

Summary

Screen time usage is becoming an increasingly significant part of modern lifestyles.

With the rise of smartphones, tablets, and computers in daily routines, we aim to understand how much time university students spend on electronic devices, as well as how this relates to their health, habits, and overall digital well-being. We also explore which days tend to have the highest screen time and which types of applications are used the most.

Group 6

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Data Collection

Survey Questions

- Age
- Gender
- Weight (kilogram)
- Heart rate while answering the questionnaire (times)
- Average sleep time per day (approximately)
- Sunday Screen Time
- Monday Screen Time
- Tuesday Screen Time
- Wednesday Screen Time
- Thursday Screen Time
- Friday Screen Time
- Saturday Screen Time
- Most used application types
- Number of notifications on Sunday (times)
- Number of notifications on Monday (times)
- Number of notifications on Tuesday (times)
- Number of notifications on Wednesday (times)
- Number of notifications on Thursday (times)
- Number of notifications on Friday (times)
- Number of notifications on Saturday (times)
- Left eye health
 - Abnormality
 - * If it's nearsightedness (Myopia)
 - How short sights?
 - * Else if it's farsightedness (Presbyopia)
 - How long sights?
 - * Else if it's compound vision (both nearsightedness and farsightedness)
 - How short sights?
 - How long sights?
 - Other eye disorders (multiple selection)
- Right eye health
 - Abnormality
 - * If it's nearsightedness (Myopia)
 - How short sights?
 - * Else if it's farsightedness (Presbyopia)
 - How long sights?
 - * Else if it's compound vision (both nearsightedness and farsightedness)
 - How short sights?
 - How long sights?
 - Other eye disorders (multiple selection)

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Methodology

Probability

Screen time vs Age

$y \backslash x$	2	3	4	5	6	7	8	9	10	11	12	13	$\hat{P}(Y)$	$y \cdot \hat{P}(Y)$
	3	4	5	6	7	8	9	10	11	12	13	14		
18	0.0217	0.0652	0	0.0217	0	0.0217	0.0435	0.0435	0.0217	0	0	0	0.2391	4.3043
19	0	0	0.0217	0.0435	0.0435	0.0217	0.0217	0.0435	0	0	0	0.0217	0.2174	4.1304
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0.0217	0.0217	0	0	0	0	0	0.0435	0.913
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0.0217	0	0	0	0	0	0	0	0	0	0	0	0.0217	0.5
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0.0217	0	0	0	0	0	0	0	0	0	0	0.0217	0.6304
30	0	0	0	0	0	0.0217	0	0	0	0	0	0	0.0217	0.6522
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0.0217	0	0	0	0	0	0	0	0	0	0.0217	0.6957
33	0	0	0.0217	0	0	0	0	0	0	0	0	0	0.0217	0.7173913
34	0	0	0	0	0	0.0435	0	0	0	0	0	0	0.0435	1.4783
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	0	0	0.0217	0.0217	0	0	0	0	0	0	0	0	0.0435	1.6522
39	0	0	0	0	0	0	0.0217	0	0	0	0	0	0.0217	0.8478
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0.0217	0	0	0	0	0	0	0	0	0.0217	0.8913
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	0	0.0217	0	0	0	0	0	0	0	0	0	0	0.0217	0.9348
44	0	0	0	0.0217	0	0	0	0	0	0	0	0	0.0217	0.9565217
45	0	0	0	0.0217	0	0	0.0435	0	0	0	0	0	0.0652	2.9348
46	0	0.0217	0	0	0	0	0	0	0	0	0	0	0.0217	1.
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0.0217	0	0	0	0	0	0	0	0	0	0	0	0.0217	1.0435
49	0	0	0.0217	0	0	0	0	0	0	0	0	0	0.0217	1.0652
50	0	0	0	0.0217	0	0	0	0	0	0	0	0	0.0217	1.087
51	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0.0217	0	0	0	0	0	0	0.0217	1.19565217
56	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57	0	0.0217	0.0217	0	0	0	0	0	0	0	0	0	0.0435	2.4783
$\hat{P}(X)$	0.0652	0.1522	0.1304	0.1739	0.087	0.1304	0.1304	0.087	0.0217	0	0	0.0217	$\hat{E}(X)$	6.23913
midpoint	2.5000	3.5000	4.5000	5.5000	6.5000	7.5000	8.5000	9.5000	10.5000	11.5000	12.5000	13.5000	$\hat{E}(Y)$	30.10870
mid $\cdot \hat{P}(X)$	0.163	0.5326	0.587	0.9565217	0.5652	0.9783	1.1087	0.8261	0.2283	0	0	0.2935		

