Economic Inequality and Consumer Complaint Behavior

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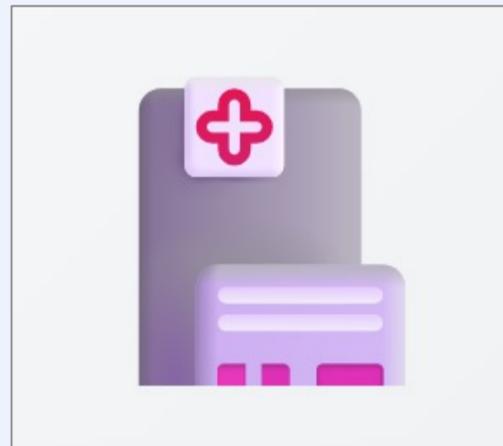
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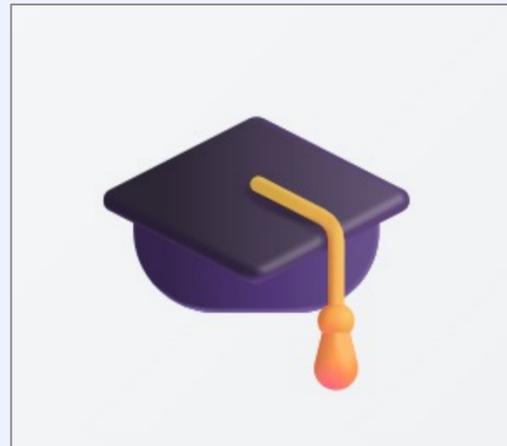
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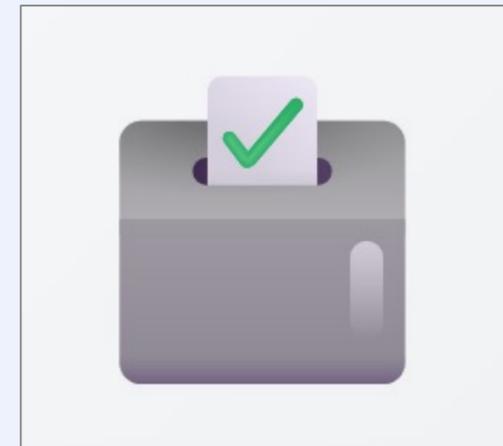
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1-2. Research Objectives

Research Objectives and Questions

Research Objectives

Identify relationship between regional economic inequality and consumer complaints

Research Questions

How does regional economic inequality relate to consumer complaint behavior?

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2-1. Economic inequality

Economic Inequality and Its impact on Society

Focus: Impacts of Economic Inequality and Policy Directions for Reduction

Economics Perspective (Cowell & Ebert, 2004; Cowell, 2008; Devooght, 2003; Temkin, 1986, 1993, 2018)	• Inequality as a concept that drives social comparison → Complaint as a response among disadvantaged groups(Temkin, 1986; Cowell & Ebert, 2004).

Social Science Perspective (Du et al., 2021; Skopek et al., 2014; Sommet & Elliot, 2023; García-Castro et al., 2020; Payne et al., 2017 ; Thorbecke & Charumilind, 2002)	• Predictors and correlates: e.g., Limited internet access (Du et al., 2021)
	• Patterns: National wealth perspective (Skopek et al., 2014), Psychological framework (Sommet & Elliot, 2023)
	• Consequences (García-Castro et al., 2020; Payne et al., 2017 ; Thorbecke & Charumilind, 2002)
	  ↓ Economic growth, educational attainment, health outcomes, tolerance for inequality
	  ↑ Social conflict, political instability, crime, risk-taking behavior

2-1. Economic inequality

Economic Inequality and Its impact on Society

- Economic inequality has been found to be related to consumer behaviors in various ways; which can either motivate or suppress consumer complaint behavior.

Motivating effects	Suppressing effects
- **Based on conflict theory**(Thorbecke & Charumilind, 2002), **Fairness perception theory**(Aldama et al., 2021)**, Social comparison theory** (Goya-Tocchetto & Payne, 2022) - **Linear relationship** : **Inequality ↑ → Social participation ↑** - **Class conflict → Active participation activities**	- **Based on Political Efficacy Theory**(Lee et al., 2021) **and Resource-Based Participation Theory**(Vik et al., 2022) - **Excessive inequality → Helplessness/resignation** - **Resource constraints → Participation suppression**

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2-2. Consumer complaint behavior

Consumer Complaint Behavior

Consumer Complaint Behavior

- Consumer efforts to assert rights and realize interests, needs, and preferences in purchase decision-making process (Lee, 2009).

