

PHYSICAL ACTIVITY ENVIRONMENT AND PERFEC/TENACI

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Today's Date

INTRODUCTION.

Previous analyses showed that enviromental variables, such as school, have significant effects on IQ and Perf. variables.

For this reason:

1. we explore the effect of the enviroment variables that promote physiscal activity in schools on IQ and Perf variables.
2. Variables related to how the evironment of schools devoted to physical activity were collected.
3. They are named and defined in the following section.

DOCUMENTATION

VARIABLES DE AMBIENTE PARA ACTIVIDAD FISICA

El sufijo aaf_ en todas las variabe indica Ambiente (para) Actividad Fisica.

- aaf_

OBSERVED VARIABLES

Nombre d Variable	Definicion	Valores
aaf_t_pe_class	t Tiempo en clase de educacion fisica	Minutos por semana
aaf_t_recess	t Tiempo de recreo	Minutos por semana
aaf_population_size	Tamannho de la poblacion total de la escuela	1 - 4 = chica, mediana, grande, muy_gr
aaf_s_size	s Tamannho d Espacio para actividad fisica	0 - 4 = no_hay, chico, mediano, grande, muy_gr
aaf_s_avail	s Espacio esta disponible o no	0, 1
aaf_s_used	s Espacio se usa o no	0, 1
aaf_s_shape	s Forma del espacio	rectang, triang, irregular, other

COMPUTED VARIABLES

Computed Variable	Definition	Formula
aaf_t_sum_total	total aggregated class+recess time	$t_sum = t_class + t_recess$
aaf_ratio_s_pop	space-size population-size ratio	$ratio_sp = s_size / pop_size$
aaf_indica_rec_t_s_p	time_space/population Indicator: Product of recess-time times the space/population ratio	$indica_tsp = t_recess * ratio_sp$
aaf_indica_sum_t_s_p	total time_space/population Indicator: Product of aggregated time (class+recess) times the space/population ratio	$indica_sum_tsp = t_sum * ratio_sp$

ANALYSES.

LINEAR REGRESSION ASSOCIATION ANALYSES.

PHYSICAL ACTIVITY ENVIROMENT VS IQ/FROST/OROS VARIABLES.

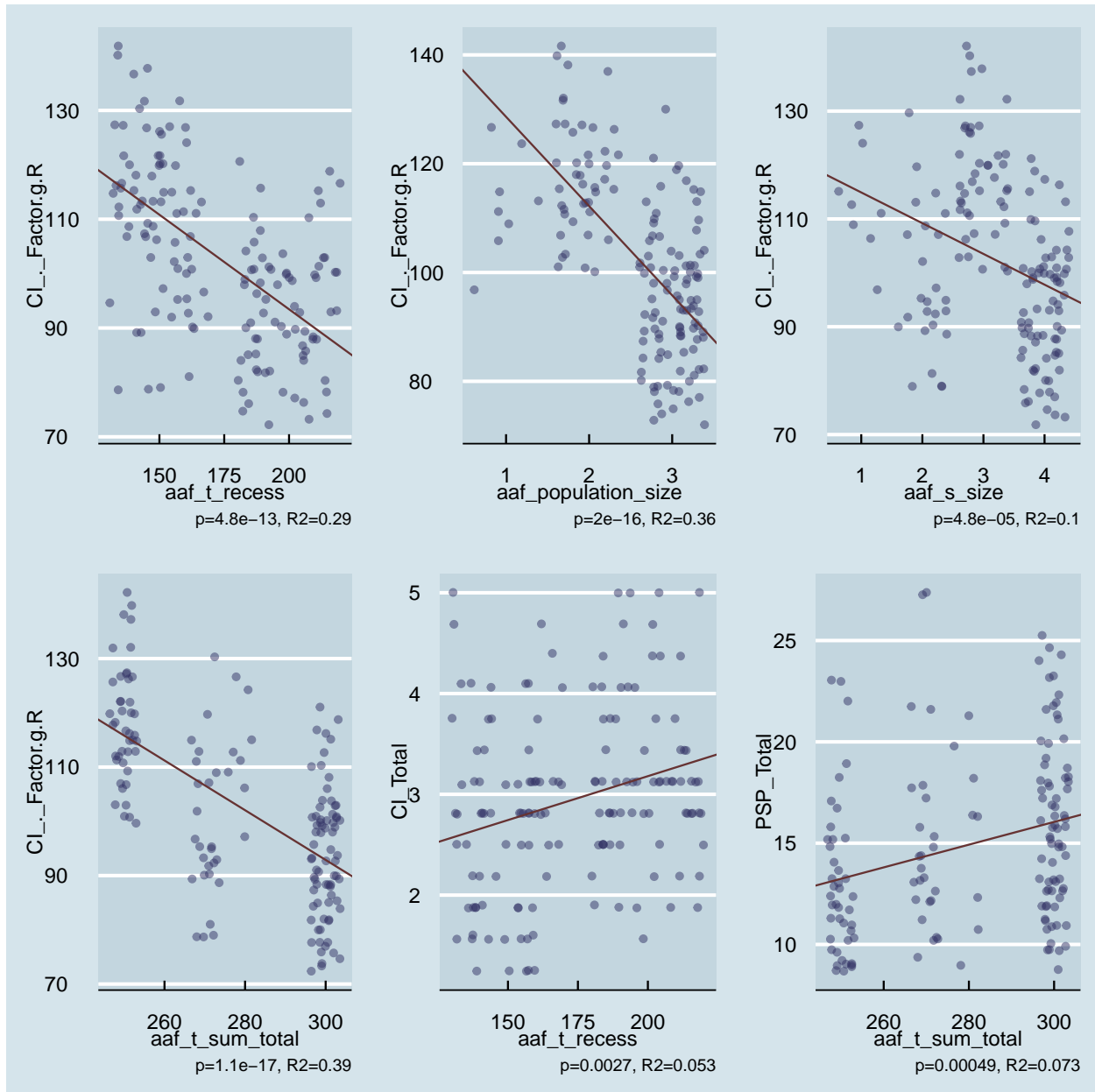
Six significan associations were found. The followind is the list. - The strongest association ($r > 4$) was found between IQ and physical activity aggregated time. - Of particular interest:

