

Ejemplo Motivador

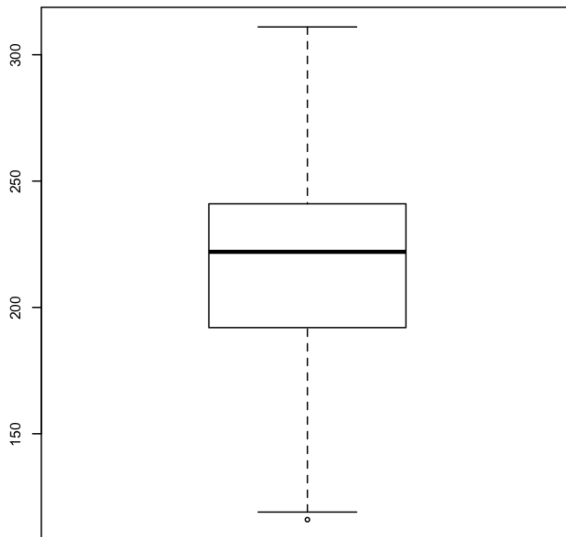
Características de la base

- Base de datos numérica
- 3265 individuos
- 9 variables
- 10 primeros casos:

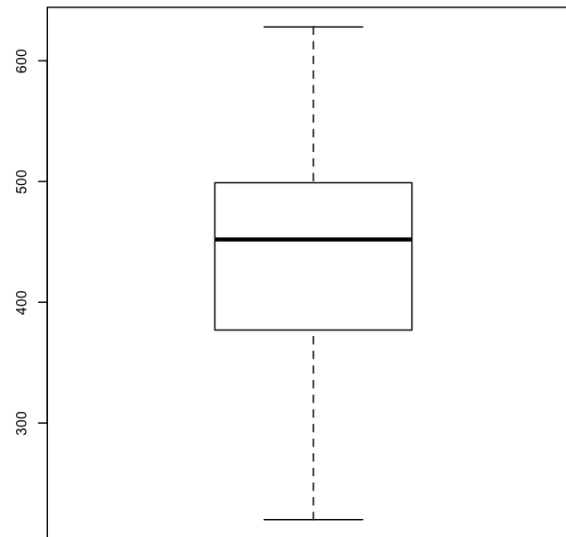
• X1	250	243	232	234	227	219	235	232	216	260	...
• X2	488	511	452	503	461	449	483	465	442	506	...
• X3	518	568	509	518	525	479	532	528	473	558	...
• X4	858	856	788	730	779	732	779	788	737	842	...
• X5	664	723	652	612	626	603	644	696	646	783	...
• X6	775	859	711	712	692	702	746	786	713	869	...
• x7	838	826	766	778	766	757	837	781	725	753	...
• x8	532	549	512	547	540	510	547	533	508	566	...
• X9	338	359	311	323	331	309	315	328	292	315	...

