Int bigData team6

CORRELATION OF MARRIAGE RATE WITH EDUCATION AND INCOME

TEAM PROJECT PRESENTATION

SPEAKER BYEORI MOON
YEONSOO OH
SUBIN KIM

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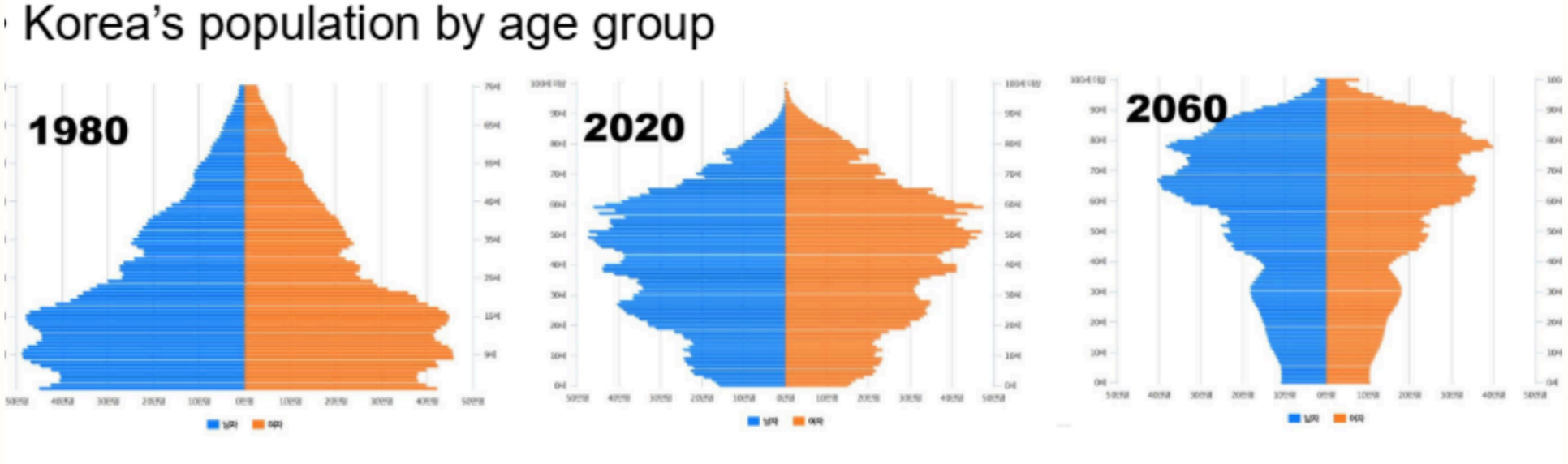
Visualization Example

KOREAN BIRTH RATE AND POPULATION DECLINE

Korea's population by age group



reference by IntBBigdata lceture5 visualization

DATA PREPARATION

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KOREA INCOME AND WELFARE

WITH KEGGLE

	id	year	wave	region	income	family_member	gender	year_born	education_level	marriage	religion
0	10101	2005	1	1	614.0	1	2	1936	2	2	2
1	10101	2011	7	1	896.0	1	2	1936	2	2	2
2	10101	2012	8	1	1310.0	1	2	1936	2	2	2
3	10101	2013	9	1	2208.0	1	2	1936	2	2	2
4	10101	2014	10	1	864.0	1	2	1936	2	2	2

INCLUDES THE INCOME, WELFARE, AND LIVING STANDARDS OF KOREAN HOUSEHOLDS.

A TOTAL OF 10046 PEOPLE WERE SURVEYED AND RECORDED THEIR BIRTH YEAR, INCOME LEVEL, EDUCATION LEVEL, PLACE OF BIRTH, GENDER, NUMBER OF FAMILY MEMBERS, RELIGIOUS AFFILIATION, ETC.