- Actions demanding solutions and responses from companies, consumer organizations, and government agencies(Joo et al., 2012).

- Consumer behavior responding to dissatisfaction experienced after purchasing products and services(Lee & Lim, 2013)

- Voluntary and active behavior to participate in markets to reflect own interests, needs, and preferences(Ryu, 2016)

Existing Research

- **Individual dissatisfaction experiences**
- **Consumer characteristics**
- **Personal attributes**

Research Gap

- **Social and market environment**
- **Regional characteristics**

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Economic Inequality and
Consumer Complaint Behavior

3-1. Data

1372 Consumer Counseling Data

- The 1372 Consumer Counseling Center serves as both a public information channel and **the first point of contact for consumer dispute resolution in Korea.**
- The data include information on the counseling applicant's gender, age, region, reason, result for counseling, enabling the identification of specific **patterns and nature of consumer problems**.

Consultation Request
(Phone, Internet, Visit, etc.)

Consumer

1372 Consumer Counseling Center

Damage Resolution
(Consultation, Information Provision, etc.)

Korea Consumer Agency

12 Consumer Organizations

16 Provincial and Metropolitan Governments

Damage Relief Transfer

Korea Consumer Agency
(Damage Relief Officer)

3-1. Data
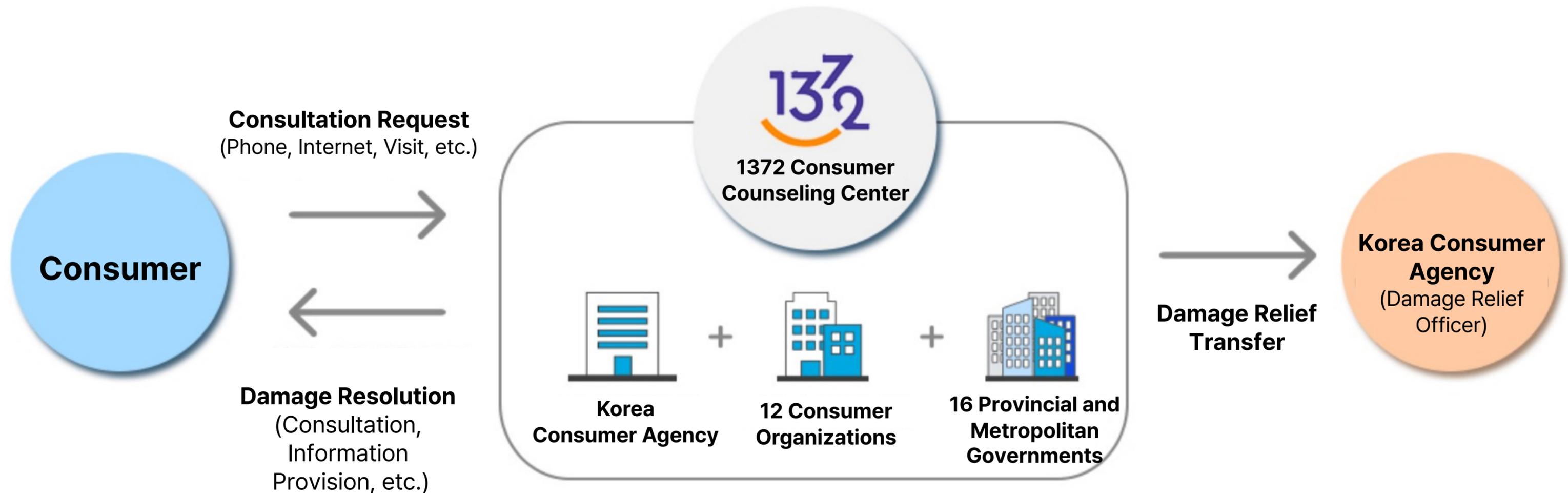
1372 Consumer Counseling Data

Data Source

1372 Consumer Counseling Center (South Korea)

Period

Cross-sectional data by year
2019 & 2020

Data Points

- 487,759 consumer complaint cases
- Aggregated across 229 municipal units (si/gun/gu)

