cabin	tree
5	game	grass
5	plastic chair	tree
4	brick wall	croquet

Higher education (Year 12 & 13)		
Count	Stem1	Stem2
63	ball	shed
26	ball	man
23	chair	croquet
18	lawn	shed
12	ball	old people
11	lawn	tree
9	croquet	man
9	red ball	yellow ball
8	chair	hut
8	chair	old people
8	mallet	shed
7	chair	lawn
6	chair	yellow ball
6	croquet	hut
5	ball	hut
5	ball	stick
5	elderly people	grass
5	green	tree
5	hut	man
4	chair	green

University / College (Undergraduate)		
Count	Stem1	Stem2
60	chair	shed
58	grass	shed
47	chair	grass
33	croquet	grass
30	chair	people
27	old man	shed
26	shed	wall
25	man	shed
24	old man	tree
23	chair	man
22	ball	croquet
22	croquet	old man
22	people	shed
21	ball	old man
20	chair	wall
19	croquet	lawn
19	grass	old man
18	chair	old man
18	man	tree
17	grass	man

PhD		
Count	Stem1	Stem2
4	brick wall	grass

Without education		
Count	Stem1	Stem2
3	croquet stick	people
2	ball	croquet stick
2	fun	green
2	lawn	people

University / College (Postgraduate)		
Count	Stem1	Stem2
20	ball	people
18	grass	people
6	chair	house
6	grass	house
5	ball	house
5	summer house	tree
4	croquet	elderly people
4	croquet stick	tree
4	grass	summer house
4	house	people
4	tree	yellow ball
3	chair	croquet stick
3	cricket	grass
3	cricket	old people
3	croquet ball	tree
3	enjoy	relax
3	garden chair	summer house
3	grass	green
2	ball	croquet hoop
2	ball	player

Other		
Count	Stem1	Stem2
55	chair	tree
51	ball	chair
47	ball	tree
47	grass	tree
36	ball	grass
28	tree	wall
16	ball	wall
4	chair	croquet ball
3	croquet ball	croquet mallet
3	line	white
2	ball	hammer
2	ball	relax
2	chair	croquet mallet
2	club house	grass
2	colour	shadow
2	concentrate	relax
2	concentrate	sunshine
2	croquet set	people
2	croquet set	shed
2	game	sunshine