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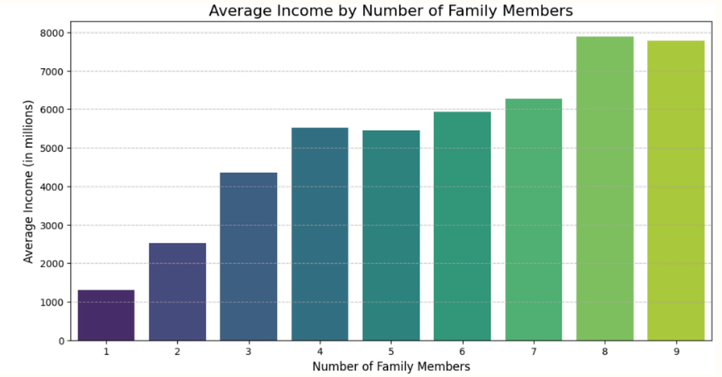
DATA PREPROCESSING

REMOVE INCOME DATA OUTLIERS

```
# Remove the top 1%
upper_limit = data['income'].quantile(0.99)
data = data[data['income'] <= upper_limit]
```

NORMALIZE INCOME OUTLIERS BY NUMBER OF FAMILY MEMBERS



GENERATE DATA ABOUT MARITAL STATUS

```
# Remove data to exclude: marriage == 1 (minor), marriage == 6 (other)
data = data[~data['marriage'].isin([1, 6])]

# Remove data to exclude: marriage == 1 (minor), marriage == 6 (other)
data['has_marriage_experience'] = data['marriage'].apply(lambda x: 1 if x in [2, 3, 4] else 0)
```

SEPARATE DATA BY GENERATION

```
# Create a generation variable
analyzed_data['generation'] = pd.cut(data['year_born'], bins=[1930, 1960, 1980, 2000, 2020],
                                     labels=['1930s-60s', '1960s-80s', '1980s-2000s', '2000s+'])
```

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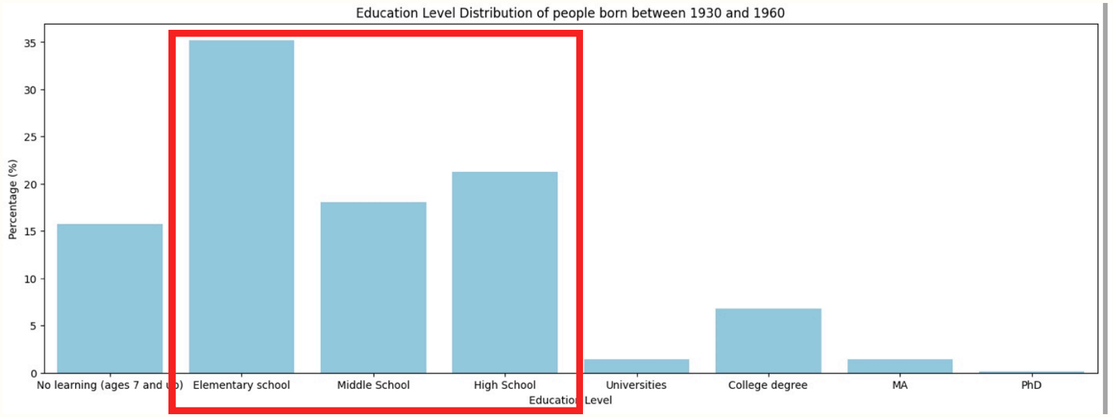
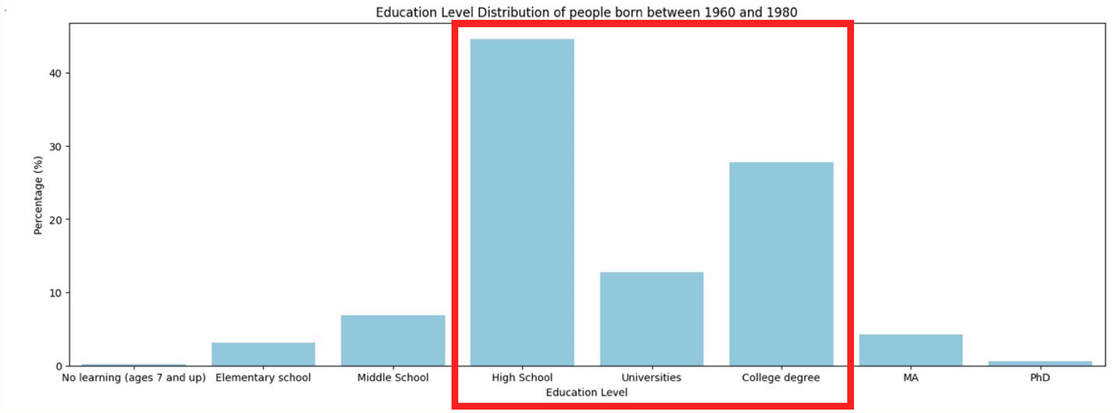
DATA ANALYSIS

