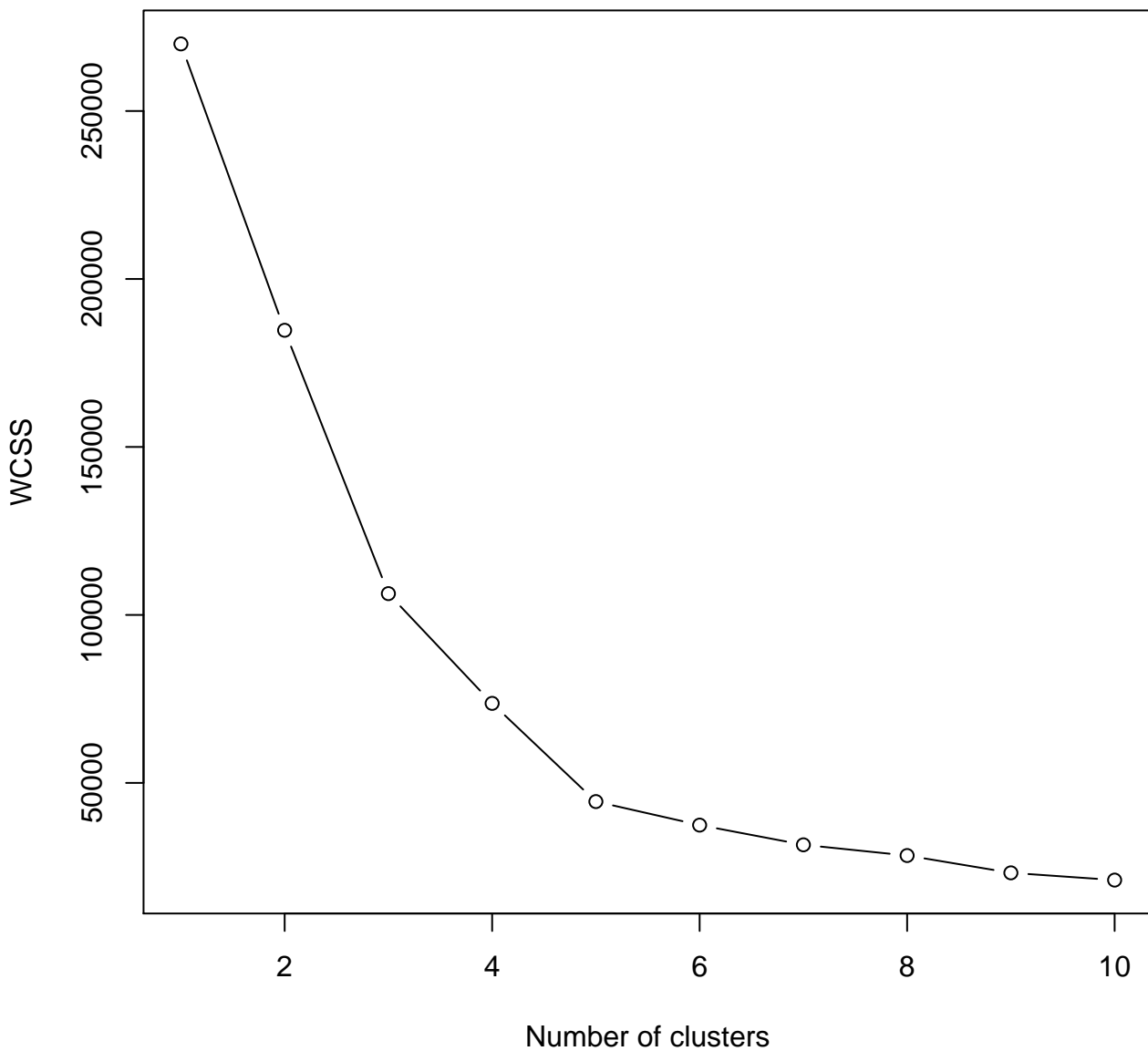


## The Elbow Method



A scatter plot showing the relationship between Annual Income (X-axis, ranging from -80 to 60) and the Number of Children (Y-axis, ranging from 0 to 10). The data points are categorized into five distinct clusters, each represented by a different color and hatched pattern:

