Ecography

Appendix 1

Table A1. Correlation structure of the variables studied. Spearman's correlation coefficients are shown with values significant at p = 0.05 in bold.

	Distance to Atlantic coast	Open-rock vegetation area	Number of habitats	Sampling effort	Inselberg density	Rainfall	Altitude	Open-canopy forest matrix cover	Plant species richness	Terrestrial plant species richness	Epiphytic plant species richness	Small-scale dispersal plant species richness	Large-scale dispersal plant species richness
Open-rock vegetation area	**-0.55**												
Number of habitats	-0.07	0.35											
Sampling effort	-0.17	**0.48**	**0.48**										
Inselberg density	**0.62**	**-0.43**	0.31	-0.10									
Rainfall	**-0.80**	**0.63**	-0.14	0.33	-0.83								
Altitude	-0.32	0.41	0.18	0.26	-0.12	0.22							
Open-canopy forest matrix cover	**0.79**	**-0.53**	-0.19	-0.30	**0.46**	**-0.66**	**-0.57**						
Plant species richness	-0.25	**0.52**	**0.69**	**0.82**	-0.06	0.36	0.22	-0.37					
Terrestrial plant species richness	-0.09	0.41	**0.74**	**0.79**	0.08	0.21	0.03	-0.21	**0.96**				
Epiphytic plant species richness	**-0.69**	**0.60**	0.31	**0.53**	**-0.44**	**0.68**	**0.59**	**-0.83**	**0.67**	**0.47**			
Small-scale dispersal plant species richness	**0.45**	0.08	**0.47**	**0.43**	**0.45**	-0.28	-0.33	**0.48**	**0.46**	**0.61**	-0.24		
Large-scale dispersal plant species richness	**-0.46**	**0.57**	**0.57**	**0.75**	-0.22	**0.53**	**0.43**	**-0.62**	**0.93**	**0.82**	**0.86**	0.16	
Woody plant species richness	**-0.50**	**0.51**	**0.42**	**0.73**	-0.29	**0.61**	**0.42**	**-0.65**	**0.85**	**0.74**	**0.84**	0.09	**0.92**

Table A2. Comparison of model's goodness-of-fits for different regression functions.

Curve	Function	F-value	P-value	Adjusted r^2
Plant species richness (Y)				
Rock-savanna vegetation area (X)				
Linear	**Y = a+bX**	**$F_{1,20}$ = 15.7**	**0.0008**	**0.41**
Quadratic	Y = a+bX+cX^2	$F_{1,19}$ = 7.5	0.0040	0.38
Power	Y = a*X^b	$F_{1,20}$ = 12.0	0.0024	0.34
Terrestrial habitat number (X)				
Linear	Y = a+bX	$F_{1,20}$ = 21.8	0.0002	0.50
Quadratic	Y = a+bX+cX^2	$F_{1,19}$ = 10.4	0.0009	0.47
Power	**Y = a*X^b**	**$F_{1,20}$ = 29.5**	**< 0.0001**	**0.58**
Terrestrial plant species richness (Y)				
Rock-savanna vegetation area (X)				
Linear	Y = a+bX	$F_{1,20}$ = 22.4	0.0001	0.51
Quadratic	Y = a+bX+cX^2	$F_{1,19}$ = 3.8	0.0398	0.51
Power	**Y = a*X^b**	**$F_{1,20}$ = 9.6**	**0.0057**	**0.29**
Terrestrial habitat number (X)				
Linear	Y = a+bX	$F_{1,20}$ = 26.6	< 0.0001	0.55
Quadratic	Y = a+bX+cX^2	$F_{1,19}$ = 12.74	0.0003	0.51
Power	**Y = a*X^b**	**$F_{1,20}$ = 34.4**	**< 0.0001**	**0.61**
Epiphytic plant species richness (Y)				
Rock-savanna vegetation area (X)				
Linear	**Y = a+bX**	**$F_{1,20}$ = 22.4**	**0.0001**	**0.51**
Quadratic	Y = a+bX+cX^2	$F_{1,19}$ = 12.3	0.0004	0.51
Power	Y = a*X^b	$F_{1,20}$ = 4.78	0.0409	0.15
Woody species richness (X)				
Linear	**Y = a+bX**	**$F_{1,20}$ = 51.15**	**< 0.0001**	**0.70**
Quadratic	Y = a+bX+cX^2	$F_{1,19}$ = 25.85	< 0.0001	0.70
Power	Y = a*X^b	$F_{1,20}$ = 14.3	0.0013	0.38

