

## **Appendix E. Tables of correlations between annual rainfall data**

## Appendix E

**Table E-1. t-Test assuming equal variances for 2016 v. 2017 rainfall amounts. There were no significant findings.**

<b>2016 V 2017</b>		
t-Test: Two-Sample Assuming Equal Variances		
	<i>2016</i>	<i>2017</i>
Mean	0.0938202	0.13386364
Variance	0.0399557	0.12335961
Observations	89	88
Pooled Variance	0.0814194	
Hypothesized Mean Difference	0	
df	175	
t Stat	0.9335056	
P(T<=t) one-tail	0.1759226	
t Critical one-tail	1.6536074	
P(T<=t) two-tail	0.3518452	
t Critical two-tail	1.9736125	

**Table E-2. t-Test assuming equal variances for 2016 v. 2018 rainfall amounts. There were no significant findings.**

<b>2016 V 2018</b>		
t-Test: Two-Sample Assuming Equal Variances		
	<i>2016</i>	<i>2018</i>
Mean	0.0938202	0.17382022
Variance	0.0399557	0.14481933
Observations	89	89
Pooled Variance	0.0923875	
Hypothesized Mean Difference	0	
df	176	
t Stat	1.7557527	
P(T<=t) one-tail	0.0404351	
t Critical one-tail	1.6535574	
P(T<=t) two-tail	0.0808702	
t Critical two-tail	1.9735344	

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**Table E-3. t-Test assuming equal variances for 2016 v. 2019 rainfall amounts. There were no significant findings.**

<b>2016 V 2019</b>		
t-Test: Two-Sample Assuming Equal Variances		
	<i>2016</i>	<i>2019</i>
Mean	0.0938202	0.1588764
Variance	0.0399557	0.14723054
Observations	89	89
Pooled Variance	0.0935931	
Hypothesized Mean Difference	0	
df	176	
		-
t Stat	1.4185564	
P(T<=t) one-tail	0.0788984	
t Critical one-tail	1.6535574	
P(T<=t) two-tail	0.1577967	
t Critical two-tail	1.9735344	

**Table E-4. t-Test assuming equal variances for 2016 v. 2020 rainfall amounts. There were no significant findings.**

<b>2016 V 2020</b>		
t-Test: Two-Sample Assuming Equal Variances		
	<i>2016</i>	<i>2020</i>
Mean	0.0938202	0.12067416
Variance	0.0399557	0.11341772
Observations	89	89
Pooled Variance	0.0766867	
Hypothesized Mean Difference	0	
df	176	
		-
t Stat	0.6468861	
P(T<=t) one-tail	0.2592742	
t Critical one-tail	1.6535574	
P(T<=t) two-tail	0.5185484	
t Critical two-tail	1.9735344	

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**Table E-5. t-Test assuming equal variances for 2016 v. 2021 rainfall amounts. Significant findings are highlighted.**

<b>2016 V 2021</b>		
t-Test: Two-Sample Assuming Equal Variances		
	<i>2016</i>	<i>2021</i>
Mean	0.0938202	0.20022472
Variance	0.0399557	0.17638859
Observations	89	89
Pooled Variance	0.1081721	
Hypothesized Mean Difference	0	
df	176	
t Stat	2.1581532	
P(T<=t) one-tail	0.0161354	
t Critical one-tail	1.6535574	
<b>P(T&lt;=t) two-tail</b>	<b>0.0322709</b>	
t Critical two-tail	1.9735344	

**Table E-6. t-Test assuming equal variances for 2017 v. 2018 rainfall amounts. There were no significant findings.**

<b>2017 V 2018</b>		
t-Test: Two-Sample Assuming Equal Variances		
	<i>2017</i>	<i>2018</i>
Mean	0.13386364	0.17382022
Variance	0.12335961	0.14481933
Observations	88	89
Pooled Variance	0.13415079	
Hypothesized Mean Difference	0	
df	175	
t Stat	-0.7256739	
P(T<=t) one-tail	0.23450402	
t Critical one-tail	1.65360744	
P(T<=t) two-tail	0.46900805	
t Critical two-tail	1.97361246	

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**Table E-7. t-Test assuming equal variances for 2017 v. 2019 rainfall amounts. There were no significant findings.**

<b>2017 V 2019</b>		
t-Test: Two-Sample Assuming Equal Variances		
	<i>2017</i>	<i>2019</i>
Mean	0.13386364	0.1588764
Variance	0.12335961	0.14723054
Observations	88	89
Pooled Variance	0.13536328	
Hypothesized Mean Difference	0	
df	175	
t Stat	-0.4522317	
P(T<=t) one-tail	0.32583106	
t Critical one-tail	1.65360744	
P(T<=t) two-tail	0.65166211	
t Critical two-tail	1.97361246	