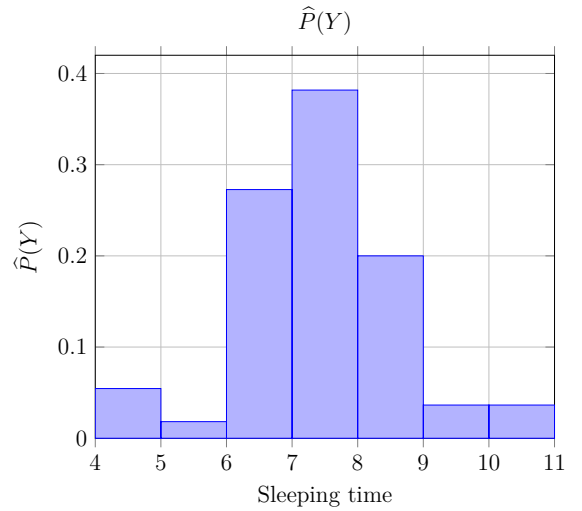
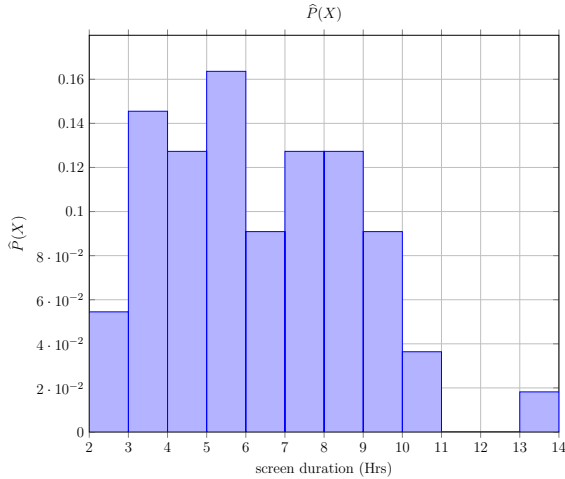
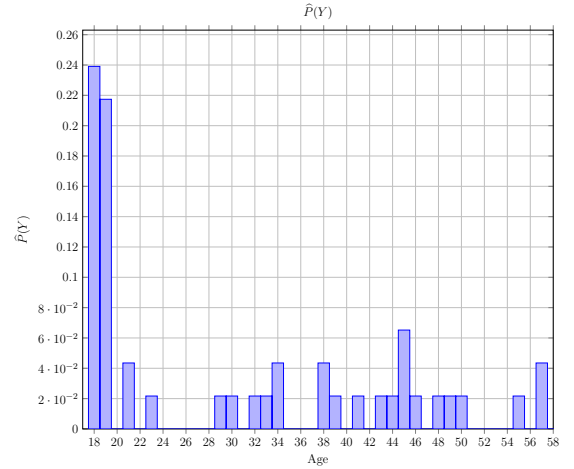
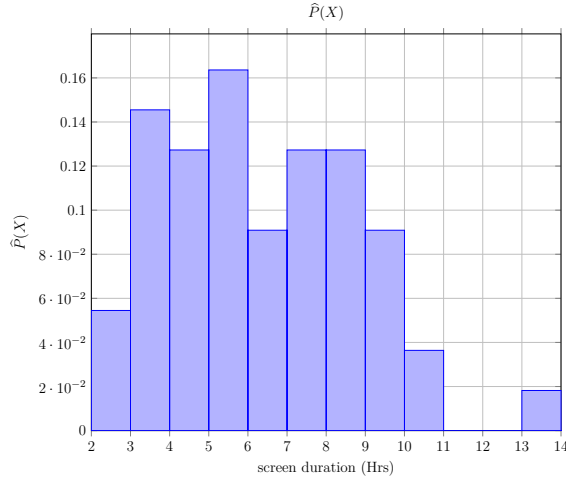
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Screen time vs Sleeping time

