

Testing the Wits Facial Classification Scheme (WFCS) for forensic facial comparison in black African males



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Declaration

I, Nelly Phumzile Matine, declare that this dissertation is my own work. It is being submitted for the degree of Master of Science (Medicine) at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination, at this or any other University.



3rd day of July 2024, in Parktown

Abstract

The crime rate increase in South Africa calls for new approaches to fighting crime and ensuring that perpetrators and victims are identified with little to no error using scientific evidence-based approaches. Forensic facial comparison (FFC) is an emerging field with huge potential to aid in identification of individuals in the age of widespread surveillance. The current Facial Identification Scientific Working Group (FISWG) feature list used in facial comparison analyses is a descriptive list that provides a list of morphological features for the identification of unknown individuals. This list was previously used to test the validity of morphological analysis in FFC. From these studies, a revised facial feature classification scheme called the Wits Facial Classification Scheme (WFCS) was developed, based on the FISWG feature list. The aim of this study was to test the performance of the WFCS within a black male South African sample.

The WFCS entailed scoring of 412 morphological facial features individually for each face. The sample size consisted of 100 face pools (50 WT and 50 CCTV). The number of total facial comparisons was 119 (63 for WT and 56 for CCTV). Average kappa agreement scores and composite facial comparison scores were used to evaluate the performance of the WFCS under two distinct image capture conditions: standard CCTV images and wildtype optimal photographs (WT). Statistical analyses were conducted using ROC curves, confusion matrices, Mann-Whitney U, and Kruskal-Wallis ANOVA by ranks tests.

The results showed a high repeatability (95%) and reproducibility (73%) and better performance of the WFCS under the WT condition than in the CCTV. Balanced accuracy was higher in the WT condition for both the average kappa agreement (92%) and composite facial comparison scores (76%). In the CCTV condition, balanced accuracy was 80% for the average kappa agreement and 61% for the composite facial comparison scores. The predictive quality values revealed that overall, the WFCS demonstrated superior performance when assessed using average kappa agreement scores compared to composite facial comparison scores. The FISWG feature list performed better than the WFCS in terms of balanced accuracies. The WFCS should be refined and tested on different populations and genders as it is still a more statistically testable method of identification. Implementing a more statistically testable method, may improve the legal defensibility of forensic facial comparison.

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List of abbreviations

Abbreviation	Full name
ACE-V	Analysis, Comparison, Evaluation and Verification
AUC	Area Under the ROC Curve
CCA	Chance Corrected Accuracy
CCTV	Closed-Circuit Television
DMV	Düsseldorf Milan Vilnius
DIWG	Digital Imaging Working Group
ENFSI	European Network of Forensic Science Institutes
FISWG	Facial Identification Scientific Working Group
FRT	Facial Recognition Technology
FN	False Negative
FP	False Positive
FPR	False Positive Rate
FFC	Forensic Facial Comparison
HREC	Human Research Ethics Committee
MA	Morphological Analysis
NPV	Negative Predictive Value
PPV	Positive Predictive Value
ROC	Receiver Operating Characteristic
SAPS	South African Police Services
SPSS	Statistical Package for Social Sciences
TN	True Negative
TP	True Positive

TPR	True Positive Rate
WFCS	Wits Facial Classification Scheme
WFD	Wits Face Database
WT	Wildtype

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Chapter 1: Introduction

South Africa faces a multifaceted challenge with its high crime rate, encompassing a spectrum of offenses including major drug dealings, murder, sexual offenses, cash-in-transit robberies, kidnappings, construction mafias, and illicit mining (South African Police Services, 2024). The most significant impact of this high crime rate is felt by its largest population group, Black South Africans (Ujaddughe *et al.*, 2024). This challenge was further exacerbated by the COVID-19 pandemic as an increase in crimes such as human-trafficking was observed (Krishnan, 2021). Most of these crimes are committed by males in South Africa (Bowman *et al.*, 2024) and in general, males are more commonly involved in crimes as either victims or perpetrators in both developing and developed countries (Maluleke, 2018). Despite the historically high crime rates in South Africa, over the past two consecutive terms, there has been a notable decrease in reported murders (South African Police Services, 2024). However, according to the World Population Review (Crime Rate by Country), South Africa has the fifth-highest crime rate globally (World Population Review, 2024), marked notably by elevated levels of assaults, rape, homicides, and various other violent offenses. While there has been progress, challenges remain, particularly in addressing sexual offenses such as rape, sexual assault, and contact offenses. To further tackle crime and ensure the safety of all citizens, it is imperative that innovative approaches to apprehend perpetrators are explored. The South African Police Minister reported that approximately half of the murder cases in the second quarter of 2021 occurred in public places such as streets, open fields, parking areas and abandoned buildings (South African Government, 2024). Public areas are usually surveilled by Closed-Circuit Television (CCTV) cameras which are able to capture criminal activity. An increase in CCTV cameras was seen in public spaces around South Africa (Moyo, 2019). Moreover, the adoption of newer technologies such as drones and aerial surveillance is further expanding the scope of data collection. In Cape Town, for instance, drones and aerial surveillance technology are set to play a significant role in the city's hi-tech crime-fighting plan, feeding footage to 'Cyclops' control rooms (Daniels, 2022). Footage from these cameras can be analysed by experts who conduct forensic facial comparison (FFC). FFC is carried out by comparing facial features between photographs or videos of victims or perpetrators with the goal of identification (Davis *et al.*, 2012; Bacci *et al.*, 2021a). This scientific technique has aided the South African judicial system in making successful convictions (Bacci *et al.*, 2021a).

The Facial Identification Scientific Working Group (FISWG) recommends morphological analysis for facial examination (Facial Identification Scientific Working Group, 2019), which is what the South African Police Services (SAPS) use successfully on their FFC cases (Houlton and Steyn, 2018). FISWG provides recommendations and guidelines for best practice (Facial Identification Scientific Working Group, 2019), as well as a list of morphological characteristics (i.e., feature list) (Facial Identification Scientific Working Group, 2018). However, the FISWG feature list lacks detailed descriptions of facial features therefore making it highly subjective (Bacci, 2021).

A different approach to facial comparison involves the use of classification schemes. However, classification schemes, such as the DMV Atlas (“Düsseldorf Milan Vilnius,” from the participating cities), were found to have a high interobserver error rate (39%) (Ritz-Timme *et al.*, 2011) and other facial comparison approaches, such as the classification scheme used by Roelofse *et al* (2008), had suboptimal definitions of their facial features. These limitations were identified in recent studies, aiming to validate the morphological analysis method (e.g., Bacci *et al.*, 2021a; 2021b). As an outcome of these studies, a new and unpublished feature list was developed based on the FISWG list, the Wits Facial Classification Scheme (WFCS), to potentially resolve the above shortcomings. The WFCS, however, has not been tested. Therefore, the aim of the current study was to test the performance of the WFCS. Should the WFCS prove to perform well, it has the potential to improve forensic facial comparison practice, by reducing its subjectivity, isolating the comparison process to reduce bias, and provide a more statistically testable method, especially in a poorly represented population group such as African individuals (Perkowitz, 2021).

1.1 Aim and Objectives

The aim of this study was to test the performance and repeatability of the Wits Facial Classification Scheme (WFCS) within a Black South African male population from the Wits Face Database (WFD) for forensic facial identification. This aim was achieved through the following objectives:

1. To determine the frequencies of facial morphological traits using the WFCS in black African males, across different views (anterior, left 45°, left lateral, right 45°, and right lateral) and under different image capture conditions (CCTV and wildtype).
2. To test the repeatability and reproducibility of the WFCS.
3. To test the performance of the WFCS, using an averaged kappa agreement score, in facial comparison across standard CCTV and wildtype photograph images. Performance was determined by specificity, sensitivity, false positive rate, and balanced accuracy.
4. To test the performance of the WFCS, using a composite facial comparison score, in facial comparison across standard CCTV and wildtype photograph images. Performance was determined by specificity, sensitivity, false positive rate, and balanced accuracy.
5. To compare the accuracy of the WFCS between standard CCTV and wildtype photograph target images.

Chapter 2: Literature Review

2.1 Facial Identification

The increase in CCTV cameras around the world has led to an increase in the use of facial identification methods (Kleinberg & Siebert, 2012; Jackson, 2016; Steyn *et al.*, 2018). Forensic facial identification, a discipline under facial imaging, makes use of facial feature information to aid with identification (Bacci *et al.*, 2021b). Facial identification is often mistaken for facial recognition despite them being different processes. Facial recognition can be understood as the psychological ability to recognise an individual from observing their face or an image of their face (Puce, 2015), or being able to recognise a person at a glance (Schüler & Obertová, 2020). Facial recognition functions differently for familiar (famous or personally known individuals) and unfamiliar (never before seen individuals) faces (Johnston and Edmonds, 2009; Wilkinson & Evans, 2009). Humans are particularly good at familiar face recognition and even trained experts have been shown to struggle with unfamiliar face recognition (Bruce *et al.*, 2001). Human facial recognition is a category under morphological biometrics in biometric security (Woodward *et al.*, 2003) and is often confused with automated facial recognition systems, which are capable of matching a human face from digital images against a database of faces using biometric information (Kaur *et al.*, 2020). Unlike facial recognition in psychology, forensic facial identification is carried out by manually and methodically comparing two or more faces and analysing them using a detailed method in order to come to perfect agreement and confirm that two faces are indistinguishable (Schüler & Obertová, 2020). An identity confirmation in a forensic context should never be solved at a glance; the identification process should follow a methodically planned procedure (Schüler & Obertová, 2020). Forensic facial comparison (FFC) is the preferred approach for facial identifications (Wilkinson and Evans, 2009; Davis *et al.*, 2012) and is utilised not only in criminal investigations but also in non-criminal contexts such as identifying missing persons (Pizzolato, 2023). FFC is employed to connect a person of interest to a crime by examining images or video recordings (Steyn *et al.*, 2018) or to compare an image of a known suspect or defendant with an image of the offender (Mallet *et al.*, 2010).

2.2 Biases in facial recognition technology

Facial recognition technology (FRT) is an entirely different approach to facial identification, involving an automated or semi-automated computer-based approach to confirmation of identity. FRT has seen widespread adoption across various sectors, including law enforcement,

security, retail, and marketing (Smith, 2019; Gao *et al.*, 2023), due to its potential to automate identification processes and enhance security measures. However, concerns have been raised regarding the accuracy, fairness, and ethical implications of these systems, particularly concerning their impact on marginalised communities (Leslie, 2020). FRTs trained on datasets that have a reduced representation of marginalised populations tend to be less accurate for them leading to high levels of misidentification, often in the form of false positives (Leslie, 2020). A study noted an enhanced recognition performance of FRT for attributes such as middle aged, senior, white, and male faces whereas recognition performance was diminished for attributes associated with young, Asian, Black, and female faces (Terhörst *et al.*, 2021). A good performance was also seen in fully visible faces and the system performed poorly in individuals that had accessories such as hats, earrings, and eyeglasses (Terhörst *et al.*, 2021). Faces displaying smiles or with their closed mouths exhibited above-average performance in FRT (Terhörst *et al.*, 2021). Conversely, faces expressing other emotions resulted in degraded FRT performance. Overall, FRT systems appear to be affected by a large number of factors besides demographics (Terhörst *et al.*, 2021).

Studies have consistently highlighted the shortcomings of automated FRT algorithms, including higher error rates and misidentifications, especially for individuals with darker skin tones (Brown, 2021). These limitations underscore the critical need for human oversight in FRT systems (Almeida *et al.*, 2022), particularly in forensic contexts where the implications of false positives are dangerous (Laporte, 2018), and accurate identification is paramount. False positives refer to when a test incorrectly identifies an outcome as positive (Veropoulos *et al.*, 1999)

2.3 Forensic Facial Comparison

Forensic Facial Comparison (FFC) is currently in high demand with the amount of CCTV footage available to police services due to an increase in criminal and terrorist activities (Porter & Doran, 2000; Goos *et al.*, 2006; Steyn *et al.*, 2018; Bacci *et al.*, 2021a). With the application of FFC, specialists are considered to be better at comparing two images of unfamiliar people as compared to the general public (Wilkinson & Evans, 2009; Balsdon *et al.*, 2018).

Facial comparison has been previously conducted through different methods including facial superimposition, photo-anthropometry, and morphological analysis, previously referred to as facial mapping (Stephan *et al.*, 2019). Superimposition is the technique of overlaying two aligned images, allowing for a simultaneous visual comparison while retaining elements of

both images (Houlton & Steyn, 2018). This process often utilises image transitions, aided by video techniques or digital image processing (Houlton & Steyn, 2018). Photo-anthropometry encompasses measuring dimensions and angles by utilizing biometric landmarks and other facial features to quantitatively analyse characteristics and proportions (Houlton & Steyn, 2018). Superimposition and photo-anthropometry are sensitive to image quality (Facial Identification Scientific Working Group, 2019). As such, images used in these methods need to be captured under optimal and nearly identical conditions (Stephan, 2015) otherwise the results can be misleading (Facial Identification Scientific Working Group, 2019). The CCTV images that forensic analysts are often provided with are not always captured under optimal conditions (Gibelli *et al.*, 2016), which makes them very challenging to work with. Morphological analysis (MA), based on an extensive feature list, is recommended in the medicolegal context (Facial Identification Scientific Working Group, 2019; Bacci *et al.*, 2021a). MA involves the comparison of two or more faces with the goal of identifying similar and dissimilar facial traits (Bacci *et al.*, 2021a).

Bacci *et al.* (2021a) tested the validity of FFC by MA in typical CCTV images and optimal photographs using the FISWG feature list (Facial Identification Scientific Working Group, 2018). It was found that MA was highly accurate in the optimal photographic images (99.1% chance-corrected accuracy (CCA)) and there was a decrease in accuracy in the CCTV images (82.6% CCA) (Bacci *et al.*, 2021a). This decrease in accuracy was thought to be due to poor image quality, unfavourable angle of incidence and lighting differences (Bacci *et al.*, 2021a). Despite these challenges, morphological analysis is still considered the most effective technique even with images of poor quality as prominent distinguishing facial features remain discernible (Stavrianos *et al.*, 2012). Morphological analysis is, however, considered subjective even when performed by experts in the absence of validated methods or procedures (Edmond & Wortly, 2016; Stephan *et al.*, 2019). Scientists have tried to mitigate this problem by developing facial feature lists (Isan, 1993; Vanezis *et al.*, 1996; Facial Identification Scientific Working Group, 2018) or atlases (Ritz-Timme *et al.*, 2011), to assist in making MA less subjective.

2.4 The importance of evidence quality in FFC

Forensic science plays a pivotal role in the criminal justice system, providing crucial evidence and insights to aid in the investigation and resolution of criminal cases. Central to the effectiveness of forensic analyses is the quality of the materials and methods provided and

used, which directly impact the reliability and accuracy of the results obtained. A recent study found that high image quality scores were associated with accurate matches, whereas low-quality scores were linked to incorrect matches (Bacci *et al.*, 2024). This effect of quality on facial comparison performance was even more notable with high rates of false positives being associated with lower face to image pixel proportions (a measure of face image quality) and underexposed (darker, poorly lit) images (Bacci *et al.*, 2024). In recent years, there has been increasing recognition of the importance of quality assurance and control measures in forensic science to ensure the integrity and credibility of forensic analyses (Chin & Ibaviosa 2022; Dror, 2023). The European Network of Forensic Science Institutes (ENFSI) Digital Imaging Working Group (DIWG) annually administers proficiency tests that serve as quality assurance measures to evaluate the performance of forensic science institutes in conducting facial image comparisons (Rodriguez *et al.*, 2022). A number of studies have also tried to address the problem with low quality images or video footage from CCTV cameras. Previous research in this field has utilised various techniques, including super-resolution processing, deblurring methods, and learning how to establish connections between different resolution domains (Li *et al.*, 2018). There is significant interest within the scientific community in the recognition of faces in low-quality images. This interest stems from the promising applications that rely on such capabilities, including fields like forensics and surveillance (Li *et al.*, 2018). One concern for a number of these approaches, however, is the legal permissibility to alter images in order to improve quality, as artefacts can be created and the image can be modified at the risk of altering the interpretation during analyses. Nonetheless, being able to accurately identify faces in images of poor quality has important implications for various practical uses, such as criminal investigations, security monitoring, and other related areas. According to a study by Chang and colleagues (2012), individuals demonstrated the ability to identify familiar faces even in low-resolution images. However, it is crucial to recognise that this capability may not consistently apply to forensic investigations, where investigators would not be familiar with the faces analysed. Consequently, the use of higher-quality images becomes paramount in such scenarios to uphold the reliability and accuracy of identification outcomes. However, this is not a realistic assumption, as majority of the data available to police is of low quality (Gibelli *et al.*, 2016). As such, testing how various methods to FFC perform in sub-optimal settings is crucial.

2.5 Differences in facial features between individuals

Facial morphology exhibits significant variability within and among human populations, with genetics playing a substantial role in shaping this diversity (Liu *et al.*, 2021). Different

populations around the world have evolved in diverse environments, leading to variations in genetic traits, including facial features. Facial characteristics that are notably uncommon or with significant differences in frequency across populations can, if approached cautiously, be utilised alongside other markers, including cultural ones, to help discern the population of origin of an unidentified individual (Ritz-Timme *et al.*, 2011). For example, cultural practices like ritual scarification, once prevalent in certain African societies but abandoned in the “New World”, were used for the identification of these population groups and may no longer be present, but genetic markers can still be used to identify if an individual may belong to a specific population (Abel & Schroeder, 2020). These DNA markers, if identified in an unidentified individual alongside other biological and cultural indicators, could help discern their population of origin (Abel & Schroeder, 2020). However, it is essential to know that most facial features are present in nearly all populations; it is only the frequencies of these features that vary among them. The potential genetic commonalities in facial features across different population groups can hence aid in facial identification. Certain genetic markers associated with facial traits are not confined to specific populations but are found across diverse human groups (Liu *et al.*, 2021). This suggests a shared genetic basis for these traits, indicating that while human populations may exhibit distinct facial features shaped by unique genetic and environmental factors, there are underlying genetic elements that transcend population boundaries and contribute to the diversity of facial morphology observed worldwide.

Facial features can unfortunately, also contribute to stereotypes and biases. These stereotypes can lead to acts of discrimination on certain individuals as compared to other individuals. Lighter-skinned Black Americans in the United States receive more favourable treatment compared to their darker-skinned counterparts (Maddox & Chase, 2004; Wade *et al.*, 2004). Biases linking Black men with criminality are particularly strong for individuals possessing Afrocentric features, such as a darker skin tone, broad nose, and full lips (Kleider-Offutt *et al.*, 2017, Bennett & Plaut, 2017). The "biologically criminal" mindset, combined with perceived inferiority and racially biased laws and punishments, contributed to the criminalisation of Black individuals in America (Cormier, 2012; King & Johnson, 2016; Kleider-Offutt *et al.*, 2017; Bennett & Plaut, 2017). However, it is important to recognize that racial biases, particularly pro-White bias, extend far beyond the borders of the United States. Research indicates that 146 countries including Zimbabwe, Dominican Republic, Kenya, and more, that were studied, exhibited pro-White bias, highlighting the pervasive nature of racial biases globally (Coutts, 2020). While racism in the United States receives significant attention, these findings suggest

that similar biases exist in most other countries, contributing to the marginalisation and discrimination faced by Black communities worldwide. These perceptions of inferiority may still influence biases in present-day legal decision-making, both in laboratory settings (controlled experimental settings) and real-world contexts (Kleider-Offutt *et al.*, 2017). Amid growing concerns regarding racial disparities in the criminal justice system, it becomes imperative to examine whether stereotypical features not only foster a presumption of violence for these individuals but also contribute to disproportionately severe treatment by law enforcement officers and jurors (Kleider-Offutt *et al.*, 2017). The historical legacy of racism and discrimination has had enduring consequences for Black individuals, particularly within the criminal justice system (Bell, 2017; Hinton *et al.*, 2018). Recognising and addressing these injustices is not only a moral imperative but also essential for building a more equitable and just society. It requires concerted efforts to challenge implicit biases, reform discriminatory laws and practices, and promote racial equity at every level of society. In light of the historical context and contemporary manifestations of racial biases, it is imperative to emphasise that having certain physical features, such as Afrocentric facial characteristics, should never serve as grounds for labelling individuals as inherently criminal or inferior.

Understanding how facial characteristics differ between populations is also essential in improving FFC (Bacci *et al.*, 2021b). Only one study (Roelofse *et al.*, 2008) has attempted to look at facial feature morphology of African individuals in relation to facial identification. In an effort to make facial identification more accurate, Roelofse and colleagues (2008) analysed the facial features of a group of black South African men to ascertain which classified facial morphological features were most prevalent. They found that the most common facial features were oval facial shapes, intermediate sized noses with a down-turned septum tilt and intermediate size mouths with a flat V-shaped upper lip notch (Cupid's bow lip shape) (Roelofse *et al.*, 2008). The exclusion of the characteristics of the ears as they could not be clearly visualized in an anterior view (Roelofse *et al.*, 2008), is, however, a shortfall of this study. Particularly since, the ears have been found to be so distinct that they are diagnostic of identity (Porter & Doran, 2000; Towler *et al.*, 2017). Investigating multiple facial features, including such highly variable features like the ears, can be helpful to investigate differences between populations and improving facial identification.

2.6 Facial feature lists

Feature instructions and feature lists have been shown to improve face matching (Towler *et al.*, 2017; Megreya & Bindemann, 2018). Feature focused approaches, such as the DMV Atlas, were developed to improve the identification of persons in photographs (Ritz-Timme *et al.*, 2011). This atlas includes photographs, illustrations, and explanations of 45 different facial features and was tested on 900 standardised photographs and resulted in poor inter-observer error (39%) and intra-observer error (19%) rates, demonstrating the subjectivity of this feature list (Ritz-Timme *et al.*, 2011). Roelofse and colleagues (2008) also attempted providing categories for each of the morphological features for classification. For example, the jawline was classified into round pointed, round globular, angular narrow or angular broad (Roelofse *et al.*, 2008). These categories, however, are suboptimally defined leaving room for interpretation, leading to high subjectivity. In contrast to the DMV atlas (Ritz-Timme *et al.*, 2011) the FISWG feature list has shown high repeatability and accuracy (Bacci *et al.*, 2021a). The FISWG feature list resulted in high accuracies for both optimal and suboptimal image capture conditions (for photograph-to-photograph comparisons (98% CCA) and for CCTV-to-photographs comparisons (81% CCA) (Bacci *et al.*, 2021a). Repeatability testing also showed intra-observer agreement of 93.4 % and 80% for photographs and CCTV, respectively; and an inter-observer agreement of 92.1% and 74.3% for photographs and CCTV, respectively (Bacci *et al.*, 2021a). Based on its high repeatability and accuracy, the FISWG feature list is currently the preferred feature list and approach to morphological analysis for FFC.

The FISWG feature list, however, has inherent flaws, namely its subjectivity and reliance on simple descriptors to guide the analysis of facial morphology (Steyn *et al.*, 2018; Houlton & Steyn, 2018). In addition, applying this feature list in facial comparison following the Analysis, Comparison, Evaluation and Verification (ACE-V) method, may result in a biased application of FFC due to the concurrent side-by-side comparison of faces. The inability to transparently quantify outcomes can also further hinder its applicability. A subjective descriptor-based feature list where facial matching ability cannot be quantified is not statistically testable (Mallet *et al.*, 2010). These limitations were identified in recent studies, aiming to validate the morphological analysis method (e.g., Bacci *et al.*, 2021a) and a revised feature list, based on the FISWG feature list, was developed to potentially resolve these shortcomings. This revised facial feature list was compiled by including classification of traits that were previously made in relevant anatomy, medicine and anthropology literature (Bacci, 2021). This feature list was named the Wits Facial Classification Scheme (WFCS) and remains unpublished (unpublished

works, Bacci, 2021). Table 2.6.1 shows an example of how traits were assessed using the WFCS.

Table 2.6.1: Excerpt of the cranial vault shape assessment using the WFCS.

FISWG Component Characteristics	Modified Characteristic Scoring
2.1 Shape of Cranial Vault	2.1.1 Frontal (portrait) contour (Modified from cranial shape, Krogman, 1955):
	2.1.1.1 Rounded: a pronounced circular contour.
	2.1.1.2 Arched: a gentle curved contour.
	2.1.1.3 Flattened: a relatively straight contour.
	2.1.2 Frontal (portrait) shape:
	2.1.2.1 Narrow: defined as a cranial vault narrower than the temporal region.
	2.1.2.2 Intermediate: cranial vault is approximately as wide as the temporal region.
	2.1.2.3 Wide: a cranial vault wider than the inferior temporal region.
	2.1.3 Lateral (profile):
	2.1.3.1 Rounded: a pronounced circular contour.
	2.1.3.2 Arched: a gentle curved contour.
	2.1.3.3 Flattened: a relatively straight contour.
	2.1.3.4 Elongated: a particularly long contour with a very subtle curve and a flattened plateau in the superior aspect.
	2.1.3.5 Cuboid: a relatively square and proportional cranial vault with sharp angles.

Chapter 3: Materials and methods

3.1 Study sample

The study sample was obtained from the Wits Face Database (WFD) (Bacci *et al.*, 2021c). This database includes a large sample of corresponding facial images of known male individuals of African descent, aged between 18 and 35 (Bacci *et al.*, 2021c). The WFD has a total of 6220 facial photographs of 622 unique individuals, and CCTV footage of 334 matching individuals recorded under different real-life settings. The WFD includes standardised and wildtype facial photographs, standard CCTV stills, eye level CCTV stills, analogue CCTV stills, and CCTV recordings with disguises (caps and sunglasses) (Bacci *et al.*, 2021c). Standardised photographs were ideal photographs captured with a solid black backdrop and participant clothing covered at a distance of 1500 mm (Bacci *et al.*, 2021c) (Figure 3.1.1). Wildtype (WT) photographs were of optimal quality captured at a distance of 5000 mm and included mixed backgrounds, representative of a realistic setting (Bacci *et al.*, 2021c) (Figure 3.1.2). Standard CCTV stills (images extracted from CCTV video footage) were taken from a height of 3100 mm (Bacci *et al.*, 2021c) (Figure 3.1.3).

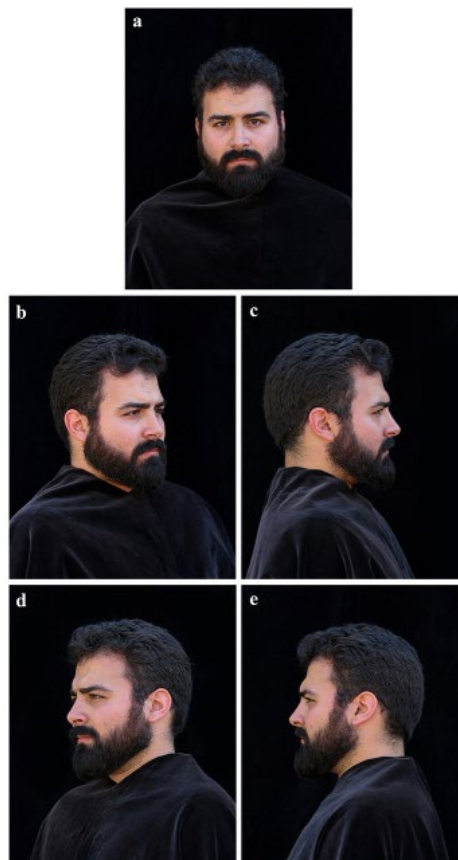


Figure 3.1.1 Example of standardised facial photographs in five different views (Bacci *et al.*, 2021a). (a) is anterior, (b) is right 45°, (c) is right lateral, (d) is left 45° and (e) is left lateral

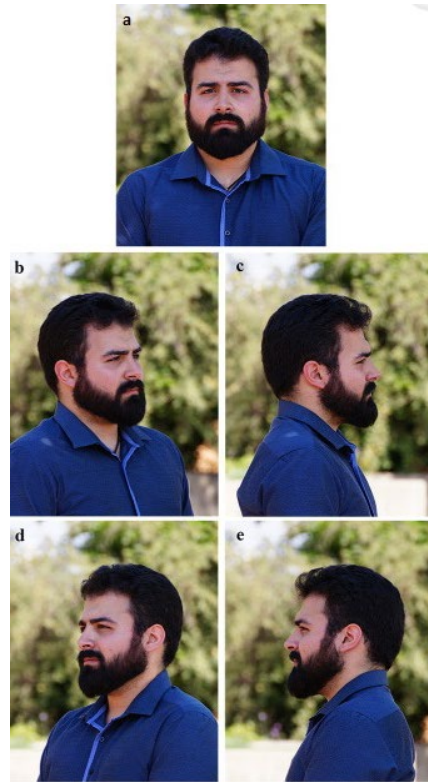


Figure 3.1.2 Example of wildtype facial photographs in five different views (Bacci *et al.*, 2021a). (a) is anterior, (b) is right 45°, (c) is right lateral, (d) is left 45° and (e) is left lateral.



Figure 3.1.3 Example of standard closed-circuit television (CCTV) stills in five different views (Bacci *et al.*, 2021a). (a) is anterior, (b) is right 45°, (c) is right lateral, (d) is left 45° and (e) is left lateral.

To test the performance, repeatability, and reproducibility of the new classification scheme (objectives two through four) facial images from the WFD were used. As no data exists in the literature on the variability of the facial morphology across all traits that are part of the WFCS, in order to conduct a power analysis and estimate an ideal representative sample, a sample of 50 face pools inclusive of a total of 1100 facial images was selected for this study. To compile the face pools, a subset of wildtype facial photographs ($n = 50$) and standard CCTV extracted images ($n = 50$) of unique individuals from the WFD were selected as target images. One target image was compared to ten standardised control photos ($n = 1000$) arranged in face pools. This study included a total of 100 face pool trials subdivided in 50 face pools per image capture condition (Table 3.1.1). The face pools were selected by an external individual (i.e., primary supervisor) to guarantee that the primary analyst was blinded and additionally included a small number of non-match pools ($n = 7/100$). The face pools utilised were composed by an independent research assistant for a previous study (Bacci *et al.*, 2021a). The composition of each face pool involved the subjective selection of control images that were visually similar to the target image obtained from the database. Attempts of a more structured facial similarity

selection approach such as that used in facial recognition research, tends to require judge panels, facial recognition technology (Jeckeln *et al.*, 2024) and some iteration of eigenface analysis that can be cumbersome to employ (Tredoux, 2002). From these face pools, a subset was selected by the primary supervisor for this study. Face pools were relatively evenly distributed across the five views (anterior, left 45°, left lateral, right 45°, and right lateral). The face pools containing target images known to the primary analyst were excluded. Subsequently, an equivalent number of replacement face pools were added to maintain a consistent sample size. Repeat trials of 10 face pool target images were included in the sample to verify intra-observer agreement and an additional trained observer also applied the WFCS to 10% of the sample (n = 10 face pool target images) to test inter-observer agreement. A total of 10 comparisons were conducted for both intra and inter-observer agreements. The inter observer agreement was conducted by an individual experienced in forensic facial comparison by morphological analysis, who developed but never previously applied the final version of the WFCS. The ground truth (true identity) for all face pools were withheld from the primary analyst until after the comparison process was complete.

Table 3.1.1: Sample size grouping

Analysis Cohorts	No. of face pools					
	Anterior	Left 45°	Right 45°	Left lateral	Right lateral	Total
Standard CCTV stills	10	6	9	13	12	50
Wildtype photographs	11	9	10	12	8	50
Total	21	15	19	25	20	100

3.2 Facial identification process

A holistic facial review (often termed simply as facial assessment) (Facial Identification Scientific Working Group, 2019) was conducted first, where the overall physiognomy, without specific focus to individual morphology of facial features, was contrasted between the target image and the standardised images. A decision was then made on the overall similarity of faces. Each facial assessment between the two faces was limited to 5 seconds (Bacci *et al.*, 2021d). This time constraint ensured the facial assessment acted as a quick, real-time comparison that did not employ the core ACE-V principles of morphological analysis, and was only used as a manner to exclude any evident non-matches with the target photograph. Throughout this process no true matches were excluded at any point. The facial features of the remaining

prospective matches and the target images were then scored using the Wits Facial Classification Scheme (WFCS) in each face pool. A total of 119 faces were considered prospective matches in addition to the 100 target images and hence a total of 219 faces were scored using the WFCS, resulting in a total of 119 comparisons.

3.3 Wits Facial Classification Scheme (WFCS)

The morphological features of each face were scored according to the WFCS scoring criteria for each facial trait in an effort to identify similarities and dissimilarities. Each facial image was categorically scored across a series of 412 morphological facial traits from the WFCS (Appendix B). Facial traits were developed based on the Facial Identification Scientific Working Group (FISWG) facial images comparison feature list for morphological analysis (Facial Identification Working Group, 2018) and included the 18 broad facial feature classes with the specific characteristics formulated for this semi-quantitative application (Table 3.3.1). A score of zero (0) was allocated to traits that were indiscernible to the investigator due to image quality or not scorable from a particular view.

Table 3.3.1: Wits Facial Classification Scheme framework with reference to where information was adapted from if not an original definition. A full list of definitions is available in Appendix B.

Facial feature class	Feature characteristics
Skin	Overall Skin Appearance (adapted from Gupta & Sharma, 2019)
Face/head outline	Shape of Cranial Vault
	Overall Shape of Face (adapted from Farkas, 1997)
Face/head composition	Overall Facial Proportions Excluding Position of Features on Face (adapted from Vegter & Hage, 2000)
Hairline & baldness pattern	Forehead Hairline (adapted from Lee <i>et al.</i> , 2007)
	Hairline Left & Right Side (adapted from BASP classification, Lee <i>et al.</i> , 2007, M1 to 3, C1 to 3 and U1 to 3)
	Cranial Baldness Pattern (adapted from BASP Classifications V1 to 3 and F1 to 3)
Forehead	Forehead Proportions (qualitative adaptation from Allanson <i>et al.</i> , 2009)
	Brow Ridges (Based on Buikstra & Ubelaker, 1994; Acsádi & Nemeskeri, 1970)
Eyebrows	Left and Right Eyebrow
	Left and right eyebrow interactions and asymmetry
Eyes	Inter-Eye Distance ((qualitative modification from Gabriel <i>et al.</i> , 2017)
	Left and Right Eye Fissure Opening (Outline) (qualitative modification from Hanada <i>et al.</i> , 2001)
	Left and Right Upper Eyelid (Including Lashes) (adapted from Kiranantawat <i>et al.</i> , 2015)
	Left and Right Lower Eyelid (Including Lashes) (adapted from Kiranantawat <i>et al.</i> , 2015)
	Left and Right Eyeball Protrusion (Lateral)
	Left and Right Eye Sclera

	Left and Right Iris (adapted from Sturm & Larsson, 2009)
	Left and Right Eye Medial Canthus
	Asymmetry between Left and Right Eyes
Cheeks	Left and Right Cheek Bone
	Left and Right Cheek Shape
Nose	Nasal Outline (Profile and Front View) (adapted from Uzun & Ozdemir, 2014 and Tamir, 2017)
	Nasal Bridge (adapted from Farkas, 1994 and Hefner, 2007)
	Nasal Dorsum
	Nasal Apex
	Nasal Base
	Nasal Alae (Wings of Nose)
	Nostrils (Nasal Openings) (adapted from Uzun & Ozdemir, 2014 and Abdulrasheed & Eneye, 2013)
	Nasal Columella (Soft Tissue between Nostrils) (adapted from Gunter <i>et al.</i> , 1996)
Ears	Overall Left & Right Ear
	Left and Right Ear Helix—Superior/Inferior (Tail)
	Left and Right Ear Tubercles (Auricular Tubercle) (Loh & Cohen, 2016)
	Left and Right Ear Antihelix
	Left and Right Ear Crura of Antihelix (Superior)
	Left and Right Ear Crura of Antihelix (Inferior)
	Left and Right Ear Triangular Fossa
	Left and Right Ear Crus of Helix
	Left and Right Ear Scaphoid Fossa
	Left and Right Ear Concha (Superior)
	Left and Right Ear Concha (Inferior)
	Left and Right Ear Tragus
	Left and Right Ear Antitragus
	Left and Right Ear Intertragic Notch
	Left and Right Ear Anterior Knob
	Left and Right Ear Anterior Notch
	Left and Right Ear Posterior Auricular Furrow
	Left and Right Ear Lobule (Lobe)
	Left and Right Ear Abnormalities
Mouth	Philtrum (adapted from Abdulrasheed & Eneye, 2013)
	Overall Mouth
	Upper and Lower Lip (adapted from Carey <i>et al.</i> , 2009)
	Lip Fissure (Opening between Lips)
	Overall Dental Occlusion (Contact between Upper and Lower Teeth) (based on British Standards Institution, 1983)
	Characteristic Detail of Teeth
	Mouth Abnormalities (Lindsay, 1976)
Chin/Jawline	Chin (Profile and Frontal view)
	Jawline (from Chin to Gonial Angle) (adapted from Buckingham <i>et al.</i> , 2015)
Neck	Neck (Overall)
	Laryngeal Prominence (Adam's Apple) (Lateral/ Anterior view)- The most anteriorly visible portion of the thyroid cartilage
Facial Hair	Facial Hair Above Upper Lip
	Facial Hair Below Lower Lip
	Facial Hair on Left and Right Side
	Facial Hair on Neck, below Chin/Jawline
	Facial Hair on Chin
Facial Lines	Forehead Creases (Wrinkles) (adapted from Schmidlin <i>et al.</i> , 2018)
	Vertical Glabellar Line(s)
	Nasion Crease
	Bifid Nose Crease
	Left and Right Periorbital Creases (Crow's Feet)

	Left and Right Lower Lid Crease (Crease between the Lower Eyelid and the bottom of the Bony Orbit)
	Left and Right Infraorbital Creases (Creases below the Eyes)
	Upper Circumoral Striae (Vertical Wrinkles above Upper Lip)
	Lower Circumoral Striae (Vertical Wrinkles below Lower Lip)
	Mentolabial Sulcus (Horizontal Crease or Fold between Lower Lip and Chin)
	Left and Right Nasolabial Crease/Folds (Creases or Folds extending from Nose to Corners of Mouth)
	Left and Right Marionette Lines
	Cleft Chin
	Left and Right Buccal Creases/Folds (Cheek to Chin)
	Wrinkles on Neck
Scars	Scars (descriptively identified)
Facial Marks	Skin Marks (e.g., freckles, moles, acne, rosacea, birth marks, bruises, abrasions, vitiligo, dark/light patches, port wine syndrome, etc.) (descriptively identified)
Alterations	Piercing (descriptively identified)
	Makeup (descriptively identified)
	Tattoo (Including Cosmetic) (descriptively identified)

3.4 Ethics

An ethics application was submitted as a sub-study of the primary supervisor's larger project (Original HREC number: M17/10/26; Amended and extended HREC number: M23/01/58), and ethical clearance was granted by the Human Research Ethics Committee (Medical) (HREC number: M2211117; Appendix A).

3.5 Data Analysis

The facial trait scoring data was captured and managed on Microsoft excel (365, v. 16.0). Data analysis was conducted using IBM Statistical Package for Social Sciences (SPSS) Statistics software (Version 29). For all statistical tests a significance level of 0.05 was used.

Descriptive statistics functions in SPSS were used to generate frequency and contingency tables for the various trait scores associated with each facial feature. To address objective one, the feature classifications were reported across each cohort in frequency and contingency tables including the five different views (anterior, left 45°, left lateral, right 45°, and right lateral) and the two image capture conditions (standard CCTV and wildtype photographs).

To address objective two, each individual trait was tested for repeatability and reproducibility. The traits were grouped into ordinal (e.g., brow ridge prominence) and nominal (e.g., ear helix shape). A total of 201 traits were grouped under nominal data, 211 traits under ordinal data. Inter-observer (reproducibility) and intra-observer agreement (repeatability) were calculated

by using weighted (quadratic) and unweighted Cohen’s kappa tests for ordinal and nominal traits, respectively. The results were interpreted following McHugh (2012) (Table 3.5.1).

Table 3.5.1: Cohen’s kappa interpretations (McHugh, 2012).

Kappa values	Interpretation
≤ 0	No agreement
0.01–0.20	None to slight agreement
0.21–0.40	Fair agreement
0.41– 0.60	Moderate agreement
0.61–0.80	Substantial agreement
0.81–1.00	Almost perfect agreement

In order to evaluate the WFCS performance, two novel and different approaches were used, an averaged kappa agreement score (objective three) and a composite facial comparison score (objective four). These approaches to facial comparison involved evaluating trait scores within each face against those of another face within each specific face pool.

To compute the averaged kappa agreement score, firstly the traits were divided into nominal and ordinal categories as done for the repeatability testing. Then weighted (quadratic) Cohen’s kappa tests and unweighted Cohen’s kappa tests across traits (for ordinal and nominal, respectively), between each target and each scored control face that were classified as prospective matches of each other during holistic facial assessment were conducted. An average of the two kappa values was then calculated to obtain a single averaged kappa agreement score for each facial comparison pair.

To compute the composite facial comparison score, the kappa values from repeatability and reproducibility testing were used for weighting. This was done by firstly computing the sum of all trait scores (Ts), for each of the 412 traits, multiplied by the trait intra- and inter-observer (Tin and Tir, respectively) kappa values from objective two for the respective traits for each face (Equation 1). Secondly, the absolute difference of the target face score (FS_t) and the control face score (FS_c) of each prospective match pair was calculated to obtain the comparison score (CS) (Equation 2).

$$FS = \sum_{i=1}^{412} (Ts)_i (Tin)_i (Tir)_i$$

equation 1

$$CS = |FS_t - FS_c|$$

equation 2

Overall, the concept of a face score allows condensing the information from multiple morphological traits into a single numerical value for each face, without requiring direct visual comparison of the faces.

Receiver Operating Characteristic (ROC) curve analyses were then conducted to examine the comparison scores and average kappa scores. The goal was to determine firstly, the overall performance of the two approaches for facial comparison when using the WFCS but also the appropriate thresholds for constructing confusion matrices. The ROC curve is a graphical representation illustrating the trade-off between sensitivity (true positive rate) and 1-specificity (false positive rate) for different threshold values (Hoo *et al.*, 2017). A true-positive rate (sensitivity) can be described as the measure of how effectively a test can perform correct matches (Kuhn, 2008; 2020). A true-negative rate (specificity) measures how effective a test can correctly discard a match (Kuhn, 2008; 2020). By plotting sensitivity against 1-specificity (also known as false positive rate) across a range of threshold values, the ROC curve provides a visual depiction of the performance of a diagnostic test or classifier model (Hoo *et al.*, 2017).

In this context, the ROC curves were generated to assess the discriminatory ability of the composite facial comparison scores and average kappa agreement scores in distinguishing between positive and negative cases under the respective image capture conditions. The area under the ROC curve (AUC) serves as a measure of the overall predictive accuracy, or performance, of the model, with values closer to 1 indicating superior performance (Hoo *et al.*, 2017). To optimise specificity and minimise false positives, the focus was on selecting a threshold that corresponded to a high specificity level on the ROC curve, at a relatively low false positive rate.

Once ROC curves were generated, specific thresholds were selected for the composite facial comparison scores and averaged kappa agreement scores in both the wildtype and CCTV conditions. Subsequently, a confusion matrix, comprising True Positives (TP), True Negatives (TN), False Positives (FP), and False Negatives (FN), was constructed for both the absolute comparison scores and the average kappa agreement scores. True Positive (TP) indicates correct identification of a positive result by a test. Similarly, True Negative (TN) denotes accurate identification of a negative result. False positive (FP) refers to when a test incorrectly identifies something as positive and False Negative (FN) refers to when a test incorrectly

identifies something as negative (Veropoulos *et al.*, 1999). Measures of predictive power were then calculated for the average kappa agreement scores and composite facial comparison scores under the CCTV and WT conditions (Table 3.5.2)

Table 3.5.2: Measures of predictive power used (Bacci *et al.*, 2021b)

Statistic	Definition
Sensitivity	Refers to the metric indicating the effectiveness of a test in accurately identifying true matches. This is also known as a true-positive rate.
Specificity	Measures the effectiveness of a test in accurately rejecting a match. This is also known as a true-negative rate.
Prevalence	The total number of accurately identified matches within the entire sample cohort.
Positive Predictive Value (PPV)	This metric, also known as precision, computes the ratio of correctly assigned matches to all positive matches the analyst made, indicating the likelihood that a trial scored as a match is indeed a valid match.
Negative Predictive Value (NPV)	This statistic represents the likelihood that a trial that was marked as an exclusion actually was an accurate exclusion.
Balanced Accuracy	An updated accuracy estimate that takes into account the sample's imbalanced distribution and incorporates specificity and sensitivity.

To assess how the average kappa agreement scores and composite facial comparison scores differ in wildtype and CCTV conditions (objective five), and to compare between the average kappa agreement scores and composite facial comparison scores against the ground truth, a Mann Whitney U test was conducted. A Kruskal-Wallis ANOVA by ranks test was used to assess the association of average kappa agreement scores and composite facial comparison scores across categories of matches by image capture condition. A post hoc pairwise comparison with Bonferroni corrections was conducted to adjust for multiple comparisons and determine specific group differences.

Chapter 4: Results

This study examined 412 facial feature traits, each assessed across varying ordinal or nominal levels. A holistic review was conducted in an initial sample of 1000 control images and 100 target images (100 face pools with 1 target image and 10 control images in each face pool). After completing the holistic facial assessment process, a total of 119 facial comparisons were conducted across the two image capture conditions (63 comparisons for wildtype photographs and 56 comparisons for CCTV) (Table 4.1).

Table 4.1: Breakdown of scored facial images and comparisons under wildtype photographs and CCTV

Type of image capture condition	Number of scored target images	Number of scored control images	Total number of facial comparisons
Wildtype	50	63	63
CCTV	50	56	56
TOTAL	100	119	119

4.1 Frequency distribution of facial traits

4.1.1 Observable features across different views

Overall, facial traits that were observable and scorable in all five available views (anterior, left 45°, left lateral, right 45°, and right lateral) included skin texture, skin luminance, skin colour (Appendix C, Table 1, page C1) as well as vertical face proportions and vertical eye position (Appendix C, Table 4, page C4). Cranial baldness was observable across all different views (Appendix C, Table 7, page C6). Forehead proportions were also observable across all views (Appendix C, Table 8, page C6-C7). Brow ridge prominence and continuity were observable in all views (Appendix C, Table 9, page C7). The right eye fissure opening was mostly visible in the anterior and right 45 ° views and the left eye fissure openings were mostly visible in the anterior and left 45 ° views (Appendix C, Table 14, pages C13-C14). The right upper eyelid traits could be seen from most views except for the left lateral view (Appendix C, Table 15, pages C14-C16) and the left upper eyelid traits could be seen from most views except for the right lateral view (Appendix C, Table 16, pages C16-C18) the exception being the left and right upper epicanthus which could not be scored in the left view and right view, respectively. The same relationship was observed in the left and right lower eyelid traits except for the epicanthus as there was no lower eyelid epicanthus present (Appendix C, Tables 17 and 18, pages C18-C21). The left and right eye sclera colours could mostly be seen from the anterior and 45 °

views (Appendix C, Tables 20 and 21, pages C23-C25). The left and right iris traits were mostly observable in the anterior and 45 ° views (Appendix C, Tables 22 and 23, pages C25-C27). The left and right medial canthus caruncle could only be observed in the anterior and 45 ° views (Appendix C, Table 24, pages C27-C28). The right cheek shape was observable in the anterior, right 45 ° and right lateral views (Appendix C, Table 27, pages C29-C30). Conversely, the left cheek shape traits were observable in the anterior, left 45 ° and left lateral views (Appendix C, Table 27, pages C29-C30). The nose relative length was observable across all views (Appendix C, Table 28, pages C31-C32). The nasal dorsum length could be seen from all views (Appendix C, Table 30, pages C33-C35). Facial hair features could be seen from all the views but facial hair that was side dependent could not be observed on the opposite sides. The facial hair above upper lip, below upper lip and on chin traits were mostly observed from an anterior view and 45 ° views (Appendix C, Tables 65, 66 and 69, pages C79-C83 and pages C87-C89). Majority of the creases and lines were also mostly observed from an anterior and 45 ° views (Appendix C, Tables 71-90, pages C92-C119). The creases or lines that were side dependent could not be scored on the opposite sides (e.g., left buccal folds could not be scored in the right lateral and right 45 ° views). Scars, skin marks, facial piercing, ear piercing, makeup, facial tattoo presence and neck tattoo presence were observable across all the views but mostly absent in the faces investigated (Appendix C, Table 91, pages C119-C120).

4.1.1.1 Observable traits in anterior view

The cranial vault frontal contour and relative width were mostly observed in the anterior view (Appendix C, Table 2, page C2) with a small percentage of the cranial vault frontal contour being observed in the right 45° view (7.3%, 3/41) and in the left 45° view (15.2%, 5/32) (Appendix C, Table 2, page C2). The face frontal contour was mostly observable from an anterior view with a few scored on the right 45° view (7.3%, 3/41) and the left 45° view (9.4%, 3/32) (Appendix C, Table 3, page C3). Both the left (Appendix C, Table 11, pages C10-C11) and right (Appendix C, Table 10, pages C8-C9) eyebrow traits could be observed mostly from an anterior view. Overall eyebrows symmetry could be seen mostly from an anterior view. Left and right eyebrow interactions and asymmetry could mostly be seen from an anterior view (Appendix C, Table 12, page C12). The median distance between eyes could mostly be scored in an anterior view (Appendix C, Table 13, page C13). The scleral triangles could mostly be scored from an anterior view (Appendix C, Tables 20 and 21, pages C22-C25). The eye position symmetry was mostly visible from an anterior view (Appendix C, Table 25, page 28). The left

and right cheekbone anterior prominence was mostly observable from an anterior view (Appendix C, Table 26, pages C28-C29). The symmetry of cheeks was observable in the anterior view (Appendix C, Table 27, pages C29-C30). The shape of the nasal dorsum (frontal) and the relative width of the nasal dorsum (frontal) were generally observable in the anterior view (Appendix C, Table 30, pages C33-C35). The nose relative width was mostly observable in the anterior view (Appendix C, Table 28, pages C31-C32). The nasal dorsum frontal shape and width could be seen mostly in the anterior view (Appendix C, Table 30, pages C33-C35). Most features of the nose that required to be scored from the anterior, were mostly seen from an anterior view (Appendix C, Tables 32, 33 and 35, pages C36-C39). Most mouth features were observable from an anterior view (Appendix C, Tables 55-57, pages C66-C72). The chin shape (portrait) and chin relative width were predominantly observed from an anterior view (Appendix C, Table 61, pages C74-C75).

4.1.1.2 Observable traits in 45° views

Apart from the anterior view, the right eyebrow could also be observed from the right 45 ° view (Appendix C, Table 10, pages C8-C9) and the left eyebrow could be observable from the left 45 ° view (Appendix C, Table 11, pages C10-C11)

4.1.1.3 Observable traits in lateral views

Midfacial lateral (profile) contour was mostly scorable from a lateral view with a few exceptions scored in the right 45° (7.3%, 3/41) and left 45° (9.4%, 3/32) (Appendix C, Table 3, page C3). The eyeball protrusion could mostly be scored from the lateral views (Appendix C, Table 19, pages C21-C22). The left and right cheekbone lateral prominence was observable in the left and right lateral views, respectively (Appendix C, Table 26, pages C28-C29). The nasal dorsum contour could mostly be scored from the lateral views (Appendix C, Table 30, pages C33-C35). Most features of the nose that required to be scored from a lateral view were mostly seen on the lateral view (Appendix C, Tables 32, 33 and 35, pages C36-C39). Features of the left and right ear could be almost exclusively scored in the lateral views (Appendix C, Tables 36-53, pages C40-C65). Moreover, features of the left ear could not be observed in the right 45 ° and right lateral views and vice versa (Appendix C, Tables 36-53, pages C40-C65). Chin prominence (profile) was primarily observed in the right and left lateral views (Appendix C, Table 61, pages C74-C75).

4.1.2 Observable features across different image capture conditions

The following traits are reported based on the number of zeros which show traits that were not scorable in these conditions. The sample size was 50 WT target images and 50 CCTV target images. For each trait if 10 or less individuals displayed a particular trait for a particular image capture condition, the trait was considered to be observable in 80% of the sample. The numbers presented below are the frequency of non-observable traits (scored as zeros) and they are reported in full detail in Appendix C, Table 92, pages C121 to C139.

The traits that were observable in 80% of the individuals in both CCTV and WT conditions across all the views were skin texture, skin luminance, skin colour, vertical face proportions, vertical eye position, cranial baldness pattern shape, forehead slope and contour, nasal apex shape, jawline shape, brow ridge prominence, nose relative length, nasal dorsum relative length, chin relative length and jowl prominence. In total, fourteen traits were observable in both conditions across all the views.

4.1.2.1 Observable features in wildtype photographic images and standard CCTV images

The traits that were observable in 80% of individuals across all the views in the WT condition were left upper eyelid eyelash density, nasal root shape, nasal dorsum deviation, laryngeal prominence shape, facial hair above upper lip surrounding continuity, left upper eyelid prominence, left upper eyelid (protrusion, superior palpebral fold, prominence, eyelash length), left lower eyelid (protrusion, prominence, inferior palpebral fold and eyelash length), nose prominence, nasal bridge relative length, nasal bridge depth, nasal alae relative thickness, nasal alae relative width, nostrils relative size, nostrils nasal hair, submental fat, laryngeal prominence and location. Regarding facial hair, hair above upper lip length, overall hair on chin thickness, hair on chin length, overall hair on neck thickness and hair on neck length, hair on chin (colour variation, surrounding continuity), hair on neck (shape, density and distribution, colour variation, outline definition and surrounding continuity). Among the additional descriptively identified traits, scars, skin marks, facial piercings, ear piercings, make up, facial and neck tattoos were also visible when present in wildtype photographs. In total, forty-two traits were observable in just the wildtype condition across all the views. No features were observable in 80% of individuals only in the CCTV condition, the ones that were observable in CCTV were also clearly observable in WT conditions as reported above. The rest of the features (398) were not observable in 80% of the individuals in CCTV.

4.1.3 Commonly present and absent feature trait morphologies across all views and conditions

The most prevalent skin colour was type V (dark brown skin) (score 5) (Appendix B, page B1) (52.5%, n = 115/219) (Appendix C, Table 1, page C1), while the least common were types I and II that were not identified in any individuals (pale and fair, respectively) (score 1 and 2) (Appendix B, page B1). Most of the individuals had a fine skin texture (score 1) (Appendix B, page B1) (86.3%, n=189/219) (Appendix C, Table 1, page C1) and non-luminescent skin (score 2) (Appendix B, page B1) (55.7%, N=122/219) (Appendix C, Table 1, page C1). The most frequent cranial vault frontal shape was rounded (score 1) (Appendix B, page B1) (15.1%, n = 33/219) (Appendix C, Table 2, page C2) and the most frequent lateral shape was arched (score 2) (Appendix B, page B2) (49.8%, n = 109/219) (Appendix C, Table 2, page C2) and a narrow cranial vault width (score 1) (Appendix B, page B1) was not identified in any individual. The only observed vertical eye position was glabella proximal (score 1) (Appendix B, page B4) (100%, n = 219/219) (Appendix C, Table 4, page C4) as midface central and midface lateral (scores 2 and 3) were not identified in any individual (Appendix B, page B4). The most frequent forehead hairline shape was curved (score 2) (Appendix B, page B4) (38.8%, n = 85/219) (Appendix C, Table 5, page C5) while part-line (midline), part-line (left medial), part-line (left marginal), part-line (right medial), part-line (right marginal), part-line upsweep (cowlick midline), upsweep (cowlick left) and upsweep (cowlick right) (scores 6 to 11) were not identified on any individual (Appendix B, page B5). No recession (score 1) (Appendix B, page B6) was the most frequent trait identified under patterned baldness of the hairline on both the left (51.6%, n=113/219) and right (47.9%, n=105/219) sides (Appendix C, Table 6, page C5) while most of the individuals had no cranial baldness (score 1) (Appendix B, page B7) (95.9%, n = 210/219) (Appendix C, Table 7, page C6).

The occurrence of minimal brow ridge prominence (score 1) (Appendix B, page B8) was more prevalent, with 73.1% (n=160/219) (Appendix C, Table 9, page C7) of individuals exhibiting this trait morphology, and brow ridge continuity being mostly uniform (score 2) (Appendix B, page B9) accounting for 74.0% (n=162/219) of individuals (Appendix C, Table 9, page C7). A discontinued brow ridge prominence (score 1) (Appendix B, page B9) was not identified in any of the individuals as many of them did not have a prominent brow ridge. The majority of the individuals exhibited separated eyebrows (score 1) (Appendix B, page B12) (59.4%, n=130/219) (Appendix C, Table 12, page C12) and a nearly complete symmetry in eyebrow appearance (score 1) (Appendix B, page B13) (9.1%, n=20/219) (Appendix C, Table 12, page

C12) This observation is reflected in the density and shape of conjoined eyebrows (often referred to as a "unibrow") (Appendix C, Table 12, page C12). Only one individual demonstrated conjoined eyebrows (0.5%, n = 1/219) (Appendix C, Table 12, page C12) for both score 2 (conjoined sparse) and score 3 (conjoined straight) (Appendix B, page B13) under density and shape, respectively.

The majority of individuals had decentralised eyes (score 3) (Appendix B, page B14) (17.8%, n = 39/219) (Appendix C, Table 13, page C13) and most individuals exhibited straight spindle eye fissure shape (score 1) (Appendix B, page B14) (24.7%, n=54/219) (Appendix C, Table 14, page C13) and a horizontal eye fissure angulation (score 1) (Appendix B, page B14) (24.2%, N=53/219) (Appendix C, Table 14, page C13) for both the left and right eyes . A round eye fissure shape (score 3) (Appendix B, pages B14-B15) was not identified in any of the individuals. The only iris colour that was identified was brown (score 1) (Appendix B, page B24-B25) for both right and left eyes (53.4%, n=117/219 and 55.3%, n=121/219, respectively) (Appendix C, Table 22 and Table 23, pages C25 and C27).

The most prevalent cheek shape was uniform inferiorly sloped cheeks (score 2) (Appendix B, pages B27-B28) (44.7%, n=98/219 for right cheek and 38.8%, n=85 for left cheek) (Appendix C, Table 27, pages C29 and C30) and most of the individuals had no dimples (score 1) (Appendix B, pages B27-B28) (59.4%, n= 130/219 for right cheek and 58.9%, n=129/219 for left cheek) (Appendix C, Table 27, pages C29 and C30). The most prevalent nose shape was a short nose (score 7) (Appendix B, page B29) with a percentage of 20.5% (n=45/219) (Appendix C, Table 28, pages C31 to C32), with the least common being a straight or Greek nose (score 1) (Appendix B, pages B28) and an aquiline nose shape (score 2) (Appendix B, page B28), each accounting for only 0.5% (1/219) of individuals (Appendix C, Table 28, pages C31 to C32). A flat nose shape (score 8) (Appendix B, page B29) was absent in all individuals.

The most prevalent ear shape (lateral) was circular (score 1) (Appendix B, pages B38-B39) in both the left (17.8%, n=39/219) and right (18.7%, n=41/219) ears (Appendix C, Tables 36 and 37, pages C40-C42). A double and triple Darwin's tubercle (scores 3 and 4) (Appendix B, page B41) were not identified on the right ear in all individuals and a triple tubercle (score 4) (Appendix B, page B42) was not identified on the left ear in all individuals.

The most common philtrum shape observed was the partially concave shape (score 3) (Appendix B, page B60). This shape accounted for 22.4% (n=49/219) (Appendix C, Table 54, pages C65 and C66) of the individuals, while a significant portion, 54.8% (n=120/219)

(Appendix C, Table 54, pages C65 and C66), exhibited an unobservable philtrum shape. The most prevalent mouth shape was a sharp mouth (score 5) (Appendix B, page B60) (18.7%, n=41/219) (Appendix C, Table 55, page C66 to C67) and most individuals had an unobservable mouth shape (57.1%, n = 125/219) (Appendix C, Table 55, page C66 to C67). A top-heavy mouth shape (score 3) (Appendix B, page B60) was not identified on any of the individuals. Majority of individuals had an intermediate upper lip (score 2) (Appendix B, page B61) (30.1%, n =66/219) and a full lower lip (score 3) (Appendix B, page B63) (32.0%, n = 70/219) (Appendix C, Table 56, pages C67-C71). Most of the individuals had teeth that were not visible enough to be scored (score 1) (Appendix B, page B66) (44.3%, n = 97/219) (Appendix C, Table 58, page C72). Much of the teeth details could not be scored as most of the individuals had a closed mouth (Appendix C, Tables 58 and 59, pages C72 to C73). Most of the individuals had no mouth abnormality (47.5%, n = 104/219) (Appendix C, Table 60, pages C73 to C74), as seen by score 1 (Appendix B, page B67).

The most prominent jawline shape was oblique slope (score 2) (Appendix B, page B69). This shape accounted for 46.6% (n=102/219) of individuals (Appendix C, Table 62, page C76). Additionally, 99.5% of the individuals showed no jowl prominence (score 1) (Appendix B, page B69), as noted in the same table on page C76 of Appendix C. The facial hair above the upper lip, below the lower lip, on the right side, on the left side, chin, and neck exhibited predominantly uniform colouration (Appendix C, Tables 65 to 70, pages C79 to C91) (score 2) (Appendix B, pages B72-B83). Majority of the individuals had no forehead creases, vertical glabellar lines, nasion creases, bifid nose crease and periorbital creases (crow's feet) (Appendix C, Tables 71 to 76, pages C92 to C101) as indicated by score 1 (Appendix B, pages B85-B93).

Most individuals did not have the right lower lid crease, left lower lid crease, right infraorbital crease, left infraorbital crease, upper circumoral striae, lower circumoral striae, mentolabial sulcus, right nasiolabial crease, left nasiolabial crease, right marionette lines and left marionette lines traits (Appendix C, Tables 77 to 86, pages C101 to C114) as noted by score 1 which represents no facial lines (Appendix B, pages B93-B106). Most individuals also did not present or demonstrate a cleft chin, right and left buccal folds lines and wrinkles on neck (Appendix C, Table 87 to 90, pages C114 to C119), as depicted by score 1 (Appendix B, pages B107-B112).

Within the entire sample, 21.9% (n=48/219) of individuals (Appendix C, Table 91, pages C119 and C120) exhibited scars, as indicated by score 2 (Appendix B, page B112). The majority of

individuals, comprising 60.7% (n=133/219), did not have any skin marks (Appendix C, Table 91, pages C119 to C120). Among the individuals with skin marks, 10.5% (23/219) (Appendix C, Table 91, pages C119 to C120) displayed dark/light patches, identified by score 10 (Appendix B, page B112). Most individuals, comprising 85.4% (n=187/219) (Appendix C, Table 91, pages C119 to C120), did not have facial piercings (score 1) (Appendix B, page B113). However, 8.2% (n=18/219) (Appendix C, Table 91, pages C119 to C120) of individuals had ear piercings (score 2) (Appendix B, page B113). Many individuals, 78.1% (n=171/219) (Appendix C, Table 91, pages C119 to C120), did not wear makeup (score 1) (Appendix B, page B113) but it is important to note that the rest of the individuals were not able to be scored for makeup presence or absence (21.9%, 48/219) (Appendix C2, Table 91, pages C119 to C120). Most individuals did not have facial or neck tattoos (87.2%, n = 191/219 and 57.1%, n = 125/219, respectively) (Appendix C, Table 91, pages C119 to C120) (score 1) (Appendix B, page B113), however, the neck area was often not observable enough to confirm whether there was a neck tattoo.

4.2 Repeatability and reproducibility of the WFCS

Overall, across all feature traits, the average intra-observer agreement was almost perfect ($\kappa = 0.95$) and the average inter-observer agreement was substantial ($\kappa = 0.73$). Out of 412 traits, intra-observer agreement showed that 380 traits had an almost perfect to perfect agreement, 28 traits had substantial agreement and four traits had moderate agreement. Inter-observer agreement showed that 165 traits had an almost perfect to perfect agreement, 120 traits had substantial agreement, 101 traits had moderate agreement, 15 traits had a fair agreement and 4 traits had slight to no agreement (Appendix C Table 93, pages C135-C151). The traits showing nearly perfect to perfect agreement between different observers (inter-observer agreement) were largely in line with those displaying nearly perfect to perfect agreement in intra-observer agreement, with the exception of six traits. These six were right ear antitragus shape, bifid nose crease shape, left eyebrow arch prominence, nasal dorsum relative length, upper lip vermilion border definition and relative neck height. These six traits had a substantial agreement in repeatability (Appendix C, Table 93, pages C135-C151).

The four traits that had a moderate agreement in intra- observer agreement were vertical face proportions ($k=0.577$), nasal bridge shape ($k=0.429$), nasal alae shape (frontal) ($k=0.583$) and facial hair on chin outline definition ($k=0.577$) (Appendix C, Table 93, pages C135-C151). The 15 traits that had a fair agreement in inter-observer were cranial vault lateral profile ($k=0.221$),

face frontal contour ($k=0.219$), forehead hairline shape ($k=0.277$), forehead slope and contour ($k=0.259$), overall nose shape (profile) ($k=0.324$), nasal apex shape ($k=0.231$), nasal base deviation ($k=0.375$), left ear helix size ($k=0.31$), right ear antihelix shape ($k=0.318$), jawline shape ($k=0.355$), nasal alae relative width ($k=0.268$), left ear crura of antihelix (superior) crus shape ($k=0.375$), lower circumoral striae distribution ($k=0.388$), chin prominence (profile) ($k=0.282$) and submental fat (double chin) ($k=0.286$) (Appendix C, Table 93, pages C135-C151). The traits that had slight to no agreement in inter-observer agreement were skin luminance ($k=0.091$), vertical face proportions ($k=0.042$), overall eyebrows symmetry ($k=0.167$) and right ear helix shape ($k=0.130$) (Appendix C, Table 93, pages C135-C151).

4.3 Performance of composite facial comparison scores and averaged agreement kappa scores using the WFCS

The metrics used to assess facial comparison matches based on the WFCS trait scoring, namely average kappa agreement scores and composite facial comparison scores, showed different patterns across wildtype and CCTV image capture conditions (Tables 4.3.1 and 4.3.2). Overall, the mean and median of the average kappa scores were notably higher for WT images, both for matching and non-matching comparisons (Table 4.3.1), representing a greater level of agreement between scores in WT images in general. The opposite was seen with composite facial comparison scores with a notably greater score in CCTV images (Table 4.3.2), representing a greater difference in facial trait morphology scores for each of those comparisons. Between matches and non-matches, expectedly, both the average kappa scores and the comparison scores showed more alignment between facial trait morphology in faces that were matching both in CCTV and WT images (Tables 4.3.1 and 4.3.2). The standard deviation of the average kappa scores was lower in WT images, both for matching and non-matching comparisons when compared to the CCTV groups of matches and non-matches. Overall, standard deviation was lower in the average kappa agreement scores. The standard deviation in the composite facial comparison scores was higher in the CCTV match and non-match groups when compared to the WT match and non-match groups. It was lowest in the WT match comparisons.

Table 4.3.1: Average kappa scores descriptive statistics across conditions and ground truth.

	Average kappa scores			
	Wildtype match	Wildtype non-match	CCTV match	CCTV non-match
Mean	0.90	0.58	0.33	0.29
Median	0.92	0.61	0.32	0.28
Standard deviation	0.09	0.10	0.11	0.14
Minimum	0.55	0.36	0.15	0.13
Maximum	0.98	0.73	0.56	0.51

Table 4.3.2: Comparison score descriptive statistics across conditions and ground truth.

	Composite facial comparison scores			
	Wildtype match	Wildtype non-match	CCTV match	CCTV non-match
Mean	2.78	7.69	41.32	38.88
Median	2.0	6.97	42.60	37.54
Standard deviation	2.75	4.39	15.10	15.56
Minimum	0.00	2.29	21.41	18.41
Maximum	9.94	15.07	66.23	60.58

The receiver operating characteristic (ROC) curve for the composite facial comparison scores obtained in wildtype images demonstrated an overall good performance of the composite facial comparison scores in the optimal image conditions of wildtype photographs (AUC = 0.839) (Figure 4.3.1). From this analysis, a comparison score threshold of 5.1 was selected for the WT comparisons based on the best compromise between a high true positive rate (TPR) (sensitivity= 0.81) and low false positive rate (FPR) (1-specificity= 0.40) (Figure 4.3.1). With this threshold, any comparison score of 5.1 or below was considered suggestive of a match in WT target images. Under the CCTV condition, the composite facial comparison scores obtained (AUC=0.475), indicating limited discriminative ability of the composite facial comparison scores in distinguishing between different classes in CCTV images (Figure 4.3.2). From the ROC analysis, a threshold of 50.00 for the composite comparison score was selected as a compromise between TPR (0.65) and FPR (0.60) (Figure 4.3.2).

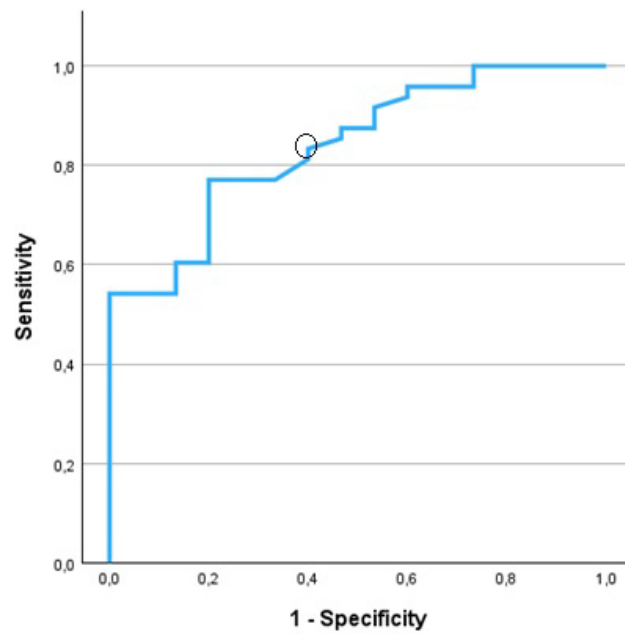


Figure 4.3.1: Receiver operating characteristic (ROC) curve analysis for composite facial comparison scores in wildtype photographs.

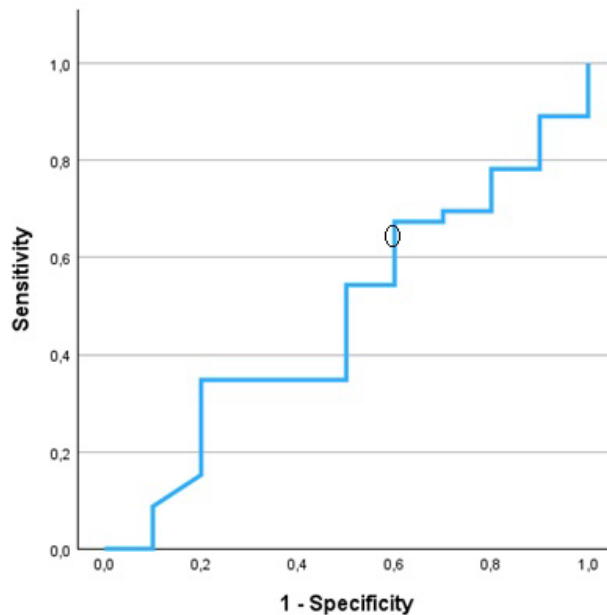


Figure 4.3.2: Receiver operating characteristic (ROC) curve analysis for composite facial comparison scores under the CCTV condition.

The average kappa agreement scores obtained for WT images demonstrated an overall good performance under optimal image conditions of WT photographs (AUC = 0.981) (Figure 4.3.3). Based on the ROC curve analysis, a threshold average kappa agreement scores of 0.65 was selected, based on a compromise between a TPR of 0.98 and FPR of 0.27 in this condition (Figure 4.3.3). As such, average kappa scores of 0.65 and above were considered to indicate a match between facial images in WT target images. In the CCTV images, the resulting AUC value was calculated to be 0.611 (Figure 4.3.4), indicating moderate discriminative ability of the average kappa agreement scores in distinguishing between different classes under this condition. From this analysis, a threshold average kappa score of 0.192 was selected (TPR = 0.89; FPR = 0.60) in this condition (Figure 4.3.4).

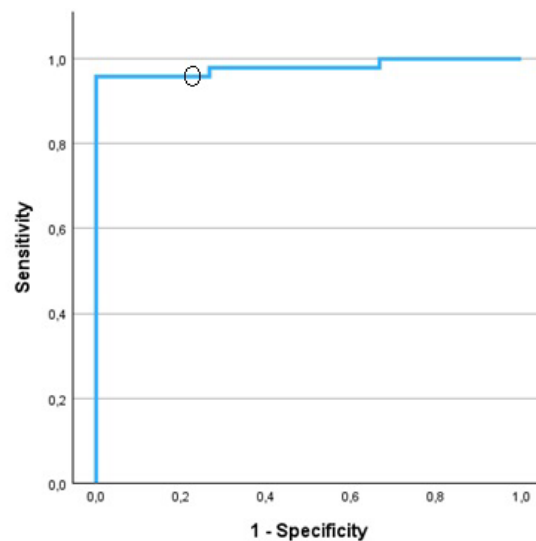


Figure 4.3.3: Receiver operating characteristic (ROC) curve analysis for average kappa agreement scores in wildtype photographs.

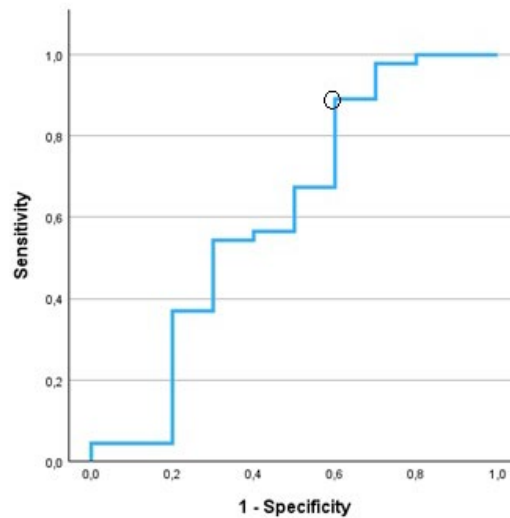


Figure 4.3.4: Receiver operating characteristic (ROC) curve analysis for average kappa agreement scores under the CCTV condition.

The average kappa agreement scores were overall better at identifying true positives and false negatives under both WT and CCTV conditions (Table 4.3.3). True negatives and false positives were equally identified by both the average kappa agreement scores and composite facial comparison scores in the CCTV condition (Table 4.3.3). In the WT, more true negatives and less false positives were identified by the average kappa agreement scores (Table 4.3.3).

The overall performance was better in the average kappa agreement scores when compared to the composite facial comparison scores (Table 4.3.4 and Table 4.3.5). This improved performance of the average kappa agreement scores was observed in both CCTV and WT conditions (Table 4.3.4 and Table 4.3.5). In addition, both metrics performed better in the WT photographs than the CCTV images. Sensitivity was higher in both the average kappa agreement scores and composite facial comparison scores under the WT condition when compared to the CCTV condition (Table 4.3.4 and Table 4.3.5), meaning that true matches were better identified in the WT condition by both these metrics. For the average kappa agreement scores, sensitivity was also very high in CCTV (Table 4.3.4). Specificity was maximized more in the WT condition by both the average kappa agreement scores and composite facial comparison scores (Table 4.3.5), meaning that these metrics were better at excluding true non-matches in the WT condition. There was also higher prevalence in the CCTV conditions for both the average kappa agreement and composite facial comparison

scores (Table 4.3.4), this suggests that in the CCTV condition, there were more instances of positive cases or matches compared to the WT. Balanced accuracy was higher in the average kappa agreement scores under both conditions but was highest under the WT condition (Table 4.3.4 and Table 4.3.5), meaning that average kappa agreement scores were better at correctly identifying both positive and negative instances, considering both sensitivity and specificity.

Table 4.3.3: The confusion matrices for the average kappa agreement scores and composite facial comparison scores under the CCTV and WT image capture conditions.

TP= True positive, FP= False Positives, FN= False Negatives and TN= True Negatives.

Predicted values	Metric	Image capture condition	Actual values	
	Average kappa agreement scores	CCTV	TP=41	FP=6
			FN=5	TN=4
	Composite facial comparison scores		TP=30	FP=6
			FN=16	TN=4
	Average kappa agreement scores	WT photographs	TP=47	FP=4
			FN=1	TN=11
	Composite facial comparison scores		TP=39	FP=6
			FN=9	TN=9

Table 4.3.4: Predictive quality values calculated in average kappa agreement scores and composite facial comparison scores under the CCTV condition.

	Average kappa agreement scores under the CCTV condition	Composite facial comparison scores under the CCTV condition
Sensitivity	0.89	0.65
Specificity	0.40	0.40
Prevalence	0.82	0.82
Precision (PPV)	0.87	0.83
Negative Predictive value	0.18	0.18
Balanced Accuracy	0.80	0.61

Table 4.3.5: Table showing Predictive quality values calculated in average kappa agreement scores and composite facial comparison scores under the WT condition.

	Average kappa agreement scores under the WT condition	Composite facial comparison scores under the WT condition
Sensitivity	0.98	0.81
Specificity	0.73	0.60
Prevalence	0.76	0.76
Precision (PPV)	0.92	0.87

Negative Predictive value	0.92	0.50
Balanced Accuracy	0.92	0.76

4.3.1 Comparison of averaged agreement kappa scores and composite facial comparison scores

When comparing average kappa agreement scores between CCTV and WT images, the average kappa agreement scores were found to be significantly higher in the WT condition (mean rank=87.5) than the CCTV condition (mean rank=29.23) (Mann-Whitney-U = 3 487, $p < 0.001$, $n=119$) (Figure 4.3.5). This suggests that average kappa scores performed significantly better in WT over CCTV images. The average kappa agreement score was higher in the match (mean rank=63.45) and lower in the non-match group (mean rank=46.92) (Mann-Whitney-U value= 848, $p=0.033$, $N=119$) (Figure 4.3.6). This means that there was better agreement when assessing matches compared to non-matches.

The composite facial comparison score was higher in the CCTV condition (mean rank=91.50) and lower in the WT condition (mean rank=32.00) (Mann-Whitney-U value= 0,000, $p < 0.001$, $N=119$) (Figure 4.3.7). This suggests that the composite facial comparison score performed significantly better in the WT over CCTV. Majority of the composite facial comparison scores were lowest in the match group (mean rank=58.65) when compared to the non-match group (mean rank=65.08) (Mann-Whitney-U value= 1302, $p=0.407$, $N=119$) (Figure 4.3.8). The differences were, however, not statistically significant.