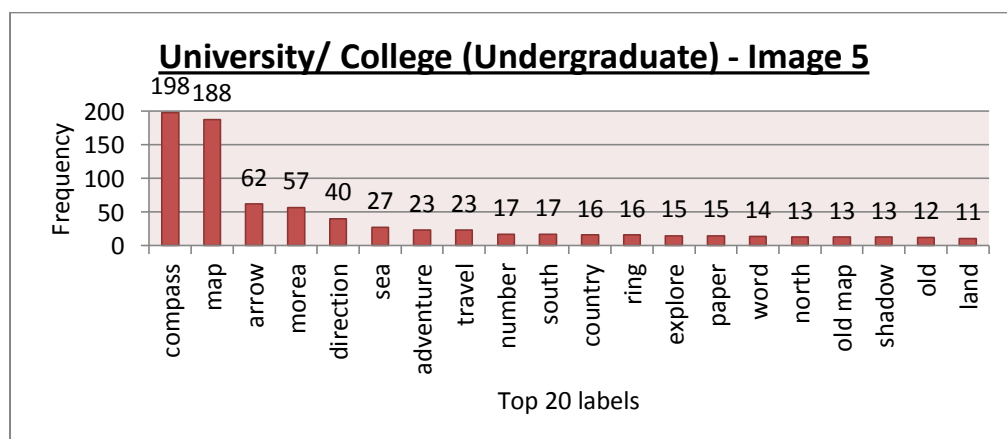
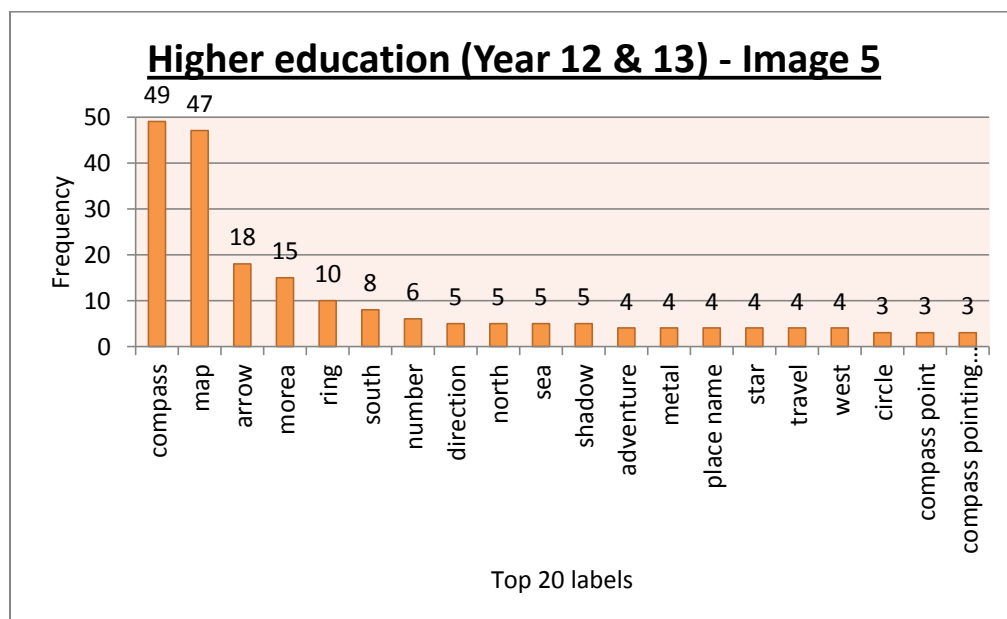
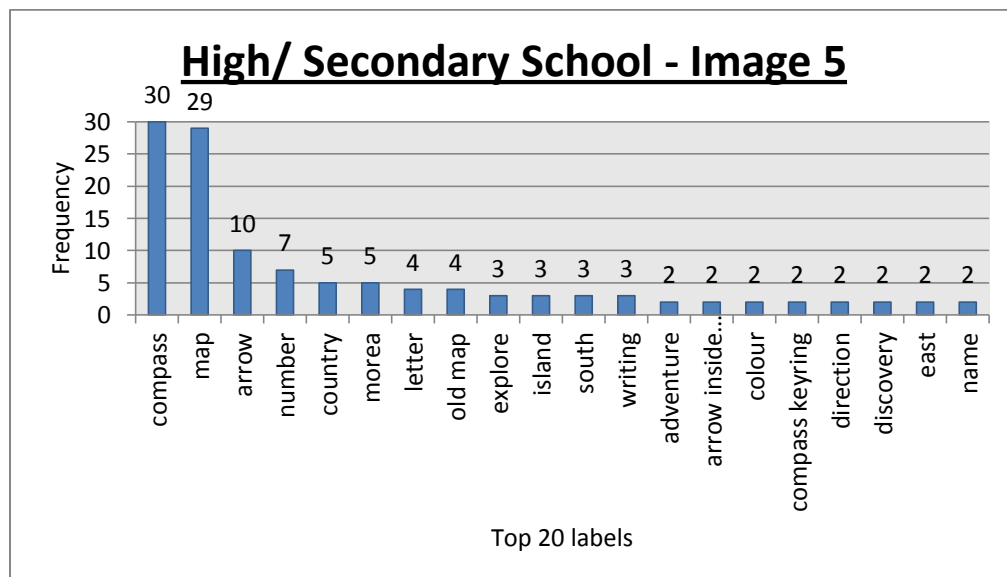
# Co-occurrence PMI