$\begin{matrix} x \\ y \end{matrix}$		2	3	4	5	6	7	8	9	10	11	12	13	$\hat{P}(Y)$	midpoint	mid $\cdot \hat{P}(Y)$
		3	4	5	6	7	8	9	10	11	12	13	14			
4	5	0	0	0	0	0	0	0	0.0435	0	0	0	0	0.0435	4.5	0.1957
5	6	0	0	0	0.0217	0	0	0	0	0	0	0	0	0.0217	5.5	0.1195652
6	7	0	0.0217	0.0217	0.0435	0.0652	0.0435	0.0652	0	0.0217	0	0	0	0.2826	6.5	1.837
7	8	0.0217	0.0652	0.1087	0.087	0.0217	0.0652	0.0435	0	0	0	0	0	0.413	7.5	3.0978
8	9	0.0435	0.0435	0	0.0217	0	0.0217	0.0217	0.0435	0	0	0	0	0.1956522	8.5	1.6630435
9	10	0	0.0217	0	0	0	0	0	0	0	0	0	0.0217	0.0435	9.5	0.413
$\hat{P}(X)$		0.0652	0.1522	0.1304	0.1739	0.087	0.1304	0.1304	0.087	0.0217	0	0	0.0217			
midpoint		2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5	10.5	11.5	12.5	13.5		$\hat{E}(X)$	6.2391
mid $\cdot \hat{P}(X)$		0.163	0.5326	0.587	0.9565217	0.5652	0.9783	1.1087	0.8261	0.2283	0	0	0.2935		$\hat{E}(Y)$	7.3261

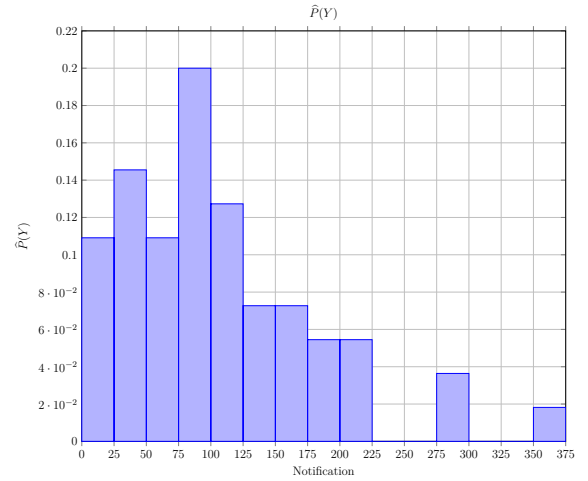
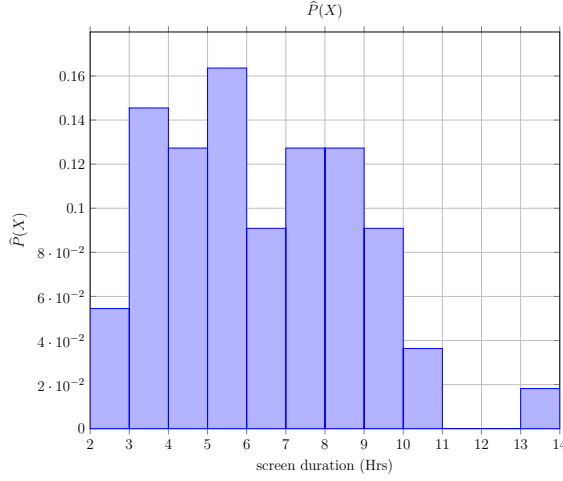
Sed feugiat. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Ut pellentesque augue sed urna. Vestibulum diam eros, fringilla et, consectetur eu, nonummy id, sapien. Nullam at lectus. In sagittis ultrices mauris. Curabitur malesuada erat sit amet massa. Fusce blandit. Aliquam erat volutpat. Aliquam euismod. Aenean vel