**Table E-8. t-Test assuming equal variances for 2017 v. 2020 rainfall amounts. There were no significant findings.**

<b>2017 V 2020</b>		
t-Test: Two-Sample Assuming Equal Variances		
	<i>2017</i>	<i>2020</i>
Mean	0.13386364	0.12067416
Variance	0.12335961	0.11341772
Observations	88	89
Pooled Variance	0.11836026	
Hypothesized Mean Difference	0	
df	175	
t Stat	0.25502009	
P(T<=t) one-tail	0.39950352	
t Critical one-tail	1.65360744	
P(T<=t) two-tail	0.79900704	
t Critical two-tail	1.97361246	

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**Table E-9. t-Test assuming equal variances for 2017 v. 2021 rainfall amounts. There were no significant findings.**

<b>2017 V 2021</b>		
t-Test: Two-Sample Assuming Equal Variances		
	<i>2017</i>	<i>2021</i>
Mean	0.13386364	0.20022472
Variance	0.12335961	0.17638859
Observations	88	89
Pooled Variance	0.15002561	
Hypothesized Mean Difference	0	
df	175	
t Stat	-1.1396735	
P(T<=t) one-tail	0.12798992	
t Critical one-tail	1.65360744	
P(T<=t) two-tail	0.25597983	
t Critical two-tail	1.97361246	

**Table E-10. t-Test assuming equal variances for 2018 v. 2019 rainfall amounts. There were no significant findings.**

<b>2018 V 2019</b>		
t-Test: Two-Sample Assuming Equal Variances		
	<i>2018</i>	<i>2019</i>
Mean	0.17382022	0.1588764
Variance	0.14481933	0.14723054
Observations	89	89
Pooled Variance	0.14602494	
Hypothesized Mean Difference	0	
df	176	
t Stat	0.2608724	
P(T<=t) one-tail	0.39724795	
t Critical one-tail	1.65355744	
P(T<=t) two-tail	0.7944959	
t Critical two-tail	1.97353439	

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**Table E-11. t-Test assuming equal variances for 2018 v. 2020 rainfall amounts. There were no significant findings.**

<b>2018 V 2020</b>		
t-Test: Two-Sample Assuming Equal Variances		
	<i>2018</i>	<i>2020</i>
Mean	0.17382022	0.12067416
Variance	0.14481933	0.11341772
Observations	89	89
Pooled Variance	0.12911853	
Hypothesized Mean Difference	0	
df	176	
t Stat	0.98663578	
P(T<=t) one-tail	0.16258783	
t Critical one-tail	1.65355744	
P(T<=t) two-tail	0.32517565	
t Critical two-tail	1.97353439	

**Table E-12. t-Test assuming equal variances for 2018 v. 2021 rainfall amounts. There were no significant findings.**

<b>2018 V 2021</b>		
t-Test: Two-Sample Assuming Equal Variances		
	<i>2018</i>	<i>2021</i>
Mean	0.17382022	0.20022472
Variance	0.14481933	0.17638859
Observations	89	89
Pooled Variance	0.16060396	
Hypothesized Mean Difference	0	
df	176	
t Stat	-0.4395211	
P(T<=t) one-tail	0.33041159	
t Critical one-tail	1.65355744	
P(T<=t) two-tail	0.66082318	
t Critical two-tail	1.97353439	

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**Table E-13. t-Test assuming equal variances for 2019 v. 2020 rainfall amounts. There were no significant findings.**

2019 V 2020		
t-Test: Two-Sample Assuming Equal Variances		
	2019	2020
Mean	0.1588764	0.12067416
Variance	0.14723054	0.11341772
Observations	89	89
Pooled Variance	0.13032413	
Hypothesized Mean Difference	0	
df	176	
t Stat	0.70592164	
P(T<=t) one-tail	0.24058511	
t Critical one-tail	1.65355744	
P(T<=t) two-tail	0.48117023	
t Critical two-tail	1.97353439	

**Table E-14. t-Test assuming equal variances for 2019 v. 2021 rainfall amounts. There were no significant findings.**

2019 V 2021		
t-Test: Two-Sample Assuming Equal Variances		
	2019	2021
Mean	0.1588764	0.20022472
Variance	0.14723054	0.17638859
Observations	89	89
Pooled Variance	0.16180956	
Hypothesized Mean Difference	0	
df	176	
t Stat	-0.6857025	
P(T<=t) one-tail	0.24690148	
t Critical one-tail	1.65355744	
P(T<=t) two-tail	0.49380296	
t Critical two-tail	1.97353439	



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**Table E-15. t-Test assuming equal variances for 2020 v. 2021 rainfall amounts. There were no significant findings.**

2020 V 2021		
t-Test: Two-Sample Assuming Equal Variances		
	2021	2020
Mean	0.20022472	0.12067416
Variance	0.17638859	0.11341772
Observations	89	89
Pooled Variance	0.14490315	
Hypothesized Mean Difference	0	
df	176	
t Stat	1.39406922	
P(T<=t) one-tail	0.0825271	
t Critical one-tail	1.65355744	
P(T<=t) two-tail	0.1650542	
t Critical two-tail	1.97353439	