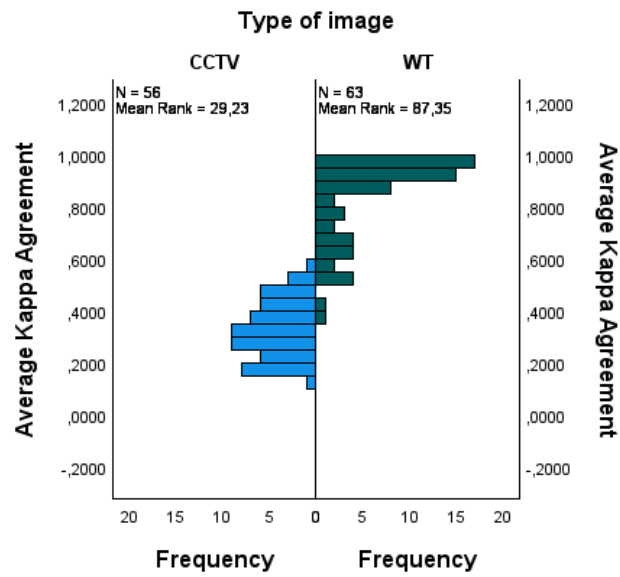


Figure 4.3.5: Distribution of average kappa agreement between CCTV and WT conditions.

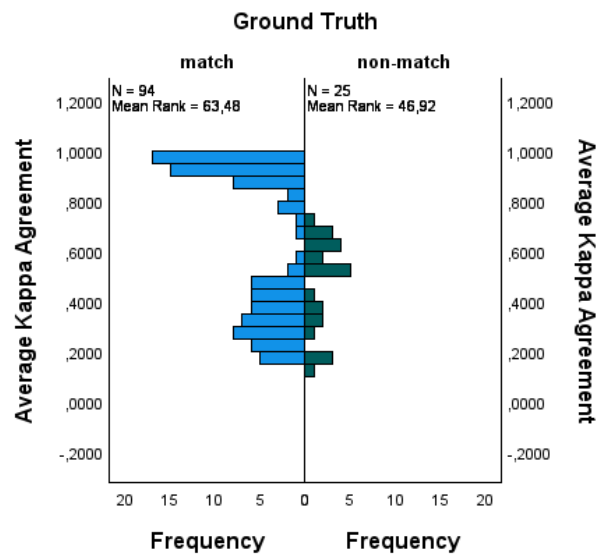


Figure 4.3.6: Distribution of average kappa agreement across categories of ground truth: match and non-match.

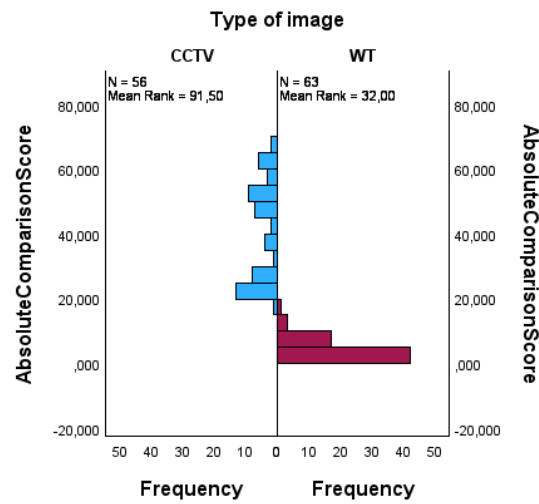


Figure 4.3.7: Distribution of the composite facial comparison score across types of image conditions: CCTV and WT.

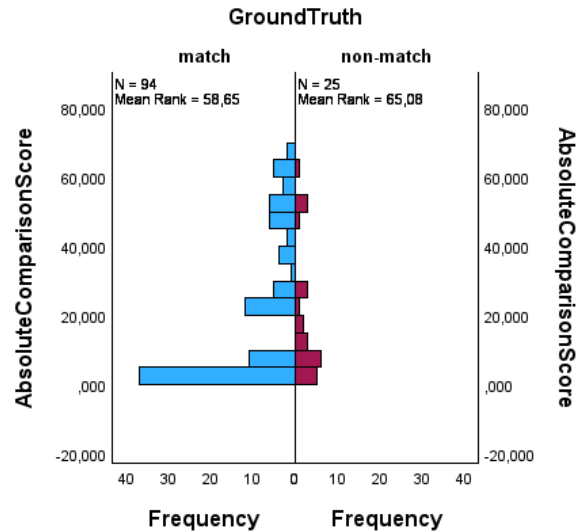


Figure 4.3.8: Distribution of composite facial comparison scores across categories of ground truth: match and non-match.

When investigating the differences between the average kappa agreement scores and the matches and non-matches in CCTV and WT images, significant differences were identified between the groups ($p < 0.001$, $n=119$, $df = 3$, H statistic=94,848) (Figure 4.3.9). The average kappa agreement scores were higher in the WT match, followed by the WT non-match. The average kappa agreement scores were higher for the CCTV match when compared to the CCTV non-match, indicating that average kappa agreement score based matches performed better in WT than CCTV as the score was significantly higher when image condition was optimal. In addition, since higher average kappa agreement scores were also more associated with matching images, suggesting a good estimator for comparison, it highlights the reliability of this metric in discerning true matches.

Looking at the differences between the composite facial comparison score and the matches and non-matches in the two conditions: CCTV and WT. There were significant differences found between the groups ($p < 0.001$, $n=119$, $df = 3$, H statistic=92,763) (Figure 4.3.10). The composite facial comparison scores were highest in the CCTV match group, followed by the CCTV non-match group. The composite facial comparison scores were lowest in the WT match, followed by the WT non-match group. This suggests that the composite facial comparison scores were more reliable in identifying true matches in the WT condition as seen by the low values and were not good at discerning matches in the CCTV condition.

There were significant differences in the average kappa agreement scores between CCTV non-match and WT non-match, CCTV non match and WT match, CCTV match and WT non-match, CCTV match and WT match and, WT non-match and WT match groups (Table 4.3.6). There was no significant difference between the CCTV non-match and match groups (Table 4.3.6). Negative test statistics mean that the observed difference between the two groups is in the opposite direction of the null hypothesis which was that the distribution of average kappa agreements is the same across categories of matches by type.

Significant differences were found in the composite facial comparison scores between WT match and CCTV non-match, WT match and CCTV match, WT non-match and CCTV non-match and, WT non-match and CCTV match groups (Table 4.3.7). No significant differences were found between WT match and WT non-match and, CCTV match and non-match groups (Table 4.3.7). Negative test statistics mean that the observed difference between the two groups

is in the opposite direction of the null hypothesis which was that the distribution of composite facial comparison scores is the same across categories of matches by type.

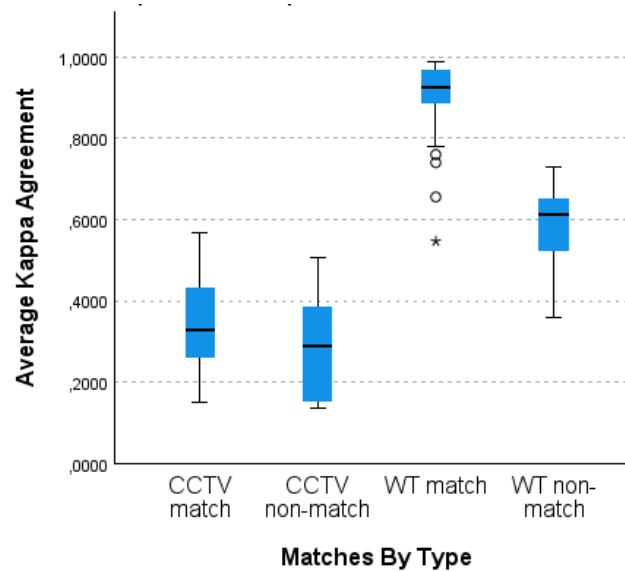


Figure 4.3.9: Graph showing the relationship between the average kappa agreement scores and matches by type of condition. The star and the circles represent that there was a significant association found.

Table 4.3.6: A pairwise comparison of matches by type for the average kappa agreement scores.

Sample 1-Sample 2	Test statistic	Standard error	Adjusted significance
CCTV non-match-CCTV match	6,491	12,036	1,000
CCTV non-match-WT non-match	-38,367	14,083	0,039
CCTV non-match-WT match	-71,288	11,991	0,000
CCTV match-WT non-match	-31,875	10,257	0,011
CCTV match-WT match	-64,796	7,118	0,000
WT non-match-WT match	32,921	10,204	0,008

The Bonferroni adjusted significance level involves dividing the original significance level by the number of comparisons being made.

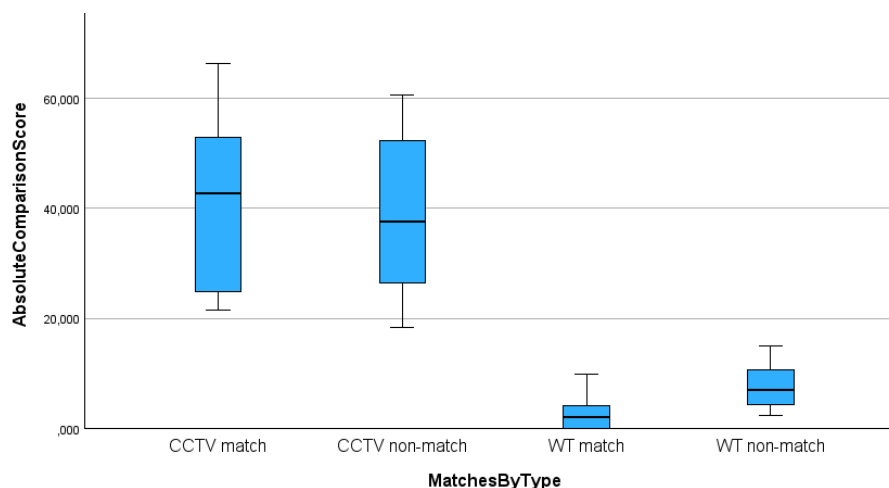


Figure 4.3.10: Graph showing the relationship between the composite facial comparison score and matches by type of condition.

Table 4.3.7: A pairwise comparison of matches by type for the composite facial comparison scores.

Sample 1-Sample 2	Test statistic	Standard error	Adjusted significance
WT match-WT non-match	-21,350	10,195	0,217
WT match-CCTV non-match	63,383	11,980	0,000
WT match-CCTV match	64,844	7,111	0,000
WT non-match-CCTV non-match	42,033	14,070	0,017
WT non-match-CCTV match	43,494	10,247	0,000
CCTV non-match-CCTV match	1,461	12,025	1,000

The Bonferroni adjusted significance level involves dividing the original significance level by the number of comparisons being made)

Chapter 5: Discussion

This study was aimed at testing the Wits Facial Classification Scheme (WFCS) for forensic facial comparison in a sample of black South African males that are aged between 18 and 35. The WFCS is a comprehensive classification scheme with detailed descriptions of various facial feature traits. The most prevalent and absent facial morphological traits were determined across different viewing angles and capture conditions for this cohort. Inter-observer agreement was found to be 73%, indicating substantial agreement among different observers in identifying facial morphological traits. Moreover, the intra-observer agreement was high at 95%, suggesting consistent assessments by the same observer across multiple observations. The WFCS demonstrated superior performance using two analytical approaches, namely average kappa agreement scores and composite facial comparison scores, particularly in the WT condition. When comparing the WFCS's accuracy between WT and CCTV images, it was found to be more accurate in the WT condition. The predictive quality measures, evaluated through two distinct analytical approaches for testing performance, revealed that overall, the WFCS demonstrated superior performance when assessed using average kappa agreement scores compared to composite facial comparison scores.

5.1 Facial feature trait morphology in black South African males

The most prevalent skin colour in this study was type V (dark brown skin). The darker skin tones commonly observed in African individuals are a result of heightened skin pigmentation, primarily determined by melanin levels (Iwuala & Taylor, 2022). Melanocytes, the pigment-producing cells in the skin, are present in similar numbers in individuals regardless of their skin colour (Iwuala & Taylor, 2022). Individuals can be misidentified based on pigment, and other morphological features, due to biases in FRTs (Perkowitz, 2021). To ensure that these biases are reduced in facial identification, comprehensive classification schemes are needed to encompass a wide range of facial features and account for the diversity of various populations, including differences in skin pigment. The application of the Fitzpatrick skin phototype classification system (Fitzpatrick, 1988) in this study revealed noteworthy patterns among the individuals assessed. Consistent with the limitations discussed in the literature (Taylor & Cook-Bolden, 2002; Gupta & Sharma, 2019, Osto *et al.*, 2022), the majority of individuals scored were found to have dark brown skin tones (phototype V). Given the prevalence of individuals with brown skin tones in the current study sample, it becomes evident that the Fitzpatrick scale's original framework, developed primarily for assessing lighter skin tones (Taylor &

Cook-Bolden, 2002), may not be sufficiently inclusive for populations with darker skin. These observations align with the need for revised or expanded classification systems that better accommodates the spectrum of skin pigmentation, particularly among individuals of African, Hispanic/Latino, Native American, and Asian descents (Taylor & Cook-Bolden, 2002). By recognising and addressing the limitations of existing classification systems, including the Fitzpatrick scale, future research and clinical practice should strive to develop more inclusive approaches for evaluating skin pigmentation and its implications both for dermatological care and forensic applications among diverse populations.

The most common cranial vault shape observed from a lateral perspective in individuals of this study was an arched or gently curved contour. This finding contrasts with a study conducted on United States' (US) white and black individuals, which reported a predominance of rounded cranial vault shapes in white individuals and pentagonal/angular shapes in black individuals (Murphy & Garvin, 2018). These discrepancies underscore the importance of recognising the variability within population groups and caution against applying stereotypical features to specific demographics without considering individual differences. The differences in cranial vault shapes between these populations may be influenced by factors such as genetic ancestry and environmental influences (Jantz, 2001; Goovaerts *et al.*, 2023). The phenotypic craniofacial pattern, including cranial vault shape, can undergo changes in response to periods of significant admixture and gene flow among populations (Martínez-Abadías *et al.*, 2006). Improvements in socio-economic conditions, particularly in terms of nutrition and healthcare access, may also impact cranial shape over time (Grine *et al.*, 2020). Geographic variation in cranial traits has been documented (Hartman, 1980), reflecting regional differences in genetic ancestry and environmental factors. Therefore, differences in cranial vault shapes observed between US Blacks and other populations, such as those in South Africa or other parts of the world, are not unexpected. A narrow cranial vault width found in this study is also in line with what was observed in a study by Jantz (2001).

The absence of certain forehead hairline shapes, such as part-line and upsweep variations, in black African male individuals may be influenced by genetic variation, ancestral background, cultural grooming practices, hair texture and density, and overall sample representation. The composition of a study sample may naturally lead to a higher prevalence of certain hairline shapes that are characteristic of a particular population group, while other styles may be less common or absent altogether. Majority of the individuals had no cranial baldness and no recession which could be attributed to the fact that they are relatively young individuals and in

men, hair loss increases with increasing age (Rhodes *et al.*, 1998), at the exclusion of genetic conditions that lead to early onset alopecia (e.g., Liu *et al.*, 2024).

In the current study, most individuals had a minimally pronounced brow ridge (supraorbital ridge). Development of this ridge is independent of age in males but instead identified genetic factors that contribute to its development, explained under the localised stress hypothesis (Russell *et al.*, 1985). According to the localised stress hypothesis, genetic factors influence the development of the supraorbital region by affecting the behaviour of bone cells, thus shaping supraorbital morphology (Russell *et al.*, 1985). In the current study's South African sample, which exhibited a minimal brow ridge, the observed craniofacial morphology may be influenced by factors such as diet diversity and texture as the mandibular mechanism has also been tied to the development of a prominent brow ridge (Hilloowala & Trent, 1988). According to this mechanism, increased muscle requirements for the temporalis muscle during mandibular movement lead to greater development of the anterior portion, which in turn stimulates bone growth of the brow ridges (Hilloowala & Trent, 1988). Individuals with higher levels of masticatory forces, such as those with a tough or fibrous diet (Kiliaridis, 2006), may experience increased bone growth in the supraorbital region in response to these stresses. It is plausible that individuals in the current study's population have a varied diet that may not include as many tough or fibrous foods. The consumption of softer or less abrasive foods could result in lower masticatory forces and reduced mechanical stress on the supraorbital region, potentially contributing to the observed minimal brow ridge development. The findings from studies in macaques and squirrel monkeys, which showed poorer craniofacial growth when fed soft diets (Kiliaridis, 2006) offer valuable parallels to our observations in the South African sample with minimal brow ridge development.

The only iris colour that was identified was brown. There were no green-hazel or blue-eyed individuals. Individuals with green/hazel or blue iris colours have a higher likelihood of developing uveal melanoma (UM), a rare form of eye cancer affecting eye tissue, compared to individuals with brown iris colours (Houtzagers *et al.*, 2020). This rarity of non-brown iris colours among black individuals in our study could potentially have implications for facial identification processes. Having non-brown iris colours in a population where brown iris colour is predominant can enhance facial identification by offering distinctive and memorable characteristics that aid in accurately matching individuals to their identities. This observation also extends to the rarity of dimples among individuals in the current study, as they may serve as effective identifiers for those who possess them. Cheek dimples, also known as *fovea*

buccalis, are typically inherited as a dominant genetic trait (Omotoso *et al.*, 2010) and they are more commonly found in females than in males (Anibor *et al.*, 2021; Omotoso *et al.*, 2021). Hence, male individuals with this otherwise rare trait may be even easier to identify.

The most common nose shape was a short nose and the least common being a Greek nose and aquiline nose shape. Nasal proportions can vary across different population groups. However, it is crucial to recognise that the size and shape of the nose alone do not distinctly define population groups such as European, Asian, or African (Leong & Eccles, 2009). Despite this, there are anatomical variations of the nose associated more often with certain population groups and genders (Shah & Frank-Ito, 2022). Anthropologists propose that nasal variations are a result of human adaptation to environmental factors (Ohki *et al.*, 1991; Romo & Abraham, 2003; Leong & Eccles, 2009; Keeler *et al.*, 2016). For example, Negus (1958) noted that populations acclimated to cold and arid climates typically exhibit prominent external noses, nostrils that angle downward, and skeletal nasal apertures that are narrower. In relation to the suggested potential relationship between nose morphology, population and environmental factors, in the context of facial identification the higher prevalence of certain nasal morphologies can reduce its benefit as an identifying feature within a geographical location or population group, while observing certain less common morphologies could aid in identification, as these unique features may be diagnostic of individual identity. With the nose being considered particularly helpful in a subjective approach to facial comparison (Bacci *et al.*, 2021a) incorporating a high level of detail in the assessment of its morphology can aid in enhancing the precision of facial identification processes.

The most prevalent ear shape in this study was a circular ear, while the least common trait of the ear was Darwin's tubercle, observed only six times on the right ear (2.7%) and fifteen times on the left ear (6.9%). Some studies have suggested a slightly higher prevalence of Darwin's tubercle in males compared to females (Peace *et al.*, 2022; Sowmya *et al.*, 2023). Characteristics of the ear, such as its shape, size, and specific landmarks, may be useful in personal identification (Benzaoui *et al.*, 2016) and potentially assisting in criminal investigations or other forensic applications (Verma *et al.*, 2016). The uniqueness of ear morphology as such can be considered crucial for facial comparison. In addition to their diagnostic value in facial identification, ears play a significant role in forensic investigations, particularly in the recovery of latent earprints from crime scenes (Dhanda *et al.*, 2011). Dhanda and colleagues (2011) have demonstrated the efficacy of techniques such as black powder and iodine fuming in developing latent earprints. These techniques reveal observable

morphological features of the ear auricle, including the helix, antihelix, tragus, and antitragus (Dhanda *et al.*, 2011), which can collectively aid in individual identification in criminal investigations.

The most prevalent philtrum shape was a partially concave philtrum and a notable number of individuals exhibited an unobservable philtrum shape. The presence of hair above the upper lip made it difficult to observe the philtrum, this was also the case in a study by Roelofse and colleagues (2008) which investigated common and rare morphological features in South African males in an effort to improve facial identification. The philtrum is found to differ between populations and sexes (Kishi *et al.*, 2011). In a Nigerian sample the most common philtrum shape was a triangular (Abdularasheed & Eneye, 2013), dissimilar to the results from the current study. However, with the difficulty in identifying its morphology clearly either due to image quality, or facial hair it should not be considered a crucial trait for identification.

The most common jawline shape was an oblique shape and other studies show that men tend to have a square face with a prominent jawline (Yu *et al.*, 2023), a square face would mean the individual has a right-angled jawline. In this study, a right-angled jawline was the least observed jawline morphology with only 9.1% of individuals having this trait. This rarity of the trait suggests its potential diagnostic significance in identifying individuals, given its infrequent occurrence within the sampled population.

Almost all the individuals except for one, had no jowl prominence. The presence of jowls is the result of several factors, including the interaction of specific fat compartments (mandibular septum and submandibular fat compartments) and the overlying skin (Reece & Rohrich, 2008). This interaction, combined with dynamic forces associated with aging, contributes to the development of jowling (Reece & Rohrich, 2008). As such, with the individuals in the present study being young, it is expected that they would be less likely to have prominent jowls, hence, a target's age should be considered when assessing certain traits such as jowls for identification purposes.

Facial hair tended to have uniform colouration, which could be attributed to the young age of the individuals. Majority of the individuals also did not have facial creases or lines which could also attributed to their young age. Repeatedly expressing emotions leads to the development of hyperfunctional facial lines and these lines are often interpreted as a visible indicator of aging (Charles *et al.*, 2003). Only one individual had a conjoined eyebrow and according to the

author's knowledge, no study has focused on the prevalence of conjoined eyebrows among different population groups.

In, terms of identification of jowls, facial lines, uniform facial hair colouration and other traits generally associated with age are considered less stable (Facial Identification Scientific Working Group, 2021) and may not be ideal indicators of identity, particularly if there is a time difference between target and control image capture. For instance, facial lines and wrinkles can deepen (Swift *et al.*, 2021) or change in appearance over time, making it challenging to precisely match them between images taken at different points in time. Similarly, uniform facial hair coloration may be subject to alterations due to grooming practices, dyeing, or natural greying (Gowda, 2016), further complicating the identification process.

A majority of individuals did not exhibit skin marks, such as moles or other skin pathologies, they only displayed dark or light patches which signifies a skin pigmentation disorder. Recent work has found potential benefits of using facial nevi (moles) as secondary identifiers (Cappella *et al.*, 2024), this is still early-stage research and moles are known to change morphology over time and with age (Scope *et al.*, 2016). However, the observation that skin marks that are displayed as darker or lighter skin patches raises pertinent questions regarding our understanding of skin pathology in diverse populations, particularly individuals with darker skin tones. Historically, medical research and education have primarily focused on the presentation of skin pathologies in lighter-skinned populations, potentially leading to disparities in diagnosis and treatment among individuals with darker skin tones (Alchorne *et al.*, 2024). Darker skin tones react differently to various factors and diseases present differently compared to fairer skin (Alchorne *et al.*, 2024). While some research has been undertaken to improve understanding of darker skin (Alchorne *et al.*, 2024), there is still a lot of work to be done. This knowledge gap is particularly relevant in the context of facial identification, where accurate recognition of facial features, including moles and other distinguishing marks, is crucial for forensic and clinical purposes.

Overall, traits with consistently higher prevalence within the black South African sample (e.g., brown coloured irises, partially concave philtrum, oblique jawline etc), may be less useful for identification as they would be less unique. However, traits that do not present at all in certain populations (e.g., epicanthic fold) or age (e.g., facial lines, jowls) groups may also be less useful in a feature list applied to such a group. As such, in improving facial feature-based identification methods, considering whether feature lists should be specific and tailored or

extensive and applicable to a wider range of individuals is important. The current best practice feature list by FISWG (Facial Identification Scientific Working Group, 2018) avoids this problem by incorporating descriptors left to the analyst to interpret and subjectively analyse. The WFCS on the other hand would have to undergo revisions to be either made more specific should that be considered best practice, as it was originally designed to be a broad and inclusive classification scheme. Should the preference be to be as inclusive as possible, which would aid in wide range application and testing, certain traits (e.g., skin colour) should be revised to incorporate a more representative range of classifications.

5.2 Dependency on the view and image conditions

Overall, the study showed that the visibility of traits is highly dependent on the view of the image. For example, features of the right side (e.g., the right ear), were not observable in the left 45° and left lateral views. Features that required to be scored from an anterior (portrait) view were not clearly observable in the lateral view and vice versa. Majority of the ear features could only be observed in the lateral view and this posed a problem in faces that were positioned anteriorly as many of the ear features could not be scored. This is a disadvantage as ears have been said to be very distinct that they are diagnostic of identity (Porter & Doran, 2000; Benzaoui *et al.*, 2016; Towler *et al.*, 2017; Bacci *et al.*, 2021a). The results of this study also show a very good kappa agreement (intra and inter-observer agreements) between the ear feature traits, indicating that ear features are reliable traits to score. Certain features, such as facial hairs, were observable across nearly all viewing angles. However, due to limitations in quality in CCTV images, the visibility from certain perspectives was not consistent.

More features could be scored in WT photographs when compared to the CCTV stills as depicted by the high number of zero scores. Simply put, the CCTV stills were of a lower quality and the WT photographs were of high quality and allowed better overall visibility of traits. Other studies have also shown that uncertainty in conclusions seems to increase in lower quality images and forensic experts feel less certain when scoring images of poor quality (Norell *et al.*, 2015). Low resolution or low-quality images lack sufficient details of facial features (Bacci *et al.*, 2021b, Bacci *et al.*, 2024) and this can impede the correct identification of individuals. Beyond resolution, images with darker lighting also have an effect on visibility of certain facial features and can result in higher false positive rates (Bacci *et al.*, 2024), when using the FISWG feature list.

Most features like facial lines, facial hair, skin marks, scars, and tattoos, were difficult to observe in the CCTV stills due to the poor image quality. In the WT images, overexposure made it difficult to discern the edges of certain facial features and shadows cast over specific features posed challenges in accurately scoring them, both in the CCTV and WT conditions. Under- and overexposed images as well as shadows across the face are common challenges that affect image quality in forensic facial comparison (Bacci *et al.*, 2021e; Bacci *et al.*, 2024). Overall, assessing features in the CCTV stills proved challenging due to their lack of clarity, making it difficult to discern details. The images became highly pixelated when zoomed in as the images already had a low resolution.

In the CCTV cohort alone, no features were observable in more than 80% of the individuals. By setting a threshold of 20% zeros (equivalent to 80% scorable traits), the aim was to ensure that the majority of traits are reliably observed across different conditions. This threshold aligns with the notion of reliability commonly accepted in forensic sciences. If a trait can be reliably identified in at least 80% of individuals, it suggests a reasonable level of consistency and validity in the analysis, similar to the benchmark used in forensic techniques like fingerprint analysis (Stern *et al.*, 2019). This ensures that data are of sufficient quality to support accurate and reliable analyses.

Only 14 traits were observable in both CCTV and WT conditions. The remainder were not discernible in CCTV. The indiscernibility of these feature traits can potentially be attributed to several factors. Certain features, such as hairline and baldness patterns, require a high level of detail being visible, and lower quality images from CCTV recordings would not have a good enough resolution to visualise the detail of the finer hair and textures along the hairline, baldness sparseness, and with eyebrow and facial hair density, for example. Fine detail visibility is a marker of suitability of image quality for facial comparison, recent work has classified images where fine hair is visible and describable as optimal and good quality, while images with small scale features being no longer visible as poor and insufficient (Schuler & Obertova 2020; Bacci *et al.*, 2024). Inadequate or uneven lighting, positioning and distance from the subject can further obscure details in the CCTV footage (Seckiner *et al.*, 2018). Our study sheds light on the broader issue of addressing the constraints of poor-quality imagery in forensic analysis. By demonstrating the impact of these limitations on facial identification tasks, we underscore the need for innovative strategies to enhance accuracy in real-world scenarios. Other studies have tried to address the problem of image quality by averaging multiple low-resolution images of an individual's face, and they found a good performance of

this technique in improving human identification (Ritchie *et al.*, 2018). This approach should be considered in future studies involving the WFCs, or similar classification schemes, and investigate any improvement of trait visibility.

Even in low-quality images, there is usually some level of contrast between different regions of the image, allowing to observe large scale features (Schuler & Obertova 2020; Bacci *et al.*, 2024) such as the overall skin, nasal apex and jawline shape which were observable in both CCTV and WT conditions. The features that were observable in CCTV imagery, despite the remaining features being unscorable in approximately 80% of the study population, are important to discuss in further detail, as this level of image quality is more consistent with the images more often available to police services (Gibelli *et al.*, 2016).

Skin colour is so distinct (Soriano *et al.*, 2000) that it tends to stand out against backgrounds or other objects in the image, making it one of the most visually apparent features. However, it is unclear how consistently these features would be scored across different images of the same individual as lighting differences could affect the ability to match scores between images captured under different lighting conditions (Bacci *et al.*, 2021a). Certain features are generally observable despite poor image quality. Some of these features that were observable in CCTV, such as brow ridge prominence and jowl prominence may create noticeable contours or shadows, aiding its detection in CCTV stills. The nose relative length, nasal dorsum relative length and chin relative length are all central features and because of their location and relative size, they may be distinguishable even in images with a reduced clarity. The vertical face proportions and vertical eye position may maintain a relative consistency in different image conditions because of structural position and the relative nature of the assessment. The human face tends to maintain similar proportions and there is structural consistency of the eyes relative to other features on the face. The eyeballs may change position in the orbit (Moon *et al.*, 2020) and although the position of the eye (or the zygoma-orbit complex, which includes the eye socket or orbit) can be altered through tripod osteotomy (Lee *et al.*, 2012), the anatomy and positional stability of the eyes are relatively consistent features in individuals. The stability of eye anatomy and position, as noted in the current study, aligns with the findings of FISWG regarding the relative stability of facial features. Specifically, the position of the eyes, ears, and nose relative to each other remains consistent under most conditions (Facial Identification Scientific Working Group, 2021). The nasal apex shape and jawline shape were prominent features making their shapes distinguishable even in less detailed images. The nasal apex also commonly referred to as the nasal tip is typically one of the most prominent and visually

striking features on the face (Zhuang *et al.*, 2023). However, as these features are traditionally related to overall facial attractiveness many individuals seek surgical interventions such as rhinoplasty (nose reshaping surgery) (Daniel, 1987) or facial bone contouring surgeries particularly in many East Asian countries (Lee, 2015). Significant quantitative differences in facial landmarks across different population groups are known to exist (Morris *et al.*, 2007), indicating that cultural and population backgrounds play a crucial role in shaping aesthetic preferences (Lee, 2015). Hence, the desire to achieve an idealised jawline often transcends geographical boundaries, with individuals across diverse cultural backgrounds seeking to modify their jawlines through contouring procedures. This trend reflects not only the universal recognition of the jawline's importance in facial aesthetics but also the cultural nuances that influence perceptions of beauty and attractiveness. As such, these features although easily discernible despite image quality, they may not always be ideal indicators of identity due these trends in cosmetic surgery. A study conducted on the cosmetic surgery market in South Africa, however, revealed striking gender discrepancies. Specifically, the market for male cosmetic surgery was found to account for less than three percent of the total, with no indication of growth (Koekemoer, 2013). These findings strongly suggest that plastic surgery is not a common practice among males in South Africa, and hence, these traits could be considered useful in majority of settings and conditions for identification locally.

5.3 Repeatability and reproducibility of the WFCS

Overall, there was a good agreement for the intra-observer as the kappa values ranged from moderate agreement (0.41-0.60) to an almost perfect to perfect agreement (0.81-1.00). The moderate agreement found for vertical face proportions could potentially be attributed to the estimating these proportions based on the relative distance from specific facial landmarks using reference guiding lines rely on a large number of potential options (13). To address the issue of lower statistical reliability, potential solutions could include streamlining the scoring process by reducing the number of options considered or accepting a trade-off between comprehensiveness and reliability, particularly in cases where sample sizes are limited. By implementing such adjustments, future studies can strive to improve the reliability of vertical face proportion assessments while maintaining methodological rigor. Regarding the nasal bridge, although defined, it remained relatively subjective and should be improved with the inclusion of illustrations. Nasal alae shape had a moderate level of agreement that could possibly be explained by interpretation differences around shape concavity and convexity, which may have led to discrepancies in assessments. Visual aids illustrating each category can

help clarify the criteria and promote more consistent measurements. On the other hand, some traits may have been less evident in images and prone to human error. For example, the definition of the chin facial hair could have been inconsistently observed when detail was not clear enough.

Reproducibility was almost perfect to substantial for majority of facial feature traits; however, a small number were found to not be as ideal (fair and slight to no agreement). The traits that had slight to no agreement were skin luminance, vertical face proportions, overall eyebrow symmetry and right ear helix shape. Skin luminance had a low agreement as an observer was not confidently able to discern the skin luminance, therefore the disagreement was based on disagreement on the visibility of the feature trait, dependent on image quality and lighting, and not uncertainty on the morphology of the trait. Clearer instructions on when traits should be scored under certain image capture conditions and views should as such be incorporated into the WFCS and future feature lists. Vertical face proportions were scored very differently between the two observers and the reason for this could be the variability in landmark identification or measurement precision, leading to these discrepancies. The low kappa value for eyebrow symmetry may be explained by substantial discrepancies in the scores due to views. One rater may focus on scoring symmetry anteriorly while another may have also included scoring symmetry in 45 degree views. This discrepancy in the choice of views likely contributed to the observed inconsistencies in scoring. While both raters assigned zeros to many faces, the scored ones exhibited significant variation between raters. The same was observed for the right ear helix shape. To mitigate this problem, the WFCS should include guidelines specifying under which views facial traits should be scored to significantly enhance consistency across assessments.

Fifteen traits had a fair agreement in inter-observer and this could be due to a number of reasons. The differences in scores for the cranial vault lateral profile were subtle; one observer would characterise it as rounded while the other described it as gently curved. Such nuances in traits would benefit from visual aids, suggesting the use of illustrations for improved scoring accuracy. In addition, one observer opted not to score cranial vault shape if the presence of hair was potentially obscuring the morphology. Providing clear instructions as to when cranial vault shape can be assessed if head hair is present would aid in reducing this error further. In addition, illustrations could aid in assessing a number of these facial traits (e.g., hairline, forehead slope and contour, nose shape, nasal apex shape, jawline shape, the face frontal contour and forehead hairline shape), where slight nuances could result in differing interpretations. The nasal base

deviation was largely unobservable to both observers, with only two instances being scored, and notably, one of these instances was scored differently by the observers. The rarity of this trait may have amplified the impact of even a single disagreement, which may explain the low agreement statistic. The case was the same for the left ear helix size and the right ear antihelix shape where these traits were mostly unobservable to both observers and the scored ones differed.

Traits like nasal alae relative width, lower circumoral striae, and left ear crura of antihelix (superior) crus shape were frequently unobservable to both observers and had slightly different scores for those that were observed. Additionally, the inability to assess chin prominence and submental fat consistently across different individuals by different observers contributed to the low kappa values observed for these traits. To address these challenges and enhance the repeatability and reproducibility of assessments, future studies could benefit from examining a larger sample size that definitively exhibits these features. By incorporating a larger and more diverse sample, researchers can better ascertain the "true" repeatability and reproducibility of scoring these traits. This approach would not only provide more robust data but also offer insights into the extent of variability in trait visibility and scoring across a broader population.

In summary, the use of illustrations could facilitate clearer interpretation and scoring of certain facial feature traits, thereby potentially improving the reproducibility of the WFCS. The majority of discrepancies stemmed from disagreement on visibility of facial traits between the two raters, where one rater was not confident to assign a score if the entire trait was not distinctly visible. By providing clear instructions of when to consider a feature trait visible or scorable and from which view (portrait or profile and more), these errors in reproducibility should be able to be largely reduced.

Overall, the ordinal traits had better agreement when compared to the nominal traits and this may be due to the fact that ordinal traits involve ranking or ordering based on a continuum of values, such as size, severity, or prominence. This ordering may have helped facilitate a more consistent assessment between observers compared to nominal traits where there is no natural order. Observers may be more likely to agree on the relative positioning of traits along the continuum, leading to higher kappa values. As such, providing heavier weighting to these traits during a facial comparison application may benefit the accuracy of facial comparison analysis in general, whether it makes use of the WFCS or other feature lists. While ordinal traits generally demonstrated good kappa agreements compared to nominal traits, it is important to

acknowledge that some traits inherently remain nominal by definition. This distinction arises from the nature of certain features, where there is no natural order or continuum to rank or order them. Shapes, for instance, often fall into this category, as not all shapes can be easily arranged in ordinal scores due to their diverse and often subjective nature.

The WFCS demonstrated strong agreement both within the observer (95%), and between observers (73%). It is important to note that these percentages are overall percentages which included both CCTV and WT conditions. Notably, its performance surpassed that of the DMV atlas, which exhibited lower inter-observer agreement at 61% and an intra-observer agreement at 81% (Ritz-Timme *et al.*, 2011). The intra-observer agreement by the authors of a study by Roelofse and colleagues (2008) ranged from 83.89% to 99.89%. However, it is essential to consider the variation in image quality across these studies. While our study encompassed both high and low-quality images, the previous studies (Roelofse *et al.*, 2008 and Ritz-Timme *et al.*, 2011) employed optimal photographs, potentially inflating their reported agreement values. Therefore, our results provide a more comprehensive understanding of observer agreement in facial identification. In a study by Bacci and colleagues (2021a), intra-observer in photograph to photograph comparisons was 93.4% and 80.7% in photograph to CCTV comparisons and the inter-observer was 92.1% and 74.3% for photograph to photograph and photograph to CCTV comparisons, respectively. This suggests that classifications schemes are not as prone to reliability errors as previously suggested (Facial Identification Scientific working Group, 2019) and can likely be further improved to be useable in a forensic context.

5.4 Performance evaluation of the WFCS for facial comparison

The ROC curves were generated for composite facial comparison scores and average kappa agreement scores in both the WT and CCTV conditions in order to generate thresholds that can be used for the confusion matrices. Although ROC curves and AUC metrics have not been incorporated in facial comparison research previously, in the present study they were found to be good indicators of facial comparison performance and a great aid in identifying quantitative thresholds for assigning facial comparison scores and average kappa scores as matches. ROC curves have been used in other studies (e.g., O'Reilly & Nielsen, 2013) to evaluate threshold dependent statistics. The thresholds that were selected are based on the ability to maximize specificity which is the effectiveness of a test in accurately accepting a true match (also known as a true-positive rate). Maximizing specificity is crucial in forensic facial comparison (Bacci *et al* 2021b) and forensic DNA evidence (Thomson *et al.*, 2003) due to the implications of false

positives. False positives occur when the test incorrectly identifies an individual as a match when they are not (Saks & Faigman, 2008). This may lead to significant consequences in real world security and forensic scenarios such as wrongful accusation and imprisonment. Future studies investigating facial comparison with quantifiable metrics such as the ones used in the present study, should strive to make use of ROC curves and AUC statistics to provide more insightful results.

Sensitivity (true positive rate) was higher in both the average kappa agreement scores and composite facial comparison scores under the WT condition when compared to the CCTV condition. Suggesting that facial comparison, when using the WFCS, performed better under the WT condition, most likely due to the higher image quality and ability to score more features to compare between target and control facial images. Average kappa agreement scores had a high sensitivity even in CCTV images which suggests that despite differences, the poor quality and differences in sensitivity between conditions, the average kappa agreement scores performed well in identifying true positives across both conditions using the WFCS. Specificity (true negative rate) was higher in the WT condition with both the average kappa agreement scores and composite facial comparison scores but was higher when using average kappa agreement scores than in composite facial comparison scores. The average kappa agreement scores were also more stringent or conservative in classifying true negatives compared to composite facial comparison scores within the WT condition. Minimising false positives and maintaining accuracy in facial identification tasks was possible in WT images thanks to the higher quality of images compared to the CCTV condition, for both average kappa scores and composite facial comparison scores. As such, due to optimal image quality of WT images, both the average kappa scores and comparison scores were able to perform better overall. The improved performance is likely tied to the ability to visualise and score more traits in better quality images with a higher degree of confidence. Image quality is well established to affect facial comparison performance by profoundly influencing the accuracy, reliability, and efficiency of forensic facial identification processes. Higher image quality facilitates clearer, more detailed representations of facial features, enabling forensic experts to discern subtle nuances and unique characteristics crucial for accurate matching. Enhanced visibility of specific facial landmarks, reduced artefacts, and improved measurement accuracy afforded by superior image quality contribute to more precise alignment and comparison during forensic analyses (Lee *et al* 2009, Bacci *et al* 2021a-c, Bacci *et al*, 2024).

Balanced accuracy was higher in the average kappa agreement scores, than the comparison scores, under both conditions but was highest under the WT condition. The average kappa agreement scores in WT condition yielded the most accurate results overall when considering the imbalanced distribution of samples. This suggests that overall, when applied to optimal photographic images, the WFCS using the average kappa agreement score was more reliable for facial identification, offering the best balance between correctly identifying positive and negative cases. In the same image capture conditions, using the FISWG feature list balanced accuracies achieved were 99.2% for WT and 88.1% for CCTV (Bacci *et al.*, 2021a). While these balanced accuracies were better than the balanced accuracies found in the WFCS, 80% and 61% for CCTV using average kappa agreement scores and composite facial comparison scores respectively and, 92% and 76% for WT using average kappa agreement scores and composite facial comparison scores respectively, the WFCS provides a structured, repeatable framework that can be statistically tested. This structured framework facilitates repeatability and consistency in assessments, allowing for statistical testing to evaluate its reliability and validity. By providing a standardised methodology, the WFCS enables researchers and practitioners to conduct rigorous statistical analyses, ensuring robustness in facial identification procedures, while also separating the comparison step of the ACE-V method and potentially reduce the confirmation bias of analysts.

In general, higher average kappa agreement scores and lower composite facial comparison scores were seen to be significantly associated with matches respectively, suggesting that both metrics are useful for identification in their application with the WFCS. However, when comparing the performance of comparison scores and average kappa agreement scores in facial comparison using the WFCS, the average kappa scores were significantly associated with true matches more closely, across both image capture conditions. This may be justified by the fact that the comparison scores worked inversely to the average kappa agreement scores when conducting a facial comparison analysis. A high comparison score was a result of mismatch between two face images and in the current study found to be strongly associated to the poor quality of the CCTV stills. To clarify further, the computation of face scores in our analysis involved multiplying the scores by the values representing repeatability and reproducibility. In this process, if a score was assigned a zero, it was effectively excluded from the calculation and not added to the final face score. This exclusion of zeros resulted in a lower target face score for CCTV images compared to control face images. The control face images used in the current study were of high and standardised quality, ensuring that they accurately represented

the true facial morphology of the individuals depicted. Since these images were not affected by image quality issues, the scores assigned to them tended to be more representative of the actual facial features. Conversely, CCTV target images often exhibited lower image quality due to factors such as compression artefacts, poor resolution, or lighting conditions (Bacci *et al.*, 2021a). As a result, certain facial features might be less discernible or obscured in these images, leading to zeros being assigned to them during assessment. When these zero scores were excluded from the calculation, the overall face score for CCTV images tended to be lower than that of the control photos, which had fewer exclusions and thus higher composite facial comparison scores reflecting less image-related interference. When the difference was computed between these two mismatched quality images, the comparison score was greater. As such, the composite facial comparison score was notably susceptible to image quality mismatch between target and control images, suggesting that for it to be a true metric for facial comparison, images need to be of similar quality. However, inclusion of a comparison score in facial comparison analyses, may be useful to represent the level of image quality mismatch and highlight this concern during FFC application.

Overall, in the interpretation of composite facial comparison scores, it is important to consider image quality of both control and target images, when applying this metric in facial comparison applications. This also further highlights the importance of clear and high-quality images to ensure reliable and accurate identification outcomes, as well as the potential for composite facial comparison scores to provide valuable insights into the likelihood of a match between images.

5.5 Facial recognition technology and the need for human expertise

Facial identification is an emerging field, with multiple approaches to it being investigated and employed. Facial recognition technology (FRT) is generally considered the easy solution; however, it has a large number of shortfalls, including racial/population biases particularly in terms of population affinity and gender (Alvi *et al.*, 2018; Buolamwini & Gebru, 2018, Leslie, 2020; Perkowitz, 2021). Systems primarily trained on lighter-skinned faces exhibit higher error rates with darker skin tones (Grother *et al.*, 2019). While FRT offers rapid data processing, Bacci emphasises that “human oversight is crucial for due process and bias mitigation” (No author, 2023). Public trust in automatic facial recognition (AFR) is tempered by concerns over sole reliance on technology for identification (Ritchie *et al.*, 2021). Misidentification poses severe consequences, particularly for people of colour, as highlighted in a Guardian news

article (Bhuiyan, 2024). The wrongful arrest and subsequent injustices suffered by innocent individuals underscore the risks of automated identification systems, without adequate human verification further exacerbated by racial biases (Noiret *et al.*, 2022; Bhuiyan, 2024).

5.6 Limitations

The WFCS encountered limitations primarily stemming from inconsistencies in scoring traits based on image views. Additionally, certain traits necessitated specification regarding whether they should be scored in profile or portrait views. While this specification was applied to some traits, it lacked consistency across the entire trait list. As such, inclusion of specific instructions across the WFCS for when a trait should and should not be scored, based on view and obstruction of visibility will likely benefit application and reliability of the classification scheme as a whole. Low resolution target images pose a significant limitation in facial identification as they only allow for a limited number of observable traits. This constraint impedes accurate facial identification by limiting the amount of detail available for analysis and comparison. Unfortunately, low quality images are a reality faced by most FFC practitioners in forensic cases and the best potential solution is improvement of knowledge on the limitations imposed by poor image quality as well as widespread awareness of these effects in the hopes of improving surveillance system installation. The extensive and detailed nature of the WFCS can result in prolonged scoring times for facial identification experts, potentially leading to fatigue over time. Attempting to find an ideal compromise between methodological rigour with practical application should be considered in future studies.

The dataset used was limited to a specific population (young African males) and image capture conditions. Future studies should include a broader diversity of populations and a wider range of image capture conditions that are representative of forensic casework. This expansion is crucial for enhancing the dataset's applicability to real-world forensic scenarios. By incorporating individuals from diverse populations, ages, genders, and facial characteristics, the dataset would better reflect the varied demographics encountered in forensic casework. Such diversity is essential to ensure that facial comparison methods perform well under different conditions and produce accurate and dependable results across different population groups.

Chapter 6: Conclusion

The study tested the performance and repeatability of the Wits Facial Classification Scheme (WFCS) within a Black South African male population from the Wits Face Database (WFD). A number of available feature lists present with a number of problems including high subjectivity, suboptimal definitions of facial features and high intra and inter-observer error rates. This study made use of the average kappa agreement scores and composite facial comparison scores to assess the performance of the WFCS under the Wildtype (WT) photographs and CCTV conditions.

The prevalence of facial traits in the WFCS across black South African men was presented, with certain traits (e.g., pale and fair skin colours, blue or green/hazel iris colours, jowls, etc.) being absent from this population, and age group. Visibility of facial traits across views and conditions demonstrated that scoring of traits is dependent on the view and image quality.

The WFCS was found highly repeatable and reproducible, with a few traits being exceptions and recommendations of inclusion of illustrations to guide assessment of these traits as well as clearer instructions on when to exclude traits based on visibility (e.g., presence of overlying hair or poor image clarity) are recommended to ensure greater precision in facial identification applications.

The study demonstrated a better performance of the WFCS under the wildtype optimal photographic condition. Despite the lower balanced accuracy rates in CCTV, the WFCS still demonstrated considerable effectiveness in identifying individuals. These findings emphasise the importance of image quality optimisation for enhancing facial identification accuracy while acknowledging the utility of CCTV images, particularly in contexts where high-quality images may not be readily available. The superior performance of the WFCS under the WT condition compared to CCTV highlights the influence of image quality on the precision of facial identification methods.

Moving forward, efforts should be directed towards further refining the WFCS, including initiatives such as the integration of illustrative aids to help further clarify each type of trait, and clear instructions of when to exclude a trait from scoring. Moreover, awareness should be raised on the consistent concerns of image quality in facial comparison across all methods used, so as to encourage improvement of CCTV installations in order to ensure more precise and

dependable facial identification results, ultimately aiding law enforcement agencies in their efforts to combat crime effectively and uphold justice.

6.1 Recommendations

The WFCS could benefit from having illustrations to help guide the assessment of different facial traits. Some features should be more refined to account for the diverse range of facial features seen in different populations. While certain features, such as a cowlick hairline and extremely fair skin (type I), were not found in this population group, it is important to recognise that most facial features are universal and can be found across various populations. The primary difference lies in the frequency with which these features occur in different groups. Furthermore, African individuals exhibit a range of skin types, and there are instances where individuals present with fair skin types (for example, albinism should be taken into consideration). Therefore, rather than recommending the absolute exclusion of these features, it is suggested that these features are likely to be encountered less frequently and should be given less weighting in future studies. A broader, more inclusive yet sufficiently detailed list that encompasses all populations is more applicable and comparable as opposed to a population specific one. The WFCS must undergo testing on diverse population groups to ascertain its broad applicability across different demographics such as age, sex, and various capture conditions before it can be deemed suitable for forensic applications in real-world settings.

There should be awareness on image quality and how it can affect FFC and human identification. Collaborations with engineers and technologists can be established to develop advanced imaging technologies that enhance image quality in CCTV systems. This could involve exploring new camera technologies, image processing algorithms, or software enhancements. Additionally, workshops, seminars, or training sessions can be conducted to educate CCTV operators and technicians about the importance of image quality for facial identification purposes. Guidance must also be provided on optimal camera placement, lighting conditions, and maintenance procedures to ensure high-quality images. Lastly, there should be advocates for industry standards and guidelines that prioritise image quality in facial identification applications. There should be collaborations with government agencies, industry organisations, and other stakeholders to promote best practices and regulations that support improved CCTV installations.

Regarding the WFCS being extensive and taking considerable time to apply, training and support to facial identification experts can be provided to improve their efficiency and

effectiveness in using the WFCS and guidance must be offered on best practices for scoring and strategies for managing fatigue during prolonged sessions. There should also be an investment in research and development efforts to explore new technologies and methodologies for facial identification that can reduce scoring times without compromising accuracy.

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Appendix A: Ethical clearance

 UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG	HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

Office of the Deputy Vice-Chancellor (Research and Innovation)

TO: Ms N Matine
School of Anatomical Sciences
Medical School
University

E-mail: 1692793@students.wits.ac.za

CC: Supervisor: Drs N Bacci, B Billings and J Davimes
<Nicholas.Bacci@wits.ac.za>
and <HREC-Medical Research Office@wits.ac.za>

FROM: Mr Iain Burns
Human Research Ethics Committee (Medical)
Tel: 011 717 1252

E-mail: Iain.Burns@wits.ac.za

DATE: 2022/12/01

REF: R14/49

PROTOCOL NO: **M2211117** (This is your ethics application reference number. Please quote it in all enquiries, oral or written, relating to this study.)

PROJECT TITLE: *Testing the Wits Facial Classification Scheme (WFCS) for forensic facial comparison in Black African males*

Please find attached the Clearance Certificate for the above project. I hope it goes well and that an article in a recognized publication comes out of it. This will reflect well on your professional standing and contribute to Government funding of the University.



MSWorks2000/Iain0007/Clearscan.wps



R49 Ms N Matine

**HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
CLEARANCE CERTIFICATE NO. M2211117**

NAME: Ms N Matine
(Principal Investigator)

DEPARTMENT: School of Anatomical Sciences
Medical School
University

PROJECT TITLE: *Testing the Wits Facial Classification Scheme (WFCS) for forensic facial comparison in Black African males*

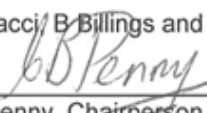
DATE CONSIDERED: Ad hoc

DECISION: Approved unconditionally

CONDITIONS: Sub-study under M17/10/26

NOTE: If contact information regarding student study participants is required, please contact the Registrar's office - <Nicoleen.Potgieter@wits.ac.za>

SUPERVISOR: Drs N Bacci, B Billings and J Davimes

APPROVED BY: 
Dr CB Penny, Chairperson, HREC (Medical)

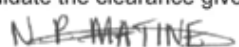
DATE OF APPROVAL: 2022/12/01

This Clearance Certificate is valid for 5 years from the date of approval. An extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office secretariat on the 3rd floor, Phillip Tobias Building, Parktown, University of the Witwatersrand, Johannesburg.

I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated from the research protocol as approved, I/we undertake to submit details to the Committee. **I agree to submit a yearly progress report.** When a funder requires annual re-certification, the application date will be one year after the date when the study was initially reviewed. In this case, the study was initially reviewed in **November** and therefore reports and re-certification will be due in the month of **November** each year. Unreported changes to the study may invalidate the clearance given by the HREC (Medical).


Signature of Principal Investigator

01/12/2022

Date

APPENDIX B: Wits Facial Classification Scheme

Appendix B: Wits facial classification scheme

FISWG Component Characteristics	Trait Scores	Modified Characteristic Scoring
Overall Skin Appearance		
	1.1.1	Skin Texture:
	1.1.1.1	Fine: smooth flawless appearing texture.
	1.1.1.2	Coarse: distinctively rough textured appearance.
	1.1.1.3	Uneven: partly smooth and partly coarse texture combination.
	1.1.2	Skin luminance:
	1.1.2.1	Luminescent: displaying a conventionally considered healthy glow with a reflective nature.
	1.1.2.2	Non-luminescent: displaying a matte finish on the skin with no to very limited reflection of light.
	1.1.3	Skin colour (adapted from Fitzpatrick skin phototype) (Gupta and Sharma, 2019):
	1.1.3.1	Type I: Pale, extremely fair skin.
	1.1.3.2	Type II: Fair skin.
	1.1.3.3	Type III: Olive to light-brown skin.
	1.1.3.4	Type IV: Moderate brown skin.
	1.1.3.5	Type V: Dark brown skin.
	1.1.3.6	Type VI: Deeply pigmented dark brown to black skin.
Shape of Cranial Vault		
	2.2.1	Frontal (portrait) Contour:
	2.2.1.1	Rounded: a pronounced circular contour.
	2.2.1.2	Arched: a gentle curved contour.
	2.2.1.3	Flattened: a relatively straight contour.
	2.2.2	Frontal (portrait) relative width:
	2.2.2.1	Narrow: defined as a cranial vault narrower than the temporal region.
	2.2.2.2	Intermediate: cranial vault is approximately as wide as the temporal region.

APPENDIX B: Wits Facial Classification Scheme

	2.2.2.3	Wide: a cranial vault wider than the inferior temporal region.
	2.2.3	Lateral (profile):
	2.2.3.1	Rounded: a pronounced circular contour.
	2.2.3.2	Arched: a gentle curved contour.
	2.2.3.3	Flattened: a relatively straight contour.
	2.2.3.4	Elongated: a particularly long contour with a very subtle curve and a flattened plateau in the superior aspect.
	2.2.3.5	Cuboid: a relatively square and proportional cranial vault with sharp angles.
Overall Shape of Face (Adapted from Farkas, 1994 and Anstice optometrists)		
	2.3.1	Frontal (portrait) contour:
	2.3.1.1	Oval: A face with a rounded chin and forehead with balanced proportions. An oval face appears longer than it is wide, with the forehead being slightly wider than the jaw.
	2.3.1.2	Ellipsoid/Rectangular: A face pronouncedly longer than it is wide which may demonstrate a squared chin, and jaw line.
	2.3.1.3	Rounded: A circular face with full cheeks and a rounded chin and appears wider than it is long.

APPENDIX B: Wits Facial Classification Scheme

	2.3.1.4	Triangular: A face with a broad forehead tapering down to a narrow, rounded chin.
	2.3.1.5	Square: A face with a very pronounced jaw line and a broad forehead. Unlike the ellipsoid/rectangular shape, the width and length are proportionally equal.
	2.3.1.6	Trapezoid: A face predominantly square in appearance, with a pronounced rounded or square chin, disrupting the overall quadrangular appearance with an additional projection in the midline.
	2.3.2	Midfacial lateral (profile) contour (Can be confirmed by connecting the glabella, subnasale and prognion landmarks of the face with a guiding line, and observing posterior angle size):
	2.3.2.1	Concave: midfacial contour excluding nasal projection is posteriorly concave, identifiable by observing a posterior indentation forming between glabella and the tubercle of the lip. Guiding line angle greater than 200 degrees.
	2.3.2.2	Straight: midfacial contour excluding nasal projection appears vertically linear and uniform. The angle formed between the guiding line is 160 to 200 degrees.
	2.3.2.3	Convex: midfacial contour anterior convexity. Guiding line angle smaller than 160 degrees.
Overall Facial Proportions Excluding Position of Features on Face		
	3.1.1	Vertical face proportions (adapted from Vegter & Hage, 2000):
	3.1.1.1	Proportionate: the face is subdivided into three vertically equal thirds at the following levels, trichion to glabella, glabella to subnasale, subnasale to gnathion.
	3.1.1.2	Short forehead: trichon to glabella length is approximately shorter than the midfacial and lowerfacial lengths, which are approximately equal to one another.
	3.1.1.3	Short midface: forehead and lower facial lengths are similar while the midfacial length (glabella to subnasale) is relatively smaller.
	3.1.1.4	Short lower face: forehead and mid facial lengths are similar with lower facial length (subnasale to gnathion) being smaller than both.
	3.1.1.5	Long forehead: trichon to glabella length is approximately longer than the midfacial and lowerfacial lengths, which are approximately equal to one another.
	3.1.1.6	Long midface: forehead and lower facial lengths are similar while the midfacial length (glabella to subnasale) is relatively longer.

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	3.1.1.7	Long lower face: forehead and mid facial lengths are similar with lower facial length (subnasale to gnathion) being longer than both.
	3.1.1.8	Short forehead with long midface: forehead is pronouncedly shorter than both midface and lower face, while mid face is noticeably longer in comparison to lower face.
	3.1.1.9	Short midface with long lower face: midface is pronouncedly shorter than both forehead and lower face, while lower face is noticeably longer in comparison to forehead.
	3.1.1.10	Short lower face with long forehead: lower face is pronouncedly shorter than both midface and forehead, while forehead is noticeably longer in comparison to midface.
	3.1.1.11	Short forehead with long lower face: forehead is pronouncedly shorter than both midface and lower face, while lower face is noticeably longer in comparison to midface.
	3.1.1.12	Short midface with long forehead: midface is pronouncedly shorter than both forehead and lower face, while forehead is noticeably longer in comparison to lower face.
	3.1.1.13	Short lower face with long midface: lower face is pronouncedly shorter than both midface and forehead, while midface is noticeably longer in comparison to forehead.
	3.1.2	Vertical eye position:
	3.1.2.1	Glabella proximal: eyes are located in the upper third of the midfacial subdivision of the face (between glabella and subnasale).
	3.1.2.2	Midface central: eyes are located along the midline of the face and the midline of the midfacial third.
	3.1.2.3	Midfacial lateral: eyes are located along the lateral aspect of the face on the midline of the midfacial third.
Forehead Hairline		
	4.1.1	Forehead hairline shape (adapted from Lee <i>et al.</i>, 2007):
	4.1.1.1	Linear: hairline commences uniformly and extends in a straight fashion laterally, potentially giving the forehead a superiorly squared appearance.
	4.1.1.2	Curved: hair begins along the midline and extends in a curvilinear fashion laterally, potentially joining the eyebrows' lateral terminal points.
	4.1.1.3	M-shaped: hairline is characterized by a minor and possibly wide midline inferior protrusion, with mildly curved lateral extensions forming an M-shaped outline over the superior aspect of the forehead.
	4.1.1.4	Widow's peak: hairline characterized an extremely pronounced and fine point protrusion in the midline with very pronounced curving lateral extensions resembling an inverted U-shape on either side of the midline.

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	4.1.1.5	Uneven: characterized by a multitude of inferior hairline protrusions onto the forehead region, usually observed in an asymmetrical manner.
	4.1.1.6	Part-line (midline): a distinct artificial separation of the hairline along its anterior margin. Can be located in the midline section of the hairline.
	4.1.1.7	Part-line (left medial): a distinct artificial separation of the hairline along its anterior margin. Can be located in the left medial section of the hairline.
	4.1.1.8	Part-line (left marginal): a distinct artificial separation of the hairline along its anterior margin. Can be located in the left marginal section of the hairline.
	4.1.1.9	Part-line (right medial): a distinct artificial separation of the hairline along its anterior margin. Can be located in the right medial section of the hairline.
	4.1.1.10	Part-line (right marginal): a distinct artificial separation of the hairline along its anterior margin. Can be located in the right marginal section of the hairline.
	4.1.1.11	Upsweep (cowlick midline): presence of a whorl of hair, forming a pivot that distributes the hair from a specific point around in all different directions along the hairline, disrupting the natural shape of the hairline. Can be located in the midline section of the hairline.
	4.1.1.12	Upsweep (cowlick left): presence of a whorl of hair, forming a pivot that distributes the hair from a specific point around in all different directions along the hairline, disrupting the natural shape of the hairline. Can be located in the left section of the hairline.
	4.1.1.13	Upsweep (cowlick right): presence of a whorl of hair, forming a pivot that distributes the hair from a specific point around in all different directions along the hairline, disrupting the natural shape of the hairline. Can be located in the right section of the hairline.
	4.1.2	Hairline angulation:
	4.1.2.1	Even: the hairline extends from similar heights between left to right margins of the forehead, nearly perpendicular to the nose and parallel to the supraorbital ridge.
	4.1.2.2	Left slant: the hairline extends from a more inferior point in the left margin of the forehead to a more superior point in the right margin of the forehead.
	4.1.2.3	Right slant: the hairline extends from a more superior point in the left margin of the forehead to a more inferior point in the right margin of the forehead.
Hairline Right Side		

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	4.2.1	Patterned baldness classifications (adapted from BASP classification, Lee <i>et al.</i>, 2007, M1 to 3, C1 to 3 and U1 to 3)
	4.2.1.1	No recession: no visible disruption of hairline due to patterned baldness
	4.2.1.2	Limited lateral recession (M1): minimal recession has occurred on the lateral margins of the hairline, more commonly observed in males.
	4.2.1.3	Defined lateral recession (M2): notable recession with distinct disruption of the hairline shape on the lateral margins and sections of the hairline is visible.
	4.2.1.4	Severe lateral recession (M3): significant recession of the hairline at the lateral margins, with possible initial hair loss in the midline occurring.
	4.2.1.5	Limited uniform recession (C1): minimal recession of the overall anterior hairline is visible, generally following a curvature extending posteriorly.
	4.2.1.6	Defined uniform recession (C2): notable recession with loss of visibility of the anterior hairline from a frontal view, bar potentially very sparse hairs in the midline.
	4.2.1.7	Severe uniform recession (C3): significant recession of the hairline along the entire margin, extending beyond the midline of the head from a lateral perspective.
	4.2.1.8	Extensive uniform recession (U1): hairline receded beyond the approximate level of the lambdoid suture, with hair covering only the occipital bone in the posterior aspect.
	4.2.1.9	Extreme uniform recession (U2): Hairline has receded to align with the superior aspect of the helix of the ear.
	4.2.1.10	Complete uniform recession (U3): Hairline has receded below the level of the external acoustic meatus.
Hairline Left Side	4.3.1	Patterned baldness classifications (adapted from BASP classification, Lee <i>et al.</i>, 2007, M1 to 3, C1 to 3 and U1 to 3)
	4.3.1.1	No recession: no visible disruption of hairline due to patterned baldness
	4.3.1.2	Limited lateral recession (M1): minimal recession has occurred on the lateral margins of the hairline, more commonly observed in males.
	4.3.1.3	Defined lateral recession (M2): notable recession with distinct disruption of the hairline shape on the lateral margins and sections of the hairline is visible.
	4.3.1.4	Severe lateral recession (M3): significant recession of the hairline at the lateral margins, with possible initial hair loss in the midline occurring.
	4.3.1.5	Limited uniform recession (C1): minimal recession of the overall anterior hairline is visible, generally following a curvature extending posteriorly.

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	4.3.1.6	Defined uniform recession (C2): notable recession with loss of visibility of the anterior hairline from a frontal view, but potentially very sparse hairs in the midline.
	4.3.1.7	Severe uniform recession (C3): significant recession of the hairline along the entire margin, extending beyond the midline of the head from a lateral perspective.
	4.3.1.8	Extensive uniform recession (U1): hairline receded beyond the approximate level of the lambdoid suture, with hair covering only the occipital bone in the posterior aspect.
	4.3.1.9	Extreme uniform recession (U2): Hairline has receded to align with the superior aspect of the helix of the ear.
	4.3.1.10	Complete uniform recession (U3): Hairline has receded below the level of the external acoustic meatus.
Cranial Baldness Pattern		
	4.4.1	Cranial Baldness Pattern Shape (adapted from BASP Classifications V1 to 3 and F1 to 3):
	4.4.1.1	No cranial baldness present.
	4.4.1.2	Mild frontal thinning (F1): noticeable thinning of hair in the mid-frontal head region.
	4.4.1.3	Moderate frontal thinning (F2): thinning of hair in the mid-frontal head region is pronounced, extending beyond the midline into the lateral parts of the frontal region and into the superior-most parietal regions.
	4.4.1.4	Severe frontal thinning (F3): thinning extending from the frontal midline region to cover majority of the superior aspect of the cranial vault.
	4.4.1.5	Mild vertex thinning (V1): noticeable thinning of hair in the vertex region, cranial skin might be slightly visible through the thinning at the position of the crown.
	4.4.1.6	Moderate vertex thinning (V2): pronounced thinning in the vertex region with loss of distinct crown appearance and extending in a circular or oval fashion, demonstrating a distinct region of cranial skin.
	4.4.1.7	Severe vertex thinning (V3): extensive thinning in the vertex region, demonstrating a distinct rounded shape of completely exposed cranial skin and extending antero-laterally to almost join the frontal hairline, especially when hairline is receded.
Forehead Proportions		
	5.1.1	Relative forehead height (Qualitative adaptation from Allanson <i>et al.</i>, 2009):
	5.1.1.1	Short: the midline height is approximately less than a half of the width.
	5.1.1.2	Intermediate: approximately as wide as twice the height of the forehead.
	5.1.1.3	Elongated: the the height is approximately over half of the width.

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	5.1.2	Relative forehead width (Qualitative adaptation from Allanson <i>et al.</i>, 2009):
	5.1.2.1	Narrow: visibly narrow intertemporal region, can be considered narrow when it appears less than twice as wide as it is tall.
	5.1.2.2	Intermediate: approximately as wide as twice the height of the forehead.
	5.1.2.3	Broad: forehead appears to have laterally extended boundaries, can be considered broad when it appears twice as wide as it is tall.
	5.1.3	Slope and contour:
	5.1.3.1	Straight: the forehead appears nearly completely vertically straight, a reference line from glabella to trichion can assist in confirming this.
	5.1.3.2	Curved: a distinctly anterior convex curvature is visible extending from the brow level to the hairline.
	5.1.3.3	Linear slope: a linear slope, of approximately 45 degrees, running from glabella to hairline is noticeable, this slope does not curve convexly or concavely.
	5.1.3.4	Convex slope: a mild and slightly convex slope is visible between glabella and hairline.
	5.1.3.5	Concave slope: a mild and slightly concave slope is present between glabella and hairline, emphasized by a pronounced glabella and supraorbital ridge.
Brow Ridges		
	5.2.1	Brow ridge prominence (Based on Buikstra & Ubelaker, 1994, Standards for Data Collection from Human Skeletal Remains, pp. 20 and Acsádi & Nemeskeri, 1970, History of Human Life Span and Mortality, p.90):
	5.2.1.1	Minimal prominence: the brow ridge appears barely distinguishable from the forehead, appearing almost continuous with the forehead and smooth.
	5.2.1.2	Minor prominence: the brow ridge appears minimally prominent with a slight delimitation.
	5.2.1.3	Intermediate prominence: a small level of convexity is distinctly delimited in the region.
	5.2.1.4	Prominent: a marked, and potentially arched, elevation of the brow is visible.
	5.2.1.5	Extremely prominent: a massive level of prominence is visible particularly at the sites of attachment of the frontalis muscles, appearing like two well rounded projections.
	5.2.2	Brow ridge continuity:

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	5.2.2.1	Discontinued: evident separation between the left and right brow ridge prominences, usually seen in individuals with more prominent brow ridges.
	5.2.2.2	Uniform: brow ridge appears continuous from lateral aspects with uniform level of prominence.
	5.2.2.3	Uneven continuous: Brow ridge appears continuous but is unevenly prominent throughout.
Right Eyebrow		
	6.1.1	Eyebrow shape:
	6.1.1.1	Straight: approximately straight linear eyebrow, with minimal, if any, curvature or angulation and overall, horizontally perpendicular to the nose.
	6.1.1.2	Rounded: uniform curvature of eyebrow from medial to lateral.
	6.1.1.3	Soft angled at midpoint: gentle angle forming at the midpoint of the eyebrow, more pronounced than the curvature of a rounded eyebrow but not too sharp.
	6.1.1.4	Soft angled at two thirds: gentle angle forming at the lateral two thirds of the eyebrow, more pronounced than the curvature of a rounded eyebrow but not too sharp.
	6.1.1.5	Hard angled at midpoint: strong angle forming at the midpoint of the eyebrow, more pronounced than the curvature of a rounded eyebrow and sharper change in direction.
	6.1.1.6	Hard angled at two thirds: strong angle forming at the lateral two thirds of the eyebrow, more pronounced than the curvature of a rounded eyebrow and sharper change in direction.
	6.1.1.7	Wavy: multiple, usually two, curvatures are present. First curvature is gentle, superiorly concave and in the medial aspect of the eyebrow, with the second curvature generally being more pronounced and on arching convexly superiorly around two thirds of the eyebrow.
	6.1.1.8	Upward slanting: eyebrow shows no, or minimal curvature, but the lateral end is tilted superiorly.
	6.1.1.9	Downward slanting: eyebrow shows no, or minimal curvature, but the lateral end is tilted inferiorly.
	6.1.2	Arch prominence:
	6.1.2.1	No arch: the eyebrow is not arched and is usually seen with straight and downward/upward variations.
	6.1.2.2	Low arch: a gentle arch is visible defining the angulation/s or curvature closer to the superior eyelid.
	6.1.2.3	High arch: a pronounced arch usually more evident at the midpoint or at 2/3 of the eyebrow distancing the shape from the superior eyelid distinctly.
	6.1.3	Overall eyebrow thickness:

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	6.1.3.1	Thin: pencil-like thin vertical height of eyebrow.
	6.1.3.2	Intermediate: eyebrow thickness appears proportionate to the surrounding facial features.
	6.1.3.3	Thick: strong and robust vertical height of eyebrow thickness.
	6.1.4	Hair density and distribution:
	6.1.4.1	Uniform dense: hair density is high and consistent throughout length of eyebrow.
	6.1.4.2	Uniform thin: hair density is low and consistent throughout length of eyebrow.
	6.1.4.3	Medially dense: medial aspect of eyebrow is dense with the lateral aspect thinning out.
	6.1.4.4	Laterally dense: lateral aspect of the eyebrow is dense with the medial aspect thinning out.
	6.1.4.5	Midpoint dense: a dense midpoint is distinguishable with the lateral and medial aspects thinning.
	6.1.5	Length relative to eye:
	6.1.5.1	Equal dimensions: eyebrow length from the most medial to most lateral points corresponds approximately to the respective canthi of the eye below.
	6.1.5.2	Shortened dimensions: eyebrow is shorter both laterally and medially than the lateral and medial canthi of the eye below.
	6.1.5.3	Laterally short: the lateral end of the eyebrow terminates more medial than the lateral canthus of the eye below, while the medial end begins at approximately the level of the medial canthus.
	6.1.5.4	Medially short: the medial end originates more laterally than the medial canthus of the eye below, while the lateral end terminates approximately at the same level as the lateral canthus.
	6.1.5.5	Elongated dimensions: eyebrow extends beyond both lateral and medial canthi of the eye below.
	6.1.5.6	Laterally long: the lateral end of the eyebrow extends beyond the lateral canthus of the eye below while the medial end begins at approximately the level of the medial canthus.
	6.1.5.7	Medially long: the medial end of the eyebrow extends beyond the medial canthus of the eye below, while the lateral end terminates approximately at the same level as the lateral canthus.
	6.1.5.8	Medially long and laterally short: the medial end of the eyebrow extends beyond the medial canthus and the lateral end terminates before the lateral canthus.
	6.1.5.9	Laterally long and medially short: the lateral end of the eyebrow extends beyond the lateral canthus and the medial end terminates before the medial canthus.

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Left Eyebrow		
	6.2.1	Eyebrow shape:
	6.2.1.1	Straight: approximately straight linear eyebrow, with minimal, if any, curvature or angulation and overall, horizontally perpendicular to the nose.
	6.2.1.2	Rounded: uniform curvature of eyebrow from medial to lateral.
	6.2.1.3	Soft angled at midpoint: gentle angle forming at the midpoint of the eyebrow, more pronounced than the curvature of a rounded eyebrow but not too sharp.
	6.2.1.4	Soft angled at two thirds: gentle angle forming at the lateral two thirds of the eyebrow, more pronounced than the curvature of a rounded eyebrow but not too sharp.
	6.2.1.5	Hard angled at midpoint: strong angle forming at the midpoint of the eyebrow, more pronounced than the curvature of a rounded eyebrow and sharper change in direction.
	6.2.1.6	Hard angled at two thirds: strong angle forming at the lateral two thirds of the eyebrow, more pronounced than the curvature of a rounded eyebrow and sharper change in direction.
	6.2.1.7	Wavy: multiple, usually two, curvatures are present. First curvature is gentle, superiorly concave and in the medial aspect of the eyebrow, with the second curvature generally being more pronounced and on arching convexly superiorly around two thirds of the eyebrow.
	6.2.1.8	Upward slanting: eyebrow shows no, or minimal curvature, but the lateral end is tilted superiorly.
	6.2.1.9	Downward slanting: eyebrow shows no, or minimal curvature, but the lateral end is tilted inferiorly.
	6.2.2	Arch prominence:
	6.2.2.1	No arch: the eyebrow is not arched and is usually seen with straight and downward/upward variations.
	6.2.2.2	Low arch: a gentle arch is visible defining the angulation/s or curvature closer to the superior eyelid.
	6.2.2.3	High arch: a pronounced arch usually more evident at the midpoint or at 2/3 of the eyebrow distancing the shape from the superior eyelid distinctly.
	6.2.3	Overall eyebrow thickness:
	6.2.3.1	Thin: pencil-like thin vertical height of eyebrow.
	6.2.3.2	Intermediate: eyebrow thickness appears proportionate to the surrounding facial features.
	6.2.3.3	Thick: strong and robust vertical height of eyebrow thickness.

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	6.2.4	Hair density and distribution:
	6.2.4.1	Uniform dense: hair density is high and consistent throughout length of eyebrow.
	6.2.4.2	Uniform thin: hair density is low and consistent throughout length of eyebrow.
	6.2.4.3	Medially dense: medial aspect of eyebrow is dense with the lateral aspect thinning out.
	6.2.4.4	Laterally dense: lateral aspect of the eyebrow is dense with the medial aspect thinning out.
	6.2.4.5	Midpoint dense: a dense midpoint is distinguishable with the lateral and medial aspects thinning.
	6.2.5	Length relative to eye:
	6.2.5.1	Equal dimensions: eyebrow length from the most medial to most lateral points corresponds approximately to the respective canthi of the eye below.
	6.2.5.2	Shortened dimensions: eyebrow is shorter both laterally and medially than the lateral and medial canthi of the eye below.
	6.2.5.3	Laterally short: the lateral end of the eyebrow terminates more medial than the lateral canthus of the eye below, while the medial end begins at approximately the level of the medial canthus.
	6.2.5.4	Medially short: the medial end originates more laterally than the medial canthus of the eye below, while the lateral end terminates approximately at the same level as the lateral canthus.
	6.2.5.5	Elongated dimensions: eyebrow extends beyond both lateral and medial canthi of the eye below.
	6.2.5.6	Laterally long: the lateral end of the eyebrow extends beyond the lateral canthus of the eye below while the medial end begins at approximately the level of the medial canthus.
	6.2.5.7	Medially long: the median end of the eyebrow extends beyond the medial canthus of the eye below, while the lateral end terminates approximately at the same level as the lateral canthus.
	6.2.5.8	Medially long and laterally short: the medial end of the eyebrow extends beyond the medial canthus and the lateral end terminates before the lateral canthus.
	6.2.5.9	Laterally long and medially short: the lateral end of the eyebrow extends beyond the lateral canthus and the medial end terminates before the medial canthus.
Left and right eyebrow interactions and asymmetry:	6.3.1	Conjoined eyebrows (“unibrow”) density:
	6.3.1.1	Separate: eyebrows are separated from one another by a hairless glabella.

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	6.3.1.2	Conjoined sparse: eyebrows appear conjoined in the midline by a sparse distribution of hairs, particularly in comparison to the eyebrows proper.
	6.3.1.3	Conjoined intermediate thickness: eyebrows are joined by intermediately thick hairs, while not as dense as the eyebrows proper, but with a distinct definition.
	6.3.1.4	Conjoined thick: eyebrows are conjoined by noticeably thick hair density, approximately the same density as the eyebrows proper, if not denser.
	6.3.2	Conjoined eyebrows shape:
	6.3.2.1	Separate: eyebrows are separated from one another by a hairless glabella.
	6.3.2.2	Conjoined concave: a patch of hair curved inferiorly join the two eyebrows leaving a superiorly concave shape at the glabellar region.
	6.3.2.3	Conjoined straight: a patch of hair joins the two eyebrows in a linear perpendicular manner to the nose.
	6.3.2.4	Conjoined convex: a patch of hair curved superiorly join the two eyebrows leaving a superiorly convex shape at the glabellar region.
	6.3.3	Overall symmetry (portrait):
	6.3.3.1	Near complete symmetry: the eyebrows are extremely symmetrical, appearing nearly mirror images of one another.
	6.3.3.2	Asymmetrical shape: the shape of the eyebrows is evidently different from one another.
	6.3.3.3	Asymmetrical thickness: the thickness of the eyebrows is evidently different from one another.
	6.3.3.4	Asymmetrical length: the length of the eyebrows is evidently different from one another.
	6.3.3.5	Asymmetrical arch: the arch of the eyebrows is evidently different from one another.
	6.3.3.6	Asymmetrical hair density: the hair densities of the eyebrows are evidently different from one another.
Inter-Eye Distance		
	7.1.1	Median distance between eyes (qualitative modification from Gabriel <i>et al.</i>, 2017):
	7.1.1.1	Centralised (close set): distance between medial canthi (inter-canthal distance) of left and right eyes appears to be narrower than individual eye widths.

