



Cultural Evolution of Human Beauty Standards

Example of Fashion Modeling

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Key Insight

Fashion modeling serves as a unique cultural mechanism that propagates beauty ideals across societies

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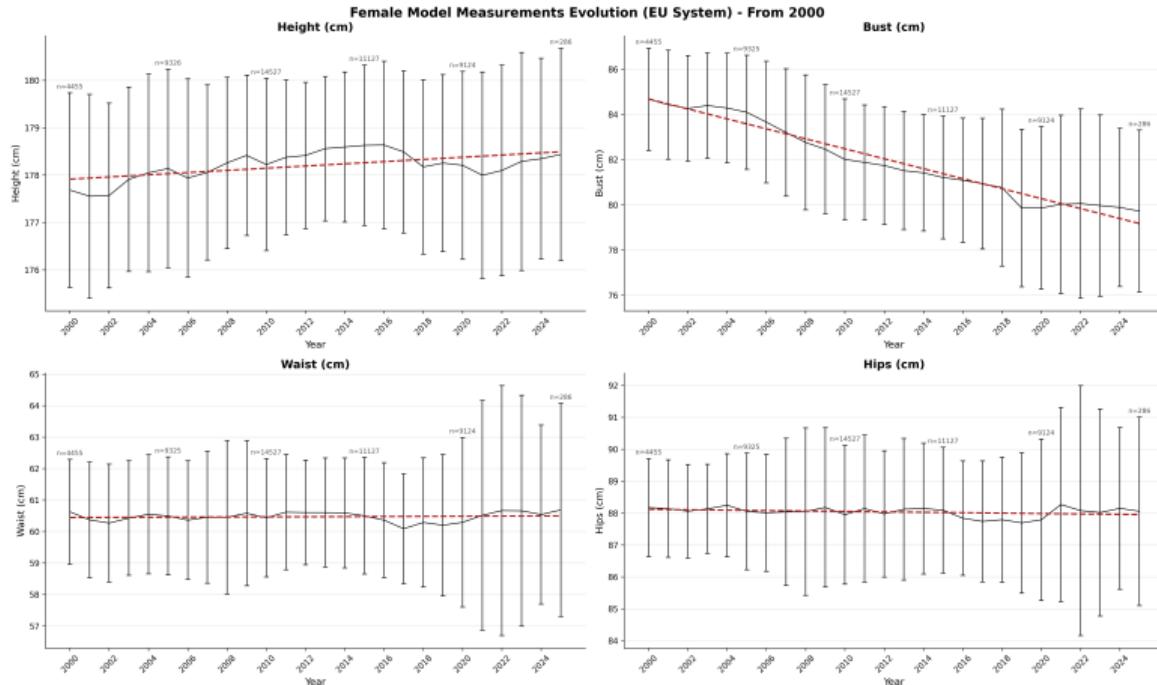
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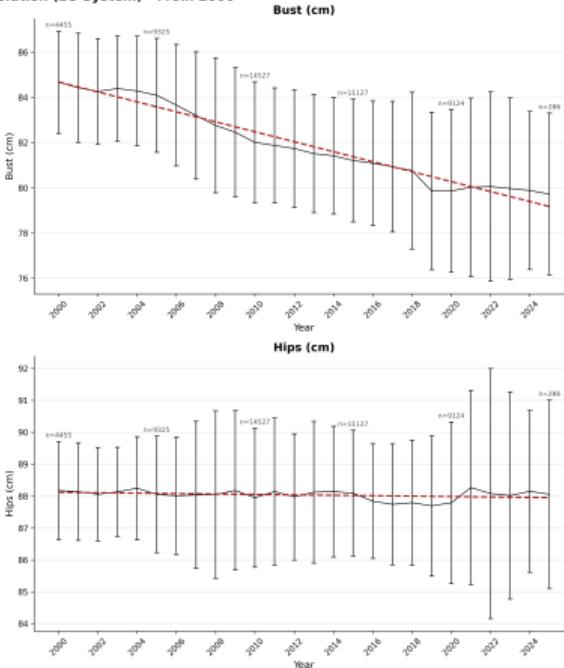
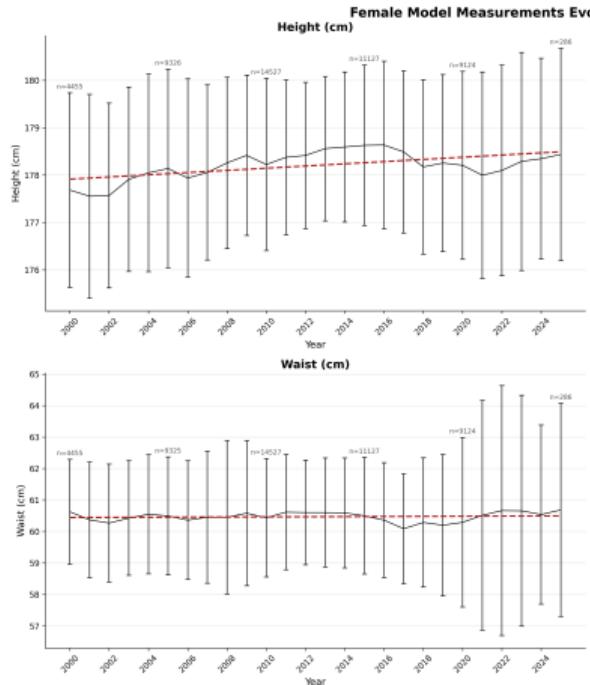


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 - Visual traits (hair, eye color)
 - Nationality

Body Measurements: Evolution

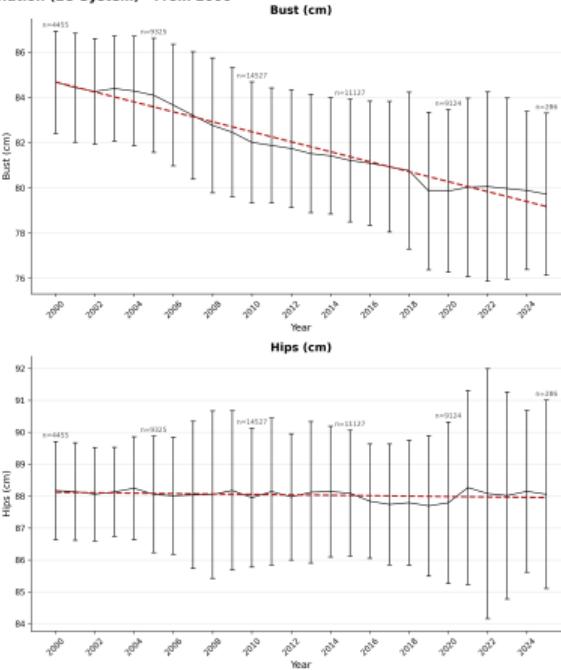
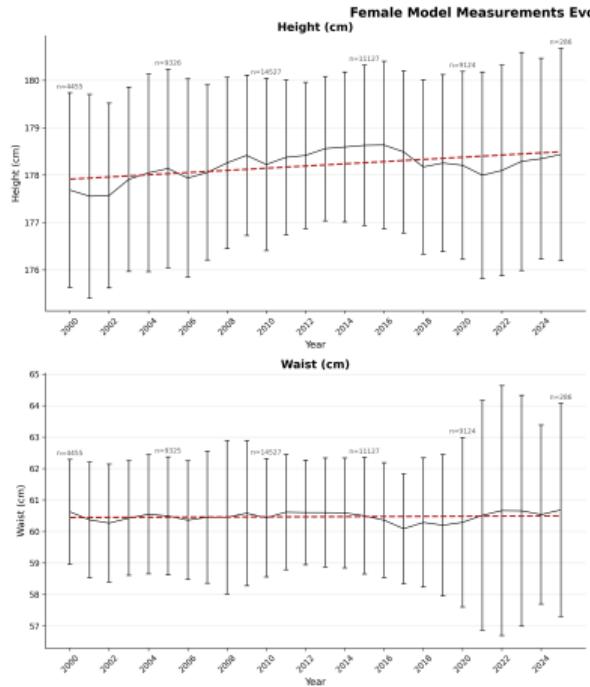


