

Table S1.- Median and interquartile range (IQR) of the variables not normally distributed.

| | Median | IQR |
|------------------------------|--------|-------|
| Age (years) | 51.00 | 23.75 |
| Sphere (D) | 0.25 | 4.00 |
| RA (D) | -0.75 | 1.00 |
| WTW (mm) | 12.1 | 0.60 |
| AXL (mm) | 23.70 | 1.88 |
| ACA (D) | 0.90 | 0.90 |
| PCA (D) | 0.32 | 0.20 |
| QF | -0.23 | 0.17 |
| QB | -0.24 | 0.28 |
| Thinnest (μm) | 546 | 42.00 |
| Ele F Apex (μm) | 2 | 2.00 |
| Ele F Thin (μm) | 2 | 2.00 |
| Ele B Apex (μm) | 3 | 5.00 |
| Ele B Thin (μm) | 7 | 7.00 |
| RMS (Anterior cornea): | 1.804 | 0.90 |
| RMS HOA (Anterior cornea): | 0.453 | 0.17 |
| RMS LOA (Anterior cornea): | 1.742 | 0.89 |
| RMS (Posterior cornea): | 0.786 | 0.21 |
| RMS HOA (Posterior cornea): | 0.185 | 0.04 |
| RMS LOA (Posterior cornea): | 0.763 | 0.21 |
| RMS (Total cornea): | 1.527 | 0.88 |
| RMS HOA (Total cornea): | 0.429 | 0.19 |
| RMS LOA (Total cornea): | 1.458 | 0.89 |

Table S2.- Multivariant linear regression Model 1 for the RMS total of the total cornea.

| Dependent variables predicting RMS total (Total cornea) | Unstandardized coefficients | Standardized coefficients | t | Sig. |
|---|--------------------------------|------------------------------|--------|--------|
| | B | Beta | | |
| (Constante) | 0.956 | | 0.923 | 0.356 |
| ACA | 0.564 | 0.591 | 18.458 | 0.000* |
| Age | 0.015 | 0.279 | 11.005 | 0.000* |
| Ele F Apex | -0.199 | -0.300 | -6.780 | 0.000* |
| RA | -0.179 | -0.213 | -7.222 | 0.000* |
| WTW | -0.180 | -0.097 | -3.747 | 0.000* |
| Ele F Thin | -0.063 | -0.143 | -4.280 | 0.000* |
| QF | -1.049 | -0.176 | -4.623 | 0.000* |
| KmF | 0.038 | 0.070 | 2.618 | 0.009* |

R² (%) = 63.0% Model F = 159.638

* Statistically significant (p<0.05)

Table S3.- Multivariant regression Model 1 for the RMS LOA of the total cornea.

| Dependent variables predicting RMS LOA (Total cornea) | Unstandardized coefficients | Standardized coefficients | t | Sig. |
|---|--------------------------------|------------------------------|--------|--------|
| | B | Beta | | |
| (Constante) | 0.764 | | 0.746 | 0.456 |
| ACA | 0.568 | 0.598 | 18.814 | 0.000* |
| Age | 0.014 | 0.268 | 10.643 | 0.000* |
| Ele F Apex | -0.206 | -0.311 | -7.072 | 0.000* |
| RA | -0.182 | -0.217 | -7.419 | 0.000* |
| WTW | -0.169 | -0.092 | -3.562 | 0.000* |
| QF | -1.144 | -0.193 | -5.096 | 0.000* |
| Ele F Thin | -0.058 | -0.133 | -3.998 | 0.000* |
| KmF | 0.038 | 0.071 | 2.638 | 0.009* |

R² (%) = 63.5% Model F = 163.134

* Statistically significant (p<0.05)

Table S4.- Multivariant regression Model 1 for the RMS HOA of the total cornea.

| Dependent variables predicting RMS HOA (Total cornea) | Unstandardized coefficients | Standardized coefficients | t | Sig. |
|---|--------------------------------|------------------------------|--------|--------|
| | B | Beta | | |
| (Constante) | 1.253 | | 7.513 | 0.000* |
| Age | 0.005 | 0.377 | 11.898 | 0.000* |
| Ele F Thin | -0.030 | -0.291 | -7.484 | 0.000* |
| ACA | 0.051 | 0.231 | 7.670 | 0.000* |
| WTW | -0.070 | -0.162 | -5.178 | 0.000* |
| QF | 0.172 | 0.124 | 3.262 | 0.001* |
| Sex | 0.029 | 0.077 | 2.629 | 0.009* |
| AXL | -0.007 | -0.064 | -2.003 | 0.046* |

R² (%)= 39.5% Model F = 70.605

* Statistically significant (p<0.05)

Table S5.- Multivariant regression Model 1 for the RMS total of the anterior cornea.