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

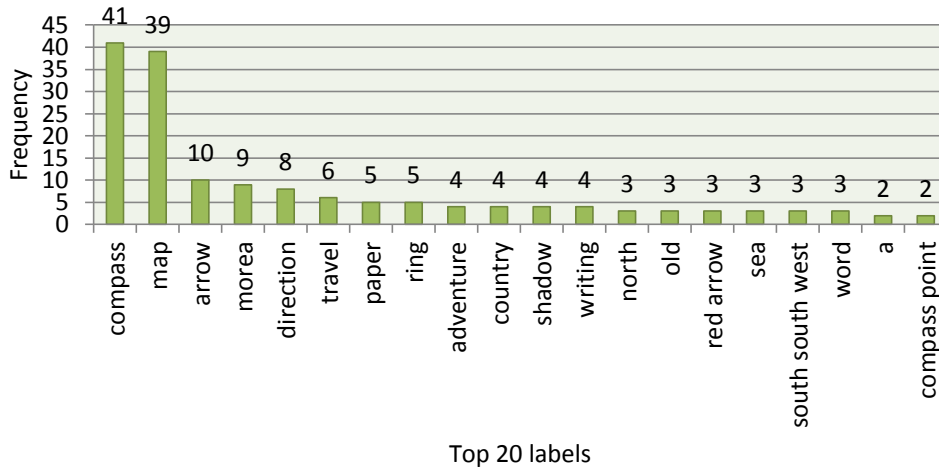
High/ Secondary School						Higher education (12&13)					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
ball	couple	1	1	18	3.534026	brick wall	lawn chair	2	1	5	2.909823
ball	garden shed	1	1	10	3.278754	chair	colour	28	1	3	2.864066
brick wall	chair	2	11	75	2.811392	elderly	game	2	4	12	2.687975
chair	club	11	1	33	2.755875	enjoy	peaceful	2	1	3	2.687975
blue box	question mark	1	1	3	2.755875	fun	game	2	4	1	2.650186
blank	space	1	1	3	2.755875	shadow	towel	1	2	2	2.511883
couple	stick	1	1	3	2.755875	garden chair	grass	1	16	8	2.210853
ball	club	12	1	35	2.74364	lawn	people watching	6	1	3	2.210853
cabin	chair	2	11	56	2.684519	brick wall	lawn	2	6	5	2.131672
blank	white	1	1	2	2.579784	ball	fun	22	2	8	2.123703
University/ College (Undergraduate)						University/ College (Postgraduate)					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
blank	empty	5	1	2	3.764355	bush	five chairs	1	1	6	3.189771
empty	space	1	1	2	3.421933	croquet ball	garden chair	1	2	5	2.80956
empty	nothing	1	3	5	3.342752	ball	croquet hoop	10	1	0	2.71265
croquet ball	croquet stick	5	3	25	3.342752	elderly people	lawn	1	3	4	2.536558
jumper over deck rail	nice grass	2	2	5	3.217813	chair	croquet stick	15	1	8	2.490801
garden chair	garden shed	3	5	18	3.200084	croquet ball	summer house	1	2	2	2.41162
shoe	spaghetti	2	1	2	3.120903	croquet	elderly people	10	1	6	2.189771
flat cap	white plastic chair	2	1	2	3.120903	enjoy	relax	2	2	2	2.11059
ball	bat	69	1	0	3.060205	garden chair	summer house	2	2	2	2.11059
peace	quiet	2	2	3	2.995964	ball	house	10	1	4	2.01368
Other education level						Without education					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
croquet ball	croquet mallet	1	1	47	3.575188	croquet stick	people	1	1	3	1.653213
chair	croquet ball	7	1	1	2.765562	ball	croquet stick	1	1	2	1.477121
club house	grass	1	4	28	2.748188	fun	green	1	1	2	1.477121
chair	croquet mallet	7	1	47	2.73009	lawn	people	1	1	2	1.477121
ball	hammer	6	1	16	2.329059						
croquet set	people	1	2	4	2.20412						
colour	shadow	1	1	2	2.20412						
line	square	1	1	2	2.20412						
line	white	1	1	2	2.20412						
square	white	1	1	2	2.20412						