Variables X1, X2 y X3

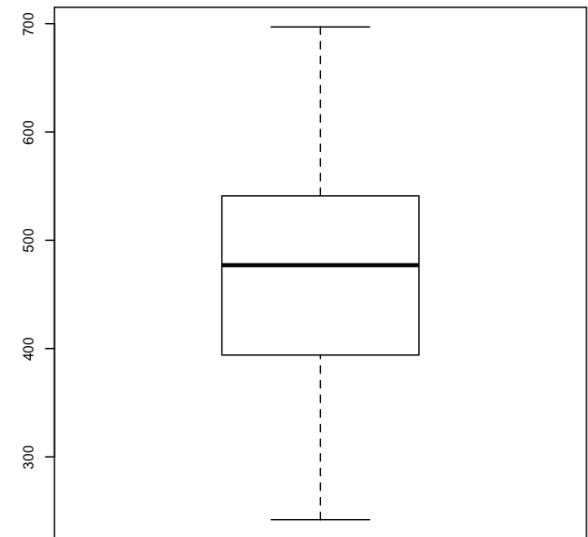
Vaible 1



Vaible 2

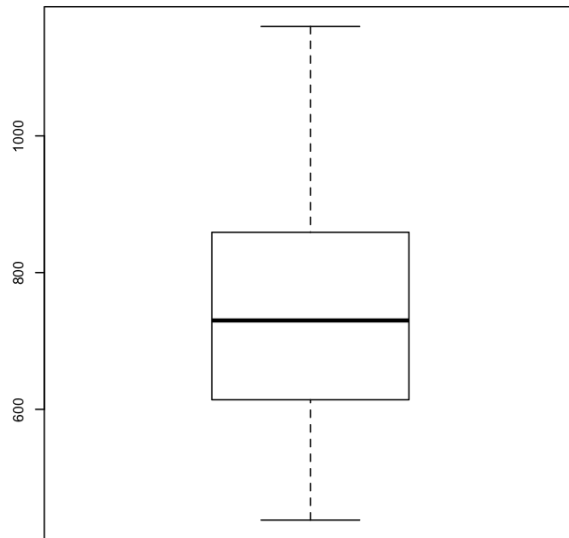


Vaible 3

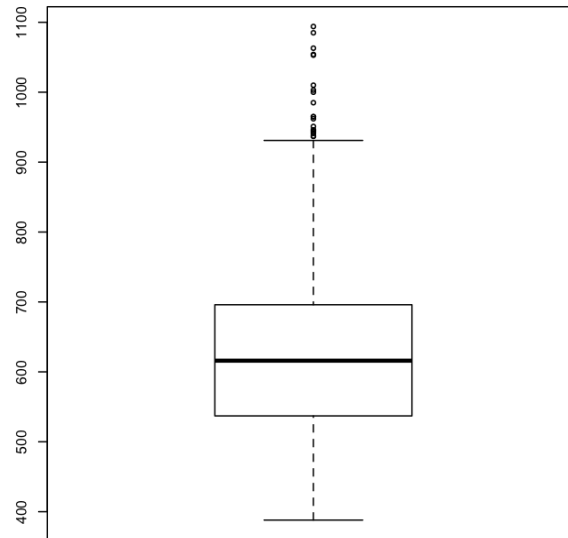


Variables X4, X5 y X6