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Screen time vs Notification

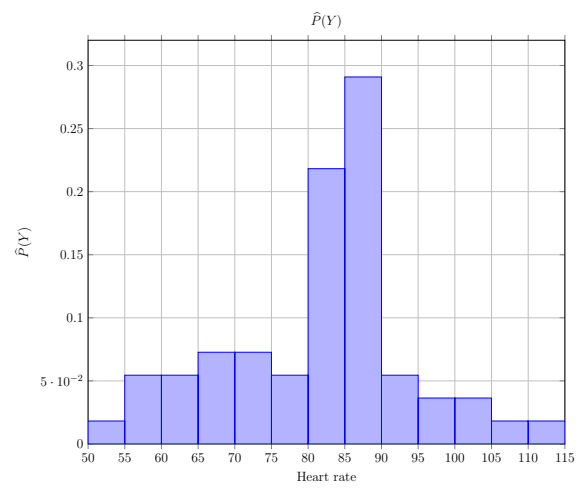
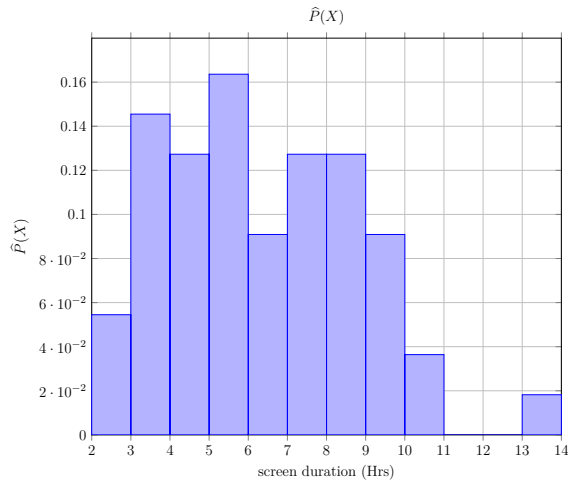
$y \backslash x$	2		3		4		5		6		7		8		9		10		11		12		13		$\hat{P}(Y)$	midpoint	mid $\cdot \hat{P}(Y)$	
	3	4	5	6	7	8	9	10	11	12	13	14																
0	25	0.0217	0	0.0217	0.0652	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1087	12.5	1.3587		
25	50	0	0	0.0217	0	0.0217	0.0435	0.0217	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0217	0.1304	37.5	4.8913			
50	75	0.0217	0.0217	0	0.0435	0	0	0.0435	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1304	62.5	8.1522			
75	100	0.0217	0.0652	0.0217	0.0435	0.0435	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1956522	87.5	17.1195652			
100	125	0	0.0435	0.0217	0.0217	0.0217	0.0217	0	0.0217	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1522	112.5	17.1196			
125	150	0	0	0.0217	0	0	0	0.0217	0.0435	0	0	0	0	0	0	0	0	0	0	0	0	0	0.087	137.5	11.95652174			
150	175	0	0	0	0	0	0	0.0652	0	0	0.0217	0	0	0	0	0	0	0	0	0	0	0	0.087	162.5	14.1304			
175	200	0	0	0	0	0	0	0	0.0435	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0435	187.5	8.1522			
200	225	0	0.0217	0.0217	0	0	0	0	0	0.0217	0	0	0	0	0	0	0	0	0	0	0	0	0.0652	212.5	13.8587			
$\hat{P}(X)$		0.0652	0.1522	0.1304	0.1739	0.087	0.1304	0.1304	0.087	0.0217	0	0	0.0217															
midpoint		2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5	10.5	11.5	12.5	13.5												$\hat{E}(Y)$		96.7391	
mid $\cdot \hat{P}(X)$		0.163	0.5326	0.587	0.9565	0.5652	0.9783	1.1087	0.8261	0.2283	0	0	0.2935													$\hat{E}(X)$		6.2391