1. Association between POO and aggregated time was found.

ACTIVITY VARIABLE REGRESSION ANALYUSES

```
res_activity_corr <- regression_significant_main(oactivity_df, joint_nums, varnames_activity, significality=0.05)

## [1] "CI_._Factor.g.R aaf_t_recess"
## [1] 4.8e-13
## [1] 0.29
## [1] "CI_._Factor.g.R aaf_population_size"
## [1] 2e-16
## [1] 0.36
## [1] "CI_._Factor.g.R aaf_s_size"
## [1] 4.8e-05
## [1] 0.1
## [1] "CI_._Factor.g.R aaf_t_sum_total"
## [1] 1.1e-17
## [1] 0.39
## [1] "CI_Total aaf_t_recess"
## [1] 0.0027
## [1] 0.053
## [1] "PSP_Total aaf_t_sum_total"
## [1] 0.00049
## [1] 0.073
## [1] "NUMBER OF SIGNIFICANT ANALYSES:"
## [1] 6
```



```
## [1] "NUMBER OF GRAPHICS IN GRID:"
## [1] 6
```

```
## SHOW THE CORRELATIONS GRID
res_activity_corr[['grid']]
```

```
## TableGrob (2 x 3) "arrange": 6 grobs
##
## CI._Factor.g.R~_aaf_t_recess      1 (1-1,1-1) arrange gtable[layout]
## CI._Factor.g.R~_aaf_population_size 2 (1-1,2-2) arrange gtable[layout]
## CI._Factor.g.R~_aaf_s_size        3 (1-1,3-3) arrange gtable[layout]
## CI._Factor.g.R~_aaf_t_sum_total    4 (2-2,1-1) arrange gtable[layout]
## CI.Total~_aaf_t_recess             5 (2-2,2-2) arrange gtable[layout]
## PSP.Total~_aaf_t_sum_total         6 (2-2,3-3) arrange gtable[layout]
```

DIFFERENCES BETWEEN GROUPS ANALYSES.

