

## **Appendices**

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## **Appendix 1: Weather elements**

### **True North:**

True north is a navigational term referring to the direction of the North Pole relative to the navigator's position. The direction of true north is marked in the skies by the celestial north pole.

### **Magnetic North:**

The point on the Earth's surface where the Earth's magnetic field points directly downwards. This pole is constantly wandering.

### **Wind Chill:**

The cooling effect of combining wind and temperature. The wind chill gives a more accurate reading of how cold it really feels to the human body. The Kestrel Meter's wind chill is based on the National Weather Service standards as of November 1, 2001.

### **Relative Humidity:**

The amount of water vapor in the air divided by the maximum amount of water vapor the air could hold at that temperature, expressed as a percentage.

### **Temperature:**

The ambient air temperature.

### **Heat Index:**

A practical measure of how hot the current combination of relative humidity and temperature feels to a human body. Higher relative humidity makes it seem hotter because the body's ability to cool itself by evaporating perspiration is reduced.

### **Dewpoint:**

The temperature to which air must be cooled in order for condensation to occur. The difference between dewpoint and temperature is referred to as the "temperature/dew point spread". A low dewpoint spread indicates high relative humidity, while a large dewpoint spread indicates dry conditions

**Wet Bulb:**

The lowest temperature to which a thermometer can be cooled by evaporating water into the air at constant pressure. This measurement is a holdover from the use of an instrument called a sling psychrometer. To measure wet bulb temperature with a sling psychrometer, a thermometer with a wet cloth covering over the bulb is spun rapidly through the air. If the relative humidity is high, there will be little evaporative cooling and the wet bulb temperature will be quite close to the ambient temperature. Some exercise physiology guides use wet bulb temperature, rather than heat index, as a measure of the safety of exercise in hot and humid conditions.

**Barometric Pressure:**

The air pressure of your location reduced to sea level. Pressure will change as weather systems move into your location. Falling pressure indicates the arrival of a low-pressure system and expected precipitation or storm conditions. Steady or rising pressure indicates clear weather. A correct altitude must be input for the Kestrel Meter to display barometric pressure correctly.

**Altitude:**

The distance above sea level. The Kestrel Meter calculates altitude based on the measured station pressure and the input barometric pressure - or “reference pressure”

**Density Altitude:**

The altitude at which you would be, given the current air density. Often used by pilots to determine how an aircraft will perform. Also, of interest to individuals who tune high performance internal combustion engines, such as race car engines.

**Cross Wind:**

A crosswind is any wind that has a perpendicular component to the line or direction of travel. This affects the aerodynamics of many forms of transport. Moving non-parallel to the wind's direction creates a crosswind component on the object and thus increasing the apparent wind on the object; such use of cross wind travel is used to advantage by sailing craft, kiteboarding craft, power kiting, etc. On the other side, crosswind moves the path of vehicles sideways and can be a hazard.

## Appendix. 2: Activity budget



Standing, lying, walking and playing-fight activities.



Eating inside barn



Eating outside barn

### APPENDIX 3: Statistical tables.

The tables below are the full initial models of the statistical analysis. FAC1, FAC2 and FAC3 are corresponding to factor one, factor two, factor three of table six to eight in chapter four above respectively.

**Parameter Estimates**

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test		
			Lower	Upper	Wald Chi-Square	df	Sig.
(Intercept)	34.891	1.5380	31.877	37.906	514.640	1	.000
FAC1_1	-9.962	1.5418	-12.984	-6.940	41.745	1	.000
FAC2_1	-9.392	1.5418	-12.414	-6.370	37.104	1	.000
FAC3_1	9.276	1.5418	6.254	12.298	36.194	1	.000
(Scale)	482.566 <sup>a</sup>	47.7812	397.443	585.920			

Dependent Variable: EI

Model: (Intercept), FAC1\_1, FAC2\_1, FAC3\_1

a. Maximum likelihood estimate.

**Parameter Estimates**

Paramete	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test		
			Lower	Upper	Wald Chi-Square	df	Sig.
(Intercept)	33.622	1.8671	29.963	37.282	324.272	1	.000
FAC1_1	5.916	1.8717	2.248	9.585	9.991	1	.002
FAC2_1	4.354	1.8717	.685	8.022	5.410	1	.020
FAC3_1	-8.016	1.8717	-11.685	-4.348	18.344	1	.000
(Scale)	711.166 <sup>a</sup>	70.4159	585.719	863.481			

Dependent Variable: EO

Model: (Intercept), FAC1\_1, FAC2\_1, FAC3\_1

a. Maximum likelihood estimate.

**Parameter Estimates**

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test		
			Lower	Upper	Wald Chi-Square	df	Sig.
(Intercept)	10.373	.9785	8.456	12.291	112.398	1	.000
FAC1_1	2.856	.9809	.933	4.778	8.476	1	.004
FAC2_1	3.549	.9809	1.626	5.471	13.090	1	.000
FAC3_1	-1.161	.9809	-3.084	.761	1.402	1	.236
(Scale)	195.308 <sup>a</sup>	19.3384	160.856	237.138			

Dependent Variable: RT

Model: (Intercept), FAC1\_1, FAC2\_1, FAC3\_1

a. Maximum likelihood estimate.