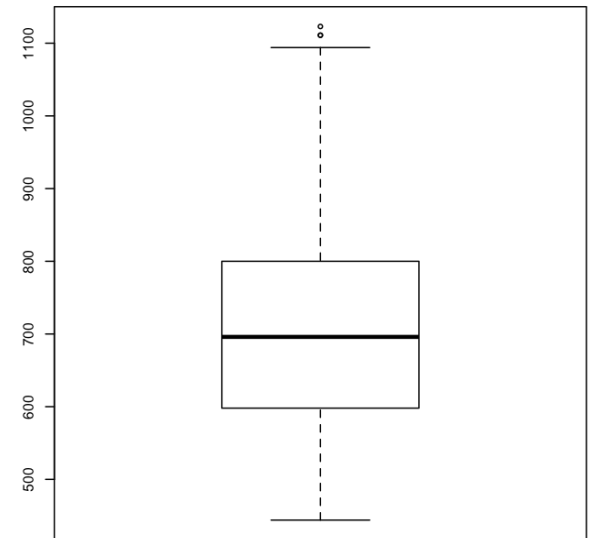
Vaible 4



Vaible 5

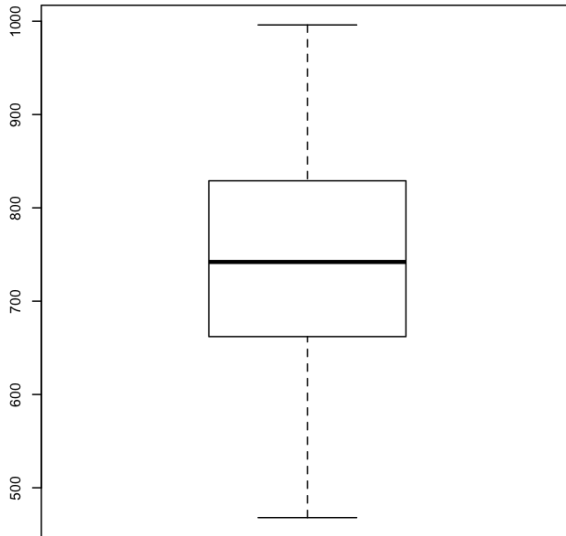


Vaible 6

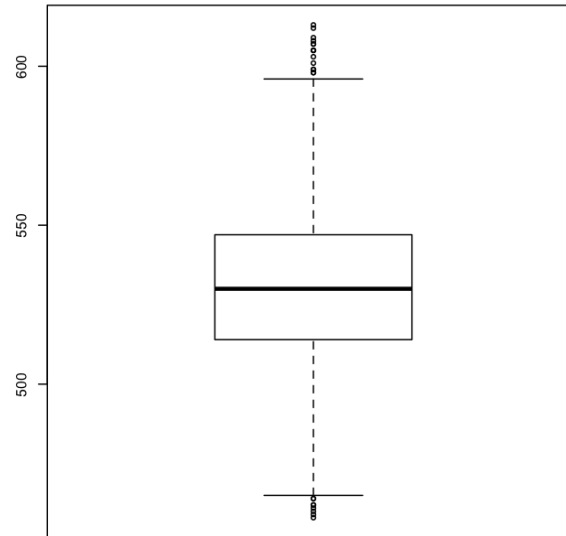


Variables X7, X8 y X9

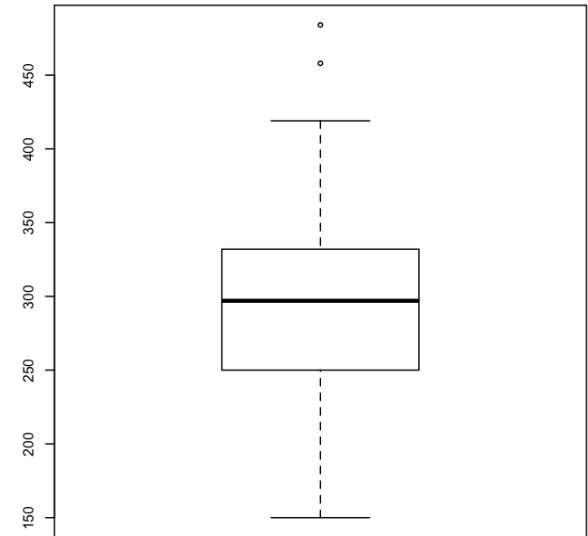