By using the physical activity as grouping variables:

1. 39 significant differences were found.
2. Most of them of little interest.
3. However, the associatiaion between IQ and PSP reported above was replicated.

```
## ACTIVITY SAME ANALYSIS AS ABOVE BUT THE ACTIVITIES ARE TAKEN AS CATEFORIES FOR DIFFERENCE ANALYSES.  
res_activity_diff <- regression_significant_main(oactivity_factored_df, joint_nums, varnames_activity, )
```

```
## [1] "CI_._Factor.g.R aaf_t_recess"  
## [1] 4.8e-13  
## [1] 0.29  
## [1] "CI_._Factor.g.R aaf_population_size"  
## [1] 4.3e-05  
## [1] 0.46  
## [1] "CI_._Factor.g.R aaf_s_size"  
## [1] 1.8e-05  
## [1] 0.46  
## [1] "CI_._Factor.g.R aaf_indica_sum_t_s_p"  
## [1] 1.2e-10  
## [1] 0.46  
## [1] "CI_._Factor.g.R aaf_indica_rec_t_s_p"  
## [1] 1.2e-10  
## [1] 0.46  
## [1] "CI_._Factor.g.R aaf_ratio_s_pop"  
## [1] 1.2e-10  
## [1] 0.46  
## [1] "CI_._Factor.g.R aaf_t_sum_total"  
## [1] 7.5e-21  
## [1] 0.46  
## [1] "CI_Total aaf_t_pe_class"  
## [1] 0.027  
## [1] 0.022  
## [1] "CI_Total aaf_t_recess"  
## [1] 0.0027  
## [1] 0.053  
## [1] "CI_Total aaf_indica_sum_t_s_p"  
## [1] 0.004  
## [1] 0.055  
## [1] "CI_Total aaf_indica_rec_t_s_p"  
## [1] 0.004  
## [1] 0.055  
## [1] "CI_Total aaf_ratio_s_pop"  
## [1] 0.004  
## [1] 0.055  
## [1] "CI_Total aaf_t_sum_total"  
## [1] 0.014  
## [1] 0.055  
## [1] "Grit.S aaf_t_pe_class"  
## [1] 0.0063  
## [1] 0.04  
## [1] "Grit.S aaf_t_recess"  
## [1] 0.022  
## [1] 0.028
```

```

## [1] "Grit.S aaf_indica_sum_t_s_p"
## [1] 0.0025
## [1] 0.047
## [1] "Grit.S aaf_indica_rec_t_s_p"
## [1] 0.0025
## [1] 0.047
## [1] "Grit.S aaf_ratio_s_pop"
## [1] 0.0025
## [1] 0.047
## [1] "ESP_Total aaf_t_pe_class"
## [1] 0.016
## [1] 0.027
## [1] "ESP_Total aaf_population_size"
## [1] 0.0098
## [1] 0.031
## [1] "ESP_Total aaf_s_size"
## [1] 0.01
## [1] 0.026
## [1] "ESP_Total aaf_indica_sum_t_s_p"
## [1] 0.025
## [1] 0.026
## [1] "ESP_Total aaf_indica_rec_t_s_p"
## [1] 0.025
## [1] 0.026
## [1] "ESP_Total aaf_ratio_s_pop"
## [1] 0.025
## [1] 0.026
## [1] "ESP_Total aaf_t_sum_total"
## [1] 0.01
## [1] 0.026
## [1] "Preocupaci..n_perfeccionista aaf_t_sum_total"
## [1] 0.026
## [1] 0.016
## [1] "Esfuerzo_Perfeccionista aaf_population_size"
## [1] 0.021
## [1] 0.024
## [1] "Esfuerzo_Perfeccionista aaf_s_size"
## [1] 0.022
## [1] 0.02
## [1] "Esfuerzo_Perfeccionista aaf_t_sum_total"
## [1] 0.022
## [1] 0.02
## [1] "Perfeccionismo_de_.Frost aaf_t_sum_total"
## [1] 0.028
## [1] 0.023
## [1] "PSP_Total aaf_t_recess"
## [1] 0.0043
## [1] 0.047
## [1] "PSP_Total aaf_t_sum_total"
## [1] 0.00032
## [1] 0.067
## [1] "P00_Total aaf_t_pe_class"
## [1] 0.0097
## [1] 0.051