## Image 5

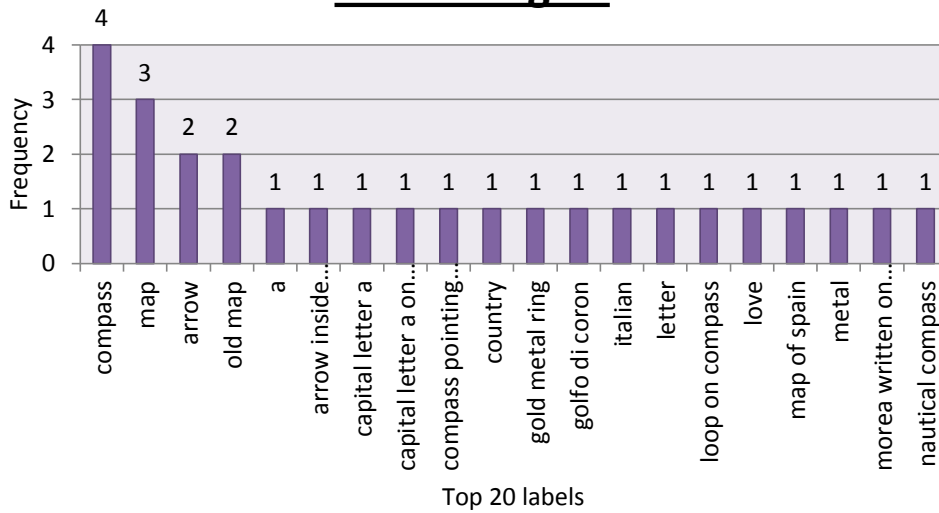
### Top 20 most frequent annotations



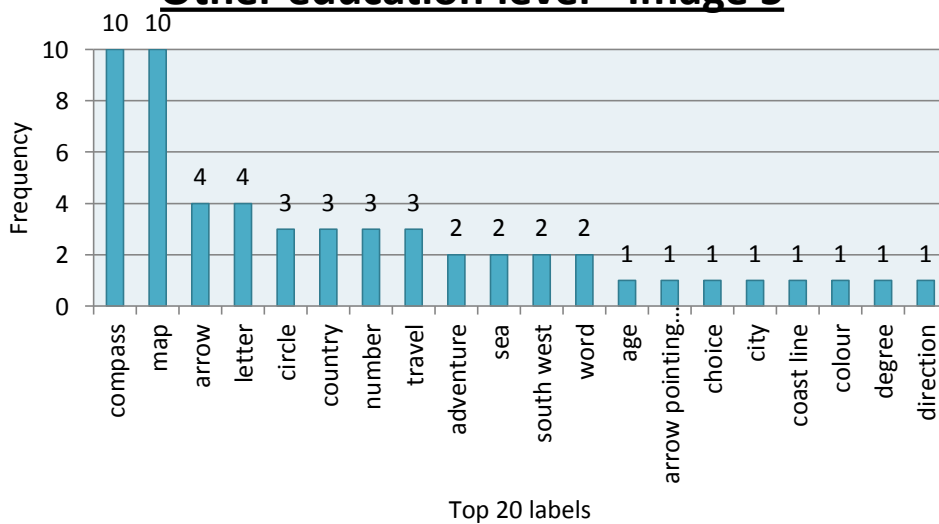
### University/ College (Postgraduate) - Image 5



### PhD - Image 5



### Other education level - Image 5





## Collocation

High / Secondary School		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
old map	2	4
arrow inside compass	3	2
south south west	3	2
place name	2	2
compass keyring	2	2
arrow pointing between south and south west	7	1
red tip of arrow	4	1
writing morea on map	4	1
drawing of a man	4	1
will to escape	3	1
shadow of compass	3	1
orange compass dial	3	1
foreign country	2	1
plan trip	2	1
pocket compass	2	1
round loop	2	1
peloponnese peninsula	2	1
ancient map	2	1
thermometer	2	1
compass setting	2	1