Vaible 7



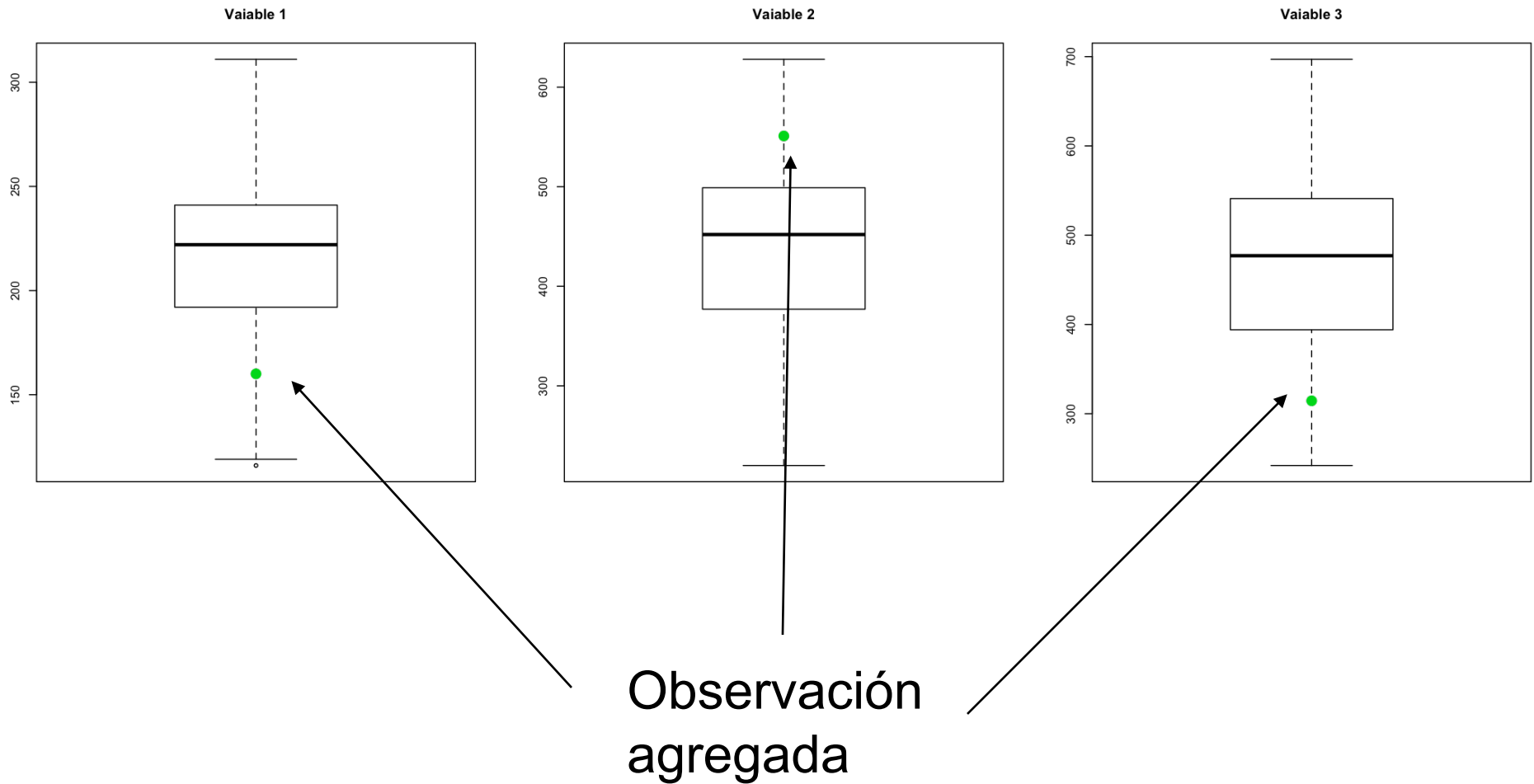
Vaible 8



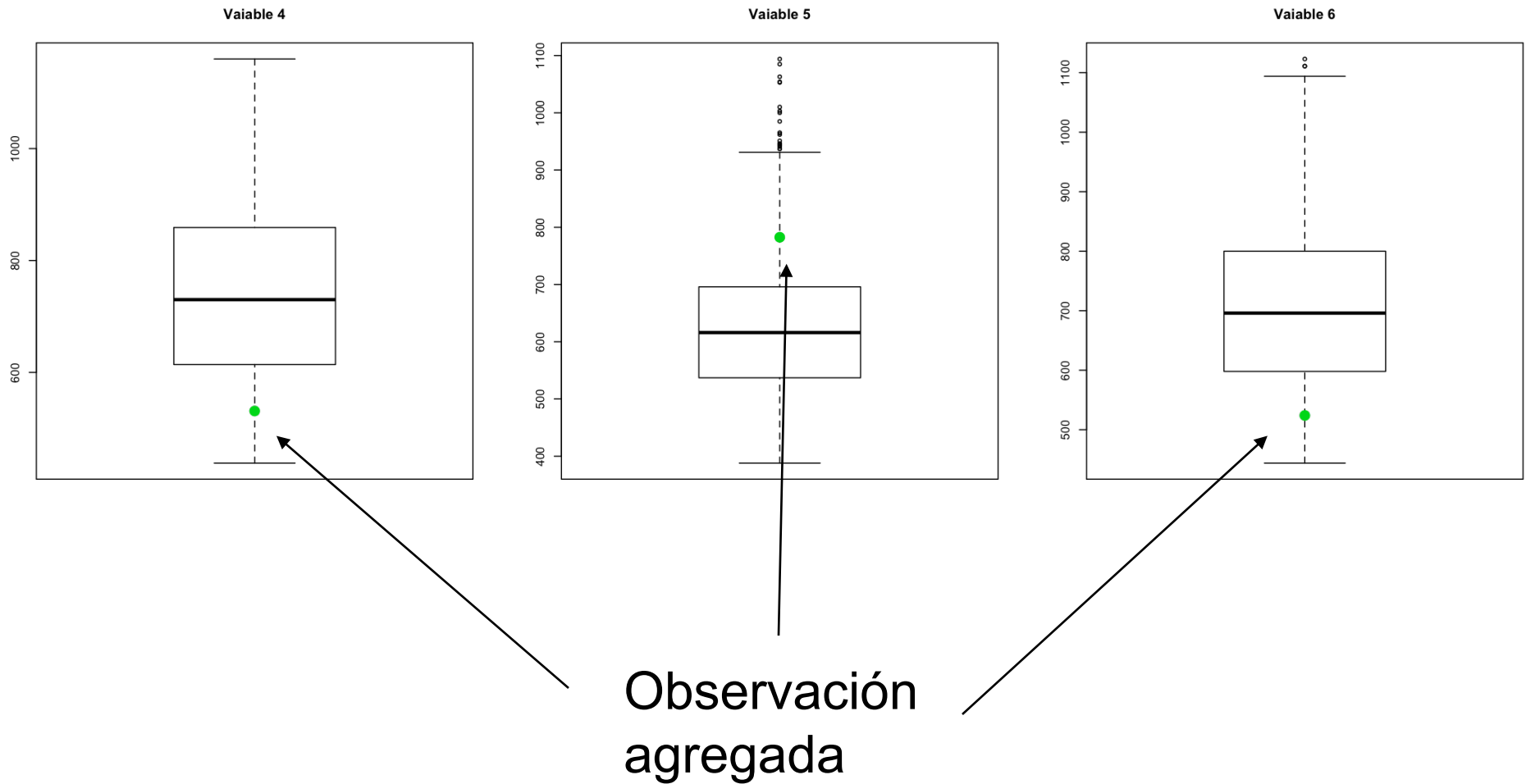
Vaible 9



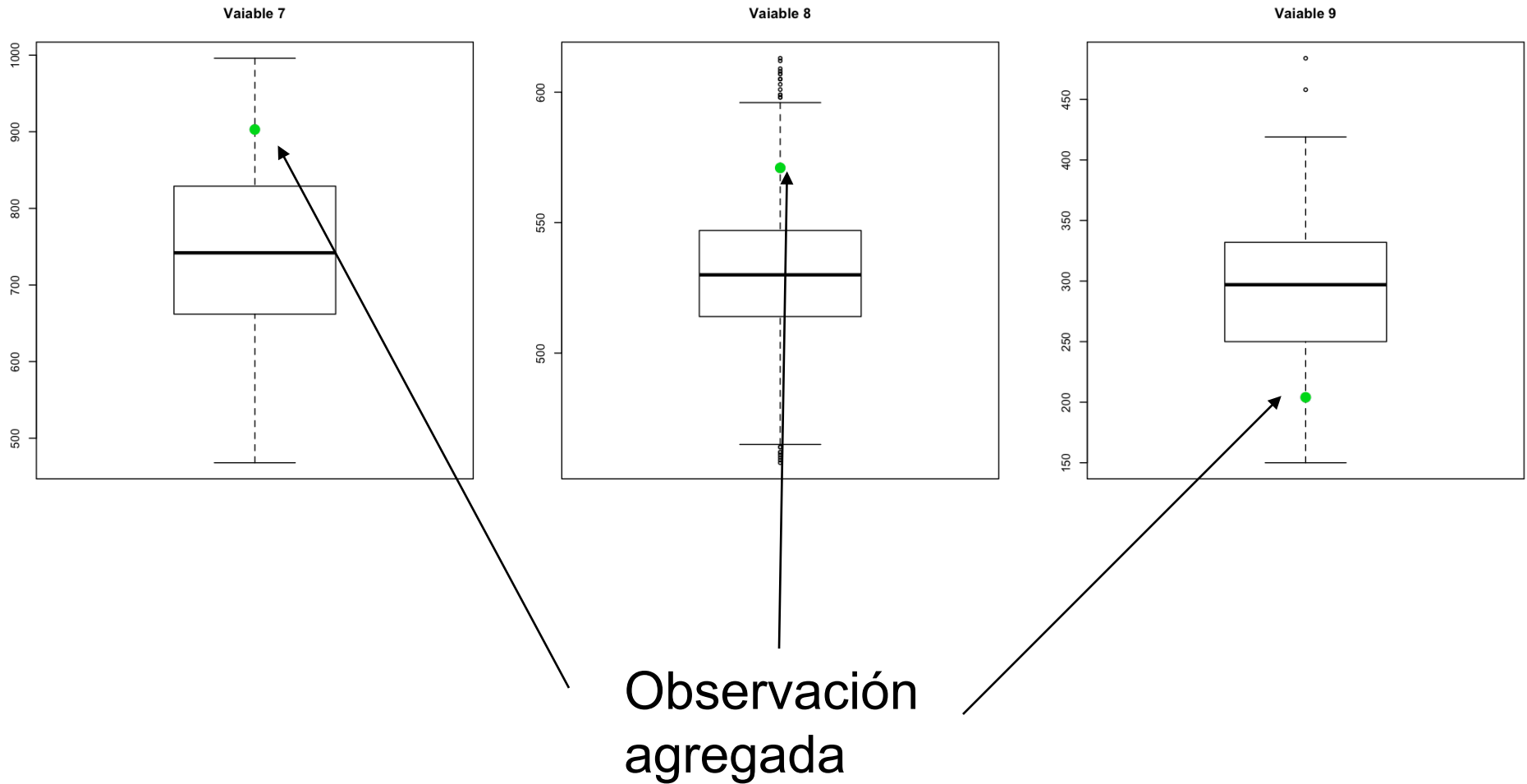
Variables X1, X2 y X3 con observación agregada