```

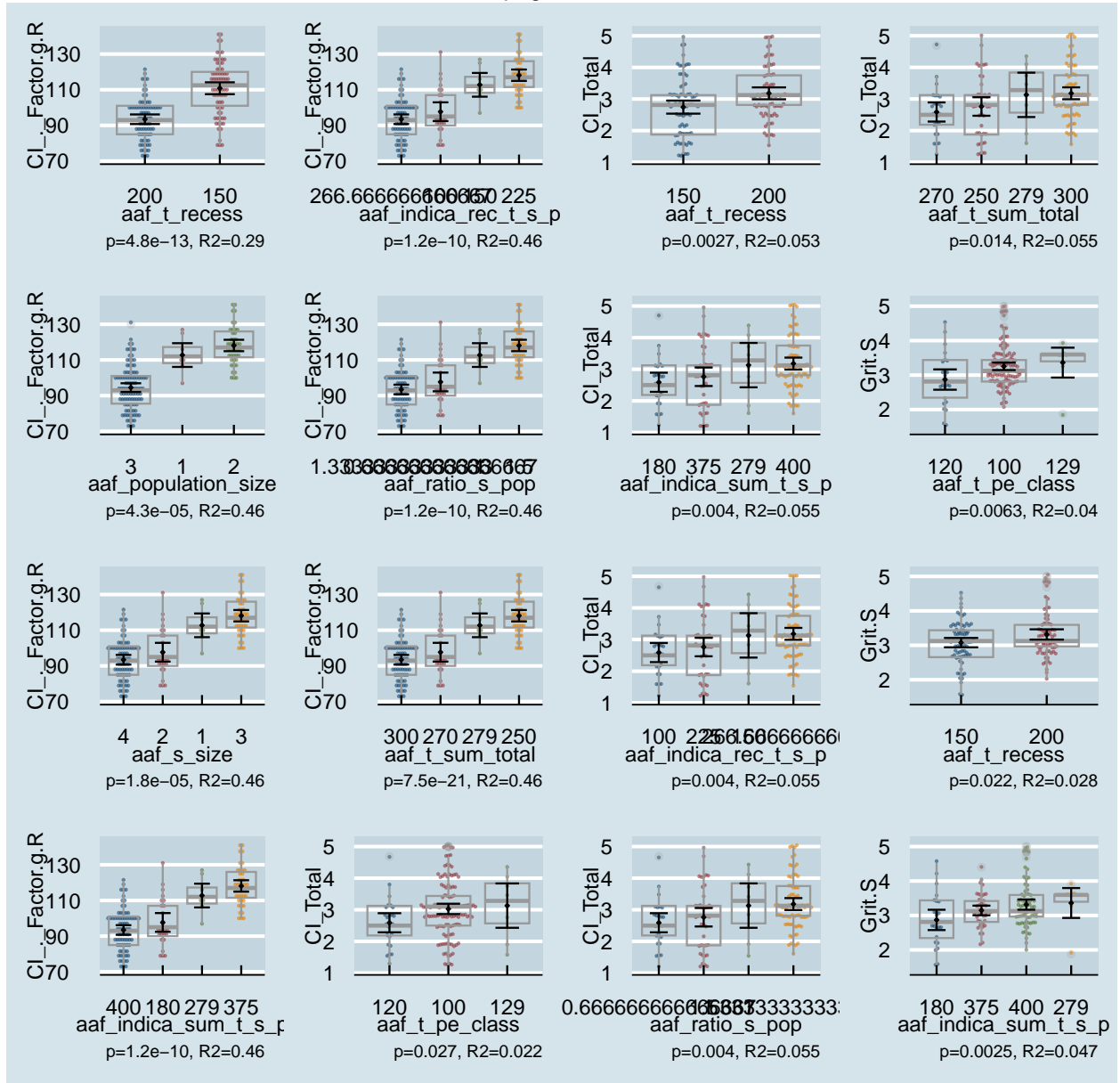
```

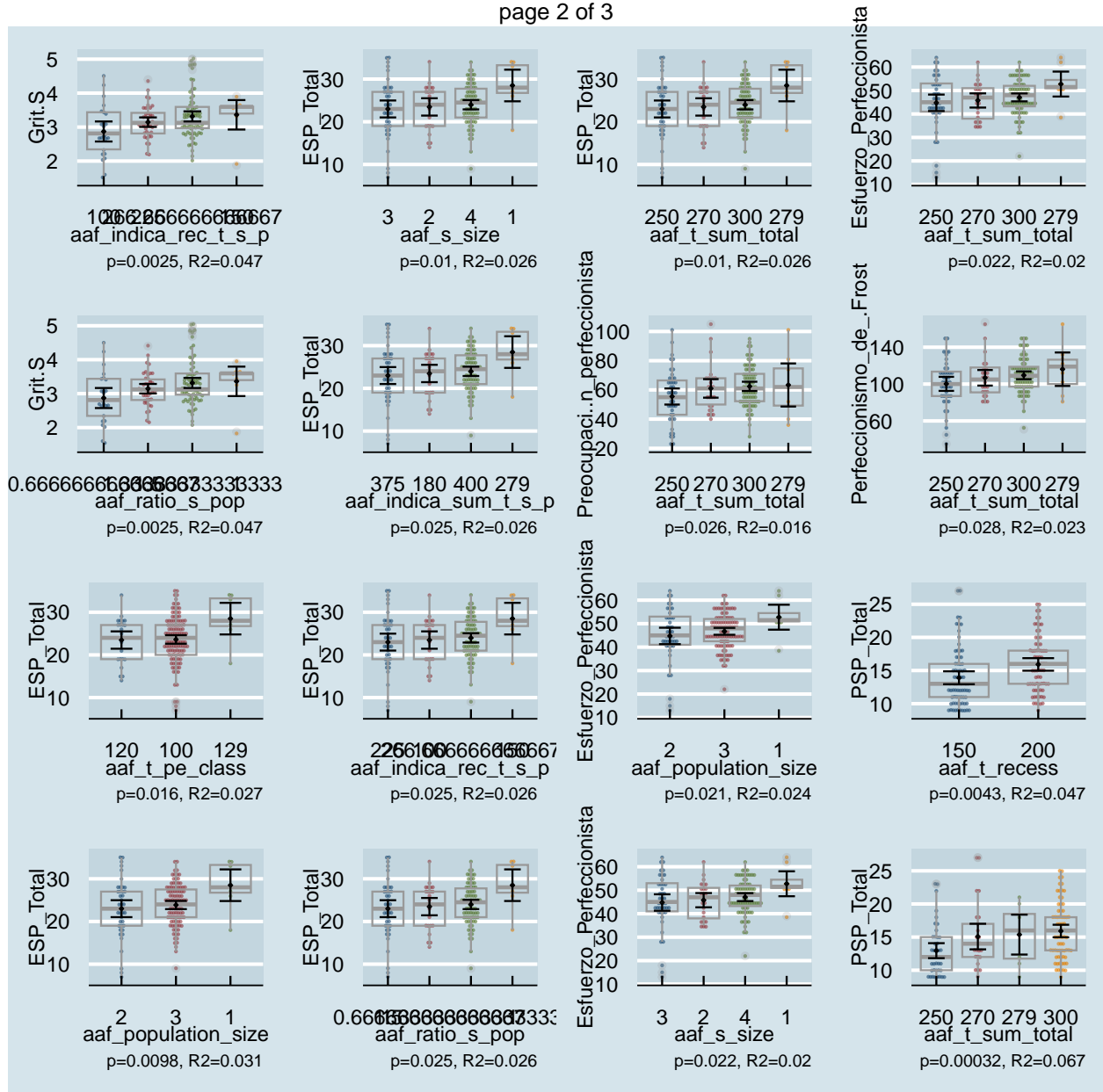
## [1] "P00_Total aaf_population_size"
## [1] 0.0045
## [1] 0.042
## [1] "P00_Total aaf_s_size"
## [1] 0.0019
## [1] 0.046
## [1] "P00_Total aaf_indica_sum_t_s_p"
## [1] 0.0019
## [1] 0.046
## [1] "P00_Total