Table A3. Results of the selection procedure of multiple regression models relating plant diversity to ecological drivers (n = 22). All models with ΔAICc < 2 and variance inflation factor (VIF) < 4 were included in the confidence models set. ω_i is the model weight indicating the relative support of the model. *, ** and *** indicate statistical significance at p = 0.05, 0.01 and 0.001, respectively. [ns]: not significant.

| Open-rock vegetation area	Number of habitats	Woody plant species richness	Sampling effort	Inselberg density	Rainfall	Altitude	Open-canopy forest matrix cover	ΔAICc	w_i	r^2
Richness of all plant species										
	0.44***		0.39***					0.00	0.43	0.80
	0.49***		0.34**	-0.12[ns]				0.39	0.34	0.83
	0.45**		0.35**		0.13[ns]			1.26	0.23	0.82
Richness of terrestrial plant species										
	0.53***		0.37**					0.00	1.00	0.78
Richness of epiphytic plant species										
0.25*		0.30*			0.38**	0.33***		0.00	0.70	0.90
			0.40**		0.45***	0.33**		1.74	0.30	0.87
Richness of small-scale dispersal plant species										
	0.39**		0.37**		-0.46***	-0.54***		0.00	1.00	0.80
Richness of large-scale dispersal plant species										
	0.38**		0.25*		0.29**	0.20*		0.00	1.00	0.85
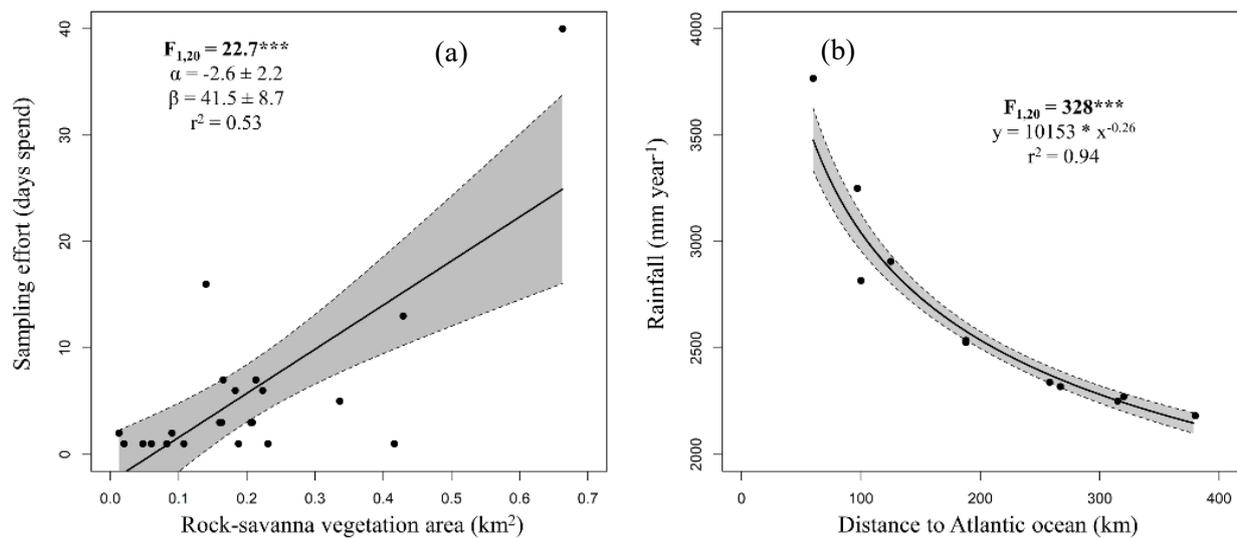
Figure A1. Pairwise relationships between open-rock vegetation area and sampling effort (a), and between distance to the Atlantic Ocean and rainfall (b). α and β represent the intercept and slope of linear regression models, respectively (± standard error). *** indicate statistical significance at p = 0.001, respectively. [ns]: not significant.
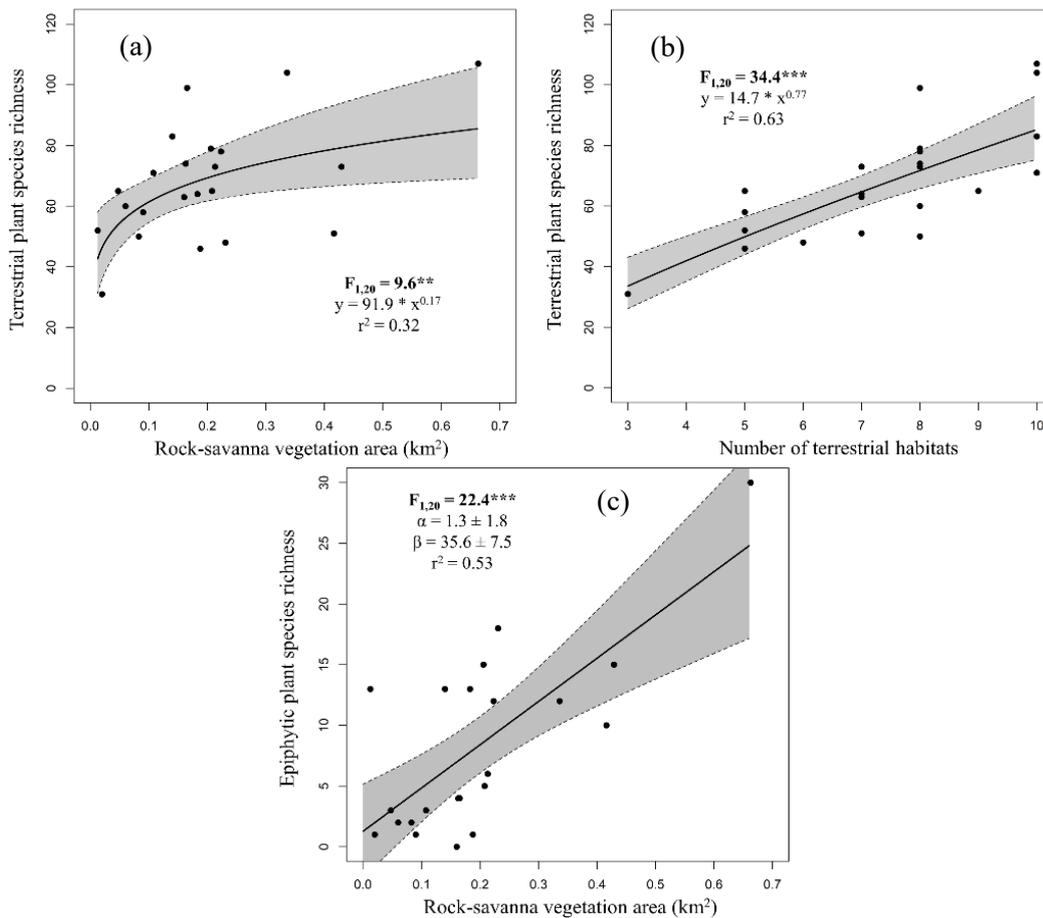
Figure A2. Pairwise relationships between open-rock vegetation area and terrestrial plant species richness (a), between terrestrial habitat number and terrestrial plant species richness (b), and open-rock vegetation area and epiphytic plant species richness (c). α and β represent the intercept and slope of linear regression models, respectively (± standard error). ** and *** indicate statistical significance at p = 0.010 and 0.001, respectively..
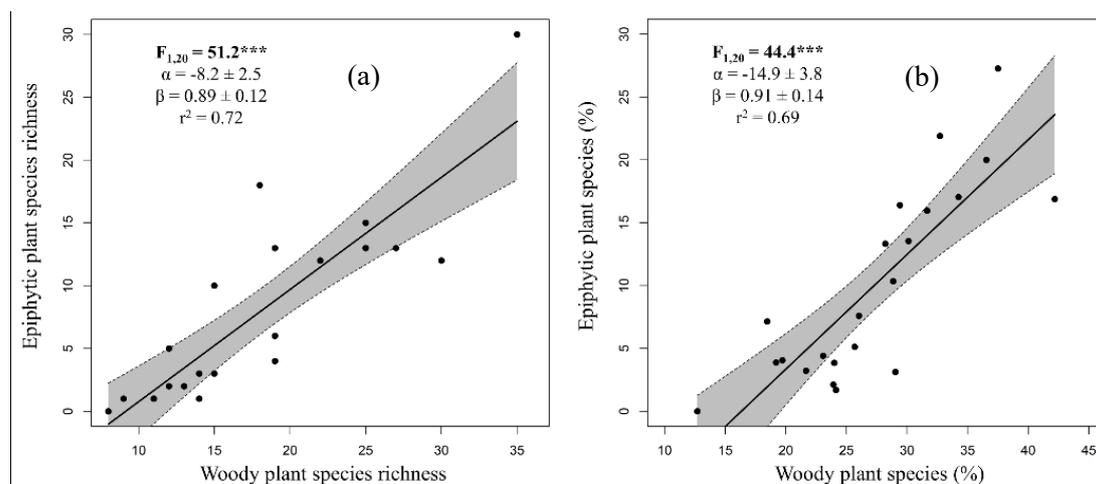