Variables X4, X5 y X6 con observación agregada



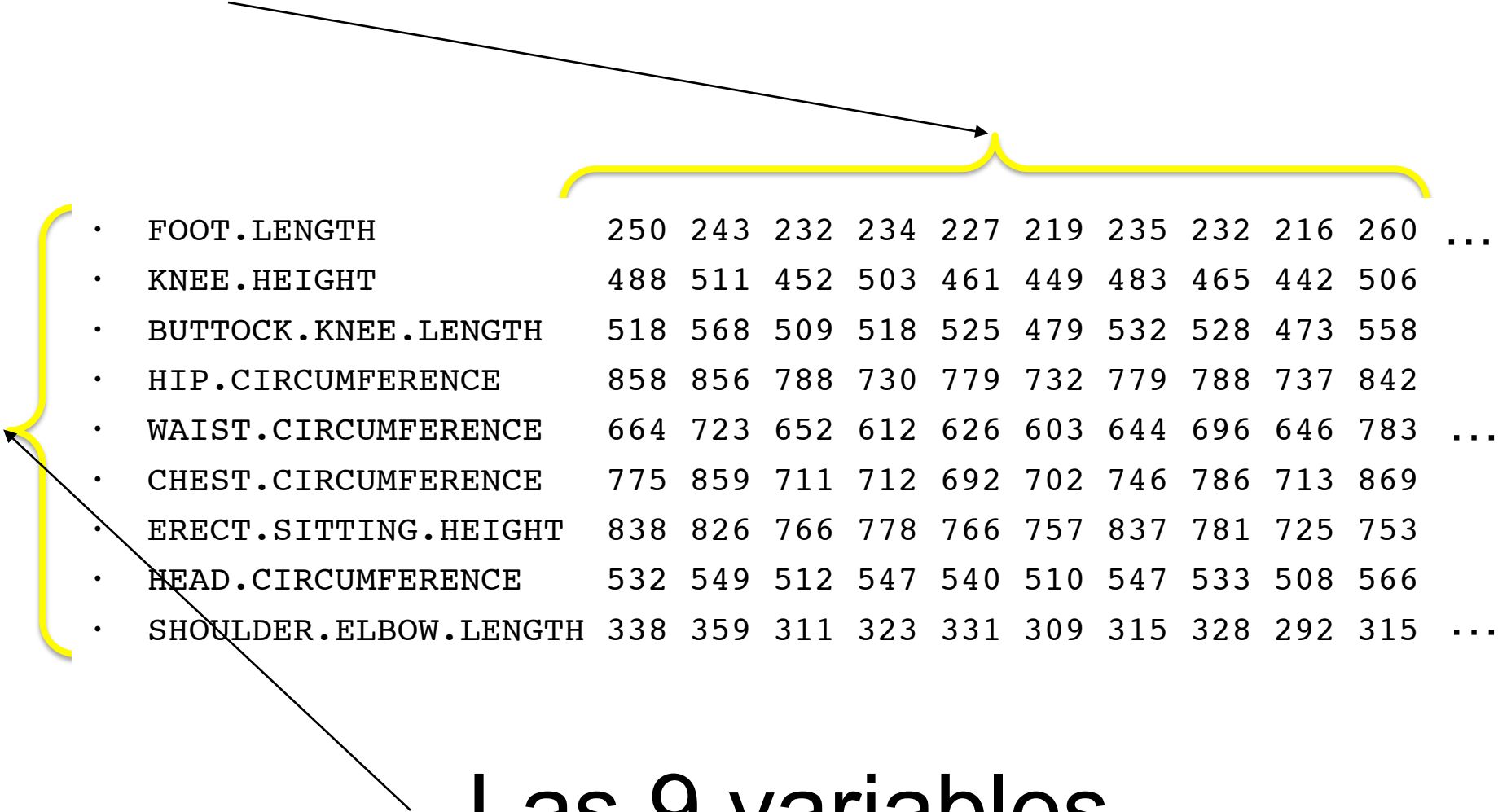
Variables X7, X8 y X9 con observación agregada