Body Measurements: Evolution



- Height: slight increase
- Bust: decrease
- Waist & Hips: stable

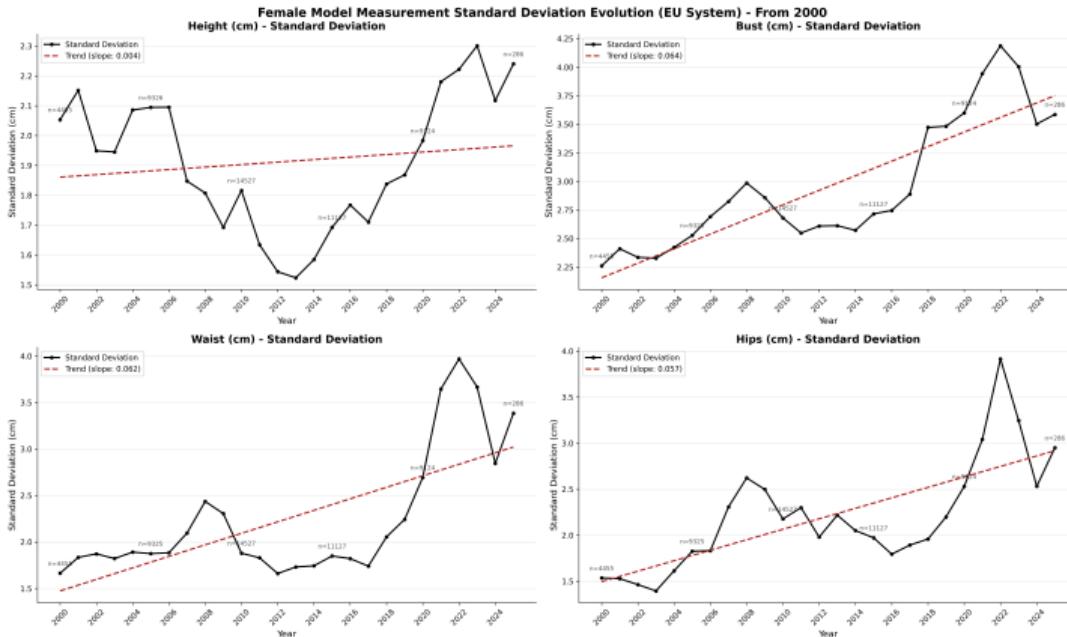
Body Measurements: Evolution



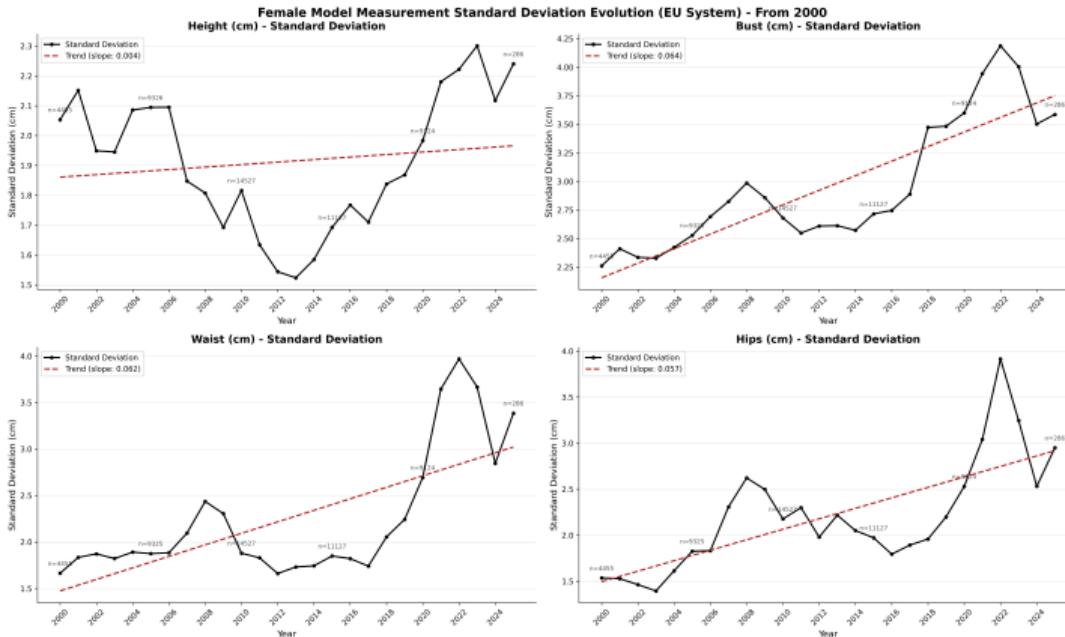
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Standard deviations increase across all measurements