Figure A3. Pairwise relationships of the species richness of woody and epiphytic plants (a), as well as the proportion of woody and epiphytic species within the community (b). α and β represents the intercept and slope of linear regression models, respectively (± standard error). *** indicate statistical significance at p = 0.001.

(a)

$F_{1,20} = 16.4^{***}$
$\alpha = 43.5 \pm 3.2$
$\beta = -0.037 \pm 0.009$
$r^2 = 0.45$

Autochorous terrestrial plant species (%)

(e)

$F_{1,20} = 6.0^{*}$
$\alpha = 59.6 \pm 10.7$
$\beta = -0.011 \pm 0.004$
$r^2 = 0.26$

(b)

$F_{1,20} = 15.1^{***}$
$\alpha = 36.8 \pm 2.0$
$\beta = -0.022 \pm 0.006$
$r^2 = 0.43$

Anemochorous terrestrial plant species (%)

(f)

$F_{1,20} = 2.1^{ns}$
$\alpha = 33.4 \pm 7.1$
$\beta = 0.004 \pm 0.002$
$r^2 = 0.10$

(c)

$F_{1,20} = 1.4^{ns}$
$\alpha = 34.4 \pm 2.4$
$\beta = 0.008 \pm 0.007$
$r^2 = 0.07$

Zoochorous terrestrial plant species (%)

(g)

$F_{1,20} = 9.3^{**}$
$\alpha = 19.4 \pm 5.8$
$\beta = 0.007 \pm 0.002$
$r^2 = 0.32$

(d)

$F_{1,20} = 0.4^{ns}$
$\alpha = 8.98 \pm 1.1$
$\beta = -0.002 \pm 0.003$
$r^2 = 0.02$

Hydrochorous terrestrial plant species (%)

Altitude (m)

(h)