Origen de los Datos: AnthroKids - Anthropometric Data of Children

- Fuente: <http://www.itl.nist.gov/iaui/ovrt/projects/anthrokids/ncontent.htm>

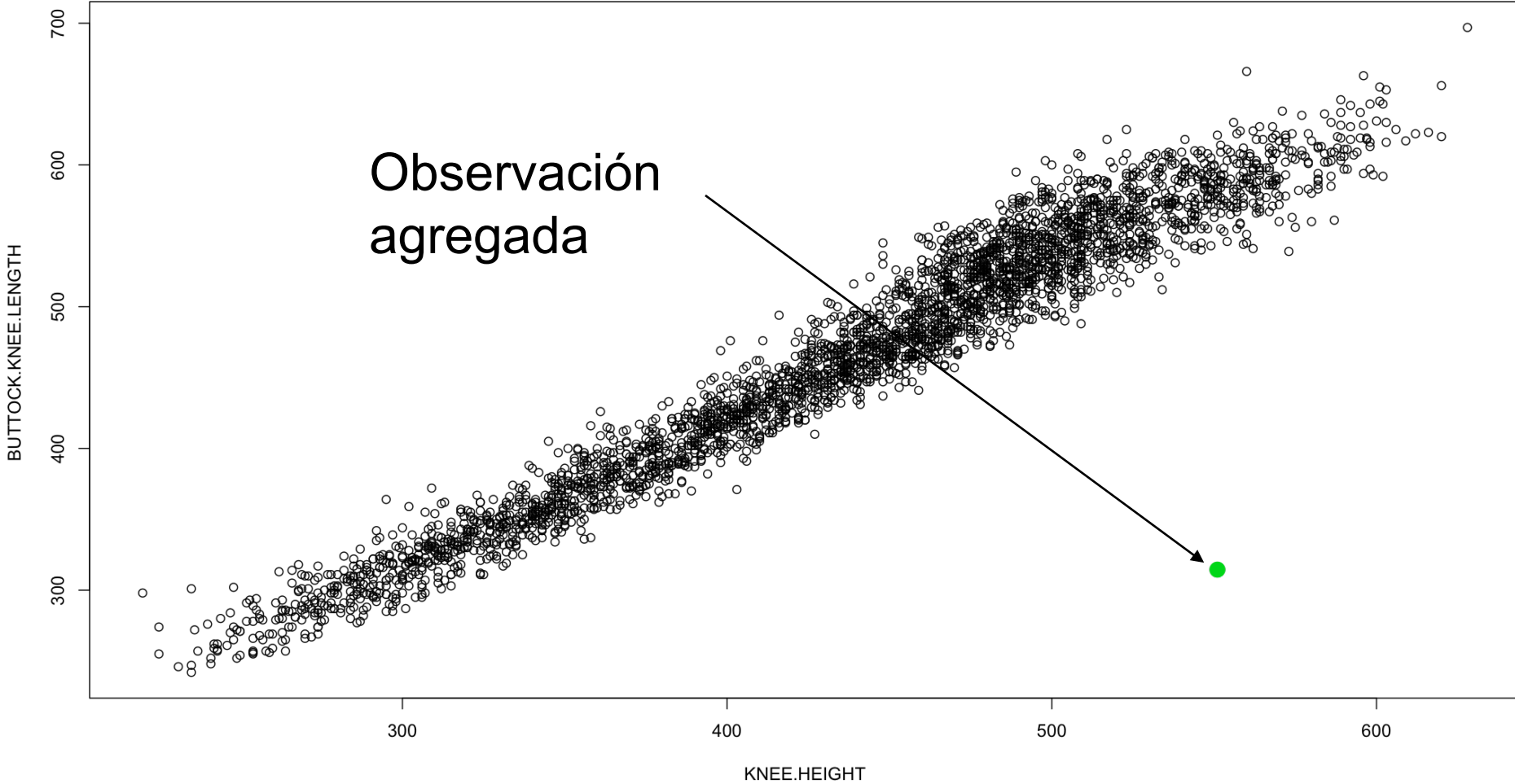
10 primeros casos de la base



• FOOT.LENGTH	250	243	232	234	227	219	235	232	216	260	...
• KNEE.HEIGHT	488	511	452	503	461	449	483	465	442	506	
• BUTTOCK.KNEE.LENGTH	518	568	509	518	525	479	532	528	473	558	
• HIP.CIRCUMFERENCE	858	856	788	730	779	732	779	788	737	842	
• WAIST.CIRCUMFERENCE	664	723	652	612	626	603	644	696	646	783	...
• CHEST.CIRCUMFERENCE	775	859	711	712	692	702	746	786	713	869	
• ERECT.SITTING.HEIGHT	838	826	766	778	766	757	837	781	725	753	
• HEAD.CIRCUMFERENCE	532	549	512	547	540	510	547	533	508	566	
• SHOULDER.ELBOW.LENGTH	338	359	311	323	331	309	315	328	292	315	...