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Screen time vs Heart rate

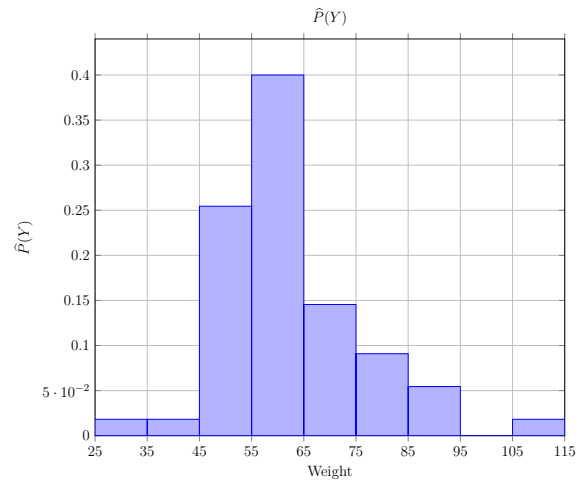
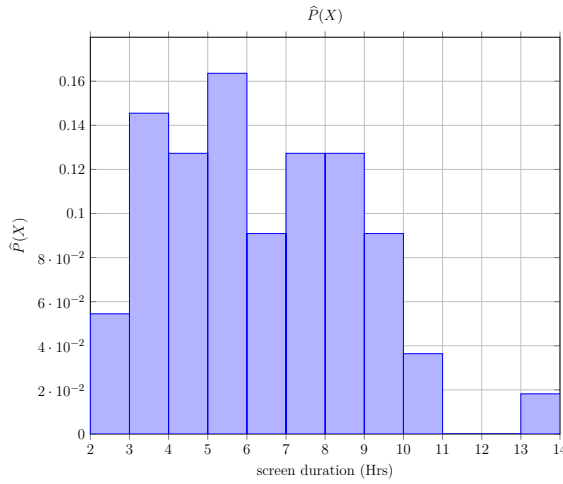
$\begin{matrix} \backslash & x \\ y \end{matrix}$	2	3	4	5	6	7	8	9	10	11	12	13	$\hat{P}(Y)$	midpoint	mid $\cdot \hat{P}(Y)$
	3	4	5	6	7	8	9	10	11	12	13	14			
50 55	0	0	0	0	0	0	0.0217	0	0	0	0	0	0.0217	52.5	1.1413
55 60	0	0.0217	0	0	0	0	0	0	0	0	0	0	0.0217	57.5	1.25
60 65	0	0	0	0	0	0.0435	0	0	0	0	0	0	0.0435	62.5	2.7174
65 70	0	0	0	0	0.0217	0.0217	0.0217	0.0217	0	0	0	0	0.087	67.5	5.8696
70 75	0	0.0217	0	0.0217	0	0	0	0.0217	0	0	0	0	0.0652	72.5	4.7283
75 80	0	0.0435	0.0217	0	0	0	0	0	0	0	0	0	0.0652	77.5	5.0543
80 85	0.0217	0.0435	0.0435	0.0435	0.0217	0.0217	0.0217	0.0217	0	0	0	0	0.2391	82.5	19.72826087
85 90	0.0217	0.0217	0.0435	0.0652	0.0435	0.0435	0.0435	0.0217	0.0217	0	0	0	0.3261	87.5	28.5326
90 95	0	0	0	0.0435	0	0	0.0217	0	0	0	0	0	0.0652	92.5	6.0326
95 100	0.0217	0	0	0	0	0	0	0	0	0	0	0.0217	0.0435	97.5	4.2391
100 105	0	0	0.0217	0	0	0	0	0	0	0	0	0	0.0217	102.5	2.2283
$\hat{P}(X)$	0.0652	0.1522	0.1304	0.1739	0.087	0.1304	0.1304	0.087	0.0217	0	0	0.0217			
midpoint	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5	10.5	11.5	12.5	13.5		$\hat{E}(X)$	6.2391
mid $\cdot \hat{P}(X)$	0.163	0.5326	0.587	0.9565	0.5652	0.9783	1.1087	0.8261	0.2283	0	0	0.2935		$\hat{E}(Y)$	81.5217