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	7.1.1.2	Proportionate: distance between medial canthi of left and right eyes appears to be approximately equal to individual eye widths.
	7.1.1.3	Decentralised (wide set): distance between medial canthi of left and right eyes appears to be wider than individual eye widths.
Right Eye Fissure Opening (Outline)		
	7.2.1	Eye Fissure Shape:
	7.2.1.1	Straight spindle: traditional spindle shape eye fissure with canthi with approximate similar angulation and dimensions.
	7.2.1.2	Undulated spindle: spindle shape with canthi with a visible difference in direction of their terminal projection, in opposite directions, producing a wave-like connection between the two.
	7.2.1.3	Round: a more circular shape of the fissure over the spindle is visible, usually as a result of the both or only one canthus having a significantly wider angle than in a spindle shaped fissure.
	7.2.2	Eye fissure angulation (qualitative modification from Hanada <i>et al.</i>, 2001):
	7.2.2.1	Horizontal: the medial and lateral canthus are located at approximately the same level, a reference line joining the two sites would be nearly completely horizontal.
	7.2.2.2	Medial slant (gentle): the medial canthus of the eye is positioned slightly inferiorly in relation to the lateral canthus, a reference line between the two would indicate a mildly medially oblique line.
	7.2.2.3	Medial slant (prominent): the medial canthus of the eye is positioned inferiorly in relation to the lateral canthus, a reference line between the two would indicate a markedly medially oblique line.
	7.2.2.4	Lateral slant (gentle): the medial canthus of the eye is positioned slightly superiorly in relation to the lateral canthus, a reference line between the two would indicate a mildly laterally oblique line.
	7.2.2.5	Lateral slant (prominent): the medial canthus of the eye is positioned superiorly in relation to the lateral canthus, a reference line between the two would indicate a markedly laterally oblique line.
	7.2.2.6	Uniform curved: medial and lateral canthi of the eye are both slanted inferiorly giving the eye fissure a uniform curved appearance.
Left Eye Fissure Opening (Outline)		
	7.3.1	Eye Fissure Shape:

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	7.3.1.1	Straight spindle: traditional spindle shape eye fissure with canthi with approximate similar angulation and dimensions.
	7.3.1.2	Undulated spindle: spindle shape with canthi with a visible difference in direction of their terminal projection, in opposite directions, producing a wave-like connection between the two.
	7.3.1.3	Round: a more circular shape of the fissure over the spindle is visible, usually as a result of the both or only one canthus having a significantly wider angle than in a spindle shaped fissure.
	7.3.2	Eye fissure angulation (qualitative modification from Hanada <i>et al.</i>, 2001):
	7.3.2.1	Horizontal: the medial and lateral canthus are located at approximately the same level, a reference line joining the two sites would be nearly completely horizontal.
	7.3.2.2	Medial slant (gentle): the medial canthus of the eye is positioned slightly inferiorly in relation to the lateral canthus, a reference line between the two would indicate a mildly medially oblique line.
	7.3.2.3	Medial slant (prominent): the medial canthus of the eye is positioned inferiorly in relation to the lateral canthus, a reference line between the two would indicate a markedly medially oblique line.
	7.3.2.4	Lateral slant (gentle): the medial canthus of the eye is positioned slightly superiorly in relation to the lateral canthus, a reference line between the two would indicate a mildly laterally oblique line.
	7.3.2.5	Lateral slant (prominent): the medial canthus of the eye is positioned superiorly in relation to the lateral canthus, a reference line between the two would indicate a markedly laterally oblique line.
	7.3.2.6	Uniform curved: medial and lateral canthi of the eye are both slanted inferiorly giving the eye fissure a uniform curved appearance.
Right Upper Eyelid (Including Lashes)		
	7.4.1	Right Eyelid Prominence:
	7.4.1.1	Inconspicuous: the eyelid is mostly hidden posterior to the supraorbital ridge or epicanthus.
	7.4.1.2	Visible: eyelid is defined and visible.
	7.4.1.3	Prominent: eyelid is well defined and largely visible even when the eye is open.
	7.4.2	Right Eyelid protrusion:
	7.4.2.1	Deep set: eyelid appears sunken within the orbit
	7.4.2.2	Intermediate: eyelid is not sunken or particularly protruding
	7.4.2.3	Protruding: eyelid protrudes anteriorly appearing almost swollen.

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	7.4.3	Right Superior/Inferior palpebral fold (adapted from Kiranantawat <i>et al.</i>, 2015):
	7.4.3.1	No fold: the palpebral fold is not present.
	7.4.3.2	Faint: a shallow palpebral fold is visible.
	7.4.3.3	Pronounced: a pronounced palpebral fold is seen.
	7.4.4	Right Eyelid Position:
	7.4.4.1	Retracted: the eyelid is retracted demonstrating a variable extent of sclera between it and the limbus.
	7.4.4.2	Peripheral: the eyelid rests proximally to the margin (inferior or superior) of the iris (limbus), appearing to almost cradle it.
	7.4.4.3	Overlying: the eyelid rests over a minor component of the iris, hiding the limbus behind it.
	7.4.4.4	Extended: eyelid rests over a large part of the iris, reaching the margin of, or beyond, the pupil.
	7.4.5	Right Eyelash length:
	7.4.5.1	Short: eyelash hairs are extremely short and barely visible.
	7.4.5.2	Intermediate: eyelashes are long enough to be distinctly identifiable, without being noticeably long.
	7.4.5.3	Long: eyelash hair is extremely long, distinctly visible and likely displaying a pronounced curvature.
	7.4.6	Right Eyelash density:
	7.4.6.1	Sparse: hair distribution is scarce and uneven throughout eyelid margin.
	7.4.6.2	Dense: hair density is high and consistent throughout eyelid margin.
	7.4.7	Right Epicanthus presence:
	7.4.7.1	Epicanthus absent.
	7.4.7.2	Epicanthus present.
Left Upper Eyelid (Including Lashes)		
	7.5.1	Left Upper Eyelid Prominence:

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	7.5.1.1	Inconspicuous: the eyelid is mostly hidden posterior to the supraorbital ridge or epicanthus.
	7.5.1.2	Visible: eyelid is defined and visible.
	7.5.1.3	Prominent: eyelid is well defined and largely visible even when the eye is open.
	7.5.2	Left Upper Eyelid protrusion:
	7.5.2.1	Deep set: eyelid appears sunken within the orbit
	7.5.2.2	Intermediate: eyelid is not sunken or particularly protruding
	7.5.2.3	Protruding: eyelid protrudes anteriorly appearing almost swollen.
	7.5.3	Left Upper Eyelid Superior/Inferior palpebral fold (adapted from Kiranantawat <i>et al.</i>, 2015):
	7.5.3.1	No fold: the palpebral fold is not present.
	7.5.3.2	Faint: a shallow palpebral fold is visible.
	7.5.3.3	Pronounced: a pronounced palpebral fold is seen.
	7.5.4	Left Upper Eyelid Position:
	7.5.4.1	Retracted: the eyelid is retracted demonstrating a variable extent of sclera between it and the limbus.
	7.5.4.2	Peripheral: the eyelid rests proximally to the margin (inferior or superior) of the iris (limbus), appearing to almost cradle it.
	7.5.4.3	Overlying: the eyelid rests over a minor component of the iris, hiding the limbus behind it.
	7.5.4.4	Extended: eyelid rests over a large part of the iris, reaching the margin of, or beyond, the pupil.
	7.5.5	Left Upper Eyelid Eyelash length:
	7.5.5.1	Short: eyelash hairs are extremely short and barely visible.
	7.5.5.2	Intermediate: eyelashes are long enough to be distinctly identifiable, without being noticeably long.
	7.5.5.3	Long: eyelash hair is extremely long, distinctly visible and likely displaying a pronounced curvature.
	7.5.6	Left Upper Eyelid Eyelash density:
	7.5.6.1	Sparse: hair distribution is scarce and uneven throughout eyelid margin.
	7.5.6.2	Dense: hair density is high and consistent throughout eyelid margin.

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	7.5.7	Left Upper Eyelid Epicanthus presence:
	7.5.7.1	Epicanthus absent.
	7.5.7.2	Epicanthus present.
Right Lower Eyelid (Including Lashes)		
	7.6.1	Right Lower Eyelid Prominence:
	7.6.1.1	Inconspicuous: the eyelid is mostly hidden posterior to the supraorbital ridge or epicanthus.
	7.6.1.2	Visible: eyelid is defined and visible.
	7.6.1.3	Prominent: eyelid is well defined and largely visible even when the eye is open.
	7.6.2	Right Lower Eyelid protrusion:
	7.6.2.1	Deep set: eyelid appears sunken within the orbit
	7.6.2.2	Intermediate: eyelid is not sunken or particularly protruding
	7.6.2.3	Protruding: eyelid protrudes anteriorly appearing almost swollen.
	7.6.3	Right Lower Eyelid Superior/Inferior palpebral fold (adapted from Kiranantawat <i>et al.</i>, 2015):
	7.6.3.1	No fold: the palpebral fold is not present.
	7.6.3.2	Faint: a shallow palpebral fold is visible.
	7.6.3.3	Pronounced: a pronounced palpebral fold is seen.
	7.6.4	Right Lower Eyelid Position:
	7.6.4.1	Retracted: the eyelid is retracted demonstrating a variable extent of sclera between it and the limbus.
	7.6.4.2	Peripheral: the eyelid rests proximally to the margin (inferior or superior) of the iris (limbus), appearing to almost cradle it.
	7.6.4.3	Overlying: the eyelid rests over a minor component of the iris, hiding the limbus behind it.
	7.6.4.4	Extended: eyelid rests over a large part of the iris, reaching the margin of, or beyond, the pupil.
	7.6.5	Right Lower Eyelid Eyelash length:

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	7.6.5.1	Short: eyelash hairs are extremely short and barely visible.
	7.6.5.2	Intermediate: eyelashes are long enough to be distinctly identifiable, without being noticeably long.
	7.6.5.3	Long: eyelash hair is extremely long, distinctly visible and likely displaying a pronounced curvature.
	7.6.6	Right Lower Eyelid Eyelash density:
	7.6.6.1	Sparse: hair distribution is scarce and uneven throughout eyelid margin.
	7.6.6.2	Dense: hair density is high and consistent throughout eyelid margin.
Left Lower Eyelid (Including Lashes)		
	7.7.1	Left Lower Eyelid Prominence:
	7.7.1.1	Inconspicuous: the eyelid is mostly hidden posterior to the supraorbital ridge or epicanthus.
	7.7.1.2	Visible: eyelid is defined and visible.
	7.7.1.3	Prominent: eyelid is well defined and largely visible even when the eye is open.
	7.7.2	Left Lower Eyelid protrusion:
	7.7.2.1	Deep set: eyelid appears sunken within the orbit
	7.7.2.2	Intermediate: eyelid is not sunken or particularly protruding
	7.7.2.3	Protruding: eyelid protrudes anteriorly appearing almost swollen.
	7.7.3	Left Lower Eyelid Superior/Inferior palpebral fold (adapted from Kiranantawat <i>et al.</i>, 2015):
	7.7.3.1	No fold: the palpebral fold is not present.
	7.7.3.2	Faint: a shallow palpebral fold is visible.
	7.7.3.3	Pronounced: a pronounced palpebral fold is seen.
	7.7.4	Left Lower Eyelid Position:
	7.7.4.1	Retracted: the eyelid is retracted demonstrating a variable extent of sclera between it and the limbus.
	7.7.4.2	Peripheral: the eyelid rests proximally to the margin (inferior or superior) of the iris (limbus), appearing to almost cradle it.
	7.7.4.3	Overlying: the eyelid rests over a minor component of the iris, hiding the limbus behind it.

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	7.7.4.4	Extended: eyelid rests over a large part of the iris, reaching the margin of, or beyond, the pupil.
	7.7.5	Left Lower Eyelid Eyelash length:
	7.7.5.1	Short: eyelash hairs are extremely short and barely visible.
	7.7.5.2	Intermediate: eyelashes are long enough to be distinctly identifiable, without being noticeably long.
	7.7.5.3	Long: eyelash hair is extremely long, distinctly visible and likely displaying a pronounced curvature.
	7.7.5	Left Lower Eyelid Eyelash density:
	7.7.5.1	Sparse: hair distribution is scarce and uneven throughout eyelid margin.
	7.7.5.2	Dense: hair density is high and consistent throughout eyelid margin.
Right Eyeball Protrusion (Lateral)		
	7.8.1	Eyeball protrusion:
	7.8.1.1	Minimal prominence: eyes appear deep set and sunken, large extent of the nasal bridge is visible from a lateral view.
	7.8.1.2	Intermediate prominence: no distinct level of protrusion or depression is notable. The eyeball's most anterior projection is in line with the inferior margin of the eyebrow in a lateral view.
	7.8.1.3	Extreme prominence: eyeball protrudes anteriorly evidently appearing almost swollen, the nasal bridge may be near completely to completely obscured by the eyeball in a lateral view.
Left Eyeball Prominence (Lateral)		
	7.9.1	Eyeball protrusion:
	7.9.1.1	Minimal prominence: eyes appear deep set and sunken, large extent of the nasal bridge is visible from a lateral view.
	7.9.1.2	Intermediate prominence: no distinct level of protrusion or depression is notable. The eyeball's most anterior projection is in line with the inferior margin of the eyebrow in a lateral view.
	7.9.1.3	Extreme prominence: eyeball protrudes anteriorly evidently appearing almost swollen, the nasal bridge may be near completely to completely obscured by the eyeball in a lateral view.

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Right Eye Sclera		
	7.10.1	Right Eye Nasal Scleral triangle size
	7.10.1.1	Diminutive: scleral triangle is visible when the eye is open minimally, approximately less than a quarter of the visible eye, can be as a result of a particularly large iris, small palpebral fissure, or a combination of both.
	7.10.1.2	Proportionate: triangle appears relatively proportionate to the rest of the eye, with it corresponding to approximately a quarter of the visible eye when open.
	7.10.1.3	Large: a significant portion of the eye is made up of the sclera, with over one quarter of it making up the visible eye.
	7.10.2	Right Eye Nasal Scleral triangle shape:
	7.10.2.1	Equilateral: the triangle has three approximately congruent sides.
	7.10.2.2	Isosceles: the triangle has two approximately congruent sides (superior and inferior sides).
	7.10.2.3	Acute: scleral triangle has three non-congruent sides and three acute angles; incongruity is usually a result of asymmetrical eyelid positions.
	7.10.3	Right Eye Lateral Scleral triangle size
	7.10.3.1	Diminutive: scleral triangle is visible when the eye is open minimally, approximately less than a quarter of the visible eye, can be as a result of a particularly large iris, small palpebral fissure, or a combination of both.
	7.10.3.2	Proportionate: triangle appears relatively proportionate to the rest of the eye, with it corresponding to approximately a quarter of the visible eye when open.
	7.10.3.3	Large: a significant portion of the eye is made up of the sclera, with over one quarter of it making up the visible eye.
	7.10.4	Right Eye Lateral Scleral triangle shape:
	7.10.4.1	Equilateral: the triangle has three approximately congruent sides.
	7.10.4.2	Isosceles: the triangle has two approximately congruent sides (superior and inferior sides).
	7.10.4.3	Acute: scleral triangle has three non-congruent sides and three acute angles; incongruity is usually a result of asymmetrical eyelid positions.

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	7.10.5	Right Eye Blood vessel visibility:
	7.10.5.1	No vessel visibility: sclera does not demonstrate any engorged blood vessels.
	7.10.5.2	Minor vessel visibility: a small density of blood vessels is visible in the sclera, giving the sclera a mild pink colouration.
	7.10.5.3	Major vessel visibility: a severe amount of blood vessels is engorged within the sclera and may give it a red, bloodshot colour.
	7.10.6	Right Eye Sclera colour:
	7.10.6.1	White
	7.10.6.2	Pink
	7.10.6.3	Bloodshot red
	7.10.6.4	Pale blue
	7.10.6.5	Pale yellow
	7.10.6.6	Light brown
Left Eye Sclera		
	7.11.1	Left Eye Nasal Scleral triangle size:
	7.11.1.1	Diminutive: scleral triangle is visible when the eye is open minimally, approximately less than a quarter of the visible eye, can be as a result of a particularly large iris, small palpebral fissure, or a combination of both.
	7.11.1.2	Proportionate: triangle appears relatively proportionate to the rest of the eye, with it corresponding to approximately a quarter of the visible eye when open.
	7.11.1.3	Large: a significant portion of the eye is made up of the sclera, with over one quarter of it making up the visible eye.
	7.11.2	Left Eye Nasal Scleral triangle shape:
	7.11.2.1	Equilateral: the triangle has three approximately congruent sides.
	7.11.2.2	Isosceles: the triangle has two approximately congruent sides (superior and inferior sides).

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	7.11.2.3	Acute: scleral triangle has three non-congruent sides and three acute angles; incongruity is usually a result of asymmetrical eyelid positions.
	7.11.3	Left Eye Lateral Scleral triangle size:
	7.11.3.1	Diminutive: scleral triangle is visible when the eye is open minimally, approximately less than a quarter of the visible eye, can be as a result of a particularly large iris, small palpebral fissure, or a combination of both.
	7.11.3.2	Proportionate: triangle appears relatively proportionate to the rest of the eye, with it corresponding to approximately a quarter of the visible eye when open.
	7.11.3.3	Large: a significant portion of the eye is made up of the sclera, with over one quarter of it making up the visible eye.
	7.11.4	Left Eye Lateral Scleral triangle shape:
	7.11.4.1	Equilateral: the triangle has three approximately congruent sides.
	7.11.4.2	Isosceles: the triangle has two approximately congruent sides (superior and inferior sides).
	7.11.4.3	Acute: scleral triangle has three non-congruent sides and three acute angles; incongruity is usually a result of asymmetrical eyelid positions.
	7.11.5	Left Eye Blood vessel visibility:
	7.11.5.1	No vessels visibility: sclera does not demonstrate any engorged blood vessels.
	7.11.5.2	Minor vessel visibility: a small density of blood vessels is visible in the sclera, giving the sclera a mild pink colouration.
	7.11.5.3	Major vessel visibility: a severe amount of blood vessels is engorged within the sclera and may give it a red, bloodshot colour.
	7.11.6	Left Eye Sclera colour:
	7.11.6.1	White
	7.11.6.2	Pink
	7.11.6.3	Bloodshot red
	7.11.6.4	Pale blue

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	7.11.6.5	Pale yellow
	7.11.6.6	Light brown
Right Iris		
	7.12.1	Right Iris colour (adapted from Sturm & Larsson, 2009):
	7.12.1.1	Brown: colouration ranging from dark brown (colloquially black) to light brown.
	7.12.1.2	Green-Hazel: colouration ranging from light green to hazel and amber.
	7.12.1.3	Blue: colouration ranging from steel blue to dark blue.
	7.12.2	Right Iris Visibility:
	7.12.2.1	Fully visible: the entirety of the iris is visible when the eye is open.
	7.12.2.2	Mostly visible: majority of the iris is visible when the eye is open, a minor usually superior part of the iris is not visible.
	7.12.2.3	Moderately visible: a large part of the iris is visible when the eye is open with less than one third of the iris obscured by an eyelid.
	7.12.2.4	Partly obscured: up to half the iris is visible when the eye is open.
	7.12.2.5	Mostly obscured: the iris is barely visible, with only a central minor part including the pupil being visible.
	7.12.3	Right Iris relative size:
	7.12.3.1	Small: a small iris makes up less than half of the eye fissure width.
	7.12.3.2	Proportionate: a proportionate iris makes up approximately half of the eye fissure width.
	7.12.3.3	Large: a large iris makes up more than half of the eye fissure width.
	7.12.4	Right Iris position in eye:
	7.12.4.1	Lateral displacement: the iris is slightly laterally displaced within the eye fissure.
	7.12.4.2	Central: the iris is located in the approximate mid-point of the eye fissure.
	7.12.4.3	Medial displacement: the iris is slightly medially displaced within the eye fissure.
	7.12.5	Right Iris Pupil ring presence:

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	7.12.5.1	Absent: No pupil ring is present in the iris.
	7.12.5.2	Present: a distinct pupil ring is present and distinguishable by the difference in iris colour surrounding the pupil.
Left Iris		
	7.13.1	Left Iris colour (adapted from Sturm & Larsson, 2009):
	7.13.1.1	Brown: colouration ranging from dark brown (colloquially black) to light brown.
	7.13.1.2	Green-Hazel: colouration ranging from light green to hazel and amber.
	7.13.1.3	Blue: colouration ranging from steel blue to dark blue.
	7.13.2	Left Iris Visibility:
	7.13.2.1	Fully visible: the entirety of the iris is visible when the eye is open.
	7.13.2.2	Mostly visible: majority of the iris is visible when the eye is open, a minor usually superior part of the iris is not visible.
	7.13.2.3	Moderately visible: a large part of the iris is visible when the eye is open with less than one third of the iris obscured by an eyelid.
	7.13.2.4	Partly obscured: up to half the iris is visible when the eye is open.
	7.13.2.5	Mostly obscured: the iris is barely visible, with only a central minor part including the pupil being visible.
	7.13.3	Left Iris relative size:
	7.13.3.1	Small: a small iris makes up less than half of the eye fissure width.
	7.13.3.2	Proportionate: a proportionate iris makes up approximately half of the eye fissure width.
	7.13.3.3	Large: a large iris makes up more than half of the eye fissure width.
	7.13.4	Left Iris position in eye:
	7.13.4.1	Lateral displacement: the iris is slightly laterally displaced within the eye fissure.
	7.13.4.2	Central: the iris is located in the approximate mid-point of the eye fissure.
	7.13.4.3	Medial displacement: the iris is slightly medially displaced within the eye fissure.

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	7.13.5	Left Iris Pupil ring presence:
	7.13.5.1	Absent: No pupil ring is present in the iris.
	7.13.5.2	Present: a distinct pupil ring is present and distinguishable by the difference in iris colour surrounding the pupil.
Right Eye Medial Canthus		
	7.14.1	Right Eye Medial Canthus Caruncle prominence:
	7.14.1.1	Minimal prominence: the caruncle is barely visible due to anatomical variation, (not obscured vision of it), but can still be observed as a small fleshy prominence in the medial canthus region.
	7.14.1.2	Prominent: caruncle can be seen distinctly as a large and protruding triangular shaped fleshy prominence.
Left Eye Medial Canthus		
	7.15.1	Left Eye Medial Canthus Caruncle prominence:
	7.15.1.1	Minimal prominence: the caruncle is barely visible due to anatomical variation, (not obscured vision of it), but can still be observed as a small fleshy prominence in the medial canthus region.
	7.15.1.2	Prominent: caruncle can be seen distinctly as a large and protruding triangular shaped fleshy prominence.
Asymmetry Between Right and Left Eyes		
	7.18.1	Eye position symmetry:
	7.18.1.1	Symmetrical: both eyes are at the approximate same level and well aligned.
	7.18.1.2	Left asymmetry: left eye is slightly superiorly positioned in relation to right eye.
	7.18.1.3	Right asymmetry: right eye is slightly superiorly positioned in relation to left eye.
Right Cheek Bone		
	8.1.1	Right Cheekbone lateral prominence (profile):
	8.1.1.1	Retreating: cheekbones appear retreated in relation to other lateral features of the face.
	8.1.1.2	Vertical: cheekbones appear in line with the remainder of the lateral elements of the face.
	8.1.1.3	Projecting: lateral projection of the cheekbone is distinct, visible as a lateral protrusion beyond the supraorbital ridge and mandible.

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	8.1.2	Right Cheekbone anterior prominence (portrait):
	8.1.2.1	Retreating: cheekbone region appears posteriorly depressed in relation to the lateral canthus and.
	8.1.2.2	Vertical: cheekbone region appears in line with the lateral canthus.
	8.1.2.3	Projecting: an anterior projection of the cheekbone region extends beyond the lateral canthus.
Left Cheek Bone		
	8.2.1	Left Cheekbone lateral prominence (profile):
	8.2.1.1	Retreating: cheekbones appear retreated in relation to other lateral features of the face.
	8.2.1.2	Vertical: cheekbones appear in line with the remainder of the lateral elements of the face.
	8.2.1.3	Projecting: lateral projection of the cheekbone is distinct, visible as a lateral protrusion beyond the supraorbital ridge and mandible.
	8.2.2	Left Cheekbone anterior prominence (portrait):
	8.2.2.1	Retreating: cheekbone region appears posteriorly depressed in relation to the lateral canthus.
	8.2.2.2	Vertical: cheekbone region appears in line with the lateral canthus.
	8.2.2.3	Projecting: an anterior projection of the cheekbone region extends beyond the lateral canthus.
Right Cheek Shape		
	8.3.1	Right Cheek shape:
	8.3.1.1	Rounded: no concavity or uniform slope is seen below the zygomatic bone, instead a rounded protruding amount of soft tissue in the area gives a rounded curved appearance to the cheek.
	8.3.1.2	Uniform inferior slope: cheek extends as uniform slope from zygomatic region to the chin.
	8.3.1.3	Concave: a minor inferolateral concavity of the cheek is visible below the zygomatic bone.
	8.3.1.4	Extremely concave: an extreme inferolateral concavity of the cheek is visible below the zygomatic bone, most common with noticeably thinner individuals.
	8.3.2	Right Cheek dimple presence:
	8.3.2.1	No dimple present

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	8.3.2.2	Dimple present.
Left Cheek Shape		
	8.4.1	Left Cheek shape:
	8.4.1.1	Rounded: no concavity or uniform slope is seen below the zygomatic bone, instead a rounded protruding amount of soft tissue in the area gives a rounded curved appearance to the cheek.
	8.4.1.2	Uniform inferior slope: cheek extends as uniform slope from zygomatic region to the chin.
	8.4.1.3	Concave: a minor inferolateral concavity of the cheek is visible below the zygomatic bone.
	8.4.1.4	Extremely concave: an extreme inferolateral concavity of the cheek is visible below the zygomatic bone, most common with noticeably thinner individuals.
	8.4.2	Left Cheek dimple presence:
	8.4.2.1	No dimple present
	8.4.2.2	Dimple present.
	8.4.3	Symmetry of cheeks:
	8.4.3.1	Near complete symmetry: the cheeks are extremely symmetrical, appearing nearly as mirror images of one another.
	8.4.3.2	Asymmetrical shape: the shape of the cheeks is evidently different from one another.
	8.4.3.3	Asymmetrical dimples left: a dimple is present on the left cheek but not the right.
	8.4.3.4	Asymmetrical dimples right: a dimple is present on the right cheek but not the left.
Nasal Outline (Profile and Front view)		
	9.1.1	Overall nose shape (profile) (adapted from Uzun & Ozdemir, 2014 and Tamir, 2017):
	9.1.1.1	Straight (Greek): a proportionate nose with an uninterrupted linear connection between the nasal root to the nasal apex, straight nasal alae and minimally visible nostrils with a columella approximately in line with the alae.
	9.1.1.2	Aquiline (Roman): a generally large nose with a large protrusion at the nasal dorsum, interrupting the connection between the nasal root and nasal apex, below a concavity at the nasal bridge terminating with

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		an inferior-anteriorly projecting and pointing nasal apex with superiorly concave nostrils, due to arched nasal alae and a straight columella.
	9.1.1.3	Convex (Hawk): a large nose with a pronounced convexity extending from the nasal bridge across the nasal dorsum and terminating in one single slope at an inferiorly projecting and pointing nasal apex and pronouncedly concave nostrils.
	9.1.1.4	Square (hooked): a relatively proportionate nose with a hump-like protrusion at the nasal dorsum disrupting the angle of the nose, terminating with an anteriorly pointing nasal apex with horizontally straight nostrils and columella.
	9.1.1.5	Fleshy: a large nose with a gentle convexly curved nasal dorsum but otherwise straight features.
	9.1.1.6	Undulating (bumpy): a relatively proportionate nose with an irregular nasal dorsum consisting of multiple protrusions but terminating in a horizontal anteriorly facing nasal apex.
	9.1.1.7	Short: a relatively small nose with a short but straight nasal dorsum terminating in a slight superiorly facing nasal apex with disproportionately larger nasal alae.
	9.1.1.8	Flat: a relatively small and straight nose with a significantly smaller nasal apex with straight alae and columella.
	9.1.1.9	Upturned (celestial): a short nose with a greater superior angulation of the nasal apex combined with a pronounced concavity of the nasal dorsum and proportional nasal alae.
	9.1.1.10	Snub: a mostly small nose with a slightly concave nasal dorsum and a larger protruding nasal apex and base.
	9.1.1.11	High: a small nose with a long nasal dorsum and a small nasal apex and base. The nasal base lies horizontal and the nasal apex points anteriorly in a straight manner.
	9.1.1.12	Narrow: a nose with a pronounced nasal dorsum terminating with a small anteriorly pointing nasal apex and an inferiorly angled nasal base with large nasal alae.
	9.1.1.13	Low: a nose that has a particularly longer nasal root, leading to the nasal dorsum and apex being positioned more inferiorly in the face, generally small in overall size.
	9.1.2	Nose Relative length:
	9.1.2.1	Short: nose length is less than a third of the total face length.
	9.1.2.2	Proportionate: nose is approximately as long as a third of the face.
	9.1.2.3	Long: nose is longer than a third of the total length of the face.

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	9.1.3	Nose Relative width:
	9.1.3.1	Narrow: the widest point of the nose is narrower than the medial intercanthal distance.
	9.1.3.2	Proportionate: the widest point of the nose is approximately as wide as the medial intercanthal distance.
	9.1.3.3	Wide: the widest point of the nose is wider than the medial intercanthal distance.
	9.1.4	Nose Prominence:
	9.1.4.1	Subtle: the nose is overall a less emphasised feature of the face, generally smaller and featureless.
	9.1.4.2	Proportionate: a nose that suits the facial characteristics of the individual both in size and overall shape.
	9.1.4.3	Prominent: a nose that draws attention to it at a first glance due to its size and particular shape.
Nasal Bridge		
	9.2.1	Nasal Bridge Relative length:
	9.2.1.1	Short: nasal bridge extends from glabella to before the medial canthi.
	9.2.1.2	Proportionate: nasal bridge extends from glabella to approximately the medial canthi.
	9.2.1.3	Long: nasal bridge extends from glabella to beyond the medial canthi.
	9.2.2	Nasal Bridge Relative width:
	9.2.2.1	Narrow: nasal bridge is narrower than the iris.
	9.2.2.2	Proportionate: nasal bridge is approximately as narrow as the iris.
	9.2.2.3	Wide: nasal bridge is wider than the iris.
	9.2.3	Nasal Bridge Depth (adapted from Farkas, 1994):
	9.2.3.1	Shallow: nasal root is barely distinguishable from the glabella to nasal apex plane.
	9.2.3.2	Intermediate: a medium level of depth is seen with clear distinction of the nasal bridge.
	9.2.3.3	Deep: a pronounced concavity is visible with the nasal bridge nearly disappearing behind the eye (profile view).
	9.2.4	Nasal Bridge Shape (adapted from Hefner, 2007):

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	9.2.4.1	Arched: low and rounded nasal bridge.
	9.2.4.2	Semi-circular: consisting of elongated and rounded lateral walls, joining in the midline in a smooth and round manner.
	9.2.4.3	Trapezoid: lateral walls form a steep slope with a relatively broad and relatively flat anterior surface.
	9.2.4.4	Triangular: very steep lateral walls join in the midline in a sharp point termination with no plateau.
Nasal Dorsum		
	9.3.1	Nasal Dorsum Relative length:
	9.3.1.1	Short: nasal dorsum represents less than half of the total nose length (from nasion to subnasale).
	9.3.1.2	Proportionate: the nasal dorsum makes up approximately half of the total nose length (from nasion to subnasale).
	9.3.1.3	Long: nasal dorsum represents more than half of the total nose length (from nasion to subnasale).
	9.3.2	Nasal Dorsum Relative width (frontal)
	9.3.2.1	Narrow: nasal dorsum appears to have nearly the same width of the nasal bridge.
	9.3.2.2	Proportionate: the nasal dorsum is approximately a middle point of width between the nasal bridge and nasal apex.
	9.3.2.3	Wide: the nasal dorsum appears nearly as wide as the nasal apex.
	9.3.3	Nasal Dorsum Shape (frontal):
	9.3.3.1	Cylindrical: nearly parallel nasal sidewalls extend from nasal bridge to nasal apex.
	9.3.3.2	Conical: a gentle angulation between a superiorly narrower and an inferiorly wider dorsum forms on either side, appearing as a rough cone.
	9.3.4	Nasal Dorsum Deviation:
	9.3.4.1	Straight: no deviation is evident.
	9.3.4.2	Slight left deviation: a slight deviation to the individual's left is visible with a slight convexity visible towards the individual's left, without extending entirely beyond a midline reference line.
	9.3.4.3	Slight right deviation: a slight deviation to the individual's right is visible with a slight convexity visible towards the individual's right, without extending entirely beyond a midline reference line.

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	9.3.4.4	Pronounced left deviation: a pronounced deviation to the individual's left is visible with a pronounced convexity visible towards the individual's left, extending entirely beyond a midline reference line.
	9.3.4.5	Pronounced right deviation: a pronounced deviation to the individual's right is visible with a pronounced convexity visible towards the individual's right, extending entirely beyond a midline reference line.
	9.3.4.6	Undulating: multiple deviations are visible going both towards the individual's left and right.
	9.3.5	Nasal Dorsum Contour (profile):
	9.3.5.1	Significantly concave: a pronounced anterior concavity is visible giving the dorsum a pronouncedly depressed slope.
	9.3.5.2	Slightly concave: a very faint anterior concavity is visible giving the dorsum a gentle depressed slope.
	9.3.5.3	Straight: a straight contour of the nasal dorsum.
	9.3.5.4	Slightly convex: a very faint anterior convexity is visible giving the dorsum a gentle elevated slope.
	9.3.5.5	Significantly convex: a pronounced anterior convexity is visible giving the dorsum a pronouncedly elevated slope.
Nasal Apex		
	9.4.1	Nasal Apex Shape:
	9.4.1.1	Rounded: formed as a spherical curvature extends from all directions giving it an inconspicuous and proportionate appearance.
	9.4.1.2	Bulbous: a relatively round protrusion is seen in the nasal apex extending anteriorly and laterally beyond the surrounding structures of the nasal base.
	9.4.1.3	Arched: a gentle mostly symmetrical curvature extends from left to right.
	9.4.1.4	Sharp: a point-like termination is seen anteriorly extending the nasal apex anteriorly and making it appear disproportionately larger.
	9.4.1.5	Rectangular: two sharp point-like terminations give the nasal apex a wide termination with sharp edges.
	9.4.1.6	Reduced: a small nasal apex is seen, enhancing the size of the surrounding nasal alae and appearing almost pinched.
	9.4.1.7	Flattened: the nasal apex is flattened and usually inferiorly directed.
	9.4.2	Nasal Apex Angulation (Angle inferior to intersecting line between pronasale and subnasale (lateral)):

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	9.4.2.1	Acute: angle formed between a tangent line at pronasale and a horizontal line intersecting it from subnasale is smaller than 90 degrees.
	9.4.2.2	Right: a tangent line at pronasale and a horizontal line intersecting it from subnasale forms an angle of approximately 90 degrees.
	9.4.2.3	Obtuse: angle formed between a tangent line at pronasale and a horizontal line intersecting it from subnasale is greater than 90 degrees.
Nasal Base		
	9.5.1	Nasal Base Relative length (lateral):
	9.5.1.1	Short: nasal base horizontal length constitutes less than a third of the overall nose length.
	9.5.1.2	Proportionate: nasal base horizontal length constitutes approximately a third of the overall nose length.
	9.5.1.3	Long: nasal base horizontal length constitutes more than a third of the overall nose length.
	9.5.2	Nasal Base Relative width (frontal):
	9.5.2.1	Narrow: the widest point of the base is narrower than the medial intercanthal distance.
	9.5.2.2	Proportionate: the widest point of the base is approximately as wide as the medial intercanthal distance.
	9.5.2.3	Wide: the widest point of the base is wider than the medial intercanthal distance.
	9.5.3	Nasal Base Deviation:
	9.5.3.1	Straight: no deviation is evident.
	9.5.3.2	Slight left deviation: a slight deviation to the individual's left is visible with the nasal apex terminating at a slight angle facing the individual's left, without extending entirely beyond a midline reference line.
	9.5.3.3	Slight right deviation: a slight deviation to the individual's right is visible with the nasal apex terminating at a slight angle facing the individual's right, without extending entirely beyond a midline reference line.
	9.5.3.4	Pronounced left deviation: a pronounced deviation to the individual's left is visible with the nasal apex terminating at a sharp angle facing the individual's left, extending entirely beyond a midline reference line.
	9.5.3.5	Pronounced right deviation: a pronounced deviation to the individual's right is visible with the nasal apex terminating at a sharp angle facing the individual's right, extending entirely beyond a midline reference line.

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Nasal Alae (Wings of Nose)		
	9.6.1	Nasal Alae Relative thickness:
	9.6.1.1	Thin: nasal alar tissue is thinner than the columella.
	9.6.1.2	Proportionate: nasal alar tissue is approximately as thick as the columella.
	9.6.1.3	Thick: nasal alar tissue is thicker than the columella.
	9.6.2	Nasal Alae Relative width:
	9.6.2.1	Narrow: the nasal ala is narrower than the widest point of the nasal apex.
	9.6.2.2	Proportionate: the nasal ala is approximately as wide as the widest point of the nasal apex.
	9.6.2.3	Wide: the nasal ala is wider than the widest point of the nasal apex.
	9.6.3	Nasal Alae Shape (frontal):
	9.6.3.1	Straight: ala extends posteriorly in a straight manner, nearly parallel to the columella, from a generally wide nasal apex.
	9.6.3.2	Sloping: an oblique slope is formed between the nasal apex and the termination of the ala on the lateral aspect of the nose.
	9.6.3.3	Flared: a wide laterally expanded and usually rounded ala extends with a very gentle curvature from apex to the lateral aspect.
	9.6.3.4	Circular: a fully curved rounded extension from the nasal apex to the lateral attachment.
	9.6.4	Nasal Alae Shape (lateral):
	9.6.4.1	Retracted: inferiorly concave disrupting parallel relationship with reference line.
	9.6.4.2	Straight: parallel to a horizontal reference line from subnasale.
	9.6.4.3	Hooded: inferiorly convex ala, usually close to subnasale and obscuring nostril.
	9.6.5	Nasal Alae Symmetry of attachment:
	9.6.5.1	Symmetrical: nasal alae attach at the same level.
	9.6.5.2	Left elevated: left nasal ala attaches slightly more superior than right ala.
	9.6.5.3	Right elevated: right ala attaches slightly more superior than left ala.

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	9.6.5.4	Left extended: left nasal ala attachment extends further laterally than the right side
	9.6.5.5	Right extended: right nasal ala attachment extends further laterally than the left nasal ala attachment
Nostrils (Nasal Openings)		
	9.7.1	Nostrils Shape (adapted from Uzun & Ozdemir, 2014 and Abdulrasheed & Eneye, 2013):
	9.7.1.1	Round: circular shaped nostril.
	9.7.1.2	Oval: ellipsoid shaped nostril parallel to the nasal alae axis.
	9.7.1.3	Oval parallel: ellipsoid shaped nostril parallel to the flat plane of the face.
	9.7.1.4	Rectangular: approximately wide rectangularly shaped nostril parallel to the nasolabial line.
	9.7.1.5	Teardrop parallel: roughly oval shape with medial aspect relatively smaller creating a teardrop outline, running parallel to the plane of the face.
	9.7.1.6	Teardrop angled: roughly oval shape with the antero-medial aspect relatively smaller creating a teardrop outline, running parallel to the axis of the nasal alae.
	9.7.1.7	Triangular: roughly triangular with the apex of the triangle orientated postero-medially and the base of the triangle parallel to the nasal alae.
	9.7.2	Nostrils Relative size:
	9.7.2.1	Small: nostrils at their longer point are shorter than half the respective side's nasal base length (frontal) or the total nasal base length (lateral).
	9.7.2.2	Proportionate: nostrils at their longer point are approximately the same size as half the respective side's nasal base length (frontal) or the total nasal base length (lateral).
	9.7.2.3	Large: nostrils at their longer point are longer than half the respective side's nasal base length (frontal) or the total nasal base length (lateral).
	9.7.3	Nostrils Nasal hair:
	9.7.3.1	No nasal hair visible.
	9.7.3.2	Visible but characteristics cannot be determined.
	9.7.3.3	Short sparse (thinly dispersed or scattered) hairs are visible.
	9.7.3.4	Long sparse (thinly dispersed or scattered) hairs are visible.
	9.7.3.5	Short dense (closely compacted) hairs are visible.

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	9.7.3.6	Long dense (closely compacted) hairs are visible.
Nasal Columella (Soft Tissue between Nostrils) (Gunter, Rohrich and Friedman. Classification and correction of alar-columellar discrepancies in rhinoplasty. Plastic Reconstructive Surgery. 1996;97:643-648)		
	9.8.1	Nasal Columella Shape (lateral) (Gunter <i>et al.</i>, 1996):
	9.8.1.1	Retracted: inferiorly concave usually close to subnasale with a sharper angulation.
	9.8.1.2	Straight: parallel to a horizontal reference line from subnasale.
	9.8.1.3	Hanging: inferiorly convex columella, disrupting parallel relationship with reference line.
	9.8.2	Nasal Columella Relative width (frontal):
	9.8.2.1`	Narrow: columella is narrower than half the nasal apex.
	9.8.2.2	Proportionate: columella is approximately half the nasal apex.
	9.8.2.3	Wide: columella is wider than half the nasal apex.
	9.8.3	Nasal Columella Deviation:
	9.8.3.1	Straight: no deviation is evident.
	9.8.3.2	Slight left deviation: a slight deviation to the individual's left is visible with the columella terminating at a slight angle facing the individual's left, without extending entirely beyond a midline reference line.

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	9.8.3.3	Slight right deviation: a slight deviation to the individual's right is visible with the columella terminating at a slight angle facing the individual's right, without extending entirely beyond a midline reference line.
	9.8.3.4	Pronounced left deviation: a pronounced deviation to the individual's left is visible with the columella terminating at a sharp angle facing the individual's left, extending entirely beyond a midline reference line.
	9.8.3.5	Pronounced right deviation: a pronounced deviation to the individual's right is visible with the columella terminating at a sharp angle facing the individual's right, extending entirely beyond a midline reference line.
Overall Right Ear		
	10.1.1	Overall Right Ear Vertical ear position:
	10.1.1.1	Midline placement: the ear sits mostly or entirely within the boundaries of the midface third of the face (between reference line crossing glabella and subnasale horizontally).
	10.1.1.2	Low-set placement: the superior part of the helix is located over a quarter of the midface below the glabella.
	10.1.1.3	High-set placement: the helix extends by approximately a quarter superiorly above the glabella reference line, within the forehead third of the face.
	10.1.2	Overall Right Ear Relative ear size:
	10.1.2.1	Small: ear is smaller than the midface third.
	10.1.2.2	Proportionate: ear matches nearly perfectly the midface third of the face (glabella to subnasale) in length.
	10.1.2.3	Long: ear extends beyond the length of the midface third.
	10.1.3	Overall Right Ear shape (frontal):
	10.1.3.1	Flat: ear lies flat on the lateral aspect of the head with it being barely visible from an anterior perspective.
	10.1.3.2	Expanded: ear is slightly laterally uniformly protruding.
	10.1.3.3	Superior protrusion: superior aspect of the helix and adjacent antihelix is jutting laterally noticeably.
	10.1.3.4	Inferior protrusion: Inferior aspect of the helix and adjacent antihelix, and possibly the lobule are jutting laterally noticeably.
	10.1.3.5	Complete protrusion: significantly protruding prominent ears along the entirety of the ear with the exception of the lobe.

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	10.1.4	Overall Right Ear shape (lateral):
	10.1.4.1	Circular: a relatively round to slightly oval overall ear shape.
	10.1.4.2	Arched: a flat attachment region followed by a relatively uniformly curved outer helix to the lobe.
	10.1.4.3	Helical: a narrow superior helix extends quite significantly inferiorly terminating at a more anteriorly placed lobe.
	10.1.4.4	Trapezoid: a relatively square appearance with a sharp superior ending on either side of the helix and terminating on the inferior aspect angling anteriorly towards the lobe.
	10.1.4.5	Pinched: supero-posterior aspect of the helix is pinched with usually a pointed tip appearance with the rest of the ear appearing proportionately rounded.
	10.1.4.6	Spindle: a pinched supero-posterior helix with an equally narrow lobe at the opposite end, giving the ear distinct diagonally orientated spindle shape.
	10.1.5	Overall Right Ear Angle (lateral):
	10.1.5.1	Flat: the angle formed between the pinna's vertical attachment and the most lateral contour of the face is approximately zero degrees.
	10.1.5.2	Minor: a small angle is formed between the attachment-line and the most lateral line of the face of approximately 10 degrees or less.
	10.1.5.3	Major: an angle greater than approximately 10 degrees is formed between the attachment and lateral face contour.
Overall Left Ear		
	10.2.1	Overall Left Vertical ear position:
	10.2.1.1	Midline placement: the ear sits mostly or entirely within the boundaries of the midface third of the face (between reference line crossing glabella and subnasale horizontally).
	10.2.1.2	Low-set placement: the superior part of the helix is located over a quarter of the midface below the glabella.
	10.2.1.3	High-set placement: the helix extends by approximately a quarter superiorly above the glabella reference line, within the forehead third of the face.
	10.2.2	Overall Left Relative ear size:
	10.2.2.1	Small: ear is smaller than the midface third.

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	10.2.2.2	Proportionate: ear matches nearly perfectly the midface third of the face (glabella to subnasale) in length.
	10.2.2.3	Long: ear extends beyond the length of the midface third.
	10.2.3	Overall Left Ear shape (frontal):
	10.2.3.1	Flat: ear lies flat on the lateral aspect of the head with it being barely visible from an anterior perspective.
	10.2.3.2	Expanded: ear is slightly laterally uniformly protruding.
	10.2.3.3	Superior protrusion: superior aspect of the helix and adjacent antihelix is jutting laterally noticeably.
	10.2.3.4	Inferior protrusion: Inferior aspect of the helix and adjacent antihelix, and possibly the lobule are jutting laterally noticeably.
	10.2.3.5	Complete protrusion: significantly protruding prominent ears along the entirety of the ear with the exception of the lobe.
	10.2.4	Overall Left Ear shape (lateral):
	10.2.4.1	Circular: a relatively round to slightly oval overall ear shape.
	10.2.4.2	Arched: a flat attachment region followed by a relatively uniformly curved outer helix to the lobe.
	10.2.4.3	Helical: a narrow superior helix extends quite significantly inferiorly terminating at a more anteriorly placed lobe.
	10.2.4.4	Trapezoid: a relatively square appearance with a sharp superior ending on either side of the helix and terminating on the inferior aspect angling anteriorly towards the lobe.
	10.2.4.5	Pinched: supero-posterior aspect of the helix is pinched with usually a pointed tip appearance with the rest of the ear appearing proportionately rounded.
	10.2.4.6	Spindle: a pinched supero-posterior helix with an equally narrow lobe at the opposite end, giving the ear distinct diagonally orientated spindle shape.
	10.2.5	Overall Left Ear Angle (lateral):
	10.2.5.1	Flat: the angle formed between the pinna's vertical attachment and the most lateral contour of the face is approximately zero degrees.
	10.2.5.2	Minor: a small angle is formed between the attachment-line and the most lateral line of the face of approximately 10 degrees or less.
	10.2.5.3	Major an angle greater than approximately 10 degrees is formed between the attachment and lateral face contour.

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Right Ear Helix—Superior/Inferior (Tail)		
	10.3.1	Right Ear Helix size:
	10.3.1.1	Small: the helix is overall thinner than the antihelix and not well defined.
	10.3.1.2	Proportionate: helix and antihelix are comparable in size and well defined.
	10.3.1.3	Pronounced: helix is significantly more pronounced and defined than the antihelix.
	10.3.1.4	Superiorly small: a small helix superiorly with a proportionate tail towards the lobe.
	10.3.1.5	Superiorly pronounced: a large helix terminating in a proportionate tail.
	10.3.1.6	Inferiorly small: a thin tailed helix, which is hard to distinguish as it extends towards the lobe from a proportionately sized superior part.
	10.3.1.7	Inferiorly pronounced: a large ending tail end of the helix extends towards the lobe from a proportionate superior helix.
	10.3.2	Right Ear Helix shape:
	10.3.2.1	Curved: a slight gentle curve follows from the superior to the inferior end of the helix consistently.
	10.3.2.2	Rounded: a more pronounced curvature extends throughout the helix, giving the ear a more circular appearance overall.
	10.3.2.3	Angled: a sharp angle is visible in the superior part of the helix, giving it a pinched (elf-like) appearance.
	10.3.2.4	Wide: the superior part of an otherwise relatively rounded appearing helix is markedly curved over the scaphoid fossa.
	10.3.2.5	Folded: a wide fold forms over the scaphoid fossa, giving it a flattened appearance.
Left Ear Helix—Superior/Inferior (Tail)		
	10.4.1	Left Ear Helix size:
	10.4.1.1	Small: the helix is overall thinner than the antihelix and not well defined.
	10.4.1.2	Proportionate: helix and antihelix are comparable in size and well defined.
	10.4.1.3	Pronounced: helix is significantly more pronounced and defined than the antihelix.
	10.4.1.4	Superiorly small: a small helix superiorly with a proportionate tail towards the lobe.
	10.4.1.5	Superiorly pronounced: a large helix terminating in a proportionate tail.

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	10.4.1.6	Inferiorly small: a thin tailed helix, which is hard to distinguish as it extends towards the lobe from a proportionately sized superior part.
	10.4.1.7	Inferiorly pronounced: a large ending tail end of the helix extends towards the lobe from a proportionate superior helix.
	10.4.2	Left Ear Helix shape:
	10.4.2.1	Curved: a slight gentle curve follows from the superior to the inferior end of the helix consistently.
	10.4.2.2	Rounded: a more pronounced curvature extends throughout the helix, giving the ear a more circular appearance overall.
	10.4.2.3	Angled: a sharp angle is visible in the superior part of the helix, giving it a pinched (elf-like) appearance.
	10.4.2.4	Wide: the superior part of an otherwise relatively rounded appearing helix is markedly curved over the scaphoid fossa.
	10.4.2.5	Folded: a wide fold forms over the scaphoid fossa, giving it a flattened appearance.
Right Ear Tubercles (Auricular Tubercle)	10.5.1	Right Ear tubercle (Darwin's tubercle) (Loh & Cohen, 2016):
	10.5.1.1	Absent: no visible thickening of the helix present at any point.
	10.5.1.2	Single tubercle: a pronounced thicker rounded or bulbous point on the helix, usually at the junction of the superior and middle thirds.
	10.5.1.3	Double tubercle: two pronounced points on the helix usually on the superior and/or middle third of the helix.
	10.5.1.4	Triple tubercle: three thickenings of the helix seen at various locations on the helix.
	10.5.2	Right Ear tubercle size (use A-C etc. for multiple tubercles):
	10.5.2.1	No tubercle.
	10.5.2.2	Diminutive: a small barely visible nodule is present, appearing the size of a pen-tip.
	10.5.2.3	Pronounced: a noticeable distinct tubercle is visible as a rounded or bulbous prominence in the helix.
	10.5.2.4	Extreme: very large tubercle that disrupts the appearance of the helix evidently and is similar in size to the opening of the ear canal.

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	10.5.3.	Right Ear tubercle location:
	10.5.3.1	No tubercle.
	10.5.3.2	Superior third: the tubercle is found in the most superior third of the helix.
	10.5.3.3	Superior junction: found in the junction between superior and middle third of the helix.
	10.5.3.4	Middle third: found in the middle third of the helix.
	10.5.3.5	Inferior junction: found at the junction between middle and inferior third.
	10.5.3.6	Inferior third: found at the inferior third of the helix.
Left Ear Tubercles (Auricular Tubercle)		
	10.6.1	Left Ear tubercle (Darwin's tubercle) (Loh & Cohen, 2016):
	10.6.1.1	Absent: no visible thickening of the helix present at any point.
	10.6.1.2	Single tubercle: a pronounced thicker rounded or bulbous point on the helix, usually at the junction of the superior and middle thirds.
	10.6.1.3	Double tubercle: two pronounced points on the helix usually on the superior and/or middle third of the helix.
	10.6.1.4	Triple tubercle: three thickenings of the helix seen at various locations on the helix.
	10.6.2	Left Ear tubercle size (use A-C etc. for multiple tubercles):
	10.6.2.1	No tubercle.
	10.6.2.2	Diminutive: a small barely visible nodule is present, appearing the size of a pen-tip.
	10.6.2.3	Pronounced: a noticeable distinct tubercle is visible as a rounded or bulbous prominence in the helix.
	10.6.2.4	Extreme: very large tubercle that disrupts the appearance of the helix evidently and is similar in size to the opening of the ear canal.
	10.6.3	Left Ear tubercle location:
	10.6.3.1	No tubercle.
	10.6.3.2	Superior third: the tubercle is found in the most superior third of the helix.
	10.6.3.3	Superior junction: found in the junction between superior and middle third of the helix.

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	10.6.3.4	Middle third: found in the middle third of the helix.
	10.6.3.5	Inferior junction: found at the junction between middle and inferior third.
	10.6.3.6	Inferior third: found at the inferior third of the helix.
Right Ear Antihelix		
	10.7.1	Right Ear Antihelix size:
	10.7.1.1	Thin: a narrow visible antihelix is seen and is noticeably thinner than the helix.
	10.7.1.2	Proportionate: an antihelix approximately similar in thickness as the helix.
	10.7.1.3	Broad: a very broad antihelix noticeably wider than the helix across it.
	10.7.2	Right Ear Antihelix shape:
	10.7.2.1	Flat: antihelix is so distended that it is hard to identify and makes the scaphoid fossa appear as extending throughout majority of the pinna.
	10.7.2.2	Cone: a wide superior end extends with a uniformly narrowing antihelix to the inferior terminal point.
	10.7.2.3	Cylindrical: a mostly entirely cylindrical antihelix extends from the crura to the inferior end.
	10.7.2.4	Funnel: a broad superior half of the antihelix terminates in a strictly cylindrical inferior half of the helix.
Left Ear Antihelix		
	10.8.1	Left Ear Antihelix size:
	10.8.1.1	Thin: a narrow visible antihelix is seen and is noticeably thinner than the helix.
	10.8.1.2	Proportionate: an antihelix approximately similar in thickness as the helix.
	10.8.1.3	Broad: a very broad antihelix noticeably wider than the helix across it.
	10.8.2	Left Ear Antihelix shape:
	10.8.2.1	Flat: antihelix is so distended that it is hard to identify and makes the scaphoid fossa appear as extending throughout majority of the pinna.
	10.8.2.2	Cone: a wide superior end extends with a uniformly narrowing antihelix to the inferior terminal point.
	10.8.2.3	Cylindrical: a mostly entirely cylindrical antihelix extends from the crura to the inferior end.
	10.8.2.4	Funnel: a broad superior half of the antihelix terminates in a strictly cylindrical inferior half of the helix.

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Right Ear Crura of Antihelix (Superior)		
	10.9.1	Right Ear Crura of Antihelix (Superior) Crus size:
	10.9.1.1	Visibly absent.
	10.9.1.2	Fine: a thin margin is seen forming the crus.
	10.9.1.3	Pronounced: a well-defined proportional crus .
	10.9.1.4	Extreme: a greatly enlarged crus that can be larger than the helix at its widest point
	10.9.2	Right Ear Crura of Antihelix (Superior) Crus shape:
	10.9.2.1	Flat: crus is so distended it is hard to identify and makes the scaphoid fossa and triangular fossa appear to merge.
	10.9.2.2	Rounded: a curved margin is visible.
	10.9.2.3	Sharp: a sharp margin is formed at the most projecting point of the crus.
Right Ear Crura of Antihelix (Inferior)		
	10.10.1	Right Ear Crura of Antihelix (Inferior) Crus size:
	10.10.1.1	Visibly absent.
	10.10.1.2	Fine: a thin margin is seen forming the crus.
	10.10.1.3	Pronounced: a well-defined proportional crus .
	10.10.1.4	Extreme: a greatly enlarged crus that can be larger than the helix at its widest point
	10.10.2	Right Ear Crura of Antihelix (Inferior) Crus shape:
	10.10.2.1	Flat: crus is so distended it is hard to identify and makes the scaphoid fossa and triangular fossa appear to merge.
	10.10.2.2	Rounded: a curved margin is visible.
	10.10.2.3	Sharp: a sharp margin is formed at the most projecting point of the crus.
Left Ear Crura of Antihelix (Superior)		
	10.11.1	Left Ear Crura of Antihelix (Superior) Crus size:

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	10.11.1.1	Visibly absent.
	10.11.1.2	Fine: a thin margin is seen forming the crus.
	10.11.1.3	Pronounced: a well-defined proportional crus .
	10.11.1.4	Extreme: a greatly enlarged crus that can be larger than the helix at its widest point
	10.11.2	Left Ear Crura of Antihelix (Superior) Crus shape:
	10.11.2.1	Flat: crus is so distended it is hard to identify and makes the scaphoid fossa and triangular fossa appear to merge.
	10.11.2.2	Rounded: a curved margin is visible.
	10.11.2.3	Sharp: a sharp margin is formed at the most projecting point of the crus.
Left Ear Crura of Antihelix (Inferior)		
	10.12.1	Left Ear Crura of Antihelix (Inferior) Crus size:
	10.12.1.1	Visibly absent.
	10.12.1.2	Fine: a thin margin is seen forming the crus.
	10.12.1.3	Pronounced: a well-defined proportional crus .
	10.12.1.4	Extreme: a greatly enlarged crus that can be larger than the helix at its widest point
	10.12.2	Left Ear Crura of Antihelix (Inferior) Crus shape:
	10.12.2.1	Flat: crus is so distended it is hard to identify and makes the scaphoid fossa and triangular fossa appear to merge.
	10.12.2.2	Rounded: a curved margin is visible.
	10.12.2.3	Sharp: a sharp margin is formed at the most projecting point of the crus.
Right Ear Triangular Fossa		
	10.13.1	Right Ear Triangular fossa shape:
	10.13.1.1	No distinct fossa shape can be scored, usually due to one of the crura not forming a distinct border.
	10.13.1.2	Equilateral: the triangular fossa has three approximately congruent straight sides.

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	10.13.1.3	Isosceles: the fossa has two approximately congruent and straight sides (superior and inferior sides) and a longer appearance overall.
	10.13.1.4	Acute: fossa has three non-congruent relatively straight sides and three acute angles.
	10.13.1.5	Arched: a straight base with an arched U-shaped termination towards the adjoining of the two crura.
	10.13.1.6	Oval: overall rounded oval to circular appearance of the fossa with no distinct sides or angles.
	10.13.2	Right Ear Triangular Fossa depth:
	10.13.2.1	Absent.
	10.13.2.2	Shallow: fossa is barely distinguishable from the relief of the crura and the antihelix.
	10.13.2.3	Deep: a pronounced concavity is visibly well outlined between the crura.
	10.13.3	Right Ear Triangular Fossa size (lateral):
	10.13.3.1	Absent.
	10.13.3.2	Reduced: fossa is small in size, appearing smaller than the tragus.
	10.13.3.3	Proportionate: fossa appears approximately the same size as the tragus.
	10.13.3.4	Large: fossa appears larger than tragus.
Left Ear Triangular Fossa		
	10.14.1	Left Ear Triangular fossa shape:
	10.14.1.1	No distinct fossa shape can be scored, usually due to one of the crura not forming a distinct border.
	10.14.1.2	Equilateral: the triangular fossa has three approximately congruent straight sides.
	10.14.1.3	Isosceles: the fossa has two approximately congruent and straight sides (superior and inferior sides) and a longer appearance overall.
	10.14.1.4	Acute: fossa has three non-congruent relatively straight sides and three acute angles.
	10.14.1.5	Arched: a straight base with an arched U-shaped termination towards the adjoining of the two crura.
	10.14.1.6	Oval: overall rounded oval to circular appearance of the fossa with no distinct sides or angles.
	10.14.2	Left Ear Triangular Fossa depth:
	10.14.2.1	Absent.

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	10.14.2.2	Shallow: fossa is barely distinguishable from the relief of the crura and the antihelix.
	10.14.2.3	Deep: a pronounced concavity is visibly well outlined between the crura.
	10.1.4.3	Left Ear Triangular Fossa size (lateral)
	10.14.3.1	Absent.
	10.14.3.2	Reduced: fossa is small in size, appearing smaller than the tragus.
	10.14.3.3	Proportionate: fossa appears approximately the same size as the tragus.
	10.14.3.4	Large: fossa appears larger than tragus.
Right Ear Crus of Helix		
	10.15.1	Right Ear Crus thickness:
	10.15.1.1	Absent.
	10.15.1.2	Fine: a thin margin is seen forming the crus.
	10.15.1.3	Pronounced: a well-defined proportional crus is visible.
	10.15.1.4	Extreme: a greatly enlarged crus that can be larger than the helix at its widest point is visible.
	10.15.2	Right Ear Crus length:
	10.15.2.1	Absent
	10.15.2.2	Diminutive: minor projection of the crus over the ear canal opening.
	10.15.2.3	Intermediate: crus extends to the same approximate point of the ear canal opening and approximately half the length of the crura of the antihelix.
	10.15.2.4	Extensive: particularly long crus extending to approximately the entire length of the crura of the antihelix.
	10.15.3	Right Ear Crus shape:
	10.15.3.1	Absent
	10.15.3.2	Flat: crus is so distended that it is hard to identify and makes the superior and inferior concha appear to merge.
	10.15.3.3	Rounded: a curved margin is visible.
	10.15.3.4	Sharp: a sharp margin is formed at the most projecting point of the crus.

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Left Ear Crus of Helix		
	10.16.1	Left Ear Crus thickness:
	10.16.1.1	Absent.
	10.16.1.2	Fine: a thin margin is seen forming the crus.
	10.16.1.3	Pronounced: a well-defined proportional crus is visible.
	10.16.1.4	Extreme: a greatly enlarged crus that can be larger than the helix at its widest point is visible.
	10.16.2	Left Ear Crus length:
	10.16.2.1	Absent
	10.16.2.2	Diminutive: minor projection of the crus over the ear canal opening.
	10.16.2.3	Intermediate: crus extends to the same approximate point of the ear canal opening and approximately half the length of the crura of the antihelix.
	10.16.2.4	Extensive: particularly long crus extending to approximately the entire length of the crura of the antihelix.
	10.16.3	Left Ear Crus shape:
	10.16.3.1	Absent
	10.16.3.2	Flat: crus is so distended that it is hard to identify and makes the superior and inferior concha appear to merge.
	10.16.3.3	Rounded: a curved margin is visible.
	10.16.3.4	Sharp: a sharp margin is formed at the most projecting point of the crus.
Right Ear Scaphoid Fossa		
	10.17.1	Right Ear Scaphoid fossa shape:
	10.17.1.1	Gutter: a relatively equally distributed slightly curved concave cylindrical shape across the entirety of the fossa.
	10.17.1.2	Partial: a generally wide half of the fossa that terminates before reaching the other half of the ear, usually seen as a result of a flat partial inferior antihelix or superior crus of antihelix.
	10.17.1.3	Triangular: a wider point approximately in the middle third of the ear appears as a very obtuse apex to a rough triangular shape.

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	10.17.1.4	Club: a relatively uniformly wide superior half to two thirds of the fossa terminating in a very narrow lower third, similar to a baseball bat.
	10.17.1.5	Curved blade: a curved and broad superior half to two thirds, broader at the superior third to middle third junction region, terminating in a very narrow lower third.
	10.17.2	Right Ear Scaphoid Fossa depth:
	10.17.2.1	Shallow: fossa is barely distinguishable from the relief of the crura, helix and antihelix.
	10.17.2.2	Deep: a pronounced concavity between the helix and antihelix is visibly well outlined.
	10.17.2.3	Superiorly shallow: superior part of fossa is shallow and hard to distinguish while inferior part is deep and evident.
	10.17.2.4	Inferiorly shallow: inferior part of fossa is shallow and hard to distinguish while superior part is deep and evident.
	10.17.3	Right Ear Scaphoid Fossa width (lateral):
	10.17.3.1	Narrow: fossa is small in size, appearing narrower than the helix and/or antihelix.
	10.17.3.2	Proportionate: fossa appears approximately the same width as the helix and/or antihelix.
	10.17.3.3	Wide: fossa appears larger than helix and antihelix combined.
	10.17.3.4	Extreme: fossa covers majority of pinna due to underdeveloped antihelix and crura, appearing to merge with the concha.
Left Ear Scaphoid Fossa		
	10.18.1	Left Ear Scaphoid fossa shape:
	10.18.1.1	Gutter: a relatively equally distributed slightly curved concave cylindrical shape across the entirety of the fossa.
	10.18.1.2	Partial: a generally wide half of the fossa that terminates before reaching the other half of the ear, usually seen as a result of a flat partial inferior antihelix or superior crus of antihelix.
	10.18.1.3	Triangular: a wider point approximately in the middle third of the ear appears as a very obtuse apex to a rough triangular shape.
	10.18.1.4	Club: a relatively uniformly wide superior half to two thirds of the fossa terminating in a very narrow lower third, similar to a baseball bat.

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	10.18.1.5	Curved blade: a curved and broad superior half to two thirds, broader at the superior third to middle third junction region, terminating in a very narrow lower third.
	10.18.2	Left Ear Scaphoid Fossa depth:
	10.18.2.1	Shallow: fossa is barely distinguishable from the relief of the crura, helix and antihelix.
	10.18.2.2	Deep: a pronounced concavity between the helix and antihelix is visibly well outlined.
	10.18.2.3	Superiorly shallow: superior part of fossa is shallow and hard to distinguish while inferior part is deep and evident.
	10.18.2.4	Inferiorly shallow: inferior part of fossa is shallow and hard to distinguish while superior part is deep and evident.
	10.18.3	Left Ear Scaphoid Fossa width (lateral):
	10.18.3.1	Narrow: fossa is small in size, appearing narrower than the helix and/or antihelix.
	10.18.3.2	Proportionate: fossa appears approximately the same width as the helix and/or antihelix.
	10.18.3.3	Wide: fossa appears larger than helix and antihelix combined.
	10.18.3.4	Extreme: fossa covers majority of pinna due to underdeveloped antihelix and crura, appearing to merge with the concha.
Right Ear Concha (Superior)		
	10.19.1	Right Ear Concha (Superior) depth:
	10.19.1.1	Shallow: fossa is barely distinguishable from the relief of the crura and antihelix.
	10.19.1.2	Deep: a pronounced concavity is visibly well outlined between the crura and antihelix.
	10.19.2	Right Ear Concha (Superior) width (lateral):
	10.19.2.1	Narrow: fossa is small in size, appearing narrower than the helix and antihelix combined at their widest point.
	10.19.2.2	Proportionate: fossa appears approximately the same width as the helix and antihelix combined at their widest point
	10.19.2.3	Wide: fossa appears larger than helix and antihelix combined at their widest point.

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	10.19.2.4	Extreme: fossa covers majority of pinna due to underdeveloped antihelix and crura, appearing to merge with the concha.
Right Ear Concha (Inferior)		
	10.20.1	Right Ear Concha (Inferior) depth:
	10.20.1.1	Shallow: fossa is barely distinguishable from the relief of the crura and antihelix.
	10.20.1.2	Deep: a pronounced concavity is visibly well outlined between the crura and antihelix.
	10.20.2	Right Ear Concha (Inferior) width (lateral):
	10.20.2.1	Narrow: fossa is small in size, appearing narrower than the helix and antihelix combined at their widest point.
	10.20.2.2	Proportionate: fossa appears approximately the same width as the helix and antihelix combined at their widest point
	10.20.2.3	Wide: fossa appears larger than helix and antihelix combined at their widest point.
	10.20.2.4	Extreme: fossa covers majority of pinna due to underdeveloped antihelix and crura, appearing to merge with the concha.
Left Ear Concha (Superior)		
	10.21.1	Left Ear Concha (Superior) depth:
	10.21.1.1	Shallow: fossa is barely distinguishable from the relief of the crura and antihelix.
	10.21.1.2	Deep: a pronounced concavity is visibly well outlined between the crura and antihelix.
	10.21.2	Left Ear Concha (Superior) width (lateral):
	10.21.2.1	Narrow: fossa is small in size, appearing narrower than the helix and antihelix combined at their widest point.
	10.21.2.2	Proportionate: fossa appears approximately the same width as the helix and antihelix combined at their widest point
	10.21.2.3	Wide: fossa appears larger than helix and antihelix combined at their widest point.
	10.21.2.4	Extreme: fossa covers majority of pinna due to underdeveloped antihelix and crura, appearing to merge with the concha.

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Left Ear Concha (Inferior)		
	10.22.1	Left Ear Concha (Inferior) depth:
	10.22.1.1	Shallow: fossa is barely distinguishable from the relief of the crura and antihelix.
	10.22.1.2	Deep: a pronounced concavity is visibly well outlined between the crura and antihelix.
	10.22.2	Left Ear Concha (Inferior) width (lateral):
	10.22.2.1	Narrow: fossa is small in size, appearing narrower than the helix and antihelix combined at their widest point.
	10.22.2.2	Proportionate: fossa appears approximately the same width as the helix and antihelix combined at their widest point
	10.22.2.3	Wide: fossa appears larger than helix and antihelix combined at their widest point.
	10.22.2.4	Extreme: fossa covers majority of pinna due to underdeveloped antihelix and crura, appearing to merge with the concha.
Right Ear Tragus		
	10.23.1	Right Ear Tragus shape:
	10.23.1.1	Flat: nearly no protrusion visible extending from the tragus region postero-laterally.
	10.23.1.2	Curved: a gentle rounded appearance of the contour of the tragus is visible.
	10.23.1.3	Triangular: a sharper more angled midline tip is formed postero-laterally.
	10.23.1.4	Trapezoid: a relatively square tragus with sloping sides towards the cheek.
	10.23.2	Right Ear Tragus size:
	10.23.2.1	Reduced: a tragus barely extending from the cheek with no distinct formation of an anterior notch and a very limited covering of the ear canal opening.
	10.23.2.2	Proportionate: tragus extends postero-laterally enough to cover approximately half of the ear canal opening or approximately equal to the helix attachment width.
	10.23.2.3	Large: tragus extends significantly covering at least two thirds of the ear canal opening and obscuring part of the concha.

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Left Ear Tragus		
	10.24.1	Left Ear Tragus shape:
	10.24.1.1	Flat: nearly no protrusion visible extending from the tragus region postero-laterally.
	10.24.1.2	Curved: a gentle rounded appearance of the contour of the tragus is visible.
	10.24.1.3	Triangular: a sharper more angled midline tip is formed postero-laterally.
	10.24.1.4	Trapezoid: a relatively square tragus with sloping sides towards the cheek.
	10.24.2	Left Ear Tragus size
	10.24.2.1	Reduced: a tragus barely extending from the cheek with no distinct formation of an anterior notch and a very limited covering of the ear canal opening.
	10.24.2.2	Proportionate: tragus extends postero-laterally enough to cover approximately half of the ear canal opening or approximately equal to the helix attachment width.
	10.24.2.3	Large: tragus extends significantly covering at least two thirds of the ear canal opening and obscuring part of the concha.
Right Ear Antitragus		
	10.25.1	Right Ear Antitragus shape:
	10.25.1.1	Flat: nearly no protrusion visible extending from the lower helix/lobule antero-laterally.
	10.25.1.2	Curved: a gentle rounded appearance of the contour of the antitragus is visible.
	10.25.1.3	Triangular: a sharper more angled midline tip is formed antero-laterally.
	10.25.1.4	Trapezoid: a relatively square antitragus with sloping sides towards the lower helix/lobule.
	10.25.2	Right Ear Antitragus size:
	10.25.2.1	Reduced: antitragus barely extending from the lower helix/lobule with a very limited protrusion over the inferior concha.
	10.25.2.2	Proportionate: antitragus extends antero-medially enough to cover approximately a quarter of the inferior concha.
	10.25.2.3	Large: tragus extends significantly covering at a third to half of the inferior concha.
Left Ear Antitragus		

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	10.26.1	Left Ear Antitragus shape:
	10.26.1.1	Flat: nearly no protrusion visible extending from the lower helix/lobule antero-laterally.
	10.26.1.2	Curved: a gentle rounded appearance of the contour of the antitragus is visible.
	10.26.1.3	Triangular: a sharper more angled midline tip is formed antero-laterally.
	10.26.1.4	Trapezoid: a relatively square antitragus with sloping sides towards the lower helix/lobule.
	10.26.2	Left Ear Antitragus size:
	10.26.2.1	Reduced: antitragus barely extending from the lower helix/lobule with a very limited protrusion over the inferior concha.
	10.26.2.2	Proportionate: antitragus extends antero-medially enough to cover approximately a quarter of the inferior concha.
	10.26.2.3	Large: tragus extends significantly covering at a third to half of the inferior concha.
Right Ear Intertragic Notch		
	10.27.1	Right Ear Intertragic notch shape:
	10.27.1.1	Fissure shaped: a narrow and long slit-like shape of the notch.
	10.27.1.2	U-shaped: a thin to wide but uniform shape with a U terminal part towards the lobule attachment site and parallel postero-superior boundaries.
	10.27.1.3	Parabola shaped: a widening shape, narrower near the lobule attachment site and widening as it moves further postero-superiorly.
	10.27.2	Right Ear Intertragic notch size:
	10.27.2.1	Reduced: notch is pronouncedly smaller than the anterior notch.
	10.27.2.2	Proportionate: approximately equal in size as the anterior notch
	10.27.2.3	Large: larger than the anterior notch and also covering more area than the tragus.
Left Ear Intertragic Notch		
	10.28.1	Left Ear Intertragic notch shape:
	10.28.1.1	Fissure shaped: a narrow and long slit-like shape of the notch.

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	10.28.1.2	U-shaped: a thin to wide but uniform shape with a U terminal part towards the lobule attachment site and parallel postero-superior boundaries.
	10.28.1.3	Parabola shaped: a widening shape, narrower near the lobule attachment site and widening as it moves further postero-superiorly.
	10.28.2	Left Ear Intertragic notch size:
	10.28.2.1	Reduced: notch is pronouncedly smaller than the anterior notch.
	10.28.2.2	Proportionate: approximately equal in size as the anterior notch
	10.28.2.3	Large: larger than the anterior notch and also covering more area than the tragus.
Right Ear Anterior Knob		
	10.29.1	Right Ear Anterior knob:
	10.29.1.1	Absent.
	10.29.1.2	Present.
Left Ear Anterior Knob		
	10.30.1	Left Ear Anterior knob:
	10.30.1.1	Absent.
	10.30.1.2	Present.
Right Ear Anterior Notch		
	10.31.1	Right Ear Anterior notch shape:
	10.31.1.1	Absent or poorly defined
	10.31.1.2	Fissure shaped: a narrow and long slit-like shape of the notch.
	10.31.1.3	U-shaped: a thin to wide but uniform shape with a U terminal part towards the helix anterior attachment site and parallel antero-superior boundaries.
	10.31.1.4	Parabola shaped: a widening shape, narrower near helix anterior attachment site and widening as it moves further antero-superiorly.

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	10.31.2	Right Ear Anterior notch size:
	10.31.2.1	Reduced: notch is pronouncedly smaller than the intertragic notch.
	10.31.2.2	Proportionate: approximately equal in size as the intertragic notch
	10.31.2.3	Large: larger than the intertragic notch and also covering more area than the tragus.
Left Ear Anterior Notch		
	10.32.1	Left Ear Anterior notch shape:
	10.32.1.1	Absent or poorly defined
	10.32.1.2	Fissure shaped: a narrow and long slit-like shape of the notch.
	10.32.1.3	U-shaped: a thin to wide but uniform shape with a U terminal part towards the helix anterior attachment site and parallel antero-superior boundaries.
	10.32.1.4	Parabola shaped: a widening shape, narrower near helix anterior attachment site and widening as it moves further antero-superiorly.
	10.32.2	Left Ear Anterior notch size:
	10.32.2.1	Reduced: notch is pronouncedly smaller than the intertragic notch.
	10.32.2.2	Proportionate: approximately equal in size as the intertragic notch
	10.32.2.3	Large: larger than the intertragic notch and also covering more area than the tragus.
Right Ear Posterior Auricular Furrow		
	10.33.1	Right Ear Posterior auricular furrow size:
	10.33.1.1	Absent.
	10.33.1.2	Shallow: furrow is barely distinguishable from the relief of the antitragus and the antihelix.
	10.33.1.3	Deep: a pronounced concavity is visibly well outlined between the antitragus and antihelix.
	10.33.2	Right Ear Posterior auricular furrow shape:
	10.33.2.1	Flat: a smooth continuous and straight contour shows no real furrow formation.
	10.33.2.2	Notch: a small, recurved break in the straight contour indicates a small notch present.
	10.33.2.3	Parabola: a prolonged parabola-shaped furrow extends between antitragus and antihelix.

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Left Ear Posterior Auricular Furrow		
	10.34.1	Left Ear Posterior auricular furrow size:
	10.34.1.1	Absent.
	10.34.1.2	Shallow: furrow is barely distinguishable from the relief of the antitragus and the antihelix.
	10.34.1.3	Deep: a pronounced concavity is visibly well outlined between the antitragus and antihelix.
	10.34.2	Left Ear Posterior auricular furrow shape:
	10.34.2.1	Flat: a smooth continuous and straight contour shows no real furrow formation.
	10.34.2.2	Notch: a small, recurved break in the straight contour indicates a small notch present.
	10.34.2.3	Parabola: a prolonged parabola-shaped furrow extends between antitragus and antihelix.
Right Ear Lobule (Lobe)		
	10.35.1	Right Ear Lobule attachment:
	10.35.1.1	Fully detached: completely detached lobule.
	10.35.1.2	Partially detached: inferior third of lobule is detached from the cheek.
	10.35.1.3	Partially attached: only superior third of lobule is attached.
	10.35.1.4	Fully attached: lobule is completely attached to the cheek uniformly.
	10.35.2	Right Ear Lobule size:
	10.35.2.1	Reduced (hypoplastic): severely diminished size lobule (usually attached), hard to distinguish from the terminal part of the helix up to the size of the inferior concha.
	10.35.2.2	Proportionate: lobule is similar in dimensions to the inferior concha and ear canal aperture combined.
	10.35.2.3	Large: a very pronounced lobule extending beyond the equivalent size of the concha and ear canal aperture either vertically, horizontally or in both directions.
	10.35.3	Right Ear Lobule shape
	10.35.3.1	Flat: a smooth barely visible lobule that lies flat against the cheek and neck below the rest of the pinna.