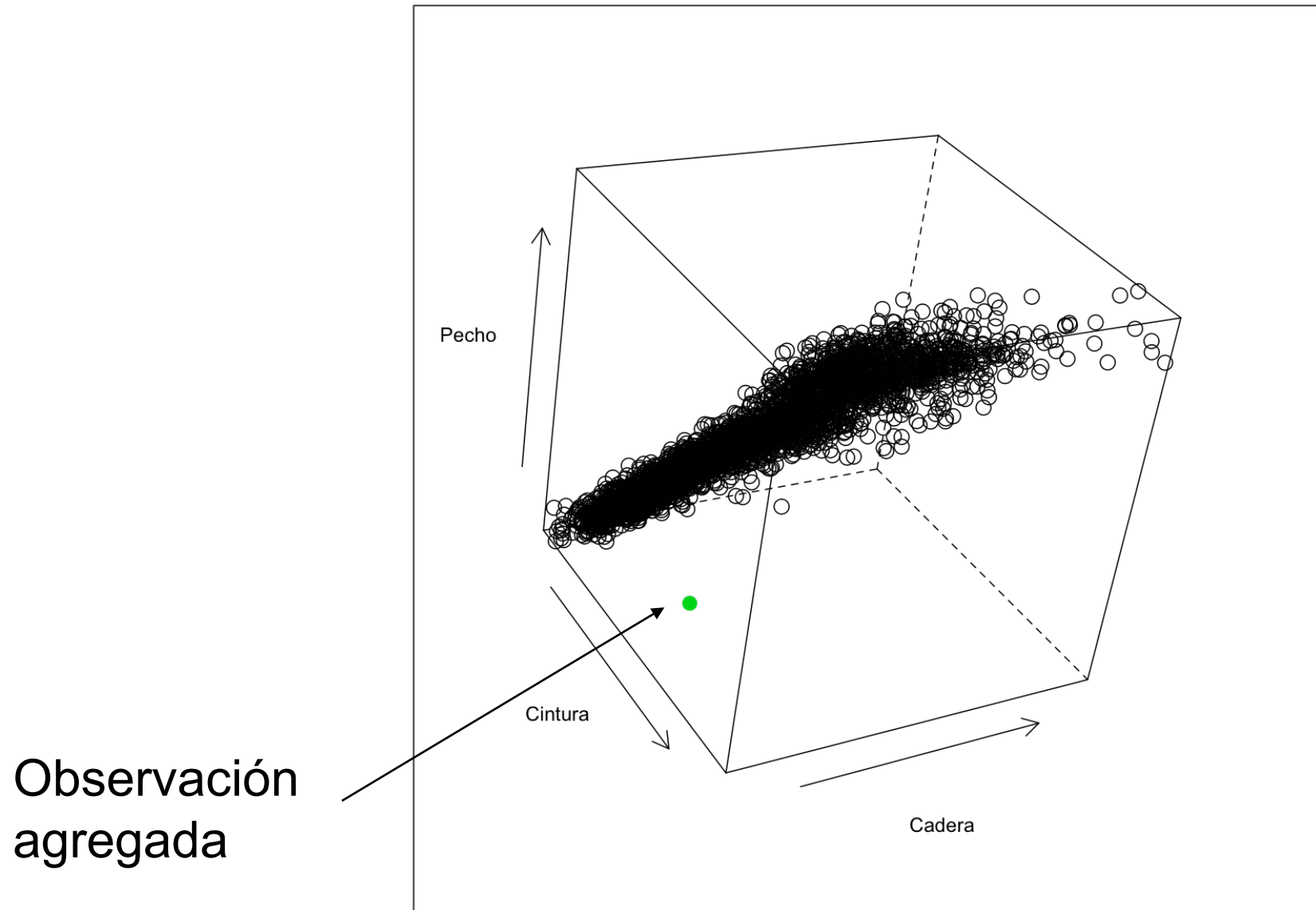
Las 9 variables

Relacion entre Muslo y Canilla



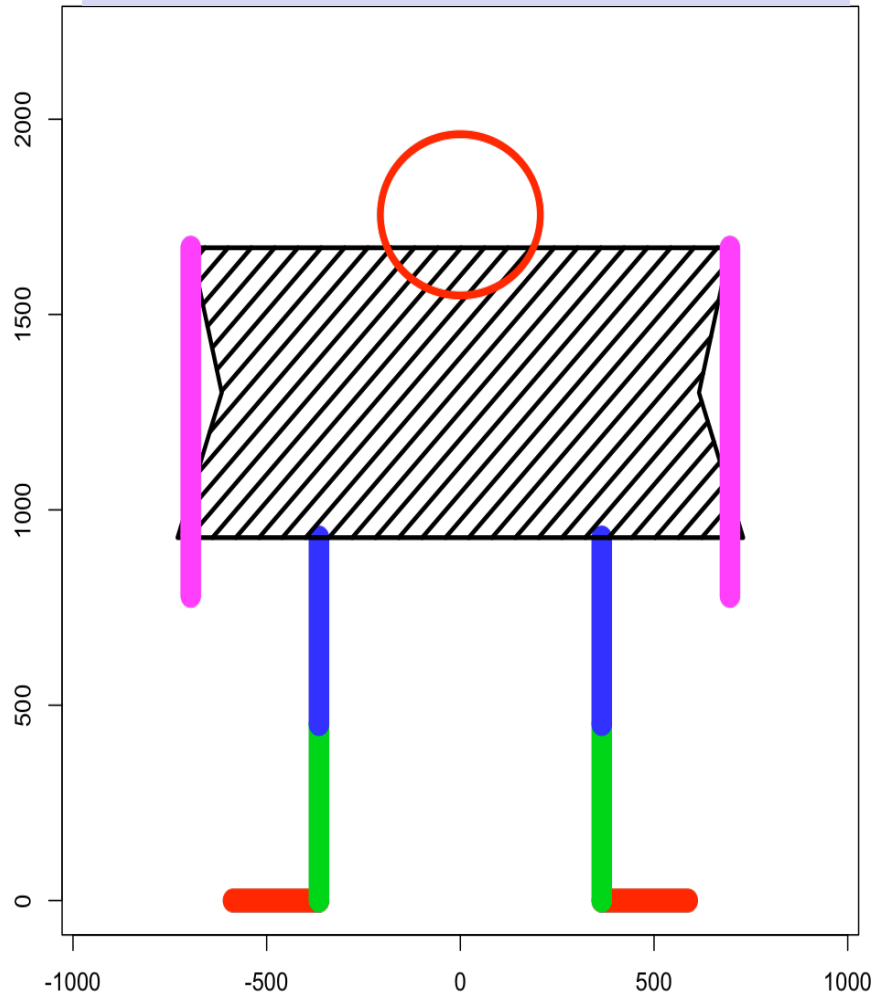
Relacion entre cintura, cadera y pecho

3 variables del torso

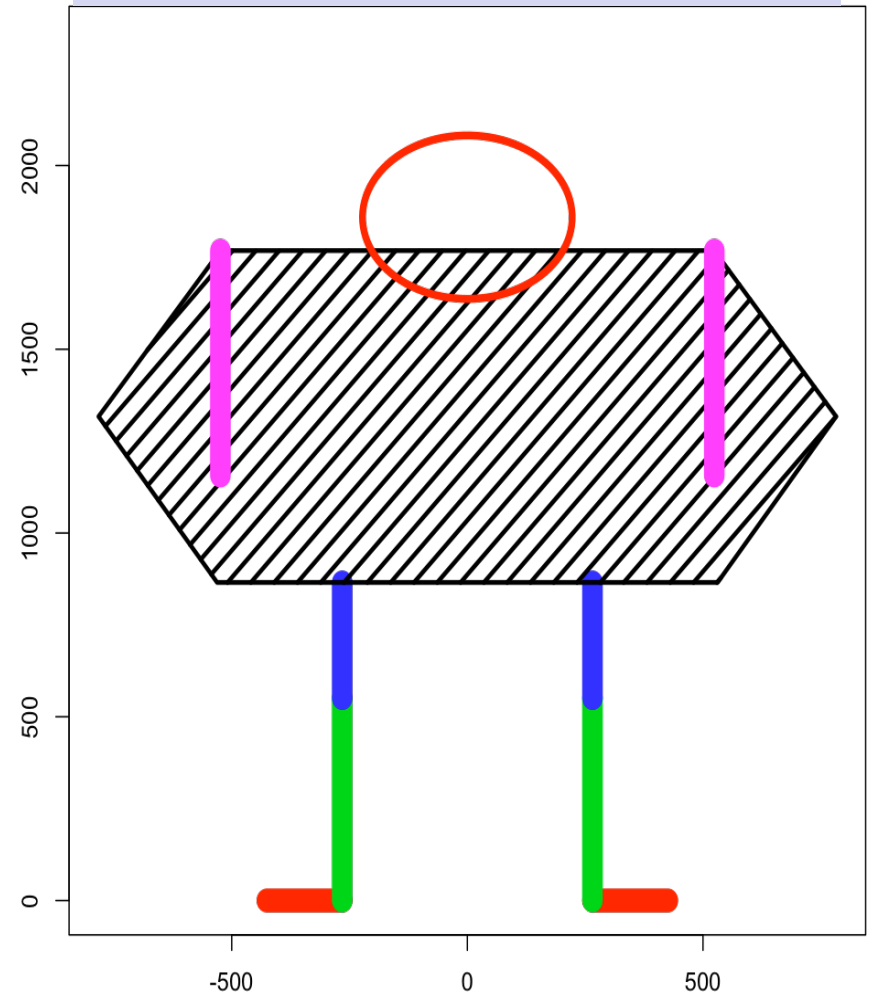


Dos chicos

Chico promedio



Chico agregado



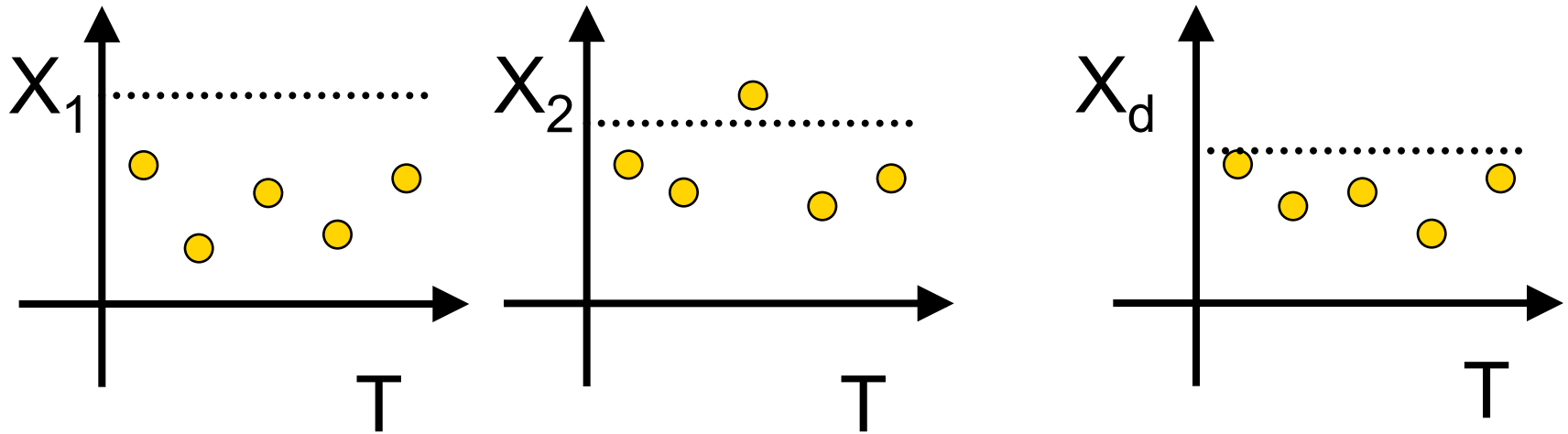