Standard Deviation Trends: Increasing Diversity

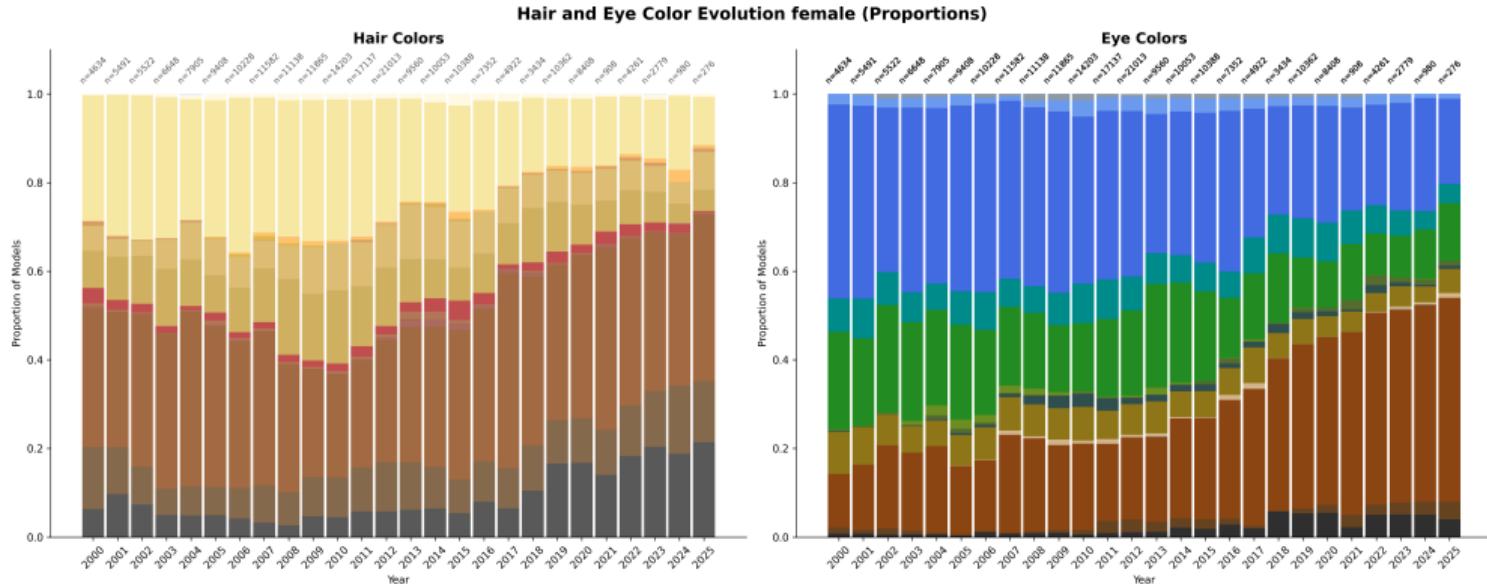


Standard Deviation Trends: Increasing Diversity



The std increase across all measurements indicates broader acceptance of body type variation

Hair & Eye Color Evolution



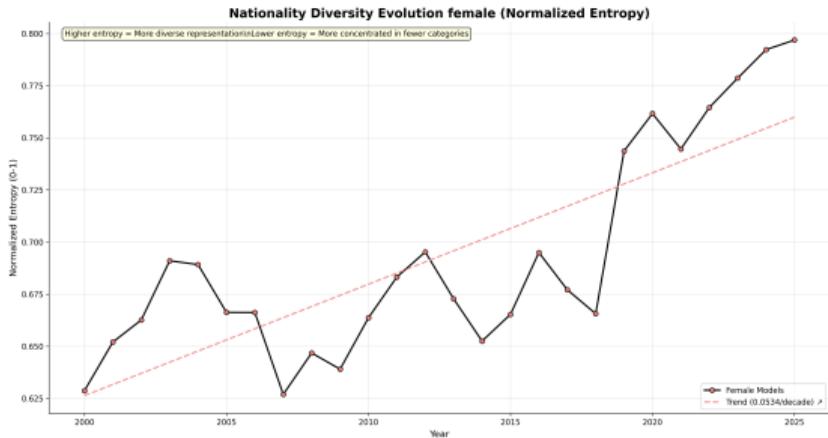
Hair color trends:

- Lighter colors (blonde) less dominant
 - Shift toward darker tones

Eyes color trends:

- Lighter colors (blue) less dominant
 - Similar shift than in hair color

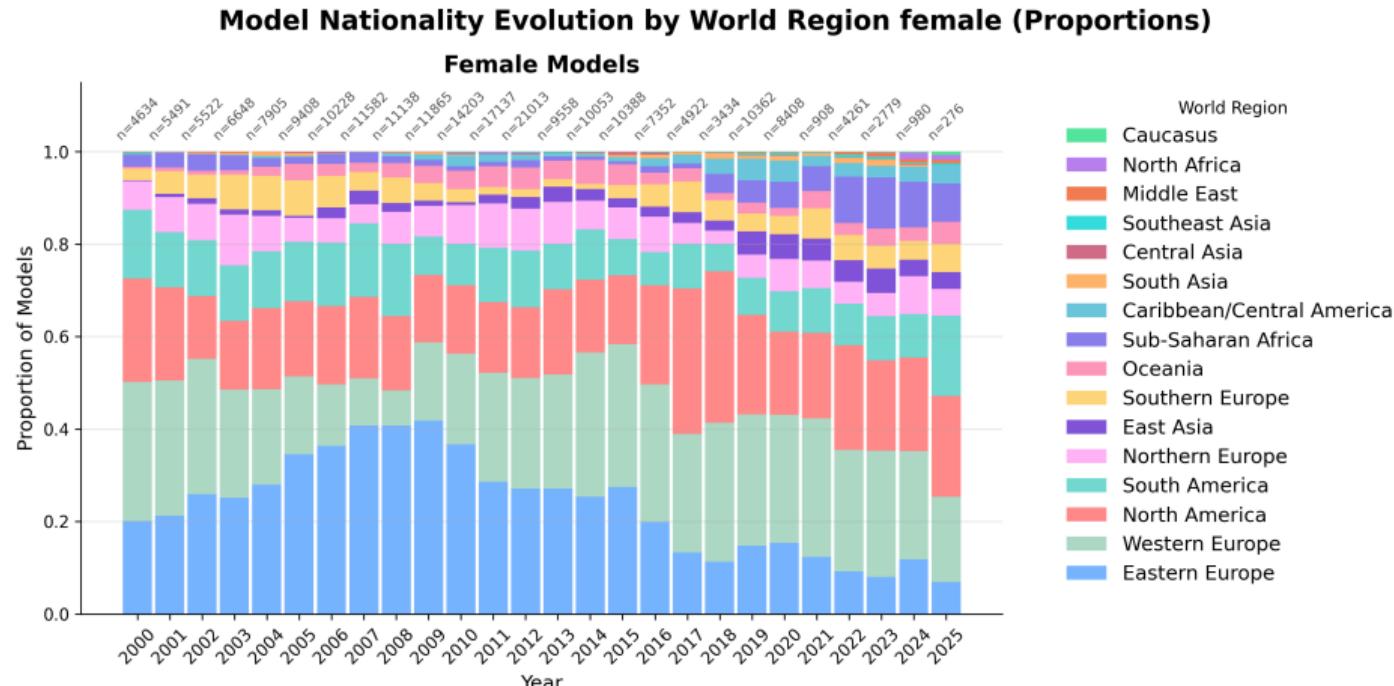
Global Representation: Entropy Analysis



Entropy Growth Rates:

- **Female models:** +0.155 bits/decade
- Models are more globally representative

Regional Breakdown



Regional breakdown shows increasing representation from Africa, Asia, and South America