FIRST GROUP
(1930~1960)



education_level	percentage
No learning (ages 7 and up)	28.830680
Elementary school	41.927752
Middle School	14.620784
High School	11.123951
Universities	0.749016
College degree	2.465331
MA	0.226845
PhD	0.055641

SECOND GROUP
(1960~1980)



education_level	percentage
No learning (ages 7 and up)	0.429017
Elementary school	6.500260
Middle School	12.142486
High School	51.092044
Universities	11.895476
College degree	15.574623
MA	2.028081
PhD	0.338014

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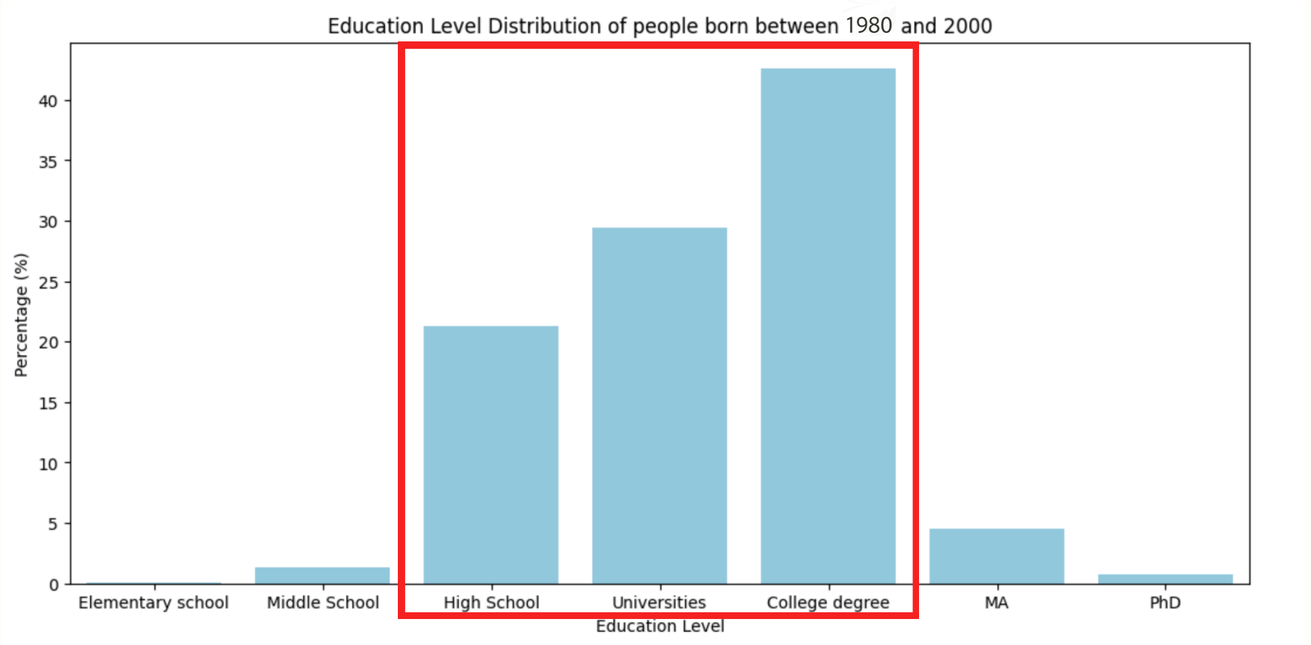
DATA ANALYSIS

THIRD GROUP
(1980~2000)

education_level	percentage
Elementary school	0.100100
Middle School	2.402402
High School	22.022022
Universities	27.977978
College degree	42.492492
MA	4.354354
PhD	0.650651