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	10.35.3.2	Sloping: a well-developed and straight slope follows across from the terminal point of the helix to the (usually attached) anterior margin of the lobule.
	10.35.3.3	Rounded: an inferiorly curved lobule relatively circular in proportions.
	10.35.3.4	Oblong: an elongated and generally relatively curved lobule.
	10.35.3.5	Bulbous: a visibly protruding lobule extending laterally/medially beyond the plane it lies in.
	10.35.3.6	Arched: a very gently curved lobule, usually small in size and barely distinguishable from the curvature of the helix.
Left Ear Lobule (Lobe)		
	10.36.1	Left Ear Lobule attachment:
	10.36.1.1	Fully detached: completely detached lobule.
	10.36.1.2	Partially detached: inferior third of lobule is detached from the cheek.
	10.36.1.3	Partially attached: only superior third of lobule is attached.
	10.36.1.4	Fully attached: lobule is completely attached to the cheek uniformly.
	10.36.2	Left Ear Lobule size:
	10.36.2.1	Reduced (hypoplastic): severely diminished size lobule (usually attached), hard to distinguish from the terminal part of the helix up to the size of the inferior concha.
	10.36.2.2	Proportionate: lobule is similar in dimensions to the inferior concha and ear canal aperture combined.
	10.36.2.3	Large: a very pronounced lobule extending beyond the equivalent size of the concha and ear canal aperture either vertically, horizontally or in both directions.
	10.36.3	Left Ear Lobule shape:
	10.36.3.1	Flat: a smooth barely visible lobule that lies flat against the cheek and neck below the rest of the pinna.
	10.36.3.2	Sloping: a well-developed and straight slope follows across from the terminal point of the helix to the (usually attached) anterior margin of the lobule.
	10.36.3.3	Rounded: an inferiorly curved lobule relatively circular in proportions.
	10.36.3.4	Oblong: an elongated and generally relatively curved lobule.
	10.36.3.5	Bulbous: a visibly protruding lobule extending laterally/medially beyond the plane it lies in.

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	10.36.3.6	Arched: a very gently curved lobule, usually small in size and barely distinguishable from the curvature of the helix.
Ear Abnormalities (Left)	10.37.1	Ear Abnormality (Add stuff that you come across)
	10.37.1.1	No abnormality.
	10.37.1.2	Abnormality present:
		Descriptive section, some common abnormalities:
		Cleft lobe
		Cauliflower ear
		Accessory tragus
		Weathering nodules
		Cryptootia
		Stahl ear (typical)
		Stahl ear (variant)
		Shell ear
Ear Abnormalities (Right)	10.38.1	Ear Abnormality (Add stuff that you come across)
	10.38.1.1	No abnormality.
	10.38.1.2	Abnormality present:
		Descriptive section, some common abnormalities:
		Cleft lobe
		Cauliflower ear
		Accessory tragus
		Weathering nodules
		Cryptootia
		Stahl ear (typical)
		Stahl ear (variant)
		Shell ear

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Philtrum		
	11.1.1	Philtrum shape (adapted from Abdulrasheed & Eneye, 2013):
	11.1.1.1	Parallel: the philtral columns run vertically parallel to one another between the cupid's bow and the nostrils, a clear furrow is visible between them in the midline.
	11.1.1.2	Triangular: philtral columns run at an angle from the cupid's bow to the columella, with the midline furrow narrowing superiorly.
	11.1.1.3	Partial concave: philtral columns run approximately half the distance between the cupid's bow and the nostrils, with the furrow being present only along that half of the philtrum.
	11.1.1.4	Flat: no furrow or philtral columns are distinguishable in the region.
Overall Mouth		
	11.2.1	Overall mouth shape:
	11.2.1.1	Linear: lips appear disproportionately thin for the width of the overall mouth while running relatively straight. Upper lip tends to be thinner.
	11.2.1.2	Round: lips are full, and the overall mouth is narrow with an inconspicuous cupid's bow, creating a round outline.
	11.2.1.3	Top heavy: upper lip is fuller than lower lip while proportionately wide and tall.
	11.2.1.4	Bottom heavy: lower lip is fuller than upper lip while proportionately wide and tall.
	11.2.1.5	Sharp: defined by sharp outlines over the cupid's bow and tori of lower lip, creating an angular shape overall.
	11.2.1.6	Full and wide: overall wide mouth and significantly full lips, making the mouth an overpowering feature of the face.
	11.2.1.7	Upturned: overall proportionate mouth with lateral commissures pointing supero-laterally.
	11.2.1.8	Downturned: overall proportionate mouth with lateral commissures points infero-laterally.
	11.2.2	Overall mouth width:
	11.2.2.1	Narrow: overall width of mouth from labial commissure to labial commissure is relatively narrower than the interpupillary distance.
	11.2.2.2	Proportionate: overall width of mouth from commissure to commissure is approximately equal to the interpupillary distance.

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	11.2.2.3	Wide: overall width of mouth from commissure to commissure is wider than the interpupillary distance.
Upper Lip and Lower Lip	11.3.1	Upper Lip Fullness (portrait):
	11.3.1.1	Thin: a slim and elongated lip is observed, relative to the diameter of the iris, it is thinner at its widest point.
	11.3.1.2	Intermediate: a lip that is not thin or particularly full and is relatively proportionate in relation to the rest of the face, relative to the diameter of the iris, it is approximately the same thickness.
	11.3.1.3	Full: markedly thick lip with thickness relatively larger than the diameter of the iris.
	11.3.2	Upper Lip Protrusion (lateral):
	11.3.2.1	Retracted: with respect to a vertically straight line from subnasale this lip is seen to be further posterior than the reference line.
	11.3.2.2	Parallel: the lip is approximately at the same reference plane as the opposing lip.
	11.3.2.3	Protruding: with respect to a vertically straight reference line from subnasale this lip protrudes anteriorly beyond it.
	11.3.3	Upper Lip Full Vermilion border shape (adapted from Carey <i>et al.</i>, 2009):
	11.3.3.1	Curved: absence of paramedian peaks and median notch of the vermilion and presenting with a gentle curvature along the entire border.
	11.3.3.2	Straight: absence of peaks and notches with a horizontally straight border.
	11.3.3.3	Everted: inner aspect of vermilion border is visible in frontal view.
	11.3.3.4	Tented: roughly triangularly projecting vermilion border.
	11.3.3.5	Cupid's bow (faint): a loosely archery style bow is visible in the upper lip not well defined or pronounced.
	11.3.3.6	Cupid's bow (pronounced) a distinct archery style bow is visible in the upper lip border with distinct paramedial peaks and a concave median sulcus.
	11.3.4	Upper Lip Full Vermilion border definition

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	11.3.4.1	Faint: an extremely inconspicuous vermilion border separates the lip and over or underlying skin, it appears almost as if the lip and the skin gently blend into one another with no clear distinction at a specific point.
	11.3.4.2	Intermediate: a visible separation between lip and over or underlying skin is present, it remains however mostly distinguished by shape and colouration change.
	11.3.4.3	Prominent: a distinct separation between the lip and the over or underlying skin, usually with a sharp angle forming at the vermilion border.
	11.3.5	Upper Lip Symmetry:
	11.3.5.1	Symmetrical: near complete symmetry between left and right aspects of the mouth complex.
	11.3.5.2	Left thickness asymmetry: left aspect of the lips is visibly less full than the right.
	11.3.5.3	Right thickness asymmetry: right aspect of the lips is visibly less full than the left.
	11.3.5.4	Left commissural asymmetry: left labial commissure is angled slightly more superiorly than the right.
	11.3.5.5	Right commissural asymmetry: right labial commissure is angled slightly more superiorly than the left.
	11.3.5.6	Left vermilion definition asymmetry: left vermilion is more prominently defined than the right.
	11.3.5.7	Right vermilion definition asymmetry: right vermilion is more prominently defined than the left.
	11.3.6	Upper lip tubercle:
	11.3.6.1	Absent: no median tubercle is seen in the upper lip.
	11.3.6.2	Faint: a minor tubercle is distinguishable along the midline of the upper lip, with a usually rounded appearance.
	11.3.6.3	Pronounced: a protruding tubercle is seen in the midline of the upper lip, distinctly extending the upper lip anteriorly with a sharp border.
	11.3.7	Upper lip alae:
	11.3.7.1	Absent: no distinct ala is observable, rather a relatively flat or uniformly curved vermilion border.
	11.3.7.2	Shallow curve: the ala is distinct from the midline, and it is gently curved superiorly.
	11.3.7.3	Pronounced curve: the ala is markedly curved with a sharp change in direction.
	11.3.7.4	Angled: the ala is abruptly angled, terminating into a sharp point superiorly.

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	11.3.8	Upper lip circumoral striae distribution
	11.3.8.1	Absent: no visible signs of lip creases are seen.
	11.3.8.2	Faint and sparse: lip creases are few and shallow.
	11.3.8.3	Faint and dense: lip creases are shallow but numerous.
	11.3.8.4	Pronounced and sparse: lip creases are deep and few.
	11.3.8.5	Pronounced and dense: lip creases are numerous and deep.
	11.3.9	Lower Lip Fullness (portrait):
	11.3.9.1	Thin: a slim and elongated lip is observed, relative to the diameter of the iris, it is thinner at its widest point.
	11.3.9.2	Intermediate: a lip that is not thin or particularly full and is relatively proportionate in relation to the rest of the face, relative to the diameter of the iris, it is approximately the same thickness.
	11.3.9.3	Full: markedly thick lip with thickness relatively larger than the diameter of the iris.
	11.3.10	Lower Lip Protrusion (lateral):
	11.3.10.1	Retracted: with respect to a vertically straight line from subnasale this lip is seen to be further posterior than the reference line.
	11.3.10.2	Parallel: the lip is approximately at the same reference plane as the opposing lip.
	11.3.10.3	Protruding: with respect to a vertically straight reference line from subnasale this lip protrudes anteriorly beyond it.
	11.3.11	Lower Lip Full Vermilion border shape (adapted from Carey <i>et al.</i>, 2009):
	11.3.11.1	Curved: absence of paramedian peaks and median notch of the vermillion and presenting with a gentle curvature along the entire border.
	11.3.11.2	Straight: absence of peaks and notches with a horizontally straight border.
	11.3.11.3	Everted: inner aspect of vermillion border is visible in frontal view.
	11.3.11.4	Tented: roughly triangularly projecting vermillion border.
	11.3.11.5	Biconvex: traditionally a lower lip specific appearance with two inferiorly protruding rounded tori and a pronounced median sulcus.

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	11.3.12	Lower Lip Full Vermilion border definition
	11.3.12.1	Faint: an extremely inconspicuous vermilion border separates the lip and over or underlying skin, it appears almost as if the lip and the skin gently blend into one another with no clear distinction at a specific point.
	11.3.12.2	Intermediate: a visible separation between lip and over or underlying skin is present, it remains however mostly distinguished by shape and colouration change.
	11.3.12.3	Prominent: a distinct separation between the lip and the over or underlying skin, usually with a sharp angle forming at the vermilion border.
	11.3.13	Lower Lip Symmetry:
	11.3.13.1	Symmetrical: near complete symmetry between left and right aspects of the mouth complex.
	11.3.13.2	Left thickness asymmetry: left aspect of the lips is visibly less full than the right.
	11.3.13.3	Right thickness asymmetry: right aspect of the lips is visibly less full than the left.
	11.3.13.4	Left commissural asymmetry: left labial commissure is angled slightly more superiorly than the right.
	11.3.13.5	Right commissural asymmetry: right labial commissure is angled slightly more superiorly than the left.
	11.3.13.6	Left vermilion definition asymmetry: left vermilion is more prominently defined than the right.
	11.3.13.7	Right vermilion definition asymmetry: right vermilion is more prominently defined than the left.
	11.3.14	Lower lip median sulcus
	11.3.14.1	Absent: no median sulcus is observable in the lower lip.
	11.3.14.2	Faint: a minor sulcus is distinguishable along the midline of the lower lip not extending across the entire lip.
	11.3.14.3	Pronounced: a deep furrow is distinctly visible in the midline possibly extending all the way to the vermilion border.
	11.3.14.4	Extreme: a deep furrow running the entirety of the midline of the lower lip and creating an area of concavity in the lower vermilion border of the lip.

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	11.3.15	Lower lip torus:
	11.3.15.1	Absent: no lower lip torus is observable.
	11.3.15.2	Shallow curve: the torus is distinct from the midline, and is gently curved inferiorly.
	11.3.15.3	Pronounced curve: the torus is markedly curved with a sharp change in direction.
	11.3.15.4	Angled: the torus is abruptly angled, terminating into a sharp point inferiorly.
	11.3.16	Lower lip circumoral striae distribution
	11.3.16.1	Absent: no visible signs of lip creases are seen.
	11.3.16.2	Faint and sparse: lip creases are few and shallow.
	11.3.16.3	Faint and dense: lip creases are shallow but numerous.
	11.3.16.4	Pronounced and sparse: lip creases are deep and few.
	11.3.16.5	Pronounced and dense: lip creases are numerous and deep.
Lip Fissure (Opening between Lips)		
	11.4.1	Lip fissure shape:
	11.4.1.1	Linear: oral fissure is closed, linear and horizontally straight.
	11.4.1.2	Left slant: oral fissure is angled with the left commissure slightly superior to the right while overall shape is linear.
	11.4.1.3	Right slant: oral fissure is angled with the right commissure slightly superior to the right while overall shape is linear.
	11.4.1.4	Inferior curve: a symmetrical curve is formed by the closed oral fissure that is inferiorly concave.
	11.4.1.5	Left inferior curve: a curve is formed by the closed oral fissure that is inferiorly concave and slightly more elevated on the left side.
	11.4.1.6	Right inferior curve: a curve is formed by the closed oral fissure that is inferiorly concave and slightly more elevated on the right side.
	11.4.1.7	Superior curve: a symmetrical curve is formed by the closed oral fissure that is superiorly concave.
	11.4.1.8	Left superior curve: a curve is formed by the closed oral fissure that is superiorly concave and slightly more elevated on the left side.

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	11.4.1.9	Right superior curve: a symmetrical curve is formed by the closed oral fissure that is superiorly concave and slightly more elevated on the right side.
	11.4.2	Lip Fissure Degree of contact
	11.4.2.1	Complete contact: upper and lower lips are completely in contact with no visually discernible opening.
	11.4.2.2	Minimal opening: the space of the oral cavity visible from the lip fissure corresponds to less than a quarter of the lip height.
	11.4.2.3	Intermediate opening: the lip fissure is open to correspond approximately between a quarter and half of the total lip height.
	11.4.2.4	Large opening: the height of the opening corresponds approximately between half to three quarters of total lip height.
Overall Dental Occlusion (Contact between Upper and Lower Teeth)		
	11.5.1	Overall Dental occlusion classification (based on British Standards Institution, 1983):
	11.5.1.1	Teeth are not readily visible or visible enough to be scored
	11.5.1.2	Normal occlusion: lower incisor apex lies immediately below cingulum plateau of upper central incisors.
	11.5.1.3	Anterior angle over-jet: upper central incisors are anteriorly inclined, increasing over-jet distance.
	11.5.1.4	Posterior angle over-jet: upper central incisors are posteriorly inclined, decreasing over-jet while projecting further inferiorly over lower incisors.
	11.5.1.5	Reverse over-jet: lower incisors apex lies anterior to upper central incisor.
Characteristic Detail of Teeth		
	11.6.1	Teeth visibility:
	11.6.1.1	Not visible: Closed mouth where teeth cannot be observed
	11.6.1.2	Barely visible: Teeth are not readily noticeable
	11.6.1.3	Mostly visible: Majority of the lower or upper teeth can be spotted

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	11.6.2	Alignment of teeth
11.6.2.1	Not visible: Closed mouth where teeth cannot be observed or not visible enough to be scored	
	11.6.2.2	Parallel tight: teeth are tightly arranged with minimal to no spacing between individual teeth and parallel to one another.
	11.6.2.3	Parallel spaced: teeth are widely spaced but parallel to one another.
	11.6.2.4	Central diastema: large noticeable central diastema is present.
	11.6.2.5	Left diastema: diastema present between left central incisor and left lateral incisor.
	11.6.2.6	Right diastema: diastema present between right central incisor and right lateral incisor.
	11.6.2.7	Misaligned: teeth are visibly misaligned or crooked.
	11.6.3	Dental condition and modifications
11.6.3.1	Not visible: Closed mouth where teeth cannot be observed or not visible enough to be scored	
	11.6.3.2	Natural and healthy: teeth appear healthy and have no obvious modifications.
	11.6.3.3	Healthy with braces: teeth appear healthy, but braces have been installed.
	11.6.3.4	Healthy, chipped: teeth appear healthy, with a section of any tooth missing.
	11.6.3.5	Natural and stained: teeth appear without modification but with a darker yellow-brown tone to them.
	11.6.3.6	Visible decay: teeth show signs of pathologies and discoloration.
	11.6.3.7	Artificial inlay: teeth appear to have inlay modifications on the outer boundary.
	11.6.3.8	Tooth or teeth replacement: visible replacement teeth visible.
	11.6.3.9	Tooth or teeth removed: teeth absent from anterior rows.
Mouth Abnormalities		
	11.7.1	Mouth abnormality presence (Lindsay, 1976):
	11.7.1.1	Absent: no abnormality present.
	11.7.1.2	Herpes (cold sores): outbursts of herpes are visible on the margins of the vermilion border.
	11.7.1.3	Cleft lip: a separation of part or of the entire lip can be seen and attributed to cleft lip.
	11.7.1.4	Microstomia: congenitally severely reduced mouth region dimensions.
	11.7.1.5	Macrochelia: congenital enlargement of the lips.

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Chin (Profile and Frontal view)		
	12.1.1	Chin shape (portrait):
	12.1.1.1	Rounded: the chin is inferiorly gently curved.
	12.1.1.2	Triangular: chin terminates in a sharp angled point inferiorly, appearing like the apex of an inverted triangle.
	12.1.1.3	Rectangular: a well-defined straight inferior end and bordered on either side by nearly perpendicular and mostly straight vertical terminations.
	12.1.2	Chin prominence (profile):
	12.1.2.1	Retreating: mental region appears posteriorly depressed in relation to other anterior elements of the face (excluding nose and lips).
	12.1.2.2	Vertical: mental region appears in line with the anterior elements of the face (excluding nose and lips).
	12.1.2.3	Projecting: an anterior projection of the mental region is distinct.
	12.1.3	Chin relative width:
	12.1.3.1	Narrow: the lateral aspects of the chin appear to terminate prior to the oral commissures.
	12.1.3.2	Symmetrical: the chin laterally aligns approximately with the oral commissures.
	12.1.3.3	Wide: the chin extends laterally beyond the level of the oral commissures.
	12.1.3.4	Chin relative length:
	12.1.3.1	Short: the chin extends below the lips less than the length between subnasale and the lower vermilion border of the lips at midpoint.
	12.1.3.2	Proportionate: the chin extends inferiorly, approximately the same length as between subnasale and the lower vermilion border of the lips at midpoint.
	12.1.3.3	Long: the chin extends inferiorly further than the length between subnasale and the lower vermilion border of the lips at midpoint.
	12.1.4	Chin Symmetry:
	12.1.4.1	Symmetrical: chin is aligned and a near perfect symmetry between left and right halves is observed.

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	12.1.4.2	Left elevation: the left aspect of the chin contour terminates above the right.
	12.1.4.3	Right elevation: the right aspect of the chin contour terminates above the left.
	12.1.5	Chin cleft
	12.1.5.1	No cleft: no fissure is present on the chin.
	12.1.5.2	Subtle cleft: a subtle fissure is present in the midline of the chin in a vertical orientation. This is usually more pronounced in the inferior-most aspect of the chin.
	12.1.5.3	Pronounced cleft: a distinct fissure is present in the midline of the chin in a vertical orientation, it can be so pronounced it visibly divides the chin into two parallel sections.
	12.1.6	Chin dimple
	12.1.6.1	No dimple: no dimple is present.
	12.1.6.2	Subtle dimple: a subtle circular depression is present on the anterior aspect of the chin in the midline.
	12.1.6.3	Pronounced dimple: a distinct dimple is present in the midline of the chin.
	12.1.6.4	Multiple dimples: two or more dimples are present at various positions in the chin, likely asymmetrically arranged.
Jawline (from Chin to Gonial Angle)		
	12.2.1	Jawline shape (gonial angle is the angle formed between the tragus, mandibular angle and chin) :
	12.2.1.1	Rounded: a gentle curve extends from the gonial angle to the chin.
	12.2.1.2	Oblique slope: a straight, gentle and diagonally sloping linear contour is observed between gonial angle and chin.
	12.2.1.3	Right angled: a right angle is formed at the gonial angle extending to the chin in a nearly horizontal manner, tends to give the face a square appearance.
	12.2.1.4	Obtuse angle: a pronounced extreme obtuse angle is formed at the gonial angle and extends as an oblique line to the chin, tends to give the face a rectangular appearance.
	12.2.2	Jowl prominence (adapted from Buckingham <i>et al.</i>, 2015):
	12.2.2.1	Absent: no jowls are distinguishable along the jawline.

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	12.2.2.2	Prejowl: the beginnings of a very mild jowl protrusion is seen with a shadow created infero-anteriorly to the labiomandibular fold region.
	12.2.2.3	Descended jowl: a pronounced jowl is distinguishable as a convexity disrupting the jawline shape below the labiomandibular fold region, manifested as an accentuation of the shadow created by it.
Neck (Overall)		
	13.1.1	Relative neck width:
	13.1.1.1	Narrow: neck is relatively narrower than bizygomatic breadth.
	13.1.1.2	Proportionate: neck is approximately as wide as the bizygomatic breadth.
	13.1.1.3	Wide: neck is wider than bizygomatic breadth.
	13.1.2	Relative neck height:
	13.1.2.1	Short: the neck is shorter than a third of the total face length.
	13.1.2.2	Proportionate: the neck is approximately a third of the total face length.
	13.1.2.3	Long: the neck is longer than a third of the total face length.
	13.1.3	Neck shape (frontal)
	13.1.3.1	Cylindrical: parallel lateral edges to one another running relatively straight from the thoracic inlet to the cranial base.
	13.1.3.2	Triangular: narrower superiorly and wider inferiorly forming a roughly triangular shape, usually as a result of large trapezius muscles.
	13.1.3.3	Combination: wide inferior half and parallel superior half.
	13.1.3.4	Inverse triangular: wider superiorly and narrow inferiorly.
	13.1.4	Submental fat (double chin):
	13.1.4.1	Absent: no evidence of submental fat is present.
	13.1.4.2	Minor: a minor extent of submental fat has accumulated inferior to the chin, more easily noticeable from a lateral view.
	13.1.4.3	Pronounced: a well-defined extended layer of submental fat is markedly visible from all views.

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Laryngeal Prominence (Adam's Apple) (Lateral/ Anterior view)- The most anteriorly visible portion of the thyroid cartilage		
	13.2.1	Laryngeal Prominence (Adam's Apple) Shape:
	13.2.1.1	Flat: no real laryngeal protrusion is visible.
	13.2.1.2	Rounded: formed by a curved anteriorly convex protrusion.
	13.2.1.3	Pointed: a sharp single central point protrudes anteriorly with approximately equal postero-laterally extending slopes.
	13.2.1.4	Angular: formed by a protruding sharp long edge with straight slopes on either side.
	13.2.2	Laryngeal Prominence Prominence:
	13.2.2.1	Absent: no laryngeal protrusion.
	13.2.2.2	Faint: barely visible laryngeal prominence.
	13.2.2.3	Pronounced: a markedly identifiable prominence with an easy to distinguish shape.
	13.2.3	Laryngeal Prominence Location
	13.2.3.1	Absent: no laryngeal protrusion.
	13.2.3.2	Low: located in the lower half of the neck region.
	13.2.3.3	Intermediate: located at the approximate midpoint of the neck length.
	13.2.3.4	High: located close to the chin in the superior half of the neck region.
Facial Hair Above Upper Lip		
	14.1.1	Facial Hair Above Upper Lip shape:
	14.1.1.1	No facial hair.
	14.1.1.2	Straight: approximately straight linear stripe of hair, with minimal, if any, curvature or angulation and overall horizontally parallel to the lip.
	14.1.1.3	Curved: uniformly rounded hair stripe following the curvature of the lip.

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	14.1.1.4	Solid stripe: a continuous single vertically orientated stripe of hair perpendicular to the lip along the midline of the face.
	14.1.1.5	Triangular: a thick facial hair in the midline with thinner tapering lateral ends.
	14.1.2	Overall Facial Hair Above Upper Lip thickness:
	14.1.2.1	No facial hair.
	14.1.2.2	Thin: pencil-like thin height or width of hair.
	14.1.2.3	Intermediate: thickness appears to incompletely cover the over or under lip area, while still distinctly present in over half of the region.
	14.1.2.4	Full: vertical height covering the entire (or majority of) the upper or lower lip region.
	14.1.3	Facial Hair Above Upper Lip density and distribution
	14.1.3.1	No facial hair.
	14.1.3.2	Uniform dense: hair density is high and consistent throughout.
	14.1.3.3	Uniform thin: hair density is low and consistent throughout.
	14.1.3.4	Midpoint dense: median aspect is dense with the lateral aspects thinning out.
	14.1.3.5	Laterally dense: lateral aspects dense with the median thinning.
	14.1.4	Facial Hair Above Upper Lip Colour variation
	14.1.4.1	No facial hair.
	14.1.4.2	Uniform colouration through area.
	14.1.4.3	Inconsistently uneven colouration throughout.
	14.1.4.4	Darker in the midline and lighter colouration on lateral aspects.
	14.1.4.5	Darker colours in the lateral aspects and lighter colouration in the midline.
	14.1.4.6	Left half darker coloured than the right.
	14.1.4.7	Right side darker coloured than the left.
	14.1.5	Facial Hair Above Upper Lip Outline definition
	14.1.5.1	No facial hair.

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	14.1.5.2	Clear and sharp well-defined outline.
	14.1.5.3	Blended outline, gently transitioning into a hairless region.
	14.1.5.4	Uneven and irregular outline with other areas quite distinct to others and others transitioning smoothly.
	14.1.6	Facial Hair Above Upper Lip Surrounding continuity:
	14.1.6.1	No facial hair.
	14.1.6.2	Detached: facial hair growth appears separate from the surrounding regions (cheek facial hair growth and/or upper/lower lip hair growth).
	14.1.6.3	Partially continuous: facial hair lines are continuous with some minor areas of detachment.
	14.1.6.4	Continuous defined: a well-defined facial hair region is evident, that is however fully in contact with the surrounding regions.
	14.1.6.5	Continuous blended: a smooth transitioning facial hair region in full contact with surrounding regions, difficult to distinguish a specific separation line.
	14.1.7	Facial Hair Above Upper Lip length
	14.1.7.1	No facial hair.
	14.1.7.2	Fuzz: a very thin hair type covering the majority of the region, most commonly seen in younger individuals (teenagers).
	14.1.7.3	Short stubble: a very short relatively uniform distribution of hair that resembles the conventionally called "5 o'clock shadow", barely creating a darker appearing tone over the region.
	14.1.7.4	Long stubble: a longer stubble suggestive of a few days of not shaving, hairs can be distinguished in higher resolution images but have not grown enough to create a thick layer of hair over the region.
	14.1.7.5	Short hair: facial hair long enough to create a distinct facial hair style but within a short range with regards to actual overall length. This length will obscure facial areas' texture and minor superficial morphology.
	14.1.7.6	Medium length hair: facial hair is markedly long and can cross over beyond regions of origin with that extended length, generally partially obscuring and distorting the adjacent areas or traits of the face.
	14.1.7.7	Long hair: facial hair is elongated beyond the face and extends over below the region of origin completely obscuring and distorting classification of surrounding traits.
Facial Hair Below Lower Lip		
	14.2.1	Facial Hair Below Lower Lip shape:

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	14.2.1.1	No facial hair.
	14.2.1.2	Straight: approximately straight linear stripe of hair, with minimal, if any, curvature or angulation and overall horizontally parallel to the lip.
	14.2.1.3	Curved: uniformly rounded hair stripe following the curvature of the lip.
	14.2.1.4	Solid stripe: a continuous single vertically orientated stripe of hair perpendicular to the lip along the midline of the face.
	14.2.1.5	Triangular: a thick facial hair midline with thinner tapering lateral ends.
	14.2.2	Overall Facial Hair Below Lower Lip thickness
	14.2.2.1	No facial hair.
	14.2.2.2	Thin: pencil-like thin height or width of hair.
	14.2.2.3	Intermediate: thickness appears to incompletely cover the over or under lip area, while still distinctly present in over half of the region.
	14.2.2.4	Full: vertical height covering the entire (or majority of) the upper or lower lip region.
	14.2.3	Facial Hair Below Lower Lip density and distribution:
	14.2.3.1	No facial hair.
	14.2.3.2	Uniform dense: hair density is high and consistent throughout.
	14.2.3.3	Uniform thin: hair density is low and consistent throughout.
	14.2.3.4	Midpoint dense: median aspect is dense with the lateral aspects thinning out.
	14.2.3.5	Laterally dense: lateral aspects dense with the median thinning.
	14.2.4	Facial Hair Below Lower Lip Colour variation
	14.2.4.1	No facial hair.
	14.2.4.2	Uniform colouration through area.
	14.2.4.3	Inconsistently uneven colouration throughout.
	14.2.4.4	Darker in the midline and lighter colouration on lateral aspects.
	14.2.4.5	Darker colours in the lateral aspects and lighter colouration in the midline.
	14.2.4.6	Left half darker coloured than the right.

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	14.2.4.7	Right side darker coloured than the left.
	14.2.5	Facial Hair Below Lower Lip Outline definition
	14.2.5.1	No facial hair.
	14.2.5.2	Clear and sharp well-defined outline.
	14.2.5.3	Blended outline, gently transitioning into a hairless region.
	14.2.5.4	Uneven and irregular outline with some areas quite distinct to other and others transitioning smoothly.
	14.2.6	Facial Hair Below Lower Lip Surrounding continuity
	14.2.6.1	No facial hair.
	14.2.6.2	Detached: facial hair growth appears separate from the surrounding regions (cheek facial hair growth and/or upper/lower lip hair growth).
	14.2.6.3	Partially continuous: facial hair lines are continuous with some minor areas of detachment.
	14.2.6.4	Continuous defined: a well-defined facial hair region is evident, that is however fully in contact with the surrounding regions.
	14.2.6.5	Continuous blended: a smooth transitioning facial hair region in full contact with surrounding regions, difficult to distinguish a specific separation line.
	14.2.7	Facial Hair Below Lower Lip length
	14.2.7.1	No facial hair.
	14.2.7.2	Fuzz: a very thin hair type covering the majority of the region, most commonly seen in younger individuals (teenagers).
	14.2.7.3	Short stubble: a very short relatively uniform distribution of hair that resembles the conventionally called “5 o’clock shadow”, barely creating a darker appearing tone over the region.
	14.2.7.4	Long stubble: a longer stubble suggestive of a few days of not shaving, hairs can be distinguished in higher resolution images but have not grown enough to create a thick layer of hair over the region.
	14.2.7.5	Short hair: facial hair long enough to create a distinct facial hair style but within a short range with regards to actual overall length. This length will obscure facial areas’ texture and minor superficial morphology.
	14.2.7.6	Medium length hair: facial hair is markedly long and can cross over beyond regions of origin with that extended length, generally partially obscuring and distorting the adjacent areas or traits of the face.

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	14.2.7.7	Long hair: facial hair is elongated beyond the face and extends over below the region of origin completely obscuring and distorting classification of surrounding traits.
Facial Hair on Right Side		
	14.3.1	Facial Hair on Right Side shape:
	14.3.1.1	No facial hair.
	14.3.1.2	Straight L-shape: approximately straight outline of the cheekbone region forming an approximately perfect L or mirrored L, with minimal, if any, curvature and characterised by a right angle between the sideburn region and the lower cheek/mandibular region.
	14.3.1.3	Curved: uniformly rounded hair line from sideburn to the lateral aspect of the mouth.
	14.3.1.4	Horizontal stripe: a continuous single horizontally orientated stripe of hair parallel to the jawline without a fully grown sideburn.
	14.3.1.5	Vertical stripe: a vertically orientated stripe of facial hair anterior to the ear forming a sideburn of varying widths and lengths.
	14.3.2	Overall Facial Hair on Right Side thickness
	14.3.2.1	No facial hair.
	14.3.2.2	Thin: pencil-like thin strip of hair, accompanying the lateral face contour and/or jawline.
	14.3.2.3	Intermediate: thickness appears to incompletely cover the mandibular region, while still distinctly present in over half of the region.
	14.3.2.4	Full: height covering the entire (or majority of) mandibular and cheek region.
	14.3.2.5	Overgrown: extends superiorly over the cheekbone and inferiorly beyond jawline.
	14.3.3	Facial Hair on Right Side density and distribution
	14.3.3.1	No facial hair.
	14.3.3.2	Uniform dense: hair density is high and consistent throughout.
	14.3.3.3	Uniform thin: hair density is low and consistent throughout.
	14.3.3.4	Medially dense: medial aspect is dense with the lateral aspect thinning out.
	14.3.3.5	Laterally dense: lateral aspects dense with the medial thinning.

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	14.3.4	Facial Hair on Right Side Colour variation
	14.3.4.1	No facial hair.
	14.3.4.2	Uniform colouration through area.
	14.3.4.3	Inconsistently uneven colouration throughout.
	14.3.4.4	Darker on the superior regions and lighter colouration on inferior aspects.
	14.3.4.5	Darker colours on the inferior aspects and lighter colouration on the superior aspects.
	14.3.4.6	Lateral half darker coloured than the medial.
	14.3.4.7	Medial half darker coloured than the lateral.
	14.3.5	Facial Hair on Right Side Outline definition:
	14.3.5.1	No facial hair.
	14.3.5.2	Clear and sharp well-defined outline.
	14.3.5.3	Blended outline, gently transitioning into a hairless region.
	14.3.5.4	Uneven and irregular outline with some areas quite distinct to other and others transitioning smoothly.
	14.3.6	Facial Hair on Right Side Surrounding continuity
	14.3.6.1	No facial hair.
	14.3.6.2	Detached: facial hair growth appears separate from the surrounding regions (cheek facial hair growth and/or upper/lower lip hair growth).
	14.3.6.3	Partially continuous: facial hair lines are continuous with some minor areas of detachment.
	14.3.6.4	Continuous defined: a well-defined facial hair region is evident, that is however fully in contact with the surrounding regions.
	14.3.6.5	Continuous blended: a smooth transitioning facial hair region in full contact with surrounding regions, difficult to distinguish a specific separation line.
	14.3.7	Facial Hair on Right Side length
	14.3.7.1	No facial hair.
	14.3.7.2	Fuzz: a very thin hair type covering the majority of the region, most commonly seen in younger individuals (teenagers).

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	14.3.7.3	Short stubble: a very short relatively uniform distribution of hair that resembles the conventionally called “5 o’clock shadow”, barely creating a darker appearing tone over the region.
	14.3.7.4	Long stubble: a longer stubble suggestive of a few days of not shaving, hairs can be distinguished in higher resolution images but have not grown enough to create a thick layer of hair over the region.
	14.3.7.5	Short hair: facial hair long enough to create a distinct facial hair style but within a short range with regards to actual overall length. This length will obscure facial areas’ texture and minor superficial morphology.
	14.3.7.6	Medium length hair: facial hair is markedly long and can cross over beyond regions of origin with that extended length, generally partially obscuring and distorting the adjacent areas or traits of the face.
	14.3.7.7	Long hair: facial hair is elongated beyond the face and extends over below the region of origin completely obscuring and distorting classification of surrounding traits.
Facial Hair on Left Side		
	14.4.1	Facial Hair on Left Side shape:
	14.4.1.1	No facial hair.
	14.4.1.2	Straight L-shape: approximately straight outline of the cheekbone region forming an approximately perfect L or mirrored L, with minimal, if any, curvature and characterised by a right angle between the sideburn region and the lower cheek/mandibular region.
	14.4.1.3	Curved: uniformly rounded hair line from sideburn to the lateral aspect of the mouth.
	14.4.1.4	Horizontal stripe: a continuous single horizontally orientated stripe of hair parallel to the jawline without a fully grown sideburn.
	14.4.1.5	Vertical stripe: a vertically orientated stripe of facial hair anterior to the ear forming a sideburn of varying widths and lengths.
	14.4.2	Overall Facial Hair on Left Side thickness
	14.4.2.1	No facial hair.
	14.4.2.2	Thin: pencil-like thin strip of hair, accompanying the lateral face contour and/or jawline.
	14.4.2.3	Intermediate: thickness appears to incompletely cover the mandibular region, while still distinctly present in over half of the region.
	14.4.2.4	Full: height covering the entire (or majority of) the mandibular and cheek region.
	14.4.2.5	Overgrown: extends superiorly over the cheekbone and inferiorly beyond jawline.

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	14.4.3	Facial Hair on Left Side density and distribution
	14.4.3.1	No facial hair.
	14.4.3.2	Uniform dense: hair density is high and consistent throughout.
	14.4.3.3	Uniform thin: hair density is low and consistent throughout.
	14.4.3.4	Medially dense: medial aspect is dense with the lateral aspect thinning out.
	14.4.3.5	Laterally dense: lateral aspects dense with the medial thinning.
	14.4.4	Facial Hair on Left Side Colour variation:
	14.4.4.1	No facial hair.
	14.4.4.2	Uniform colouration through area.
	14.4.4.3	Inconsistently uneven colouration throughout.
	14.4.4.4	Darker on the superior regions and lighter colouration on inferior aspects.
	14.4.4.5	Darker colours on the inferior aspects and lighter colouration on the superior aspects.
	14.4.4.6	Lateral half darker coloured than the medial.
	14.4.4.7	Medial half darker coloured than the lateral.
	14.4.5	Facial Hair on Left Side Outline definition
	14.4.5.1	No facial hair.
	14.4.5.2	Clear and sharp well-defined outline.
	14.4.5.3	Blended outline, gently transitioning into a hairless region.
	14.4.5.4	Uneven and irregular outline with some areas quite distinct to other and others transitioning smoothly.
	14.4.6	Facial Hair on Left Side Surrounding continuity:
	14.4.6.1	No facial hair.
	14.4.6.2	Detached: facial hair growth appears separate from the surrounding regions (cheek facial hair growth and/or upper/lower lip hair growth).
	14.4.6.3	Partially continuous: facial hair lines are continuous with some minor areas of detachment.
	14.4.6.4	Continuous defined: a well-defined facial hair region is evident, that is however fully in contact with the surrounding regions.

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	14.4.6.5	Continuous blended: a smooth transitioning facial hair region in full contact with surrounding regions, difficult to distinguish a specific separation line.
	14.4.7	Facial Hair on Left Side length
	14.4.7.1	No facial hair.
	14.4.7.2	Fuzz: a very thin hair type covering the majority of the region, most commonly seen in younger individuals (teenagers).
	14.4.7.3	Short stubble: a very short relatively uniform distribution of hair that resembles the conventionally called “5 o’clock shadow”, barely creating a darker appearing tone over the region.
	14.4.7.4	Long stubble: a longer stubble suggestive of a few days of not shaving, hairs can be distinguished in higher resolution images but have not grown enough to create a thick layer of hair over the region.
	14.4.7.5	Short hair: facial hair long enough to create a distinct facial hair style but within a short range with regards to actual overall length. This length will obscure facial areas’ texture and minor superficial morphology.
	14.4.7.6	Medium length hair: facial hair is markedly long and can cross over beyond regions of origin with that extended length, generally partially obscuring and distorting the adjacent areas or traits of the face.
	14.4.7.7	Long hair: facial hair is elongated beyond the face and extends over below the region of origin completely obscuring and distorting classification of surrounding traits.
Facial Hair on Neck, below Chin/Jawline		
	14.5.1	Facial Hair on Chin shape
	14.5.1.1	No facial hair.
	14.5.1.2	Straight: approximately straight linear stripe of hair, with minimal, if any, curvature or angulation and overall, horizontally parallel to the lip/chin.
	14.5.1.3	Curved: uniformly rounded hair stripe following the curvature of the chin or extending around the neck.
	14.5.1.4	Solid stripe: a continuous single vertically orientated stripe of hair perpendicular to the lip and chin line along the midline of the face.
	14.5.1.5	Triangular: a thick facial hair midline with thinner tapering lateral ends.

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	14.5.2	Overall Facial Hair on Chin thickness:
	14.5.2.1	No facial hair.
	14.5.2.2	Thin: pencil-like thin vertical height of hair.
	14.5.2.3	Intermediate: thickness appears to incompletely cover chin or neck area, while still distinctly present in over half of the region.
	14.5.2.4	Full: vertical height covering the entire (or majority of) the region.
	14.5.3	Facial Hair on Chin density and distribution
	14.5.3.1	No facial hair.
	14.5.3.2	Uniform dense: hair density is high and consistent throughout.
	14.5.3.3	Uniform thin: hair density is low and consistent throughout.
	14.5.3.4	Midpoint dense: median aspect is dense with the lateral aspects thinning out.
	14.5.3.5	Laterally dense: lateral aspects dense with the median thinning.
	14.5.4	Facial Hair on Chin Colour variation
	14.5.4.1	No facial hair.
	14.5.4.2	Uniform colouration through area.
	14.5.4.3	Inconsistently uneven colouration throughout.
	14.5.4.4	Darker in the midline and lighter colouration on lateral aspects.
	14.5.4.5	Darker colours in the lateral aspects and lighter colouration in the midline.
	14.5.4.6	Left half darker coloured than the right.
	14.5.4.7	Right side darker coloured than the left.
	14.5.5	Facial Hair on Chin Outline definition
	14.5.5.1	No facial hair.
	14.5.5.2	Clear and sharp well-defined outline.
	14.5.5.3	Blended outline, gently transitioning into a hairless region.
	14.5.5.4	Uneven and irregular outline with some areas quite distinct to other and others transitioning smoothly.

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	14.5.6	Facial Hair on Chin Surrounding continuity
	14.5.6.1	No facial hair.
	14.5.6.2	Detached: facial hair growth appears separate from the surrounding regions (cheek facial hair growth and/or upper/lower lip hair growth).
	14.5.6.3	Partially continuous: facial hair lines are continuous with some minor areas of detachment.
	14.5.6.4	Continuous defined: a well-defined facial hair region is evident, that is however fully in contact with the surrounding regions.
	14.5.6.5	Continuous blended: a smooth transitioning facial hair region in full contact with surrounding regions, difficult to distinguish a specific separation line.
	14.5.7	Facial Hair on Chin length
	14.5.7.1	No facial hair.
	14.5.7.2	Fuzz: a very thin hair type covering the majority of the region, most commonly seen in younger individuals (teenagers).
	14.5.7.3	Short stubble: a very short relatively uniform distribution of hair that resembles the conventionally called “5 o’clock shadow”, barely creating a darker appearing tone over the region.
	14.5.7.4	Long stubble: a longer stubble suggestive of a few days of not shaving, hairs can be distinguished in higher resolution images but have not grown enough to create a thick layer of hair over the region.
	14.5.7.5	Short hair: facial hair long enough to create a distinct facial hair style but within a short range with regards to actual overall length. This length will obscure facial areas’ texture and minor superficial morphology.
	14.5.7.6	Medium length hair: facial hair is markedly long and can cross over beyond regions of origin with that extended length, generally partially obscuring and distorting the adjacent areas or traits of the face.
	14.5.7.7	Long hair: facial hair is elongated beyond the face and extends over below the region of origin completely obscuring and distorting classification of surrounding traits.
Facial Hair on Chin		
	14.6.1	Facial Hair on Neck, below Chin/Jawline shape
	14.6.1.1	No facial hair.
	14.6.1.2	Straight: approximately straight linear stripe of hair, with minimal, if any, curvature or angulation and overall, horizontally parallel to the lip.
	14.6.1.3	Curved: uniformly rounded hair stripe following the curvature of the chin or extending around the neck.

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	14.6.1.4	Solid stripe: a continuous single vertically orientated stripe of hair perpendicular to the lip and chin line along the midline of the face.
	14.6.1.5	Triangular: a thick facial hair midline with thinner tapering lateral ends.
	14.6.2	Overall Facial Hair on Neck, below Chin/Jawline thickness:
	14.6.2.1	No facial hair.
	14.6.2.2	Thin: pencil-like thin vertical height of hair.
	14.6.2.3	Intermediate: thickness appears to incompletely cover neck area, while still distinctly present in over half of the region.
	14.6.2.4	Full: vertical height covering the entire (or majority of) the region.
	14.6.3	Facial Hair on Neck, below Chin/Jawline density and distribution:
	14.6.3.1	No facial hair.
	14.6.3.2	Uniform dense: hair density is high and consistent throughout.
	14.6.3.3	Uniform thin: hair density is low and consistent throughout.
	14.6.3.4	Midpoint dense: median aspect is dense with the lateral aspects thinning out.
	14.6.3.5	Laterally dense: lateral aspects dense with the median thinning.
	14.6.4	Facial Hair on Neck, below Chin/Jawline Colour variation
	14.6.4.1	No facial hair.
	14.6.4.2	Uniform colouration through area.
	14.6.4.3	Inconsistently uneven colouration throughout.
	14.6.4.4	Darker in the midline and lighter colouration on lateral aspects.
	14.6.4.5	Darker colours in the lateral aspects and lighter colouration in the midline.
	14.6.4.6	Left half darker coloured than the right.
	14.6.4.7	Right side darker coloured than the left.
	14.6.5	Facial Hair on Neck, below Chin/Jawline Outline definition
	14.6.5.1	No facial hair.

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	14.6.5.2	Clear and sharp well-defined outline.
	14.6.5.3	Blended outline, gently transitioning into a hairless region.
	14.6.5.4	Uneven and irregular outline with some areas quite distinct to other and others transitioning smoothly.
	14.6.6	Facial Hair on Neck, below Chin/Jawline Surrounding continuity
	14.6.6.1	No facial hair.
	14.6.6.2	Detached: facial hair growth appears separate from the surrounding regions (cheek facial hair growth and/or upper/lower lip hair growth).
	14.6.6.3	Partially continuous: facial hair lines are continuous with some minor areas of detachment.
	14.6.6.4	Continuous defined: a well-defined facial hair region is evident, that is however fully in contact with the surrounding regions.
	14.6.6.5	Continuous blended: a smooth transitioning facial hair region in full contact with surrounding regions, difficult to distinguish a specific separation line.
	14.6.7	Facial Hair on Neck, below Chin/Jawline length
	14.6.7.1	No facial hair.
	14.6.7.2	Fuzz: a very thin hair type covering the majority of the region, most commonly seen in younger individuals (teenagers).
	14.6.7.3	Short stubble: a very short relatively uniform distribution of hair that resembles the conventionally called “5 o’clock shadow”, barely creating a darker appearing tone over the region.
	14.6.7.4	Long stubble: a longer stubble suggestive of a few days of not shaving, hairs can be distinguished in higher resolution images but have not grown enough to create a thick layer of hair over the region.
	14.6.7.5	Short hair: facial hair long enough to create a distinct facial hair style but within a short range with regards to actual overall length. This length will obscure facial areas’ texture and minor superficial morphology.
	14.6.7.6	Medium length hair: facial hair is markedly long and can cross over beyond regions of origin with that extended length, generally partially obscuring and distorting the adjacent areas or traits of the face.
	14.6.7.7	Long hair: facial hair is elongated beyond the face and extends over below the region of origin completely obscuring and distorting classification of surrounding traits.
Forehead Creases (Wrinkles) (adapted from Schmidlin <i>et al.</i> , 2018)		

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	15.1.1	Forehead Creases (Wrinkles) Line prominence
	15.1.1.1	No facial lines.
	15.1.1.2	Faint: barely visible lines/creases formed across the region.
	15.1.1.3	Distinct: clearly defined lines/creases are visible and obvious.
	15.1.1.4	Deep: very pronounced and deep lines are seen across entirety of the region.
	15.1.2	Forehead Creases (Wrinkles) Line orientation
	15.1.2.1	No facial lines.
	15.1.2.2	Horizontal lines.
	15.1.2.3.	Vertical lines.
	15.1.2.4	Horizontal and vertical lines.
	15.1.3	Forehead Creases (Wrinkles) Quantity
	15.1.3.1	No facial lines.
	15.1.3.2	Single facial line.
	15.1.3.3	Two facial lines.
	15.1.3.4	Three facial lines.
	15.1.3.5	Multiple facial lines beyond three.
	15.1.4	Forehead Creases (Wrinkles) Distribution
	15.1.4.1	No facial lines.
	15.1.4.2	Evenly distributed across forehead region.
	15.1.4.3	Distributed mainly in the superior half of the forehead region.
	15.1.4.4	Distributed mainly in the inferior half of the forehead region.
	15.1.5	Forehead Creases (Wrinkles) Shape
	15.1.5.1	No facial lines.
	15.1.5.2	Straight: straight lines across region, with little to no curvature or angulation.
	15.1.5.3	Curved inferiorly: lines form gentle curves across region, with a concavity from the inferior aspect.

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	15.1.5.4	Curved superiorly: lines form gentle curves across region, with a concavity from the superior aspect.
	15.1.5.5	Wavy: multiple curvatures are visibly across the lines giving them a wavy appearance.
	15.1.5.6.	Angled left: lines slant with left side terminating superior to the other.
	15.1.5.7	Angled right: lines slant with right side terminating superior to the other
	15.1.6	Forehead Creases (Wrinkles) Inter-line relations
	15.1.6.1	No multiple facial lines.
	15.1.6.2	Parallel: lines are approximately parallel to one another.
	15.1.6.3	Perpendicular: lines are orientated in perpendicular relation to one another.
	15.1.6.4	Intersecting: lines intersect at odd angles to one another.
	15.1.6.5	Opposite angulation: lines slant in opposite relative directions.
	15.1.6.6	Asymptotic: curved or wavy lines that come close to one another but do not interact.
	15.1.6.7	Adjacent: lines run in a similar direction next to one another without intersecting or matching other relations described above.
Vertical Glabellar Line(s)		
	15.2.1	Vertical Glabellar Line(s) prominence
	15.2.1.1	No facial lines.
	15.2.1.2	Faint: barely visible lines/creases formed across the region.
	15.2.1.3	Distinct: clearly defined lines/creases are visible and obvious.
	15.2.1.4	Deep: very pronounced and deep lines are seen across entirety of the region.
	15.2.2	Vertical Glabellar Line(s) orientation
	15.2.2.1	No facial lines.
	15.2.2.2	Horizontal lines.
	15.2.2.3	Vertical lines.
	15.2.2.4	Horizontal and vertical lines.
	15.2.2.5	Oblique.

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	15.2.3	Vertical Glabellar Line(s) Quantity
	15.2.3.1	No facial lines.
	15.2.3.2	Single facial line.
	15.2.3.3	Two facial lines.
	15.2.3.4	Three facial lines.
	15.2.3.5	Multiple facial lines beyond three.
	15.2.4	Vertical Glabellar Line(s) Distribution
	15.2.4.1	No facial lines.
	15.2.4.2	Evenly distributed across glabellar region.
	15.2.4.3	Distributed mainly in the left half of the glabellar region.
	15.2.4.4	Distributed mainly in the right half of the glabellar region.
	15.2.5	Vertical Glabellar Line(s) Shape
	15.2.5.1	No facial lines.
	15.2.5.2	Straight: straight lines across region, with little to no curvature or angulation.
	15.2.5.3	Curved left: lines form gentle curves across region, with a concavity from the left aspect.
	15.2.5.4	Curved right: lines form gentle curves across region, with a concavity from the right aspect.
	15.2.5.5	Wavy: multiple curvatures are visibly across the lines giving them a wavy appearance.
	15.2.5.6	Angled left: lines slant with left side terminating further laterally to the other.
	15.2.5.7	Angled right: lines slant with right side terminating further laterally to the other.
	15.2.6	Vertical Glabellar Line(s) Inter-line relations:
	15.2.6.1	No multiple facial lines.
	15.2.6.2	Parallel: lines are approximately parallel to one another.
	15.2.6.3	Perpendicular: lines are orientated in perpendicular relation to one another.
	15.2.6.4	Intersecting: lines intersect at odd angles to one another.
	15.2.6.5	Opposite angulation: lines slant in opposite relative directions.
	15.2.6.6	Asymptotic: curved or wavy lines that come close to one another but do not interact.

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Nasion Crease		
	15.3.1	Nasion Crease Line prominence
	15.3.1.1	No facial lines.
	15.3.1.2	Faint: barely visible lines/creases formed across the region.
	15.3.1.3	Distinct: clearly defined lines/creases are visible and obvious.
	15.3.1.4	Deep: very pronounced and deep lines are seen across entirety of the region.
	15.3.2	Nasion Crease Line orientation
	15.3.2.1	No facial lines.
	15.3.2.2	Horizontal lines.
	15.3.2.3	Vertical lines.
	15.3.2.4	Horizontal and vertical lines.
	15.3.2.5	Oblique.
	15.3.3	Nasion Crease Quantity
	15.3.3.1	No facial lines.
	15.3.3.2	Single facial line.
	15.3.3.3	Two facial lines.
	15.3.3.4	Three facial lines.
	15.3.3.5	Multiple facial lines beyond three.
	15.3.4	Nasion Crease Distribution
	15.3.4.1	No facial lines.
	15.3.4.2	Evenly distributed across region.
	15.3.4.3	Distributed mainly superior to a reference line across the medial canthi.
	15.3.4.4	Distributed mainly inferior to a reference line across the medial canthi.
	15.3.5	Nasion Crease Shape

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	15.3.5.1	No facial lines.
	15.3.5.2	Straight: straight lines across region, with little to no curvature or angulation.
	15.3.5.3	Curved inferiorly: lines form gentle curves across region, with a concavity from the inferior aspect.
	15.3.5.4	Curved superiorly: lines form gentle curves across region, with a concavity from the superior aspect.
	15.3.5.5	Wavy: multiple curvatures are visibly across the lines giving them a wavy appearance.
	15.3.5.6	Angled left: lines slant with left side terminating superior to the other.
	15.3.5.7	Angled right: lines slant with right side terminating superior to the other
	15.3.6	Nasion Crease Inter-line relations
	15.3.6.1	No multiple facial lines.
	15.3.6.2	Parallel: lines are approximately parallel to one another.
	15.3.6.3	Perpendicular: lines are orientated in perpendicular relation to one another.
	15.3.6.4	Intersecting: lines intersect at odd angles to one another.
	15.3.6.5	Opposite angulation: lines slant in opposite relative directions.
	15.3.6.6	Asymptotic: curved or wavy lines that come close to one another but do not interact.
Bifid Nose Crease		
	15.4.1	Bifid Nose Crease Line prominence:
	15.4.1.1	No facial line.
	15.4.1.2	Faint: barely visible line/creases formed across the region.
	15.4.1.3	Distinct: clearly defined line/creases are visible and obvious.
	15.4.1.4	Deep: very pronounced and deep line are seen across entirety of the region.
	15.4.2	Bifid Nose Crease Shape
	15.4.2.1	No facial line.
	15.4.2.2	Straight: straight line across region, with little to no curvature or angulation.
	15.4.2.3	Curved inferiorly: line form gentle curves across region, with a concavity from the inferior aspect.
	15.4.2.4	Curved superiorly: line form gentle curves across region, with a concavity from the superior aspect.
	15.4.2.5	Wavy: multiple curvatures are visibly across the line giving them a wavy appearance.

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	15.4.2.6	Angled left: line slant with left side terminating superior to the other.
	15.4.2.7	Angled right: line slant with right side terminating superior to the other
	15.4.3	Bifid Nose Crease length
	15.4.3.1	No facial line.
	15.4.3.2.	Short: crease is short and only found in the most anterior part of the nasal apex.
	15.4.3.3	Long: crease is long and extends beyond the apex approximately to the same level where the alae terminate superiorly on the lateral aspect of the nose.
Right Periorbital Creases (Crow's Feet)		
	15.5.1	Right Periorbital Creases (Crow's Feet) Line prominence
	15.5.1.1	No facial lines.
	15.5.1.2	Faint: barely visible lines/creases formed across the region.
	15.5.1.3	Distinct: clearly defined lines/creases are visible and obvious.
	15.5.1.4	Deep: very pronounced and deep lines are seen across entirety of the region.
	15.5.2	Right Periorbital Creases (Crow's Feet) Line orientation
	15.5.2.1	No facial lines.
	15.5.2.2	Horizontal lines.
	15.5.2.3	Vertical lines.
	15.5.2.4	Horizontal and vertical lines.
	15.5.2.5	Oblique.
	15.5.3	Right Periorbital Creases (Crow's Feet) Quantity
	15.5.3.1	No facial lines.
	15.5.3.2	Single facial line.
	15.5.3.3	Two facial lines.

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	15.5.3.4	Three facial lines.
	15.5.3.5	Multiple facial lines beyond three.
	15.5.4	Right Periorbital Creases (Crow's Feet) Distribution
	15.5.4.1	No facial lines.
	15.5.4.2	Evenly distributed across region.
	15.5.4.3	Distributed mainly superior to a reference line across the lateral canthi.
	15.5.4.4	Distributed mainly inferior to a reference line across the lateral canthi.
	15.5.5	Right Periorbital Creases (Crow's Feet) Shape
	15.5.5.1	No facial lines.
	15.5.5.2	Straight: straight lines across region, with little to no curvature or angulation.
	15.5.5.3	Curved inferiorly: lines form gentle curves across region, with a concavity from the inferior aspect.
	15.5.5.4	Curved superiorly: lines form gentle curves across region, with a concavity from the superior aspect.
	15.5.5.5	Wavy: multiple curvatures are visibly across the lines giving them a wavy appearance.
	15.5.5.6	Angled left: lines slant with left side terminating superior to the other.
	15.5.5.7	Angled right: lines slant with right side terminating superior to the other
	15.5.6	Right Periorbital Creases (Crow's Feet) Inter-line relations
	15.5.6.1	No facial lines.
	15.5.6.2	Parallel: lines are approximately parallel to one another.
	15.5.6.3	Perpendicular: lines are orientated in perpendicular relation to one another.
	15.5.6.4	Intersecting: lines intersect at odd angles to one another.
	15.5.6.5	Opposite angulation: lines slant in opposite relative directions.
	15.5.6.6	Asymptotic: curved or wavy lines that come close to one another but do not interact.
Left Periorbital Creases (Crow's Feet)		

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	15.6.1	Left Periorbital Creases (Crow's Feet) Line prominence:
	15.6.1.1	No facial lines.
	15.6.1.2	Faint: barely visible lines/creases formed across the region.
	15.6.1.3	Distinct: clearly defined lines/creases are visible and obvious.
	15.6.1.4	Deep: very pronounced and deep lines are seen across entirety of the region.
	15.6.2	Left Periorbital Creases (Crow's Feet) Line orientation:
	15.6.2.1	No facial lines.
	15.6.2.2	Horizontal lines.
	15.6.2.3	Vertical lines.
	15.6.2.4	Horizontal and vertical lines.
	15.6.2.5	Oblique.
	15.6.3	Left Periorbital Creases (Crow's Feet) Quantity:
	15.6.3.1	No facial lines.
	15.6.3.2	Single facial line.
	15.6.3.3	Two facial lines.
	15.6.3.4	Three facial lines.
	15.6.3.5	Multiple facial lines beyond three.
	15.6.4	Left Periorbital Creases (Crow's Feet) Distribution
	15.6.4.1	No facial lines.
	15.6.4.2	Evenly distributed across region.
	15.6.4.3	Distributed mainly superior to a reference line across the lateral canthi.
	15.6.4.4	Distributed mainly inferior to a reference line across the lateral canthi.
	15.6.5	Left Periorbital Creases (Crow's Feet) Shape
	15.6.5.1	No facial lines.
	15.6.5.2	Straight: straight lines across region, with little to no curvature or angulation.

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	15.6.5.3	Curved inferiorly: lines form gentle curves across region, with a concavity from the inferior aspect.
	15.6.5.4	Curved superiorly: lines form gentle curves across region, with a concavity from the superior aspect.
	15.6.5.5	Wavy: multiple curvatures are visibly across the lines giving them a wavy appearance.
	15.6.5.6	Angled left: lines slant with left side terminating superior to the other.
	15.6.5.7	Angled right: lines slant with right side terminating superior to the other
	15.6.6	Left Periorbital Creases (Crow's Feet) Inter-line relations:
	15.6.6.1	No facial lines.
	15.6.6.2	Parallel: lines are approximately parallel to one another.
	15.6.6.3	Perpendicular: lines are orientated in perpendicular relation to one another.
	15.6.6.4	Intersecting: lines intersect at odd angles to one another.
	15.6.6.5	Opposite angulation: lines slant in opposite relative directions.
	15.6.6.6	Asymptotic: curved or wavy lines that come close to one another but do not interact.
Right Lower Lid Crease	15.7.1	Right Lower Lid Crease Line prominence:
	15.7.1.1	No facial lines.
	15.7.1.2	Faint: barely visible lines/creases formed across the region.
	15.7.1.3	Distinct: clearly defined lines/creases are visible and obvious.
	15.7.1.4	Deep: very pronounced and deep lines are seen across entirety of the region.
	15.7.2	Right Lower Lid Crease Position:
	15.7.2.1	No facial lines.
	15.7.2.2	Low-set: crease located below midline of the eyelid.
	15.7.2.3	Midline: crease located in the approximate midline of the eyelid.
	15.7.2.4	High-set: crease located above midline of the eyelid.
	15.7.3	Right Lower Lid Crease Quantity:
	15.7.3.1	No facial lines.

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	15.7.3.2	Single facial line.
	15.7.3.3	Two facial lines.
	15.7.3.4	Three facial lines.
	15.7.3.5	Multiple facial lines beyond three.
	15.7.4	Right Lower Lid Crease Shape:
	15.7.4.1	No facial lines.
	15.7.4.2	Straight: straight lines across region, with little to no curvature or angulation.
	15.7.4.3	Curved inferiorly: lines form gentle curves across region, with a concavity from the inferior aspect.
	15.7.4.4	Curved superiorly: lines form gentle curves across region, with a concavity from the superior aspect.
	15.7.4.5	Wavy: multiple curvatures are visibly across the lines giving them a wavy appearance.
	15.7.4.6	Angled left: lines slant with left side terminating superior to the other.
	15.7.4.7	Angled right: lines slant with right side terminating superior to the other
Left Lower Lid Crease (Crease between the Lower Eyelid and the bottom of the Bony Orbit)		
	15.8.1	Left Lower Lid Crease Line prominence:
	15.8.1.1	No facial lines.
	15.8.1.2	Faint: barely visible lines/creases formed across the region.
	15.8.1.3	Distinct: clearly defined lines/creases are visible and obvious.
	15.8.1.4	Deep: very pronounced and deep lines are seen across entirety of the region.
	15.8.2	Left Lower Lid Crease Position:
	15.8.2.1	No facial lines.
	15.8.2.2	Low-set: crease located below midline of the eyelid.

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	15.8.2.3	Midline: crease located in the approximate midline of the eyelid.
	15.8.2.4	High-set: crease located above midline of the eyelid.
	15.8.3	Left Lower Lid Crease Quantity:
	15.8.3.1	No facial lines.
	15.8.3.2	Single facial line.
	15.8.3.3	Two facial lines.
	15.8.3.4	Three facial lines.
	15.8.3.5	Multiple facial lines beyond three.
	15.8.4	Left Lower Lid Crease Shape:
	15.8.4.1	No facial lines.
	15.8.4.2	Straight: straight lines across region, with little to no curvature or angulation.
	15.8.4.3	Curved inferiorly: lines form gentle curves across region, with a concavity from the inferior aspect.
	15.8.4.4	Curved superiorly: lines form gentle curves across region, with a concavity from the superior aspect.
	15.8.4.5	Wavy: multiple curvatures are visibly across the lines giving them a wavy appearance.
	15.8.4.6	Angled left: lines slant with left side terminating superior to the other.
	15.8.4.7	Angled right: lines slant with right side terminating superior to the other
Right Infraorbital Creases		
	15.9.1	Right Infraorbital Creases Line prominence:
	15.9.1.1	No facial lines.
	15.9.1.2	Faint: barely visible lines/creases formed across the region.
	15.9.1.3	Distinct: clearly defined lines/creases are visible and obvious.
	15.9.1.4	Deep: very pronounced and deep lines are seen across entirety of the region.
	15.9.2	Right Infraorbital Creases Line orientation:
	15.9.2.1	No facial lines.
	15.9.2.2	Horizontal lines.

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	15.9.2.3	Vertical lines.
	15.9.2.4	Horizontal and vertical lines.
	15.9.2.5	Oblique.
	15.9.3	Right Infraorbital Creases Quantity
	15.9.3.1	No facial lines.
	15.9.3.2	Single facial line.
	15.9.3.3	Two facial lines.
	15.9.3.4	Three facial lines.
	15.9.3.5	Multiple facial lines beyond three.
	15.9.4	Right Infraorbital Creases Distribution:
	15.9.4.1	No facial lines.
	15.9.4.2	Along lower margin of orbit.
	15.9.4.3	Distributed mainly above the lower margin of the orbit.
	15.9.4.4	Distributed mainly below the lower margin of the orbit.
	15.9.5	Right Infraorbital Creases Shape
	15.9.5.1	No facial lines.
	15.9.5.2	Straight: straight lines across region, with little to no curvature or angulation.
	15.9.5.3	Curved inferiorly: lines form gentle curves across region, with a concavity from the inferior aspect.
	15.9.5.4	Curved superiorly: lines form gentle curves across region, with a concavity from the superior aspect.
	15.9.5.5	Wavy: multiple curvatures are visibly across the lines giving them a wavy appearance.
	15.9.5.6	Angled left: lines slant with left side terminating superior to the other.
	15.9.5.7	Angled right: lines slant with right side terminating superior to the other
	15.9.6	Right Infraorbital Creases Inter-line relations:
	15.9.6.1	No multiple facial lines.
	15.9.6.2	Parallel: lines are approximately parallel to one another.

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	15.9.6.3	Perpendicular: lines are orientated in perpendicular relation to one another.
	15.9.6.4	Intersecting: lines intersect at odd angles to one another.
	15.9.6.5	Opposite angulation: lines slant in opposite relative directions.
	15.9.6.6	Asymptotic: curved or wavy lines that come close to one another but do not intersect.
Left Infraorbital Creases (Creases below the Eyes)		
	15.10.1	Left Infraorbital Creases Line prominence
	15.10.1.1	No facial lines.
	15.10.1.2	Faint: barely visible lines/creases formed across the region.
	15.10.1.3	Distinct: clearly defined lines/creases are visible and obvious.
	15.10.1.4	Deep: very pronounced and deep lines are seen across entirety of the region.
	15.10.2	Left Infraorbital Creases Line orientation:
	15.10.2.1	No facial lines.
	15.10.2.2	Horizontal lines.
	15.10.2.3	Vertical lines.
	15.10.2.4	Horizontal and vertical lines.
	15.10.2.5	Oblique.
	15.10.3	Left Infraorbital Creases Quantity:
	15.10.3.1	No facial lines.
	15.10.3.2	Single facial line.
	15.10.3.3	Two facial lines.
	15.10.3.4	Three facial lines.
	15.10.3.5	Multiple facial lines beyond three.

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	15.10.4	Left Infraorbital Creases Distribution:
	15.10.4.1	No facial lines.
	15.10.4.2	Along lower margin of orbit.
	15.10.4.3	Distributed mainly above the lower margin of the orbit.
	15.10.4.4	Distributed mainly below the lower margin of the orbit.
	15.10.5	Left Infraorbital Creases Shape:
	15.10.5.1	No facial lines.
	15.10.5.2	Straight: straight lines across region, with little to no curvature or angulation.
	15.10.5.3	Curved inferiorly: lines form gentle curves across region, with a concavity from the inferior aspect.
	15.10.5.4	Curved superiorly: lines form gentle curves across region, with a concavity from the superior aspect.
	15.10.5.5	Wavy: multiple curvatures are visibly across the lines giving them a wavy appearance.
	15.10.5.6	Angled left: lines slant with left side terminating superior to the other.
	15.10.5.7	Angled right: lines slant with right side terminating superior to the other
	15.10.6	Left Infraorbital Creases Inter-line relations:
	15.10.6.1	No multiple facial lines.
	15.10.6.2	Parallel: lines are approximately parallel to one another.
	15.10.6.3	Perpendicular: lines are orientated in perpendicular relation to one another.
	15.10.6.4	Intersecting: lines intersect at odd angles to one another.
	15.10.6.5	Opposite angulation: lines slant in opposite relative directions.
	15.10.6.6	Asymptotic: curved or wavy lines that come close to one another but do not intersect.
upper circumoral striae (Vertical Wrinkles above Upper Lip)		

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	15.11.1	upper circumoral striae Line prominence:
	15.11.1.1	No facial lines.
	15.11.1.2	Faint: barely visible lines/creases formed across the region.
	15.11.1.3	Distinct: clearly defined lines/creases are visible and obvious.
	15.11.1.4	Deep: very pronounced and deep lines are seen across entirety of the region.
	15.11.2	upper circumoral striae Line orientation:
	15.11.2.1	No facial lines.
	15.11.2.2	Horizontal lines.
	15.11.2.3	Vertical lines.
	15.11.2.4	Horizontal and vertical lines.
	15.11.2.5	Oblique.
	15.11.3	upper circumoral striae Quantity:
	15.11.3.1	No facial lines.
	15.11.3.2	Single facial line.
	15.11.3.3	Two facial lines.
	15.11.3.4	Three facial lines.
	15.11.3.5	Multiple facial lines beyond three.
	15.11.4	upper circumoral striae Distribution:
	15.11.4.1	No facial lines.
	15.11.4.2	Evenly distributed across upper lip region.
	15.11.4.3	Distributed mainly in the left half of the upper lip region.
	15.11.4.4	Distributed mainly in the right half of the upper lip region.
	15.11.5	upper circumoral striae Shape
	15.11.5.1	No facial lines.
	15.11.5.2	Straight: straight lines across region, with little to no curvature or angulation.

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	15.11.5.3	Curved left: lines form gentle curves across region, with a concavity from the left aspect.
	15.11.5.4	Curved right: lines form gentle curves across region, with a concavity from the right aspect.
	15.11.5.5	Wavy: multiple curvatures are visibly across the lines giving them a wavy appearance.
	15.11.5.6	Angled left: lines slant with left side terminating lateral to the other.
	15.11.5.7	Angled right: lines slant with right side terminating medial to the other.
	15.11.6	upper circumoral striae Inter-line relations:
	15.11.6.1	No facial lines.
	15.11.6.2	Parallel: lines are approximately parallel to one another.
	15.11.6.3	Perpendicular: lines are orientated in perpendicular relation to one another.
	15.11.6.4	Intersecting: lines intersect at odd angles to one another.
	15.11.6.5	Opposite angulation: lines slant in opposite relative directions.
	15.11.6.6	Asymptotic: curved or wavy lines that come close to one another but do not interact.
lower circumoral striae (Vertical Wrinkles below Lower Lip)		
	15.12.1	lower circumoral striae Line prominence:
	15.12.1.1	No facial lines.
	15.12.1.2	Faint: barely visible lines/creases formed across the region.
	15.12.1.3	Distinct: clearly defined lines/creases are visible and obvious.
	15.12.1.4	Deep: very pronounced and deep lines are seen across entirety of the region.
	15.12.2	lower circumoral striae Line orientation:
	15.12.2.1	No facial lines.
	15.12.2.2	Horizontal lines.
	15.12.2.3	Vertical lines.
	15.12.2.4	Horizontal and vertical lines.

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	15.12.2.5	Oblique.
	15.12.3	lower circumoral striae Quantity:
	15.12.3.1	No facial lines.
	15.12.3.2	Single facial line.
	15.12.3.3	Two facial lines.
	15.12.3.4	Three facial lines.
	15.12.3.5	Multiple facial lines beyond three.
	15.12.4	lower circumoral striae Distribution:
	15.12.4.1	No facial lines.
	15.12.4.2	Evenly distributed across lower lip region.
	15.12.4.3	Distributed mainly in the left half of the lower lip region.
	15.12.4.4	Distributed mainly in the right half of the lower lip region.
	15.12.5	lower circumoral striae Shape:
	15.12.5.1	No facial lines.
	15.12.5.2	Straight: straight lines across region, with little to no curvature or angulation.
	15.12.5.3	Curved left: lines form gentle curves across region, with a concavity from the left aspect.
	15.12.5.4	Curved right: lines form gentle curves across region, with a concavity from the right aspect.
	15.12.5.5	Wavy: multiple curvatures are visibly across the lines giving them a wavy appearance.
	15.12.5.6	Angled left: lines slant with left side terminating lateral to the other.
	15.12.5.7	Angled right: lines slant with right side terminating medial to the other.
	15.12.6	lower circumoral striae Inter-line relations:
	15.12.6.1	No facial lines.
	15.12.6.2	Parallel: lines are approximately parallel to one another.
	15.12.6.3	Perpendicular: lines are orientated in perpendicular relation to one another.
	15.12.6.4	Intersecting: lines intersect at odd angles to one another.

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	15.12.6.5	Opposite angulation: lines slant in opposite relative directions.
	15.12.6.6	Asymptotic: curved or wavy lines that come close to one another but do not interact.
Mentolabial Sulcus (Horizontal Crease or Fold between Lower Lip and Chin)		
	15.13.1	Mentolabial Sulcus Line prominence:
	15.13.1.1	No facial lines.
	15.13.1.2	Faint: barely visible lines/creases formed across the region.
	15.13.1.3	Distinct: clearly defined lines/creases are visible and obvious.
	15.13.1.4	Deep: very pronounced and deep lines are seen across entirety of the region.
	15.13.2	Mentolabial Sulcus Length:
	15.13.2.1	No facial line.
	15.13.2.2	Short: the sulcus is shorter than the philtrum's width.
	15.13.2.3	Intermediate: sulcus is approximately as wide as the philtrum.
	15.13.2.4	Long sulcus extends well beyond the width of the philtrum.
	15.13.3	Mentolabial Sulcus Shape:
	15.13.3.1	No facial lines.
	15.13.3.2	Straight: straight lines across region, with little to no curvature or angulation.
	15.13.3.3	Curved inferiorly: lines form gentle curves across region, with a concavity from the inferior aspect.
	15.13.3.4	Curved superiorly: lines form gentle curves across region, with a concavity from the superior aspect.
	15.13.3.5	Wavy: multiple curvatures are visibly across the lines giving them a wavy appearance.
	15.13.3.6	Angled left: lines slant with left side terminating superior to the other.
	15.13.3.7	Angled right: lines slant with right side terminating superior to the other.
Right Nasolabial Crease/Folds		
	15.14.1	Right Nasolabial Crease/Folds Line prominence:
	15.14.1.1	No facial lines.

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	15.14.1.2	Faint: barely visible lines/creases formed across the region.
	15.14.1.3	Distinct: clearly defined lines/creases are visible and obvious.
	15.14.1.4	Deep: very pronounced and deep lines are seen across entirety of the region.
	15.14.2	Right Nasolabial Crease/Folds Line orientation:
	15.14.2.1	No facial lines.
	15.14.2.2	Horizontal lines.
	15.14.2.3	Vertical lines.
	15.14.2.4	Horizontal and vertical lines.
	15.14.2.5	Oblique.
	15.14.3	Right Nasolabial Crease/Folds Quantity:
	15.14.3.1	No facial lines.
	15.14.3.2	Single facial line.
	15.14.3.3	Two facial lines.
	15.14.3.4	Three facial lines.
	15.14.3.5	Multiple facial lines beyond three.
	15.14.4	Right Nasolabial Crease/Folds Distribution:
	15.14.4.1	No facial lines.
	15.14.4.2	Evenly distributed across region.
	15.14.4.3	Distributed mainly in the superior half of the region.
	15.14.4.4	Distributed mainly in the inferior half of the region.
	15.14.5	Right Nasolabial Crease/Folds Shape:
	15.14.5.1	No facial lines.
	15.14.5.2	Straight: straight lines across region, with little to no curvature or angulation.
	15.14.5.3	Curved lateral: lines form gentle curves across region, with a concavity from the lateral aspect.
	15.14.5.4	Curved medial: lines form gentle curves across region, with a concavity from the medial aspect.

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	15.14.5.5	Wavy: multiple curvatures are visibly across the lines giving them a wavy appearance.
	15.14.5.6	Angled left: lines slant with left side terminating further laterally to the other.
	15.14.5.7	Angled right: lines slant with right side terminating further laterally to the other.
	15.14.6	Right Nasolabial Crease/Folds Inter-line relations:
	15.14.6.1	No multiple facial lines.
	15.14.6.2	Parallel: lines are approximately parallel to one another.
	15.14.6.3	Perpendicular: lines are orientated in perpendicular relation to one another.
	15.14.6.4	Intersecting: lines intersect at odd angles to one another.
	15.14.6.5	Opposite angulation: lines slant in opposite relative directions.
	15.14.6.6	Asymptotic: curved or wavy lines that come close to one another but do not interact.
Left Nasolabial Crease/Folds (Creases or Folds extending from Nose to Corners of Mouth)		
	15.15.1	Left Nasolabial Crease/Folds Line prominence:
	15.15.1.1	No facial lines.
	15.15.1.2	Faint: barely visible lines/creases formed across the region.
	15.15.1.3	Distinct: clearly defined lines/creases are visible and obvious.
	15.15.1.4	Deep: very pronounced and deep lines are seen across entirety of the region.
	15.15.2	Left Nasolabial Crease/Folds Line orientation:
	15.15.2.1	No facial lines.
	15.15.2.2	Horizontal lines.
	15.15.2.3	Vertical lines.
	15.15.2.4	Horizontal and vertical lines.
	15.15.2.5	Oblique.
	15.15.3	Left Nasolabial Crease/Folds Quantity:

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	15.15.3.1	No facial lines.
	15.15.3.2	Single facial line.
	15.15.3.3	Two facial lines.
	15.15.3.4	Three facial lines.
	15.15.3.5	Multiple facial lines beyond three.
	15.15.4	Left Nasolabial Crease/Folds Distribution:
	15.15.4.1	No facial lines.
	15.15.4.2	Evenly distributed across region.
	15.15.4.3	Distributed mainly in the superior half of the region.
	15.15.4.4	Distributed mainly in the inferior half of the region.
	15.15.5	Left Nasolabial Crease/Folds Shape:
	15.15.5.1	No facial lines.
	15.15.5.2	Straight: straight lines across region, with little to no curvature or angulation.
	15.15.5.3	Curved lateral: lines form gentle curves across region, with a concavity from the lateral aspect.
	15.15.5.4	Curved medial: lines form gentle curves across region, with a concavity from the medial aspect.
	15.15.5.5	Wavy: multiple curvatures are visibly across the lines giving them a wavy appearance.
	15.15.5.6	Angled left: lines slant with left side terminating further laterally to the other.
	15.15.5.7	Angled right: lines slant with right side terminating further laterally to the other.
	15.15.6	Left Nasolabial Crease/Folds Inter-line relations:
	15.15.6.1	No multiple facial lines.
	15.15.6.2	Parallel: lines are approximately parallel to one another.
	15.15.6.3	Perpendicular: lines are orientated in perpendicular relation to one another.
	15.15.6.4	Intersecting: lines intersect at odd angles to one another.
	15.15.6.5	Opposite angulation: lines slant in opposite relative directions.
	15.15.6.6	Asymptotic: curved or wavy lines that come close to one another but do not interact.