University / College (Undergraduate)		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
old map	2	13
golfo di coron	3	8
south south west	3	7
compass pointing south	3	7
capital letter a	3	6
map of morea	3	5
compass pointing between south and south west	7	3
drawing of a man	4	3
compass keyring	2	3
south west	2	3
red arrow	2	3
lord of the rings	4	2
keyring on compass	3	2
gold ring	2	2
coast line	2	2
compass handle	2	2
compass arrow	2	2
key ring	2	2
place name	2	2
middle earth	2	2

Higher education (Year 12 & 13)		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
place name	2	4
compass pointing between south and south west	7	3
north west	2	3
compass point	2	3
south south west	3	2
coast line	2	2
old map	2	2
antique map	2	2
south west	2	2
switch to set compass	4	1
name of different areas	4	1
middle ages map	3	1
place on map	3	1
red arrow tip	3	1
name of city	3	1
foreign place name	3	1
city name	2	1
capital letter	2	1
french name	2	1
red arrow	2	1

PhD		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
old map	2	2
compass pointing between south and south west	7	1
red light reflection on compass	5	1
capital letter a on map	5	1
morea written on map	4	1
loop on compass	3	1
red compass arrow	3	1
golfo di coron	3	1
red arrow tip	3	1
map of spain	3	1
capital letter a	3	1
arrow inside compass	3	1
gold metal ring	3	1
shadow of compass	3	1
renascence man	2	1
nautical compass	2	1

University / College (Postgraduate)		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
south south west	3	3
red arrow	2	3
golfo di coron	3	2
foreign language	2	2
compass point	2	2
south east	2	2
south west	2	2
compass pointing between south and south west	7	1
fingers facing between south and west	6	1
south south west direction	4	1
morea written on map	4	1
lord of the rings	4	1
direction pointing south	3	1
arrow inside compass	3	1
map of italy	3	1
red arrow point	3	1
image of god	3	1
compass pointing south	3	1
region called morea	3	1
old map	2	1

Other		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
south west	2	2
arrow pointing between south and south west	7	1
shade of brown	3	1
eight pointed star	3	1
name of place	3	1
name of ocean	3	1
coast line	2	1
red arrow	2	1
metal ring	2	1
old map	2	1
positive feeling	2	1

Without education		
<i>Stem</i>	<i>Collocation</i>	<i>Frequency</i>
going from place to place	5	1
arranging a holiday	3	1

## Co-occurrence

High / Secondary School		
Count	Stem1	Stem2
70	compass	morea
31	map	sea
30	compass	sea
29	compass	country
29	country	map
29	map	number
28	compass	number
21	compass	south
15	compass	explore
13	compass	old map
10	arrow	writing
10	compass	land
10	land	map
8	compass	name
8	map	name
8	map	west
7	compass	island
7	island	map
7	morea	old map
6	arrow	name

Higher education (Year 12 & 13)		
Count	Stem1	Stem2
24	compass	shadow
22	map	shadow
20	compass	writing
20	map	south
19	map	writing
12	arrow	star
10	arrow	morea
9	compass	place name
8	map	place name
7	metal	paper
6	compass	red arrow
5	arrow	metal
5	compass	compass point
5	compass point	map
5	ink	paper
5	map	red arrow
5	morea	number
5	morea	red arrow
4	coast line	compass
4	coast line	map

University / College (Undergraduate)		
Count	Stem1	Stem2
295	compass	map
90	arrow	compass
89	arrow	map
68	map	morea
27	compass	ring
27	map	ring
24	arrow	number
24	map	travel
22	compass	travel
20	compass	paper
19	map	paper
19	map	word
17	arrow	ring
16	adventure	compass
15	map	north
14	compass	north
14	map	old
13	adventure	map
13	circle	map
12	compass	old

