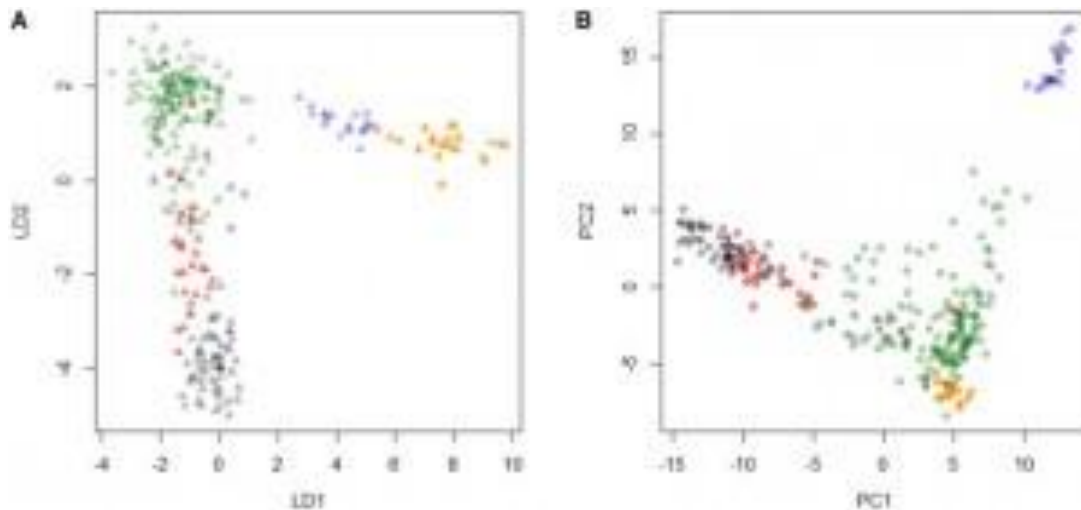


Principle Component Analysis Definition: Statistical analysis that uses an orthogonal transformation to convert possibly correlated variables into (linear uncorrelated) numerical values called Principle Components.

Clarifications:

1 Identifies the most important components, factors, or gradients within a dataset 2 Can be used on a variety of datasets... ecological, economics, genomics, etc... 3 Rotates data such that maximum variability is visible 4 PCA is the simplest of the true eigenvector-based multivariate analyses 5 PCA is closely related to factor analysis



Principal component analysis of Kenyan and other dairy cattle breeds.resource:(2)Eui-Soo Kim and Max F. Rothschild*, Genomic adaptation of admixed dairy cattle in East Africa, Front Genet. 2014; 5: 443. Published online 2014 Dec 19. doi: [10.3389/fgene.2014.00443](https://doi.org/10.3389/fgene.2014.00443)

When the samples have population stratification phenomenon, it will cause errors if you directly make use of association analysis since there exist “subgroup” within the whole population, in other words, the relation among individuals should be considered to correct the results.