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Screen time vs Weight

$y \backslash x$	2		3	4	5	6	7	8	9	10	11	12	13	14	15	16	$\hat{P}(Y)$	midpoint	mid $\cdot \hat{P}(Y)$
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17				
25	35	0	0.0182	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0182	30	0.5455
35	45	0	0	0	0	0	0	0	0.0182	0	0	0	0	0	0	0	0.0182	40	0.7273
45	55	0	0.0909	0	0.0545	0.0182	0.0364	0.0182	0.0182	0	0	0	0	0	0	0.0182	0.2545	50	12.7273
55	65	0.0364	0.0182	0.0545	0.0727	0	0.0545	0.0727	0.0545	0.0182	0	0	0.0182	0	0	0	0.4	60	24
65	75	0.0182	0	0.0364	0.0182	0.0364	0.0182	0	0.0182	0	0	0	0	0	0	0	0.1455	70	10.1818
75	85	0	0	0.0182	0	0.0364	0.0182	0.0182	0	0	0	0	0	0	0	0	0.0909	80	7.2727
85	95	0	0.0182	0.0182	0.0182	0	0	0	0	0	0	0	0	0	0	0	0.0545	90	4.9091
95	105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
105	115	0	0	0	0	0	0	0	0	0.0182	0	0	0	0	0	0	0.0182	110	2
$\hat{P}(X)$		0.0545	0.1455	0.1273	0.1636	0.0909	0.1273	0.1273	0.0909	0.0364	0	0	0.0182	0	0	0.0182			
midpoint		2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5			
mid $\cdot \hat{P}(X)$		0.1364	0.5091	0.5727	0.9	0.5909	0.9545	1.0818	0.8636	0.3818	0	0	0.2455	0	0	0.3000			
																		$\hat{E}(X)$	6.5364
																		$\hat{E}(Y)$	62.3636



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Statistics

Descriptive Statistics

		Age	Weight (kg)	Heart Rate	Sleeping time (Hrs)	Average daily screen time (Hrs)	Average daily notification received
Count		55	55	55	55	55	55
Measure of Centrality	MEAN	29.182	61.97090909	80.89090909	7.310	6.577	103.751
	median	21.000	60	83	7.342	6.202	86.000
	mode	19	62.2	87	7.5	6.202380952	86
	MIN	7.000	25.7	51	4.500	2.236	6.429
Measure of Dispersion	MAX	57.000	111.1	111	10.533	16.671	357.000
	range	50.000	85.400	60.000	6.033	14.436	350.571
	variance	175.4478	194.3140	168.4323	1.4176	7.9495	5585.474088
	SD	13.2457	13.9397	12.9781	1.1906	2.8195	74.7360
	cv	0.4539	0.2249	0.1604	0.1629	0.4287	0.7203
	MAD	11.7752	9.9298	9.9451	0.8687	2.2193	56.00727273
	quartile1 (Q1)	19	52.5	73	6.5	4.569047619	49.14285714
	quartile3 (Q3)	43	67	88	8	8.316666667	146.7142857
	IQR	24	14.5	15	1.5	3.747619048	97.57142857
	Q1-1.5IQR	-17	30.75	50.5	4.25	-1.052380952	-97.21428571
Outliers	Q3+1.5IQR	79	88.75	110.5	10.25	13.93809524	293.0714286
	Outliers (based on IQR) If no outlier, answer None.	None	25.7, 93, 111.1	111	10.417, 10.533	16.671	294.857, 357.000
	MEAN-3SD	-10.5552	20.1519	41.9565	3.7379	-1.8814	-120.4574
	MEAN+3SD	68.9188	103.7899	119.8254	10.8818	15.0355	327.9587
	Outliers (based on SD) If no outlier, answer None.	None	111.1	None	None	16.671	357.000
	Mean after removing outliers based on IQR. If no outlier, type NA	NA	61.12692308	80.3333	7.1904	6.3901	95.367
	SD after removing outliers based on IQR. If no outlier, type NA	NA	10.63094107	12.4173	1.0355	2.4782	61.58689353