| Dependent variables predicting RMS total (Anterior cornea) | Unstandardized coefficients | Standardized coefficients | t | Sig. |
|--|--------------------------------|------------------------------|---------|--------|
| | B | Beta | | |
| (Constante) | 0.089 | | 0.090 | 0.928 |
| ACA | 0.683 | 0.652 | 23.286 | 0.000* |
| Age | 0.010 | 0.179 | 7.713 | 0.000* |
| Ele F Apex | -0.268 | -0.384 | -10.531 | 0.000* |
| RA | -0.156 | -0.176 | -6.590 | 0.000* |
| WTW | -0.147 | -0.075 | -3.196 | 0.001* |
| QF | -0.924 | -0.148 | -4.287 | 0.000* |
| KmF | 0.058 | 0.107 | 4.222 | 0.000* |

R² (%)= 69.1% Model F = 239.402

* Statistically significant (p<0.05)

Table S6.- Multivariant regression Model 1 for the RMS total of the posterior cornea.

| Dependent variables predicting RMS total (Posterior cornea) | Unstandardized coefficients | Standardized coefficients | t | Sig. |
|---|--------------------------------|------------------------------|--------|--------|
| | B | Beta | | |
| (Constante) | -0.640 | | -3.760 | 0.000* |
| ACA | 0.063 | 0.304 | 9.517 | 0.000* |
| Age | -0.004 | -0.317 | -9.419 | 0.000* |
| KmF | 0.037 | 0.318 | 9.672 | 0.000* |
| Sex | -0.042 | -0.122 | -3.848 | 0.000* |
| Ele F Apex | -0.032 | -0.217 | -4.658 | 0.000* |
| Ele F Thin | 0.015 | 0.154 | 3.446 | 0.001* |

R² (%)= 31.3% Model F = 57.542

* Statistically significant (p<0.05)

Table S7.- Multivariant regression Model 2 for the RMS total of the posterior cornea.

| Dependent variables predicting RMS total (Posterior cornea) | Unstandardized coefficients | Standardized coefficients | t | Sig. |
|---|--------------------------------|------------------------------|---------|--------|
| | B | Beta | | |
| (Constante) | -0.519 | | -4.577 | 0.000* |
| PCA | 0.420 | 0.418 | 16.103 | 0.000* |
| QB | 0.263 | 0.337 | 7.350 | 0.000* |
| KmB | -0.210 | -0.309 | -11.982 | 0.000* |
| Ele B Thin | 0.014 | 0.464 | 11.615 | 0.000* |
| Ele B Apex | -0.028 | -0.560 | -10.283 | 0.000* |
| Age | -0.002 | -0.144 | -5.094 | 0.000* |
| Sex | -0.023 | -0.065 | -2.809 | 0.005* |
| RA | -0.011 | -0.061 | -2.549 | 0.011* |

R² (%)= 63.6% Model F = 147.576

* Statistically significant (p<0.05)

Table S8.- Multivariant regression Model 3 for the RMS total of the total cornea.

| Dependent variables predicting RMS total (Total cornea) | Unstandardized coefficients | Standardized coefficients | t | Sig. |
|---|--------------------------------|------------------------------|--------|--------|
| | B | Beta | | |
| (Constante) | 0.350 | | 0.332 | 0.740 |
| ACA | 0.555 | 0.582 | 19.462 | 0.000* |
| Age | 0.011 | 0.208 | 6.776 | 0.000* |
| Ele F Apex | -0.203 | -0.305 | -6.880 | 0.000* |
| RA | -0.179 | -0.213 | -7.281 | 0.000* |
| WTW | -0.158 | -0.085 | -3.209 | 0.001* |
| Ele F Thin | -0.063 | -0.144 | -4.332 | 0.000* |
| QF | -0.885 | -0.149 | -3.875 | 0.000* |
| QB | -0.438 | -0.123 | -4.057 | 0.000* |
| KmF | 0.093 | 0.174 | 3.442 | 0.001* |
| KmB | 0.306 | 0.098 | 1.996 | 0.046* |

R² (%)= 63.7% **Model F = 132.181**

* Statistically significant (p<0.05)

Table S9.- Multivariant regression Model 3 for the RMS LOA of the total cornea.

| Dependent variables predicting RMS LOA (Total cornea) | Unstandardized coefficients | Standardized coefficients | t | Sig. |
|---|--------------------------------|------------------------------|--------|--------|
| | B | Beta | | |
| (Constante) | 0.038 | | 0.037 | 0.971 |
| ACA | 0.562 | 0.592 | 19.887 | 0.000* |
| Age | 0.012 | 0.222 | 7.700 | 0.000* |
| Ele F Apex | -0.201 | -0.304 | -6.947 | 0.000* |
| RA | -0.185 | -0.220 | -7.549 | 0.000* |
| WTW | -0.136 | -0.073 | -2.803 | 0.005* |
| QF | -1.045 | -0.176 | -4.642 | 0.000* |
| Ele F Thin | -0.061 | -0.140 | -4.233 | 0.000* |
| QB | -0.308 | -0.087 | -3.219 | 0.001* |
| KmF | 0.046 | 0.087 | 3.218 | 0.001* |

R² (%)= 63.9% **Model F = 134.182**

* Statistically significant (p<0.05)