- Cluster 1 (Red, top-left):** High income, high number of children. Includes points like 199, 195, 193, 189, 183, 179, 173, 169, 159, 155, 151, 147, 143, 139, 135, 131, 127, 123, 119, 115, 111, 107, 103, 99, 95, 91, 87, 83, 79, 75, 71, 67, 63, 59, 55, 51, 47, 43, 39, 35, 31, 27, 23, 19, 15, 11, 7, 3, -1, -5, -9, -13, -17, -21, -25, -29, -33, -37, -41, -45, -49, -53, -57, -61, -65, -69, -73, -77, -81, -85, -89, -93, -97, -101, -105, -109, -113, -117, -121, -125, -129, -133, -137, -141, -145, -149, -153, -157, -161, -165, -169, -173, -177, -181, -185, -189, -193, -197, -201, -205, -209, -213, -217, -221, -225, -229, -233, -237, -241, -245, -249, -253, -257, -261, -265, -269, -273, -277, -281, -285, -289, -293, -297, -301, -305, -309, -313, -317, -321, -325, -329, -333, -337, -341, -345, -349, -353, -357, -361, -365, -369, -373, -377, -381, -385, -389, -393, -397, -401, -405, -409, -413, -417, -421, -425, -429, -433, -437, -441, -445, -449, -453, -457, -461, -465, -469, -473, -477, -481, -485, -489, -493, -497, -501, -505, -509, -513, -517, -521, -525, -529, -533, -537, -541, -545, -549, -553, -557, -561, -565, -569, -573, -577, -581, -585, -589, -593, -597, -601, -605, -609, -613, -617, -621, -625, -629, -633, -637, -641, -645, -649, -653, -657, -661, -665, -669, -673, -677, -681, -685, -689, -693, -697, -701, -705, -709, -713, -717, -721, -725, -729, -733, -737, -741, -745, -749, -753, -757, -761, -765, -769, -773, -777, -781, -785, -789, -793, -797, -801, -805, -809, -813, -817, -821, -825, -829, -833, -837, -841, -845, -849, -853, -857, -861, -865, -869, -873, -877, -881, -885, -889, -893, -897, -901, -905, -909, -913, -917, -921, -925, -929, -933, -937, -941, -945, -949, -953, -957, -961, -965, -969, -973, -977, -981, -985, -989, -993, -997, -1001, -1005, -1009, -1013, -1017, -1021, -1025, -1029, -1033, -1037, -1041, -1045, -1049, -1053, -1057, -1061, -1065, -1069, -1073, -1077, -1081, -1085, -1089, -1093, -1097, -1101, -1105, -1109, -1113, -1117, -1121, -1125, -1129, -1133, -1137, -1141, -1145, -1149, -1153, -1157, -1161, -1165, -1169, -1173, -1177, -1181, -1185, -1189, -1193, -1197, -1201, -1205, -1209, -1213, -1217, -1221, -1225, -1229, -1233, -1237, -1241, -1245, -1249, -1253, -1257, -1261, -1265, -1269, -1273, -1277, -1281, -1285, -1289, -1293, -1297, -1301, -1305, -1309, -1313, -1317, -1321, -1325, -1329, -1333, -1337, -1341, -1345, -1349, -1353, -1357, -1361, -1365, -1369, -1373, -1377, -1381, -1385, -1389, -1393, -1397, -1401, -1405, -1409, -1413, -1417, -1421, -1425, -1429, -1433, -1437, -1441, -1445, -1449, -1453, -1457, -1461, -1465, -1469, -1473, -1477, -1481, -1485, -1489, -1493, -1497, -1501, -1505, -1509, -1513, -1517, -1521, -1525, -1529, -1533, -1537, -1541, -1545, -1549, -1553, -1557, -1561, -1565, -1569, -1573, -1577, -1581, -1585, -1589, -1593, -1597, -1601, -1605, -1609, -1613, -1617, -1621, -1625, -1629, -1633, -1637, -1641, -1645, -1649, -1653, -1657, -1661, -1665, -1669, -1673, -1677, -1681, -1685, -1689, -1693, -1697, -1701, -1705, -1709, -1713, -1717, -1721, -1725, -1729, -1733, -1737, -1741, -1745, -1749, -1753, -1757, -1761, -1765, -1769, -1773, -1777, -1781, -1785, -1789, -1793, -1797, -1801, -1805, -1809, -1813, -1817, -1821, -1825, -1829, -1833, -1837, -1841, -1845, -1849, -1853, -1857, -1861, -1865, -1869, -1873, -1877, -1881, -1885, -1889, -1893, -1897, -1901, -1905, -1909, -1913, -1917, -1921, -1925, -1929, -1933, -1937, -1941, -1945, -1949, -1953, -1957, -1961, -1965, -1969, -1973, -1977, -1981, -1985, -1989, -1993, -1997, -2001, -2005, -2009, -2013, -2017, -2021, -2025, -2029, -2033, -2037, -2041, -2045, -2049, -2053, -2057, -2061, -2065, -2069, -2073, -2077, -2081, -2085, -2089, -2093, -2097, -2101, -2105, -2109, -2113, -2117, -2121, -2125, -2129, -2133, -2137, -2141, -2145, -2149, -2153, -2157, -2161, -2165, -2169, -2173, -2177, -2181, -2185, -2189, -2193, -2197, -2201, -2205, -2209, -2213, -2217, -2221, -2225, -2229, -2233, -2237, -2241, -2245, -2249, -2253, -2257, -2261, -2265, -2269, -2273, -2277, -2281, -2285, -2289, -2293, -2297, -2301, -2305, -2309, -2313, -2317, -2321, -2325, -2329, -2333, -2337, -2341, -2345, -2349, -2353, -2357, -2361, -2365, -2369, -2373, -2377, -2381, -2385, -2389, -2393, -2397, -2401, -2405, -2409, -2413, -2417, -2421, -2425, -2429, -2433, -2437, -2441, -2445, -2449, -2453, -2457, -2461, -2465, -2469, -2473, -2477, -2481, -2485, -2489, -2493, -2497, -2501, -2505, -2509, -2513, -2517, -2521, -2525, -2529, -2533, -2537, -2541, -2545, -2549, -2553, -2557, -2561, -2565, -2569, -2573, -2577, -2581, -2585, -2589, -2593, -2597, -2601, -2605, -2609, -2613, -2617, -2621, -2625, -2629, -2633, -2637, -2641, -2645, -2649, -2653, -2657, -2661, -2665, -2669, -2673, -2677, -2681, -2685, -2689, -2693, -

These two components explain 100 % of the point variability.