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Goodness of Fit test

1. Data set : Average screen duration

Type of distribution : Normal distribution

Known parameter : 0

Unknown parameter (m) : 2, which are μ, σ

H_0 : Screen duration is normally distributed with $\mu = 6.5771$ and $\sigma = 2.8195$

H_a : Screen duration is not normally distributed with $\mu = 6.5771$ and $\sigma = 2.8195$

Number of cells with the expected number of samples (k) : 7

$$\text{Test static } \chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i} = 2.1452$$

Significant level (α) : 0.05

Degree of freedom 1 (ν_1) : $k - 1 - m = 7 - 1 - 2 \Rightarrow 4$

Cutoff of non-rejection region : 9.4877

Degree of freedom 2 (ν_2) : $k - 1 = 7 - 1 \Rightarrow 6$

Cutoff of rejection region : 12.592

Non-rejection regions : $\chi^2 < \chi_{0.05,4}^2 = 9.4877$

Rejection regions : $\chi^2 \geq \chi_{0.05,6}^2 = 12.592$

Rejection decision : Don't need to reject null hypothesis

Conclusion : Screen duration is normally distributed with $\mu = 6.5771$ and $\sigma = 2.8195$

2. Data set : Average Sleeping Duration

Type of distribution : Normal distribution

Known parameter : 0

Unknown parameter (m) : 2, which are μ, σ

H_0 : Screen duration is normally distributed with $\mu = 7.3098$ and $\sigma = 1.1906$

H_a : Screen duration is not normally distributed with $\mu = 7.3098$ and $\sigma = 1.1906$

Number of cells with the expected number of samples (k) : 4

$$\text{Test static } \chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i} = 2.2647$$

Significant level (α) : 0.05

Degree of freedom 1 (ν_1) : $k - 1 - m = 4 - 1 - 2 \Rightarrow 1$

Cutoff of non-rejection region : 3.8415

Degree of freedom 2 (ν_2) : $k - 1 = 4 - 1 \Rightarrow 3$

Cutoff of rejection region : 7.8147

Non-rejection regions : $\chi^2 < \chi_{0.05,1}^2 = 3.8415$

Rejection regions : $\chi^2 \geq \chi_{0.05,3}^2 = 7.8147$

Rejection decision : Don't need to reject null hypothesis

Conclusion : Screen duration is normally distributed with $\mu = 7.3098$ and $\sigma = 1.1906$

3. Data set : Weight

Type of distribution : Normal distribution

Known parameter : 0

Unknown parameter (m) : 2, which are μ, σ

H_0 : Screen duration is normally distributed with $\mu = 61.9709$ and $\sigma = 13.9397$

H_a : Screen duration is not normally distributed with $\mu = 61.9709$ and $\sigma = 13.9397$

Number of cells with the expected number of samples (k) : 7

$$\text{Test static } \chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i} = 7.6892$$

Significant level (α) : 0.05

Degree of freedom 1 (ν_1) : $k - 1 - m = 7 - 1 - 2 \Rightarrow 4$

Cutoff of non-rejection region : 9.4877

Degree of freedom 2 (ν_2) : $k - 1 = 7 - 1 \Rightarrow 6$

Cutoff of rejection region : 12.592

Non-rejection regions : $\chi^2 < \chi_{0.05,4}^2 = 9.4877$

Rejection regions : $\chi^2 \geq \chi_{0.05,6}^2 = 12.592$

Rejection decision : Don't need to reject null hypothesis

Conclusion : Screen duration is normally distributed with $\mu = 61.9709$ and $\sigma = 13.9397$

4. Data set : Average Notification

Type of distribution : Normal distribution

Known parameter : 0

Unknown parameter (m) : 2, which are μ, σ

H_0 : Screen duration is normally distributed with $\mu = 103.7506$ and $\sigma = 74.7360$

H_a : Screen duration is not normally distributed with $\mu = 103.7506$ and $\sigma = 74.7360$