La Independencia estocástica

X_1, \dots, X_n son independientes, si y solo si

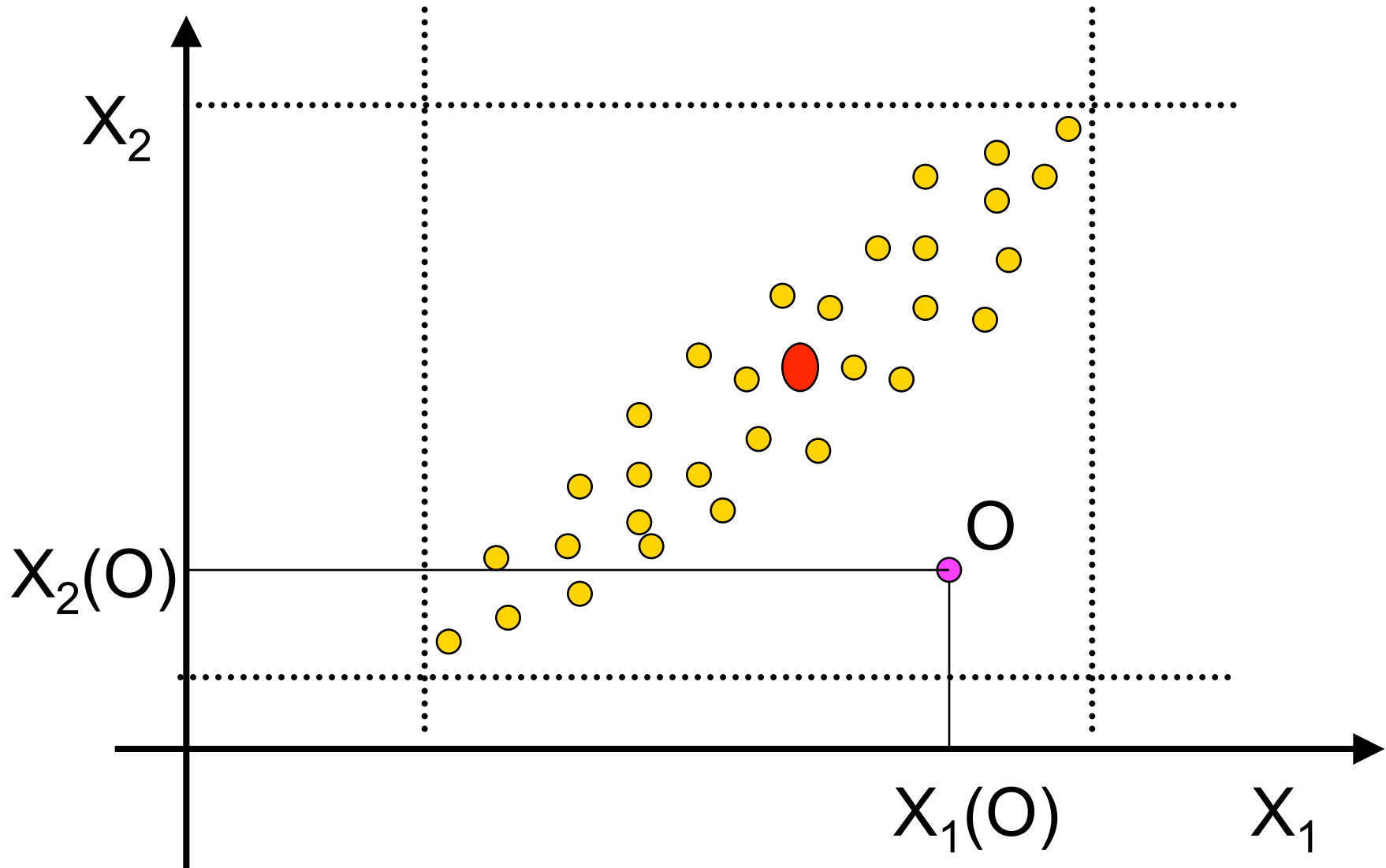
$$f_{X_1, \dots, X_n}(x_1, \dots, x_n) = f_{X_1}(x_1) \cdots f_{X_n}(x_n).$$

Motivación del Análisis Multivariado en Control de Calidad

Control Univariado



Control Multivariado



Distancia de Mahalanobis

