Supplemental Table 3: Significance of iHS under assorted demographic models

Demographic Model	Kenya-AA	Kenya-NS	Tanzania-AA	Tanzania-NS	Tanzania-NK	Tanzania-SW
Growth (Model 1)	0.14	<0.01	<0.01	<0.01	<0.01	0.13
Growth (Model 2)	0.14	<0.01	<0.01	<0.01	<0.01	0.12
Growth (Model 3)	0.21	<0.01	<0.01	<0.01	<0.01	0.13
Growth (Model 4)	0.17	<0.01	<0.01	<0.01	<0.01	0.24
Growth (Model 5)	0.15	<0.01	<0.01	<0.01	<0.01	0.11
Growth (Model 6)	0.15	<0.01	<0.01	<0.01	<0.01	0.09
Bottleneck (Model 1)	0.14	<0.01	<0.01	<0.01	<0.01	<0.01
Bottleneck (Model 2)	0.13	<0.01	<0.01	<0.01	<0.01	<0.01
Bottleneck (Model 3)	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Bottleneck (Model 4)	0.011	<0.01	<0.01	<0.01	<0.01	<0.01
Bottleneck (Model 5)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Bottleneck (Model 6)	<0.01	<0.01	<0.01	<0.01	<0.01	0.13
Bottleneck (Model 7)	0.011	<0.01	<0.01	<0.01	<0.01	0.11
Bottleneck (Model 8)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Bottleneck (Model 9)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Bottleneck (Model 10)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Bottleneck (Model 11)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Growth Models

Exponential growth beginning at t_{onset} generations in the past at rate alpha: $N_F = N_A * \exp(t_{onset}*\alpha)$. Various models were taken from Voight et al. (2005).

1: $\alpha = 0$, $N_A = 11156$ [no growth]
2: $\alpha = 0.00075$, $t_{onset} = 1000$, $N_A = 10659$ [~2x growth starting 25,000 years ago, approximate MLE for Hausa data based on Voight et al. (2005)]
3: $\alpha = 0.01$, $t_{onset} = 250$, $N_A = 10860$ [~12x growth starting 6,250 years ago]
4: $\alpha = 0.00025$, $t_{onset} = 5000$, $N_A = 8449$ [~4x growth starting 125,000 ya]
5: $\alpha = 0.00075$, $t_{onset} = 1000$, $N_A = 12300$ [same as 2, with upper confidence bound for N_A based on Voight et al. (2005)]
6: $\alpha = 0.00075$, $t_{onset} = 1000$, $N_A = 9450$ [same as 3, with lower confidence bound for N_A based on Voight et al. (2005)]

Bottleneck models

A population of ancestral size N_A experiences an instantaneous reduction in population size to $b * N_A$, which persists for t_{dur} generations. The population recovers to 1x (Models 1-5), 10x (Models 6-10), or 50x (Models 11 & 12) of the ancestral population size after the bottleneck.

Bottleneck, with recovery after the bottleneck to initial population size [N_A = 10,659]

1: b = 1.0 [no bottleneck]
2: b = 0.1, t_{dur} = 100, T = 1600 [90% reduction in population size occurring 37,500 years ago lasting 2,500 years]
3: b = 0.01, t_{dur} = 100, T = 1600 [99% reduction in population size occurring 37,500 years ago lasting 2,500 years]
4: b = 0.01, t_{dur} = 200, T = 1600 [99% reduction in population size occurring 35,000 years ago lasting 5,000 years]
5: b = 0.01, t_{dur} = 400, T = 1600 [99% reduction in population size occurring 30,000 years ago lasting 10,000 years]

Bottleneck, with 10x increase in original population size after the bottleneck [N_A = 10,659]

6: b = 0.01, t_{dur} = 100, T = 1600 [99% reduction in population size occurring 37,500 years ago lasting 2,500 years]
7: b = 0.01, t_{dur} = 200, T = 1600 [99% reduction in population size occurring 35,000 years ago lasting 5,000 years]
8: b = 0.01, t_{dur} = 100, T = 400 [99% reduction in population size occurring 7,500 years ago lasting 2,500 years]
9: b = 0.01, t_{dur} = 100, T = 200 [99% reduction in population size occurring 2,500 years ago lasting 2,500 years]

Bottleneck, with 50x increase in pop size after the bottleneck [N_A = 10,659]

10: b = 0.01, t_{dur} = 50, T = 200 [99% reduction in populaton size occurring 3,750 ya lasting 1,250 years]
11: b = 0.005, t_{dur} = 50, T = 200 [99.5% reduction in population size occurring 3,750 ya lasting 1,250 years]