Skin Color Diversity: Individual Typology Angle

ALSO increasing

Diversity Summary

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Key Finding

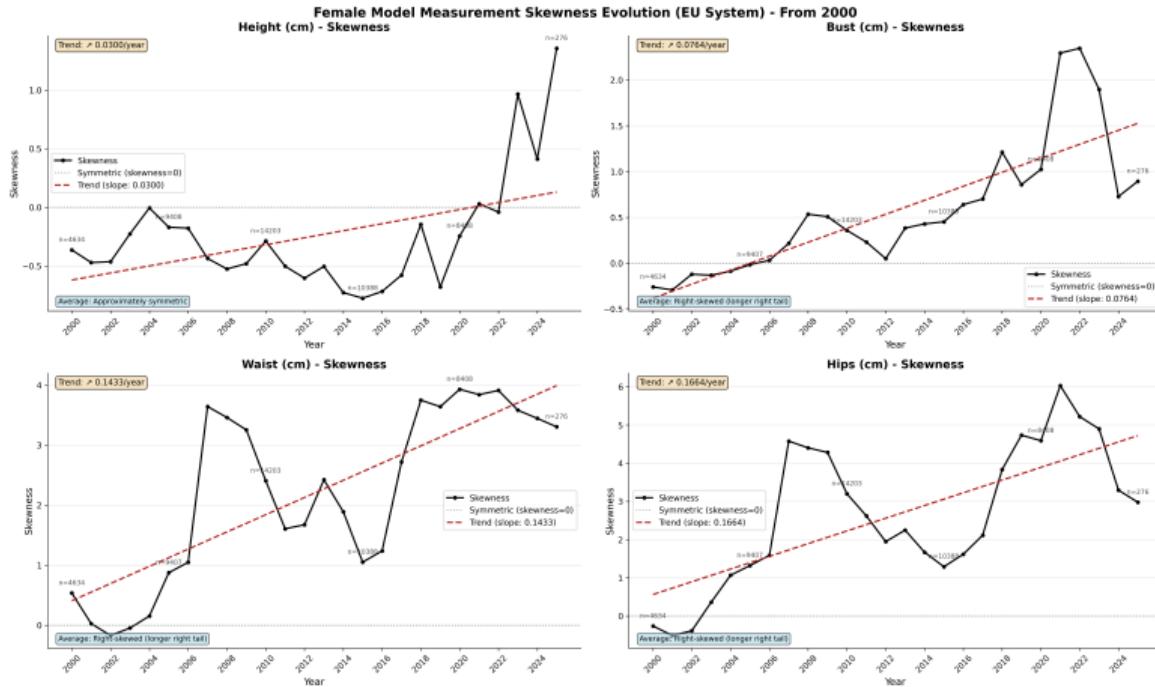
Overall, fashion modeling reflects a trend toward greater diversity in beauty standards, driven by both acceptance of outliers and broader global representation

What drives diversity?

Is the distribution shape changing?

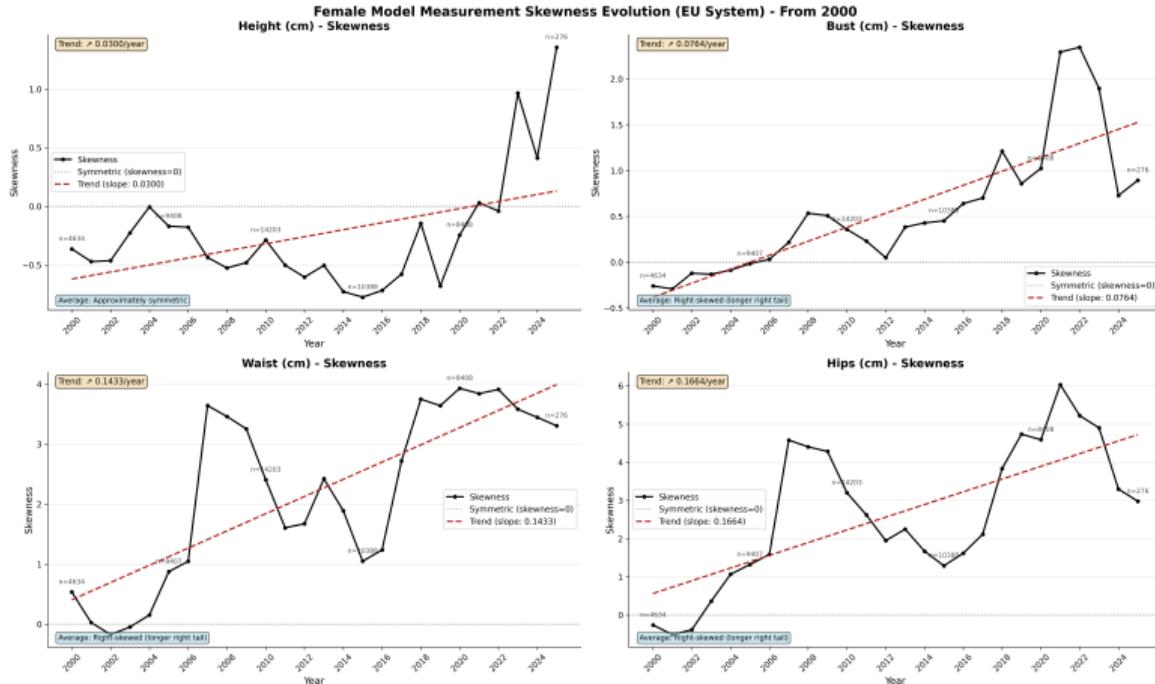
Or is it just a few outliers?

Distribution Shape: Skewness



Skewness:

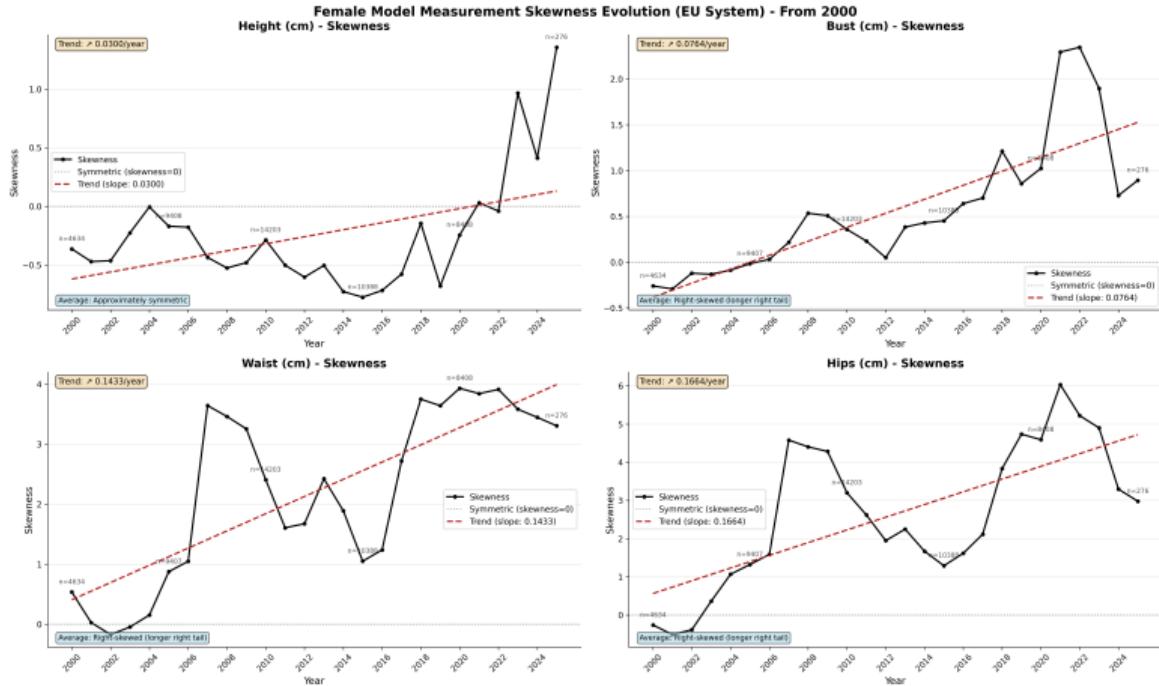
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Skewness:

- Positive skewness indicates a long tail of larger measurements

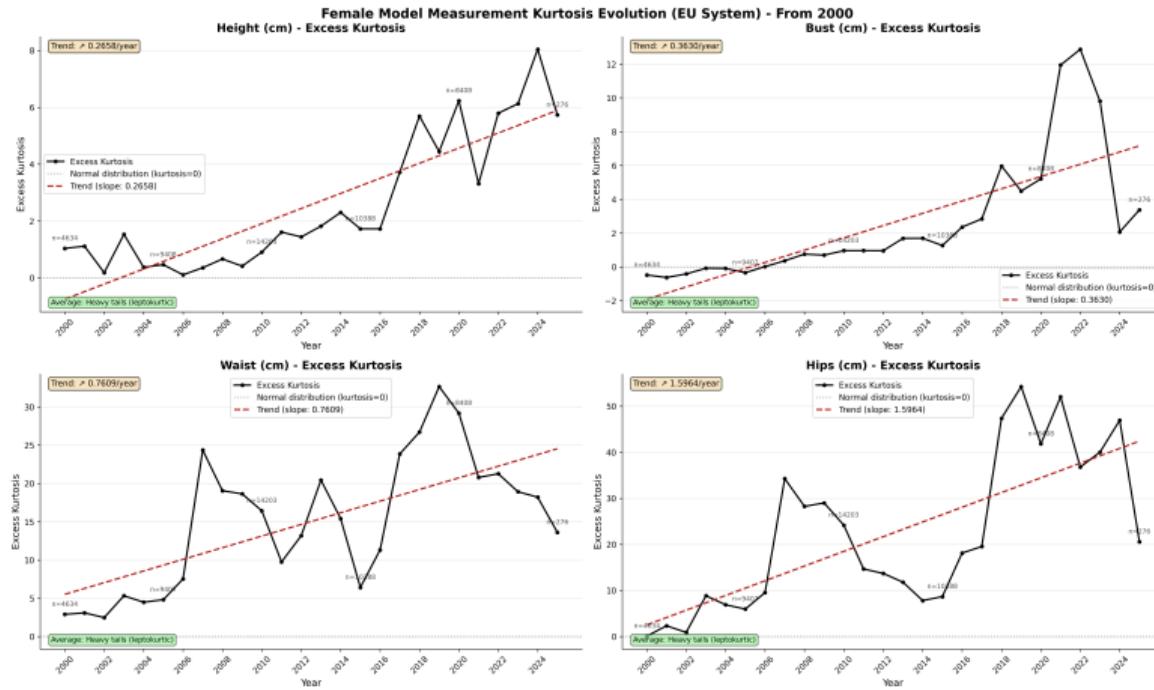
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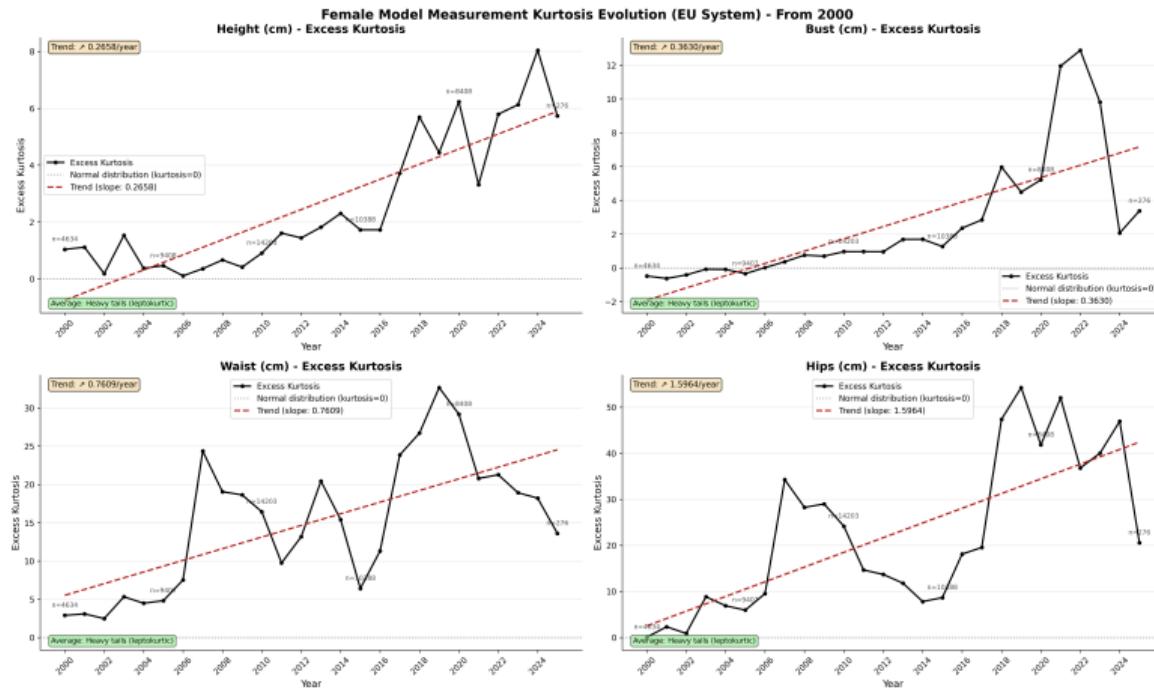
- Positive skewness indicates a long tail of larger measurements
- Increasing skewness suggests growing acceptance of larger body types

Distribution Shape: Kurtosis



Kurtosis:

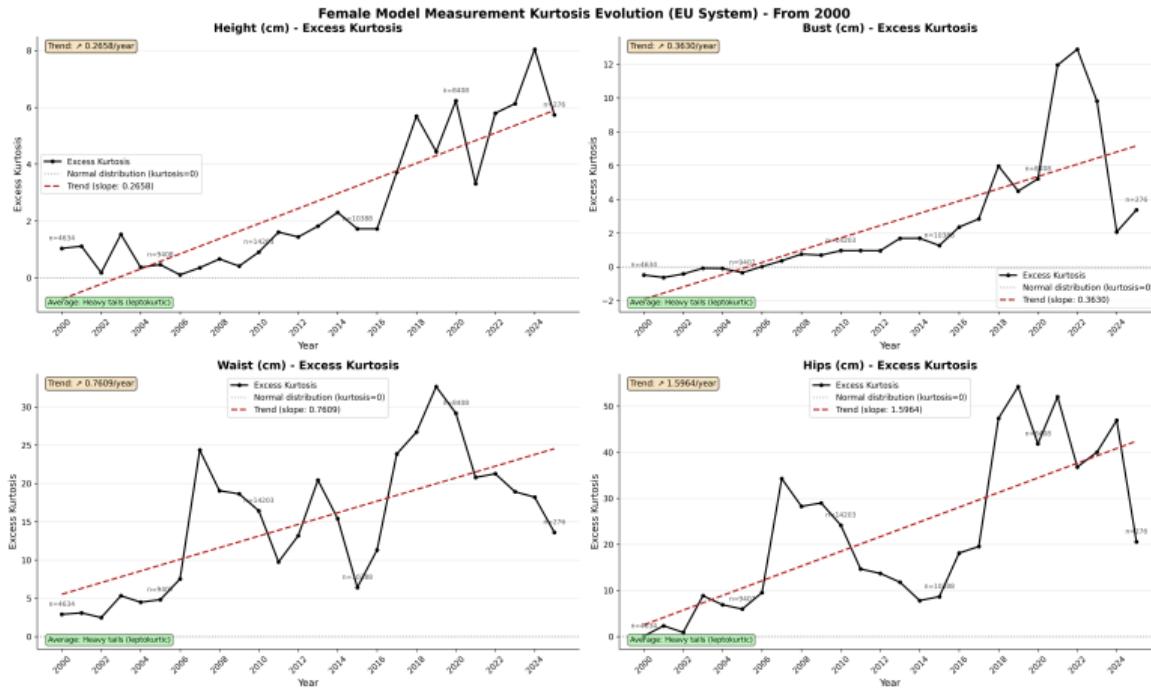
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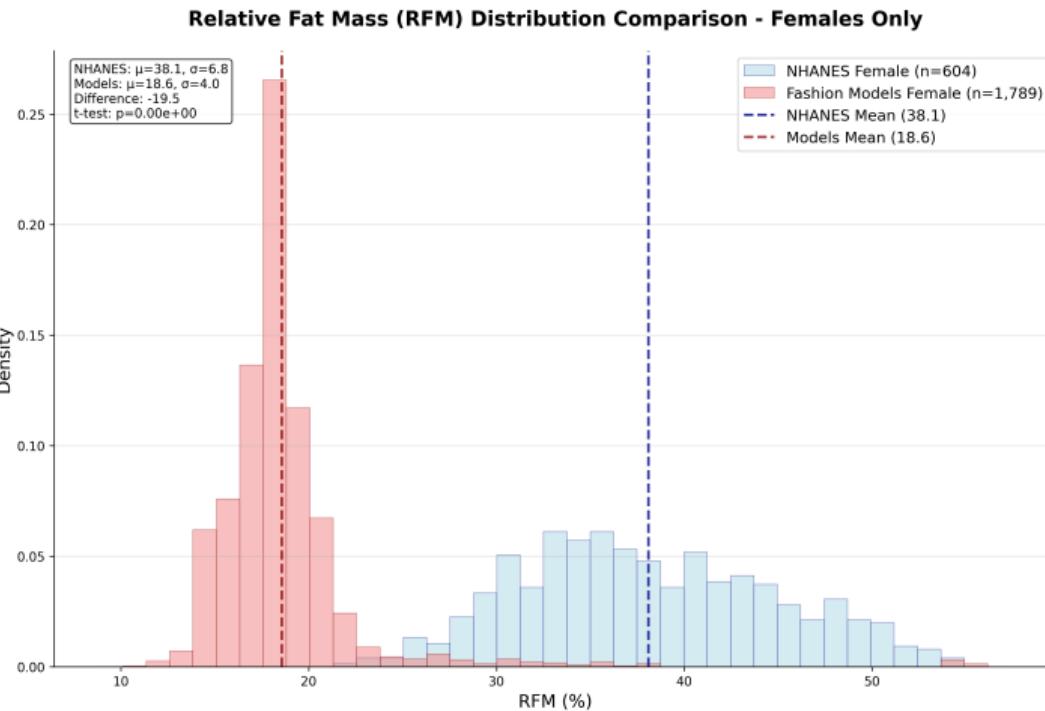
Kurtosis:

- Positive kurtosis indicates a distribution with heavier tails
- Increasing kurtosis suggests more extreme values (outliers) in body measurements

How does it compare with general population?

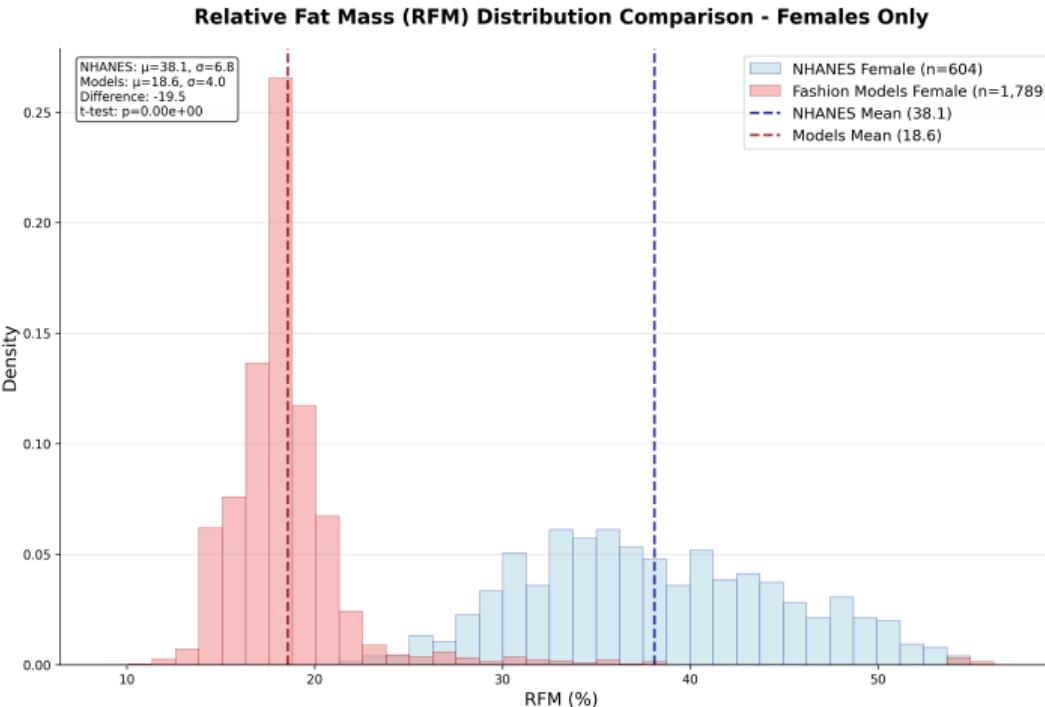
Are these outliers truly outliers?