$F_{1,20} = 0.2^{ns}$
$\alpha = 7.0 \pm 3.1$
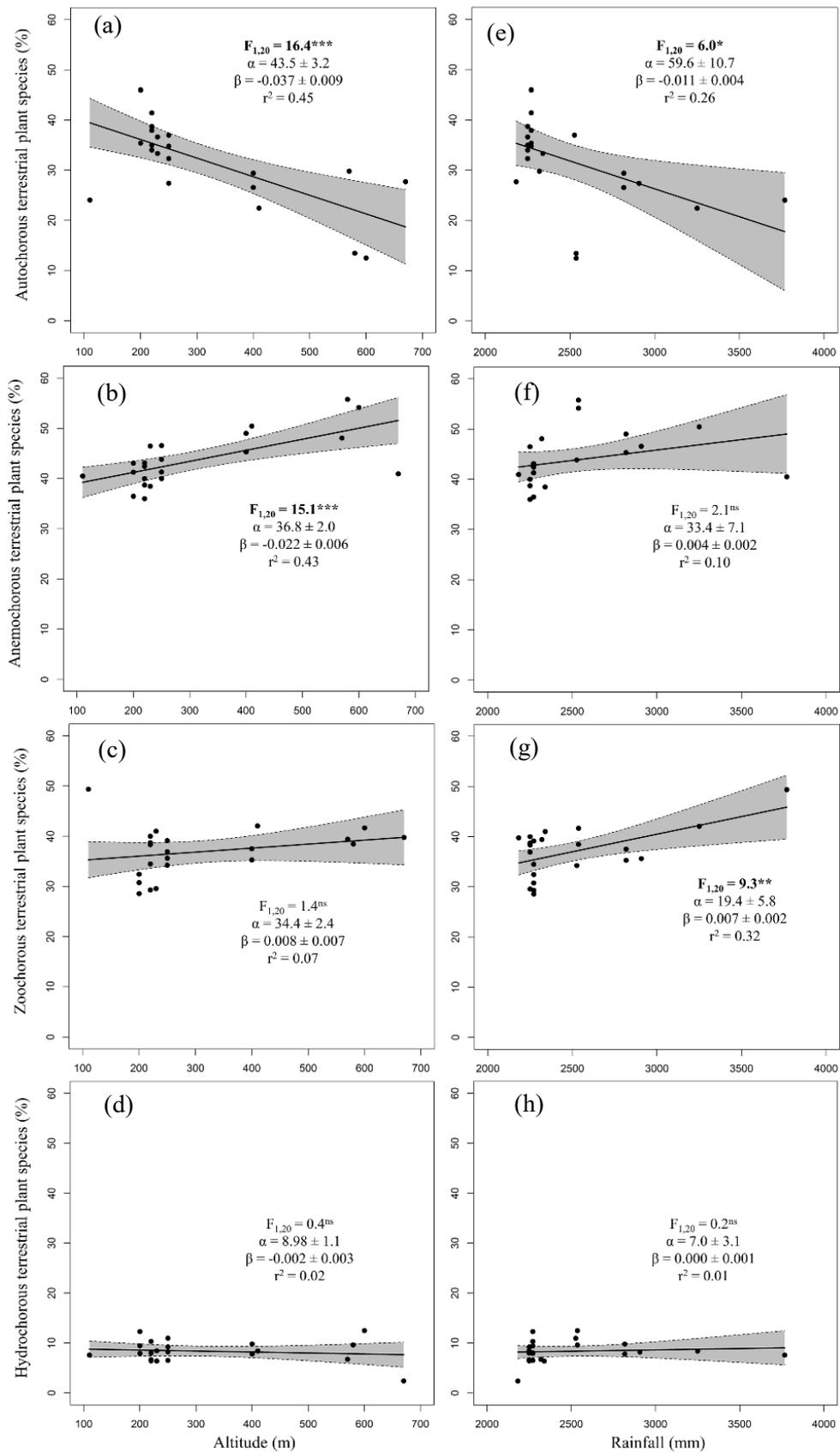$\beta = 0.000 \pm 0.001$
$r^2 = 0.01$

Rainfall (mm)

Figure A4. Pairwise relationships of altitude (a, c, e and g) and rainfall (b, d, f and h) with the proportion of species with contrasting dispersal type within the community. α and β represents the intercept and slope of linear regression models, respectively (± standard error). *, ** and *** indicate statistical significance at p = 0.05, 0.01 and 0.001, respectively. ns: not significant.