3-2. Measures

Variables

Independent variables
Economic Inequality

- Measures: **Gini Index, Gini Index²**
- Definition: Gini Index quantifies income distribution inequality within a population (0 = perfect equality, 1 = maximum inequality)
- Squared Term: Captures non-linear relationship

Dependent variables
Consumer Complaints

- Measure: **Log-transformed total consumer complaints**
- Definition: Total number of consumer complaints by 229 regions per year (2019, 2020 cross-sections)
- Transformation: Natural logarithm applied for distribution normalization

control variables
Gross Regional Domestic Product(Log), Population Density(Log), Sex Ratio, Age group distribution (0-19, 20-39, 40-59, 60-79, 80+)

Cross-Sectional Regression Analysis

- To examine the relationship between regional economic inequality and consumer complaint behavior, regression analyses were conducted using the number of consumer complaints and regional Gini coefficients.

- Added both linear and quadratic terms of the Gini coefficient to the model to account for the potentially nonlinear and inconsistent effects of economic inequality on consumer behavior.

Log(Consumer Complaints)$_{xt}$ = β_{0t} + β_{1t}(Gini Index) $^2_{xt}$ + β_{2t}(Gini Index)$_{xt}$ + β_{3t}Log(GRDP)$_{xt}$ + β_{4t}Log(Population Density)$_{xt}$ + β_{5t}(Sex Ratio)$_{xt}$ + β_{6t}(Age 0-19%)$_{xt}$ + β_{7t}(Age 40-59%)$_{xt}$ + β_{8t}(Age 60-79%)$_{xt}$ + β_{9t}(Age 80+%)$_{xt}$ + ε_{xt}

x = region (x = 1, 2, ..., 229), t = year (t = 2019, 2020)

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4-1. Descriptive Statistics

Descriptive Statistics for the variables

N=229

Variable	Year = 2019							Year = 2020						
	Mean	SD	Variance	Min	Max	Skewness	Kurtosis	Mean	SD	Variance	Min	Max	Skewness	Kurtosis
N of Total Complaints	1196.489	1545.620	2388940.146	29.000	12248.000	2.985	16.403	1426.843	1713.788	2937071.019	30.000	9471.000	2.070	7.814
N of Total Complaints (Log)	6.334	1.324	1.753	3.367	9.413	-0.094	1.970	6.525	1.319	1.740	3.401	9.156	-0.113	1.956
Gini Index	0.477	0.063	0.004	0.292	0.638	0.294	2.778	0.467	0.067	0.004	0.295	0.639	0.444	2.551
Gini Index Squared	0.231	0.061	0.004	0.085	0.407	0.611	2.941	0.223	0.065	0.004	0.087	0.408	0.721	2.860
GRDP	8104361	10607368	112516256747492	278633	76110441	3.049	15.391	8052595	10885196	118487492754159	251845	83373909	3.327	18.033
GRDP(Log)	15.282	1.134	1.286	12.538	18.148	0.118	2.345	15.271	1.129	1.275	12.437	18.239	0.150	2.408
Population Density	3376.123	5480.214	30032741.597	12.779	23947.547	1.814	5.399	3346.771	5405.612	29220637.446	13.070	23865.714	1.810	5.394

4-1. Descriptive Statistics

Descriptive Statistics for the variables

N=229

Variable	Year = 2019							Year = 2020						
	Mean	SD	Variance	Min	Max	Skewness	Kurtosis	Mean	SD	Variance	Min	Max	Skewness	Kurtosis
Land Area(km²)	438.434	381.751	145734073172.106	2.826	1820.310	1	3	438.483	381.772	145750240446.637	2.826	1820.344	1	3
Sex Ratio*	1.004	0.055	0.003	0.900	1.310	1.323	7.181	1.005	0.057	0.003	0.890	1.320	1.287	7.003
Age 0-19 (%)	24.601	26.944	725.970	7.507	109.193	2.664	8.275	15.116	3.505	12.282	7.061	25.282	0.228	2.546
Age 20-39 (%)	23.113	5.529	30.572	13.159	39.242	-0.076	2.027	22.643	5.747	33.026	12.173	39.574	-0.073	2.069
Age 40–59 (%)	30.978	3.744	14.020	16.273	36.476	-1.911	7.061	31.400	2.289	5.238	25.883	36.055	-0.171	2.260
Age 60–79 (%)	24.058	6.900	47.604	11.226	38.717	0.147	1.859	24.853	6.892	47.502	11.940	40.222	0.220	1.942
Age 80+ (%)	6.851	5.848	34.195	1.520	30.664	2.161	7.580	5.988	3.278	10.744	1.589	13.896	0.750	2.341