Comparaison with General Population



Relative Fat Mass (RFM):
RFM is a measure of body fat
based on height and waist
circumference

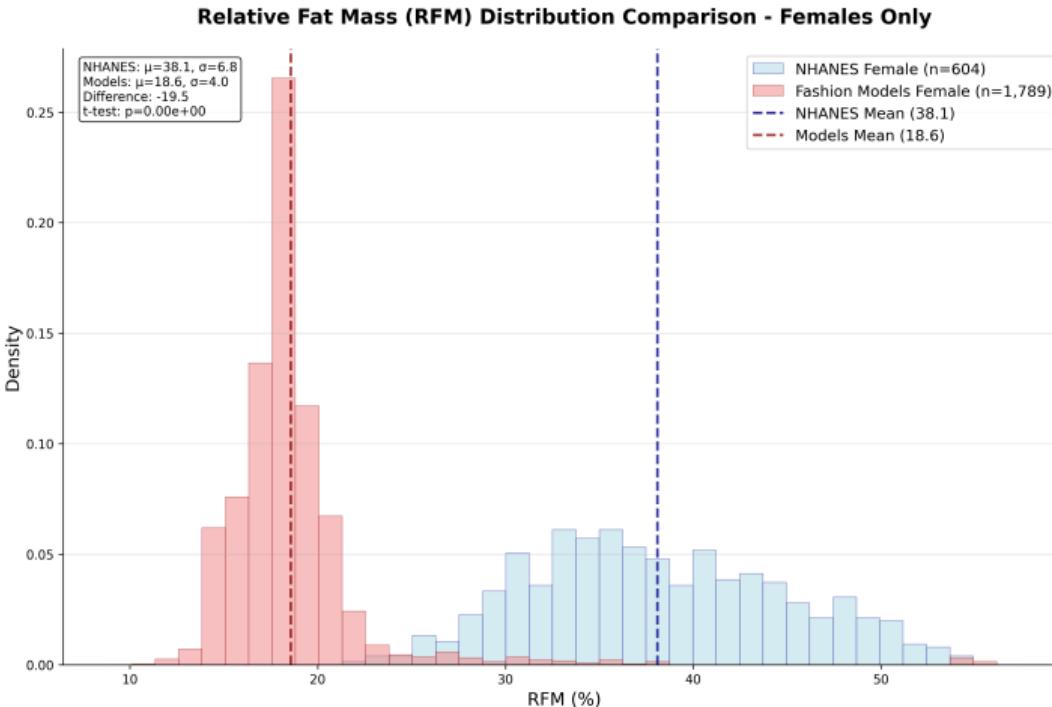
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Relative Fat Mass (RFM):
RFM is a measure of body fat based on height and waist circumference

- Fashion models show lower RFM than general population
- Models' RFM distribution is more concentrated around lower values

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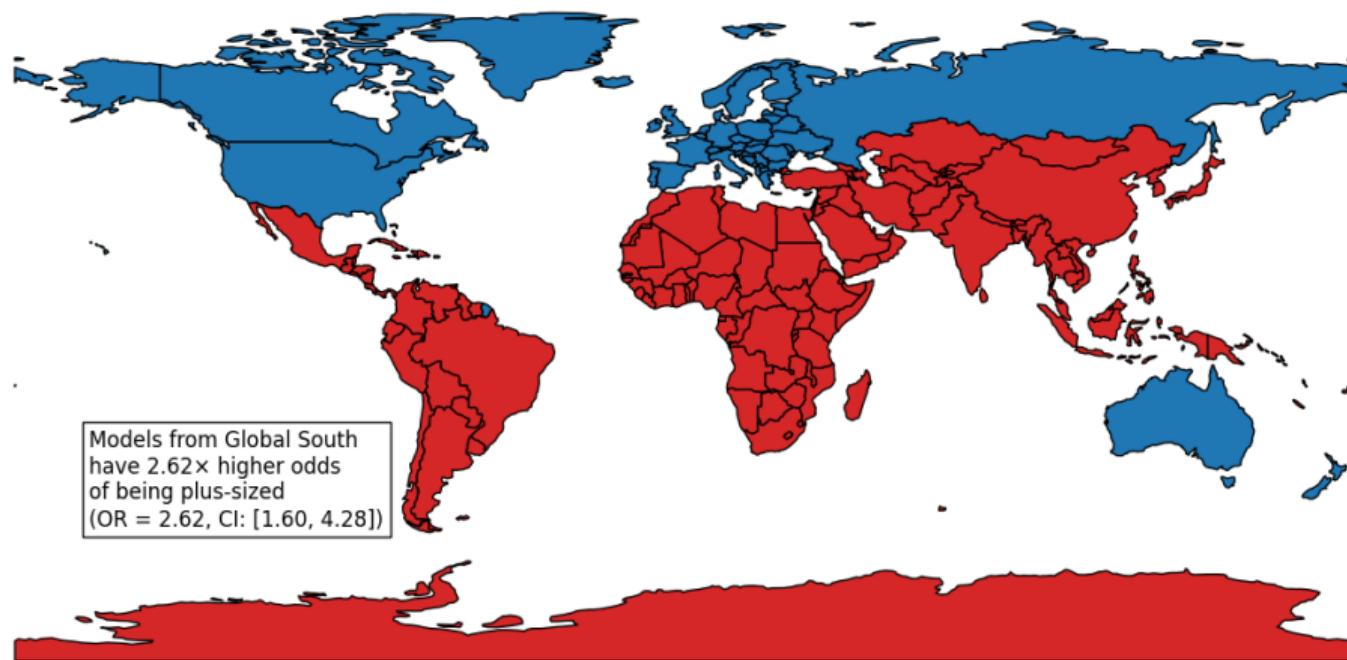
Fashion modeling increasingly includes diverse body types, but still represents a very narrow segment of population.

We showed that body measurements and ethnic diversity in fashion modeling have increased over the past two decades.