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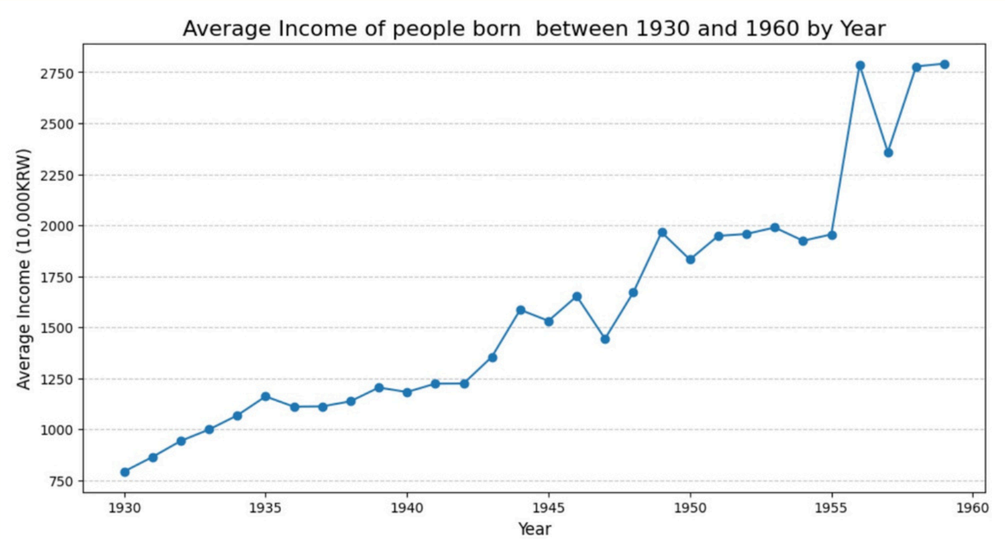
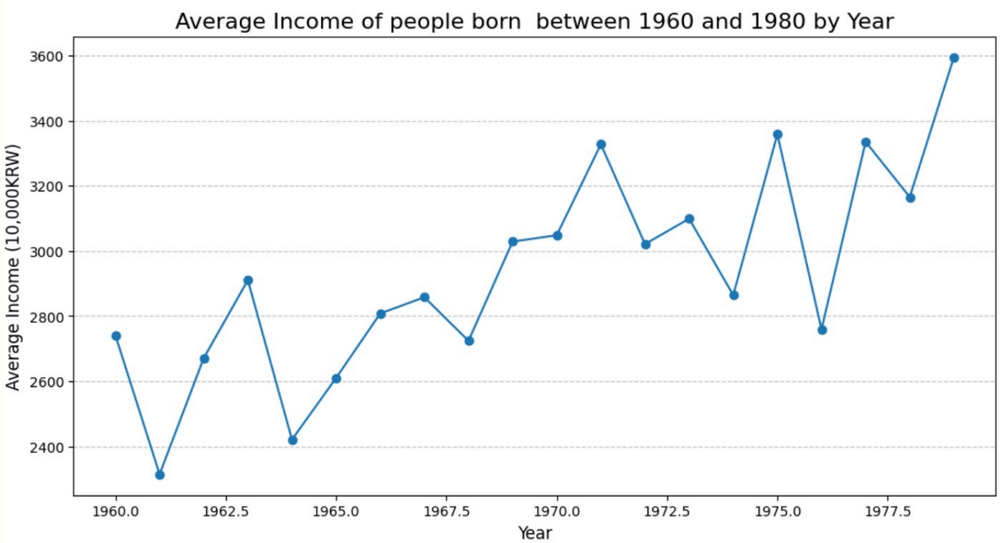
DATA ANALYSIS

FIRST GROUP
(1930~1960)



SECOND GROUP
(1960~1980)