*: Sex Ratio = (Number of males ÷ Number of females) × 100

4-1. Descriptive Statistics

Descriptive Statistics of the number of Complaints by Type

N=229

Variable **Complaint Reasons***	Year = 2019							Year = 2020						
	Mean	SD	Variance	Min	Max	Skewness	Kurtosis	Mean	SD	Variance	Min	Max	Skewness	Kurtosis
1. Misleading Advertising	13.157	17.673	312.344	0	143	3.109	17.671	20.367	24.442	597.417	0	134	1.910	7.176
2. Contract Terms	9.314	14.017	196.488	0	88	3.036	14.300	18.646	29.080	845.659	0	206	3.572	19.331
3. Pricing and Fees	21.066	26.487	701.561	0	201	2.894	15.005	36.738	42.547	1810.264	0	221	2.070	7.813
4. Interest and Service Charges	4.546	8.378	70.188	0	102	7.425	82.056	6.336	7.931	62.908	0	47	2.045	8.072
5. Contracts by Incompetent Persons	0.594	1.130	1.277	0	7	2.707	11.704	1.397	2.080	4.328	0	13	2.155	8.440
6. Withdrawal of Subscription	79.659	109.468	11983.261	0	955	3.594	22.994	132.349	161.117	25958.693	1	918	2.223	8.924
7. Nonperformance of Contracts	114.157	144.823	20973.756	1	1004	2.583	12.104	220.716	270.080	72943.152	6	1511	2.089	7.890
8. Product/Service Quality	161.406	216.037	46671.997	2	1840	3.346	20.448	274.961	325.811	106153.003	5	1753	2.058	7.786

4-1. Descriptive Statistics

Descriptive Statistics of the number of Complaints by Type

N=229

Variable **Complaint Reasons***	Year = 2019							Year = 2020						
	Mean	SD	Variance	Min	Max	Skewness	Kurtosis	Mean	SD	Variance	Min	Max	Skewness	Kurtosis
9. Safety (Product/Facility)	16.214	23.057	531.608	0	216	3.926	28.324	19.751	24.673	608.758	0	141	2.095	8.095
10. After-service issues	50.681	63.443	4025.034	1	452	2.694	12.915	84.489	98.341	9671.005	2	528	2.217	8.574
11. Contract Cancellation /Termination	162.690	234.896	55175.917	1	2217	4.035	29.349	361.092	448.244	200922.321	5	2562	2.079	7.892
12. Unfair Debt Collection	1.105	1.937	3.752	0	19	4.369	34.858	1.987	2.650	7.022	0	18	2.353	10.847
13. Trade Practices	7.559	14.925	222.756	0	187	8.140	93.435	12.598	16.179	261.759	0	86	2.189	8.030
14. Legal and Institutional Issues	1.917	6.805	46.304	0	98	12.500	175.419	2.978	4.385	19.232	0	25	2.619	11.066
15. Unfair Practices	39.026	49.751	2475.131	0	323	2.340	9.938	74.031	89.442	7999.916	1	538	2.266	9.236
16. Simple Inquiries	58.734	74.304	5521.030	1	545	2.681	13.122	119.690	145.275	21104.943	1	735	2.060	7.462