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Right Marionette Lines		
	15.16.1	Right Marionette Lines Line prominence:
	15.16.1.1	No facial lines.
	15.16.1.2	Faint: barely visible lines/creases formed across the region.
	15.16.1.3	Distinct: clearly defined lines/creases are visible and obvious.
	15.16.1.4	Deep: very pronounced and deep lines are seen across entirety of the region.
	15.16.2	Right Marionette Lines Shape:
	15.16.2.1	No facial lines.
	15.16.2.2	Straight: straight lines across region, with little to no curvature or angulation.
	15.16.2.3	Curved left: lines form gentle curves across region, with a concavity from the left aspect.
	15.16.5.4	Curved right: lines form gentle curves across region, with a concavity from the right aspect.
	15.16.2.5	Wavy: multiple curvatures are visibly across the lines giving them a wavy appearance.
	15.16.2.6	Angled left: lines slant with left side terminating superior to the other.
	15.16.2.7	Angled right: lines slant with right side terminating superior to the other
Left Marionette Lines		
	15.17.1	Left Marionette Lines Line prominence:
	15.17.1.1	No facial lines.
	15.17.1.2	Faint: barely visible lines/creases formed across the region.
	15.17.1.3	Distinct: clearly defined lines/creases are visible and obvious.
	15.17.1.4	Deep: very pronounced and deep lines are seen across entirety of the region.
	15.17.2	Left Marionette Lines Shape:
	15.17.2.1	No facial lines.
	15.17.2.2	Straight: straight lines across region, with little to no curvature or angulation.
	15.17.2.3	Curved left: lines form gentle curves across region, with a concavity from the left aspect.
	15.17.5.4	Curved right: lines form gentle curves across region, with a concavity from the right aspect.
	15.17.2.5	Wavy: multiple curvatures are visibly across the lines giving them a wavy appearance.

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	15.17.2.6	Angled left: lines slant with left side terminating superior to the other.
	15.17.2.7	Angled right: lines slant with right side terminating superior to the other
Cleft Chin		
	15.18.1	Cleft Chin Line prominence:
	15.18.1.1	No facial lines.
	15.18.1.2	Faint: barely visible lines/creases formed across the region.
	15.18.1.3	Distinct: clearly defined lines/creases are visible and obvious.
	15.18.1.4	Deep: very pronounced and deep lines are seen across entirety of the region.
	15.18.2	Cleft Chin Line length:
	15.18.2.1	No facial line.
	15.18.2.2	Short: crease is short and only found in the most inferior part of the chin.
	15.18.2.3	Intermediate: crease covers approximately half the distance between most inferior aspect of the chin and the mentolabial sulcus location.
	15.18.2.4	Long: crease is long and extends superiorly to the apex of the chin up to mentolabial sulcus.
Right Buccal Creases/Folds		
	15.19.1	Right Buccal Creases/Folds Line prominence:
	15.19.1.1	No facial lines.
	15.19.1.2	Faint: barely visible lines/creases formed across the region.
	15.19.1.3	Distinct: clearly defined lines/creases are visible and obvious.
	15.19.1.4	Deep: very pronounced and deep lines are seen across entirety of the region.
	15.19.2	Right Buccal Creases/Folds Line orientation:
	15.19.2.1	No facial lines.
	15.19.2.2	Horizontal lines.
	15.19.2.3	Vertical lines.
	15.19.2.4	Horizontal and vertical lines.

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	15.19.2.5	Oblique.
	15.19.3	Right Buccal Creases/Folds Quantity:
	15.19.3.1	No facial lines.
	15.19.3.2	Single facial line.
	15.19.3.3	Two facial lines.
	15.19.3.4	Three facial lines.
	15.19.3.5	Multiple facial lines beyond three.
	15.19.4	Right Buccal Creases/Folds Distribution:
	15.19.4.1	No facial lines.
	15.19.4.2	Evenly distributed across buccal region.
	15.19.4.3	Distributed mainly in the superior half of the buccal region.
	15.19.4.4	Distributed mainly in the inferior half of the buccal region.
	15.19.5	Right Buccal Creases/Folds Shape:
	15.19.5.1	No facial lines.
	15.19.5.2	Straight: straight lines across region, with little to no curvature or angulation.
	15.19.5.3	Curved left: lines form gentle curves across region, with a concavity from the left aspect.
	15.19.5.4	Curved right: lines form gentle curves across region, with a concavity from the right aspect.
	15.19.5.5	Wavy: multiple curvatures are visibly across the lines giving them a wavy appearance.
	15.19.5.6	Angled left: lines slant with left side terminating superior to the other.
	15.19.5.7	Angled right: lines slant with right side terminating superior to the other
	15.19.6	Right Buccal Creases/Folds Inter-line relations:
	15.19.6.1	No facial lines.
	15.19.6.2	Parallel: lines are approximately parallel to one another.
	15.19.6.3	Perpendicular: lines are orientated in perpendicular relation to one another.
	15.19.6.4	Intersecting: lines intersect at odd angles to one another.

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	15.19.6.5	Opposite angulation: lines slant in opposite relative directions.
	15.19.6.6	Asymptotic: curved or wavy lines that come close to one another but do not interact.
Left Buccal Creases/Folds (Cheek to Chin)		
	15.20.1	Left Buccal Creases/Folds (Cheek to Chin) Line prominence:
	15.20.1.1	No facial lines.
	15.20.1.2	Faint: barely visible lines/creases formed across the region.
	15.20.1.3	Distinct: clearly defined lines/creases are visible and obvious.
	15.20.1.4	Deep: very pronounced and deep lines are seen across entirety of the region.
	15.20.2	Left Buccal Creases/Folds (Cheek to Chin) Line orientation:
	15.20.2.1	No facial lines.
	15.20.2.2	Horizontal lines.
	15.20.2.3	Vertical lines.
	15.20.2.4	Horizontal and vertical lines.
	15.20.2.5	Oblique.
	15.20.3	Left Buccal Creases/Folds (Cheek to Chin) Quantity:
	15.20.3.1	No facial lines.
	15.20.3.2	Single facial line.
	15.20.3.3	Two facial lines.
	15.20.3.4	Three facial lines.
	15.20.3.5	Multiple facial lines beyond three.
	15.20.4	Left Buccal Creases/Folds (Cheek to Chin) Distribution:
	15.20.4.1	No facial lines.
	15.20.4.2	Evenly distributed across buccal region.
	15.20.4.3	Distributed mainly in the superior half of the buccal region.
	15.20.4.4	Distributed mainly in the inferior half of the buccal region.

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	15.20.5	Left Buccal Creases/Folds (Cheek to Chin) Shape:
	15.20.5.1	No facial lines.
	15.20.5.2	Straight: straight lines across region, with little to no curvature or angulation.
	15.20.5.3	Curved left: lines form gentle curves across region, with a concavity from the left aspect.
	15.20.5.4	Curved right: lines form gentle curves across region, with a concavity from the right aspect.
	15.20.5.5	Wavy: multiple curvatures are visibly across the lines giving them a wavy appearance.
	15.20.5.6	Angled left: lines slant with left side terminating superior to the other.
	15.20.5.7	Angled right: lines slant with right side terminating superior to the other
	15.20.6	Left Buccal Creases/Folds (Cheek to Chin) Inter-line relations:
	15.20.6.1	No facial lines.
	15.20.6.2	Parallel: lines are approximately parallel to one another.
	15.20.6.3	Perpendicular: lines are orientated in perpendicular relation to one another.
	15.20.6.4	Intersecting: lines intersect at odd angles to one another.
	15.20.6.5	Opposite angulation: lines slant in opposite relative directions.
	15.20.6.6	Asymptotic: curved or wavy lines that come close to one another but do not interact.
Wrinkles on Neck		
	15.21.1	Wrinkles on Neck Line prominence:
	15.21.1.1	No facial lines.
	15.21.1.2	Faint: barely visible lines/creases formed across the region.
	15.21.1.3	Distinct: clearly defined lines/creases are visible and obvious.
	15.21.1.4	Deep: very pronounced and deep lines are seen across entirety of the region.
	15.21.2	Wrinkles on Neck Line orientation:
	15.21.2.1	No facial lines.
	15.21.2.2	Horizontal lines.
	15.21.2.3	Vertical lines.

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	15.21.2.4	Horizontal and vertical lines.
	15.21.2.5	Oblique.
	15.21.3	Wrinkles on Neck Quantity:
	15.21.3.1	No facial lines.
	15.21.3.2	Single facial line.
	15.21.3.3	Two facial lines.
	15.21.3.4	Three facial lines.
	15.21.3.5	Multiple facial lines beyond three.
	15.21.4	Wrinkles on Neck Distribution:
	15.21.4.1	No facial lines.
	15.21.4.2	Evenly distributed across neck region.
	15.21.4.3	Distributed mainly in the superior half of the neck region.
	15.21.4.4	Distributed mainly in the inferior half of the neck region.
	15.21.5	Wrinkles on Neck Shape:
	15.21.5.1	No facial lines.
	15.21.5.2	Straight: straight lines across region, with little to no curvature or angulation.
	15.21.5.3	Curved inferiorly: lines form gentle curves across region, with a concavity from the inferior aspect.
	15.21.5.4	Curved superiorly: lines form gentle curves across region, with a concavity from the superior aspect.
	15.21.5.5	Wavy: multiple curvatures are visibly across the lines giving them a wavy appearance.
	15.21.5.6	Angled left: lines slant with left side terminating superior to the other.
	15.21.5.7	Angled right: lines slant with right side terminating superior to the other
	15.21.6	Wrinkles on Neck Inter-line relations:
	15.21.6.1	No facial lines.
	15.21.6.2	Parallel: lines are approximately parallel to one another.
	15.21.6.3	Perpendicular: lines are orientated in perpendicular relation to one another.

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	15.21.6.4	Intersecting: lines intersect at odd angles to one another.
	15.21.6.5	Opposite angulation: lines slant in opposite relative directions.
	15.21.6.6	Asymptotic: curved or wavy lines that come close to one another but do not interact.
Scars		To be described and matched between target and face pool candidates if visible and possible. FISWG descriptors to be used in descriptive analysis.
	16.1.1	Absent
	16.1.2	Present
Skin Marks (e.g., freckles, moles, acne, rosacea, birth marks, bruises, abrasions, vitiligo, dark/light patches, port wine syndrome, etc.)		To be described and matched between target and face pool candidates if visible and possible. FISWG descriptors to be used in descriptive analysis.
	17.1.1	Absent
	17.1.2	Freckles: Clusters of pigment cells or small brown spots on your skin often in areas that get sun exposure.
	17.1.3	Moles: Growths on the skin that are usually brown or black in colour.
	17.1.4	Acne: A skin condition that occurs when your hair follicles become plugged with oil and dead skin cells. It causes whiteheads, blackheads or pimples.
	17.1.5	Rosacea: A common skin condition that causes blushing or flushing and visible blood vessels in your face
	17.1.6	Birth marks: A congenital, benign irregularity on the skin which is present at birth or appears shortly after birth
	17.1.7	Bruises: An injury appearing as an area of discoloured skin on the body, caused by a blow or impact rupturing underlying blood vessels.
	17.1.8	Abrasions: Superficial injuries of the skin and visceral linings in the body, resulting in a break in the continuity of tissue.
	17.1.9	Vitiligo: A condition in which the pigment is lost from areas of the skin, causing whitish patches, often with no clear cause.
	17.1.10	Dark/light patches: Signifies a skin pigmentation disorder that causes hypopigmentation (patches of skin that are lighter than your overall skin tone) or hyperpigmentation (Darkened patches or spots on the skin).
	17.1.11	Port wine syndrome: Flat patches that appear pink or red on lighter skin tones, dark-purple or violet-red on darker skin tones. They are caused by swollen blood vessels under the skin.

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Piercing		
	18.1.1	Facial piercing:
	18.1.1.1	Absent
	18.1.1.2	Present
	18.1.2	Ear piercing:
	18.1.2.1	Absent
	18.1.2.2	Present
		To be described and matched between target and face pool candidates if visible and possible. FISWG descriptors to be used in descriptive analysis.
Makeup		If visible to be described in colour and definition.
	18.2.1	Absent
	18.2.2	Present
Tattoo (Including Cosmetic)		
	18.3.1	Facial tattoo presence:
	18.3.1.1	Absent
	18.3.1.2	Present
	18.3.2	Neck tattoo presence
	18.3.2.1	Absent
	18.3.2.1	Present
		To be described and matched between target and face pool candidates if visible and possible. FISWG descriptors to be used in descriptive analysis.

Appendix C: WFCs frequency and contingency tables**Tables showing the frequency distributions for 412 facial feature traits across a sample of 219 Black African males.****Table 1: Table showing frequency distribution of scores for skin texture, skin luminance and skin colour among Black African males aged 18 to 35 from the Wits Face Database (WFD).**

	Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT		
Overall Skin Appearance	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	
Skin texture	0	8	3.7%	2	4.4%	1	2.4%	2	4.5%	0	0.0%	3	5.3%	8	7.5%	0	0%
	1	189	86.3%	37	82.2%	35	85.4%	38	86.4%	29	90.6%	50	87.7%	94	88.7%	95	84.1%
	2	5	2.3%	0	0%	0	0.0%	4	9.1%	0	0.0%	1	1.8%	1	0.9%	4	3.5%
	3	17	7.8%	6	13.3%	5	12.2%	0	0.0%	3	9.4%	3	5.3%	3	2.8%	14	12.4%
	Total	219	100.0%	45	100%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100%	113	100%
Skin luminance	0	2	0.9%	0	0.0%	0	0.0%	1	2.3%	0	0.0%	1	1.8%	2	1.9%	0	0.0%
	1	95	43.4%	29	64.4%	17	41.5%	14	31.8%	21	65.6%	14	24.6%	40	37.7%	55	48.7%
	2	122	55.7%	16	35.6%	24	58.5%	29	65.9%	11	34.4%	42	73.7%	64	60.4%	58	51.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Skin colour	3	4	1.8%	0	0.0%	1	2.4%	2	4.5%	1	3.1%	0	0.0%	0	0.0%	4	3.5%
	4	65	29.7%	15	33.3%	13	31.7%	7	15.9%	9	28.1%	21	36.8%	33	31.1%	32	28.3%
	5	115	52.5%	18	40.0%	24	58.5%	26	59.1%	18	56.3%	29	50.9%	54	50.9%	61	54.0%
	6	35	16.0%	12	26.7%	3	7.3%	9	20.5%	4	12.5%	7	12.3%	19	17.9%	16	14.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 2: Table showing frequency distribution of scores for cranial vault (portrait) contour, cranial Vault Frontal (portrait) relative width and cranial vault lateral (profile) among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Shape of Cranial Vault		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Cranial Vault Frontal (portrait) contour	0	162	74.0%	0	0.0%	38	92.7%	44	100.0%	27	84.4%	57	100%	83	78.3%	79	69.9%
	1	33	15.1%	25	55.6%	2	4.9%	0	0.0%	4	12.5%	0	0%	20	18.9%	13	11.5%
	2	23	10.5%	20	44.4%	1	2.4%	0	0.0%	1	3.1%	0	0%	3	2.8%	20	17.7%
	3	1	0.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Cranial Vault Frontal (portrait) relative width	0	174	79.5%	0	0.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	85	80.2%	89	78.8%
	2	33	15.1%	33	73.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	16	15.1%	17	15.0%
	3	12	5.5%	12	26.7%	0	0.0%	0	0.0%	0	0.0%	0	0	5	4.7%	7	6.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	0.0%	106	100.0%	113	100.0%
Cranial Vault Lateral (profile)	0	49	22.4%	45	100.0%	3	7.3%	0	0.0%	1	3.1%	0	0.0%	23	21.7%	26	23.0%
	1	32	14.6%	0	0.0%	7	17.1%	11	25.0%	7	21.9%	7	12.3%	16	15.1%	16	14.2%
	2	109	49.8%	0	0.0%	27	65.9%	24	54.5%	18	56.3%	40	70.2%	54	50.9%	55	48.7%
	3	16	7.3%	0	0.0%	4	9.8%	1	2.3%	5	15.6%	6	10.5%	10	9.4%	6	5.3%
	4	12	5.5%	0	0.0%	0	0.0%	8	18.2%	1	3.1%	3	5.3%	3	2.8%	9	8.0%
	5	1	0.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	00.0%	57	100.0%	106	100.0%	113	100.0%

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Table 3: Table showing frequency distribution of scores for Face Frontal (portrait) contour and midfacial lateral (profile) contour among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Overall Shape of Face		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Face Frontal (portrait) contour	0	166	75.8%	0	0.0%	38	92.7%	44	100.0%	29	90.6%	57	96.5%	83	78.3%	83	73.5%
	1	16	7.3%	14	31.1%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	13	12.3%	3	2.7%
	2	16	7.3%	15	33.3%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	4	3.8%	12	10.6%
	3	5	2.3%	2	4.4%	0	0.0%	0	0.0%	2	6.3%	0	0.0%	0	0.0%	4	3.54%
	4	4	1.8%	3	6.7%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	3	2.8%	1	0.9%
	5	6	2.7%	5	11.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.9%	6	5.30%
	6	6	2.7%	6	13.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.9%	4	3.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Midfacial lateral (profile) contour	0	115	52.5%	45	100.0%	38	92.7%	1	2.3%	29	90.6%	2	3.5%	50	47.2%	65	57.5%
	1	10	4.6%	0	0.0%	0	0.0%	2	4.5%	0	0.0%	8	14.0%	2	1.9%	8	7.1%
	2	58	26.5%	0	0.0%	1	2.4%	31	70.5%	0	0.0%	26	45.6%	32	30.2%	26	23.0%
	3	36	16.4%	0	0.0%	2	4.9%	10	22.7%	3	9.4%	21	36.8%	22	20.8%	14	12.4%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 4: Table showing frequency distribution of scores for vertical face proportions and vertical eye position among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Overall Facial Proportions Excluding Position of Features on Face		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Vertical face proportions	1	44	20.1%	10	22.2%	6	14.6%	10	22.7%	4	12.5%	14	24.6%	22	20.8%	22	19.5%
	2	45	20.5%	10	22.2%	7	17.1%	10	22.7%	7	21.9%	11	19.3%	18	17.0%	27	23.9%
	3	13	5.9%	5	11.1%	2	4.9%	6	13.6%	0	0.0%	0	0.0%	6	5.7%	7	6.2%
	4	11	5.0%	0	0.0%	4	9.8%	1	2.3%	3	9.4%	3	5.3%	7	6.6%	4	3.5%
	5	20	9.1%	2	4.4%	2	4.9%	6	13.6%	5	15.6%	5	8.8%	18	17.0%	2	1.8%
	6	8	3.7%	2	4.4%	3	7.3%	2	4.5%	0	0.0%	1	1.8%	4	3.8%	4	3.5%
	7	22	10.0%	7	15.6%	4	9.8%	5	11.4%	3	9.4%	3	5.3%	11	10.4%	11	9.7%
	8	7	3.2%	3	6.7%	1	2.4%	0	0.0%	1	3.1%	2	3.5%	1	0.9%	6	5.3%
	9	9	4.1%	1	2.2%	4	9.8%	0	0.0%	2	6.3%	2	3.5%	3	2.8%	6	5.3%
	10	3	1.4%	0	0.0%	1	2.4%	0	0.0%	1	3.1%	1	1.8%	3	2.8%	0	0.0%
	11	34	15.5%	5	11.1%	5	12.2%	4	9.1%	5	15.6%	15	26.3%	12	11.3%	22	19.5%
	13	3	1.4%	0	0.0%	2	4.9%	0	0.0%	1	3.1%	0	0.0%	1	0.9%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Vertical eye position	1	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 5: Table showing frequency distribution of scores for forehead hairline shape and hairline angulation among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Forehead Hairline		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Forehead hairline shape	0	83	37.9%	1	2.2%	3	7.3%	31	70.5%	3	9.4%	45	78.9%	41	38.7%	42	37.2%
	1	27	12.3%	15	33.3%	6	14.6%	2	4.5%	3	9.4%	1	1.8%	11	10.4%	16	14.2%
	2	85	38.8%	26	57.8%	27	65.9%	8	18.2%	18	56.3%	6	10.5%	42	39.6%	43	38.1%
	3	22	10.0%	2	4.4%	4	9.8%	3	6.8%	8	25.0%	5	8.8%	11	10.4%	11	9.7%
	4	1	0.5%	0	0.0%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	5	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Hairline angulation	0	124	56.7%	3	6.7%	11	26.8%	41	93.2%	15	46.9%	54	94.8%	61	57.5%	63	55.8%
	1	95	43.4%	42	93.3%	30	73.2%	3	6.8%	17	53.1%	3	5.3%	45	42.5%	50	44.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 6: Table showing frequency distribution of scores for patterned baldness classifications (hairline right side) and patterned baldness classifications (hairline left side) among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Hairline Right and Left Side		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Patterned baldness classifications (Hairline Right Side)	0	86	39.3%	3	6.7%	4	9.8%	2	4.5%	22	68.8%	55	96.5%	42	39.6%	44	38.9%
	1	105	47.9%	37	82.2%	29	70.7%	27	61.4%	10	31.3%	2	3.5%	53	50.0%	52	46.0%
	2	12	5.5%	2	4.4%	1	2.4%	9	20.5%	0	0.0%	0	0.0%	6	5.7%	6	5.3%
	3	16	7.3%	3	6.7%	7	17.1%	6	13.6%	0	0.0%	0	0.0%	5	4.7%	11	9.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	1	100.0%	113	100.0%
Patterned baldness classifications (Hairline Left Side)	0	81	37.0%	3	6.7%	30	73.2%	43	97.7%	0	0.0%	5	8.8%	44	41.5%	37	32.7%
	1	113	51.6%	38	84.4%	11	26.8%	0	0.0%	24	75.0%	40	70.2%	49	46.2%	64	56.6%
	2	13	5.9%	1	2.2%	0	0.0%	1	2.3%	6	18.8%	5	8.8%	9	8.5%	4	3.5%
	3	12	5.5%	3	6.7%	0	0.0%	0	0.0%	2	6.3%	7	12.3%	4	3.8%	8	7.1%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 7: Table showing frequency distribution of scores for cranial baldness pattern shape among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Cranial Baldness		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Cranial Baldness Pattern Shape	0	8	3.7%	2	4.4%	3	7.3%	0	0.0%	0	0.0%	3	5.3%	6	5.7%	2	1.8%
	1	210	95.9%	43	95.6%	38	92.7%	43	97.7%	32	100.0%	54	94.7%	100	94.3%	110	97.3%
	4	1	0.5%	0	0.0%	0	0.0%	1	2.3%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 8: Table showing frequency distribution of scores for relative forehead height, relative forehead width and forehead slope and contour among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Forehead Proportions		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Relative forehead height	0	79	36.1%	0	0.0%	1	2.4%	31	70.5%	6	18.8%	41	71.9%	47	44.3%	32	28.3%
	1	16	7.3%	3	6.7%	4	9.8%	1	2.3%	7	21.9%	1	1.8%	2	1.9%	14	12.4%
	2	96	43.8%	34	75.6%	27	65.9%	8	18.2%	14	43.8%	13	22.8%	40	37.7%	56	49.6%
	3	28	12.8%	8	17.8%	9	22.0%	4	9.1%	5	15.6%	2	3.5%	17	16.0%	11	9.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Relative forehead width	0	82	37.4%	0	0.0%	3	7.3%	31	70.5%	6	18.8%	42	73.7%	48	45.3%	34	30.1%

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Forehead Slope and contour	1	27	12.3%	8	17.8%	9	22.0%	4	9.1%	5	15.6%	1	1.8%	16	15.1%	11	9.7%
	2	96	43.8%	34	75.6%	26	63.4%	8	18.2%	14	43.8%	14	24.6%	40	37.7%	56	49.6%
	3	14	6.4%	3	6.7%	3	7.3%	1	2.3%	7	21.9%	0	0.0%	2	1.9%	12	10.6%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	35	16.0%	34	75.6%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	18	17.0%	17	15.0%
	1	26	11.9%	3	6.7%	3	7.3%	6	13.6%	6	18.8%	8	14.0%	8	7.5%	18	15.9%
	2	117	53.4%	4	8.9%	30	73.2%	25	56.8%	22	68.8%	36	63.2%	67	63.2%	50	44.2%
	3	5	2.3%	1	2.2%	2	4.9%	0	0.0%	0	0.0%	2	3.5%	4	3.8%	1	0.9%
	4	36	16.4%	3	6.7%	6	14.6%	13	29.5%	3	9.4%	11	19.3%	9	8.5%	27	23.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 9: Table showing frequency distribution of scores for brow ridge prominence and brow ridge continuity among Black African males aged 18 to 35 from the Wits Face Database (WFD).

Brow Ridges		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Brow ridge prominence	0	1	0.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	1	0.9%	0	0.0%
	1	160	73.1%	41	91.1%	34	82.9%	33	75.0%	18	56.3%	34	59.6%	78	73.6%	82	72.6%
	2	39	17.8%	4	8.9%	6	14.6%	7	15.9%	10	31.3%	12	21.1%	16	15.1%	23	20.4%
	3	9	4.1%	0	0.0%	1	2.4%	2	4.5%	3	9.4%	3	5.3%	8	7.5%	1	0.9%
	4	9	4.1%	0	0.0%	0	0.0%	2	4.5%	0	0.0%	7	12.3%	3	2.8%	6	5.3%
	5	1	0.5%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Brow ridge continuity	0	57	26.0%	0	0.0%	0	0.0%	29	65.9%	0	0.0%	28	49.1%	32	30.2%	25	22.1%
	2	162	74.0%	45	100.0%	41	100.0%	15	34.1%	32	100.0%	29	50.9%	74	69.8%	88	77.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 10: Table showing frequency distribution of scores for right eyebrow shape, arch prominence, overall thickness, hair density and distribution and length relative to eye among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right Eyebrow		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Eyebrow shape	0	122	55.7%	2	4.4%	2	4.9%	33	75.0%	30	93.8%	55	96.5%	62	58.5%	60	53.1%
	1	31	14.2%	11	24.4%	16	39.0%	4	9.1%	0	0.0%	0	0.0%	17	16.0%	14	12.4%
	2	23	10.5%	14	31.1%	5	12.2%	2	4.5%	1	3.1%	1	1.8%	7	6.6%	16	14.2%
	3	6	2.7%	1	2.2%	5	12.2%	0	0.0%	0	0.0%	0	0.0%	4	3.8%	2	1.8%
	4	12	5.5%	6	13.3%	4	9.8%	1	2.3%	0	0.0%	1	1.8%	2	1.9%	10	8.8%
	5	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
	6	9	4.1%	3	6.7%	3	7.3%	3	6.8%	0	0.0%	0	0.0%	5	4.7%	4	3.5%
	8	4	1.8%	0	0.0%	4	9.8%	0	0.0%	0	0.0%	0	0.0%	2	1.9%	2	1.8%
	9	11	5.0%	7	15.6%	2	4.9%	1	2.3%	1	3.1%	0	0.0%	6	5.7%	5	4.4%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Eyebrow arch prominence	0	104	47.5%	2	4.4%	2	4.9%	21	47.7%	26	81.3%	53	93.0%	56	52.8%	48	42.5%
	1	53	24.2%	23	51.1%	24	58.5%	4	9.1%	0	0.0%	2	3.5%	26	24.5%	27	23.9%
	2	24	11.0%	7	15.6%	9	22.0%	6	13.6%	2	6.3%	0	0.0%	7	6.6%	17	15.0%

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Right eyebrow overall thickness	3	3	17.4%	13	28.9%	6	14.6%	13	29.5%	4	12.5%	2	3.5%	17	16.0%	21	18.6%
	Total	8	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	112	51.1%	2	4.4%	2	4.9%	26	59.1%	28	87.5%	54	94.7%	56	52.8%	56	49.6%
	1	3	1.4%	0	0.0%	2	4.9%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	2	1.8%
	2	78	35.6%	27	60.0%	33	80.5%	15	34.1%	1	3.1%	2	3.5%	42	39.6%	36	31.9%
	3	26	11.9%	16	35.6%	4	9.8%	2	4.5%	3	9.4%	1	1.8%	7	6.6%	19	16.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	118	53.9%	2	4.4%	3	7.3%	31	70.5%	28	87.5%	54	94.7%	62	58.5%	56	49.6%
	1	79	36.1%	40	88.9%	26	63.4%	8	18.2%	3	9.4%	2	3.5%	34	32.1%	45	39.8%
	2	13	5.9%	3	6.7%	4	9.8%	4	9.1%	1	3.1%	1	1.8%	6	5.7%	7	6.2%
Right Eyebrow Hair Density and distribution	3	9	4.1%	0	0.0%	8	1	1	2.3%	0	0.0%	0	0.0%	4	3.8%	5	4.4%
	Total	219	100.0%	45	100.0%	41	9.	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	136	62.1%	2	4.4%	6	14.6%	40	90.9%	32	100.0%	56	98.2%	71	67.0%	65	57.5%
	1	15	6.8%	11	24.4%	2	4.9%	1	2.3%	0	0.0%	1	1.8%	7	6.6%	8	7.1%
	3	3	1.4%	1	2.2%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	2	1.9%	1	0.9%
Right Eyebrow length relative to eye	5	42	19.2%	18	40.0%	22	53.7%	2	4.5%	0	0.0%	0	0.0%	13	12.3%	29	25.7%
	6	12	5.5%	12	26.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	6	5.7%	6	5.3%
	7	10	4.6%	1	2.2%	8	19.5%	1	2.3%	0	0.0%	0	0.0%	7	6.6%	3	2.7%
	8	1	0.5%	0	0.0%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 11: Table showing frequency distribution of scores for left eyebrow shape, arch prominence, overall thickness, hair density and distribution and length relative to eye among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Left Eyebrow Shape	0	131	59.8%	3	6.7%	40	97.6%	44	100.0%	4	12.5%	40	70.2%	71	67.0%	60	53.1%
	1	34	15.5%	13	28.9%	1	2.4%	0	0.0%	8	25.0%	12	21.1%	16	15.1%	18	15.9%
	2	28	12.8%	13	28.9%	0	0.0%	0	0.0%	11	34.4%	4	7.0%	7	6.6%	21	18.6%
	3	3	1.4%	1	2.2%	0	0.0%	0	0.0%	2	6.3%	0	0.0%	2	1.9%	1	0.9%
	4	8	3.7%	4	8.9%	0	0.0%	0	0.0%	4	12.5%	0	0.0%	1	0.9%	7	6.2%
	5	2	0.9%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	2	1.9%	0	0.0%
	6	4	1.8%	4	8.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.9%	2	1.8%
	9	9	4.1%	6	13.3%	0	0.0%	0	0.0%	3	9.4%	0	0.0%	5	4.7%	4	3.5%
	Total	219	100.0%	4	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Eyebrow arch prominence	0	119	54.3%	2	4.4%	39	95.1%	44	100.0%	3	9.4%	31	54.4%	67	63.2%	52	46.0%
	1	46	21.0%	25	55.6%	1	2.4%	0	0.0%	12	37.5%	8	14.0%	21	19.8%	25	22.1%
	2	20	9.1%	5	11.1%	1	2.4%	0	0.0%	10	31.3%	4	7.0%	7	6.6%	13	11.5%
	3	34	15.5%	13	28.9%	0	0.0%	0	0.0%	7	21.9%	14	24.6%	11	10.4%	23	20.4%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left eyebrow overall thickness	0	113	51.6%	2	4.4%	34	82.9%	44	100.0%	3	9.4%	30	52.6%	65	61.3%	48	42.5%
	1	3	1.4%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	2	3.5%	1	0.9%	2	1.8%

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Left Eyebrow Hair density and distribution	2	77	35.2%	27	60.0%	7	17.1%	0	0.0%	23	71.9%	20	35.1%	31	29.2%	46	40.7%
	3	26	11.9%	16	35.6%	0	0.0%	0	0.0%	5	15.6%	5	8.8%	9	8.5%	17	15.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	123	56.2%	2	4.4%	39	95.1%	44	100.0%	4	12.5%	34	59.6%	71	67.0%	52	46.0%
	1	70	32.0%	35	77.8%	2	4.9%	0	0.0%	18	56.3%	15	26.3%	24	22.6%	46	40.7%
	2	9	4.1%	3	6.7%	0	0.0%	0	0.0%	4	12.5%	2	3.5%	2	1.9%	7	6.2%
	3	17	7.8%	5	11.1%	0	0.0%	0	0.0%	6	18.8%	6	10.5%	9	8.5%	8	7.1%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	147	67.1%	5	11.1%	41	100.0%	44	100.0%	7	21.9%	50	87.7%	80	75.5%	67	59.3%
	1	13	5.9%	7	15.6%	0	0.0%	0	0.0%	3	9.4%	3	5.3%	4	3.8%	9	8.0%
Left Eyebrow Length relative to eye	3	3	1.4%	0	0.0%	0	0.0%	0	0.0%	3	9.4%	0	0.0%	0	0.0%	3	2.7%
	4	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
	5	29	13.2%	14	31.1%	0	0.0%	0	0.0%	13	40.6%	2	3.5%	11	10.4%	18	15.9%
	6	16	7.3%	16	35.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	6	5.7%	10	8.8%
	7	9	4.1%	1	2.2%	0	0.0%	0	0.0%	6	18.8%	2	3.5%	3	2.8%	6	5.3%
	9	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 12: Table showing frequency distribution of scores for conjoined eyebrows density, conjoined eyebrows shape and overall eyebrows symmetry among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Left and Right eyebrow interactions and asymmetry		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Conjoined eyebrows (“unibrow”) density	0	88	40.2%	0	0.0%	3	7.3%	37	84.1%	3	9.4%	45	78.9%	53	50.0%	35	31.0%
	1	130	59.4%	44	97.8%	38	92.7%	7	15.9%	29	90.6%	12	21.1%	52	49.1%	78	69.0%
	2	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Conjoined eyebrows shape	0	88	40.2%	0	0.0%	3	7.3%	37	84.1%	3	9.4%	45	78.9%	53	50.0%	35	31.0%
	1	130	59.4%	44	97.8%	38	92.7%	7	15.9%	29	90.6%	12	21.1%	52	49.1%	78	69.0%
	3	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Overall Eyebrows symmetry	0	176	80.4%	5	11.1%	41	100.0%	44	100.0%	30	93.8%	56	98.2%	88	83.0%	88	77.9%
	1	20	9.1%	19	42.2%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	9	8.5%	11	9.7%
	2	4	1.8%	2	4.4%	0	0.0%	0	0.0%	1	3.1%	1	1.8%	0	0.0%	4	3.5%
	3	2	0.9%	2	4.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	1	0.9%
	4	2	0.9%	2	4.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.8%
	5	13	5.9%	13	28.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	7	6.6%	6	5.3%
	6	2	0.9%	2	4.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

APPENDIX C: Frequency Tables

Table 13: Table showing frequency distribution of scores for median distance between eyes among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Inter-Eye Distance		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Median distance between eyes	0	155	70.8%	0	0.0%	33	80.5%	44	100.0%	23	71.9%	55	96.5%	79	74.5%	76	67.3%
	1	2	0.9%	1	2.2%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	0	0.0%	2	1.8%
	2	23	10.5%	13	28.9%	5	12.2%	0	0.0%	5	15.6%	0	0.0%	11	10.4%	12	10.6%
	3	39	17.8%	31	68.9%	3	7.3%	0	0.0%	3	9.4%	2	3.5%	16	15.1%	23	20.4%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 14: Table showing frequency distribution of scores for right eye fissure shape, right eye fissure angulation, left eye fissure shape and left eye fissure angulation among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right and Left Eye fissure opening (Outline)		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Eye Fissure Shape	0	142	64.8%	5	11.1%	11	26.8%	41	93.2%	29	90.6%	56	98.2%	78	73.6%	64	56.6%
	1	54	24.7%	24	53.3%	25	61.0%	2	4.5%	2	6.3%	1	1.8%	22	20.8%	32	28.3%
	2	23	10.5%	16	35.6%	5	12.2%	1	2.3%	1	3.1%	0	0.0%	6	5.7%	17	15.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Eye fissure angulation	0	140	63.9%	4	8.9%	11	26.8%	41	93.2%	28	87.5%	56	98.2%	77	72.6%	63	55.8%
	1	53	24.2%	29	64.4%	17	41.5%	3	6.8%	3	9.4%	1	1.8%	20	18.9%	33	29.2%
	2	20	9.1%	8	17.8%	11	26.8%	0	0.0%	1	3.1%	0	0.0%	9	8.5%	11	9.7%
	3	2	0.9%	0	0.0%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.8%

APPENDIX C: Frequency Tables

Left Eye Fissure Shape	4	3	1.4%	3	6.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	2.7%
	5	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	145	66.2%	5	11.1%	38	92.7%	44	100.0%	7	21.9%	51	89.5%	81	76.4%	64	56.6%
	1	59	26.9%	28	62.2%	3	7.3%	0	0.0%	24	75.0%	4	7.0%	21	19.8%	38	33.6%
	2	15	6.8%	12	26.7%	0	0.0%	0	0.0%	1	3.1%	2	3.5%	4	3.8%	11	9.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	145	66.2%	5	11.1%	38	92.7%	44	100.0%	7	21.9%	51	89.5%	81	76.4%	64	56.6%
	1	48	21.9%	27	60.0%	3	7.3%	0	0.0%	16	50.0%	2	3.5%	16	15.1%	32	28.3%
	2	21	9.6%	9	20.0%	0	0.0%	0	0.0%	9	28.1%	3	5.3%	9	8.5%	12	10.6%
	3	1	0.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	0	0.0%	1	0.9%
	4	3	1.4%	3	6.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	2.7%
	5	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Eye Fissure Angulation	0	145	66.2%	5	11.1%	38	92.7%	44	100.0%	7	21.9%	51	89.5%	81	76.4%	64	56.6%
	1	48	21.9%	27	60.0%	3	7.3%	0	0.0%	16	50.0%	2	3.5%	16	15.1%	32	28.3%
	2	21	9.6%	9	20.0%	0	0.0%	0	0.0%	9	28.1%	3	5.3%	9	8.5%	12	10.6%
	3	1	0.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	0	0.0%	1	0.9%
	4	3	1.4%	3	6.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	2.7%
	5	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 15: Table showing frequency distribution of scores for right upper eyelid prominence, protrusion, superior palpebral fold, position, eyelash length, eyelash density and epicanthus presence among Black African males aged 18 to 35 from the Wits Face Database (WFD).

	Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT		
Right Upper Eyelid (Including Lashes)	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	
Right Upper eyelid Prominence	0	87	39.7%	10	22.2%	9	22.0%	14	31.8%	7	21.9%	47	82.5%	64	60.4%	23	20.4%

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Right Upper Eyelid protrusion	1	28	12.8%	10	22.2%	8	19.5%	6	13.6%	3	9.4%	1	1.8%	14	13.2%	14	12.4%
	2	77	35.2%	18	40.0%	19	46.3%	19	43.2%	12	37.5%	9	15.8%	23	21.7%	54	47.8%
	3	27	12.3%	7	15.6%	5	12.2%	5	11.4%	10	31.3%	0	0.0%	5	4.7%	22	19.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	84	38.4%	9	20.0%	9	22.0%	12	27.3%	7	21.9%	47	82.5%	63	59.4%	21	18.6%
	1	39	17.8%	12	26.7%	9	22.0%	9	20.5%	8	25.0%	1	1.8%	19	17.9%	20	17.7%
	2	96	43.8%	24	53.3%	23	56.1%	23	52.3%	17	53.1%	9	15.8%	24	22.6%	72	63.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	85	38.8%	10	22.2%	9	22.0%	12	27.3%	7	21.9%	47	82.5%	64	60.4%	21	18.6%
	1	6	2.7%	2	4.4%	0	0.0%	2	4.5%	1	3.1%	1	1.8%	2	1.9%	4	3.5%
Right Upper Eyelid Superior palpebral fold	2	46	21.0%	15	33.3%	6	14.6%	11	25.0%	10	31.3%	4	7.0%	18	17.0%	28	24.8%
	3	82	37.4%	18	40.0%	26	63.4%	19	43.2%	14	43.8%	5	8.8%	22	20.8%	60	53.1%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	91	41.6%	9	20.0%	9	22.0%	19	43.2%	7	21.9%	47	82.5%	65	61.3%	26	23.0%
	2	7	3.2%	1	2.2%	3	7.3%	0	0.0%	1	3.1%	2	3.5%	3	2.8%	4	3.5%
Right Upper Eyelid Position	3	106	48.4%	32	71.1%	22	53.7%	21	47.7%	24	75.0%	7	12.3%	33	31.1%	73	64.6%
	4	15	6.8%	3	6.7%	7	17.1%	4	9.1%	0	0.0%	1	1.8%	5	4.7%	10	8.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	85	38.8%	10	22.2%	9	22.0%	12	27.3%	7	21.9%	47	82.5%	64	60.4%	21	18.6%
Right Upper Eyelid Eyelash length	1	3	1.4%	0	0.0%	2	4.9%	0	0.0%	0	0.0%	1	1.8%	1	0.9%	2	1.8%
	2	68	31.1%	26	57.8%	20	48.8%	14	31.8%	5	15.6%	3	5.3%	20	18.9%	48	42.5%
	3	63	28.8%	9	20.0%	10	24.4%	18	40.9%	20	62.5%	6	10.5%	21	19.8%	42	37.2%

APPENDIX C: Frequency Tables

Right Upper Eyelid Eyelash density	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	87	39.7%	9	20.0%	9	22.0%	15	34.1%	7	21.9%	47	82.5%	63	59.4%	24	21.2%
	1	7	3.2%	3	6.7%	4	9.8%	0	0.0%	0	0.0%	0	0.0%	2	1.9%	5	4.4%
	2	125	57.1%	33	73.3%	28	68.3%	29	65.9%	25	78.1%	10	17.5%	41	38.7%	84	74.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Upper Eyelid Epicanthus presence	0	122	55.7%	10	22.2%	9	22.0%	40	90.9%	12	37.5%	51	89.5%	78	73.6%	44	38.9%
	1	92	42.0%	34	75.6%	30	73.2%	3	6.8%	20	62.5%	5	8.8%	25	23.6%	67	59.3%
	2	5	2.3%	1	2.2%	2	4.9%	1	2.3%	0	0.0%	1	1.8%	3	2.8%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 16: Table showing frequency distribution of scores for left upper eyelid prominence, protrusion, superior palpebral fold, position, eyelash length, eyelash density, and epicanthus presence among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Left Upper Eyelid (Including Lashes)		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Left Upper eyelid Prominence	0	82	37.4%	10	22.2%	10	24.4%	41	93.2%	6	18.8%	15	26.3%	61	57.5%	21	18.6%
	1	27	12.3%	9	20.0%	7	17.1%	2	4.5%	3	9.4%	6	10.5%	13	12.3%	14	12.4%
	2	83	37.9%	19	42.2%	19	46.3%	0	0.0%	11	34.4%	34	59.6%	27	25.5%	56	49.6%
	3	27	12.3%	7	15.6%	5	12.2%	1	2.3%	12	37.5%	2	3.5%	5	4.7%	22	19.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Upper Eyelid protrusion	0	81	37.0%	9	20.0%	10	24.4%	41	93.2%	6	18.8%	15	26.3%	60	56.6%	21	18.6%
	1	38	17.4%	12	26.7%	8	19.5%	3	6.8%	9	28.1%	6	10.5%	18	17.0%	20	17.7%

APPENDIX C: Frequency Tables

Left Upper Eyelid Superior palpebral fold	2	100	45.7%	24	53.3%	23	56.1%	0	0.0%	17	53.1%	36	63.2%	28	26.4%	72	63.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	82	37.4%	10	22.2%	10	24.4%	41	93.2%	6	18.8%	15	26.3%	61	57.5%	21	18.6%
	1	8	3.7%	2	4.4%	0	0.0%	1	2.3%	1	3.1%	4	7.0%	2	1.9%	6	5.3%
	2	39	17.8%	15	33.3%	7	17.1%	1	2.3%	6	18.8%	10	17.5%	15	14.2%	24	21.2%
	3	90	41.1%	18	40.0%	24	58.5%	1	2.3%	19	59.4%	28	49.1%	28	26.4%	62	54.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	89	40.6%	9	20.0%	10	24.4%	41	93.2%	6	18.8%	23	40.4%	64	60.4%	25	22.1%
	2	10	4.6%	1	2.2%	3	7.3%	0	0.0%	2	6.3%	4	7.0%	5	4.7%	5	4.4%
	3	110	50.2%	34	75.6%	23	56.1%	2	4.5%	24	75.0%	27	47.4%	34	32.1%	76	67.3%
Left Upper Eyelid Position	4	10	4.6%	1	2.2%	5	12.2%	1	2.3%	0	0.0%	3	5.3%	3	2.8%	7	6.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	83	37.9%	10	22.2%	10	24.4%	41	93.2%	6	18.8%	16	28.1%	62	58.5%	21	18.6%
	1	2	0.9%	0	0.0%	1	2.4%	0	0.0%	0	0.0%	1	1.8%	0	0.0%	2	1.8%
	2	72	32.9%	26	57.8%	13	31.7%	1	2.3%	12	37.5%	20	35.1%	20	18.9%	52	46.0%
Left Upper Eyelid Eyelash length	3	62	28.3%	9	20.0%	17	41.5%	2	4.5%	14	43.8%	20	35.1%	24	22.6%	38	33.6%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	82	37.4%	9	20.0%	10	24.4%	41	93.2%	6	18.8%	16	28.1%	61	57.5%	21	18.6%
	1	9	4.1%	5	11.1%	3	7.3%	0	0.0%	1	3.1%	0	0.0%	2	1.9%	7	6.2%
	2	128	58.4%	31	68.9%	28	68.3%	3	6.8%	25	78.1%	41	71.9%	43	40.6%	85	75.2%
Left Upper Eyelid Eyelash density	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	124	56.6%	10	22.2%	19	46.3%	41	93.2%	6	18.8%	48	84.2%	79	74.5%	45	39.8%

APPENDIX C: Frequency Tables

Left Upper Eyelid Epicanthus presence	1	92	42.0%	34	75.6%	22	53.7%	2	4.5%	26	81.3%	8	14.0%	25	23.6%	67	59.3%
	2	3	1.4%	1	2.2%	0	0.0%	1	2.3%	0	0.0%	1	1.8%	2	1.9%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 17: Table showing frequency distribution of scores for right lower eyelid prominence, protrusion, superior palpebral fold, position, eyelash length and eyelash density among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right Lower Eyelid (Including Lashes)		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Lower eyelid Prominence	0	93	42.5%	10	22.2%	9	22.0%	15	34.1%	8	25.0%	51	89.5%	66	62.3%	27	23.9%
	1	16	7.3%	2	4.4%	6	14.6%	4	9.1%	3	9.4%	1	1.8%	7	6.6%	9	8.0%
	2	97	44.3%	29	64.4%	20	48.8%	23	52.3%	20	62.5%	5	8.8%	29	27.4%	68	60.2%
	3	13	5.9%	4	8.9%	6	14.6%	2	4.5%	1	3.1%	0	0.0%	4	3.8%	9	8.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Lower Eyelid protrusion	0	89	40.6%	9	20.0%	9	22.0%	13	29.5%	8	25.0%	50	87.7%	65	61.3%	24	21.2%
	1	22	10.0%	6	13.3%	5	12.2%	6	13.6%	4	12.5%	1	1.8%	8	7.5%	14	12.4%
	2	108	49.3%	30	66.7%	27	65.9%	25	56.8%	20	62.5%	6	10.5%	33	31.1%	75	66.4%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	93	42.5%	10	22.2%	9	22.0%	13	29.5%	10	31.3%	51	89.5%	67	63.2%	26	23.0%

APPENDIX C: Frequency Tables

Right Lower Eyelid Superior palpebral fold	1	97	44.3%	28	62.2%	23	56.1%	26	59.1%	18	56.3%	2	3.5%	32	30.2%	65	57.5%
	2	27	12.3%	7	15.6%	8	19.5%	5	11.4%	4	12.5%	3	5.3%	7	6.6%	20	17.7%
	3	2	0.9%	0	0.0%	1	2.4%	0	0.0%	0	0.0%	1	1.8%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Lower Eyelid Position	0	93	42.5%	9	20.0%	9	22.0%	17	38.6%	8	25.0%	50	87.7%	66	62.3%	27	23.9%
	2	1	0.5%	0	0.0%	0	0.0%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
	3	120	54.8%	35	77.8%	29	70.7%	26	59.1%	23	71.9%	7	12.3%	38	35.8%	82	72.6%
	4	5	2.3%	1	2.2%	3	7.3%	0	0.0%	1	3.1%	0	0.0%	1	0.9%	4	3.5%
Right Lower Eyelid Eyelash length	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	93	42.5%	10	22.2%	9	22.0%	15	34.1%	8	25.0%	51	89.5%	66	62.3%	27	23.9%
	1	98	44.7%	30	66.7%	28	68.3%	23	52.3%	13	40.6%	4	7.0%	30	28.3%	68	60.2%
	2	24	11.0%	4	8.9%	3	7.3%	6	13.6%	9	28.1%	2	3.5%	9	8.5%	15	13.3%
Right Lower Eyelid Eyelash density	3	4	1.8%	1	2.2%	1	2.4%	0	0.0%	2	6.3%	0	0.0%	1	0.9%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	98	44.7%	9	20.0%	9	22.0%	18	40.9%	10	31.3%	52	91.2%	65	61.3%	33	29.2%
	1	65	29.7%	19	42.2%	19	46.3%	12	27.3%	12	37.5%	3	5.3%	21	19.8%	44	38.9%
Right Lower Eyelid Eyelash density	2	56	25.6%	17	37.8%	13	31.7%	14	31.8%	10	31.3%	2	3.5%	20	18.9%	36	31.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 18: Table showing frequency distribution of scores for left lower eyelid prominence, protrusion, superior palpebral fold, position, eyelash length and eyelash density among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Left Lower Eyelid (Including Lashes)		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Left Lower eyelid Prominence	0	86	39.3%	10	22.2%	13	31.7%	41	93.2%	6	18.8%	16	28.1%	63	59.4%	23	20.4%
	1	15	6.8%	2	4.4%	4	9.8%	0	0.0%	3	9.4%	6	10.5%	4	3.8%	11	9.7%
	2	104	47.5%	29	64.4%	18	43.9%	2	4.5%	20	62.5%	35	61.4%	35	33.0%	69	61.1%
	3	14	6.4%	4	8.9%	6	14.6%	1	2.3%	3	9.4%	0	0.0%	4	3.8%	10	8.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Lower Eyelid protrusion	0	85	38.8%	9	20.0%	13	31.7%	41	93.2%	6	18.8%	16	28.1%	62	58.5%	23	20.4%
	1	24	11.0%	7	15.6%	5	12.2%	2	4.5%	5	15.6%	5	8.8%	7	6.6%	17	15.0%
	2	110	50.2%	29	64.4%	23	56.1%	1	2.3%	21	65.6%	36	63.2%	37	34.9%	73	64.6%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Lower Eyelid Superior palpebral fold	0	88	40.2%	10	22.2%	15	36.6%	41	93.2%	6	18.8%	16	28.1%	65	61.3%	23	20.4%
	1	107	48.9%	27	60.0%	20	48.8%	3	6.8%	23	71.9%	34	59.6%	35	33.0%	72	63.7%
	2	23	10.5%	8	17.8%	6	14.6%	0	0.0%	3	9.4%	6	10.5%	6	5.7%	17	15.0%
	3	1	0.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Lower Eyelid Position	0	90	41.1%	9	20.0%	13	31.7%	41	93.2%	6	18.8%	21	36.8%	65	61.3%	25	22.1%
	2	126	57.5%	35	77.8%	26	63.4%	3	6.8%	26	81.3%	36	63.2%	41	38.7%	85	75.2%
	3	3	1.4%	1	2.2%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Left Lower Eyelid Eyelash length	0	87	39.7%	10	22.2%	13	31.7%	41	93.2%	6	18.8%	17	29.8%	63	59.4%	24	21.2%
	1	106	48.4%	30	66.7%	21	51.2%	3	6.8%	23	71.9%	29	50.9%	29	27.4%	77	68.1%
	2	22	10.0%	4	8.9%	5	12.2%	0	0.0%	2	6.3%	11	19.3%	14	13.2%	8	7.1%
	3	4	1.8%	1	2.2%	2	4.9%	0	0.0%	1	3.1%	0	0.0%	0	0.0%	4	3.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Lower Eyelid Eyelash density	0	88	40.2%	9	20.0%	13	31.7%	41	93.2%	7	21.9%	18	31.6%	62	58.5%	26	23.0%
	1	70	32.0%	22	48.9%	15	36.6%	2	4.5%	15	46.9%	16	28.1%	20	18.9%	50	44.2%
	2	61	27.9%	14	31.1%	13	31.7%	1	2.3%	10	31.3%	23	40.4%	24	22.6%	37	32.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 19: Table showing frequency distribution of scores for right and left eyeball protrusion among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Left and Right Eyeball protrusion		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Eyeball protrusion	0	83	37.9%	42	93.3%	13	31.7%	4	9.1%	14	43.8%	10	17.5%	30	28.3%	53	46.9%
	1	95	43.4%	0	0.0%	17	41.5%	33	75.0%	12	37.5%	33	57.9%	56	52.8%	39	34.5%
	2	40	18.3%	3	6.7%	11	26.8%	6	13.6%	6	18.8%	14	24.6%	20	18.9%	20	17.7%
	3	1	0.5%	0	0.0%	0	0.0%	1	2.3%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Eyeball protrusion	0	83	37.9%	42	93.3%	13	31.7%	12	27.3%	14	43.8%	2	3.5%	26	24.5%	57	50.4%
	1	93	42.5%	0	0.0%	17	41.5%	28	63.6%	12	37.5%	36	63.2%	59	55.7%	34	30.1%
	2	43	19.6%	3	6.7%	11	26.8%	4	9.1%	6	18.8%	19	33.3%	21	19.8%	22	19.5%

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Total 219 100.0% 45 100.0% 41 100.0% 44 100.0% 32 100.0% 57 100.0% 106 100.0% 113 100.0%

Table 20: Table showing frequency distribution of scores for right eye nasal scleral triangle size, right eye nasal scleral triangle shape, right eye lateral scleral triangle size, right eye lateral scleral shape, right eye blood vessel visibility and right eye sclera colour among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right Eye Sclera		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Eye Nasal Scleral triangle size	0	143	65.3%	6	13.3%	21	51.2%	43	97.7%	19	59.4%	54	94.7%	80	75.5%	63	55.8%
	1	12	5.5%	2	4.4%	9	22.0%	1	2.3%	0	0.0%	0	0.0%	4	3.8%	8	7.1%
	2	59	26.9%	33	73.3%	11	26.8%	0	0.0%	12	37.5%	3	5.3%	22	20.8%	37	32.7%
	3	5	2.3%	4	8.9%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	0	0.0%	5	4.4%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Eye Nasal Scleral triangle shape	0	147	67.1%	6	13.3%	26	63.4%	43	97.7%	18	56.3%	54	94.7%	81	76.4%	66	58.4%
	1	5	2.3%	2	4.4%	1	2.4%	1	2.3%	1	3.1%	0	0.0%	3	2.8%	2	1.8%
	2	64	29.2%	35	77.8%	14	34.1%	0	0.0%	12	37.5%	3	5.3%	22	20.8%	42	37.2%
	3	3	1.4%	2	4.4%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	0	0.0%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Eye Lateral Scleral triangle size	0	142	64.8%	6	13.3%	11	26.8%	38	86.4%	30	93.8%	57	100.0%	78	73.6%	64	56.6%
	1	12	5.5%	6	13.3%	4	9.8%	1	2.3%	1	3.1%	0	0.0%	3	2.8%	9	8.0%
	2	60	27.4%	29	64.4%	26	63.4%	4	9.1%	1	3.1%	0	0.0%	25	23.6%	35	31.0%
	3	5	2.3%	4	8.9%	0	0.0%	1	2.3%	0	0.0%	0	0.0%	0	0.0%	5	4.4%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Right Eye Lateral Scleral triangle shape	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	135	61.6%	6	13.3%	13	31.7%	29	65.9%	31	96.9%	56	98.2%	71	67.0%	64	56.6%
	1	24	11.0%	18	40.0%	4	9.8%	2	4.5%	0	0.0%	0	0.0%	9	8.5%	15	13.3%
	2	44	20.1%	10	22.2%	21	51.2%	12	27.3%	0	0.0%	1	1.8%	20	18.9%	24	21.2%
	3	16	7.3%	11	24.4%	3	7.3%	1	2.3%	1	3.1%	0	0.0%	6	5.7%	10	8.8%
Right Eye Blood vessel visibility	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	123	56.2%	9	20.0%	14	34.1%	37	84.1%	11	34.4%	52	91.2%	77	72.6%	46	40.7%
	1	75	34.2%	30	66.7%	21	51.2%	6	13.6%	14	43.8%	4	7.0%	27	25.5%	48	42.5%
	2	21	9.6%	6	13.3%	6	14.6%	1	2.3%	7	21.9%	1	1.8%	2	1.9%	19	16.8%
Right Eye Sclera colour	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	108	49.3%	7	15.6%	13	31.7%	29	65.9%	8	25.0%	51	89.5%	65	61.3%	43	38.1%
	1	99	45.2%	33	73.3%	26	63.4%	13	29.5%	22	68.8%	5	8.8%	39	36.8%	60	53.1%
	2	12	5.5%	5	11.1%	2	4.9%	2	4.5%	2	6.3%	1	1.8%	2	1.9%	10	8.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 21: Table showing frequency distribution of scores for left eye nasal scleral triangle size, left eye nasal scleral triangle shape, left eye lateral scleral triangle size, left eye lateral scleral shape, left eye blood vessel visibility and left eye sclera colour among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Left Eye Sclera		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Left Eye Nasal Scleral triangle size	0	142	64.8%	6	13.3%	30	73.2%	41	93.2%	11	34.4%	54	94.7%	80	75.5%	62	54.9%
	1	8	3.7%	3	6.7%	0	0.0%	1	2.3%	4	12.5%	0	0.0%	1	0.9%	7	6.2%

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Left Eye Nasal Scleral triangle shape	2	65	29.7%	32	71.1%	11	26.8%	2	4.5%	17	53.1%	3	5.3%	25	23.6%	40	35.4%
	3	4	1.8%	4	8.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4	3.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	144	65.8%	7	15.6%	28	68.3%	41	93.2%	14	43.8%	54	94.7%	81	76.4%	63	55.8%
	1	3	1.4%	2	4.4%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	2	1.9%	1	0.9%
	2	71	32.4%	36	80.0%	13	31.7%	3	6.8%	17	53.1%	2	3.5%	23	21.7%	48	42.5%
	3	1	0.5%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	146	66.7%	6	13.3%	40	97.6%	44	100.0%	6	18.8%	50	87.7%	83	78.3%	63	55.8%
	1	10	4.6%	5	11.1%	1	2.4%	0	0.0%	4	12.5%	0	0.0%	1	0.9%	9	8.0%
Left Eye Lateral Scleral triangle size	2	56	25.6%	30	66.7%	0	0.0%	0	0.0%	20	62.5%	6	10.5%	22	20.8%	34	30.1%
	3	7	3.2%	4	8.9%	0	0.0%	0	0.0%	2	6.3%	1	1.8%	0	0.0%	7	6.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	129	58.9%	6	13.3%	40	97.6%	44	100.0%	6	18.8%	33	57.9%	72	67.9%	57	50.4%
	1	24	11.0%	16	35.6%	1	2.4%	0	0.0%	0	0.0%	7	12.3%	13	12.3%	11	9.7%
Left Eye Lateral Scleral triangle shape	2	56	25.6%	14	31.1%	0	0.0%	0	0.0%	25	78.1%	17	29.8%	18	17.0%	38	33.6%
	3	10	4.6%	9	20.0%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	3	2.8%	7	6.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	118	53.9%	9	20.0%	18	43.9%	42	95.5%	6	18.8%	43	75.4%	75	70.8%	43	38.1%
	1	88	40.2%	29	64.4%	20	48.8%	1	2.3%	24	75.0%	14	24.6%	27	25.5%	61	54.0%
Left Eye Blood vessel visibility	2	13	5.9%	7	15.6%	3	7.3%	1	2.3%	2	6.3%	0	0.0%	4	3.8%	9	8.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Left Eye Sclera colour	0	101	46.1%	7	15.6%	16	39.0%	41	93.2%	5	15.6%	32	56.1%	61	57.5%	40	35.4%
	1	107	48.9%	31	68.9%	24	58.5%	2	4.5%	25	78.1%	25	43.9%	44	41.5%	63	55.8%
	2	11	5.0%	7	15.6%	1	2.4%	1	2.3%	2	6.3%	0	0.0%	1	0.9%	10	8.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 22: Table showing frequency distribution of scores for right iris colour, visibility, relative size, position in eye, and pupil ring presence among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right Iris		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
	0	102	46.6%	5	11.1%	11	26.8%	30	68.2%	7	21.9%	49	86.0%	63	59.4%	39	34.5%
Right Iris colour	1	117	53.4%	40	88.9%	30	73.2%	14	31.8%	25	78.1%	8	14.0%	43	40.6%	74	65.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	111	50.7%	5	11.1%	11	26.8%	37	84.1%	7	21.9%	51	89.5%	68	64.2%	43	38.1%
	1	4	1.8%	0	0.0%	4	9.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4	3.5%
	2	89	40.6%	33	73.3%	20	48.8%	5	11.4%	25	78.1%	6	10.5%	31	29.2%	58	51.3%
Right Iris Visibility	3	9	4.1%	7	15.6%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	4	3.8%	5	4.4%
	4	3	1.4%	0	0.0%	2	4.9%	1	2.3%	0	0.0%	0	0.0%	2	1.9%	1	0.9%
	5	3	1.4%	0	0.0%	2	4.9%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	128	58.4%	5	11.1%	13	31.7%	43	97.7%	13	40.6%	54	94.7%	77	72.6%	51	45.1%
Right Iris relative size	1	15	6.8%	8	17.8%	4	9.8%	0	0.0%	3	9.4%	0	0.0%	8	7.5%	7	6.2%

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Right Iris position in eye	2	67	30.6%	27	60.0%	21	51.2%	1	2.3%	15	46.9%	3	5.3%	18	17.0%	49	43.4%
	3	9	4.1%	5	11.1%	3	7.3%	0	0.0%	1	3.1%	0	0.0%	3	2.8%	6	5.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	136	62.1%	4	8.9%	16	39.0%	44	100.0%	17	53.1%	55	96.5%	77	72.6%	59	52.2%
	1	1	0.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	0	0.0%	1	0.9%
	2	80	36.5%	41	91.1%	23	56.1%	0	0.0%	15	46.9%	1	1.8%	29	27.4%	51	45.1%
	3	2	0.9%	0	0.0%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	185	84.5%	29	64.4%	28	68.3%	44	100.0%	28	87.5%	56	98.2%	91	85.8%	94	83.2%
	2	34	15.5%	16	35.6%	13	31.7%	0	0.0%	4	12.5%	1	1.8%	15	14.2%	19	16.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Iris Pupil ring presence	0	185	84.5%	29	64.4%	28	68.3%	44	100.0%	28	87.5%	56	98.2%	91	85.8%	94	83.2%
	2	34	15.5%	16	35.6%	13	31.7%	0	0.0%	4	12.5%	1	1.8%	15	14.2%	19	16.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 23: Table showing frequency distribution of scores for left iris colour, visibility, relative size, position in eye, and pupil ring presence among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Left Iris		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Left Iris colour	0	98	44.7%	5	11.1%	13	31.7%	41	93.2%	6	18.8%	33	57.9%	62	58.5%	36	31.9%
	1	121	55.3%	40	88.9%	28	68.3%	3	6.8%	26	81.3%	24	42.1%	44	41.5%	77	68.1%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Iris Visibility	0	116	53.0%	5	11.1%	15	36.6%	41	93.2%	6	18.8%	49	86.0%	72	67.9%	44	38.9%
	1	6	2.7%	0	0.0%	5	12.2%	0	0.0%	0	0.0%	1	1.8%	0	0.0%	6	5.3%
	2	86	39.3%	36	80.0%	16	39.0%	1	2.3%	26	81.3%	7	12.3%	29	27.4%	57	50.4%

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Left Iris relative size	3	6	2.7%	4	8.9%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	3	2.8%	3	2.7%
	4	5	2.3%	0	0.0%	3	7.3%	2	4.5%	0	0.0%	0	0.0%	2	1.9%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	124	56.6%	5	11.1%	18	43.9%	43	97.7%	7	21.9%	51	89.5%	75	70.8%	49	43.4%
	1	16	7.3%	8	17.8%	3	7.3%	0	0.0%	5	15.6%	0	0.0%	9	8.5%	7	6.2%
	2	71	32.4%	27	60.0%	18	43.9%	1	2.3%	19	59.4%	6	10.5%	19	17.9%	52	46.0%
	3	8	3.7%	5	11.1%	2	4.9%	0	0.0%	1	3.1%	0	0.0%	3	2.8%	5	4.4%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	134	61.2%	4	8.9%	25	61.0%	44	100.0%	8	25.0%	53	93.0%	79	74.5%	55	48.7%
	1	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
Left Iris position in eye	2	84	38.4%	40	88.9%	16	39.0%	0	0.0%	24	75.0%	4	7.0%	26	24.5%	58	51.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	188	85.8%	29	64.4%	30	73.2%	44	100.0%	28	87.5%	57	100.0%	92	86.8%	96	85.0%
Left Iris Pupil ring presence	2	31	14.2%	16	35.6%	11	26.8%	0	0.0%	4	12.5%	0	0.0%	14	13.2%	17	15.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 24: Table showing frequency distribution of scores for right eye medial canthus caruncle prominence and left eye medial canthus caruncle prominence among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Left and Right Eye Medial Canthus		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Eye Medial Canthus Caruncle prominence	0	144	65.8%	10	22.2%	14	34.1%	42	95.5%	24	75.0%	54	94.7%	82	77.4%	62	54.9%
	1	24	11.0%	3	6.7%	10	24.4%	1	2.3%	7	21.9%	3	5.3%	6	5.7%	18	15.9%

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	2	51	23.3%	32	71.1%	17	41.5%	1	2.3%	1	3.1%	0	0.0%	18	17.0%	33	29.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Eye Medial Canthus Caruncle prominence	0	144	65.8%	10	22.2%	31	75.6%	42	95.5%	10	31.3%	51	89.5%	84	79.2%	60	53.1%
	1	23	10.5%	3	6.7%	6	14.6%	2	4.5%	8	25.0%	4	7.0%	7	6.6%	16	14.2%
	2	52	23.7%	32	71.1%	4	9.8%	0	0.0%	14	43.8%	2	3.5%	15	14.2%	37	32.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 25: Table showing frequency distribution of scores for eye position symmetry among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Eye position symmetry (Asymmetry Between Right and Left Eyes)	0	99	45.2%	0	0.0%	4	9.8%	40	90.9%	5	15.6%	50	87.7%	54	50.9%	45	39.8%
	1	117	53.4%	45	100.0%	37	90.2%	3	6.8%	25	78.1%	7	12.3%	51	48.1%	66	58.4%
	2	2	0.9%	0	0.0%	0	0.0%	0	0.0%	2	6.3%	0	0.0%	0	0.0%	2	1.8%
	3	1	0.5%	0	0.0%	0	0.0%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 26: Table showing frequency distribution of scores for right cheekbone lateral prominence, right cheekbone anterior prominence, left cheekbone lateral prominence and left cheekbone anterior prominence among Black African males aged 18 to 35 from the Wits Face Database (WFD).

	Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT		
Left and Right Cheek Bone	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	
Right Cheekbone lateral prominence (profile)	0	119	54.3%	45	100.0%	6	14.6%	0	0.0%	17	53.1%	51	89.5%	55	51.9%	64	56.6%
	1	2	0.9%	0	0.0%	1	2.4%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	1	0.9%

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Right Cheekbone anterior prominence (portrait)	2	81	37.0%	0	0.0%	29	70.7%	37	84.1%	11	34.4%	4	7.0%	40	37.7%	41	36.3%
	3	17	7.8%	0	0.0%	5	12.2%	6	13.6%	4	12.5%	2	3.5%	10	9.4%	7	6.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	142	64.8%	0	0.0%	16	39.0%	42	95.5%	27	84.4%	57	100.0%	73	68.9%	69	61.1%
	2	75	34.2%	44	97.8%	25	61.0%	2	4.5%	4	12.5%	0	0.0%	33	31.1%	42	37.2%
	3	2	0.9%	1	2.2%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	116	53.0%	45	100.0%	23	56.1%	41	93.2%	4	12.5%	3	5.3%	59	55.7%	57	50.4%
	2	82	37.4%	0	0.0%	16	39.0%	2	4.5%	23	71.9%	41	71.9%	36	34.0%	46	40.7%
	3	21	9.6%	0	0.0%	2	4.9%	1	2.3%	5	15.6%	13	22.8%	11	10.4%	10	8.8%
Left Cheekbone lateral prominence (profile)	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	149	68.0%	0	0.0%	32	78.0%	44	100.0%	19	59.4%	54	94.7%	78	73.6%	71	62.8%
	2	67	30.6%	44	97.8%	9	22.0%	0	0.0%	11	34.4%	3	5.3%	28	26.4%	39	34.5%
Left Cheekbone anterior prominence (portrait)	3	3	1.4%	1	2.2%	0	0.0%	0	0.0%	2	6.3%	0	0.0%	0	0.0%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 27: Table showing frequency distribution of scores for right cheek shape, right cheek dimple presence, left cheek shape, left cheek dimple presence and symmetry of cheeks among Black African males aged 18 to 35 from the Wits Face Database (WFD).

	Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT		
Left and Right Cheek Shape	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	
Right Cheek Shape	0	75	34.2%	0	0.0%	0	0.0%	0	0.0%	23	71.9%	52	91.2%	39	36.8%	36	31.9%

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	1	31	14.2%	13	28.9%	4	9.8%	10	22.7%	3	9.4%	1	1.8%	12	11.3%	19	16.8%
	2	98	44.7%	27	60.0%	32	78.0%	31	70.5%	5	15.6%	3	5.3%	48	45.3%	50	44.2%
	3	15	6.8%	5	11.1%	5	12.2%	3	6.8%	1	3.1%	1	1.8%	7	6.6%	8	7.1%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	86	39.3%	0	0.0%	1	2.4%	0	0.0%	30	93.8%	55	96.5%	41	38.7%	45	39.8%
	Right Cheek dimple presence																
	1	130	59.4%	44	97.8%	40	97.6%	42	95.5%	2	6.3%	2	3.5%	65	61.3%	65	57.5%
	2	3	1.4%	1	2.2%	0	0.0%	2	4.5%	0	0.0%	0	0.0%	0	0.0%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	82	37.4%	0	0.0%	35	85.4%	44	100.0%	0	0.0%	3	5.3%	46	43.4%	36	31.9%
Left Cheek Shape	1	35	16.0%	13	28.9%	0	0.0%	0	0.0%	8	25.0%	14	24.6%	13	12.3%	22	19.5%
	2	85	38.8%	27	60.0%	6	14.6%	0	0.0%	18	56.3%	34	59.6%	36	34.0%	49	43.4%
	3	17	7.8%	5	11.1%	0	0.0%	0	0.0%	6	18.8%	6	10.5%	11	10.4%	6	5.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	87	39.7%	0	0.0%	41	100.0%	44	100.0%	0	0.0%	2	3.5%	45	42.5%	42	37.2%
Left Cheek dimple presence	1	129	58.9%	45	100.0%	0	0.0%	0	0.0%	31	96.9%	53	93.0%	60	56.6%	69	61.1%
	2	3	1.4%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	2	3.5%	1	0.9%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	170	77.6%	0	0.0%	41	100.0%	44	100.0%	29	90.6%	56	98.2%	85	80.2%	85	75.2%
Symmetry of Cheeks	1	47	21.5%	43	95.6%	0	0.0%	0	0.0%	3	9.4%	1	1.8%	20	18.9%	27	23.9%
	2	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
	4	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 28: Table showing frequency distribution of scores for overall nose shape (profile), nose relative length, nose relative width and nose prominence among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Nasal Outline (Profile and Front view)		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Overall nose shape (profile)	0	71	32.4%	38	84.4%	8	19.5%	10	22.7%	6	18.8%	9	15.8%	45	42.5%	26	23.0%
	1	1	0.5%	0	0.0%	0	0.0%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
	2	1	0.5%	0	0.0%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	3	10	4.6%	0	0.0%	4	9.8%	3	6.8%	1	3.1%	2	3.5%	4	3.8%	6	5.3%
	4	8	3.7%	0	0.0%	1	2.4%	4	9.1%	1	3.1%	2	3.5%	1	0.9%	7	6.2%
	5	14	6.4%	1	2.2%	2	4.9%	3	6.8%	3	9.4%	5	8.8%	9	8.5%	5	4.4%
	6	7	3.2%	2	4.4%	0	0.0%	1	2.3%	1	3.1%	3	5.3%	3	2.8%	4	3.5%
	7	45	20.5%	0	0.0%	17	41.5%	8	18.2%	10	31.3%	10	17.5%	18	17.0%	27	23.9%
	9	6	2.7%	2	4.4%	0	0.0%	0	0.0%	2	6.3%	2	3.5%	2	1.9%	4	3.5%
	10	15	6.8%	1	2.2%	4	9.8%	7	15.9%	0	0.0%	3	5.3%	10	9.4%	5	4.4%
	11	18	8.2%	1	2.2%	0	0.0%	1	2.3%	2	6.3%	14	24.6%	7	6.6%	11	9.7%
	12	11	5.0%	0	0.0%	1	2.4%	3	6.8%	6	18.8%	1	1.8%	3	2.8%	8	7.1%
	13	12	5.5%	0	0.0%	3	7.3%	3	6.8%	0	0.0%	6	10.5%	3	2.8%	9	8.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Nose Relative length	0	3	1.4%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	2	3.5%	3	2.8%	0	0.0%
	1	202	92.2%	40	88.9%	39	95.1%	41	93.2%	29	90.6%	53	93.0%	94	88.7%	108	95.6%
	2	12	5.5%	5	11.1%	1	2.4%	2	4.5%	2	6.3%	2	3.5%	8	7.5%	4	3.5%
	3	2	0.9%	0	0.0%	1	2.4%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	1	0.9%

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Nose Relative width	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	163	74.4%	0	0.0%	36	87.8%	44	100.0%	28	87.5%	55	96.5%	85	80.2%	78	69.0%
	1	2	0.9%	0	0.0%	1	2.4%	0	0.0%	1	3.1%	0	0.0%	0	0.0%	2	1.8%
	2	16	7.3%	12	26.7%	1	2.4%	0	0.0%	2	6.3%	1	1.8%	4	3.8%	12	10.6%
	3	38	17.4%	33	73.3%	3	7.3%	0	0.0%	1	3.1%	1	1.8%	17	16.0%	21	18.6%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Nose Prominence	0	69	31.5%	0	0.0%	2	4.9%	27	61.4%	3	9.4%	37	64.9%	51	48.1%	18	15.9%
	1	3	1.4%	1	2.2%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	2	1.9%	1	0.9%
	2	132	60.3%	39	86.7%	34	82.9%	16	36.4%	26	81.3%	17	29.8%	43	40.6%	89	78.8%
	3	15	6.8%	5	11.1%	3	7.3%	1	2.3%	3	9.4%	3	5.3%	10	9.4%	5	4.4%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 29: Table showing frequency distribution of scores for nasal bridge relative length, nasal bridge relative width, nasal bridge depth and nasal bridge shape among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Nasal Bridge		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
	0	58	26.5%	6	13.3%	7	17.1%	17	38.6%	6	18.8%	22	38.6%	52	49.1%	6	5.3%
	1	61	27.9%	15	33.3%	14	34.1%	4	9.1%	18	56.3%	10	17.5%	17	16.0%	44	38.9%
Nasal Bridge Relative length	2	91	41.6%	24	53.3%	18	43.9%	21	47.7%	8	25.0%	20	35.1%	34	32.1%	57	50.4%
	3	9	4.1%	0	0.0%	2	4.9%	2	4.5%	0	0.0%	5	8.8%	3	2.8%	6	5.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Nasal Bridge Relative width	0	154	70.3%	6	13.3%	29	70.7%	44	100.0%	22	68.8%	53	93.0%	85	80.2%	69	61.1%
	2	2	0.9%	0	0.0%	0	0.0%	0	0.0%	2	6.3%	0	0.0%	1	0.9%	1	0.9%
	3	63	28.8%	39	86.7%	12	29.3%	0	0.0%	8	25.0%	4	7.0%	20	18.9%	43	38.1%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Nasal Bridge Depth	0	35	16.0%	4	8.9%	4	9.8%	11	25.0%	3	9.4%	13	22.8%	31	29.2%	4	3.5%
	1	8	3.7%	4	8.9%	2	4.9%	0	0.0%	0	0.0%	2	3.5%	0	0.0%	8	7.1%
	2	117	53.4%	28	62.2%	28	68.3%	14	31.8%	26	81.3%	21	36.8%	51	48.1%	66	58.4%
	3	59	26.9%	9	20.0%	7	17.1%	19	43.2%	3	9.4%	21	36.8%	24	22.6%	35	31.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Nasal Bridge Shape	0	41	18.7%	6	13.3%	5	12.2%	13	29.5%	4	12.5%	13	22.8%	35	33.0%	6	5.3%
	1	64	29.2%	7	15.6%	6	14.6%	22	50.0%	3	9.4%	26	45.6%	29	27.4%	35	31.0%
	2	31	14.2%	5	11.1%	6	14.6%	3	6.8%	9	28.1%	8	14.0%	5	4.7%	26	23.0%
	3	48	21.9%	15	33.3%	14	34.1%	0	0.0%	13	40.6%	6	10.5%	17	16.0%	31	27.4%
	4	35	16.0%	12	26.7%	10	24.4%	6	13.6%	3	9.4%	4	7.0%	20	18.9%	15	13.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 30: Table showing frequency distribution of scores for nasal dorsum relative length, nasal dorsum relative width (frontal), nasal dorsum shape (frontal) and nasal dorsum contour among Black African males aged 18 to 35 from the Wits Face Database (WFD).

	Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT		
Nasal Dorsum	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	
Nasal Dorsum Relative length	0	5	2.3%	0	0.0%	0	0.0%	2	4.5%	1	3.1%	2	3.5%	4	3.8%	1	0.9%

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Nasal Dorsum Relative width (frontal)	2	10	4.6%	4	8.9%	2	4.9%	1	2.3%	0	0.0%	3	5.3%	3	2.8%	7	6.2%
	3	204	93.2%	41	91.1%	39	95.1%	41	93.2%	31	96.9%	52	91.2%	99	93.4%	105	92.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	161	73.5%	1	2.2%	36	87.8%	43	97.7%	27	84.4%	54	94.7%	85	80.2%	76	67.3%
	1	6	2.7%	2	4.4%	1	2.4%	0	0.0%	3	9.4%	0	0.0%	0	0.0%	6	5.3%
	2	33	15.1%	26	57.8%	4	9.8%	0	0.0%	2	6.3%	1	1.8%	12	11.3%	21	18.6%
	3	19	8.7%	16	35.6%	0	0.0%	1	2.3%	0	0.0%	2	3.5%	9	8.5%	10	8.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	160	73.1%	0	0.0%	37	90.2%	43	97.7%	26	81.3%	54	94.7%	83	78.3%	77	68.1%
	1	28	12.8%	20	44.4%	3	7.3%	0	0.0%	4	12.5%	1	1.8%	12	11.3%	16	14.2%
Nasal Dorsum Shape (frontal)	2	31	14.2%	25	55.6%	1	2.4%	1	2.3%	2	6.3%	2	3.5%	11	10.4%	20	17.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	25	11.4%	1	2.2%	5	12.2%	9	20.5%	3	9.4%	7	12.3%	15	14.2%	10	8.8%
Nasal Dorsum Deviation	1	184	84.0%	40	88.9%	32	78.0%	35	79.5%	28	87.5%	49	86.0%	89	84.0%	95	84.1%
	2	3	1.4%	0	0.0%	3	7.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	2.7%
	3	5	2.3%	2	4.4%	1	2.4%	0	0.0%	1	3.1%	1	1.8%	2	1.9%	3	2.7%
	6	2	0.9%	2	4.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Nasal Dorsum Contour (profile)	0	49	22.4%	37	82.2%	4	9.8%	2	4.5%	4	12.5%	2	3.5%	30	28.3%	19	16.8%
	1	10	4.6%	0	0.0%	1	2.4%	4	9.1%	0	0.0%	5	8.8%	6	5.7%	4	3.5%
	2	25	11.4%	1	2.2%	7	17.1%	8	18.2%	5	15.6%	4	7.0%	14	13.2%	11	9.7%
	3	80	36.5%	3	6.7%	22	53.7%	16	36.4%	18	56.3%	21	36.8%	36	34.0%	44	38.9%

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4	38	17.4%	2	4.4%	4	9.8%	9	20.5%	5	15.6%	18	31.6%	13	12.3%	25	22.1%
5	17	7.8%	2	4.4%	3	7.3%	5	11.4%	0	0.0%	7	12.3%	7	6.6%	10	8.8%
Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 31: Table showing frequency distribution of scores for nasal apex shape and nasal apex angulation among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Nasal Apex		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Nasal Apex Shape	0	4	1.8%	1	2.2%	0	0.0%	1	2.3%	0	0.0%	2	3.5%	3	2.8%	1	0.9%
	1	83	37.9%	13	28.9%	16	39.0%	19	43.2%	10	31.3%	25	43.9%	37	34.9%	46	40.7%
	2	8	3.7%	3	6.7%	0	0.0%	2	4.5%	1	3.1%	2	3.5%	1	0.9%	7	6.2%
	3	94	42.9%	17	37.8%	20	48.8%	19	43.2%	13	40.6%	25	43.9%	58	54.7%	36	31.9%
	4	26	11.9%	11	24.4%	4	9.8%	3	6.8%	7	21.9%	1	1.8%	7	6.6%	19	16.8%
	5	4	1.8%	0	0.0%	1	2.4%	0	0.0%	1	3.1%	2	3.5%	0	0.0%	4	3.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Nasal Apex Angulation	0	57	26.0%	45	100.0%	3	7.3%	2	4.5%	2	6.3%	5	8.8%	26	24.5%	31	27.4%
	1	162	74.0%	0	0.0%	38	92.7%	42	95.5%	30	93.8%	52	91.2%	80	75.5%	82	72.6%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 32: Table showing frequency distribution of scores for nasal base relative length (lateral), nasal base relative width (frontal) and nasal base deviation among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Nasal Base		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Nasal Base Relative length (lateral)	0	113	51.6%	45	100.0%	36	87.8%	3	6.8%	24	75.0%	5	8.8%	51	48.1%	62	54.9%
	1	14	6.4%	0	0.0%	1	2.4%	4	9.1%	0	0.0%	9	15.8%	4	3.8%	10	8.8%
	2	23	10.5%	0	0.0%	0	0.0%	10	22.7%	0	0.0%	13	22.8%	6	5.7%	17	15.0%
	3	69	31.5%	0	0.0%	4	9.8%	27	61.4%	8	25.0%	30	52.6%	45	42.5%	24	21.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Nasal Base Relative width (frontal)	0	163	74.4%	0	0.0%	36	87.8%	44	100.0%	28	87.5%	55	96.5%	85	80.2%	78	69.0%
	1	1	0.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	0	0.0%	1	0.9%
	2	17	7.8%	12	26.7%	2	4.9%	0	0.0%	3	9.4%	0	0.0%	4	3.8%	13	11.5%
	3	38	17.4%	33	73.3%	3	7.3%	0	0.0%	1	3.1%	1	1.8%	17	16.0%	21	18.6%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Nasal Base Deviation	0	120	54.8%	0	0.0%	12	29.3%	40	90.9%	15	46.9%	53	93.0%	67	63.2%	53	46.9%
	1	99	45.2%	45	100.0%	29	70.7%	4	9.1%	17	53.1%	4	7.0%	39	36.8%	60	53.1%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 33: Table showing frequency distribution of scores for nasal alae relative thickness, nasal alae relative width, nasal alae shape (frontal), nasal alae shape (lateral) and nasal alae symmetry of attachment among Black African males aged 18 to 35 from the Wits Face Database (WFD).

Nasal Alae (Wings of Nose)	Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%

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Nasal Alae Relative thickness	0	51	23.3%	9	20.0%	8	19.5%	15	34.1%	5	15.6%	14	24.6%	48	45.3%	3	2.7%
	1	18	8.2%	13	28.9%	2	4.9%	1	2.3%	0	0.0%	2	3.5%	8	7.5%	10	8.8%
	2	76	34.7%	22	48.9%	10	24.4%	9	20.5%	11	34.4%	24	42.1%	21	19.8%	55	48.7%
	3	74	33.8%	1	2.2%	21	51.2%	19	43.2%	16	50.0%	17	29.8%	29	27.4%	45	39.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Nasal Alae Relative width	0	54	24.7%	8	17.8%	8	19.5%	15	34.1%	5	15.6%	18	31.6%	47	44.3%	7	6.2%
	1	59	26.9%	36	80.0%	6	14.6%	1	2.3%	8	25.0%	8	14.0%	21	19.8%	38	33.6%
	2	88	40.2%	0	0.0%	20	48.8%	24	54.5%	16	50.0%	28	49.1%	35	33.0%	53	46.9%
	3	18	8.2%	1	2.2%	7	17.1%	4	9.1%	3	9.4%	3	5.3%	3	2.8%	15	13.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Nasal Alae Shape (frontal)	0	118	53.9%	2	4.4%	11	26.8%	41	93.2%	11	34.4%	53	93.0%	68	64.2%	50	44.2%
	1	60	27.4%	25	55.6%	19	46.3%	1	2.3%	12	37.5%	3	5.3%	25	23.6%	35	31.0%
	2	17	7.8%	7	15.6%	7	17.1%	0	0.0%	2	6.3%	1	1.8%	1	0.9%	16	14.2%
	3	24	11.0%	11	24.4%	4	9.8%	2	4.5%	7	21.9%	0	0.0%	12	11.3%	12	10.6%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Nasal Alae Shape (lateral)	0	79	36.1%	45	100.0%	11	26.8%	8	18.2%	5	15.6%	10	17.5%	49	46.2%	30	26.5%
	1	111	50.7%	0	0.0%	25	61.0%	31	70.5%	24	75.0%	31	54.4%	45	42.5%	66	58.4%
	2	27	12.3%	0	0.0%	5	12.2%	4	9.1%	3	9.4%	15	26.3%	12	11.3%	15	13.3%
	3	2	0.9%	0	0.0%	0	0.0%	1	2.3%	0	0.0%	1	1.8%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Nasal Alae Symmetry of attachment	0	126	57.5%	0	0.0%	18	43.9%	42	95.5%	12	37.5%	54	94.7%	69	65.1%	57	50.4%
	1	92	42.0%	44	97.8%	23	56.1%	2	4.5%	20	62.5%	3	5.3%	36	34.0%	56	49.6%

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5	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 34: Table showing frequency distribution of scores for nostrils shape, nostrils relative size and nostrils nasal hair among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Nostrils (Nasal Openings)		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Nostrils Shape	0	77	35.2%	14	31.1%	14	34.1%	18	40.9%	9	28.1%	22	38.6%	56	52.8%	21	18.6%
	1	5	2.3%	3	6.7%	0	0.0%	0	0.0%	2	6.3%	0	0.0%	2	1.9%	3	2.7%
	2	27	12.3%	16	35.6%	7	17.1%	0	0.0%	3	9.4%	1	1.8%	5	4.7%	22	19.5%
	3	17	7.8%	3	6.7%	7	17.1%	1	2.3%	5	15.6%	1	1.8%	8	7.5%	9	8.0%
	5	23	10.5%	8	17.8%	6	14.6%	1	2.3%	7	21.9%	1	1.8%	6	5.7%	17	15.0%
	6	6	2.7%	1	2.2%	2	4.9%	0	0.0%	3	9.4%	0	0.0%	2	1.9%	4	3.5%
	7	64	29.2%	0	0.0%	5	12.2%	24	54.5%	3	9.4%	32	56.1%	27	25.5%	37	32.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Nostrils Relative size	0	61	27.9%	10	22.2%	9	22.0%	18	40.9%	8	25.0%	16	28.1%	52	49.1%	9	8.0%
	1	29	13.2%	2	4.4%	1	2.4%	9	20.5%	3	9.4%	14	24.6%	18	17.0%	11	9.7%
	2	54	24.7%	9	20.0%	10	24.4%	9	20.5%	8	25.0%	18	31.6%	14	13.2%	40	35.4%
	3	75	34.2%	24	53.3%	21	51.2%	8	18.2%	13	40.6%	9	15.8%	22	20.8%	53	46.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Nostrils Nasal hair	0	55	25.1%	10	22.2%	9	22.0%	15	34.1%	7	21.9%	14	24.6%	51	48.1%	4	3.5%
	1	161	73.5%	35	77.8%	32	78.0%	29	65.9%	25	78.1%	40	70.2%	54	50.9%	107	94.7%

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2	3	1.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	5.3%	1	0.9%	2	1.8%
Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 35: Table showing frequency distribution of scores for nasal columella shape (lateral), nasal columella relative width (frontal) and nasal columella deviation among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Nasal Columella (Soft Tissue between Nostrils)		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Nasal Columella Shape (lateral)	0	96	43.8%	41	91.1%	16	39.0%	15	34.1%	10	31.3%	14	24.6%	60	56.6%	36	31.9%
	1	16	7.3%	2	4.4%	4	9.8%	4	9.1%	1	3.1%	5	8.8%	5	4.7%	11	9.7%
	2	47	21.5%	2	4.4%	4	9.8%	13	29.5%	3	9.4%	25	43.9%	17	16.0%	30	26.5%
	3	60	27.4%	0	0.0%	17	41.5%	12	27.3%	18	56.3%	13	22.8%	24	22.6%	36	31.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Nasal Columella Relative width (frontal)	0	138	63.0%	11	24.4%	17	41.5%	42	95.5%	15	46.9%	53	93.0%	83	78.3%	55	48.7%
	1	35	16.0%	15	33.3%	12	29.3%	1	2.3%	6	18.8%	1	1.8%	13	12.3%	22	19.5%
	2	44	20.1%	17	37.8%	12	29.3%	1	2.3%	11	34.4%	3	5.3%	9	8.5%	35	31.0%
	3	2	0.9%	2	4.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Nasal Columella Deviation	0	94	42.9%	12	26.7%	15	36.6%	23	52.3%	14	43.8%	30	52.6%	67	63.2%	27	23.9%
	1	125	57.1%	33	73.3%	26	63.4%	21	47.7%	18	56.3%	27	47.4%	39	36.8%	86	76.1%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 36: Table showing frequency distribution of scores for overall right ear vertical ear position, overall right ear relative size, overall right ear shape (frontal), overall right ear shape (lateral) and overall right ear angle (lateral) among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Overall Right Ear		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Overall Right Ear Vertical ear position	0	86	39.3%	0	0.0%	0	0.0%	0	0.0%	32	100.0%	54	94.7%	39	36.8%	47	41.6%
	1	47	21.5%	10	22.2%	18	43.9%	19	43.2%	0	0.0%	0	0.0%	21	19.8%	26	23.0%
	2	65	29.7%	24	53.3%	17	41.5%	21	47.7%	0	0.0%	3	5.3%	31	29.2%	34	30.1%
	3	21	9.6%	11	24.4%	6	14.6%	4	9.1%	0	0.0%	0	0.0%	15	14.2%	6	5.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Overall Right Ear Relative size	0	86	39.3%	0	0.0%	0	0.0%	0	0.0%	32	100.0%	54	94.7%	39	36.8%	47	41.6%
	1	64	29.2%	21	46.7%	20	48.8%	23	52.3%	0	0.0%	0	0.0%	33	31.1%	31	27.4%
	2	67	30.6%	24	53.3%	20	48.8%	20	45.5%	0	0.0%	3	5.3%	34	32.1%	33	29.2%
	3	2	0.9%	0	0.0%	1	2.4%	1	2.3%	0	0.0%	0	0.0%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Overall Right Ear shape (frontal)	0	174	79.5%	0	0.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	85	80.2%	89	78.8%
	2	22	10.0%	22	48.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	15	14.2%	7	6.2%
	3	8	3.7%	8	17.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4	3.8%	4	3.5%
	5	15	6.8%	15	33.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.9%	13	11.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Overall Right Ear shape (lateral)	0	133	60.7%	45	100.0%	0	0.0%	2	4.5%	32	100.0%	54	94.7%	62	58.5%	71	62.8%
	1	41	18.7%	0	0.0%	24	58.5%	16	36.4%	0	0.0%	1	1.8%	15	14.2%	26	23.0%
	2	24	11.0%	0	0.0%	2	12.2%	18	40.9%	0	0.0%	1	1.8%	12	11.3%	12	10.6%

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	3	6	2.7%	0	0.0%	6	4.9%	4	9.1%	0	0.0%	0	0.0%	5	4.7%	1	0.9%
	4	7	3.2%	0	0.0%	3	14.6%	1	2.3%	0	0.0%	0	0.0%	4	3.8%	3	2.7%
	5	7	3.2%	0	0.0%	1	7.3%	3	6.8%	0	0.0%	1	1.8%	7	6.6%	0	0.0%
	6	1	0.5%	0	0.0%	41	2.4%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
	Total	219	100.0%	45	100.0%	0	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Overall Right Ear Angle (lateral)	0	128	58.4%	45	100.0%	0	0.0%	0	0.0%	32	100.0%	51	89.5%	57	53.8%	71	62.8%
	1	8	3.7%	0	0.0%	4	9.8%	3	6.8%	0	0.0%	1	1.8%	5	4.7%	3	2.7%
	2	8	3.7%	0	0.0%	2	4.9%	5	11.4%	0	0.0%	1	1.8%	6	5.7%	2	1.8%
	3	75	34.2%	0	0.0%	35	85.4%	36	81.8%	0	0.0%	4	7.0%	38	35.8%	37	32.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 37: Table showing frequency distribution of scores for overall left ear vertical ear position, overall left ear relative size, overall left ear shape (frontal), overall left ear shape (lateral) and overall left ear angle (lateral) among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Overall Left Ear		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Overall Left Ear Vertical ear position	0	87	39.7%	0	0.0%	41	100.0%	44	100.0%	0	0.0%	2	3.5%	45	42.5%	42	37.2%
	1	45	20.5%	10	22.2%	0	0.0%	0	0.0%	8	25.0%	27	47.4%	22	20.8%	23	20.4%
	2	73	33.3%	24	53.3%	0	0.0%	0	0.0%	24	75.0%	25	43.9%	27	25.5%	46	40.7%
	3	14	6.4%	11	24.4%	0	0.0%	0	0.0%	0	0.0%	3	5.3%	12	11.3%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Overall Left Ear Relative size	0	87	39.7%	0	0.0%	41	100.0%	44	100.0%	0	0.0%	2	3.5%	45	42.5%	42	37.2%

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Overall Left Ear shape (frontal)	1	73	33.3%	21	46.7%	0	0.0%	0	0.0%	20	62.5%	32	56.1%	32	30.2%	41	36.3%
	2	56	25.6%	24	53.3%	0	0.0%	0	0.0%	12	37.5%	20	35.1%	26	24.5%	30	26.5%
	3	3	1.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	5.3%	3	2.8%	0	0.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	173	79.0%	0	0.0%	41	100.0%	44	100.0%	31	96.9%	57	100.0%	85	80.2%	88	77.9%
	2	24	11.0%	24	53.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	17	16.0%	7	6.2%
	3	3	1.4%	3	6.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.9%	1	0.9%
	5	19	8.7%	18	40.0%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	2	1.9%	17	15.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	134	61.2%	45	100.0%	41	100.0%	44	100.0%	1	3.1%	3	5.3%	68	64.2%	66	58.4%
	1	39	17.8%	0	0.0%	0	0.0%	0	0.0%	18	56.3%	21	36.8%	16	15.1%	23	20.4%
	2	21	9.6%	0	0.0%	0	0.0%	0	0.0%	5	15.6%	16	28.1%	11	10.4%	10	8.8%
	3	6	2.7%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	5	8.8%	5	4.7%	1	0.9%
	4	11	5.0%	0	0.0%	0	0.0%	0	0.0%	2	6.3%	9	15.8%	3	2.8%	8	7.1%
	5	6	2.7%	0	0.0%	0	0.0%	0	0.0%	5	15.6%	1	1.8%	2	1.9%	4	3.5%
	6	2	0.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	3.5%	1	0.9%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	132	60.3%	45	100.0%	41	100.0%	44	100.0%	0	0.0%	2	3.5%	66	62.3%	66	58.4%
	1	3	1.4%	0	0.0%	0	0.0%	0	0.0%	2	6.3%	1	1.8%	1	0.9%	2	1.8%
	2	19	8.7%	0	0.0%	0	0.0%	0	0.0%	6	18.8%	13	22.8%	13	12.3%	6	5.3%
	3	65	29.7%	0	0.0%	0	0.0%	0	0.0%	24	75.0%	41	71.9%	26	24.5%	39	34.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Overall Left Ear shape (lateral)	0	134	61.2%	45	100.0%	41	100.0%	44	100.0%	1	3.1%	3	5.3%	68	64.2%	66	58.4%
	1	39	17.8%	0	0.0%	0	0.0%	0	0.0%	18	56.3%	21	36.8%	16	15.1%	23	20.4%
	2	21	9.6%	0	0.0%	0	0.0%	0	0.0%	5	15.6%	16	28.1%	11	10.4%	10	8.8%
	3	6	2.7%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	5	8.8%	5	4.7%	1	0.9%
	4	11	5.0%	0	0.0%	0	0.0%	0	0.0%	2	6.3%	9	15.8%	3	2.8%	8	7.1%
	5	6	2.7%	0	0.0%	0	0.0%	0	0.0%	5	15.6%	1	1.8%	2	1.9%	4	3.5%
Overall Left Ear Angle (lateral)	6	2	0.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	3.5%	1	0.9%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	132	60.3%	45	100.0%	41	100.0%	44	100.0%	0	0.0%	2	3.5%	66	62.3%	66	58.4%
	1	3	1.4%	0	0.0%	0	0.0%	0	0.0%	2	6.3%	1	1.8%	1	0.9%	2	1.8%
	2	19	8.7%	0	0.0%	0	0.0%	0	0.0%	6	18.8%	13	22.8%	13	12.3%	6	5.3%
	3	65	29.7%	0	0.0%	0	0.0%	0	0.0%	24	75.0%	41	71.9%	26	24.5%	39	34.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 38: Table showing frequency distribution of scores for right ear helix size, right ear helix shape, left ear helix size and left ear helix shape among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right and Left Ear Helix-Superior/Inferior Tail		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Ear Helix size	0	138	63.0%	37	82.2%	6	14.6%	7	15.9%	32	100.0%	56	98.2%	73	68.9%	65	57.5%
	1	16	7.3%	3	6.7%	10	24.4%	3	6.8%	0	0.0%	0	0.0%	4	3.8%	12	10.6%
	2	41	18.7%	5	11.1%	18	43.9%	17	38.6%	0	0.0%	1	1.8%	22	20.8%	19	16.8%
	3	19	8.7%	0	0.0%	5	12.2%	14	31.8%	0	0.0%	0	0.0%	6	5.7%	13	11.5%
	5	3	1.4%	0	0.0%	2	4.9%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	2	1.8%
	7	2	0.9%	0	0.0%	0	0.0%	2	4.5%	0	0.0%	0	0.0%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Ear Helix shape	0	138	63.0%	37	82.2%	6	14.6%	7	15.9%	32	100.0%	56	98.2%	73	68.9%	65	57.5%
	1	49	22.4%	6	13.3%	18	43.9%	24	54.5%	0	0.0%	1	1.8%	18	17.0%	31	27.4%
	2	17	7.8%	0	0.0%	9	22.0%	8	18.2%	0	0.0%	0	0.0%	7	6.6%	10	8.8%
	3	7	3.2%	0	0.0%	6	14.6%	1	2.3%	0	0.0%	0	0.0%	5	4.7%	2	1.8%
	4	3	1.4%	1	2.2%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	2.7%
	5	5	2.3%	1	2.2%	0	0.0%	4	9.1%	0	0.0%	0	0.0%	3	2.8%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Ear Helix size	0	139	63.5%	37	82.2%	41	100.0%	44	100.0%	5	15.6%	12	21.1%	79	74.5%	60	53.1%
	1	10	4.6%	3	6.7%	0	0.0%	0	0.0%	3	9.4%	4	7.0%	4	3.8%	6	5.3%
	2	39	17.8%	5	11.1%	0	0.0%	0	0.0%	12	37.5%	22	38.6%	14	13.2%	25	22.1%
	3	22	10.0%	0	0.0%	0	0.0%	0	0.0%	7	21.9%	15	26.3%	6	5.7%	16	14.2%

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Left Ear Helix shape	5	8	3.7%	0	0.0%	0	0.0%	0	0.0%	5	15.6%	3	5.3%	2	1.9%	6	5.3%
	6	1	0.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	1	0.9%	0	0.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	137	62.6%	37	82.2%	41	100.0%	44	100.0%	4	12.5%	11	19.3%	77	72.6%	60	53.1%
	1	41	18.7%	6	13.3%	0	0.0%	0	0.0%	10	31.3%	25	43.9%	17	16.0%	24	21.2%
	2	18	8.2%	0	0.0%	0	0.0%	0	0.0%	10	31.3%	8	14.0%	4	3.8%	14	12.4%
	3	9	4.1%	0	0.0%	0	0.0%	0	0.0%	8	25.0%	1	1.8%	2	1.9%	7	6.2%
	4	2	0.9%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	1	0.9%	1	0.9%
	5	12	5.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	11	19.3%	5	4.7%	7	6.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 39: Table showing frequency distribution of scores for right ear tubercle (Darwin's tubercle), right ear tubercle size (use A-C etc. for multiple tubercles), right ear tubercle location, left ear tubercle (Darwin's tubercle) and left ear tubercle size (use A- C etc. for multiple tubercles) and left ear tubercle location among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right and Left Ear Tubercles (Auricular Tubercle)		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
	0	149	68.0%	40	88.9%	9	22.0%	12	27.3%	32	100.0%	56	98.2%	82	77.4%	67	59.3%
Right Ear tubercle (Darwin's tubercle)	1	64	29.2%	5	11.1%	29	70.7%	29	65.9%	0	0.0%	1	1.8%	20	18.9%	44	38.9%
	2	6	2.7%	0	0.0%	3	7.3%	3	6.8%	0	0.0%	0	0.0%	4	3.8%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Ear tubercle size (use A-C etc. for multiple tubercles)	0	149	68.0%	40	88.9%	9	22.0%	12	27.3%	32	100.0%	56	98.2%	82	77.4%	67	59.3%
	1	63	28.8%	4	8.9%	29	70.7%	29	65.9%	0	0.0%	1	1.8%	20	18.9%	43	38.1%

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Right Ear tubercle location	2	4	1.8%	0	0.0%	1	2.4%	3	6.8%	0	0.0%	0	0.0%	3	2.8%	1	0.9%
	3	3	1.4%	1	2.2%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	149	68.0%	40	88.9%	9	22.0%	12	27.3%	32	100.0%	56	98.2%	82	77.4%	67	59.3%
	1	63	28.8%	4	8.9%	29	70.7%	29	65.9%	0	0.0%	1	1.8%	20	18.9%	43	38.1%
	2	5	2.3%	0	0.0%	2	4.9%	3	6.8%	0	0.0%	0	0.0%	4	3.8%	1	0.9%
	3	2	0.9%	1	2.2%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	145	66.2%	40	88.9%	41	100.0%	44	100.0%	6	18.8%	14	24.6%	83	78.3%	62	54.9%
	1	59	26.9%	4	8.9%	0	0.0%	0	0.0%	18	56.3%	37	64.9%	18	17.0%	41	36.3%
Left Ear tubercle (Darwin's tubercle)	2	14	6.4%	1	2.2%	0	0.0%	0	0.0%	8	25.0%	5	8.8%	4	3.8%	10	8.8%
	3	1	0.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	1	0.9%	0	0.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	145	66.2%	40	88.9%	41	100.0%	44	100.0%	6	18.8%	14	24.6%	83	78.3%	62	54.9%
	1	59	26.9%	4	8.9%	0	0.0%	0	0.0%	18	56.3%	37	64.9%	18	17.0%	41	36.3%
Left Ear tubercle size (use A- C etc. for multiple tubercles)	2	3	1.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	5.3%	1	0.9%	2	1.8%
	3	12	5.5%	1	2.2%	0	0.0%	0	0.0%	8	25.0%	3	5.3%	4	3.8%	8	7.1%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	145	66.2%	40	88.9%	41	100.0%	44	100.0%	6	18.8%	14	24.6%	83	78.3%	62	54.9%
	1	59	26.9%	4	8.9%	0	0.0%	0	0.0%	18	56.3%	37	64.9%	18	17.0%	41	36.3%
Left Ear tubercle location	2	5	2.3%	0	0.0%	0	0.0%	0	0.0%	4	12.5%	1	1.8%	1	0.9%	4	3.5%
	3	8	3.7%	1	2.2%	0	0.0%	0	0.0%	3	9.4%	4	7.0%	4	3.8%	4	3.5%

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4	2	0.9%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	1	1.8%	0	0.0%	2	1.8%
Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 40: Table showing frequency distribution of scores for right ear antihelix size, right ear antihelix shape, left ear antihelix size and left ear antihelix shape among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right and Left Ear Antihelix		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Ear Antihelix size	0	139	63.5%	38	84.4%	6	14.6%	7	15.9%	32	100.0%	56	98.2%	74	69.8%	65	57.5%
	1	19	8.7%	0	0.0%	5	12.2%	14	31.8%	0	0.0%	0	0.0%	6	5.7%	13	11.5%
	2	45	20.5%	4	8.9%	20	48.8%	20	45.5%	0	0.0%	1	1.8%	22	20.8%	23	20.4%
	3	16	7.3%	3	6.7%	10	24.4%	3	6.8%	0	0.0%	0	0.0%	4	3.8%	12	10.6%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Ear Antihelix shape	0	139	63.5%	38	84.4%	6	14.6%	7	15.9%	32	100.0%	56	98.2%	74	69.8%	65	57.5%
	1	2	0.9%	0	0.0%	0	0.0%	2	4.5%	0	0.0%	0	0.0%	0	0.0%	2	1.8%
	2	5	2.3%	1	2.2%	1	2.4%	3	6.8%	0	0.0%	0	0.0%	4	3.8%	1	0.9%
	3	63	28.8%	6	13.3%	28	68.3%	28	63.6%	0	0.0%	1	1.8%	24	22.6%	39	34.5%
	4	10	4.6%	0	0.0%	6	14.6%	4	9.1%	0	0.0%	0	0.0%	4	3.8%	6	5.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Ear Antihelix size	0	142	64.8%	39	86.7%	41	100.0%	44	100.0%	5	15.6%	13	22.8%	80	75.5%	62	54.9%
	1	23	10.5%	0	0.0%	0	0.0%	0	0.0%	7	21.9%	16	28.1%	6	5.7%	17	15.0%
	2	39	17.8%	3	6.7%	0	0.0%	0	0.0%	13	40.6%	23	40.4%	14	13.2%	25	22.1%
	3	15	6.8%	3	6.7%	0	0.0%	0	0.0%	7	21.9%	5	8.8%	6	5.7%	9	8.0%

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Left Ear Antihelix shape	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	142	64.8%	39	86.7%	41	100.0%	44	100.0%	5	15.6%	13	22.8%	80	75.5%	62	54.9%
	1	2	0.9%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	1	1.8%	1	0.9%	1	0.9%
	2	7	3.2%	1	2.2%	0	0.0%	0	0.0%	2	6.3%	4	7.0%	0	0.0%	7	6.2%
	3	46	21.0%	5	11.1%	0	0.0%	0	0.0%	16	50.0%	25	43.9%	18	17.0%	28	24.8%
	4	22	10.0%	0	0.0%	0	0.0%	0	0.0%	8	25.0%	14	24.6%	7	6.6%	15	13.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 41: Table showing frequency distribution of scores for right ear crura of antihelix (superior) crus size, right ear crura of antihelix (superior) crus shape, right ear crura of antihelix (Inferior) crus size, right ear crura of antihelix (Inferior) crus shape, left ear crura of antihelix (superior) crus size, left ear crura of antihelix (superior) crus shape, left ear crura of antihelix (Inferior) crus size and left ear crura of antihelix (Inferior) crus shape among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right and Left Ear Crura of Antihelix (Superior and Inferior)		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Ear Crura of Antihelix (Superior) Crus size	0	154	70.3%	45	100.0%	9	22.0%	12	27.3%	32	100.0%	56	98.2%	83	78.3%	71	62.8%
	1	25	11.4%	0	0.0%	8	19.5%	17	38.6%	0	0.0%	0	0.0%	9	8.5%	16	14.2%
	2	32	14.6%	0	0.0%	17	41.5%	14	31.8%	0	0.0%	1	1.8%	13	12.3%	19	16.8%
	3	6	2.7%	0	0.0%	5	12.2%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	5	4.4%
	4	2	0.9%	0	0.0%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Ear Crura of Antihelix (Superior) Crus shape	0	155	70.8%	45	100.0%	9	22.0%	13	29.5%	32	100.0%	56	98.2%	84	79.2%	71	62.8%
	1	31	14.2%	0	0.0%	12	29.3%	19	43.2%	0	0.0%	0	0.0%	11	10.4%	20	17.7%
	2	31	14.2%	0	0.0%	19	46.3%	11	25.0%	0	0.0%	1	1.8%	10	9.4%	21	18.6%

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Right Ear Crura of Antihelix (Inferior) Crus size	3	2	0.9%	0	0.0%	1	2.4%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	154	70.3%	45	100.0%	9	22.0%	12	27.3%	32	100.0%	56	98.2%	83	78.3%	71	62.8%
	1	1	0.5%	0	0.0%	0	0.0%	1	2.3%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	2	9	4.1%	0	0.0%	7	17.1%	2	4.5%	0	0.0%	0	0.0%	4	3.8%	5	4.4%
	3	55	25.1%	0	0.0%	25	61.0%	29	65.9%	0	0.0%	1	1.8%	19	17.9%	36	31.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	154	70.3%	45	100.0%	9	22.0%	12	27.3%	32	100.0%	56	98.2%	83	78.3%	71	62.8%
	1	1	0.5%	0	0.0%	0	0.0%	1	2.3%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	2	8	3.7%	0	0.0%	5	12.2%	3	6.8%	0	0.0%	0	0.0%	5	4.7%	3	2.7%
Right Ear Crura of Antihelix (Inferior) Crus shape	3	56	25.6%	0	0.0%	27	65.9%	28	63.6%	0	0.0%	1	1.8%	18	17.0%	38	33.6%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	152	69.4%	45	100.0%	41	100.0%	44	100.0%	6	18.8%	16	28.1%	84	79.2%	68	60.2%
	1	26	11.9%	0	0.0%	0	0.0%	0	0.0%	11	34.4%	15	26.3%	6	5.7%	20	17.7%
	2	36	16.4%	0	0.0%	0	0.0%	0	0.0%	12	37.5%	24	42.1%	13	12.3%	23	20.4%
	3	5	2.3%	0	0.0%	0	0.0%	0	0.0%	3	9.4%	2	3.5%	3	2.8%	2	1.8%
Left Ear Crura of Antihelix (Superior) Crus size	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	152	69.4%	45	100.0%	41	100.0%	44	100.0%	6	18.8%	16	28.1%	84	79.2%	68	60.2%
	1	36	16.4%	0	0.0%	0	0.0%	0	0.0%	13	40.6%	23	40.4%	9	8.5%	27	23.9%
	2	27	12.3%	0	0.0%	0	0.0%	0	0.0%	10	31.3%	17	29.8%	11	10.4%	16	14.2%
	3	4	1.8%	0	0.0%	0	0.0%	0	0.0%	3	9.4%	1	1.8%	2	1.9%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Ear Crura of Antihelix (Superior) Crus shape	0	152	69.4%	45	100.0%	41	100.0%	44	100.0%	6	18.8%	16	28.1%	84	79.2%	68	60.2%
	1	36	16.4%	0	0.0%	0	0.0%	0	0.0%	13	40.6%	23	40.4%	9	8.5%	27	23.9%
	2	27	12.3%	0	0.0%	0	0.0%	0	0.0%	10	31.3%	17	29.8%	11	10.4%	16	14.2%
	3	4	1.8%	0	0.0%	0	0.0%	0	0.0%	3	9.4%	1	1.8%	2	1.9%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Left Ear Crura of Antihelix (Inferior) Crus size	0	151	68.9%	45	100.0%	41	100.0%	44	100.0%	6	18.8%	15	26.3%	84	79.2%	67	59.3%
	2	11	5.0%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	10	17.5%	8	7.5%	3	2.7%
	3	57	26.0%	0	0.0%	0	0.0%	0	0.0%	25	78.1%	32	56.1%	14	13.2%	43	38.1%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Ear Crura of Antihelix (Inferior) Crus shape	0	151	68.9%	45	100.0%	41	100.0%	44	100.0%	6	18.8%	15	26.3%	84	79.2%	67	59.3%
	2	14	6.4%	0	0.0%	0	0.0%	0	0.0%	7	21.9%	7	12.3%	7	6.6%	7	6.2%
	3	54	24.7%	0	0.0%	0	0.0%	0	0.0%	19	59.4%	35	61.4%	15	14.2%	39	34.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 42: Table showing frequency distribution of scores for right ear triangular fossa shape, right ear triangular fossa depth, right ear triangular fossa size (lateral), left ear triangular fossa shape, left ear triangular fossa depth and left ear triangular fossa size (lateral) among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right and Left Ear Triangular Fossa		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Ear Triangular fossa shape	0	154	70,3%	45	100,0%	9	22,0%	12	27,3%	32	100,0%	56	98,2%	83	78,3%	71	62,8%
	1	39	17,8%	0	0,0%	23	56,1%	16	36,4%	0	0,0%	0	0,0%	15	14,2%	24	21,2%
	2	11	5,0%	0	0,0%	5	12,2%	6	13,6%	0	0,0%	0	0,0%	3	2,8%	8	7,1%
	3	4	1,8%	0	0,0%	0	0,0%	3	6,8%	0	0,0%	1	1,8%	1	0,9%	3	2,7%
	4	3	1,4%	0	0,0%	3	7,3%	0	0,0%	0	0,0%	0	0,0%	0	0,0%	3	2,7%
	5	1	0,5%	0	0,0%	1	2,4%	0	0,0%	0	0,0%	0	0,0%	1	0,9%	0	0,0%
	6	7	3,2%	0	0,0%	0	0,0%	7	15,9%	0	0,0%	0	0,0%	3	2,8%	4	3,5%
	Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	57	100,0%	106	100,0%	113	100,0%
	0	154	70.3%	45	100.0%	9	22.0%	12	27.3%	32	100.0%	56	98.2%	83	78.3%	71	62.8%

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		Right Ear				Left Ear				Right Ear				Left Ear			
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Right Ear Triangular Fossa depth	1	39	17.8%	0	0.0%	23	56.1%	16	36.4%	0	0.0%	0	0.0%	15	14.2%	24	21.2%
	2	9	4.1%	0	0.0%	4	9.8%	5	11.4%	0	0.0%	0	0.0%	4	3.8%	5	4.4%
	3	17	7.8%	0	0.0%	5	12.2%	11	25.0%	0	0.0%	1	1.8%	4	3.8%	13	11.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Ear Triangular Fossa size (lateral)	0	154	70.3%	45	100.0%	9	22.0%	12	27.3%	32	100.0%	56	98.2%	83	78.3%	71	62.8%
	1	39	17.8%	0	0.0%	23	56.1%	16	36.4%	0	0.0%	0	0.0%	15	14.2%	24	21.2%
	2	4	1.8%	0	0.0%	4	9.8%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	3	2.7%
	3	13	5.9%	0	0.0%	5	12.2%	8	18.2%	0	0.0%	0	0.0%	4	3.8%	9	8.0%
	4	9	4.1%	0	0.0%	0	0.0%	8	18.2%	0	0.0%	1	1.8%	3	2.8%	6	5.3%
Left Ear Triangular fossa shape	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	151	68.9%	45	100.0%	41	100.0%	44	100.0%	6	18.8%	15	26.3%	84	79.2%	67	59.3%
	1	37	16.9%	0	0.0%	0	0.0%	0	0.0%	11	34.4%	26	45.6%	14	13.2%	23	20.4%
	2	11	5.0%	0	0.0%	0	0.0%	0	0.0%	7	21.9%	4	7.0%	1	0.9%	10	8.8%
	3	3	1.4%	0	0.0%	0	0.0%	0	0.0%	2	6.3%	1	1.8%	1	0.9%	2	1.8%
	5	10	4.6%	0	0.0%	0	0.0%	0	0.0%	5	15.6%	5	8.8%	3	2.8%	7	6.2%
	6	7	3.2%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	6	10.5%	3	2.8%	4	3.5%
Left Ear Triangular Fossa depth	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	151	68.9%	45	100.0%	41	100.0%	44	100.0%	6	18.8%	15	26.3%	84	79.2%	67	59.3%
	1	33	15.1%	0	0.0%	0	0.0%	0	0.0%	9	28.1%	24	42.1%	14	13.2%	19	16.8%
	2	10	4.6%	0	0.0%	0	0.0%	0	0.0%	7	21.9%	3	5.3%	1	0.9%	9	8.0%
	3	25	11.4%	0	0.0%	0	0.0%	0	0.0%	10	31.3%	15	26.3%	7	6.6%	18	15.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Left Ear Triangular Fossa size (lateral)	0	151	68.9%	45	100.0%	41	100.0%	44	100.0%	6	18.8%	15	26.3%	84	79.2%	67	59.3%
	1	33	15.1%	0	0.0%	0	0.0%	0	0.0%	9	28.1%	24	42.1%	14	13.2%	19	16.8%
	2	2	0.9%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	1	1.8%	1	0.9%	1	0.9%
	3	25	11.4%	0	0.0%	0	0.0%	0	0.0%	11	34.4%	14	24.6%	3	2.8%	22	19.5%
	4	8	3.7%	0	0.0%	0	0.0%	0	0.0%	5	15.6%	3	5.3%	4	3.8%	4	3.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 43: Table showing frequency distribution of scores for right ear crus thickness, right ear crus length, right ear crus shape, left ear crus thickness, left ear crus length and left ear crus shape among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right and Left Ear Crus of Helix		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Ear Crus thickness	0	154	70.3%	45	100.0%	9	22.0%	12	27.3%	32	100.0%	56	98.2%	83	78.3%	71	62.8%
	1	6	2.7%	0	0.0%	6	14.6%	0	0.0%	0	0.0%	0	0.0%	3	2.8%	3	2.7%
	2	31	14.2%	0	0.0%	21	51.2%	10	22.7%	0	0.0%	0	0.0%	13	12.3%	18	15.9%
	3	28	12.8%	0	0.0%	5	12.2%	22	50.0%	0	0.0%	1	1.8%	7	6.6%	21	18.6%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Ear Crus length	0	156	71.2%	45	100.0%	11	26.8%	12	27.3%	32	100.0%	56	98.2%	83	78.3%	73	64.6%
	1	13	5.9%	0	0.0%	8	19.5%	5	11.4%	0	0.0%	0	0.0%	6	5.7%	7	6.2%
	2	31	14.2%	0	0.0%	19	46.3%	12	27.3%	0	0.0%	0	0.0%	10	9.4%	21	18.6%
	3	18	8.2%	0	0.0%	2	4.9%	15	34.1%	0	0.0%	1	1.8%	6	5.7%	12	10.6%
	4	1	0.5%	0	0.0%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Right Ear Crus shape	0	156	71.2%	45	100.0%	11	26.8%	12	27.3%	32	100.0%	56	98.2%	83	78.3%	73	64.6%
	1	8	3.7%	0	0.0%	6	14.6%	2	4.5%	0	0.0%	0	0.0%	5	4.7%	3	2.7%
	2	9	4.1%	0	0.0%	4	9.8%	5	11.4%	0	0.0%	0	0.0%	1	0.9%	8	7.1%
	3	45	20.5%	0	0.0%	20	48.8%	24	54.5%	0	0.0%	1	1.8%	16	15.1%	29	25.7%
	4	1	0.5%	0	0.0%	0	0.0%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Ear Crus thickness	0	151	68.9%	45	100.0%	41	100.0%	44	100.0%	7	21.9%	14	24.6%	84	79.2%	67	59.3%
	1	6	2.7%	0	0.0%	0	0.0%	0	0.0%	5	15.6%	1	1.8%	1	0.9%	5	4.4%
	2	25	11.4%	0	0.0%	0	0.0%	0	0.0%	16	50.0%	9	15.8%	4	3.8%	21	18.6%
	3	37	16.9%	0	0.0%	0	0.0%	0	0.0%	4	12.5%	33	57.9%	17	16.0%	20	17.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Ear Crus length	0	152	69.4%	45	100.0%	41	100.0%	44	100.0%	7	21.9%	15	26.3%	84	79.2%	68	60.2%
	1	9	4.1%	0	0.0%	0	0.0%	0	0.0%	5	15.6%	4	7.0%	2	1.9%	7	6.2%
	2	29	13.2%	0	0.0%	0	0.0%	0	0.0%	17	53.1%	12	21.1%	10	9.4%	19	16.8%
	3	25	11.4%	0	0.0%	0	0.0%	0	0.0%	3	9.4%	22	38.6%	10	9.4%	15	13.3%
	4	4	1.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4	7.0%	0	0.0%	4	3.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Ear Crus shape	0	152	69.4%	45	100.0%	41	100.0%	44	100.0%	7	21.9%	15	26.3%	84	79.2%	68	60.2%
	1	7	3.2%	0	0.0%	0	0.0%	0	0.0%	5	15.6%	2	3.5%	1	0.9%	6	5.3%
	2	5	2.3%	0	0.0%	0	0.0%	0	0.0%	2	6.3%	3	5.3%	2	1.9%	3	2.7%
	3	55	25.1%	0	0.0%	0	0.0%	0	0.0%	18	56.3%	37	64.9%	19	17.9%	36	31.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 44: Table showing frequency distribution of scores for right ear scaphoid fossa shape, right ear fossa depth, right ear fossa width (lateral), left ear scaphoid fossa shape, left ear fossa depth and left ear fossa width (lateral) among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right and Left Scaphoid Fossa		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Ear Scaphoid fossa shape	0	158	72.1%	44	97.8%	9	22.0%	17	38.6%	32	100.0%	56	98.2%	85	80.2%	73	64.6%
	1	29	13.2%	0	0.0%	8	19.5%	20	45.5%	0	0.0%	1	1.8%	12	11.3%	17	15.0%
	2	25	11.4%	0	0.0%	18	43.9%	7	15.9%	0	0.0%	0	0.0%	9	8.5%	16	14.2%
	4	4	1.8%	0	0.0%	4	9.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4	3.5%
	5	3	1.4%	1	2.2%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Ear Fossa depth	0	158	72.1%	44	97.8%	9	22.0%	17	38.6%	32	100.0%	56	98.2%	85	80.2%	73	64.6%
	1	19	8.7%	0	0.0%	2	4.9%	17	38.6%	0	0.0%	0	0.0%	2	1.9%	17	15.0%
	2	36	16.4%	1	2.2%	25	61.0%	9	20.5%	0	0.0%	1	1.8%	15	14.2%	21	18.6%
	3	2	0.9%	0	0.0%	1	2.4%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	1	0.9%
	4	4	1.8%	0	0.0%	4	9.8%	0	0.0%	0	0.0%	0	0.0%	3	2.8%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Ear Fossa width (lateral)	0	158	72.1%	45	100.0%	8	19.5%	17	38.6%	32	100.0%	56	98.2%	84	79.2%	74	65.5%
	1	36	16.4%	0	0.0%	13	31.7%	22	50.0%	0	0.0%	1	1.8%	21	19.8%	15	13.3%
	2	23	10.5%	0	0.0%	20	48.8%	3	6.8%	0	0.0%	0	0.0%	1	0.9%	22	19.5%
	3	2	0.9%	0	0.0%	0	0.0%	2	4.5%	0	0.0%	0	0.0%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Left Ear Scaphoid fossa shape	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	166	75.8%	44	97.8%	41	100.0%	44	100.0%	6	18.8%	31	54.4%	91	85.8%	75	66.4%
	1	22	10.0%	0	0.0%	0	0.0%	0	0.0%	6	18.8%	16	28.1%	6	5.7%	16	14.2%
	2	19	8.7%	0	0.0%	0	0.0%	0	0.0%	16	50.0%	3	5.3%	5	4.7%	14	12.4%
	3	2	0.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	3.5%	0	0.0%	2	1.8%
	4	1	0.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	1	0.9%	0	0.0%
	5	9	4.1%	1	2.2%	0	0.0%	0	0.0%	4	12.5%	4	7.0%	3	2.8%	6	5.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Ear Fossa depth	0	167	76.3%	44	97.8%	41	100.0%	44	100.0%	6	18.8%	32	56.1%	92	86.8%	75	66.4%
	1	22	10.0%	0	0.0%	0	0.0%	0	0.0%	6	18.8%	16	28.1%	5	4.7%	17	15.0%
	2	25	11.4%	1	2.2%	0	0.0%	0	0.0%	16	50.0%	8	14.0%	9	8.5%	16	14.2%
	3	1	0.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	0	0.0%	1	0.9%
	4	4	1.8%	0	0.0%	0	0.0%	0	0.0%	4	12.5%	0	0.0%	0	0.0%	4	3.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Ear Fossa width (lateral)	0	167	76.3%	45	100.0%	41	100.0%	44	100.0%	6	18.8%	31	54.4%	91	85.8%	76	67.3%
	1	33	15.1%	0	0.0%	0	0.0%	0	0.0%	11	34.4%	22	38.6%	8	7.5%	25	22.1%
	2	12	5.5%	0	0.0%	0	0.0%	0	0.0%	9	28.1%	3	5.3%	6	5.7%	6	5.3%
	3	7	3.2%	0	0.0%	0	0.0%	0	0.0%	6	18.8%	1	1.8%	1	0.9%	6	5.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 45: Table showing frequency distribution of scores for right ear concha (superior) depth, right ear concha (superior) width (lateral), right ear concha (Inferior) depth, right ear concha (Inferior) width (lateral), left ear concha (superior) depth, left ear concha (superior) width (lateral), left ear concha (Inferior) depth and left ear concha (Inferior) width (lateral) among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right and Left Ear Concha (Superior and Inferior)		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Ear Concha (Superior) depth	0	154	70.3%	45	100.0%	8	19.5%	13	29.5%	32	100.0%	56	98.2%	83	78.3%	71	62.8%
	1	1	0.5%	0	0.0%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	2	64	29.2%	0	0.0%	32	78.0%	31	70.5%	0	0.0%	1	1.8%	23	21.7%	41	36.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Ear Concha (Superior) width (lateral)	0	151	68.9%	45	100.0%	8	19.5%	12	27.3%	31	96.9%	55	96.5%	82	77.4%	69	61.1%
	1	13	5.9%	0	0.0%	7	17.1%	5	11.4%	1	3.1%	0	0.0%	1	0.9%	12	10.6%
	2	17	7.8%	0	0.0%	6	14.6%	10	22.7%	0	0.0%	1	1.8%	7	6.6%	10	8.8%
	3	35	16.0%	0	0.0%	17	41.5%	17	38.6%	0	0.0%	1	1.8%	15	14.2%	20	17.7%
	4	3	1.4%	0	0.0%	3	7.3%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Ear Concha (Inferior) depth	0	153	69.9%	45	100.0%	8	19.5%	12	27.3%	32	100.0%	56	98.2%	82	77.4%	71	62.8%
	1	1	0.5%	0	0.0%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	2	65	29.7%	0	0.0%	32	78.0%	32	72.7%	0	0.0%	1	1.8%	24	22.6%	41	36.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Ear Concha (Inferior) width (lateral)	0	153	69.9%	45	100.0%	8	19.5%	12	27.3%	32	100.0%	56	98.2%	82	77.4%	71	62.8%
	1	6	2.7%	0	0.0%	4	9.8%	2	4.5%	0	0.0%	0	0.0%	1	0.9%	5	4.4%
	2	17	7.8%	0	0.0%	10	24.4%	7	15.9%	0	0.0%	0	0.0%	5	4.7%	12	10.6%

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Left Ear Concha (Superior) depth	3	41	18.7%	0	0.0%	18	43.9%	22	50.0%	0	0.0%	1	1.8%	17	16.0%	24	21.2%
	4	2	0.9%	0	0.0%	1	2.4%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	150	68.5%	45	100.0%	41	100.0%	44	100.0%	6	18.8%	14	24.6%	84	79.2%	66	58.4%
	2	69	31.5%	0	0.0%	0	0.0%	0	0.0%	26	81.3%	43	75.4%	22	20.8%	47	41.6%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	151	68.9%	45	100.0%	41	100.0%	44	100.0%	7	21.9%	14	24.6%	84	79.2%	67	59.3%
	1	35	16.0%	0	0.0%	0	0.0%	0	0.0%	13	40.6%	22	38.6%	6	5.7%	29	25.7%
	2	18	8.2%	0	0.0%	0	0.0%	0	0.0%	5	15.6%	13	22.8%	8	7.5%	10	8.8%
	3	13	5.9%	0	0.0%	0	0.0%	0	0.0%	5	15.6%	8	14.0%	8	7.5%	5	4.4%
Left Ear Concha (Superior) width (lateral)	4	2	0.9%	0	0.0%	0	0.0%	0	0.0%	2	6.3%	0	0.0%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	150	68.5%	45	100.0%	41	100.0%	44	100.0%	6	18.8%	14	24.6%	84	79.2%	66	58.4%
	2	69	31.5%	0	0.0%	0	0.0%	0	0.0%	26	81.3%	43	75.4%	22	20.8%	47	41.6%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Ear Concha (Inferior) depth	0	151	68.9%	45	100.0%	41	100.0%	44	100.0%	7	21.9%	14	24.6%	84	79.2%	67	59.3%
	1	17	7.8%	0	0.0%	0	0.0%	0	0.0%	7	21.9%	10	17.5%	4	3.8%	13	11.5%
	2	25	11.4%	0	0.0%	0	0.0%	0	0.0%	7	21.9%	18	31.6%	7	6.6%	18	15.9%
	3	24	11.0%	0	0.0%	0	0.0%	0	0.0%	9	28.1%	15	26.3%	11	10.4%	13	11.5%
	4	2	0.9%	0	0.0%	0	0.0%	0	0.0%	2	6.3%	0	0.0%	0	0.0%	2	1.8%
Left Ear Concha (Inferior)width (lateral)	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 46: Table showing frequency distribution of scores for right ear tragus shape, right ear tragus size, left ear tragus shape and left ear tragus size among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right and Left Ear Tragus		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Ear Tragus shape	0	150	68.5%	42	93.3%	8	19.5%	12	27.3%	32	100.0%	56	98.2%	82	77.4%	68	60.2%
	2	23	10.5%	0	0.0%	11	26.8%	12	27.3%	0	0.0%	0	0.0%	13	12.3%	10	8.8%
	3	46	21.0%	3	6.7%	22	53.7%	20	45.5%	0	0.0%	1	1.8%	11	10.4%	35	31.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Ear Tragus size	0	150	68.5%	42	93.3%	8	19.5%	12	27.3%	32	100.0%	56	98.2%	82	77.4%	68	60.2%
	1	9	4.1%	1	2.2%	2	4.9%	5	11.4%	0	0.0%	1	1.8%	4	3.8%	5	4.4%
	2	54	24.7%	0	0.0%	27	65.9%	27	61.4%	0	0.0%	0	0.0%	19	17.9%	35	31.0%
	3	6	2.7%	2	4.4%	4	9.8%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	5	4.4%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Ear Tragus shape	0	149	68.0%	44	97.8%	41	100.0%	44	100.0%	6	18.8%	14	24.6%	84	79.2%	65	57.5%
	2	32	14.6%	0	0.0%	0	0.0%	0	0.0%	5	15.6%	27	47.4%	13	12.3%	19	16.8%
	3	38	17.4%	1	2.2%	0	0.0%	0	0.0%	21	65.6%	16	28.1%	9	8.5%	29	25.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Ear Tragus size	0	149	68.0%	44	97.8%	41	100.0%	44	100.0%	6	18.8%	14	24.6%	84	79.2%	65	57.5%
	1	11	5.0%	0	0.0%	0	0.0%	0	0.0%	3	9.4%	8	14.0%	1	0.9%	10	8.8%
	2	54	24.7%	0	0.0%	0	0.0%	0	0.0%	20	62.5%	34	59.6%	20	18.9%	34	30.1%
	3	5	2.3%	1	2.2%	0	0.0%	0	0.0%	3	9.4%	1	1.8%	1	0.9%	4	3.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 47: Table showing frequency distribution of scores for right ear antitragus shape, right ear antitragus size, left ear antitragus shape and left ear antitragus size among Black African males aged 18 to 35 from the Wits Face Database (WFD).

	Total			Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right and Left Ear Antitragus	Freq.		%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Ear Antitragus shape	0	154	70.3%	45	100.0%	9	22.0%	12	27.3%	32	100.0%	56	98.2%	83	78.3%	71	62.8%
	1	9	4.1%	0	0.0%	5	12.2%	4	9.1%	0	0.0%	0	0.0%	5	4.7%	4	3.5%
	2	43	19.6%	0	0.0%	19	46.3%	23	52.3%	0	0.0%	1	1.8%	15	14.2%	28	24.8%
	3	11	5.0%	0	0.0%	6	14.6%	5	11.4%	0	0.0%	0	0.0%	2	1.9%	9	8.0%
	4	2	0.9%	0	0.0%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Ear Antitragus size	0	154	70.3%	45	100.0%	9	22.0%	12	27.3%	32	100.0%	56	98.2%	83	78.3%	71	62.8%
	1	32	14.6%	0	0.0%	16	39.0%	15	34.1%	0	0.0%	1	1.8%	13	12.3%	19	16.8%
	2	32	14.6%	0	0.0%	15	36.6%	17	38.6%	0	0.0%	0	0.0%	10	9.4%	22	19.5%
	3	1	0.5%	0	0.0%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Ear Antitragus shape	0	150	68.5%	45	100.0%	41	100.0%	44	100.0%	6	18.8%	14	24.6%	84	79.2%	66	58.4%
	1	4	1.8%	0	0.0%	0	0.0%	0	0.0%	2	6.3%	2	3.5%	4	3.8%	0	0.0%
	2	50	22.8%	0	0.0%	0	0.0%	0	0.0%	16	50.0%	34	59.6%	13	12.3%	37	32.7%
	3	13	5.9%	0	0.0%	0	0.0%	0	0.0%	8	25.0%	5	8.8%	4	3.8%	9	8.0%
	4	2	0.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	3.5%	1	0.9%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Ear Antitragus size	0	150	68.5%	45	100.0%	41	100.0%	44	100.0%	6	18.8%	14	24.6%	84	79.2%	66	58.4%

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1	29	13.2%	0	0.0%	0	0.0%	0	0.0%	11	34.4%	18	31.6%	7	6.6%	22	19.5%
2	37	16.9%	0	0.0%	0	0.0%	0	0.0%	15	46.9%	22	38.6%	14	13.2%	23	20.4%
3	3	1.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	5.3%	1	0.9%	2	1.8%
Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 48: Table showing frequency distribution of scores for right ear intertragic notch shape, right ear intertragic notch size, left ear intertragic notch shape and left ear intertragic notch size among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right and Left Ear Intertragic notch		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Ear Intertragic notch shape	0	154	70.3%	45	100.0%	9	22.0%	12	27.3%	32	100.0%	56	98.2%	83	78.3%	71	62.8%
	1	1	0.5%	0	0.0%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
	2	33	15.1%	0	0.0%	17	41.5%	16	36.4%	0	0.0%	0	0.0%	9	8.5%	24	21.2%
	3	31	14.2%	0	0.0%	14	34.1%	16	36.4%	0	0.0%	1	1.8%	13	12.3%	18	15.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Ear Intertragic notch size	0	154	70.3%	45	100.0%	9	22.0%	12	27.3%	32	100.0%	56	98.2%	83	78.3%	71	62.8%
	1	5	2.3%	0	0.0%	1	2.4%	4	9.1%	0	0.0%	0	0.0%	2	1.9%	3	2.7%
	2	22	10.0%	0	0.0%	3	7.3%	19	43.2%	0	0.0%	0	0.0%	9	8.5%	13	11.5%
	3	38	17.4%	0	0.0%	28	68.3%	9	20.5%	0	0.0%	1	1.8%	12	11.3%	26	23.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Ear Intertragic notch shape	0	150	68.5%	45	100.0%	41	100.0%	44	100.0%	6	18.8%	14	24.6%	84	79.2%	66	58.4%
	1	3	1.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	5.3%	3	2.8%	0	0.0%
	2	43	19.6%	0	0.0%	0	0.0%	0	0.0%	18	56.3%	25	43.9%	10	9.4%	33	29.2%

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	3	23	10.5%	0	0.0%	0	0.0%	0	0.0%	8	25.0%	15	26.3%	9	8.5%	14	12.4%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	150	68.5%	45	100.0%	41	100.0%	44	100.0%	6	18.8%	14	24.6%	84	79.2%	66	58.4%
	1	19	8.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	19	33.3%	8	7.5%	11	9.7%
Left Ear Intertragic notch size	2	15	6.8%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	14	24.6%	6	5.7%	9	8.0%
	3	35	16.0%	0	0.0%	0	0.0%	0	0.0%	25	78.1%	10	17.5%	8	7.5%	27	23.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 49: Table showing frequency distribution of scores for right ear anterior knob and left ear anterior knob among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right and Left Ear Anterior Knob		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Ear Anterior knob	0	154	70.3%	45	100.0%	9	22.0%	12	27.3%	32	100.0%	56	98.2%	83	78.3%	71	62.8%
	1	59	59	0	0.0%	28	68.3%	30	68.2%	0	0.0%	1	1.8%	20	18.9%	39	34.5%
	2	6	6	0	0.0%	4	9.8%	2	4.5%	0	0.0%	0	0.0%	3	2.8%	3	2.7%
	Total	219	219	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Ear Anterior knob	0	151	68.9%	44	97.8%	41	100.0%	44	100.0%	6	18.8%	16	28.1%	85	80.2%	66	58.4%
	1	64	29.2%	1	2.2%	0	0.0%	0	0.0%	25	78.1%	38	66.7%	21	19.8%	43	38.1%
	2	4	1.8%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	3	5.3%	0	0.0%	4	3.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 50: Table showing frequency distribution of scores for right ear anterior notch shape, right ear anterior notch size, left ear anterior notch shape and left ear anterior notch size among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right and Left Ear Anterior Notch		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Ear Anterior notch shape	0	155	70.8%	45	100.0%	10	24.4%	12	27.3%	32	100.0%	56	98.2%	83	78.3%	72	63.7%
	1	12	5.5%	0	0.0%	11	26.8%	1	2.3%	0	0.0%	0	0.0%	3	2.8%	9	8.0%
	2	11	5.0%	0	0.0%	8	19.5%	3	6.8%	0	0.0%	0	0.0%	5	4.7%	6	5.3%
	3	9	4.1%	0	0.0%	1	2.4%	8	18.2%	0	0.0%	0	0.0%	1	0.9%	8	7.1%
	4	32	14.6%	0	0.0%	11	26.8%	20	45.5%	0	0.0%	1	1.8%	14	13.2%	18	15.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Ear Anterior notch size	0	155	70.8%	45	100.0%	10	24.4%	12	27.3%	32	100.0%	56	98.2%	83	78.3%	72	63.7%
	1	36	16.4%	0	0.0%	26	63.4%	9	20.5%	0	0.0%	1	1.8%	12	11.3%	24	21.2%
	2	23	10.5%	0	0.0%	4	9.8%	19	43.2%	0	0.0%	0	0.0%	9	8.5%	14	12.4%
	3	5	2.3%	0	0.0%	1	2.4%	4	9.1%	0	0.0%	0	0.0%	2	1.9%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	Left Ear Anterior notch shape	0	151	68.9%	45	100.0%	41	100.0%	44	100.0%	7	21.9%	14	24.6%	84	79.2%	67
1		10	4.6%	0	0.0%	0	0.0%	0	0.0%	5	15.6%	5	8.8%	1	0.9%	9	8.0%
2		18	8.2%	0	0.0%	0	0.0%	0	0.0%	16	50.0%	2	3.5%	6	5.7%	12	10.6%
3		8	3.7%	0	0.0%	0	0.0%	0	0.0%	2	6.3%	6	10.5%	4	3.8%	4	3.5%
4		32	14.6%	0	0.0%	0	0.0%	0	0.0%	2	6.3%	30	52.6%	11	10.4%	21	18.6%
Total		219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Ear Anterior notch size	0	151	68.9%	45	100.0%	41	100.0%	44	100.0%	7	21.9%	14	24.6%	84	79.2%	67	59.3%

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1	34	15.5%	0	0.0%	0	0.0%	0	0.0%	24	75.0%	10	17.5%	8	7.5%	26	23.0%
2	16	7.3%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	15	26.3%	6	5.7%	10	8.8%
3	18	8.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	18	31.6%	8	7.5%	10	8.8%
Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 51: Table showing frequency distribution of scores for right ear posterior auricular furrow size, right ear posterior auricular furrow shape, left ear posterior auricular furrow size and left ear posterior auricular furrow shape among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right and Left Ear Posterior Auricular Furrow		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Ear Posterior auricular furrow size	0	154	70.3%	45	100.0%	9	22.0%	12	27.3%	32	100.0%	56	98.2%	83	78.3%	71	62.8%
	1	42	19.2%	0	0.0%	18	43.9%	24	54.5%	0	0.0%	0	0.0%	13	12.3%	29	25.7%
	2	17	7.8%	0	0.0%	9	22.0%	7	15.9%	0	0.0%	1	1.8%	9	8.5%	8	7.1%
	3	6	2.7%	0	0.0%	5	12.2%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	5	4.4%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Ear Posterior auricular furrow shape	0	154	70.3%	45	100.0%	9	22.0%	12	27.3%	32	100.0%	56	98.2%	83	78.3%	71	62.8%
	1	45	20.5%	0	0.0%	20	48.8%	25	56.8%	0	0.0%	0	0.0%	15	14.2%	30	26.5%
	2	20	9.1%	0	0.0%	12	29.3%	7	15.9%	0	0.0%	1	1.8%	8	7.5%	12	10.6%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Ear Posterior auricular furrow size	0	151	68.9%	45	100.0%	41	100.0%	44	100.0%	7	21.9%	14	24.6%	84	79.2%	67	59.3%
	1	52	23.7%	0	0.0%	0	0.0%	0	0.0%	19	59.4%	33	57.9%	18	17.0%	34	30.1%
	2	6	2.7%	0	0.0%	0	0.0%	0	0.0%	2	6.3%	4	7.0%	1	0.9%	5	4.4%
	3	10	4.6%	0	0.0%	0	0.0%	0	0.0%	4	12.5%	6	10.5%	3	2.8%	7	6.2%

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	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Ear Posterior auricular furrow shape	0	151	68.9%	45	100.0%	41	100.0%	44	100.0%	7	21.9%	14	24.6%	84	79.2%	67	59.3%
	1	52	23.7%	0	0.0%	0	0.0%	0	0.0%	19	59.4%	33	57.9%	18	17.0%	34	30.1%
	2	16	7.3%	0	0.0%	0	0.0%	0	0.0%	6	18.8%	10	17.5%	4	3.8%	12	10.6%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 52: Table showing frequency distribution of scores for right ear lobule attachment, right ear lobule size, right ear lobule shape, left ear lobule attachment, left ear lobule size and left ear lobule shape among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right and Left Ear Lobule (Lobe)		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Ear Lobule attachment	0	152	69.4%	44	97.8%	8	19.5%	12	27.3%	32	100.0%	56	98.2%	82	77.4%	70	61.9%
	1	25	11.4%	0	0.0%	18	43.9%	7	15.9%	0	0.0%	0	0.0%	13	12.3%	12	10.6%
	2	30	13.7%	1	2.2%	10	24.4%	18	40.9%	0	0.0%	1	1.8%	8	7.5%	22	19.5%
	3	4	1.8%	0	0.0%	0	0.0%	4	9.1%	0	0.0%	0	0.0%	0	0.0%	4	3.5%
	4	8	3.7%	0	0.0%	5	12.2%	3	6.8%	0	0.0%	0	0.0%	3	2.8%	5	4.4%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Ear Lobule size	0	152	69.4%	44	97.8%	8	19.5%	12	27.3%	32	100.0%	56	98.2%	82	77.4%	70	61.9%
	1	19	8.7%	1	2.2%	8	19.5%	10	22.7%	0	0.0%	0	0.0%	4	3.8%	15	13.3%
	2	46	21.0%	0	0.0%	23	56.1%	22	50.0%	0	0.0%	1	1.8%	20	18.9%	26	23.0%
	3	2	0.9%	0	0.0%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Ear Lobule shape	0	152	69.4%	44	97.8%	8	19.5%	12	27.3%	32	100.0%	56	98.2%	82	77.4%	70	61.9%

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Left Ear Lobule attachment	1	4	1.8%	0	0.0%	4	9.8%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	3	2.7%
	2	26	11.9%	0	0.0%	11	26.8%	14	31.8%	0	0.0%	1	1.8%	7	6.6%	19	16.8%
	3	14	6.4%	1	2.2%	8	19.5%	5	11.4%	0	0.0%	0	0.0%	9	8.5%	5	4.4%
	4	6	2.7%	0	0.0%	2	4.9%	4	9.1%	0	0.0%	0	0.0%	4	3.8%	2	1.8%
	5	11	5.0%	0	0.0%	6	14.6%	5	11.4%	0	0.0%	0	0.0%	2	1.9%	9	8.0%
	6	6	2.7%	0	0.0%	2	4.9%	4	9.1%	0	0.0%	0	0.0%	1	0.9%	5	4.4%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	151	68.9%	45	100.0%	41	100.0%	44	100.0%	6	18.8%	15	26.3%	83	78.3%	68	60.2%
	1	18	8.2%	0	0.0%	0	0.0%	0	0.0%	10	31.3%	8	14.0%	8	7.5%	10	8.8%
	2	21	9.6%	0	0.0%	0	0.0%	0	0.0%	9	28.1%	12	21.1%	5	4.7%	16	14.2%
	3	3	1.4%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	2	3.5%	0	0.0%	3	2.7%
	4	26	11.9%	0	0.0%	0	0.0%	0	0.0%	6	18.8%	20	35.1%	10	9.4%	16	14.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	149	68.0%	45	100.0%	41	100.0%	44	100.0%	6	18.8%	13	22.8%	83	78.3%	66	58.4%
	1	14	6.4%	0	0.0%	0	0.0%	0	0.0%	4	12.5%	10	17.5%	4	3.8%	10	8.8%
	2	49	22.4%	0	0.0%	0	0.0%	0	0.0%	18	56.3%	31	54.4%	19	17.9%	30	26.5%
	3	7	3.2%	0	0.0%	0	0.0%	0	0.0%	4	12.5%	3	5.3%	0	0.0%	7	6.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	149	68.0%	45	100.0%	41	100.0%	44	100.0%	6	18.8%	13	22.8%	83	78.3%	66	58.4%
	1	1	0.5%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	1	0.9%	0	0.0%
	2	24	11.0%	0	0.0%	0	0.0%	0	0.0%	7	21.9%	17	29.8%	9	8.5%	15	13.3%
	3	16	7.3%	0	0.0%	0	0.0%	0	0.0%	7	21.9%	9	15.8%	7	6.6%	9	8.0%

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4	9	4.1%	0	0.0%	0	0.0%	0	0.0%	4	12.5%	5	8.8%	3	2.8%	6	5.3%
5	13	5.9%	0	0.0%	0	0.0%	0	0.0%	6	18.8%	7	12.3%	2	1.9%	11	9.7%
6	7	3.2%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	6	10.5%	1	0.9%	6	5.3%
Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 53: Table showing frequency distribution of scores for right ear abnormality and left ear abnormality among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right and Left Ear Abnormality		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Ear abnormality	0	155	70.8%	45	100.0%	9	22.0%	13	29.5%	32	100.0%	56	98.2%	84	79.2%	71	62.8%
	1	61	27.9%	0	0.0%	30	73.2%	30	68.2%	0	0.0%	1	1.8%	20	18.9%	41	36.3%
	2	3	1.4%	0	0.0%	2	4.9%	1	2.3%	0	0.0%	0	0.0%	2	1.9%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Ear abnormality	0	149	68.0%	45	100.0%	41	100.0%	43	97.7%	6	18.8%	14	24.6%	83	78.3%	66	58.4%
	1	67	30.6%	0	0.0%	0	0.0%	1	2.3%	26	81.3%	40	70.2%	23	21.7%	44	38.9%
	2	3	1.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	5.3%	0	0.0%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 54: Table showing frequency distribution of scores for philtrum shape among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Philtrum		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Philtrum shape	0	120	54.8%	9	20.0%	14	34.1%	41	93.2%	7	21.9%	49	86.0%	74	69.8%	46	40.7%
	1	31	14.2%	9	20.0%	10	24.4%	2	4.5%	7	21.9%	3	5.3%	13	12.3%	18	15.9%

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	2	6	2.7%	2	4.4%	4	9.8%	0	0.0%	0	0.0%	0	0.0%	2	1.9%	4	3.5%
	3	49	22.4%	23	51.1%	8	19.5%	1	2.3%	13	40.6%	4	7.0%	13	12.3%	36	31.9%
	4	13	5.9%	2	4.4%	5	12.2%	0	0.0%	5	15.6%	1	1.8%	4	3.8%	9	8.0%
Total		219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 55: Table showing frequency distribution of scores for overall mouth shape and overall mouth width among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Overall Mouth		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Overall mouth shape	0	125	57.1%	7	15.6%	14	34.1%	41	93.2%	13	40.6%	50	87.7%	75	70.8%	50	44.2%
	1	2	0.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	3.5%	1	0.9%	1	0.9%
	2	33	15.1%	16	35.6%	9	22.0%	1	2.3%	6	18.8%	1	1.8%	10	9.4%	23	20.4%
	4	6	2.7%	3	6.7%	1	2.4%	0	0.0%	2	6.3%	0	0.0%	1	0.9%	5	4.4%
	5	41	18.7%	15	33.3%	14	34.1%	2	4.5%	6	18.8%	4	7.0%	14	13.2%	27	23.9%
	6	9	4.1%	3	6.7%	2	4.9%	0	0.0%	4	12.5%	0	0.0%	3	2.8%	6	5.3%
	7	2	0.9%	1	2.2%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	2	1.9%	0	0.0%
	8	1	0.5%	0	0.0%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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	0	167	76.3%	2	4.4%	41	100.0%	44	100.0%	25	78.1%	55	96.5%	85	80.2%	82	72.6%
	1	38	17.4%	32	71.1%	0	0.0%	0	0.0%	6	18.8%	0	0.0%	13	12.3%	25	22.1%
Overall mouth width	2	13	5.9%	11	24.4%	0	0.0%	0	0.0%	0	0.0%	2	3.5%	7	6.6%	6	5.3%
	3	1	0.5%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	1	0.9%	0	0.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 56: Table showing frequency distribution of scores for upper lip fullness, upper lip protrusion (lateral), upper lip vermillion border shape, upper lip vermillion border definition, upper lip symmetry, upper lip tubercle, upper lip alae, upper circumoral striae distribution, lower lip fullness, lower lip protrusion (lateral), lower lip vermillion border shape, lower lip median sulcus, lower lip torus, lower circumoral striae distribution, lower lip vermillion border definition and lower lip symmetry among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Upper Lip and Lower Lip		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Upper Lip Fullness	0	91	41.6%	5	11.1%	8	19.5%	34	77.3%	7	21.9%	37	64.9%	55	51.9%	36	31.9%
	1	3	1.4%	0	0.0%	0	0.0%	1	2.3%	0	0.0%	2	3.5%	3	2.8%	0	0.0%
	2	66	30.1%	19	42.2%	15	36.6%	5	11.4%	14	43.8%	13	22.8%	24	22.6%	42	37.2%
	3	59	26.9%	21	46.7%	18	43.9%	4	9.1%	11	34.4%	5	8.8%	24	22.6%	35	31.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Upper Lip Protrusion (lateral)	0	88	40.2%	45	100.0%	19	46.3%	2	4.5%	14	43.8%	8	14.0%	44	41.5%	44	38.9%
	1	21	9.6%	0	0.0%	1	2.4%	4	9.1%	2	6.3%	14	24.6%	8	7.5%	13	11.5%
	2	102	46.6%	0	0.0%	20	48.8%	35	79.5%	13	40.6%	34	59.6%	50	47.2%	52	46.0%

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	3	8	3.7%	0	0.0%	1	2.4%	3	6.8%	3	9.4%	1	1.8%	4	3.8%	4	3.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Upper Lip Vermilion border shape	0	117	53.4%	10	22.2%	10	24.4%	41	93.2%	7	21.9%	49	86.0%	74	69.8%	43	38.1%
	1	9	4.1%	4	8.9%	2	4.9%	0	0.0%	2	6.3%	1	1.8%	3	2.8%	6	5.3%
	5	46	21.0%	16	35.6%	14	34.1%	0	0.0%	14	43.8%	2	3.5%	11	10.4%	35	31.0%
	6	47	21.5%	15	33.3%	15	36.6%	3	6.8%	9	28.1%	5	8.8%	18	17.0%	29	25.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Upper Lip Vermilion border definition	0	108	49.3%	10	22.2%	9	22.0%	35	79.5%	6	18.8%	48	84.2%	72	67.9%	36	31.9%
	1	10	4.6%	2	4.4%	3	7.3%	2	4.5%	1	3.1%	2	3.5%	4	3.8%	6	5.3%
	2	56	25.6%	15	33.3%	19	46.3%	3	6.8%	18	56.3%	1	1.8%	21	19.8%	35	31.0%
	3	45	20.5%	18	40.0%	10	24.4%	4	9.1%	7	21.9%	6	10.5%	9	8.5%	36	31.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Upper Lip Symmetry	0	154	70.3%	8	17.8%	29	70.7%	44	100.0%	20	62.5%	53	93.0%	88	83.0%	66	58.4%
	1	61	27.9%	35	77.8%	12	29.3%	0	0.0%	11	34.4%	3	5.3%	17	16.0%	44	38.9%
	2	3	1.4%	1	2.2%	0	0.0%	0	0.0%	1	3.1%	1	1.8%	0	0.0%	3	2.7%
	3	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Upper lip tubercle	0	114	52.1%	10	22.2%	9	22.0%	41	93.2%	6	18.8%	48	84.2%	73	68.9%	41	36.3%
	1	73	33.3%	26	57.8%	23	56.1%	3	6.8%	17	53.1%	4	7.0%	26	24.5%	47	41.6%
	2	30	13.7%	8	17.8%	8	19.5%	0	0.0%	9	28.1%	5	8.8%	7	6.6%	23	20.4%
	3	2	0.9%	1	2.2%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Upper lip alae	0	116	53.0%	9	20.0%	10	24.4%	41	93.2%	7	21.9%	49	86.0%	73	68.9%	43	38.1%
	1	7	3.2%	1	2.2%	3	7.3%	0	0.0%	2	6.3%	1	1.8%	3	2.8%	4	3.5%
	2	45	20.5%	21	46.7%	9	22.0%	0	0.0%	14	43.8%	1	1.8%	11	10.4%	34	30.1%
	3	49	22.4%	13	28.9%	19	46.3%	3	6.8%	9	28.1%	5	8.8%	19	17.9%	30	26.5%
	4	2	0.9%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Upper circumoral striae distribution	0	113	51.6%	10	22.2%	9	22.0%	40	90.9%	7	21.9%	47	82.5%	71	67.0%	42	37.2%
	1	50	22.8%	15	33.3%	16	39.0%	3	6.8%	8	25.0%	8	14.0%	17	16.0%	33	29.2%
	2	17	7.8%	8	17.8%	8	19.5%	0	0.0%	1	3.1%	0	0.0%	4	3.8%	13	11.5%
	3	7	3.2%	2	4.4%	2	4.9%	0	0.0%	2	6.3%	1	1.8%	5	4.7%	2	1.8%
	4	7	3.2%	3	6.7%	2	4.9%	0	0.0%	2	6.3%	0	0.0%	2	1.9%	5	4.4%
	5	25	11.4%	7	15.6%	4	9.8%	1	2.3%	12	37.5%	1	1.8%	7	6.6%	18	15.9%
Lower Lip Fullness	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	91	41.6%	5	11.1%	8	19.5%	34	77.3%	7	21.9%	37	64.9%	55	51.9%	36	31.9%
	1	1	0.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	1	0.9%	0	0.0%
	2	57	26.0%	14	31.1%	14	34.1%	6	13.6%	9	28.1%	14	24.6%	22	20.8%	35	31.0%
	3	70	32.0%	26	57.8%	19	46.3%	4	9.1%	16	50.0%	5	8.8%	28	26.4%	42	37.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Lower Lip Protrusion (Lateral)	0	87	39.7%	45	100.0%	18	43.9%	2	4.5%	14	43.8%	8	14.0%	43	40.6%	44	38.9%
	1	7	3.2%	0	0.0%	0	0.0%	3	6.8%	3	9.4%	1	1.8%	4	3.8%	3	2.7%
	2	103	47.0%	0	0.0%	21	51.2%	35	79.5%	13	40.6%	34	59.6%	51	48.1%	52	46.0%
	3	22	10.0%	0	0.0%	2	4.9%	4	9.1%	2	6.3%	14	24.6%	8	7.5%	14	12.4%

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Lower Lip Vermilion border shape	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	115	52.5%	9	20.0%	9	22.0%	41	93.2%	7	21.9%	49	86.0%	73	68.9%	42	37.2%
	1	73	33.3%	25	55.6%	20	48.8%	2	4.5%	21	65.6%	5	8.8%	25	23.6%	48	42.5%
	2	3	1.4%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	2	3.5%	1	0.9%	2	1.8%
	5	24	11.0%	8	17.8%	11	26.8%	1	2.3%	4	12.5%	0	0.0%	7	6.6%	17	15.0%
	7	4	1.8%	2	4.4%	1	2.4%	0	0.0%	0	0.0%	1	1.8%	0	0.0%	4	3.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Lower lip median sulcus	0	117	53.4%	10	22.2%	9	22.0%	41	93.2%	7	21.9%	50	87.7%	75	70.8%	42	37.2%
	1	72	32.9%	25	55.6%	24	58.5%	2	4.5%	16	50.0%	5	8.8%	25	23.6%	47	41.6%
	2	24	11.0%	8	17.8%	7	17.1%	1	2.3%	8	25.0%	0	0.0%	6	5.7%	18	15.9%
	3	3	1.4%	0	0.0%	1	2.4%	0	0.0%	1	3.1%	1	1.8%	0	0.0%	3	2.7%
	4	3	1.4%	2	4.4%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	0	0.0%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Lower lip torus	0	118	53.9%	10	22.2%	9	22.0%	41	93.2%	7	21.9%	51	89.5%	75	70.8%	43	38.1%
	1	70	32.0%	24	53.3%	20	48.8%	1	2.3%	20	62.5%	5	8.8%	22	20.8%	48	42.5%
	2	25	11.4%	7	15.6%	10	24.4%	2	4.5%	5	15.6%	1	1.8%	9	8.5%	16	14.2%
	3	6	2.7%	4	8.9%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	6	5.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Lower circumoral striae distribution	0	113	51.6%	10	22.2%	9	22.0%	40	90.9%	7	21.9%	47	82.5%	71	67.0%	42	37.2%
	1	28	12.8%	4	8.9%	11	26.8%	2	4.5%	6	18.8%	5	8.8%	12	11.3%	16	14.2%
	2	34	15.5%	14	31.1%	10	24.4%	0	0.0%	8	25.0%	2	3.5%	10	9.4%	24	21.2%
	3	17	7.8%	7	15.6%	6	14.6%	1	2.3%	1	3.1%	2	3.5%	5	4.7%	12	10.6%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Lower Lip Vermilion border definition	4	6	2.7%	3	6.7%	1	2.4%	1	2.3%	1	3.1%	0	0.0%	2	1.9%	4	3.5%
	5	21	9.6%	7	15.6%	4	9.8%	0	0.0%	9	28.1%	1	1.8%	6	5.7%	15	13.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	109	49.8%	10	22.2%	9	22.0%	36	81.8%	6	18.8%	48	84.2%	73	68.9%	36	31.9%
	1	71	32.4%	18	40.0%	25	61.0%	3	6.8%	20	62.5%	5	8.8%	25	23.6%	46	40.7%
	2	36	16.4%	17	37.8%	7	17.1%	2	4.5%	6	18.8%	4	7.0%	7	6.6%	29	25.7%
	3	3	1.4%	0	0.0%	0	0.0%	3	6.8%	0	0.0%	0	0.0%	1	0.9%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	154	70.3%	8	17.8%	29	70.7%	44	100.0%	20	62.5%	53	93.0%	88	83.0%	66	58.4%
	1	64	29.2%	36	80.0%	12	29.3%	0	0.0%	12	37.5%	4	7.0%	18	17.0%	46	40.7%
Lower Lip Symmetry	3	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 57: Table showing frequency distribution of scores for lip fissure shape and lip fissure degree of contact among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Lip Fissure (Opening between Lips)		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Lip fissure shape	0	117	53.4%	2	4.4%	13	31.7%	42	95.5%	8	25.0%	52	91.2%	65	61.3%	52	46.0%
	1	68	31.1%	30	66.7%	17	41.5%	2	4.5%	15	46.9%	4	7.0%	23	21.7%	45	39.8%
	4	14	6.4%	3	6.7%	6	14.6%	0	0.0%	4	12.5%	1	1.8%	8	7.5%	6	5.3%
	7	20	9.1%	10	22.2%	5	12.2%	0	0.0%	5	15.6%	0	0.0%	10	9.4%	10	8.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Lip Fissure Degree of contact	0	93	42.5%	2	4.4%	4	9.8%	40	90.9%	5	15.6%	42	73.7%	59	55.7%	34	30.1%

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1	96	43.8%	37	82.2%	26	63.4%	2	4.5%	23	71.9%	8	14.0%	35	33.0%	61	54.0%
2	20	9.1%	5	11.1%	9	22.0%	1	2.3%	1	3.1%	4	7.0%	8	7.5%	12	10.6%
3	6	2.7%	1	2.2%	1	2.4%	0	0.0%	2	6.3%	2	3.5%	3	2.8%	3	2.7%
4	4	1.8%	0	0.0%	1	2.4%	1	2.3%	1	3.1%	1	1.8%	1	0.9%	3	2.7%
Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 58: Table showing frequency distribution of scores for overall dental occlusion classification among Black African males aged 18 to 35 from the Wits Face Database (WFD).

	Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT		
Overall Dental Occlusion (Contact between Upper and Lower Teeth)	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	
Overall Dental occlusion classification	0	119	54.3%	8	17.8%	10	24.4%	43	97.7%	6	18.8%	52	91.2%	65	61.3%	54	47.8%
	1	97	44.3%	37	82.2%	30	73.2%	1	2.3%	24	75.0%	5	8.8%	41	38.7%	56	49.6%
	2	1	0.5%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	0	0.0%	1	0.9%
	3	2	0.9%	0	0.0%	1	2.4%	0	0.0%	1	3.1%	0	0.0%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 59: Table showing frequency distribution of scores for teeth visibility, alignment of teeth and dental condition and modifications among Black African males aged 18 to 35 from the Wits Face Database (WFD).

	Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Characteristic Detail of Teeth																

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Teeth visibility	0	91	41.6%	2	4.4%	3	7.3%	41	93.2%	2	6.3%	43	75.4%	55	51.9%	36	31.9%
	1	118	53.9%	43	95.6%	34	82.9%	2	4.5%	27	84.4%	12	21.1%	48	45.3%	70	61.9%
	2	6	2.7%	0	0.0%	2	4.9%	1	2.3%	2	6.3%	1	1.8%	2	1.9%	4	3.5%
	3	4	1.8%	0	0.0%	2	4.9%	0	0.0%	1	3.1%	1	1.8%	1	0.9%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Alignment of teeth	0	118	53.9%	9	20.0%	9	22.0%	43	97.7%	6	18.8%	51	89.5%	65	61.3%	53	46.9%
	1	97	44.3%	36	80.0%	30	73.2%	1	2.3%	25	78.1%	5	8.8%	40	37.7%	57	50.4%
	2	2	0.9%	0	0.0%	1	2.4%	0	0.0%	1	3.1%	0	0.0%	1	0.9%	1	0.9%
	6	1	0.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	0	0.0%	1	0.9%
	7	1	0.5%	0	0.0%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Dental condition and modifications	0	118	53.9%	9	20.0%	9	22.0%	43	97.7%	6	18.8%	51	89.5%	65	61.3%	53	46.9%
	1	96	43.8%	36	80.0%	29	70.7%	1	2.3%	24	75.0%	6	10.5%	40	37.7%	56	49.6%
	2	5	2.3%	0	0.0%	3	7.3%	0	0.0%	2	6.3%	0	0.0%	1	0.9%	4	3.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 60: Table showing frequency distribution of scores for mouth abnormality presence among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Mouth Abnormalities		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
	0	113	51.6%	9	20.0%	10	24.4%	41	93.2%	7	21.9%	46	80.7%	72	67.9%	41	36.3%
Mouth abnormality presence	1	104	47.5%	36	80.0%	31	75.6%	3	6.8%	23	71.9%	11	19.3%	34	32.1%	70	61.9%
	3	2	0.9%	0	0.0%	0	0.0%	0	0.0%	2	6.3%	0	0.0%	0	0.0%	2	1.8%

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Total 219 100.0% 45 100.0% 41 100.0% 44 100.0% 32 100.0% 57 100.0% 106 100.0% 113 100.0%

Table 61: Table showing frequency distribution of scores for chin shape (portrait), chin prominence (profile), chin relative width, chin relative length, chin symmetry, chin cleft and chin dimple among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Chin (Profile and Frontal View)		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Chin shape (portrait)	0	124	56.6%	0	0.0%	15	36.6%	39	88.6%	21	65.6%	49	86.0%	61	57.5%	63	55.8%
	1	59	26.9%	29	64.4%	16	39.0%	4	9.1%	6	18.8%	4	7.0%	33	31.1%	26	23.0%
	2	7	3.2%	7	15.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	5	4.7%	2	1.8%
	3	29	13.2%	9	20.0%	10	24.4%	1	2.3%	5	15.6%	4	7.0%	7	6.6%	22	19.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Chin prominence (profile)	0	90	41.1%	38	84.4%	25	61.0%	4	9.1%	21	65.6%	2	3.5%	36	34.0%	54	47.8%
	1	20	9.1%	0	0.0%	3	7.3%	4	9.1%	0	0.0%	13	22.8%	10	9.4%	10	8.8%
	2	92	42.0%	7	15.6%	13	31.7%	30	68.2%	9	28.1%	33	57.9%	53	50.0%	39	34.5%
	3	17	7.8%	0	0.0%	0	0.0%	6	13.6%	2	6.3%	9	15.8%	7	6.6%	10	8.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Chin relative width	0	166	75.8%	2	4.4%	39	95.1%	44	100.0%	26	81.3%	55	96.5%	86	81.1%	80	70.8%

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	1	15	6.8%	15	33.3%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4	3.8%	11	9.7%
	2	31	14.2%	21	46.7%	2	4.9%	0	0.0%	6	18.8%	2	3.5%	12	11.3%	19	16.8%
	3	7	3.2%	7	15.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4	3.8%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	2	0.9%	0	0.0%	0	0.0%	1	2.3%	0	0.0%	1	1.8%	2	1.9%	0	0.0%
	1	154	70.3%	32	71.1%	27	65.9%	31	70.5%	19	59.4%	45	78.9%	89	84.0%	65	57.5%
	2	57	26.0%	12	26.7%	11	26.8%	12	27.3%	12	37.5%	10	17.5%	14	13.2%	43	38.1%
	3	6	2.7%	1	2.2%	3	7.3%	0	0.0%	1	3.1%	1	1.8%	1	0.9%	5	4.4%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	143	65.3%	3	6.7%	27	65.9%	44	100.0%	16	50.0%	53	93.0%	75	70.8%	68	60.2%
Chin Symmetry	1	76	34.7%	42	93.3%	14	34.1%	0	0.0%	16	50.0%	4	7.0%	31	29.2%	45	39.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	111	50.7%	7	15.6%	10	24.4%	41	93.2%	6	18.8%	47	82.5%	68	64.2%	43	38.1%
Chin cleft	1	104	47.5%	38	84.4%	28	68.3%	3	6.8%	25	78.1%	10	17.5%	38	35.8%	66	58.4%
	2	1	0.5%	0	0.0%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	3	3	1.4%	0	0.0%	2	4.9%	0	0.0%	1	3.1%	0	0.0%	0	0.0%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	112	51.1%	6	13.3%	12	29.3%	41	93.2%	6	18.8%	47	82.5%	68	64.2%	44	38.9%
Chin dimple	1	101	46.1%	38	84.4%	28	68.3%	2	4.5%	23	71.9%	10	17.5%	36	34.0%	65	57.5%
	2	2	0.9%	0	0.0%	1	2.4%	1	2.3%	0	0.0%	0	0.0%	2	1.9%	0	0.0%
	3	4	1.8%	1	2.2%	0	0.0%	0	0.0%	3	9.4%	0	0.0%	0	0.0%	4	3.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	112	51.1%	6	13.3%	12	29.3%	41	93.2%	6	18.8%	47	82.5%	68	64.2%	44	38.9%

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Table 62: Table showing frequency distribution of scores for jawline shape and jowl prominence among Black African males aged 18 to 35 from the Wits Face Database (WFD).

	Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT		
Jawline (from Chin to Gonial Angle)	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	
Jawline shape	0	2	0.9%	2	4.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.8%
	1	27	12.3%	1	2.2%	2	4.9%	9	20.5%	5	15.6%	10	17.5%	2	1.9%	25	22.1%
	2	102	46.6%	16	35.6%	17	41.5%	24	54.5%	11	34.4%	34	59.6%	57	53.8%	45	39.8%
	3	20	9.1%	10	22.2%	6	14.6%	2	4.5%	2	6.3%	0	0.0%	12	11.3%	8	7.1%
	4	68	31.1%	16	35.6%	16	39.0%	9	20.5%	14	43.8%	13	22.8%	35	33.0%	33	29.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Jowl prominence	1	218	99.5%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	56	98.2%	105	99.1%	113	100.0%
	2	1	0.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	1	0.9%	0	0.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 63: Table showing frequency distribution of scores for relative neck width, relative neck height, neck shape (frontal) and submental fat (double chin) among Black African males aged 18 to 35 from the Wits Face Database (WFD).

	Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Neck (Overall)	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%

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	0	195	89.0%	22	48.9%	41	100.0%	44	100.0%	32	100.0%	56	98.2%	99	93.4%	96	85.0%
	1	7	3.2%	6	13.3%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	3	2.8%	4	3.5%
Relative neck width	2	5	2.3%	5	11.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	4	3.5%
	3	12	5.5%	12	26.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	2.8%	9	8.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	171	78.1%	32	71.1%	35	85.4%	36	81.8%	25	78.1%	43	75.4%	82	77.4%	89	78.8%
	1	4	1.8%	2	4.4%	0	0.0%	0	0.0%	0	0.0%	2	3.5%	1	0.9%	3	2.7%
Relative neck height	2	6	2.7%	3	6.7%	0	0.0%	0	0.0%	1	3.1%	2	3.5%	0	0.0%	6	5.3%
	3	38	17.4%	8	17.8%	6	14.6%	8	18.2%	6	18.8%	10	17.5%	23	21.7%	15	13.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	187	85.4%	23	51.1%	36	87.8%	44	100.0%	29	90.6%	55	96.5%	96	90.6%	91	80.5%
	1	28	12.8%	18	40.0%	5	12.2%	0	0.0%	3	9.4%	2	3.5%	9	8.5%	19	16.8%
Neck shape (frontal)	2	4	1.8%	4	8.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	61	27.9%	31	68.9%	10	24.4%	7	15.9%	6	18.8%	7	12.3%	40	37.7%	21	18.6%
	1	147	67.1%	14	31.1%	26	63.4%	33	75.0%	26	81.3%	48	84.2%	63	59.4%	84	74.3%
Submental fat (double chin)	2	8	3.7%	0	0.0%	4	9.8%	4	9.1%	0	0.0%	0	0.0%	2	1.9%	6	5.3%
	3	3	1.4%	0	0.0%	1	2.4%	0	0.0%	0	0.0%	2	3.5%	1	0.9%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 64: Table showing frequency distribution of scores for laryngeal prominence (Adam's Apple) shape, laryngeal prominence prominence and laryngeal prominence location among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Laryngeal Prominence (Adam's Apple) (Lateral/ Anterior view)- The most anteriorly visible portion of the thyroid cartilage		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Laryngeal Prominence (Adam's Apple) Shape	0	84	38.4%	20	44.4%	15	36.6%	19	43.2%	8	25.0%	22	38.6%	59	55.7%	25	22.1%
	1	67	30.6%	13	28.9%	14	34.1%	11	25.0%	15	46.9%	14	24.6%	21	19.8%	46	40.7%
	2	25	11.4%	5	11.1%	2	4.9%	8	18.2%	1	3.1%	9	15.8%	6	5.7%	19	16.8%
	3	31	14.2%	4	8.9%	5	12.2%	5	11.4%	5	15.6%	12	21.1%	15	14.2%	16	14.2%
	4	12	5.5%	3	6.7%	5	12.2%	1	2.3%	3	9.4%	0	0.0%	5	4.7%	7	6.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Laryngeal Prominence Prominence	0	84	38.4%	20	44.4%	15	36.6%	19	43.2%	8	25.0%	22	38.6%	59	55.7%	25	22.1%
	1	67	30.6%	13	28.9%	14	34.1%	11	25.0%	15	46.9%	14	24.6%	21	19.8%	46	40.7%
	2	32	14.6%	8	17.8%	6	14.6%	7	15.9%	3	9.4%	8	14.0%	14	13.2%	18	15.9%
	3	36	16.4%	4	8.9%	6	14.6%	7	15.9%	6	18.8%	13	22.8%	12	11.3%	24	21.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Laryngeal Prominence Location	0	92	42.0%	21	46.7%	17	41.5%	22	50.0%	8	25.0%	24	42.1%	62	58.5%	30	26.5%
	1	60	27.4%	12	26.7%	12	29.3%	9	20.5%	15	46.9%	12	21.1%	18	17.0%	42	37.2%
	2	5	2.3%	4	8.9%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	2	1.9%	3	2.7%
	3	20	9.1%	4	8.9%	6	14.6%	2	4.5%	5	15.6%	3	5.3%	7	6.6%	13	11.5%

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4	42	19.2%	4	8.9%	6	14.6%	11	25.0%	4	12.5%	17	29.8%	17	16.0%	25	22.1%
Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 65: Table showing frequency distribution of scores for facial hair above upper lip shape, overall facial hair above upper lip thickness, facial hair above upper lip density and distribution, facial hair above upper lip colour variation, facial hair above upper lip outline definition, facial hair above upper lip surrounding continuity and facial hair above upper lip length among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Facial Hair Above Upper Lip		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Facial Hair Above Upper Lip shape	0	68	31.1%	6	13.3%	7	17.1%	24	54.5%	5	15.6%	26	45.6%	41	38.7%	27	23.9%
	1	35	16.0%	9	20.0%	5	12.2%	8	18.2%	1	3.1%	12	21.1%	20	18.9%	15	13.3%
	3	116	53.0%	30	66.7%	29	70.7%	12	27.3%	26	81.3%	19	33.3%	45	42.5%	71	62.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Overall Facial Hair Above Upper Lip thickness	0	66	30.1%	6	13.3%	7	17.1%	24	54.5%	5	15.6%	24	42.1%	41	38.7%	25	22.1%
	1	35	16.0%	9	20.0%	5	12.2%	8	18.2%	1	3.1%	12	21.1%	20	18.9%	15	13.3%
	2	24	11.0%	9	20.0%	2	4.9%	2	4.5%	7	21.9%	4	7.0%	9	8.5%	15	13.3%
	3	80	36.5%	16	35.6%	26	63.4%	10	22.7%	15	46.9%	13	22.8%	35	33.0%	45	39.8%
	4	14	6.4%	5	11.1%	1	2.4%	0	0.0%	4	12.5%	4	7.0%	1	0.9%	13	11.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Facial Hair Above Upper Lip density and distribution	0	83	37.9%	7	15.6%	7	17.1%	31	70.5%	6	18.8%	32	56.1%	54	50.9%	29	25.7%
	1	35	16.0%	9	20.0%	5	12.2%	8	18.2%	1	3.1%	12	21.1%	20	18.9%	15	13.3%
	2	29	13.2%	5	11.1%	8	19.5%	2	4.5%	7	21.9%	7	12.3%	12	11.3%	17	15.0%
	3	24	11.0%	4	8.9%	7	17.1%	2	4.5%	7	21.9%	4	7.0%	7	6.6%	17	15.0%
	4	1	0.5%	0	0.0%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%

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Facial Hair Above Upper Lip Colour variation	5	47	21.5%	20	44.4%	13	31.7%	1	2.3%	11	34.4%	2	3.5%	13	12.3%	34	30.1%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	69	31.5%	7	15.6%	7	17.1%	24	54.5%	6	18.8%	25	43.9%	44	41.5%	25	22.1%
	1	35	16.0%	9	20.0%	5	12.2%	8	18.2%	1	3.1%	12	21.1%	20	18.9%	15	13.3%
	2	113	51.6%	29	64.4%	29	70.7%	12	27.3%	25	78.1%	18	31.6%	42	39.6%	71	62.8%
	3	2	0.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	3.5%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	68	31.1%	6	13.3%	7	17.1%	26	59.1%	5	15.6%	24	42.1%	41	38.7%	27	23.9%
	1	35	16.0%	9	20.0%	5	12.2%	8	18.2%	1	3.1%	12	21.1%	20	18.9%	15	13.3%
	2	114	52.1%	30	66.7%	27	65.9%	10	22.7%	26	81.3%	21	36.8%	45	42.5%	69	61.1%
Facial Hair Above Upper Lip Outline definition	4	2	0.9%	0	0.0%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	51	23.3%	6	13.3%	7	17.1%	19	43.2%	5	15.6%	14	24.6%	36	34.0%	15	13.3%
	1	35	16.0%	9	20.0%	5	12.2%	8	18.2%	1	3.1%	12	21.1%	20	18.9%	15	13.3%
	2	112	51.1%	28	62.2%	26	63.4%	13	29.5%	22	68.8%	23	40.4%	39	36.8%	73	64.6%
	3	13	5.9%	0	0.0%	1	2.4%	2	4.5%	4	12.5%	6	10.5%	7	6.6%	6	5.3%
	4	6	2.7%	2	4.4%	2	4.9%	2	4.5%	0	0.0%	0	0.0%	4	3.8%	2	1.8%
	5	2	0.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	3.5%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	57	26.0%	7	15.6%	7	17.1%	22	50.0%	6	18.8%	15	26.3%	44	41.5%	13	11.5%
Facial Hair Above Upper Lip length	1	35	16.0%	9	20.0%	5	12.2%	8	18.2%	1	3.1%	12	21.1%	20	18.9%	15	13.3%
	2	1	0.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	1	0.9%	0	0.0%

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3	26	11.9%	6	13.3%	8	19.5%	1	2.3%	8	25.0%	3	5.3%	8	7.5%	18	15.9%
4	40	18.3%	11	24.4%	5	12.2%	6	13.6%	3	9.4%	15	26.3%	14	13.2%	26	23.0%
5	60	27.4%	12	26.7%	16	39.0%	7	15.9%	14	43.8%	11	19.3%	19	17.9%	41	36.3%
Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 66: Table showing frequency distribution of scores for facial hair below lower lip shape, overall facial hair below lower lip thickness, facial hair below lower lip density and distribution, facial hair below lower lip colour variation, facial hair below lower lip outline definition, facial hair below lower lip surrounding continuity and facial hair below lower lip length among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Facial Hair Below Lower Lip		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Facial Hair Below Lower Lip shape	0	54	24.7%	1	2.2%	4	9.8%	25	56.8%	5	15.6%	19	33.3%	29	27.4%	25	22.1%
	1	140	63.9%	30	66.7%	30	73.2%	19	43.2%	23	71.9%	38	66.7%	69	65.1%	71	62.8%
	2	6	2.7%	2	4.4%	3	7.3%	0	0.0%	1	3.1%	0	0.0%	4	3.8%	2	1.8%
	3	2	0.9%	0	0.0%	0	0.0%	0	0.0%	2	6.3%	0	0.0%	0	0.0%	2	1.8%
	4	3	1.4%	2	4.4%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	1	0.9%	2	1.8%
	5	14	6.4%	10	22.2%	4	9.8%	0	0.0%	0	0.0%	0	0.0%	3	2.8%	11	9.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Overall Facial Hair Below Lower Lip thickness	0	52	23.7%	1	2.2%	4	9.8%	25	56.8%	5	15.6%	17	29.8%	29	27.4%	23	20.4%
	1	139	63.5%	30	66.7%	30	73.2%	19	43.2%	23	71.9%	37	64.9%	69	65.1%	70	61.9%
	2	17	7.8%	10	22.2%	4	9.8%	0	0.0%	2	6.3%	1	1.8%	7	6.6%	10	8.8%
	3	11	5.0%	4	8.9%	3	7.3%	0	0.0%	2	6.3%	2	3.5%	1	0.9%	10	8.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	52	23.7%	1	2.2%	4	9.8%	25	56.8%	5	15.6%	17	29.8%	29	27.4%	23	20.4%

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Facial Hair Below Lower Lip density and distribution	1	139	63.5%	30	66.7%	30	73.2%	19	43.2%	23	71.9%	37	64.9%	69	65.1%	70	61.9%
	2	15	6.8%	6	13.3%	4	9.8%	0	0.0%	3	9.4%	2	3.5%	3	2.8%	12	10.6%
	3	13	5.9%	8	17.8%	3	7.3%	0	0.0%	1	3.1%	1	1.8%	5	4.7%	8	7.1%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Facial Hair Below Lower Lip Colour variation	0	52	23.7%	1	2.2%	4	9.8%	25	56.8%	5	15.6%	17	29.8%	29	27.4%	23	20.4%
	1	139	63.5%	30	66.7%	30	73.2%	19	43.2%	23	71.9%	37	64.9%	69	65.1%	70	61.9%
	2	28	12.8%	14	31.1%	7	17.1%	0	0.0%	4	12.5%	3	5.3%	8	7.5%	20	17.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Facial Hair Below Lower Lip Outline definition	0	52	23.7%	1	2.2%	4	9.8%	25	56.8%	5	15.6%	17	29.8%	29	27.4%	23	20.4%
	1	139	63.5%	30	66.7%	30	73.2%	19	43.2%	23	71.9%	37	64.9%	69	65.1%	70	61.9%
	2	28	12.8%	14	31.1%	7	17.1%	0	0.0%	4	12.5%	3	5.3%	8	7.5%	20	17.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Facial Hair Below Lower Lip Surrounding continuity	0	52	23.7%	1	2.2%	4	9.8%	25	56.8%	5	15.6%	17	29.8%	29	27.4%	23	20.4%
	1	139	63.5%	30	66.7%	30	73.2%	19	43.2%	23	71.9%	37	64.9%	69	65.1%	70	61.9%
	2	21	9.6%	12	26.7%	6	14.6%	0	0.0%	2	6.3%	1	1.8%	7	6.6%	14	12.4%
	3	4	1.8%	2	4.4%	0	0.0%	0	0.0%	2	6.3%	0	0.0%	0	0.0%	4	3.5%
	4	1	0.5%	0	0.0%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
	5	2	0.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	3.5%	0	0.0%	2	1.8%
Facial Hair Below Lower Lip length	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	52	23.7%	1	2.2%	4	9.8%	25	56.8%	5	15.6%	17	29.8%	29	27.4%	23	20.4%
	1	139	63.5%	30	66.7%	30	73.2%	19	43.2%	23	71.9%	37	64.9%	69	65.1%	70	61.9%
	3	2	0.9%	1	2.2%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	2	1.9%	0	0.0%

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4	9	4.1%	5	11.1%	1	2.4%	0	0.0%	2	6.3%	1	1.8%	2	1.9%	7	6.2%
5	17	7.8%	8	17.8%	5	12.2%	0	0.0%	2	6.3%	2	3.5%	4	3.8%	13	11.5%
Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 67: Table showing frequency distribution of scores for facial hair on right side shape, overall facial hair on right side thickness, facial hair on right side density and distribution, facial hair on right side colour variation, facial hair on right side outline definition, facial hair on right side surrounding continuity and facial hair on right side length among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Facial Hair on Right Side		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Facial Hair on Right Side shape	0	88	40.2%	3	6.7%	0	0.0%	0	0.0%	31	96.9%	54	94.7%	40	37.7%	48	42.5%
	1	96	43.8%	31	68.9%	28	68.3%	33	75.0%	1	3.1%	3	5.3%	51	48.1%	45	39.8%
	2	8	3.7%	6	13.3%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	6	5.7%	2	1.8%
	3	17	7.8%	3	6.7%	8	19.5%	6	13.6%	0	0.0%	0	0.0%	7	6.6%	10	8.8%
	4	3	1.4%	2	4.4%	0	0.0%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	2	1.8%
	5	7	3.2%	0	0.0%	3	7.3%	4	9.1%	0	0.0%	0	0.0%	1	0.9%	6	5.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Overall Facial Hair on Right Side thickness	0	88	40.2%	3	6.7%	0	0.0%	0	0.0%	31	96.9%	54	94.7%	40	37.7%	48	42.5%
	1	96	43.8%	31	68.9%	28	68.3%	33	75.0%	1	3.1%	3	5.3%	51	48.1%	45	39.8%
	2	16	7.3%	8	17.8%	3	7.3%	5	11.4%	0	0.0%	0	0.0%	6	5.7%	10	8.8%
	3	16	7.3%	2	4.4%	8	19.5%	6	13.6%	0	0.0%	0	0.0%	6	5.7%	10	8.8%
	4	3	1.4%	1	2.2%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	3	2.8%	0	0.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	89	40.6%	3	6.7%	0	0.0%	1	2.3%	31	96.9%	54	94.7%	41	38.7%	48	42.5%

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Facial Hair on Right Side density and distribution	1	96	43.8%	31	68.9%	28	68.3%	33	75.0%	1	3.1%	3	5.3%	51	48.1%	45	39.8%
	2	12	5.5%	5	11.1%	7	17.1%	0	0.0%	0	0.0%	0	0.0%	9	8.5%	3	2.7%
	3	19	8.7%	6	13.3%	6	14.6%	7	15.9%	0	0.0%	0	0.0%	4	3.8%	15	13.3%
	5	3	1.4%	0	0.0%	0	0.0%	3	6.8%	0	0.0%	0	0.0%	1	0.9%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Facial Hair on Right Side Colour variation	0	89	40.6%	3	6.7%	0	0.0%	1	2.3%	31	96.9%	54	94.7%	41	38.7%	48	42.5%
	1	96	43.8%	31	68.9%	28	68.3%	33	75.0%	1	3.1%	3	5.3%	51	48.1%	45	39.8%
	2	33	15.1%	11	24.4%	12	29.3%	10	22.7%	0	0.0%	0	0.0%	13	12.3%	20	17.7%
	4	1	0.5%	0	0.0%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Facial Hair on Right Side Outline definition	0	88	40.2%	3	6.7%	0	0.0%	0	0.0%	31	96.9%	54	94.7%	40	37.7%	48	42.5%
	1	96	43.8%	31	68.9%	28	68.3%	33	75.0%	1	3.1%	3	5.3%	51	48.1%	45	39.8%
	2	29	13.2%	7	15.6%	11	26.8%	11	25.0%	0	0.0%	0	0.0%	12	11.3%	17	15.0%
	3	3	1.4%	3	6.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	2.8%	0	0.0%
	4	3	1.4%	1	2.2%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Facial Hair on Right Side Surrounding continuity	0	88	40.2%	3	6.7%	0	0.0%	0	0.0%	31	96.9%	54	94.7%	40	37.7%	48	42.5%
	1	96	43.8%	31	68.9%	28	68.3%	33	75.0%	1	3.1%	3	5.3%	51	48.1%	45	39.8%
	2	8	3.7%	4	8.9%	1	2.4%	3	6.8%	0	0.0%	0	0.0%	0	0.0%	8	7.1%
	3	19	8.7%	5	11.1%	8	19.5%	6	13.6%	0	0.0%	0	0.0%	9	8.5%	10	8.8%
	4	4	1.8%	2	4.4%	0	0.0%	2	4.5%	0	0.0%	0	0.0%	2	1.9%	2	1.8%
	5	4	1.8%	0	0.0%	4	9.8%	0	0.0%	0	0.0%	0	0.0%	4	3.8%	0	0.0%

APPENDIX C: Frequency Tables

Facial Hair on Right Side length	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	89	40.6%	3	6.7%	0	0.0%	1	2.3%	31	96.9%	54	94.7%	41	38.7%	48	42.5%
	1	96	43.8%	31	68.9%	28	68.3%	33	75.0%	1	3.1%	3	5.3%	51	48.1%	45	39.8%
	3	10	4.6%	1	2.2%	6	14.6%	3	6.8%	0	0.0%	0	0.0%	1	0.9%	9	8.0%
	4	5	2.3%	3	6.7%	0	0.0%	2	4.5%	0	0.0%	0	0.0%	2	1.9%	3	2.7%
	5	17	7.8%	5	11.1%	7	17.1%	5	11.4%	0	0.0%	0	0.0%	9	8.5%	8	7.1%
	6	2	0.9%	2	4.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.9%	0	0.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 68: Table showing frequency distribution of scores for facial hair on left side shape, overall facial hair on left side thickness, facial hair on left side density and distribution, facial hair on left side colour variation, facial hair on left side outline definition, facial hair on left side surrounding continuity and facial hair on left side length among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Facial Hair on Left Side		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Facial Hair on Left Side shape	0	92	42.0%	6	13.3%	40	97.6%	44	100.0%	0	0.0%	2	3.5%	46	43.4%	46	40.7%
	1	101	46.1%	31	68.9%	1	2.4%	0	0.0%	24	75.0%	45	78.9%	52	49.1%	49	43.4%
	2	11	5.0%	4	8.9%	0	0.0%	0	0.0%	5	15.6%	2	3.5%	3	2.8%	8	7.1%
	3	14	6.4%	3	6.7%	0	0.0%	0	0.0%	3	9.4%	8	14.0%	5	4.7%	9	8.0%
	4	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Overall Facial Hair on Left Side thickness	0	92	42.0%	6	13.3%	40	97.6%	44	100.0%	0	0.0%	2	3.5%	46	43.4%	46	40.7%
	1	101	46.1%	31	68.9%	1	2.4%	0	0.0%	24	75.0%	45	78.9%	52	49.1%	49	43.4%

APPENDIX C: Frequency Tables

Facial Hair on Left Side density and distribution	2	11	5.0%	5	11.1%	0	0.0%	0	0.0%	4	12.5%	2	3.5%	3	2.8%	8	7.1%
	3	12	5.5%	2	4.4%	0	0.0%	0	0.0%	4	12.5%	6	10.5%	4	3.8%	8	7.1%
	4	3	1.4%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	2	3.5%	1	0.9%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	92	42.0%	6	13.3%	40	97.6%	44	100.0%	0	0.0%	2	3.5%	46	43.4%	46	40.7%
	1	101	46.1%	31	68.9%	1	2.4%	0	0.0%	24	75.0%	45	78.9%	52	49.1%	49	43.4%
	2	12	5.5%	5	11.1%	0	0.0%	0	0.0%	5	15.6%	2	3.5%	7	6.6%	5	4.4%
	3	12	5.5%	3	6.7%	0	0.0%	0	0.0%	3	9.4%	6	10.5%	1	0.9%	11	9.7%
	5	2	0.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	3.5%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Facial Hair on Left Side Colour variation	0	93	42.5%	6	13.3%	40	97.6%	44	100.0%	1	3.1%	2	3.5%	47	44.3%	46	40.7%
	1	101	46.1%	31	68.9%	1	2.4%	0	0.0%	24	75.0%	45	78.9%	52	49.1%	49	43.4%
	2	25	11.4%	8	17.8%	0	0.0%	0	0.0%	7	21.9%	10	17.5%	7	6.6%	18	15.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Facial Hair on Left Side Outline definition	0	92	42.0%	6	13.3%	40	97.6%	44	100.0%	0	0.0%	2	3.5%	46	43.4%	46	40.7%
	1	101	46.1%	31	68.9%	1	2.4%	0	0.0%	24	75.0%	45	78.9%	52	49.1%	49	43.4%
	2	16	7.3%	6	13.3%	0	0.0%	0	0.0%	4	12.5%	6	10.5%	7	6.6%	9	8.0%
	3	6	2.7%	1	2.2%	0	0.0%	0	0.0%	3	9.4%	2	3.5%	1	0.9%	5	4.4%
	4	4	1.8%	1	2.2%	0	0.0%	0	0.0%	1	3.1%	2	3.5%	0	0.0%	4	3.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Facial Hair on Left Side Surrounding continuity	0	91	41.6%	5	11.1%	40	97.6%	44	100.0%	0	0.0%	2	3.5%	46	43.4%	45	39.8%
	1	101	46.1%	31	68.9%	1	2.4%	0	0.0%	24	75.0%	45	78.9%	52	49.1%	49	43.4%

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Facial Hair on Left Side length	2	8	3.7%	3	6.7%	0	0.0%	0	0.0%	3	9.4%	2	3.5%	0	0.0%	8	7.1%
	3	11	5.0%	4	8.9%	0	0.0%	0	0.0%	3	9.4%	4	7.0%	6	5.7%	5	4.4%
	4	3	1.4%	1	2.2%	0	0.0%	0	0.0%	2	6.3%	0	0.0%	1	0.9%	2	1.8%
	5	5	2.3%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	4	7.0%	1	0.9%	4	3.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	92	42.0%	6	13.3%	40	97.6%	44	100.0%	0	0.0%	2	3.5%	46	43.4%	46	40.7%
	1	101	46.1%	31	68.9%	1	2.4%	0	0.0%	24	75.0%	45	78.9%	52	49.1%	49	43.4%
	3	6	2.7%	1	2.2%	0	0.0%	0	0.0%	3	9.4%	2	3.5%	1	0.9%	5	4.4%
	4	5	2.3%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	4	7.0%	0	0.0%	5	4.4%
	5	13	5.9%	4	8.9%	0	0.0%	0	0.0%	5	15.6%	4	7.0%	5	4.7%	8	7.1%
	6	2	0.9%	2	4.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.9%	0	0.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 69: Table showing frequency distribution of scores for facial hair on chin shape, overall facial hair on chin thickness, facial hair on chin density and distribution, facial hair on chin colour variation, facial hair on chin outline definition, facial hair on chin surrounding continuity and facial hair on chin length among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Facial Hair on Chin		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Facial Hair on Chin shape	0	53	24,2%	3	6,7%	3	7,3%	23	52,3%	5	15,6%	19	33,3%	29	27,4%	24	21,2%
	1	49	22,4%	8	17,8%	10	24,4%	8	18,2%	4	12,5%	19	33,3%	34	32,1%	15	13,3%
	2	6	2,7%	1	2,2%	4	9,8%	0	0,0%	0	0,0%	1	1,8%	0	0,0%	6	5,3%
	3	111	50,7%	33	73,3%	24	58,5%	13	29,5%	23	71,9%	18	31,6%	43	40,6%	68	60,2%
	Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	57	100,0%	106	100,0%	113	100,0%

APPENDIX C: Frequency Tables

Overall Facial Hair on Chin thickness	0	48	21,9%	6	13,3%	6	14,6%	17	38,6%	3	9,4%	16	28,1%	29	27,4%	19	16,8%
Overall Facial Hair on Chin thickness	1	63	28,8%	12	26,7%	13	31,7%	9	20,5%	8	25,0%	21	36,8%	36	34,0%	27	23,9%
	2	27	12,3%	12	26,7%	5	12,2%	1	2,3%	6	18,8%	3	5,3%	6	5,7%	21	18,6%
	3	59	26,9%	10	22,2%	11	26,8%	14	31,8%	13	40,6%	11	19,3%	29	27,4%	30	26,5%
	4	22	10,0%	5	11,1%	6	14,6%	3	6,8%	2	6,3%	6	10,5%	6	5,7%	16	14,2%
	Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	57	100,0%	106	100,0%	113	100,0%
Facial Hair on Chin density and distribution	0	54	24,7%	4	8,9%	3	7,3%	24	54,5%	3	9,4%	20	35,1%	34	32,1%	20	17,7%
	1	50	22,8%	8	17,8%	10	24,4%	8	18,2%	4	12,5%	20	35,1%	35	33,0%	15	13,3%
	2	70	32,0%	18	40,0%	19	46,3%	10	22,7%	11	34,4%	12	21,1%	26	24,5%	44	38,9%
	3	31	14,2%	7	15,6%	8	19,5%	2	4,5%	11	34,4%	3	5,3%	8	7,5%	23	20,4%
	4	3	1,4%	3	6,7%	0	0,0%	0	0,0%	0	0,0%	0	0,0%	1	0,9%	2	1,8%
	5	11	5,0%	5	11,1%	1	2,4%	0	0,0%	3	9,4%	2	3,5%	2	1,9%	9	8,0%
	Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	57	100,0%	106	100,0%	113	100,0%
Facial Hair on Chin Colour variation	0	45	20,5%	5	11,1%	3	7,3%	19	43,2%	4	12,5%	14	24,6%	31	29,2%	14	12,4%
	1	49	22,4%	8	17,8%	10	24,4%	8	18,2%	4	12,5%	19	33,3%	34	32,1%	15	13,3%
	2	120	54,8%	32	71,1%	27	65,9%	16	36,4%	24	75,0%	21	36,8%	39	36,8%	81	71,7%
	3	4	1,8%	0	0,0%	0	0,0%	1	2,3%	0	0,0%	3	5,3%	1	0,9%	3	2,7%
	4	1	0,5%	0	0,0%	1	2,4%	0	0,0%	0	0,0%	0	0,0%	1	0,9%	0	0,0%
	Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	57	100,0%	106	100,0%	113	100,0%
Facial Hair on Chin Outline definition	0	51	23,3%	3	6,7%	3	7,3%	25	56,8%	3	9,4%	17	29,8%	31	29,2%	20	17,7%
	1	49	22,4%	8	17,8%	10	24,4%	8	18,2%	4	12,5%	19	33,3%	34	32,1%	15	13,3%
	2	102	46,6%	32	71,1%	22	53,7%	10	22,7%	19	59,4%	19	33,3%	39	36,8%	63	55,8%

APPENDIX C: Frequency Tables

Facial Hair on Chin Surrounding continuity	3	2	0,9%	0	0,0%	0	0,0%	0	0,0%	2	6,3%	0	0,0%	0	0,0%	2	1,8%
	4	15	6,8%	2	4,4%	6	14,6%	1	2,3%	4	12,5%	2	3,5%	2	1,9%	13	11,5%
	Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	57	100,0%	106	100,0%	113	100,0%
	0	35	16,0%	3	6,7%	3	7,3%	16	36,4%	3	9,4%	10	17,5%	23	21,7%	12	10,6%
	1	49	22,4%	8	17,8%	10	24,4%	8	18,2%	4	12,5%	19	33,3%	34	32,1%	15	13,3%
	2	79	36,1%	25	55,6%	13	31,7%	9	20,5%	17	53,1%	15	26,3%	26	24,5%	53	46,9%
	3	37	16,9%	6	13,3%	9	22,0%	9	20,5%	4	12,5%	9	15,8%	14	13,2%	23	20,4%
	4	7	3,2%	3	6,7%	0	0,0%	2	4,5%	2	6,3%	0	0,0%	5	4,7%	2	1,8%
	5	12	5,5%	0	0,0%	6	14,6%	0	0,0%	2	6,3%	4	7,0%	4	3,8%	8	7,1%
	Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	57	100,0%	106	100,0%	113	100,0%
Facial Hair on Chin length	0	45	20,5%	8	17,8%	6	14,6%	18	40,9%	3	9,4%	10	17,5%	32	30,2%	13	11,5%
	1	63	28,8%	12	26,7%	13	31,7%	9	20,5%	8	25,0%	21	36,8%	36	34,0%	27	23,9%
	2	1	0,5%	0	0,0%	0	0,0%	0	0,0%	1	3,1%	0	0,0%	1	0,9%	0	0,0%
	3	14	6,4%	2	4,4%	6	14,6%	1	2,3%	2	6,3%	3	5,3%	4	3,8%	10	8,8%
	4	23	10,5%	8	17,8%	3	7,3%	3	6,8%	6	18,8%	3	5,3%	8	7,5%	15	13,3%
	5	57	26,0%	11	24,4%	13	31,7%	9	20,5%	8	25,0%	16	28,1%	17	16,0%	40	35,4%
	6	16	7,3%	4	8,9%	0	0,0%	4	9,1%	4	12,5%	4	7,0%	8	7,5%	8	7,1%
	Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	57	100,0%	106	100,0%	113	100,0%

Table 70: Table showing frequency distribution of scores for facial hair on neck, below chin/jawline shape, overall facial hair on neck, below chin/jawline thickness, facial hair on neck, below chin/jawline density and distribution, facial hair on neck, below chin/jawline colour variation, facial hair on neck, below chin/jawline outline definition, facial hair on neck, below chin/jawline surrounding continuity and facial hair on neck, below chin/jawline length among Black African males aged 18 to 35 from the Wits Face Database (WFD).

Total	Anterior	Right 45°	Right Lateral	Left 45°	Left Lateral	CCTV	WT

APPENDIX C: Frequency Tables

Facial Hair on Neck, below Chin/Jawline		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Facial Hair on Neck, below Chin/Jawline shape	0	39	17,8%	13	28,9%	3	7,3%	10	22,7%	1	3,1%	12	21,1%	25	23,6%	14	12,4%
	1	159	72,6%	30	66,7%	34	82,9%	31	70,5%	25	78,1%	39	68,4%	78	73,6%	81	71,7%
	2	9	4,1%	1	2,2%	2	4,9%	2	4,5%	0	0,0%	4	7,0%	1	0,9%	8	7,1%
	3	11	5,0%	1	2,2%	2	4,9%	1	2,3%	6	18,8%	1	1,8%	2	1,9%	9	8,0%
	5	1	0,5%	0	0,0%	0	0,0%	0	0,0%	0	0,0%	1	1,8%	0	0,0%	1	0,9%
	Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	57	100,0%	106	100,0%	113	100,0%
Overall Facial Hair on Neck, below Chin/Jawline thickness	0	30	13,7%	10	22,2%	0	0,0%	10	22,7%	1	3,1%	9	15,8%	19	17,9%	11	9,7%
	1	146	66,7%	26	57,8%	31	75,6%	30	68,2%	21	65,6%	38	66,7%	77	72,6%	69	61,1%
	2	20	9,1%	3	6,7%	3	7,3%	3	6,8%	4	12,5%	7	12,3%	3	2,8%	17	15,0%
	3	16	7,3%	4	8,9%	3	7,3%	1	2,3%	6	18,8%	2	3,5%	3	2,8%	13	11,5%
	4	7	3,2%	2	4,4%	4	9,8%	0	0,0%	0	0,0%	1	1,8%	4	3,8%	3	2,7%
	Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	57	100,0%	106	100,0%	113	100,0%
Facial Hair on Neck, below Chin/Jawline density and distribution	0	39	17,8%	13	28,9%	3	7,3%	10	22,7%	1	3,1%	12	21,1%	25	23,6%	14	12,4%
	1	159	72,6%	30	66,7%	34	82,9%	31	70,5%	25	78,1%	39	68,4%	78	73,6%	81	71,7%
	2	10	4,6%	1	2,2%	4	9,8%	2	4,5%	2	6,3%	1	1,8%	1	0,9%	9	8,0%
	3	11	5,0%	1	2,2%	0	0,0%	1	2,3%	4	12,5%	5	8,8%	2	1,9%	9	8,0%
	Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	57	100,0%	106	100,0%	113	100,0%
Facial Hair on Neck, below Chin/Jawline Colour variation	0	39	17,8%	13	28,9%	3	7,3%	10	22,7%	1	3,1%	12	21,1%	25	23,6%	14	12,4%
	1	159	72,6%	30	66,7%	34	82,9%	31	70,5%	25	78,1%	39	68,4%	78	73,6%	81	71,7%
	2	21	9,6%	2	4,4%	4	9,8%	3	6,8%	6	18,8%	6	10,5%	3	2,8%	18	15,9%
	Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	12	100,0%	106	100,0%	113	100,0%

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Facial Hair on Neck, below Chin/Jawline Outline definition	0	39	17,8%	13	28,9%	3	7,3%	10	22,7%	1	3,1%	12	21,1%	25	23,6%	14	12,4%
	1	159	72,6%	30	66,7%	34	82,9%	31	70,5%	25	78,1%	39	68,4%	78	73,6%	81	71,7%
	2	6	2,7%	2	4,4%	2	4,9%	0	0,0%	2	6,3%	0	0,0%	2	1,9%	4	3,5%
	3	15	6,8%	0	0,0%	2	4,9%	3	6,8%	4	12,5%	6	10,5%	1	0,9%	14	12,4%
	Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	57	100,0%	25	100,0%	113	100,0%
Facial Hair on Neck, below Chin/Jawline Surrounding continuity	0	39	17,8%	13	28,9%	3	7,3%	10	22,7%	1	3,1%	12	21,1%	25	23,6%	14	12,4%
	1	159	72,6%	30	66,7%	34	82,9%	31	70,5%	25	78,1%	39	68,4%	78	73,6%	81	71,7%
	2	1	0,5%	1	2,2%	0	0,0%	0	0,0%	0	0,0%	0	0,0%	1	0,9%	0	0,0%
	3	13	5,9%	1	2,2%	4	9,8%	1	2,3%	4	12,5%	3	5,3%	2	1,9%	11	9,7%
	4	3	1,4%	0	0,0%	0	0,0%	2	4,5%	0	0,0%	1	1,8%	0	0,0%	3	2,7%
	5	4	1,8%	0	0,0%	0	0,0%	0	0,0%	2	6,3%	2	3,5%	0	0,0%	4	3,5%
	Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	57	100,0%	106	100,0%	113	100,0%
Facial Hair on Neck, below Chin/Jawline length	0	30	13,7%	10	22,2%	0	0,0%	10	22,7%	1	3,1%	9	15,8%	19	17,9%	11	9,7%
	1	146	66,7%	26	57,8%	31	75,6%	30	68,2%	21	65,6%	38	66,7%	77	72,6%	69	61,1%
	3	6	2,7%	1	2,2%	4	9,8%	1	2,3%	0	0,0%	0	0,0%	2	1,9%	4	3,5%
	4	5	2,3%	1	2,2%	0	0,0%	0	0,0%	4	12,5%	0	0,0%	1	0,9%	4	3,5%
	5	27	12,3%	4	8,9%	4	9,8%	3	6,8%	6	18,8%	10	17,5%	2	1,9%	25	22,1%
	6	5	2,3%	3	6,7%	2	4,9%	0	0,0%	0	0,0%	0	0,0%	5	4,7%	0	0,0%
	Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	57	100,0%	106	100,0%	113	100,0%

APPENDIX C: Frequency Tables

Table 71: Table showing frequency distribution of scores for forehead creases (wrinkles) line prominence, forehead creases (wrinkles) line orientation, forehead creases (wrinkles) quantity, forehead creases (wrinkles) distribution, forehead creases (wrinkles) shape and forehead creases (wrinkles) Inter-line relations among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Forehead Creases (Wrinkles)		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Forehead Creases (Wrinkles) Line prominence	0	87	39.7%	5	11.1%	3	7.3%	36	81.8%	1	3.1%	42	73.7%	51	48.1%	36	31.9%
	1	100	45.7%	29	64.4%	33	80.5%	4	9.1%	20	62.5%	14	24.6%	46	43.4%	54	47.8%
	2	17	7.8%	6	13.3%	3	7.3%	1	2.3%	6	18.8%	1	1.8%	4	3.8%	13	11.5%
	3	11	5.0%	3	6.7%	2	4.9%	1	2.3%	5	15.6%	0	0.0%	1	0.9%	10	8.8%
	4	4	1.8%	2	4.4%	0	0.0%	2	4.5%	0	0.0%	0	0.0%	4	3.8%	0	0.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Forehead Creases (Wrinkles) Line orientation	0	87	39.7%	5	11.1%	3	7.3%	36	81.8%	1	3.1%	42	73.7%	51	48.1%	36	31.9%
	1	100	45.7%	29	64.4%	33	80.5%	4	9.1%	20	62.5%	14	24.6%	46	43.4%	54	47.8%
	2	31	14.2%	10	22.2%	5	12.2%	4	9.1%	11	34.4%	1	1.8%	9	8.5%	22	19.5%
	4	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Forehead Creases (Wrinkles) Quantity	0	87	39.7%	5	11.1%	3	7.3%	36	81.8%	1	3.1%	42	73.7%	51	48.1%	36	31.9%
	1	100	45.7%	29	64.4%	33	80.5%	4	9.1%	20	62.5%	14	24.6%	46	43.4%	54	47.8%
	2	9	4.1%	6	13.3%	0	0.0%	2	4.5%	1	3.1%	0	0.0%	4	3.8%	5	4.4%
	3	9	4.1%	4	8.9%	2	4.9%	1	2.3%	2	6.3%	0	0.0%	3	2.8%	6	5.3%
	4	11	5.0%	1	2.2%	3	7.3%	1	2.3%	6	18.8%	0	0.0%	2	1.9%	9	8.0%

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Forehead Creases (Wrinkles) Distribution	5	3	1.4%	0	0.0%	0	0.0%	0	0.0%	2	6.3%	1	1.8%	0	0.0%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	87	39.7%	5	11.1%	3	7.3%	36	81.8%	1	3.1%	42	73.7%	51	48.1%	36	31.9%
	1	100	45.7%	29	64.4%	33	80.5%	4	9.1%	20	62.5%	14	24.6%	46	43.4%	54	47.8%
	2	19	8.7%	5	11.1%	4	9.8%	2	4.5%	7	21.9%	1	1.8%	4	3.8%	15	13.3%
	3	11	5.0%	5	11.1%	1	2.4%	1	2.3%	4	12.5%	0	0.0%	4	3.8%	7	6.2%
	4	2	0.9%	1	2.2%	0	0.0%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	87	39.7%	5	11.1%	3	7.3%	36	81.8%	1	3.1%	42	73.7%	51	48.1%	36	31.9%
	1	100	45.7%	29	64.4%	33	80.5%	4	9.1%	20	62.5%	14	24.6%	46	43.4%	54	47.8%
Forehead Creases (Wrinkles) Shape	2	19	8.7%	6	13.3%	4	9.8%	3	6.8%	6	18.8%	0	0.0%	6	5.7%	13	11.5%
	3	3	1.4%	2	4.4%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	2	1.8%
	4	2	0.9%	1	2.2%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	1	0.9%	1	0.9%
	5	8	3.7%	2	4.4%	0	0.0%	1	2.3%	4	12.5%	1	1.8%	1	0.9%	7	6.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	87	39.7%	5	11.1%	3	7.3%	36	81.8%	1	3.1%	42	73.7%	51	48.1%	36	31.9%
Forehead Creases (Wrinkles) Inter-line relations	1	109	49.8%	35	77.8%	33	80.5%	6	13.6%	21	65.6%	14	24.6%	50	47.2%	59	52.2%
	2	18	8.2%	4	8.9%	5	12.2%	2	4.5%	6	18.8%	1	1.8%	5	4.7%	13	11.5%
	5	2	0.9%	0	0.0%	0	0.0%	0	0.0%	2	6.3%	0	0.0%	0	0.0%	2	1.8%
	6	3	1.4%	1	2.2%	0	0.0%	0	0.0%	2	6.3%	0	0.0%	0	0.0%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	87	39.7%	5	11.1%	3	7.3%	36	81.8%	1	3.1%	42	73.7%	51	48.1%	36	31.9%

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Table 72: Table showing frequency distribution of scores for vertical glabellar line(s) prominence, vertical glabellar line(s) orientation, vertical glabellar line(s) quantity, vertical glabellar line(s) distribution, vertical glabellar line(s) shape and vertical glabellar line(s) Inter-line relations among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Vertical Glabellar Line(s)		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Vertical Glabellar Line(s) prominence	0	102	46.6%	5	11.1%	5	12.2%	40	90.9%	5	15.6%	47	82.5%	63	59.4%	39	34.5%
	1	112	51.1%	39	86.7%	33	80.5%	4	9.1%	26	81.3%	10	17.5%	42	39.6%	70	61.9%
	2	4	1.8%	1	2.2%	2	4.9%	0	0.0%	1	3.1%	0	0.0%	1	0.9%	3	2.7%
	3	1	0.5%	0	0.0%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Vertical Glabellar Line(s) orientation	0	102	46.6%	5	11.1%	5	12.2%	40	90.9%	5	15.6%	47	82.5%	63	59.4%	39	34.5%
	1	113	51.6%	39	86.7%	34	82.9%	4	9.1%	26	81.3%	10	17.5%	42	39.6%	71	62.8%
	3	4	1.8%	1	2.2%	2	4.9%	0	0.0%	1	3.1%	0	0.0%	1	0.9%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Vertical Glabellar Line(s) Quantity	0	102	46.6%	5	11.1%	5	12.2%	40	90.9%	5	15.6%	47	82.5%	63	59.4%	39	34.5%
	1	112	51.1%	39	86.7%	33	80.5%	4	9.1%	26	81.3%	10	17.5%	42	39.6%	70	61.9%
	2	1	0.5%	0	0.0%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	3	2	0.9%	0	0.0%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.8%
	4	2	0.9%	1	2.2%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	1	0.9%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Vertical Glabellar Line(s) Distribution	0	102	46.6%	5	11.1%	5	12.2%	40	90.9%	5	15.6%	47	82.5%	63	59.4%	39	34.5%
	1	113	51.6%	39	86.7%	34	82.9%	4	9.1%	26	81.3%	10	17.5%	42	39.6%	71	62.8%
	2	4	1.8%	1	2.2%	2	4.9%	0	0.0%	1	3.1%	0	0.0%	1	0.9%	3	2.7%

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	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	102	46.6%	5	11.1%	5	12.2%	40	90.9%	5	15.6%	47	82.5%	63	59.4%	39	34.5%
Vertical Glabellar Line(s) Shape	1	114	52.1%	39	86.7%	35	85.4%	4	9.1%	26	81.3%	10	17.5%	42	39.6%	72	63.7%
	2	3	1.4%	1	2.2%	1	2.4%	0	0.0%	1	3.1%	0	0.0%	1	0.9%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	102	46.6%	5	11.1%	5	12.2%	40	90.9%	5	15.6%	47	82.5%	63	59.4%	39	34.5%
Vertical Glabellar Line(s) Inter-line relations	1	114	52.1%	39	86.7%	35	85.4%	4	9.1%	26	81.3%	10	17.5%	42	39.6%	72	63.7%
	2	3	1.4%	1	2.2%	1	2.4%	0	0.0%	1	3.1%	0	0.0%	1	0.9%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 73: Table showing frequency distribution of scores for nasion crease prominence, nasion crease orientation, nasion crease quantity, nasion crease distribution, nasion crease shape and nasion crease Inter-line relations among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Nasion Crease		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Nasion Crease prominence	0	102	46.6%	5	11.1%	5	12.2%	40	90.9%	5	15.6%	47	82.5%	63	59.4%	39	34.5%
	1	114	52.1%	38	84.4%	36	87.8%	4	9.1%	27	84.4%	9	15.8%	42	39.6%	72	63.7%
	2	2	0.9%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	0	0.0%	2	1.8%
	4	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Nasion Crease orientation	0	102	46.6%	5	11.1%	5	12.2%	40	90.9%	5	15.6%	47	82.5%	63	59.4%	39	34.5%
	1	114	52.1%	38	84.4%	36	87.8%	4	9.1%	27	84.4%	9	15.8%	42	39.6%	72	63.7%
	2	2	0.9%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	1	0.9%	1	0.9%

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	5	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Nasion Crease Quantity	0	102	46.6%	5	11.1%	5	12.2%	40	90.9%	5	15.6%	47	82.5%	63	59.4%	39	34.5%
	1	114	52.1%	38	84.4%	36	87.8%	4	9.1%	27	84.4%	9	15.8%	42	39.6%	72	63.7%
	2	3	1.4%	2	4.4%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	1	0.9%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	102	46.6%	5	11.1%	5	12.2%	40	90.9%	5	15.6%	47	82.5%	63	59.4%	39	34.5%
Nasion Crease Distribution	1	114	52.1%	38	84.4%	36	87.8%	4	9.1%	27	84.4%	9	15.8%	42	39.6%	72	63.7%
	2	2	0.9%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	1	0.9%	1	0.9%
	3	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	102	46.6%	5	11.1%	5	12.2%	40	90.9%	5	15.6%	47	82.5%	63	59.4%	39	34.5%
Nasion Crease Shape	1	114	52.1%	38	84.4%	36	87.8%	4	9.1%	27	84.4%	9	15.8%	42	39.6%	72	63.7%
	2	3	1.4%	2	4.4%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	1	0.9%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	102	46.6%	5	11.1%	5	12.2%	40	90.9%	5	15.6%	47	82.5%	63	59.4%	39	34.5%
	1	117	53.4%	40	88.9%	36	87.8%	4	9.1%	27	84.4%	10	17.5%	43	40.6%	74	65.5%
Nasion Crease Inter-line relations	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 74: Table showing frequency distribution of scores for bifid nose crease line prominence, bifid nose crease line shape and bifid nose crease line length among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Bifid Nose Crease		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Bifid Nose Crease Line prominence	0	95	43.4%	4	8.9%	5	12.2%	39	88.6%	4	12.5%	43	75.4%	60	56.6%	35	31.0%
	1	120	54.8%	41	91.1%	33	80.5%	4	9.1%	28	87.5%	14	24.6%	45	42.5%	75	66.4%
	2	4	1.8%	0	0.0%	3	7.3%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Bifid Nose Crease Line Shape	0	95	43.4%	4	8.9%	5	12.2%	39	88.6%	4	12.5%	43	75.4%	60	56.6%	35	31.0%
	1	120	54.8%	41	91.1%	33	80.5%	4	9.1%	28	87.5%	14	24.6%	45	42.5%	75	66.4%
	2	4	1.8%	0	0.0%	3	7.3%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Bifid Nose Crease Line Length	0	95	43.4%	4	8.9%	5	12.2%	39	88.6%	4	12.5%	43	75.4%	60	56.6%	35	31.0%
	1	120	54.8%	41	91.1%	33	80.5%	4	9.1%	28	87.5%	14	24.6%	45	42.5%	75	66.4%
	2	4	1.8%	0	0.0%	3	7.3%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 75: Table showing frequency distribution of scores for right periorbital creases (crow's feet) line prominence, right periorbital creases (crow's feet) line orientation, right periorbital creases (crow's feet) line quantity, right periorbital creases (crow's feet) line distribution, right periorbital creases (crow's feet) line shape and right periorbital creases (crow's feet) line Inter-line relations among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right periorbital creases (Crow's Feet)		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
	0	117	53.4%	10	22.2%	8	19.5%	12	27.3%	31	96.9%	56	98.2%	71	67.0%	46	40.7%

APPENDIX C: Frequency Tables

Right periorbital creases (Crow's Feet) Line prominence	1	92	42.0%	31	68.9%	31	75.6%	28	63.6%	1	3.1%	1	1.8%	29	27.4%	63	55.8%
	2	2	0.9%	0	0.0%	1	2.4%	1	2.3%	0	0.0%	0	0.0%	2	1.9%	0	0.0%
	3	8	3.7%	4	8.9%	1	2.4%	3	6.8%	0	0.0%	0	0.0%	4	3.8%	4	3.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right periorbital creases (Crow's Feet) Line orientation	0	117	53.4%	10	22.2%	8	19.5%	12	27.3%	31	96.9%	56	98.2%	71	67.0%	46	40.7%
	1	92	42.0%	31	68.9%	31	75.6%	28	63.6%	1	3.1%	1	1.8%	29	27.4%	63	55.8%
	2	7	3.2%	3	6.7%	2	4.9%	2	4.5%	0	0.0%	0	0.0%	4	3.8%	3	2.7%
	5	3	1.4%	1	2.2%	0	0.0%	2	4.5%	0	0.0%	0	0.0%	2	1.9%	1	0.9%
Right periorbital creases (Crow's Feet) Line orientation	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	117	53.4%	10	22.2%	8	19.5%	12	27.3%	31	96.9%	56	98.2%	53.4%	67.0%	46	40.7%
	1	92	42.0%	31	68.9%	31	75.6%	28	63.6%	1	3.1%	1	1.8%	42.0%	27.4%	63	55.8%
	3	2	0.9%	1	2.2%	0	0.0%	1	2.3%	0	0.0%	0	0.0%	0.9%	0.9%	1	0.9%
Right periorbital creases (Crow's Feet) Line Quantity	4	5	2.3%	1	2.2%	2	4.9%	2	4.5%	0	0.0%	0	0.0%	2.3%	3.8%	1	0.9%
	5	3	1.4%	2	4.4%	0	0.0%	1	2.3%	0	0.0%	0	0.0%	1.4%	0.9%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	100.0%	100.0%	113	100.0%
	0	117	53.4%	10	22.2%	8	19.5%	12	27.3%	31	96.9%	56	98.2%	71	67.0%	46	40.7%
Right periorbital creases (Crow's Feet) Line Distribution	1	92	42.0%	31	68.9%	31	75.6%	28	63.6%	1	3.1%	1	1.8%	29	27.4%	63	55.8%
	2	8	3.7%	3	6.7%	2	4.9%	3	6.8%	0	0.0%	0	0.0%	5	4.7%	3	2.7%
	4	2	0.9%	1	2.2%	0	0.0%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right periorbital creases (Crow's Feet) Line Shape	0	117	53.4%	10	22.2%	8	19.5%	12	27.3%	31	96.9%	56	98.2%	71	67.0%	46	40.7%
	1	92	42.0%	31	68.9%	31	75.6%	28	63.6%	1	3.1%	1	1.8%	29	27.4%	63	55.8%

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Right periorbital creases (Crow's Feet) Line Inter-line relations	2	6	2.7%	1	2.2%	2	4.9%	3	6.8%	0	0.0%	0	0.0%	4	3.8%	2	1.8%
	4	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
	5	3	1.4%	2	4.4%	0	0.0%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	117	53.4%	10	22.2%	8	19.5%	12	27.3%	31	96.9%	56	98.2%	71	67.0%	46	40.7%
	1	93	42.5%	31	68.9%	31	75.6%	29	65.9%	1	3.1%	1	1.8%	30	28.3%	63	55.8%
	2	7	3.2%	2	4.4%	2	4.9%	3	6.8%	0	0.0%	0	0.0%	5	4.7%	2	1.8%
	6	2	0.9%	2	4.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 76: Table showing frequency distribution of scores for left periorbital creases (crow's feet) line prominence, left periorbital creases (crow's feet) line orientation, left periorbital creases (crow's feet) line quantity, left periorbital creases (crow's feet) line distribution, left periorbital creases (crow's feet) line shape and left periorbital creases (crow's feet) line Inter-line relations among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Left periorbital creases (Crow's Feet)		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Left periorbital creases (Crow's Feet) Line prominence	0	114	52.1%	10	22.2%	41	100.0%	44	100.0%	6	18.8%	13	22.8%	72	67.9%	42	37.2%
	1	91	41.6%	32	71.1%	0	0.0%	0	0.0%	18	56.3%	41	71.9%	30	28.3%	61	54.0%
	2	4	1.8%	0	0.0%	0	0.0%	0	0.0%	3	9.4%	1	1.8%	1	0.9%	3	2.7%
	3	10	4.6%	3	6.7%	0	0.0%	0	0.0%	5	15.6%	2	3.5%	3	2.8%	7	6.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left periorbital creases (Crow's Feet) Line orientation	0	114	52.1%	10	22.2%	41	100.0%	44	100.0%	6	18.8%	13	22.8%	72	67.9%	42	37.2%
	1	91	41.6%	32	71.1%	0	0.0%	0	0.0%	18	56.3%	41	71.9%	30	28.3%	61	54.0%
	2	12	5.5%	2	4.4%	0	0.0%	0	0.0%	8	25.0%	2	3.5%	3	2.8%	9	8.0%

APPENDIX C: Frequency Tables

Left periorbital creases (Crow's Feet) Line Quantity	5	2	0.9%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	1	0.9%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	114	52.1%	10	22.2%	41	100.0%	44	100.0%	6	18.8%	13	22.8%	72	67.9%	42	37.2%
	1	91	41.6%	32	71.1%	0	0.0%	0	0.0%	18	56.3%	41	71.9%	30	28.3%	61	54.0%
	3	5	2.3%	1	2.2%	0	0.0%	0	0.0%	3	9.4%	1	1.8%	0	0.0%	5	4.4%
	4	6	2.7%	2	4.4%	0	0.0%	0	0.0%	4	12.5%	0	0.0%	3	2.8%	3	2.7%
	5	3	1.4%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	2	3.5%	1	0.9%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	114	52.1%	10	22.2%	41	100.0%	44	100.0%	6	18.8%	13	22.8%	72	67.9%	42	37.2%
	1	91	41.6%	32	71.1%	0	0.0%	0	0.0%	18	56.3%	41	71.9%	30	28.3%	61	54.0%
Left periorbital creases (Crow's Feet) Line Distribution	2	12	5.5%	2	4.4%	0	0.0%	0	0.0%	7	21.9%	3	5.3%	3	2.8%	9	8.0%
	4	2	0.9%	1	2.2%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	1	0.9%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	114	52.1%	10	22.2%	41	100.0%	44	100.0%	6	18.8%	13	22.8%	72	67.9%	42	37.2%
	1	91	41.6%	32	71.1%	0	0.0%	0	0.0%	18	56.3%	41	71.9%	30	28.3%	61	54.0%
Left periorbital creases (Crow's Feet) Line Shape	2	8	3.7%	1	2.2%	0	0.0%	0	0.0%	6	18.8%	1	1.8%	1	0.9%	7	6.2%
	4	4	1.8%	1	2.2%	0	0.0%	0	0.0%	2	6.3%	1	1.8%	3	2.8%	1	0.9%
	5	2	0.9%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	114	52.1%	10	22.2%	41	100.0%	44	100.0%	6	18.8%	13	22.8%	72	67.9%	42	37.2%
Left periorbital creases (Crow's Feet) Line Inter-line relations	1	91	41.6%	32	71.1%	0	0.0%	0	0.0%	18	56.3%	41	71.9%	30	28.3%	61	54.0%
	2	13	5.9%	2	4.4%	0	0.0%	0	0.0%	8	25.0%	3	5.3%	4	3.8%	9	8.0%

APPENDIX C: Frequency Tables

6	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 77: Table showing frequency distribution of scores for right lower lid crease prominence, right lower lid crease position, right lower lid crease quantity and right lower lid crease shape among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right Lower Lid Crease		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Lower Lid Crease prominence	0	127	58.0%	9	20.0%	9	22.0%	36	81.8%	19	59.4%	54	94.7%	78	73.6%	49	43.4%
	1	4	1.8%	2	4.4%	0	0.0%	2	4.5%	0	0.0%	0	0.0%	2	1.9%	2	1.8%
	2	34	15.5%	12	26.7%	14	34.1%	1	2.3%	6	18.8%	1	1.8%	8	7.5%	26	23.0%
	3	47	21.5%	20	44.4%	17	41.5%	5	11.4%	3	9.4%	2	3.5%	17	16.0%	30	26.5%
	4	7	3.2%	2	4.4%	1	2.4%	0	0.0%	4	12.5%	0	0.0%	1	0.9%	6	5.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Lower Lid Crease Position	0	127	58.0%	9	20.0%	9	22.0%	36	81.8%	19	59.4%	54	94.7%	78	73.6%	49	43.4%
	1	4	1.8%	2	4.4%	0	0.0%	2	4.5%	0	0.0%	0	0.0%	2	1.9%	2	1.8%
	2	56	25.6%	23	51.1%	24	58.5%	2	4.5%	5	15.6%	2	3.5%	16	15.1%	40	35.4%
	3	31	14.2%	11	24.4%	7	17.1%	4	9.1%	8	25.0%	1	1.8%	10	9.4%	21	18.6%
	4	1	0.5%	0	0.0%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Lower Lid Crease Quantity	0	127	58.0%	9	20.0%	9	22.0%	36	81.8%	19	59.4%	54	94.7%	78	73.6%	49	43.4%
	1	4	1.8%	2	4.4%	0	0.0%	2	4.5%	0	0.0%	0	0.0%	2	1.9%	2	1.8%
	2	17	7.8%	5	11.1%	8	19.5%	2	4.5%	1	3.1%	1	1.8%	9	8.5%	8	7.1%

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Right Lower Lid Crease Shape	3	40	18.3%	23	51.1%	9	22.0%	2	4.5%	5	15.6%	1	1.8%	9	8.5%	31	27.4%
	4	12	5.5%	2	4.4%	7	17.1%	0	0.0%	3	9.4%	0	0.0%	4	3.8%	8	7.1%
	5	19	8.7%	4	8.9%	8	19.5%	2	4.5%	4	12.5%	1	1.8%	4	3.8%	15	13.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	128	58.4%	9	20.0%	9	22.0%	37	84.1%	19	59.4%	54	94.7%	78	73.6%	50	44.2%
	1	4	1.8%	2	4.4%	0	0.0%	2	4.5%	0	0.0%	0	0.0%	2	1.9%	2	1.8%
	2	15	6.8%	6	13.3%	2	4.9%	0	0.0%	6	18.8%	1	1.8%	5	4.7%	10	8.8%
	4	61	27.9%	27	60.0%	28	68.3%	3	6.8%	3	9.4%	0	0.0%	19	17.9%	42	37.2%
	5	10	4.6%	1	2.2%	2	4.9%	2	4.5%	4	12.5%	1	1.8%	2	1.9%	8	7.1%
	7	1	0.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.8%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 78: Table showing frequency distribution of scores for left lower lid crease prominence, left lower lid crease position, left lower lid crease quantity and left lower lid crease shape among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Left Lower Lid Crease		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Left Lower Lid Crease prominence	0	121	55.3%	9	20.0%	23	56.1%	43	97.7%	6	18.8%	40	70.2%	77	72.6%	44	38.9%
	1	12	5.5%	2	4.4%	2	4.9%	0	0.0%	1	3.1%	7	12.3%	3	2.8%	9	8.0%
	2	42	19.2%	14	31.1%	4	9.8%	1	2.3%	17	53.1%	6	10.5%	13	12.3%	29	25.7%
	3	35	16.0%	17	37.8%	11	26.8%	0	0.0%	3	9.4%	4	7.0%	10	9.4%	25	22.1%
	4	9	4.1%	3	6.7%	1	2.4%	0	0.0%	5	15.6%	0	0.0%	3	2.8%	6	5.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Left Lower Lid Crease Position	0	121	55.3%	9	20.0%	23	56.1%	43	97.7%	6	18.8%	40	70.2%	77	72.6%	44	38.9%
	1	12	5.5%	2	4.4%	2	4.9%	0	0.0%	1	3.1%	7	12.3%	3	2.8%	9	8.0%
	2	61	27.9%	27	60.0%	13	31.7%	0	0.0%	15	46.9%	6	10.5%	20	18.9%	41	36.3%
	3	24	11.0%	7	15.6%	3	7.3%	1	2.3%	9	28.1%	4	7.0%	6	5.7%	18	15.9%
	4	1	0.5%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Lower Lid Crease Quantity	0	121	55.3%	9	20.0%	23	56.1%	43	97.7%	6	18.8%	40	70.2%	77	72.6%	44	38.9%
	1	12	5.5%	2	4.4%	2	4.9%	0	0.0%	1	3.1%	7	12.3%	3	2.8%	9	8.0%
	2	18	8.2%	5	11.1%	4	9.8%	0	0.0%	7	21.9%	2	3.5%	8	7.5%	10	8.8%
	3	44	20.1%	20	44.4%	8	19.5%	1	2.3%	9	28.1%	6	10.5%	8	7.5%	36	31.9%
	4	11	5.0%	6	13.3%	3	7.3%	0	0.0%	2	6.3%	0	0.0%	6	5.7%	5	4.4%
	5	13	5.9%	3	6.7%	1	2.4%	0	0.0%	7	21.9%	2	3.5%	4	3.8%	9	8.0%
Left Lower Lid Crease Shape	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	121	55.3%	9	20.0%	23	56.1%	43	97.7%	6	18.8%	40	70.2%	77	72.6%	44	38.9%
	1	13	5.9%	3	6.7%	2	4.9%	0	0.0%	1	3.1%	7	12.3%	3	2.8%	10	8.8%
	2	17	7.8%	6	13.3%	2	4.9%	0	0.0%	3	9.4%	6	10.5%	8	7.5%	9	8.0%
	3	1	0.5%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	0	0.0%	1	0.9%
	4	59	26.9%	26	57.8%	13	31.7%	1	2.3%	16	50.0%	3	5.3%	18	17.0%	41	36.3%
Left Lower Lid Crease Inter-line Relations	5	8	3.7%	1	2.2%	1	2.4%	0	0.0%	5	15.6%	1	1.8%	0	0.0%	8	7.1%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 79: Table showing frequency distribution of scores for right infraorbital creases line prominence, right infraorbital creases line orientation, right infraorbital creases quantity, right infraorbital creases distribution, right infraorbital creases shape and right infraorbital creases inter-line relations among Black African males aged 18 to 35 from the Wits Face Database (WFD).