PhD		
Count	Stem1	Stem2
13	map	metal
12	compass	metal
5	map	shade
4	compass	shade
2	metal	writing

Without education		
Count	Stem1	Stem2
6	compass	place
5	map	place
2	arrow	place
2	compass	nail
2	direction	place
2	journey	travel

University / College (Postgraduate)		
Count	Stem1	Stem2
32	direction	map
31	compass	direction
14	arrow	country
12	a	compass
12	a	map
12	arrow	letter
7	a	morea
7	direction	morea
6	compass	italian
5	country	letter
5	country	sea
4	compass	italy
4	italian	map
4	italy	map
4	number	word
4	south	travel
3	circle	sepia
3	direction	journey
3	drawing	map
3	foreign language	map

Other		
Count	Stem1	Stem2
18	compass	letter
18	letter	map
17	compass	word
11	explore	map
10	letter	number
8	compass	star
7	compass	greece
7	map	star
5	greece	map
4	history	map
4	number	star
3	arrow	shade
3	compass	history
2	circle	word
2	country	word
2	explore	history
2	greece	south west
2	letter	star
2	map	name of place

## Co-occurrence PMI

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

High/ Secondary School						Higher education (12&13)					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
arrow inside compass	compass keyring	2	2	29	3.150373	ink	paper	2	2	4	2.49693
city	country	1	5	28	3.038223	country	metal	2	4	5	2.29281
adventure	freedom	2	1	10	2.989005	ink	metal	2	4	5	2.29281
direction	freedom	2	1	10	2.989005	old	south south west	2	2	2	2.1959
direction	discovery	2	2	13	2.801918	shadow	writing	5	1	2	2.09899
land	ocean	1	1	3	2.767156	compass	coron	49	1	1	2.085487
arrow inside compass	compass	2	30	70	2.356981	metal	paper	4	2	3	2.070961
arrow pointing between south and south west	compass	1	30	31	2.304275	antique map	compass	2	49	2	1.885915
city	compass	1	30	30	2.290035	compass	gold	49	1	1	1.885915
pointer	ring	1	2	2	2.290035	coast line	compass	2	49	2	1.848126
University/ College (Undergraduate)						University/ College (Postgraduate)					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
adventure	cartography	23	4	90	3.102053	circle	sepia	1	1	2	2.69897
arrow	colour	62	2	68	2.850686	direction	journey	8	1	7	2.339948
a	arrow	10	62	295	2.789029	arrow	country	10	4	31	2.287242
adventure	fun	23	1	8	2.652961	country	letter	4	2	5	2.19382
capital letter a	compass pointing south	6	7	14	2.634477	adventure	unknown	4	1	2	2.09691
compass pointing between south and south west	golfo di coron	3	8	8	2.634477	a	compass	2	41	32	1.989276
germen	golfo di coron	4	8	7	2.451547	country	direction	4	8	12	1.971971
cartography	greece	4	8	7	2.451547	a	red arrow	2	3	2	1.920819
arrow	degree	62	1	10	2.319207	old	south	3	2	2	1.920819
arrow	circle	62	10	89	2.268597	number	word	2	3	2	1.920819
Other education level						Without education					
Stem1	Stem2	S1	S2	C	PMI	Stem1	Stem2	S1	S2	C	PMI
explore	history	1	1	17	3.10551	arrow	place	1	2	6	1.653213
compass	greece	10	1	18	2.130334	journey	travel	1	1	2	1.477121
compass	history	10	1	18	2.130334	compass	place	2	2	5	1.273001
greece	south west	1	2	3	2.051153	compass	nail	2	1	2	1.176091
explore	map	1	10	10	1.875061	direction	place	1	2	2	1.176091
arrow	shade	4	1	4	1.875061	map	place	2	2	2	0.875061
greece	map	1	10	8	1.778151						

history	map	1	10	7	1.7201 59						
number	star	3	1	2	1.6989 7						
map	name of place	10	1	5	1.5740 31						