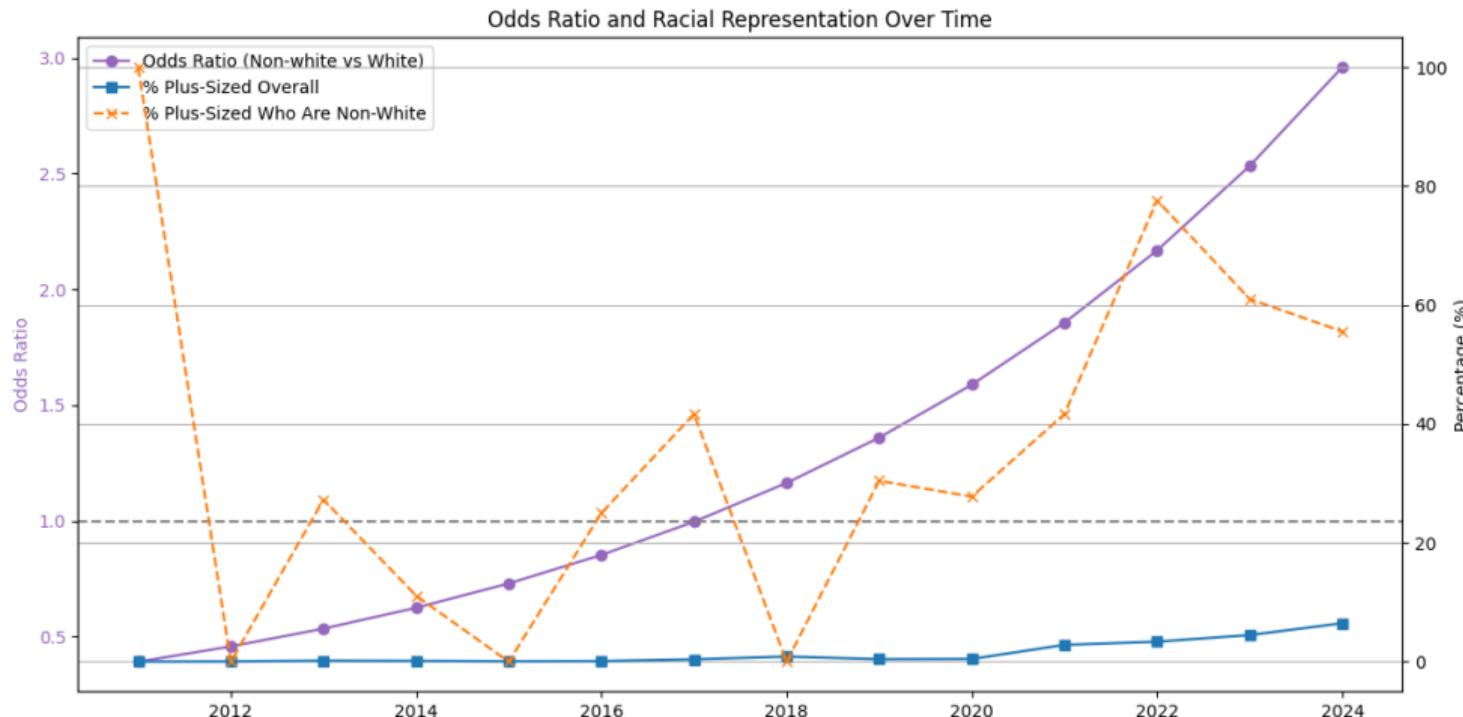
How do these two evolutions relate?

Intersectionality of Diversity

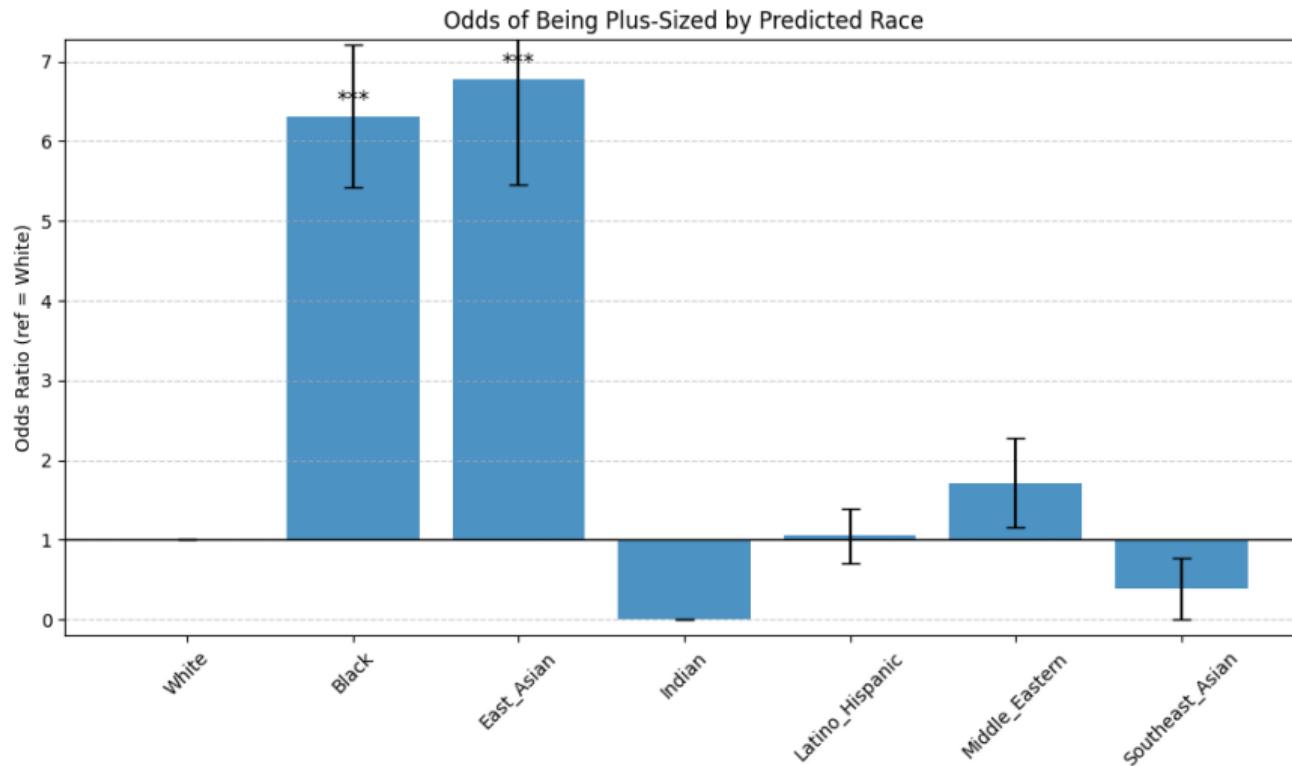
Plus-Size Model Representation by Global Region



Evolution of Intersectionality of Diversity



Breakdown Intersectionality of Diversity



Conclusion & Future Directions

Key Contributions

- **Methodological innovation:** Entropy measures for diversity in human populations
- **Substantive insights:** Quantified cultural evolution of beauty standards
- **Technical approaches:** Adaptable to other representation research domains

Implications

- Evidence for evaluating diversity initiative effectiveness
- Understanding cultural change mechanisms
- Broader social norms around human appearance and inclusion

Examples

Fashion runway serves as rich lens for studying shifting societal standards of beauty and representation

References

Thank You

Questions & Discussion