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		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right Infraorbital Creases		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Infraorbital Creases Line prominence	0	135	61.6%	7	15.6%	8	19.5%	37	84.1%	28	87.5%	55	96.5%	78	73.6%	57	50.4%
	1	63	28.8%	22	48.9%	30	73.2%	6	13.6%	4	12.5%	1	1.8%	23	21.7%	40	35.4%
	2	17	7.8%	14	31.1%	1	2.4%	1	2.3%	0	0.0%	1	1.8%	5	4.7%	12	10.6%
	3	4	1.8%	2	4.4%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4	3.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Infraorbital Creases Line orientation	0	135	61.6%	7	15.6%	8	19.5%	37	84.1%	28	87.5%	55	96.5%	78	73.6%	57	50.4%
	1	63	28.8%	22	48.9%	30	73.2%	6	13.6%	4	12.5%	1	1.8%	23	21.7%	40	35.4%
	3	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	5	20	9.1%	15	33.3%	3	7.3%	1	2.3%	0	0.0%	1	1.8%	5	4.7%	15	13.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Infraorbital Creases Quantity	0	135	61.6%	7	15.6%	8	19.5%	37	84.1%	28	87.5%	55	96.5%	78	73.6%	57	50.4%
	1	63	28.8%	22	48.9%	30	73.2%	6	13.6%	4	12.5%	1	1.8%	23	21.7%	40	35.4%
	2	21	9.6%	16	35.6%	3	7.3%	1	2.3%	0	0.0%	1	1.8%	5	4.7%	16	14.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Infraorbital Creases Distribution	0	135	61.6%	7	15.6%	8	19.5%	37	84.1%	28	87.5%	55	96.5%	78	73.6%	57	50.4%
	1	63	28.8%	22	48.9%	30	73.2%	6	13.6%	4	12.5%	1	1.8%	23	21.7%	40	35.4%
	2	18	8.2%	13	28.9%	3	7.3%	1	2.3%	0	0.0%	1	1.8%	4	3.8%	14	12.4%
	3	2	0.9%	2	4.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.8%
	4	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Right Infraorbital Creases Shape	0	135	61.6%	7	15.6%	8	19.5%	37	84.1%	28	87.5%	55	96.5%	78	73.6%	57	50.4%
	1	64	29.2%	23	51.1%	30	73.2%	6	13.6%	4	12.5%	1	1.8%	23	21.7%	41	36.3%
	2	9	4.1%	6	13.3%	1	2.4%	1	2.3%	0	0.0%	1	1.8%	4	3.8%	5	4.4%
	4	11	5.0%	9	20.0%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	10	8.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Infraorbital Creases Inter-line relations	0	135	61.6%	7	15.6%	8	19.5%	37	84.1%	28	87.5%	55	96.5%	78	73.6%	57	50.4%
	1	84	38.4%	38	84.4%	33	80.5%	7	15.9%	4	12.5%	2	3.5%	28	26.4%	56	49.6%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 80: Table showing frequency distribution of scores for left infraorbital creases line prominence, left infraorbital creases line orientation, left infraorbital creases quantity, left infraorbital creases distribution, left infraorbital creases shape and left infraorbital creases inter-line relations among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Left Infraorbital Creases		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Left Infraorbital Creases Line prominence	0	121	55.3%	9	20.0%	23	56.1%	43	97.7%	6	18.8%	40	70.2%	77	72.6%	44	38.9%
	1	12	5.5%	2	4.4%	2	4.9%	0	0.0%	1	3.1%	7	12.3%	3	2.8%	9	8.0%
	2	42	19.2%	14	31.1%	4	9.8%	1	2.3%	17	53.1%	6	10.5%	13	12.3%	29	25.7%
	3	35	16.0%	17	37.8%	11	26.8%	0	0.0%	3	9.4%	4	7.0%	10	9.4%	25	22.1%
	4	9	4.1%	3	6.7%	1	2.4%	0	0.0%	5	15.6%	0	0.0%	3	2.8%	6	5.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Infraorbital Creases Line orientation	0	125	57.1%	8	17.8%	30	73.2%	44	100.0%	5	15.6%	38	66.7%	78	73.6%	47	41.6%
	1	73	33.3%	21	46.7%	11	26.8%	0	0.0%	23	71.9%	18	31.6%	24	22.6%	49	43.4%
	5	21	9.6%	16	35.6%	0	0.0%	0	0.0%	4	12.5%	1	1.8%	4	3.8%	17	15.0%

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Left Infraorbital Creases Quantity	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	132	60.3%	7	15.6%	39	95.1%	44	100.0%	5	15.6%	37	64.9%	79	74.5%	53	46.9%
	1	59	26.9%	28	62.2%	0	0.0%	0	0.0%	17	53.1%	14	24.6%	19	17.9%	40	35.4%
	2	28	12.8%	10	22.2%	2	4.9%	0	0.0%	10	31.3%	6	10.5%	8	7.5%	20	17.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Infraorbital Creases Distribution	0	134	61.2%	7	15.6%	41	100.0%	44	100.0%	5	15.6%	37	64.9%	79	74.5%	55	48.7%
	1	59	26.9%	28	62.2%	0	0.0%	0	0.0%	17	53.1%	14	24.6%	19	17.9%	40	35.4%
	2	11	5.0%	3	6.7%	0	0.0%	0	0.0%	4	12.5%	4	7.0%	3	2.8%	8	7.1%
	3	5	2.3%	1	2.2%	0	0.0%	0	0.0%	3	9.4%	1	1.8%	2	1.9%	3	2.7%
	4	10	4.6%	6	13.3%	0	0.0%	0	0.0%	3	9.4%	1	1.8%	3	2.8%	7	6.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Infraorbital Creases Shape	0	133	60.7%	7	15.6%	40	97.6%	44	100.0%	5	15.6%	37	64.9%	79	74.5%	54	47.8%
	1	59	26.9%	28	62.2%	0	0.0%	0	0.0%	17	53.1%	14	24.6%	19	17.9%	40	35.4%
	2	20	9.1%	6	13.3%	1	2.4%	0	0.0%	9	28.1%	4	7.0%	6	5.7%	14	12.4%
	4	4	1.8%	4	8.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.9%	2	1.8%
	6	3	1.4%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	2	3.5%	0	0.0%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Infraorbital Creases Inter-line relations	0	133	60.7%	7	15.6%	40	97.6%	44	100.0%	5	15.6%	37	64.9%	79	74.5%	54	47.8%
	1	86	39.3%	38	84.4%	1	2.4%	0	0.0%	27	84.4%	20	35.1%	27	25.5%	59	52.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 81: Table showing frequency distribution of scores for upper circumoral striae s line prominence, upper circumoral striae s line orientation, upper circumoral striae s quantity, upper circumoral striae s distribution, upper circumoral striae s shape and upper circumoral striae s inter-line relations among Black African males aged 18 to 35 from the Wits Face Database (WFD).

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		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Upper circumoral striae		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Upper circumoral striae s Line prominence	0	104	47.5%	8	17.8%	8	19.5%	40	90.9%	6	18.8%	42	73.7%	67	63.2%	37	32.7%
	1	115	52.5%	37	82.2%	33	80.5%	4	9.1%	26	81.3%	15	26.3%	39	36.8%	76	67.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Upper circumoral striae s Line orientation	0	104	47.5%	8	17.8%	8	19.5%	40	90.9%	6	18.8%	42	73.7%	67	63.2%	37	32.7%
	1	115	52.5%	37	82.2%	33	80.5%	4	9.1%	26	81.3%	15	26.3%	39	36.8%	76	67.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Upper circumoral striae Quantity	0	104	47.5%	8	17.8%	8	19.5%	40	90.9%	6	18.8%	42	73.7%	67	63.2%	37	32.7%
	1	115	52.5%	37	82.2%	33	80.5%	4	9.1%	26	81.3%	15	26.3%	39	36.8%	76	67.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Upper circumoral striae Distribution	0	104	47.5%	8	17.8%	8	19.5%	40	90.9%	6	18.8%	42	73.7%	67	63.2%	37	32.7%
	1	115	52.5%	37	82.2%	33	80.5%	4	9.1%	26	81.3%	15	26.3%	39	36.8%	76	67.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Upper circumoral striae Shape	0	104	47.5%	8	17.8%	8	19.5%	40	90.9%	6	18.8%	42	73.7%	67	63.2%	37	32.7%
	1	115	52.5%	37	82.2%	33	80.5%	4	9.1%	26	81.3%	15	26.3%	39	36.8%	76	67.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Upper circumoral striae Inter-line relations	0	104	47.5%	8	17.8%	8	19.5%	40	90.9%	6	18.8%	42	73.7%	67	63.2%	37	32.7%
	1	115	52.5%	37	82.2%	33	80.5%	4	9.1%	26	81.3%	15	26.3%	39	36.8%	76	67.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 82: Table showing frequency distribution of scores for lower circumoral striae s line prominence, lower circumoral striae s line orientation, lower circumoral striae s quantity, lower circumoral striae s distribution, lower circumoral striae s shape and lower circumoral striae s inter-line relations among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Lower circumoral striae		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Lower circumoral striae Line prominence	0	104	47.5%	8	17.8%	8	19.5%	40	90.9%	6	18.8%	42	73.7%	67	63.2%	37	32.7%
	1	115	52.5%	37	82.2%	33	80.5%	4	9.1%	26	81.3%	15	26.3%	39	36.8%	76	67.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Lower circumoral striae Line orientation	0	103	47.0%	8	17.8%	8	19.5%	40	90.9%	5	15.6%	42	73.7%	66	62.3%	37	32.7%
	1	116	53.0%	37	82.2%	33	80.5%	4	9.1%	27	84.4%	15	26.3%	40	37.7%	76	67.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Lower circumoral striae Quantity	0	103	47.0%	8	17.8%	8	19.5%	40	90.9%	5	15.6%	42	73.7%	66	62.3%	37	32.7%
	1	116	53.0%	37	82.2%	33	80.5%	4	9.1%	27	84.4%	15	26.3%	40	37.7%	76	67.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Lower circumoral striae Distribution	0	103	47.0%	8	17.8%	8	19.5%	40	90.9%	5	15.6%	42	73.7%	66	62.3%	37	32.7%
	1	116	53.0%	37	82.2%	33	80.5%	4	9.1%	27	84.4%	15	26.3%	40	37.7%	76	67.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Lower circumoral striae Shape	0	103	47.0%	8	17.8%	8	19.5%	40	90.9%	5	15.6%	42	73.7%	66	62.3%	37	32.7%
	1	116	53.0%	37	82.2%	33	80.5%	4	9.1%	27	84.4%	15	26.3%	40	37.7%	76	67.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Lower circumoral striae Inter-line relations	0	103	47.0%	8	17.8%	8	19.5%	40	90.9%	5	15.6%	42	73.7%	66	62.3%	37	32.7%
	1	116	53.0%	37	82.2%	33	80.5%	4	9.1%	27	84.4%	15	26.3%	40	37.7%	76	67.3%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 83: Table showing frequency distribution of scores for mentolabial sulcus line prominence, mentolabial sulcus length and mentolabial sulcus shape among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Mentolabial Sulcus		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Mentolabial Sulcus Line prominence	0	109	49.8%	8	17.8%	9	22.0%	41	93.2%	6	18.8%	45	78.9%	70	66.0%	39	34.5%
	1	88	40.2%	28	62.2%	24	58.5%	2	4.5%	23	71.9%	11	19.3%	31	29.2%	57	50.4%
	2	15	6.8%	7	15.6%	6	14.6%	0	0.0%	2	6.3%	0	0.0%	3	2.8%	12	10.6%
	3	2	0.9%	1	2.2%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	0	0.0%	2	1.8%
	4	5	2.3%	1	2.2%	2	4.9%	1	2.3%	0	0.0%	1	1.8%	2	1.9%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Mentolabial Sulcus Length	0	109	49.8%	8	17.8%	9	22.0%	41	93.2%	6	18.8%	45	78.9%	70	66.0%	39	34.5%
	1	88	40.2%	28	62.2%	24	58.5%	2	4.5%	23	71.9%	11	19.3%	31	29.2%	57	50.4%
	2	3	1.4%	1	2.2%	1	2.4%	0	0.0%	1	3.1%	0	0.0%	2	1.9%	1	0.9%
	3	5	2.3%	3	6.7%	1	2.4%	0	0.0%	1	3.1%	0	0.0%	1	0.9%	4	3.5%
	4	14	6.4%	5	11.1%	6	14.6%	1	2.3%	1	3.1%	1	1.8%	2	1.9%	12	10.6%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Mentolabial Sulcus Shape	0	109	49.8%	8	17.8%	9	22.0%	41	93.2%	6	18.8%	45	78.9%	70	66.0%	39	34.5%
	1	89	40.6%	28	62.2%	25	61.0%	2	4.5%	23	71.9%	11	19.3%	31	29.2%	58	51.3%
	2	12	5.5%	7	15.6%	4	9.8%	0	0.0%	1	3.1%	0	0.0%	3	2.8%	9	8.0%
	3	7	3.2%	2	4.4%	3	7.3%	0	0.0%	1	3.1%	1	1.8%	1	0.9%	6	5.3%
	4	1	0.5%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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5	1	0.5%	0	0.0%	0	0.0%	1	2.3%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 84: Table showing frequency distribution of scores for right nasolabial crease/folds line prominence, right nasolabial crease/folds line orientation, right nasolabial crease/folds quantity, right nasolabial crease/folds distribution, right nasolabial crease/folds shape and right nasolabial crease/folds inter-line relations among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right Nasolabial Crease/ Folds		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Nasolabial Crease/Folds Line prominence	0	134	61.2%	7	15.6%	7	17.1%	34	77.3%	30	93.8%	56	98.2%	76	71.7%	58	51.3%
	1	65	29.7%	30	66.7%	25	61.0%	8	18.2%	2	6.3%	0	0.0%	24	22.6%	41	36.3%
	2	8	3.7%	5	11.1%	3	7.3%	0	0.0%	0	0.0%	0	0.0%	3	2.8%	5	4.4%
	3	10	4.6%	3	6.7%	4	9.8%	2	4.5%	0	0.0%	1	1.8%	2	1.9%	8	7.1%
	4	2	0.9%	0	0.0%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Nasolabial Crease/Folds Line orientation	0	134	61.2%	7	15.6%	7	17.1%	34	77.3%	30	93.8%	56	98.2%	76	71.7%	58	51.3%
	1	65	29.7%	30	66.7%	25	61.0%	8	18.2%	2	6.3%	0	0.0%	24	22.6%	41	36.3%
	5	20	9.1%	8	17.8%	9	22.0%	2	4.5%	0	0.0%	1	1.8%	6	5.7%	14	12.4%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	134	61.2%	7	15.6%	7	17.1%	34	77.3%	30	93.8%	56	98.2%	76	71.7%	58	51.3%

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Right Nasolabial Crease/Folds Quantity	1	65	29.7%	30	66.7%	25	61.0%	8	18.2%	2	6.3%	0	0.0%	24	22.6%	41	36.3%
	2	20	9.1%	8	17.8%	9	22.0%	2	4.5%	0	0.0%	1	1.8%	6	5.7%	14	12.4%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Nasolabial Crease/Folds Distribution	0	135	61.6%	7	15.6%	7	17.1%	35	79.5%	30	93.8%	56	98.2%	76	71.7%	59	52.2%
	1	65	29.7%	30	66.7%	25	61.0%	8	18.2%	2	6.3%	0	0.0%	24	22.6%	41	36.3%
	2	6	2.7%	2	4.4%	2	4.9%	1	2.3%	0	0.0%	1	1.8%	2	1.9%	4	3.5%
	3	6	2.7%	1	2.2%	5	12.2%	0	0.0%	0	0.0%	0	0.0%	2	1.9%	4	3.5%
	4	7	3.2%	5	11.1%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	2	1.9%	5	4.4%
Right Nasolabial Crease/Folds Shape	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	135	61.6%	7	15.6%	7	17.1%	35	79.5%	30	93.8%	56	98.2%	76	71.7%	59	52.2%
	1	65	29.7%	30	66.7%	25	61.0%	8	18.2%	2	6.3%	0	0.0%	24	22.6%	41	36.3%
	2	16	7.3%	5	11.1%	9	22.0%	1	2.3%	0	0.0%	1	1.8%	5	4.7%	11	9.7%
	4	3	1.4%	3	6.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	2	1.8%
Right Nasolabial Crease/Folds Inter-line relations	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	134	61.2%	7	15.6%	7	17.1%	34	77.3%	30	93.8%	56	98.2%	76	71.7%	58	51.3%
	1	85	38.8%	38	84.4%	34	82.9%	10	22.7%	2	6.3%	1	1.8%	30	28.3%	55	48.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 85: Table showing frequency distribution of scores for left nasolabial crease/folds line prominence, left nasolabial crease/folds line orientation, left nasolabial crease/folds quantity, left nasolabial crease/folds distribution, left nasolabial crease/folds shape and left nasolabial crease/folds inter-line relations among Black African males aged 18 to 35 from the Wits Face Database (WFD).

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		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Left Nasolabial Crease/ Folds		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Left Nasolabial Crease/Folds Line prominence	0	132	60.3%	7	15.6%	39	95.1%	44	100.0%	5	15.6%	37	64.9%	79	74.5%	53	46.9%
	1	59	26.9%	28	62.2%	0	0.0%	0	0.0%	17	53.1%	14	24.6%	19	17.9%	40	35.4%
	2	13	5.9%	6	13.3%	0	0.0%	0	0.0%	6	18.8%	1	1.8%	5	4.7%	8	7.1%
	3	13	5.9%	4	8.9%	2	4.9%	0	0.0%	3	9.4%	4	7.0%	3	2.8%	10	8.8%
	4	2	0.9%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	1	1.8%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Nasolabial Crease/Folds Line orientation	0	133	60.7%	7	15.6%	40	97.6%	44	100.0%	5	15.6%	37	64.9%	79	74.5%	54	47.8%
	1	59	26.9%	28	62.2%	0	0.0%	0	0.0%	17	53.1%	14	24.6%	19	17.9%	40	35.4%
	5	27	12.3%	10	22.2%	1	2.4%	0	0.0%	10	31.3%	6	10.5%	8	7.5%	19	16.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	132	60.3%	7	15.6%	39	95.1%	44	100.0%	5	15.6%	37	64.9%	79	74.5%	53	46.9%
Left Nasolabial Crease/Folds Quantity	1	59	26.9%	28	62.2%	0	0.0%	0	0.0%	17	53.1%	14	24.6%	19	17.9%	40	35.4%
	2	28	12.8%	10	22.2%	2	4.9%	0	0.0%	10	31.3%	6	10.5%	8	7.5%	20	17.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	134	61.2%	7	15.6%	41	100.0%	44	100.0%	5	15.6%	37	64.9%	79	74.5%	55	48.7%
Left Nasolabial Crease/Folds Distribution	1	59	26.9%	28	62.2%	0	0.0%	0	0.0%	17	53.1%	14	24.6%	19	17.9%	40	35.4%
	2	11	5.0%	3	6.7%	0	0.0%	0	0.0%	4	12.5%	4	7.0%	3	2.8%	8	7.1%
	3	5	2.3%	1	2.2%	0	0.0%	0	0.0%	3	9.4%	1	1.8%	2	1.9%	3	2.7%
	4	10	4.6%	6	13.3%	0	0.0%	0	0.0%	3	9.4%	1	1.8%	3	2.8%	7	6.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	132	60.3%	7	15.6%	39	95.1%	44	100.0%	5	15.6%	37	64.9%	79	74.5%	53	46.9%

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Left Nasolabial Crease/Folds Shape	0	133	60.7%	7	15.6%	40	97.6%	44	100.0%	5	15.6%	37	64.9%	79	74.5%	54	47.8%
	1	59	26.9%	28	62.2%	0	0.0%	0	0.0%	17	53.1%	14	24.6%	19	17.9%	40	35.4%
	2	20	9.1%	6	13.3%	1	2.4%	0	0.0%	9	28.1%	4	7.0%	6	5.7%	14	12.4%
	4	4	1.8%	4	8.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.9%	2	1.8%
	6	3	1.4%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	2	3.5%	0	0.0%	3	2.7%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Nasolabial Crease/Folds Inter-line relations	0	133	60.7%	7	15.6%	40	97.6%	44	100.0%	5	15.6%	37	64.9%	79	74.5%	54	47.8%
	1	86	39.3%	38	84.4%	1	2.4%	0	0.0%	27	84.4%	20	35.1%	27	25.5%	59	52.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 86: Table showing frequency distribution of scores for right marionette lines prominence, right marionette lines shape, left marionette lines prominence and left marionette lines shape among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right and Left Marionette Lines		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Marionette Lines prominence	0	112	51.1%	5	11.1%	3	7.3%	19	43.2%	30	93.8%	55	96.5%	59	55.7%	53	46.9%
	1	107	48.9%	40	88.9%	38	92.7%	25	56.8%	2	6.3%	2	3.5%	47	44.3%	60	53.1%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Marionette Lines Shape	0	112	51.1%	5	11.1%	3	7.3%	19	43.2%	30	93.8%	55	96.5%	59	55.7%	53	46.9%
	1	107	48.9%	40	88.9%	38	92.7%	25	56.8%	2	6.3%	2	3.5%	47	44.3%	60	53.1%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Marionette Lines prominence	0	102	46.6%	5	11.1%	40	97.6%	43	97.7%	2	6.3%	12	21.1%	59	55.7%	43	38.1%
	1	117	53.4%	40	88.9%	1	2.4%	1	2.3%	30	93.8%	45	78.9%	47	44.3%	70	61.9%

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	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	102	46.6%	5	11.1%	40	97.6%	43	97.7%	2	6.3%	12	21.1%	59	55.7%	43	38.1%
Left Marionette Lines Shape	1	117	53.4%	40	88.9%	1	2.4%	1	2.3%	30	93.8%	45	78.9%	47	44.3%	70	61.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 87: Table showing frequency distribution of scores for cleft chin line prominence and cleft chin line length among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Cleft Chin		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Cleft Chin Line prominence	0	103	47.0%	6	13.3%	6	14.6%	41	93.2%	5	15.6%	45	78.9%	65	61.3%	38	33.6%
	1	111	50.7%	39	86.7%	32	78.0%	3	6.8%	25	78.1%	12	21.1%	41	38.7%	70	61.9%
	2	1	0.5%	0	0.0%	1	2.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	4	4	1.8%	0	0.0%	2	4.9%	0	0.0%	2	6.3%	0	0.0%	0	0.0%	4	3.5%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Cleft Chin Line length	0	103	47.0%	6	13.3%	6	14.6%	41	93.2%	5	15.6%	45	78.9%	65	61.3%	38	33.6%
	1	111	50.7%	39	86.7%	32	78.0%	3	6.8%	25	78.1%	12	21.1%	41	38.7%	70	61.9%
	2	1	0.5%	0	0.0%	0	0.0%	0	0.0%	1	3.1%	0	0.0%	0	0.0%	1	0.9%
	3	2	0.9%	0	0.0%	1	2.4%	0	0.0%	1	3.1%	0	0.0%	0	0.0%	2	1.8%
	4	2	0.9%	0	0.0%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Table 88: Table showing frequency distribution of scores for right buccal creases/folds line prominence, right buccal creases/folds line orientation, right buccal creases/folds quantity, right buccal creases/folds distribution, right buccal creases/folds shape and right buccal creases/folds inter-line relations among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Right Buccal Creases/Folds		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Right Buccal Creases/Folds Line prominence	0	91	41.6%	2	4.4%	2	4.9%	2	4.5%	30	93.8%	55	96.5%	46	43.4%	45	39.8%
	1	127	58.0%	42	93.3%	39	95.1%	42	95.5%	2	6.3%	2	3.5%	60	56.6%	67	59.3%
	2	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Buccal Creases/Folds Line orientation	0	91	41.6%	2	4.4%	2	4.9%	2	4.5%	30	93.8%	55	96.5%	46	43.4%	45	39.8%
	1	127	58.0%	42	93.3%	39	95.1%	42	95.5%	2	6.3%	2	3.5%	60	56.6%	67	59.3%
	5	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Buccal Creases/Folds Quantity	0	91	41.6%	2	4.4%	2	4.9%	2	4.5%	30	93.8%	55	96.5%	46	43.4%	45	39.8%
	1	127	58.0%	42	93.3%	39	95.1%	42	95.5%	2	6.3%	2	3.5%	60	56.6%	67	59.3%
	2	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Buccal Creases/Folds Distribution	0	91	41.6%	2	4.4%	2	4.9%	2	4.5%	30	93.8%	55	96.5%	46	43.4%	45	39.8%
	1	127	58.0%	42	93.3%	39	95.1%	42	95.5%	2	6.3%	2	3.5%	60	56.6%	67	59.3%
	4	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

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Right Buccal Creases/Folds Shape	0	91	41.6%	2	4.4%	2	4.9%	2	4.5%	30	93.8%	55	96.5%	46	43.4%	45	39.8%
	1	127	58.0%	42	93.3%	39	95.1%	42	95.5%	2	6.3%	2	3.5%	60	56.6%	67	59.3%
	2	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Right Buccal Creases/Folds Inter-line relations	0	91	41.6%	2	4.4%	2	4.9%	2	4.5%	30	93.8%	55	96.5%	46	43.4%	45	39.8%
	1	128	58.4%	43	95.6%	39	95.1%	42	95.5%	2	6.3%	2	3.5%	60	56.6%	68	60.2%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 89: Table showing frequency distribution of scores for left buccal creases/folds line prominence, left buccal creases/folds line orientation, left buccal creases/folds quantity, left buccal creases/folds distribution, left buccal creases/folds shape and left buccal creases/folds inter-line relations among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Left Buccal Creases/Folds		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Left Buccal Creases/Folds Line prominence	0	92	42.0%	3	6.7%	41	100.0%	44	100.0%	1	3.1%	3	5.3%	50	47.2%	42	37.2%
	1	126	57.5%	41	91.1%	0	0.0%	0	0.0%	31	96.9%	54	94.7%	56	52.8%	70	61.9%
	2	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Buccal Creases/Folds Line orientation	0	92	42.0%	3	6.7%	41	100.0%	44	100.0%	1	3.1%	3	5.3%	50	47.2%	42	37.2%
	1	126	57.5%	41	91.1%	0	0.0%	0	0.0%	31	96.9%	54	94.7%	56	52.8%	70	61.9%
	5	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Buccal Creases/Folds Quantity	0	92	42.0%	3	6.7%	41	100.0%	44	100.0%	1	3.1%	3	5.3%	50	47.2%	42	37.2%
	1	126	57.5%	41	91.1%	0	0.0%	0	0.0%	31	96.9%	54	94.7%	56	52.8%	70	61.9%

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Left Buccal Creases/Folds Distribution	2	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	92	42.0%	3	6.7%	41	100.0%	44	100.0%	1	3.1%	3	5.3%	50	47.2%	42	37.2%
	1	126	57.5%	41	91.1%	0	0.0%	0	0.0%	31	96.9%	54	94.7%	56	52.8%	70	61.9%
	4	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
Left Buccal Creases/Folds Shape	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	0	92	42.0%	3	6.7%	41	100.0%	44	100.0%	1	3.1%	3	5.3%	50	47.2%	42	37.2%
	1	126	57.5%	41	91.1%	0	0.0%	0	0.0%	31	96.9%	54	94.7%	56	52.8%	70	61.9%
	2	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Left Buccal Creases/Folds Inter-line relations	0	92	42.0%	3	6.7%	41	100.0%	44	100.0%	1	3.1%	3	5.3%	50	47.2%	42	37.2%
	1	127	58.0%	42	93.3%	0	0.0%	0	0.0%	31	96.9%	54	94.7%	56	52.8%	71	62.8%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%

Table 90: Table showing frequency distribution of scores for wrinkles on neck line prominence, wrinkles on neck line orientation, wrinkles on neck quantity, wrinkles on neck distribution, wrinkles on neck shape and wrinkles on neck Inter-line relations among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
Wrinkles on Neck		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Wrinkles on Neck Line prominence	0	124	56,6%	22	48,9%	15	36,6%	34	77,3%	14	43,8%	39	68,4%	77	72,6%	47	41,6%
	1	50	22,8%	12	26,7%	12	29,3%	6	13,6%	6	18,8%	14	24,6%	17	16,0%	33	29,2%
	2	15	6,8%	4	8,9%	3	7,3%	2	4,5%	4	12,5%	2	3,5%	5	4,7%	10	8,8%

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Wrinkles on Neck Line orientation	3	27	12,3%	4	8,9%	11	26,8%	2	4,5%	8	25,0%	2	3,5%	7	6,6%	20	17,7%
	4	3	1,4%	3	6,7%	0	0,0%	0	0,0%	0	0,0%	0	0,0%	0	0,0%	3	2,7%
	Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	57	100,0%	106	100,0%	113	100,0%
	0	124	56,6%	22	48,9%	15	36,6%	34	77,3%	14	43,8%	39	68,4%	77	72,6%	47	41,6%
	1	49	22,4%	12	26,7%	12	29,3%	6	13,6%	6	18,8%	13	22,8%	16	15,1%	33	29,2%
	2	45	20,5%	11	24,4%	14	34,1%	3	6,8%	12	37,5%	5	8,8%	12	11,3%	33	29,2%
	4	1	0,5%	0	0,0%	0	0,0%	1	2,3%	0	0,0%	0	0,0%	1	0,9%	0	0,0%
	Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	57	100,0%	106	100,0%	113	100,0%
	0	126	57,5%	22	48,9%	16	39,0%	35	79,5%	14	43,8%	39	68,4%	78	73,6%	48	42,5%
	1	49	22,4%	12	26,7%	12	29,3%	6	13,6%	6	18,8%	13	22,8%	16	15,1%	33	29,2%
Wrinkles on Neck Quantity	2	1	0,5%	0	0,0%	0	0,0%	0	0,0%	1	3,1%	0	0,0%	0	0,0%	1	0,9%
	3	4	1,8%	2	4,4%	2	4,9%	0	0,0%	0	0,0%	0	0,0%	2	1,9%	2	1,8%
	4	4	1,8%	0	0,0%	2	4,9%	0	0,0%	2	6,3%	0	0,0%	0	0,0%	4	3,5%
	5	35	16,0%	9	20,0%	9	22,0%	3	6,8%	9	28,1%	5	8,8%	10	9,4%	25	22,1%
	Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	57	100,0%	106	100,0%	113	100,0%
	0	124	56,6%	22	48,9%	15	36,6%	34	77,3%	14	43,8%	39	68,4%	77	72,6%	47	41,6%
Wrinkles on Neck Distribution	1	49	22,4%	12	26,7%	12	29,3%	6	13,6%	6	18,8%	13	22,8%	16	15,1%	33	29,2%
	2	22	10,0%	9	20,0%	3	7,3%	1	2,3%	5	15,6%	4	7,0%	3	2,8%	19	16,8%
	3	24	11,0%	2	4,4%	11	26,8%	3	6,8%	7	21,9%	1	1,8%	10	9,4%	14	12,4%
	Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	57	100,0%	106	100,0%	113	100,0%
Wrinkles on Neck Shape	0	124	56,6%	22	48,9%	15	36,6%	34	77,3%	14	43,8%	39	68,4%	77	72,6%	47	41,6%
	1	49	22,4%	12	26,7%	12	29,3%	6	13,6%	6	18,8%	13	22,8%	16	15,1%	33	29,2%

APPENDIX C: Frequency Tables

Wrinkles on Neck Inter-line relations	2	6	2,7%	1	2,2%	1	2,4%	1	2,3%	1	3,1%	2	3,5%	3	2,8%	3	2,7%
	4	29	13,2%	8	17,8%	11	26,8%	3	6,8%	7	21,9%	0	0,0%	7	6,6%	22	19,5%
	5	11	5,0%	2	4,4%	2	4,9%	0	0,0%	4	12,5%	3	5,3%	3	2,8%	8	7,1%
	Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	57	100,0%	106	100,0%	113	100,0%
	0	124	56,6%	22	48,9%	15	36,6%	34	77,3%	14	43,8%	39	68,4%	77	72,6%	47	41,6%
	1	50	22,8%	12	26,7%	12	29,3%	6	13,6%	7	21,9%	13	22,8%	16	15,1%	34	30,1%
	2	32	14,6%	9	20,0%	12	29,3%	2	4,5%	6	18,8%	3	5,3%	7	6,6%	25	22,1%
	4	4	1,8%	0	0,0%	0	0,0%	2	4,5%	2	6,3%	0	0,0%	2	1,9%	2	1,8%
	5	9	4,1%	2	4,4%	2	4,9%	0	0,0%	3	9,4%	2	3,5%	4	3,8%	5	4,4%
	Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	57	100,0%	106	100,0%	113	100,0%

Table 91: Table showing frequency distribution of scores for scars, skin marks, facial piercing, ear piercing, makeup, facial tattoo presence and neck tattoo presence among Black African males aged 18 to 35 from the Wits Face Database (WFD).

		Total		Anterior		Right 45°		Right Lateral		Left 45°		Left Lateral		CCTV		WT	
		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Scars	0	45	20.5%	8	17.8%	8	19.5%	13	29.5%	6	18.8%	10	17.5%	40	37.7%	5	4.4%
	1	126	57.5%	24	53.3%	22	53.7%	28	63.6%	17	53.1%	35	61.4%	56	52.8%	70	61.9%
	2	48	21.9%	13	28.9%	11	26.8%	3	6.8%	9	28.1%	12	21.1%	10	9.4%	38	33.6%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
Skin Marks	0	36	16.4%	7	15.6%	5	12.2%	11	25.0%	3	9.4%	10	17.5%	33	31.1%	3	2.7%
	1	133	60.7%	27	60.0%	27	65.9%	24	54.5%	22	68.8%	33	57.9%	63	59.4%	70	61.9%
	2	6	2.7%	1	2.2%	2	4.9%	3	6.8%	0	0.0%	0	0.0%	0	0.0%	6	5.3%

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		3	17	7.8%	3	6.7%	2	4.9%	1	2.3%	5	15.6%	6	10.5%	2	1.9%	15	13.3%
		4	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
		6	2	0.9%	0	0.0%	2	4.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.8%
		9	1	0.5%	1	2.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%	0	0.0%
		10	23	10.5%	5	11.1%	3	7.3%	5	11.4%	2	6.3%	8	14.0%	6	5.7%	17	15.0%
	Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%	
	Facial piercing	0	32	14.6%	6	13.3%	5	12.2%	8	18.2%	3	9.4%	10	17.5%	31	29.2%	1	0.9%
		1	187	85.4%	39	86.7%	36	87.8%	36	81.8%	29	90.6%	47	82.5%	75	70.8%	112	99.1%
		Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	Ear piercing	0	54	24.7%	15	33.3%	9	22.0%	12	27.3%	6	18.8%	12	21.1%	52	49.1%	2	1.8%
		1	147	67.1%	28	62.2%	23	56.1%	30	68.2%	24	75.0%	42	73.7%	49	46.2%	98	86.7%
		2	18	8.2%	2	4.4%	9	22.0%	2	4.5%	2	6.3%	3	5.3%	5	4.7%	13	11.5%
		Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	Makeup	0	48	21.9%	10	22.2%	8	19.5%	12	27.3%	6	18.8%	12	21.1%	48	45.3%	0	0.0%
		1	171	78.1%	35	77.8%	33	80.5%	32	72.7%	26	81.3%	45	78.9%	58	54.7%	113	100.0%
		Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	100.0%
	Facial tattoo presence	0	28	12.8%	5	11.1%	4	9.8%	8	18.2%	2	6.3%	9	15.8%	28	26.4%	0	0
		1	191	87.2%	40	88.9%	37	90.2%	36	81.8%	30	93.8%	48	84.2%	78	73.6%	113	113
		Total	219	100.0%	45	100.0%	41	100.0%	44	100.0%	32	100.0%	57	100.0%	106	100.0%	113	113
	Neck tattoo presence	0	94	42,9%	17	37,8%	14	34,1%	24	54,5%	12	37,5%	27	47,4%	67	63,2%	27	23,9%
		1	125	57,1%	28	62,2%	27	65,9%	20	45,5%	20	62,5%	30	52,6%	39	36,8%	86	76,1%
		Total	219	100,0%	45	100,0%	41	100,0%	44	100,0%	32	100,0%	57	100,0%	106	100,0%	113	100,0%

APPENDIX C: Frequency Tables

Table 92: Table showing the number of zeros or exclusions under the 50 CCTV and 50 WT image capture conditions for the target images

Traits	CCTV frequency of zeros	WT frequency of zeros
Skin Texture	8	0
Skin luminance	2	0
Cranial Vault Lateral (profile)	11	11
Face Frontal (portrait) contour	39	38
Vertical face proportions	0	0
Vertical eye position	0	0
Forehead hairline shape	18	18
Hairline angulation	30	27
Patterned baldness classifications (Hairline Right Side)	19	18
Patterned baldness classifications (Hairline Left Side)	24	16
Cranial Baldness Pattern Shape	5	0
Forehead Slope and contour	9	8
Brow ridge continuity	15	13
Right Eyebrow shape	33	27
Right Eyebrow Hair Density and distribution	36	26
Right Eyebrow length relative to eye	38	29
Left Eyebrow Shape	37	28
Left Eyebrow Hair density and distribution	39	22
Left Eyebrow Length relative to eye	43	32

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Overall Eyebrows symmetry	43	41
Right Eye Fissure Shape	45	27
Right Eye fissure angulation	44	27
Left Eye Fissure Shape	45	29
Left Eye Fissure Angulation	45	29
Right Upper Eyelid Eyelash density	49	13
Right Upper Eyelid Epicanthus presence	50	19
Left Upper Eyelid Eyelash density	49	9
Left Upper Eyelid Epicanthus presence	50	20
Right Lower Eyelid Eyelash density	49	15
Left Lower Eyelid Eyelash density	49	11
Right Eye Nasal Scleral triangle shape	46	28
Right Eye Lateral Scleral triangle shape	46	28
Right Eye Sclera colour	46	20
Left Eye Nasal Scleral triangle shape	47	28
Left Eye Lateral Scleral triangle shape	46	26
Left Eye Sclera colour	46	18
Right Iris colour	45	18
Right Iris Pupil ring presence	50	42
Left Iris colour	45	16
Left Iris Pupil ring presence	50	42
Right Eye Medial Canthus Caruncle prominence	50	27

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Left Eye Medial Canthus Caruncle prominence	50	28
Eye position symmetry (Asymmetry Between Right and Left Eyes)	30	21
Right Cheek dimple presence	19	21
Left Cheek dimple presence	22	18
Symmetry of cheeks	40	38
Overall nose shape (profile)	34	12
Nasal Root Shape	30	2
Nasal Dorsum Shape (frontal)	40	35
Nasal Dorsum Deviation	12	3
Nasal Apex Shape	3	0
Nasal Base Deviation	36	24
Nasal Alae Shape (frontal)	38	23
Nasal Alae Symmetry of attachment	36	25
Nostrils Shape	50	10
Nasal Columella Deviation	50	14
Overall Right Ear shape (frontal)	40	39
Overall Right Ear shape (lateral)	29	32
Overall Left Ear shape (frontal)	40	39
Overall Left Ear shape (lateral)	34	29
Right Ear Helix size	42	30
Right Ear Helix shape	42	30
Left Ear Helix size	47	27

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Left Ear Helix shape	45	27
Right Ear Antihelix shape	42	30
Left Ear Antihelix shape	47	28
Right Ear Triangular fossa shape	50	32
Left Ear Triangular fossa shape	50	29
Right Ear Scaphoid fossa shape	49	33
Right Ear Fossa depth	49	33
Left Ear Scaphoid fossa shape	50	34
Left Ear Fossa depth	50	34
Right Ear Concha (Superior) depth	49	32
Right Ear Concha (Inferior) depth	49	32
Left Ear Concha (Superior) depth	50	29
Left Ear Concha (Inferior) depth	50	29
Right Ear Tragus shape	49	31
Left Ear Tragus shape	50	28
Right Ear Antitragus shape	50	32
Left Ear Antitragus shape	50	29
Right Ear Anterior knob	50	32
Left Ear Anterior knob	49	29
Right Ear Lobule shape	49	32
Left Ear Lobule shape	49	29
Right Ear abnormality	50	32

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Left Ear abnormality	50	29
Philtrum shape	49	22
Overall mouth shape	47	23
Upper Lip Vermilion border shape	50	20
Upper Lip Symmetry	48	31
Lower Lip Vermilion border shape	49	19
Lower Lip Symmetry	48	31
Lip fissure shape	38	25
Overall Dental occlusion classification	33	21
Alignment of teeth	33	21
Dental condition and modifications	33	21
Mouth abnormality presence	49	19
Chin shape (portrait)	30	29
Chin Symmetry	41	32
Jawline shape	0	1
Neck shape (frontal)	49	37
Laryngeal Prominence (Adam's Apple) Shape	43	9
Facial Hair Above Upper Lip shape	36	13
Facial Hair Above Upper Lip density and distribution	42	14
Facial Hair Above Upper Lip Colour variation	42	12
Facial Hair Above Upper Lip Outline definition	36	13
Facial Hair Above Upper Lip Surrounding continuity	34	7

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Facial Hair Below Lower Lip shape	25	12
Facial Hair Below Lower Lip density and distribution	25	11
Facial Hair Below Lower Lip Colour variation	25	11
Facial Hair Below Lower Lip Outline definition	25	11
Facial Hair Below Lower Lip Surrounding continuity	25	11
Facial Hair on Right Side shape	18	22
Facial Hair on Right Side density and distribution	19	22
Facial Hair on Right Side Colour variation	19	22
Facial Hair on Right Side Outline definition	18	22
Facial Hair on Right Side Surrounding continuity	18	22
Facial Hair on Left Side shape	22	21
Facial Hair on Left Side density and distribution	22	21
Facial Hair on Left Side Colour variation	23	21
Facial Hair on Left Side Outline definition	22	21
Facial Hair on Left Side Surrounding continuity	22	20
Facial Hair on Chin shape	23	12
Facial Hair on Chin density and distribution	25	10
Facial Hair on Chin Colour variation	27	7
Facial Hair on Chin Outline definition	22	10
Facial Hair on Chin Surrounding continuity	21	6
Facial Hair on Neck, below Chin/Jawline shape	15	4
Facial Hair on Neck, below Chin/Jawline density and distribution	15	4

APPENDIX C: Frequency Tables

Facial Hair on Neck, below Chin/Jawline Colour variation	15	4
Facial Hair on Neck, below Chin/Jawline Outline definition	15	4
Facial Hair on Neck, below Chin/Jawline Surrounding continuity	15	4
Forehead Creases (Wrinkles) Line orientation	30	16
Forehead Creases (Wrinkles) Distribution	30	16
Forehead Creases (Wrinkles) Shape	30	16
Forehead Creases (Wrinkles) Inter-line relations	30	16
Vertical Glabellar Line(s) orientation	40	18
Vertical Glabellar Line(s) Distribution	40	18
Vertical Glabellar Line(s) Shape	40	18
Vertical Glabellar Line(s) Inter-line relations	40	18
Nasion Crease Line orientation	40	18
Nasion Crease Distribution	40	18
Nasion Crease Shape	40	18
Nasion Crease Inter-line relations	40	18
Bifid Nose Crease Shape	38	16
Wrinkles Adjacent to Right Eye (Crow's Feet) Line orientation	49	21
Wrinkles Adjacent to Right Eye (Crow's Feet) Distribution	49	21
Wrinkles Adjacent to Right Eye (Crow's Feet) Shape	49	21
Wrinkles Adjacent to Right Eye (Crow's Feet) Inter-line relations	49	21
Wrinkles Adjacent to Left Eye (Crow's Feet) Line orientation	49	18
Wrinkles Adjacent to Left Eye (Crow's Feet) Distribution	49	18

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Wrinkles Adjacent to Left Eye (Crow's Feet) Shape	49	18
Wrinkles Adjacent to Left Eye (Crow's Feet) Inter-line relations	49	18
Right Lower Lid Crease Shape	49	23
Left Lower Lid Crease Shape	49	19
Right Infraorbital Creases Line orientation	46	26
Right Infraorbital Creases Distribution	46	26
Right Infraorbital Creases Shape	46	26
Right Infraorbital Creases Inter-line relations	46	26
Left Infraorbital Creases Line orientation	46	21
Left Infraorbital Creases Distribution	46	21
Left Infraorbital Creases Shape	46	21
Left Infraorbital Creases Inter-line relations	46	21
Upper Lip Creases Line orientation	47	17
Upper Lip Creases Distribution	47	17
Upper Lip Creases Shape	47	17
Upper Lip Creases Inter-line relations	47	17
Lower Lip Creases Line orientation	46	17
Lower Lip Creases Distribution	46	17
Lower Lip Creases Shape	46	17
Lower Lip Creases Inter-line relations	46	17
Mentolabial Sulcus Shape	47	18
Right Nasolabial Crease/Folds Line orientation	45	26

APPENDIX C: Frequency Tables

Right Nasolabial Crease/Folds Distribution	45	26
Right Nasolabial Crease/Folds Shape	45	26
Right Nasolabial Crease/Folds Inter-line relations	45	26
Left Nasolabial Crease/Folds Line orientation	46	25
Left Nasolabial Crease/Folds Distribution	46	25
Left Nasolabial Crease/Folds Shape	46	25
Left Nasolabial Crease/Folds Inter-line relations	46	25
Right Marionette Lines Shape	36	24
Left Marionette Lines Shape	37	19
Right Buccal Creases/Folds Line orientation	24	20
Right Buccal Creases/Folds Distribution	24	20
Right Buccal Creases/Folds Shape	24	20
Right Buccal Creases/Folds Inter-line relations	24	20
Left Buccal Creases/Folds (Cheek to Chin) Line orientation	27	18
Left Buccal Creases/Folds (Cheek to Chin) Distribution	27	18
Left Buccal Creases/Folds (Cheek to Chin) Shape	27	18
Left Buccal Creases/Folds (Cheek to Chin) Inter-line relations	27	18
Wrinkles on Neck Line orientation	48	19
Wrinkles on Neck Distribution	48	19
Wrinkles on Neck Shape	48	19
Wrinkles on Neck Inter-line relations	48	19
Scars	40	1

APPENDIX C: Frequency Tables

Skin Marks	33	1
Facial piercing	31	0
Ear piercing	49	1
Make Up	48	0
Facial tattoo presence	28	0
Neck tattoo presence	37	7
Skin colour	0	0
Cranial Vault Frontal (portrait) contour	39	37
Cranial Vault Frontal (portrait) relative width	40	39
Midfacial lateral (profile) contour	25	28
Relative forehead height	24	17
Relative forehead width	25	17
Brow ridge prominence	1	0
Right Eyebrow arch prominence	33	22
Right eyebrow overall thickness	33	26
Left Eyebrow arch prominence	37	24
Left eyebrow overall thickness	37	21
Conjoined eyebrows ("unibrow") density	28	16
Conjoined eyebrows shape	28	16
Median distance between eyes	39	36
Right Upper eyelid Prominence	50	12
Right Upper Eyelid protrusion	49	11

APPENDIX C: Frequency Tables

Right Upper Eyelid Superior palpebral fold	50	11
Right Upper Eyelid Position	49	13
Right Upper Eyelid Eyelash length	50	11
Left Upper Eyelid Prominence	50	9
Left Upper Eyelid protrusion	49	9
Left Upper Eyelid Superior palpebral fold	50	9
Left Upper Eyelid Position	49	11
Left Upper Eyelid Eyelash length	50	9
Right Lower Eyelid Prominence	50	13
Right Lower Eyelid protrusion	49	12
Right Lower Eyelid Inferior palpebral fold	50	12
Right Lower Eyelid Position	49	13
Right Lower Eyelid Eyelash length	50	14
Left Lower Eyelid Prominence	50	10
Left Lower Eyelid protrusion	49	10
Left Lower Eyelid Inferior palpebral fold	50	10
Left Lower Eyelid Position	49	11
Left Lower Eyelid Eyelash length	50	10
Right Eyeball protrusion	15	26
Left Eyeball protrusion	14	26
Right Eye Nasal Scleral triangle size	46	27
Right Eye Lateral Scleral triangle size	46	28

APPENDIX C: Frequency Tables

Right Eye Blood vessel visibility	49	21
Left Eye Nasal Scleral triangle size	46	28
Left Eye Lateral Scleral triangle size	46	29
Left Eye Blood vessel visibility	49	19
Right Iris Visibility	45	19
Right Iris relative size	45	23
Right Iris position in eye	44	26
Left Iris Visibility	45	20
Left Iris relative size	45	21
Left Iris position in eye	44	23
Right Cheekbone lateral prominence (profile)	26	32
Right Cheekbone anterior prominence (portrait)	34	30
Left Cheekbone lateral prominence (profile)	31	24
Left Cheekbone anterior prominence (portrait)	37	32
Right Cheek shape	18	17
Left Cheek shape	23	15
Nose Relative length	2	0
Nose Relative width	40	38
Nose Prominence	26	8
Nasal Root (Bridge) Relative length	39	2
Nasal Root Relative width	46	33
Nasal Root Depth	27	1

APPENDIX C: Frequency Tables

Nasal Dorsum Relative length	4	0
Nasal Dorsum Relative width (frontal)	41	36
Nasal Dorsum Contour (profile)	19	10
Nasal Apex Angulation	15	13
Nasal Base Relative length (lateral)	26	28
Nasal Base Relative width (frontal)	40	38
Nasal Alae Relative thickness	46	2
Nasal Alae Relative width	44	3
Nasal Alae Shape (lateral)	37	12
Nostrils Relative size	50	3
Nostrils Nasal hair	50	2
Nasal Columella Shape (lateral)	49	19
Nasal Columella Relative width (frontal)	50	25
Overall Right Ear Vertical ear position	17	21
Overall Right Ear Relative size	17	21
Overall Right Ear Angle (lateral)	27	32
Overall Left Vertical ear position	22	18
Overall Left Ear Relative size	22	18
Overall Left Ear Angle (lateral)	32	29
Right Ear tubercle (Darwin's tubercle)	50	31
Right Ear tubercle size (use A-C etc. for multiple tubercles)	50	31
Right Ear tubercle location	50	31

APPENDIX C: Frequency Tables

Left Ear tubercle (Darwin's tubercle)	50	28
Left Ear tubercle size (use A-C etc. for multiple tubercles)	50	28
Left Ear tubercle location	50	28
Right Ear Antihelix size	42	30
Left Ear Antihelix size	47	28
Right Ear Crura of Antihelix (Superior) Crus size	50	32
Right Ear Crura of Antihelix (Superior) Crus shape	50	32
Right Ear Crura of Antihelix (Inferior) Crus size	50	32
Right Ear Crura of Antihelix (Inferior) Crus shape	50	32
Left Ear Crura of Antihelix (Superior) Crus size	50	30
Left Ear Crura of Antihelix (Superior) Crus shape	50	30
Left Ear Crura of Antihelix (Inferior) Crus size	50	29
Left Ear Crura of Antihelix (Inferior) Crus shape	50	29
Right Ear Triangular Fossa depth	50	32
Right Ear Triangular Fossa size (lateral)	50	32
Left Ear Triangular Fossa depth	50	29
Left Ear Triangular Fossa size (lateral)	50	29
Right Ear Crus thickness	50	32
Right Ear Crus length	50	32
Right Ear Crus shape	50	32
Left Ear Crus thickness	50	29
Left Ear Crus length	50	29

APPENDIX C: Frequency Tables

Left Ear Crus shape	50	29
Right Ear Fossa width (lateral)	49	33
Left Ear Fossa width (lateral)	50	34
Right Ear Concha (Superior) width (lateral)	49	32
Right Ear Concha (Inferior) width (lateral)	49	32
Left Ear Concha (Superior) width (lateral)	50	29
Left Ear Concha (Inferior) width (lateral)	50	29
Right Ear Tragus size	49	31
Left Ear Tragus size	50	28
Right Ear Antitragus size	50	32
Left Ear Antitragus size	50	29
Right Ear Intertragal notch shape	50	32
Right Ear Intertragic notch size	50	32
Left Ear Intertragic notch shape	50	29
Left Ear Intertragic notch size	50	29
Right Ear Anterior notch shape	50	32
Right Ear Anterior notch size	50	32
Left Ear Anterior notch shape	50	29
Left Ear Anterior notch size	50	29
Right Ear Posterior auricular furrow size	50	32
Right Ear Posterior auricular furrow shape	50	32
Left Ear Posterior auricular furrow size	50	29

APPENDIX C: Frequency Tables

Left Ear Posterior auricular furrow shape	50	29
Right Ear Lobule attachment	49	32
Right Ear Lobule size	49	32
Left Ear Lobule attachment	49	30
Left Ear Lobule size	49	29
Overall mouth width	42	37
Upper Lip Fullness	44	16
Potrusion (lateral)	27	22
Upper Lip Vermilion border definition	50	18
Upper lip tubercle	50	19
Upper lip alae	49	20
Upper Lip crease distribution	50	19
Lower Lip Fullness	44	16
Potrusion (Lateral)	26	22
Lower Lip Vermilion border definition	50	18
Lower lip median sulcus	50	19
Lower lip torus	50	20
Lower Lip crease distribution	50	19
Lip Fissure Degree of contact	35	15
Teeth visibility	32	17
Chin prominence (profile)	19	25
Chin relative width	42	36

APPENDIX C: Frequency Tables

Chin relative length	2	0
Chin cleft	44	20
Chin dimple	43	20
Jowl prominence	0	0
Relative neck width	49	40
Relative neck height	33	34
Submental fat (double chin)	26	8
Laryngeal Prominence Prominence	43	9
Laryngeal Prominence Location	44	9
Overall Facial Hair Above Upper Lip thickness	37	12
Facial Hair Above Upper Lip length	42	6
Overall Facial Hair Below Lower Lip thickness	25	11
Facial Hair Below Lower Lip length	25	11
Overall Facial Hair on Right Side thickness	18	22
Facial Hair on Right Side length	19	22
Overall Facial Hair on Left Side thickness	22	21
Facial Hair on Left Side length	22	21
Overall Facial Hair on Chin thickness	24	8
Facial Hair on Chin length	27	5
Overall Facial Hair on Neck, below Chin/Jawline thickness	12	4
Facial Hair on Neck, below Chin/Jawline length	12	4
Forehead Creases (Wrinkles) Line prominence	30	16

APPENDIX C: Frequency Tables

Forehead Creases (Wrinkles) Quantity	30	16
Vertical Glabellar Line(s) prominence	40	18
Vertical Glabellar Line(s) Quantity	40	18
Nasion Crease Line prominence	40	18
Nasion Crease Quantity	40	18
Bifid Nose Crease Line prominence	38	16
Bifid Nose Crease length	38	16
Wrinkles Adjacent to Right Eye (Crow's Feet) Line prominence	49	21
Wrinkles Adjacent to Right Eye (Crow's Feet) Quantity	49	21
Wrinkles Adjacent to Left Eye (Crow's Feet) Line prominence	49	18
Wrinkles Adjacent to Left Eye (Crow's Feet) Quantity	49	18
Right Lower Lid Crease Line prominence	49	23
Right Lower Lid Crease Position	49	23
Right Lower Lid Crease Quantity	49	23
Left Lower Lid Crease Line prominence	49	19
Left Lower Lid Crease Position	49	19
Left Lower Lid Crease Quantity	49	19
Right Infraorbital Creases Line prominence	46	26
Right Infraorbital Creases Quantity	46	26
Left Infraorbital Creases Line prominence	46	21
Left Infraorbital Creases Quantity	46	21
Upper Lip Creases Line prominence	47	17

APPENDIX C: Frequency Tables

Upper Lip Creases Quantity	47	17
Lower Lip Creases Line prominence	46	17
Lower Lip Creases Quantity	46	17
Mentolabial Sulcus Line prominence	47	18
Mentolabial Sulcus Length	47	18
Right Nasolabial Crease/Folds Line prominence	45	26
Right Nasolabial Crease/Folds Quantity	45	26
Left Nasolabial Crease/Folds Line prominence	46	24
Left Nasolabial Crease/Folds Quantity	46	24
Right Marionette Lines prominence	36	24
Left Marionette Lines prominence	37	19
Cleft Chin Line prominence	42	18
Cleft Chin Line length	42	18
Right Buccal Creases/Folds Line prominence	24	20
Right Buccal Creases/Folds Quantity	24	20
Left Buccal Creases/Folds (Cheek to Chin) Line prominence	27	18
Left Buccal Creases/Folds (Cheek to Chin) Quantity	27	18
Wrinkles on Neck Line prominence	48	19
Wrinkles on Neck Quantity	48	19

Table 93: Table showing the Intra-Observer and Inter-Observer kappa values for 412 traits in the Wits Facial Classification Scheme

Facial feature traits	Repeatability- observer error	Intra- observer error	Reproducibility-inter- observer error

APPENDIX C: Frequency Tables

Skin Texture	0,859	0,853
Skin luminance	1	0,091
Cranial Vault Lateral (profile)	0,737	0,221
Face Frontal (portrait) contour	0,796	0,219
Vertical face proportions	0,577	0,042
Vertical eye position	0,91113781	1
Forehead hairline shape	1	0,277
Hairline angulation	1	0,6
Patterned baldness classifications (Hairline Right Side)	0,851	0,5
Patterned baldness classifications (Hairline Left Side)	0,839	0,508
Cranial Baldness Pattern Shape	1	1
Forehead Slope and contour	0,8488	0,259
Brow ridge continuity	1	0,5
Right Eyebrow shape	1	0,778
Right Eyebrow Hair Density and distribution	1	0,6
Right Eyebrow length relative to eye	1	1
Left Eyebrow Shape	0,661	0,508
Left Eyebrow Hair density and distribution	1	0,538
Left Eyebrow Length relative to eye	0,792	0,474
Overall Eyebrows symmetry	1	0,167
Right Eye Fissure Shape	0,787	0,608
Right Eye fissure angulation	1	0,831
Left Eye Fissure Shape	0,706	0,512
Left Eye Fissure Angulation	1	0,524
Right Upper Eyelid Eyelash density	0,808	0,808
Right Upper Eyelid Epicanthus presence	1	0,8
Left Upper Eyelid Eyelash density	0,808	0,63

APPENDIX C: Frequency Tables

Left Upper Eyelid Epicanthus presence	1	1
Right Lower Eyelid Eyelash density	0,778	0,512
Left Lower Eyelid Eyelash density	1	0,565
Right Eye Nasal Scleral triangle shape	1	0,706
Right Eye Lateral Scleral triangle shape	1	0,524
Right Eye Sclera colour	1	1
Left Eye Nasal Scleral triangle shape	1	1
Left Eye Lateral Scleral triangle shape	1	0,63
Left Eye Sclera colour	1	1
Right Iris colour	1	1
Right Iris Pupil ring presence	1	1
Left Iris colour	1	1
Left Iris Pupil ring presence	1	1
Right Eye Medial Canthus Caruncle prominence	1	0,706
Left Eye Medial Canthus Caruncle prominence	1	0,524
Eye position symmetry (Asymmetry Between Right and Left Eyes)	1	0,545
Right Cheek dimple presence	1	1
Left Cheek dimple presence	1	0,508
Symmetry of cheeks	1	0,737
Overall nose shape (profile)	1	0,324
Nasal Bridge Shape	0,429	0,571
Nasal Dorsum Shape (frontal)	0,787	0,75
Nasal Dorsum Deviation	1	1
Nasal Apex Shape	0,737	0,231
Nasal Base Deviation	1	0,375
Nasal Alae Shape (frontal)	0,583	0,412
Nasal Alae Symmetry of attachment	1	0,512

APPENDIX C: Frequency Tables

Nostrils Shape	0,821	0,508
Nasal Columella Deviation	1	1
Overall Right Ear shape (frontal)	0,706	0,429
Overall Right Ear shape (lateral)	1	0,706
Overall Left Ear shape (frontal)	0,706	0,429
Overall Left Ear shape (lateral)	0,792	0,583
Right Ear Helix size	1	0,524
Right Ear Helix shape	0,821	0,13
Left Ear Helix size	1	0,31
Left Ear Helix shape	1	0,63
Right Ear Antihelix shape	0,808	0,318
Left Ear Antihelix shape	1	0,512
Right Ear Triangular fossa shape	0,714	0,444
Left Ear Triangular fossa shape	0,714	0,444
Right Ear Scaphoid fossa shape	0,706	0,429
Right Ear Fossa depth	1	0,714
Left Ear Scaphoid fossa shape	1	0,444
Left Ear Fossa depth	0,706	0,444
Right Ear Concha (Superior) depth	1	1
Right Ear Concha (Inferior) depth	1	1
Left Ear Concha (Superior) depth	1	1
Left Ear Concha (Inferior) depth	1	1
Right Ear Tragus shape	1	0,512
Left Ear Tragus shape	1	0,512
Right Ear Antitragus shape	0,706	1
Left Ear Antitragus shape	0,706	0,706
Right Ear Anterior knob	1	1
Left Ear Anterior knob	0,804	0,5
Right Ear Lobule shape	0,714	0,706

APPENDIX C: Frequency Tables

Left Ear Lobule shape	1	0,535
Right Ear abnormality	1	1
Left Ear abnormality	1	1
Philtrum shape	0,825	0,615
Overall mouth shape	0,828	0,42
Upper Lip Vermilion border shape	1	0,667
Upper Lip Symmetry	1	0,615
Lower Lip Vermilion border shape	1	0,821
Lower Lip Symmetry	1	0,615
Lip fissure shape	1	0,683
Overall Dental occlusion classification	1	1
Alignment of teeth	1	1
Dental condition and modifications	1	1
Mouth abnormality presence	1	0,615
Chin shape (portrait)	0,833	0,412
Chin Symmetry	1	0,583
Jawline shape	0,811	0,355
Neck shape (frontal)	1	0,615
Laryngeal Prominence (Adam's Apple) Shape	1	0,615
Facial Hair Above Upper Lip shape	1	0,73
Facial Hair Above Upper Lip density and distribution	0,73	0,615
Facial Hair Above Upper Lip Colour variation	1	0,692
Facial Hair Above Upper Lip Outline definition	1	0,615
Facial Hair Above Upper Lip Surrounding continuity	0,857	0,589
Facial Hair Below Lower Lip shape	1	0,756
Facial Hair Below Lower Lip density and distribution	1	0,524

APPENDIX C: Frequency Tables

Facial Hair Below Lower Lip Colour variation	1	0,756
Facial Hair Below Lower Lip Outline definition	1	0,524
Facial Hair Below Lower Lip Surrounding continuity	1	0,756
Facial Hair on Right Side shape	1	0,71
Facial Hair on Right Side density and distribution	1	0,859
Facial Hair on Right Side Colour variation	1	1
Facial Hair on Right Side Outline definition	0,861	0,861
Facial Hair on Right Side Surrounding continuity	0,861	0,861
Facial Hair on Left Side shape	1	0,818
Facial Hair on Left Side density and distribution	1	0,818
Facial Hair on Left Side Colour variation	1	0,818
Facial Hair on Left Side Outline definition	1	0,818
Facial Hair on Left Side Surrounding continuity	1	0,818
Facial Hair on Chin shape	1	0,559
Facial Hair on Chin density and distribution	0,859	0,62
Facial Hair on Chin Colour variation	1	0,821
Facial Hair on Chin Outline definition	0,577	0,5
Facial Hair on Chin Surrounding continuity	0,87	0,74
Facial Hair on Neck, below Chin/Jawline shape	1	0,636
Facial Hair on Neck, below Chin/Jawline density and distribution	1	0,636
Facial Hair on Neck, below Chin/Jawline Colour variation	1	0,636
Facial Hair on Neck, below Chin/Jawline Outline definition	1	0,636

APPENDIX C: Frequency Tables

Facial Hair on Neck, below Chin/Jawline Surrounding continuity	1	0,636
Forehead Creases (Wrinkles) Line orientation	1	0,825
Forehead Creases (Wrinkles) Distribution	1	0,825
Forehead Creases (Wrinkles) Shape	1	0,825
Forehead Creases (Wrinkles) Inter-line relations	0,818	0,825
Vertical Glabellar Line(s) orientation	1	0,5
Vertical Glabellar Line(s) Distribution	1	0,5
Vertical Glabellar Line(s) Shape	1	0,5
Vertical Glabellar Line(s) Inter-line relations	1	0,5
Nasion Crease Line orientation	1	0,5
Nasion Crease Distribution	1	0,5
Nasion Crease Shape	1	0,5
Nasion Crease Inter-line relations	1	0,636
Bifid Nose Crease Shape	0,808	1
Right Eye Periorbital Creases (Crow's Feet) Line orientation	1	0,583
Right Eye Periorbital Creases (Crow's Feet) Distribution	1	0,583
Right Eye Periorbital Creases (Crow's Feet) Shape	1	0,583
Right Eye Periorbital Creases (Crow's Feet) Inter-line relations	1	0,778
Left Eye Periorbital Creases (Crow's Feet) Line orientation	1	0,512
Left Eye Periorbital Creases (Crow's Feet) Distribution	1	0,512
Left Eye Periorbital Creases (Crow's Feet) Shape	1	0,512
Left Eye Periorbital Creases (Crow's Feet) Inter-line relations	1	0,545
Right Lower Lid Crease Shape	1	0,6
Left Lower Lid Crease Shape	0,833	0,524

APPENDIX C: Frequency Tables

Right Infraorbital Creases Line orientation	1	1
Right Infraorbital Creases Distribution	1	0,592
Right Infraorbital Creases Shape	1	0,792
Right Infraorbital Creases Inter-line relations	1	1
Left Infraorbital Creases Line orientation	1	0,63
Left Infraorbital Creases Distribution	1	0,5
Left Infraorbital Creases Shape	1	0,815
Left Infraorbital Creases Inter-line relations	1	0,6
Upper Circumoral striae Line orientation	1	1
Upper Circumoral striae Distribution	1	1
Upper Circumoral striae Shape	1	1
Upper Circumoral striae Inter-line relations	1	1
Lower Circumoral striae Line orientation	1	1
Lower Circumoral striae Distribution	1	1
Lower Circumoral striae Shape	1	1
Lower Circumoral striae Inter-line relations	1	1
Mentolabial Sulcus Shape	0,808	0,655
Right Nasolabial Crease/Folds Line orientation	1	0,565
Right Nasolabial Crease/Folds Distribution	1	0,565
Right Nasolabial Crease/Folds Shape	1	0,565
Right Nasolabial Crease/Folds Inter-line relations	1	0,524
Left Nasolabial Crease/Folds Line orientation	1	0,804
Left Nasolabial Crease/Folds Distribution	1	0,804
Left Nasolabial Crease/Folds Shape	0,818	0,615

APPENDIX C: Frequency Tables

Left Nasolabial Crease/Folds Inter-line relations	1	0,738
Right Marionette Lines Shape	1	0,737
Left Marionette Lines Shape	1	1
Right Buccal Creases/Folds Line orientation	1	0,783
Right Buccal Creases/Folds Distribution	1	0,783
Right Buccal Creases/Folds Shape	1	0,783
Right Buccal Creases/Folds Inter-line relations	1	0,783
Left Buccal Creases/Folds (Cheek to Chin) Line orientation	1	0,6
Left Buccal Creases/Folds (Cheek to Chin) Distribution	1	0,6
Left Buccal Creases/Folds (Cheek to Chin) Shape	1	0,6
Left Buccal Creases/Folds (Cheek to Chin) Inter-line relations	1	0,6
Wrinkles on Neck Line orientation	0,778	0,796
Wrinkles on Neck Distribution	1	0,63
Wrinkles on Neck Shape	1	1
Wrinkles on Neck Inter-line relations	1	0,796
Scars	0,808	0,516
Skin Marks	1	0,552
Facial piercing	1	0,8
Ear piercing	1	1
Make Up	1	1
Facial tattoo presence	1	0,8
Neck tattoo presence	1	0,6
Skin colour	1	0,462
Cranial Vault Frontal (portrait) contour	1	0,688
Cranial Vault Frontal (portrait) relative width	1	0,865
Midfacial lateral (profile) contour	0,825	0,552

APPENDIX C: Frequency Tables

Relative forehead height	0,941	0,773
Relative forehead width	0,884	0,538
Brow ridge prominence	0,887	0,892
Right Eyebrow arch prominence	0,839	0,862
Right eyebrow overall thickness	1	0,706
Left Eyebrow arch prominence	0,737	0,857
Left eyebrow overall thickness	0,973	0,941
Conjoined eyebrows (“unibrow”) density	1	0,8
Conjoined eyebrows shape	1	0,8
Median distance between eyes	0,933	0,667
Right Upper eyelid Prominence	0,928	0,82
Right Upper Eyelid protrusion	0,947	0,917
Right Upper Eyelid Superior palpebral fold	1	1
Right Upper Eyelid Position	1	1
Right Upper Eyelid Eyelash length	0,94	0,921
Left Upper Eyelid Prominence	0,944	0,828
Left Upper Eyelid protrusion	0,944	1
Left Upper Eyelid Superior palpebral fold	1	1
Left Upper Eyelid Position	0,932	0,932
Left Upper Eyelid Eyelash length	0,944	0,841
Right Lower Eyelid Prominence	0,909	0,778
Right Lower Eyelid protrusion	1	0,906
Right Lower Eyelid Inferior palpebral fold	1	0,699
Right Lower Eyelid Position	1	0,706
Right Lower Eyelid Eyelash length	0,848	0,455
Left Lower Eyelid Prominence	0,846	0,909
Left Lower Eyelid protrusion	0,878	0,851

APPENDIX C: Frequency Tables

Left Lower Eyelid Inferior palpebral fold	1	0,851
Left Lower Eyelid Position	1	0,944
Left Lower Eyelid Eyelash length	1	0,946
Right Eyeball protrusion	0,941	0,933
Left Eyeball protrusion	0,941	0,8
Right Eye Nasal Scleral triangle size	0,857	0,783
Right Eye Lateral Scleral triangle size	0,848	0,762
Right Eye Blood vessel visibility	1	0,692
Left Eye Nasal Scleral triangle size	0,857	0,63
Left Eye Lateral Scleral triangle size	0,909	0,867
Left Eye Blood vessel visibility	1	0,615
Right Iris Visibility	1	0,714
Right Iris relative size	0,933	0,63
Right Iris position in eye	1	0,545
Left Iris Visibility	0,932	0,531
Left Iris relative size	0,933	0,538
Left Iris position in eye	1	0,545
Right Cheekbone lateral prominence (profile)	0,96	0,906
Right Cheekbone anterior prominence (portrait)	1	0,909
Left Cheekbone lateral prominence (profile)	0,857	0,878
Left Cheekbone anterior prominence (portrait)	1	0,906
Right Cheek shape	0,91	0,593
Left Cheek shape	0,941	0,57
Nose Relative length	1	0,849
Nose Relative width	1	0,86
Nose Prominence	1	0,608
Nasal Bridge Relative length	1	0,8

APPENDIX C: Frequency Tables

Nasal Bridge Relative width	1	0,615
Nasal Bridge Depth	0,8	0,926
Nasal Dorsum Relative length	0,756	0,937
Nasal Dorsum Relative width (frontal)	0,848	0,857
Nasal Dorsum Contour (profile)	0,954	0,558
Nasal Apex Angulation	1	0,615
Nasal Base Relative length (lateral)	0,886	0,615
Nasal Base Relative width (frontal)	1	0,923
Nasal Alae Relative thickness	1	0,627
Nasal Alae Relative width	1	0,268
Nasal Alae Shape (lateral)	0,928	0,557
Nostrils Relative size	0,932	0,942
Nostrils Nasal hair	1	0,8
Nasal Columella Shape (lateral)	0,962	0,865
Nasal Columella Relative width (frontal)	0,905	0,737
Overall Right Ear Vertical ear position	0,905	0,921
Overall Right Ear Relative size	0,921	0,851
Overall Right Ear Angle (lateral)	1	0,906
Overall Left Vertical ear position	0,933	1
Overall Left Ear Relative size	0,947	0,697
Overall Left Ear Angle (lateral)	1	0,878
Right Ear tubercle (Darwin's tubercle)	1	0,6
Right Ear tubercle size (use A-C etc. for multiple tubercles)	1	0,6
Right Ear tubercle location	1	0,6
Left Ear tubercle (Darwin's tubercle)	1	0,6
Left Ear tubercle size (use A-C etc. for multiple tubercles)	1	0,6
Left Ear tubercle location	1	0,6

APPENDIX C: Frequency Tables

Right Ear Antihelix size	1	0,615
Left Ear Antihelix size	1	0,636
Right Ear Crura of Antihelix (Superior) Crus size	1	0,906
Right Ear Crura of Antihelix (Superior) Crus shape	0,921	0,419
Right Ear Crura of Antihelix (Inferior) Crus size	1	0,737
Right Ear Crura of Antihelix (Inferior) Crus shape	1	0,891
Left Ear Crura of Antihelix (Superior) Crus size	1	1
Left Ear Crura of Antihelix (Superior) Crus shape	1	0,375
Left Ear Crura of Antihelix (Inferior) Crus size	1	0,767
Left Ear Crura of Antihelix (Inferior) Crus shape	1	0,923
Right Ear Triangular Fossa depth	0,921	0,906
Right Ear Triangular Fossa size (lateral)	0,921	0,906
Left Ear Triangular Fossa depth	0,947	0,737
Left Ear Triangular Fossa size (lateral)	0,92	0,92
Right Ear Crus thickness	0,906	0,762
Right Ear Crus length	0,906	0,762
Right Ear Crus shape	1	1
Left Ear Crus thickness	0,906	0,867
Left Ear Crus length	1	1
Left Ear Crus shape	1	0,733
Right Ear Fossa width (lateral)	1	0,906
Left Ear Fossa width (lateral)	1	0,615
Right Ear Concha (Superior) width (lateral)	1	1
Right Ear Concha (Inferior) width (lateral)	1	0,742
Left Ear Concha (Superior) width (lateral)	1	0,762

APPENDIX C: Frequency Tables

Left Ear Concha (Inferior) width (lateral)	1	0,742
Right Ear Tragus size	1	0,505
Left Ear Tragus size	0,947	0,906
Right Ear Antitragus size	0,762	0,762
Left Ear Antitragus size	1	1
Right Ear Intertragal notch shape	1	0,756
Right Ear Intertragic notch size	1	0,906
Left Ear Intertragic notch shape	1	1
Left Ear Intertragic notch size	1	0,906
Right Ear Anterior notch shape	1	0,756
Right Ear Anterior notch size	1	0,828
Left Ear Anterior notch shape	0,921	0,921
Left Ear Anterior notch size	1	0,828
Right Ear Posterior auricular furrow size	0,828	0,756
Right Ear Posterior auricular furrow shape	0,906	0,906
Left Ear Posterior auricular furrow size	0,947	1
Left Ear Posterior auricular furrow shape	0,906	1
Right Ear Lobule attachment	0,867	0,947
Right Ear Lobule size	0,906	0,867
Left Ear Lobule attachment	0,933	0,609
Left Ear Lobule size	0,941	0,675
Overall mouth width	1	0,778
Upper Lip Fullness	1	0,5
Protrusion (lateral)	0,949	0,828
Upper Lip Vermilion border definition	0,734	0,888
Upper lip tubercle	0,946	0,921
Upper lip alae	0,949	0,515

APPENDIX C: Frequency Tables

Upper Lip crease distribution	1	0,976
Lower Lip Fullness	1	0,861
Protrusion (Lateral)	0,959	0,828
Lower Lip Vermilion border definition	0,81	0,75
Lower lip median sulcus	0,909	0,737
Lower lip torus	0,923	0,571
Lower Lip crease distribution	0,859	0,388
Lip Fissure Degree of contact	0,971	0,902
Teeth visibility	1	1
Chin prominence (profile)	0,884	0,282
Chin relative width	0,848	0,815
Chin relative length	0,727	0,675
Chin cleft	1	0,8
Chin dimple	1	0,8
Jowl prominence	1	1
Relative neck width	1	1
Relative neck height	0,795	0,82
Submental fat (double chin)	1	0,286
Laryngeal Prominence Prominence	1	0,769
Laryngeal Prominence Location	1	0,889
Overall Facial Hair Above Upper Lip thickness	0,94	0,862
Facial Hair Above Upper Lip length	1	0,655
Overall Facial Hair Below Lower Lip thickness	0,889	0,75
Facial Hair Below Lower Lip length	1	0,8
Overall Facial Hair on Right Side thickness	1	0,94
Facial Hair on Right Side length	1	0,932
Overall Facial Hair on Left Side thickness	1	1

APPENDIX C: Frequency Tables

Facial Hair on Left Side length	1	1
Overall Facial Hair on Chin thickness	1	0,883
Facial Hair on Chin length	0,978	0,94
Overall Facial Hair on Neck, below Chin/Jawline thickness	1	0,848
Facial Hair on Neck, below Chin/Jawline length	1	0,848
Forehead Creases (Wrinkles) Line prominence	1	0,778
Forehead Creases (Wrinkles) Quantity	0,952	0,615
Vertical Glabellar Line(s) prominence	0,857	0,815
Vertical Glabellar Line(s) Quantity	0,857	0,67
Nasion Crease Line prominence	1	0,667
Nasion Crease Quantity	1	0,538
Bifid Nose Crease Line prominence	0,857	1
Bifid Nose Crease length	0,857	1
Right Eye Periorbital Creases (Crow's Feet) Line prominence	1	0,627
Right Eye Periorbital Creases (Crow's Feet) Quantity	1	0,627
Left Eye Periorbital Creases (Crow's Feet) Line prominence	1	0,545
Left Eye Periorbital Creases (Crow's Feet) Quantity	1	0,545
Right Lower Lid Crease Line prominence	1	0,868
Right Lower Lid Crease Position	1	1
Right Lower Lid Crease Quantity	1	0,962
Left Lower Lid Crease Line prominence	1	0,948
Left Lower Lid Crease Position	0,97	1
Left Lower Lid Crease Quantity	1	0,965
Right Infraorbital Creases Line prominence	1	0,919
Right Infraorbital Creases Quantity	1	0,947

APPENDIX C: Frequency Tables

Left Infraorbital Creases Line prominence	1	0,73
Left Infraorbital Creases Quantity	1	0,727
Upper Circumoral striae Line prominence	1	1
Upper Circumoral striae Quantity	1	1
Lower Circumoral striae Line prominence	1	1
Lower Circumoral striae Quantity	1	1
Mentolabial Sulcus Line prominence	0,857	0,857
Mentolabial Sulcus Length	0,857	0,857
Right Nasolabial Crease/Folds Line prominence	1	0,769
Right Nasolabial Crease/Folds Quantity	1	0,773
Left Nasolabial Crease/Folds Line prominence	1	0,615
Left Nasolabial Crease/Folds Quantity	1	0,561
Right Marionette Lines prominence	1	0,737
Left Marionette Lines prominence	1	1
Cleft Chin Line prominence	1	0,615
Cleft Chin Line length	1	0,615
Right Buccal Creases/Folds Line prominence	1	0,783
Right Buccal Creases/Folds Quantity	1	0,783
Left Buccal Creases/Folds (Cheek to Chin) Line prominence	1	0,6
Left Buccal Creases/Folds (Cheek to Chin) Quantity	1	0,6
Wrinkles on Neck Line prominence	0,848	0,955
Wrinkles on Neck Quantity	1	0,941

Appendix D: Turnitin report

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ORIGINALITY REPORT

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