

**ISO/IEC 19795-10****Information technology —  
Biometric performance testing and  
reporting —****Part 10:  
Quantifying biometric system  
performance variation across  
demographic groups**

*Technologies de l'information — Essais et rapports de  
performance biométriques —*

*Partie 10: Quantification de la variation des performances du  
système biométrique selon les groupes démographiques*

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As the use of biometric technology increases, so too does public interest in establishing whether the technology performs similarly for all individuals. Stakeholders are asking government and industry organizations that use biometric technology to establish whether these technologies vary in performance for different demographic groups. The intention of this document is to provide guidance on how to measure and report performance variation across demographic groups.<sup>[2]</sup>

This document is intended to help organizations evaluate demographic performance in biometric systems and report their results. Specifically, this document outlines how to measure and report biometric performance variations across demographic groups. It provides a set of metrics and best practices to facilitate such testing. However, this document does not provide guidance on how to establish specific causes for the observed variations. The following demographic variables are explicitly discussed in this document:<sup>[7][10][12]</sup>

- biological characteristics, such as:
  - sex, age, weight, height and skin lightness;
- social constructs, such as:
  - ethnicity, gender and language.

Many other variables can cause systematic changes in biometric characteristics or in how individuals interact with biometric systems. The following demographic variables are relevant although not explicitly discussed in this document:

- performance variations based on temporary states, such as:
  - self-styling (e.g. makeup, eyewear, mask-wearing, clothing, hairstyles),
  - behavioural or emotional states (e.g. intoxication),
  - behaviours (e.g. smiling, closing eyes, varying pose);
- performance variation caused by diseases or injuries, such as:
  - eye surgery, cataracts, vision correction,
  - stroke, cleft lip, Apert's syndrome,
  - missing digits;
- performance variation caused by disabilities.

Demographic performance variation for applications other than biometric recognition, such as emotion, gender or age estimation, are not considered in this document.