aaf_indica_rec_t_s_p"
## [1] 0.0019
## [1] 0.046
## [1] "P00_Total aaf_ratio_s_pop"
## [1] 0.0019
## [1] 0.046
## [1] "P00_Total aaf_t_sum_total"
## [1] 0.021
## [1] 0.046
## [1] "NUMBER OF SIGNIFICANT ANALYSES:"
## [1] 39

## [1] "NUMBER OF GRAPHICS IN GRID:"
## [1] 39

## SHOW THE GRID
res_activity_diff[['grid']]

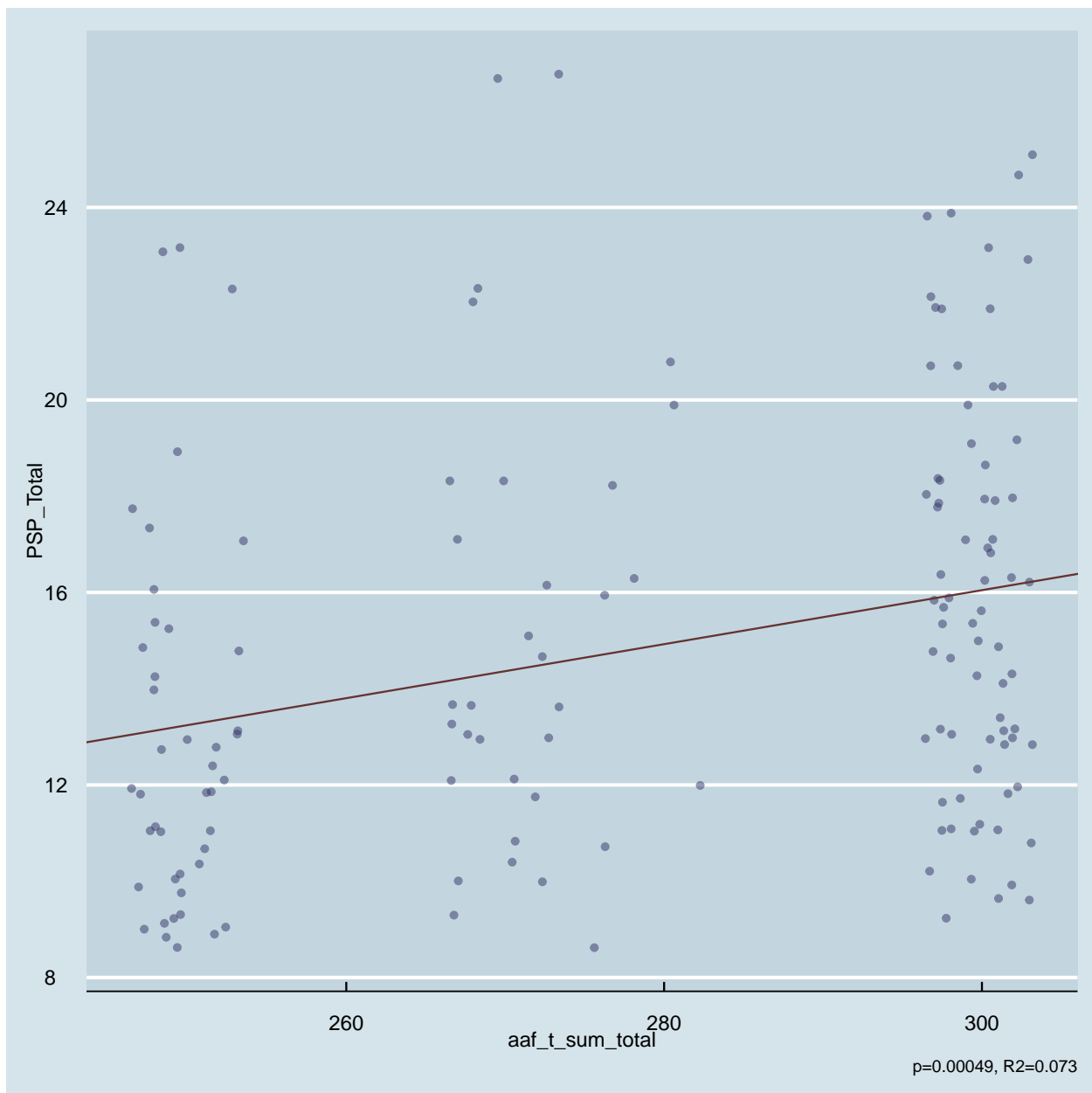
```





PSP TIME ASSOCIATION.

```
## SHOW THE PSP CORRELATION GRAPH
res_activity_corr[['plots']][['PSP_Total_~_aaf_t_sum_total']]
```



PSP TIME DIFFERENCES.

```
## SHOW THE PSP CORRELATION GRAPH
res_activity_diff[['plots']][['PSP_Total_~_aaf_t_sum_total']]
```