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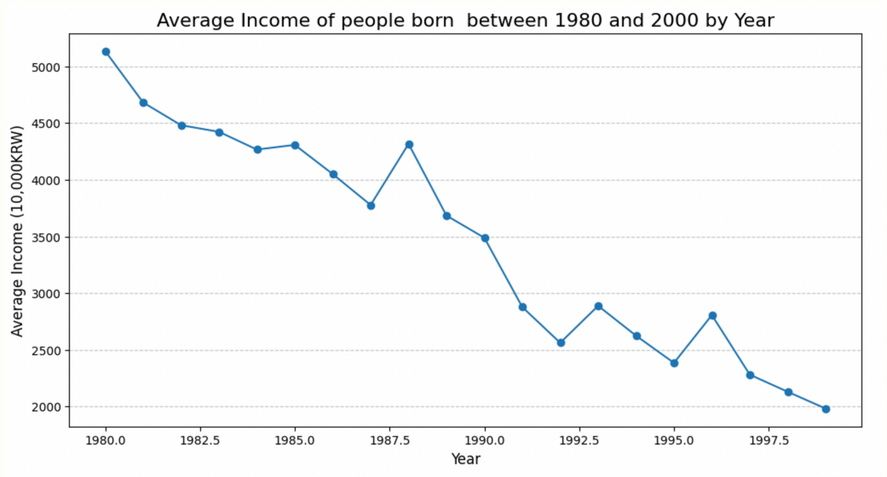
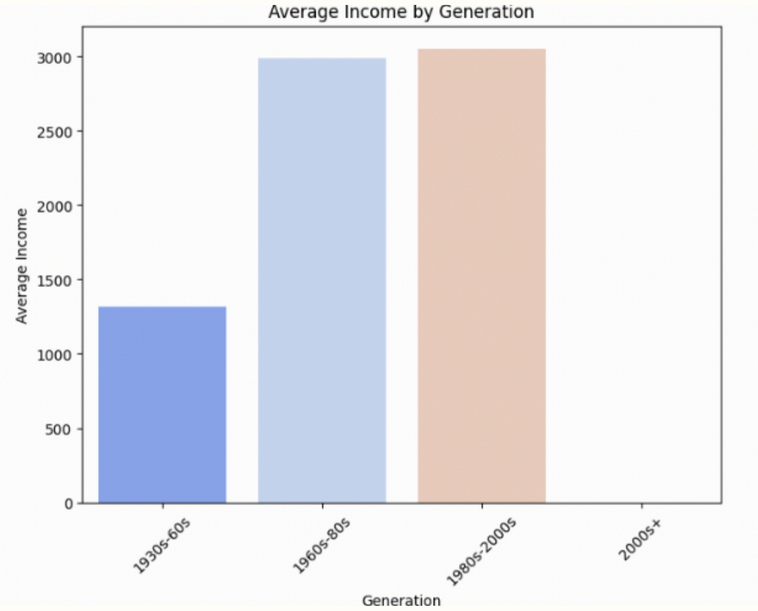
DATA ANALYSIS

THIRD GROUP (1980~2000)

AVERAGE INCOME BY GENERATION





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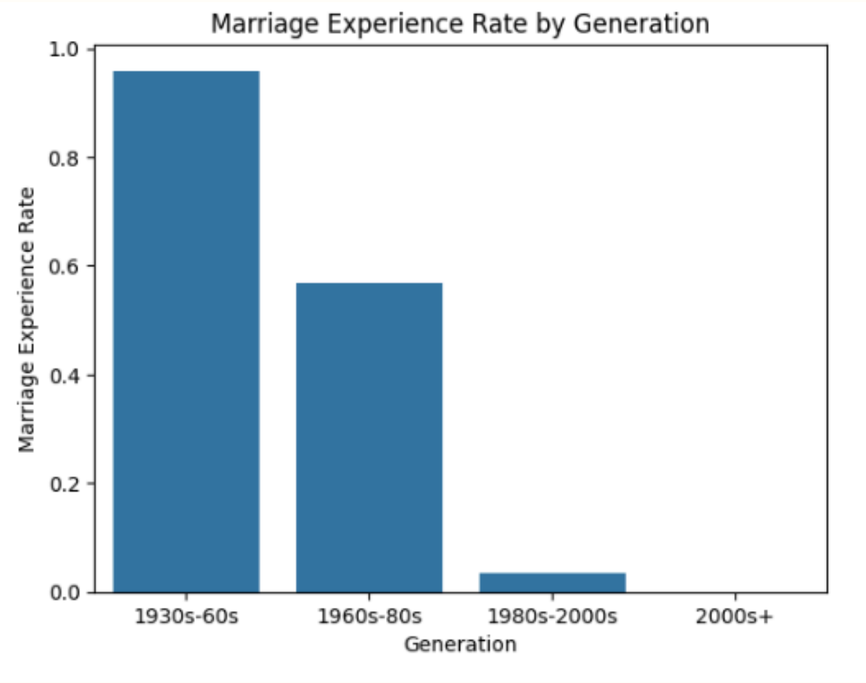
DATA ANALYSIS

OVERALL GENERATION



CONCLUSION

The overall leveling up of educational standards has made it increasingly difficult to secure stable employment and satisfactory income with just a college degree.

This impacts individuals' economic conditions and social stability, ultimately tying into declining marriage rates.

THANK YOU!