Number of cells with the expected number of samples (k) : 7

$$\text{Test static } \chi^2 = \sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i} = 3.5875$$

Significant level (α) : 0.05

Degree of freedom 1 (ν_1) : $k - 1 - m = 7 - 1 - 2 \Rightarrow 4$

Cutoff of non-rejection region : 9.4877

Degree of freedom 2 (ν_2) : $k - 1 = 7 - 1 \Rightarrow 6$

Cutoff of rejection region : 12.592

Non-rejection regions : $\chi^2 < \chi_{0.05,4}^2 = 9.4877$

Rejection regions : $\chi^2 \geq \chi_{0.05,6}^2 = 12.592$

Rejection decision : Don't need to reject null hypothesis

Conclusion : Screen duration is normally distributed with $\mu = 103.7506$ and $\sigma = 74.7360$

Hypothesis Test

1. Data set : Average screen duration

Test hypothesis claims that *average screen duration* is greater than 7 Hrs.

Collect data from 55 people. Sample mean sample standard deviation : 6.5771 & 2.8195 Hrs respectively.

Case of Hypothesis test : Large sample size

Upper-tailed, lower-tailed or two-tailed test : upper-tailed

7 steps test

1.1 Choose parameter of interest (μ)

Parameter : μ

1.2 Specify null value (μ_0) and null hypothesis (H_0)

$$\begin{aligned}\mu &: \text{average screen duration} \\ \mu_0 &: 7 \\ H_0 &: \mu = 7\end{aligned}\tag{1}$$

1.3 State alternative hypothesis (H_a)

$$H_a : \mu > 7\tag{2}$$

1.4 Compute test statistic (z)

$$z = \frac{\bar{X} - \mu_0}{\frac{s}{\sqrt{n}}} = \frac{6.5771 - 7}{\frac{2.8195}{\sqrt{55}}} \Rightarrow -1.11236\tag{3}$$

1.5 Indicate significance level (α) and find rejection region (z_a)

$$\begin{aligned}\alpha &: 0.05 \\ 1 - \alpha &= 1 - 0.05 = 0.95 \\ z_a &= z_{0.05} = 1.6449 \\ z &\geq 1.6449\end{aligned}\tag{4}$$

1.6 Determine whether we reject null hypothesis or not

Test static does not fall inside the rejection region. Null hypothesis is not rejected.

1.7 Conclude the problem

We do not reject the null hypothesis. Average screen duration is 7 Hrs.

2. Data set : Average notification

Test hypothesis claims that *average notification* is greater than 100 times.

Collect data from 55 people. Sample mean sample standard deviation : 103.7506 & 74.7360 times respectively.

Case of Hypothesis test : Large sample size

Upper-tailed, lower-tailed or two-tailed test : upper-tailed

7 steps test

2.1 Choose parameter of interest (μ)

Parameter : μ

2.2 Specify null value (μ_0) and null hypothesis (H_0)

$$\begin{aligned}\mu &: \text{average notification} \\ \mu_0 &: 100 \\ H_0 &: \mu = 100\end{aligned}\tag{5}$$

2.3 State alternative hypothesis (H_a)

$$H_a : \mu > 100\tag{6}$$

2.4 Compute test statistic (z)

$$z = \frac{\bar{X} - \mu_0}{\frac{S}{\sqrt{n}}} = \frac{103.7506 - 100}{\frac{2.8195}{\sqrt{55}}} \Rightarrow 0.372179\tag{7}$$

2.5 Indicate significance level (α) and find rejection region (z_a)

$$\begin{aligned}\alpha &: 0.01 \\ 1 - \alpha &= 1 - 0.05 = 0.99 \\ z_a &= z_{0.01} = 2.3263 \\ z &\geq 2.3263\end{aligned}\tag{8}$$

2.6 Determine whether we reject null hypothesis or not

Test static does not fall inside the rejection region. Null hypothesis is not rejected.

2.7 Conclude the problem

We do not reject the null hypothesis. Average notification is 100 times.

Conclusion

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Appendix

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