4-1. Descriptive Statistics

Descriptive Statistics of the number of Complaints by Type

N=229

Variable **Complaint Results***	**Year = 2019**							**Year = 2020**						
	Mean	SD	Variance	Min	Max	Skewness	Kurtosis	Mean	SD	Variance	Min	Max	Skewness	Kurtosis
1. Explanation of Dispute Resolution Standards	159.642	214.403	45968.669	2	1355	2.565	11.143	277.886	367.423	134999.408	4	2140	2.342	9.190
2. Legal/Regulatory Explanation	79.485	106.617	11367.260	1	639	2.453	10.362	137.170	177.688	31572.993	2	1037	2.275	9.052
3. Provision of Product Information	20.367	27.534	758.102	0	258	4.007	28.451	35.528	50.340	2534.145	0	512	4.548	37.625
4. Provision of Market Information	19.144	23.169	536.826	0	149	2.658	12.379	40.852	55.988	3134.662	0	445	2.947	16.096
5. Guidance to Business Consultation Office	1.288	1.997	3.987	0	17	3.337	21.222	2.590	3.655	13.357	0	30	3.731	23.563
6. Referral/Transfer to Other Agencies	10.441	13.387	179.204	0	67	2.040	7.507	18.572	23.782	565.606	0	148	2.413	10.315
7. Provision of Other Information	182.463	281.730	79371.741	7	3165	5.898	57.231	326.345	379.873	144303.613	8	2004	1.930	7.057
8. Test Results / Garment Review Requests	11.148	15.106	228.206	0	111	2.783	13.976	15.581	20.748	430.464	0	134	2.352	9.866

4-1. Descriptive Statistics

Descriptive Statistics of the number of Complaints by Type

N=229

Variable **Complaint Reasons***	Year = 2019							Year = 2020						
	Mean	SD	Variance	Min	Max	Skewness	Kurtosis	Mean	SD	Variance	Min	Max	Skewness	Kurtosis
9. Business Self-Consultation Outcomes	14.930	18.892	356.925	0	96	1.801	6.419	23.419	29.686	881.271	0	137	1.728	5.917
10. Rejection	0.066	0.248	0.061	0	1	3.512	13.337	0.131	0.387	0.149	0	2	3.051	12.116
11. Guidance for Filing Relief Requests	93.948	137.037	18779.024	0	1366	4.383	35.371	185.865	230.071	52932.679	2	1274	1.992	7.577
12. Additional Document Requests	0.004	0.066	0.004	0	1	15.033	227.004	0.000	0.000	0.000	0	0		
13. Follow-up Consultations	0.974	1.622	2.631	0	7	1.878	5.825	0.620	1.321	1.745	0	9	3.159	15.195
14. Repairs and Maintenance Outcomes	9.956	12.667	160.454	0	86	2.875	13.354	24.031	26.273	690.249	0	156	2.146	8.476
15. Exchange Outcomes	5.467	7.592	57.645	0	63	3.357	20.064	11.114	12.989	168.724	0	74	2.278	9.525
16. Refund Outcomes	36.419	48.827	2384.052	0	400	3.358	19.549	84.336	99.043	9809.443	0	519	2.109	8.148

4-1. Descriptive Statistics

Descriptive Statistics of the number of Complaints by Type

N=229

Variable **Complaint Reasons***	Year = 2019							Year = 2020						
	Mean	SD	Variance	Min	Max	Skewness	Kurtosis	Mean	SD	Variance	Min	Max	Skewness	Kurtosis
17. Contract Performance Outcomes	13.367	16.655	277.391	0	111	2.647	11.866	35.568	42.375	1795.624	0	264	2.709	12.131
18. Contract Cancellation/Termination Outcomes	14.441	18.459	340.721	0	127	2.980	14.607	33.415	39.276	1542.595	0	279	2.686	13.301
19. Compensation Outcomes	6.314	8.360	69.883	0	60	2.969	15.418	10.406	12.599	158.725	0	72	2.259	9.084
20. Rectification of Unfair Practices	6.786	9.391	88.186	0	62	2.909	14.501	12.035	15.092	227.771	0	87	2.356	9.482
21. Non-Processable Cases	7.293	13.111	171.910	0	156	6.993	74.476	11.175	13.657	186.513	0	80	2.248	9.027
22. Failure to Reach Agreement	47.432	61.675	3803.764	0	495	3.287	18.669	100.974	119.378	14250.999	1	636	2.127	8.046
23. Exchange Outcomes	0.450	0.947	0.898	0	5	2.625	10.120	0.515	0.953	0.909	0	5	2.224	7.949

4-2. Regression Analysis
Relationship between Economic inequality and Consumer Complaint Behaviors

- Found a significant positive linear term and negative quadratic term for the Gini coefficient
  → confirming an inverted U-shaped relationship.

