APPENDIX 1

RIDGE COUNT ANALYSIS

The variations of ridge count (RC) in each fingerprint among various age groups are discussed. The line chart illustrating the variations in ridge count for the age group 8-12 is shown in Figure A1.1.

Figure A1.1 Ridge count of male and female samples for age group 8-12

From Figure A1.1, it can be noticed that the ridge count of male samples is more than female and differs by one or two. The ridge counts are of similar value for the thumb finger.

The line chart illustrating the variations in ridge count for the age group 13-18 is shown in Figure A1.2.
Comparing Figure A1.2 with Figure A1.1, it can be observed that the minimum ridge counts is above 28 for the age group 13-18 whereas for the age group 8-12, the minimum ridge count is below 28 for little fingers and index fingers. The line chart illustrating the variations in ridge count for the age group 19-25 is shown in Figure A1.3.

Figure A1.2 Ridge count of male and female samples for age group 13-18

Figure A1.3 Ridge count of male and female samples for age group 19-25
There is a good difference in ridge counts of male and female samples for the age group 19-25. Unlike the age group 8-12 and 13-19, there is no overlapping of ridge count in any fingers of male and female samples. The line chart illustrating the variations in ridge count for the age group of above 25 is shown in Figure A1.4.

![Figure A1.4 Ridge count of male and female samples for age group >25](image)

An interesting fact that can be observed from Figure A1.4 is that the average ridge counts are around 27 to 32. In addition, the ridge counts are below 28 for the little fingers and index fingers. The reason for the reduced ridge count is that due to aging, ridge breadths are stretched and the fingers are shrinked and wrinkled.
APPENDIX 2

RIDGE WIDTH ANALYSIS

The variations of ridge width (RW) in each fingerprint among various age groups are discussed. The line chart illustrating the variations in ridge width for the age group 8-12 is shown in Figure A2.1.

![Figure A2.1 Ridge width of male and female samples for age group 8-12](image)

Figure A2.1 Ridge width of male and female samples for age group 8-12

The ridge width in the age group 8-12 ranges between 350 µm to 450 µm. For the little finger, ring finger and the middle finger, the ridge width is low and almost equal. Similarly, the ridge width is high for the index and thumb fingers and almost equal. For all the fingers, the ridge width is more for male than female. The line chart illustrating the variations in ridge width for the age group 13-18 is shown in Figure A2.2.
In the age group 13-18, the differences between the values of RW are closer in all fingers. For the right thumb finger, the RW is more and closer to 500 µm. For all fingers, RW of male is more than female. The line chart illustrating the variations in ridge width for the age group 19-25 is shown in Figure A2.3.
For the age group of 19-25, there is a substantial difference in ridge width between male and female. The line chart illustrating the variations in ridge width for the age group of >25 is shown in Figure A2.4.

**Figure A2.4 Ridge width of male and female samples for age group >25**

For the age group of >25, the ridge width is in the range of 400 µm to 525 µm. Whereas for the age group of 8-12 the ridge width is in the range of 350 µm to 450 µm, for the age group of 13-18, the ridge width is in the range of 375-475 µm and the ridge width is in the range of 325-475 µm for the 19-25 age group. This result clarifies that aging causes the stretched ridge width.
APPENDIX 3

ANALYSIS OF FINGERTIP SIZE OF THE FINGERPRINT

The variations of fingertip size (FS) in each fingerprint among various age groups are discussed. The line chart illustrating the variations in fingertip size for the age group 8-12 is shown in Figure A3.1.

Figure A3.1 Fingertip size of male and female samples for age group 8-12

As observed, the fingertip sizes of the thumb fingers are high and in the range of 475-500 µm. The FS of other fingers is only in the range of 350-425 µm. For all the fingers, the fingertip sizes are more for male than female. The line chart illustrating the variations in fingertip size for the age group 8-12 is shown in Figure A3.2.
The minimum fingertip size in this group is around 425µm and nearly 75 µm more than the age group of 8-12. In addition, the difference in fingertip size of thumb fingers and other fingers is narrowed down. The line chart illustrating the variations in fingertip size for the age group 19-25 is shown in Figure A3.3.

Figure A3.2 Fingertip size of male and female samples for age group 13-18

Figure A3.3 Fingertip size of male and female samples for age group 19-25
There is gradual increase in FS of the male fingers from little finger to thumb finger in both hand. But, female fingers follow the same pattern of having high FS for thumb fingers and average values for all other fingers. The FS is in the range of 425-550 µm and 400-500 µm for male and female, respectively. The line chart illustrating the variations in fingertip size for the age group of >25 is shown in Figure A3.4.

![Fingertip size of male and female samples for age group >25](image)

**Figure A3.4 Fingertip size of male and female samples for age group >25**

The fingertip size in this age group is between 400-500 µm. It is observed that the FS values are less in comparison with any fingers of male and female. This shows that the shrinkage and wrinkling of fingers due to aging result in reduced fingertip size.