	Year = 2019					
Variable	Coef.	SE	t-stat	p-value	95% CI	
Gini Index	24.419	5.402	4.52	0.000	13.772	35.066
Gini Index Squared	-26.690	5.524	-4.83	0.000	-37.578	-15.803
GRDP(Log)*	0.597	0.043	13.95	0.000	0.512	0.681
Population Density(Log)**	0.066	0.024	2.80	0.005	0.020	0.113
Sex Ratio***	-5.030	0.643	-7.83	0.000	-6.296	-3.763
Age 0-19 (%)	0.012	0.002	5.41	0.000	0.008	0.017
Age 40–59 (%)	0.027	0.021	1.29	0.200	-0.015	0.069
Age 60–79 (%)	-0.050	0.009	-5.49	0.000	-0.069	-0.032
Age 80+ (%)	-0.053	0.021	-2.53	0.012	-0.093	-0.012
cons	-3.188	2.132	-1.50	0.136	-7.390	1.014
R²	0.914					
Adjusted R²	0.911					
N	229					

*: Gross Regional Domestic Product(Unit: million Korean Won)
**: Population Density = population/km2
***: Sex Ratio = (Number of males ÷ Number of females) × 100

4-2. Regression Analysis
Relationship between Economic inequality and Consumer Complaint Behaviors

- Found a significant positive linear term and negative quadratic term for the Gini coefficient.
- Significance observed in both 2019 and 2020.

Year = 2020						
Variable	Coef.	SE	t-stat	p-value	95% CI	
Gini Index	24.438	5.202	4.70	0.000	14.186	34.690
Gini Index Squared	-26.801	5.319	-5.04	0.000	-37.283	-16.317
GRDP(Log)*	0.611	0.043	14.22	0.000	0.526	0.695
Population Density(Log)**	0.040	0.035	1.13	0.261	-0.030	0.110
Sex Ratio***	-5.573	0.708	-7.87	0.000	-6.968	-4.178
Age 0-19 (%)	0.012	0.022	0.56	0.575	-0.031	0.055
Age 40–59 (%)	0.027	0.021	1.27	0.206	-0.015	0.068
Age 60–79 (%)	-0.024	0.017	-1.44	0.151	-0.058	0.009
Age 80+ (%)	-0.102	0.031	-3.32	0.001	-0.163	-0.042
cons	-2.697	2.381	-1.13	0.259	-7.390	1.997
R^2	0.916					
Adjusted R^2	0.912					
N	229					

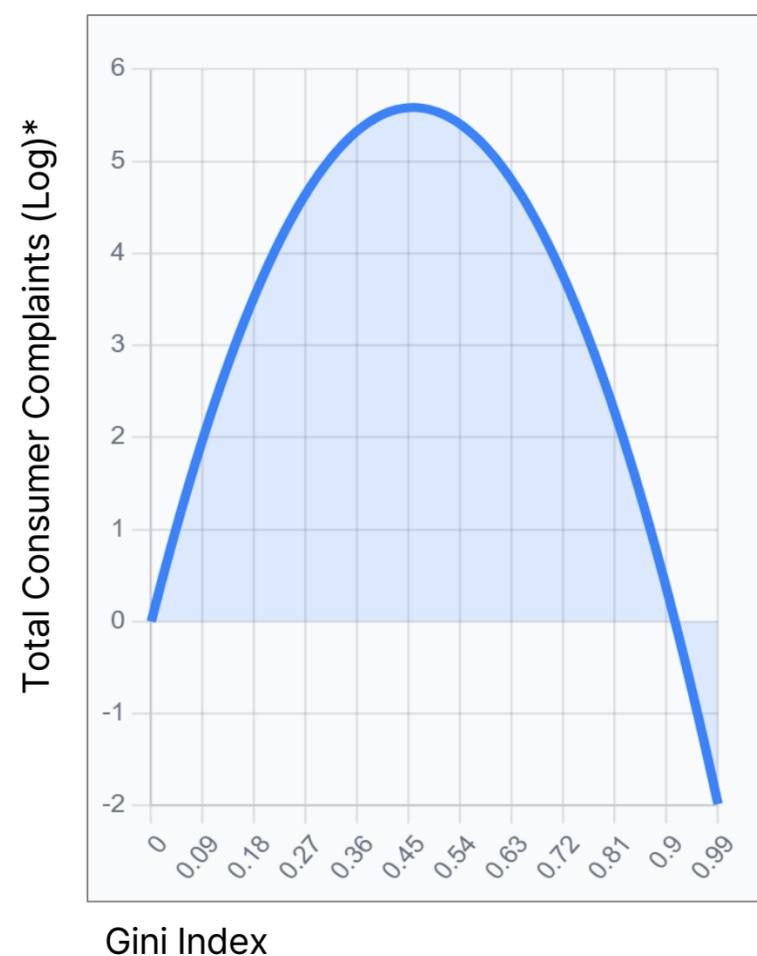*: Gross Regional Domestic Product(Unit: million Korean Won)
**: Population Density = population/km2
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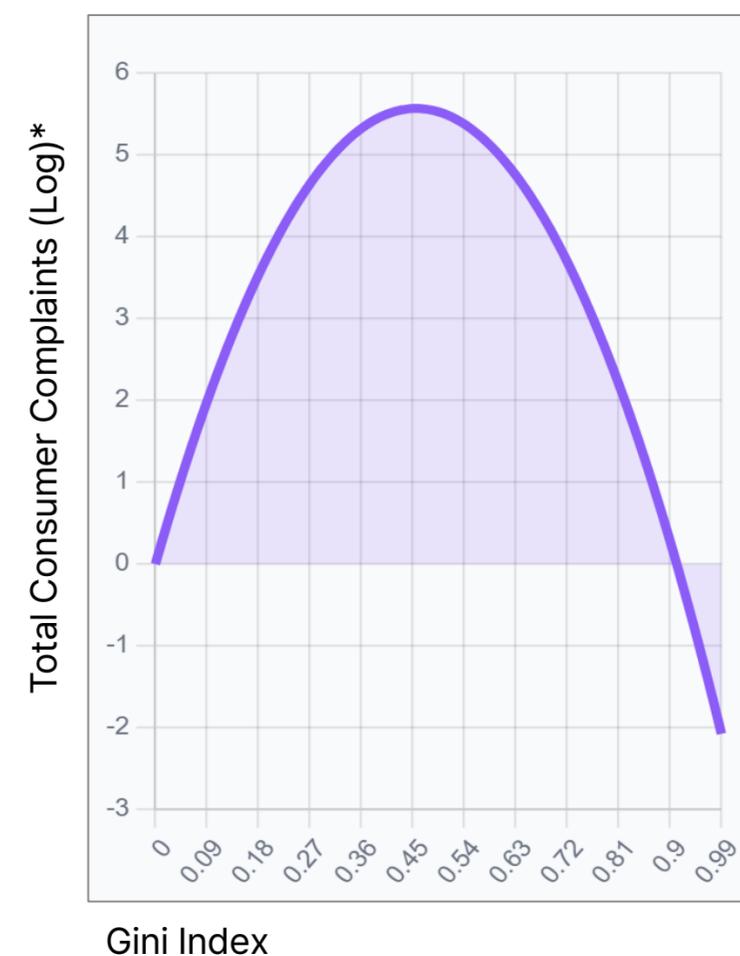
4-2. Regression Analysis

Confirming an inverted U-shaped relationship

Year = 2019

Gini Index

- **Peak at Gini 0.457** indicates optimal consumer advocacy conditions at moderate inequality.
- Steep decline after peak suggests extreme inequality suppresses consumer voice.
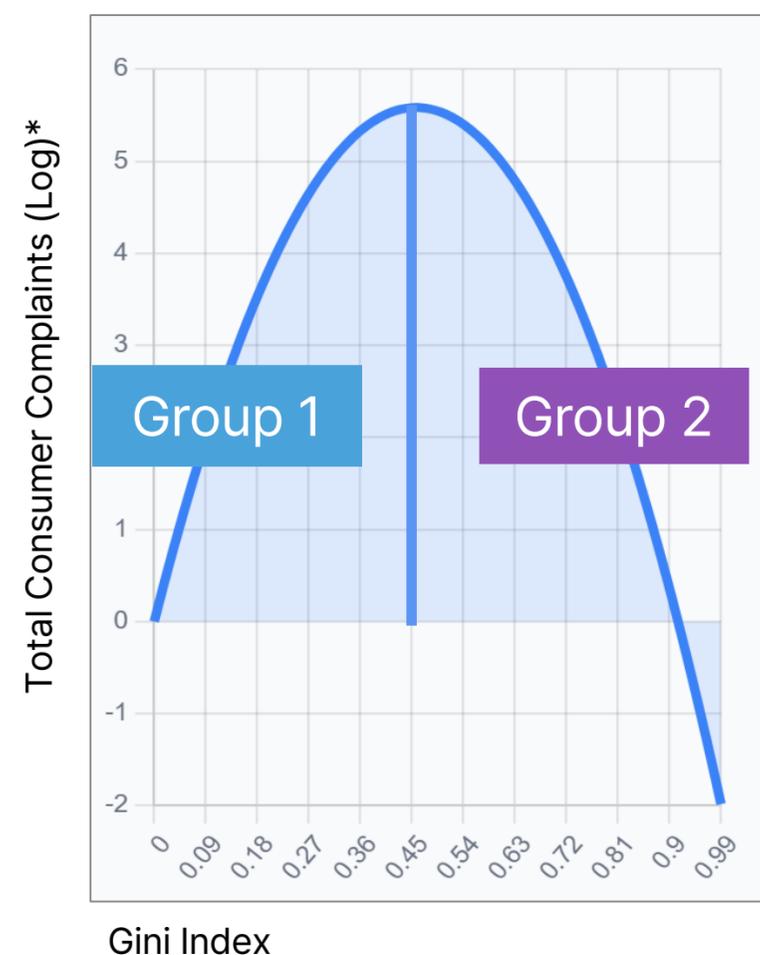
Year = 2020

Gini Index

- **Peak at Gini 0.456** shows consistent optimal inequality threshold across years.
- Slightly steeper negative coefficient (-26.801 vs -26.690) shows faster complaint decline at high inequality

*: The dependent variable was log-transformed for normalization
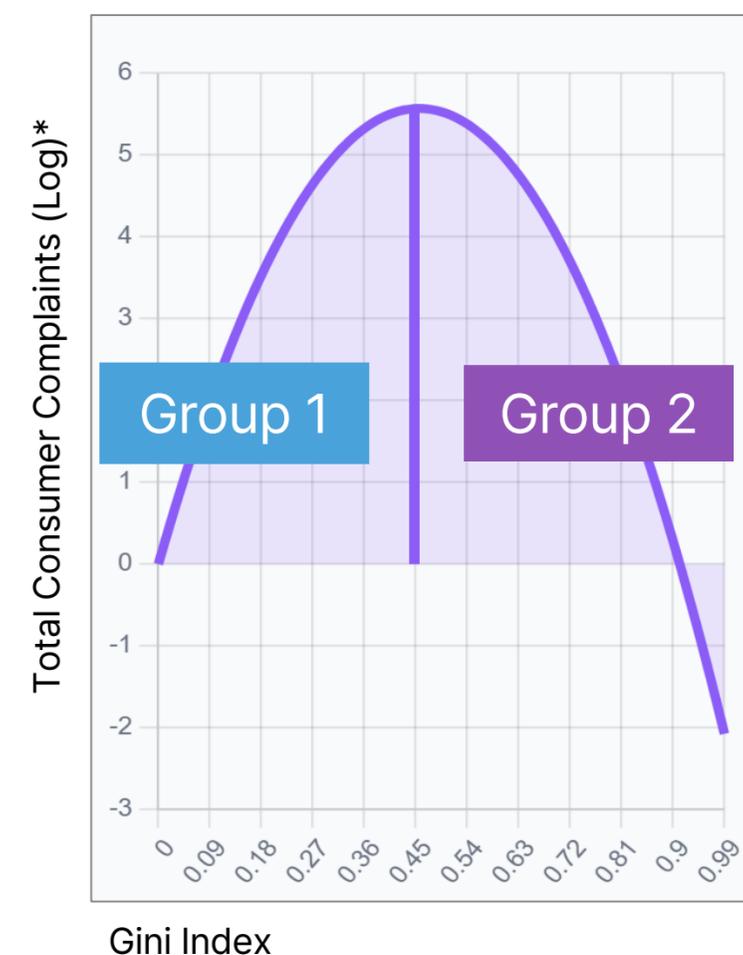
4-2. Regression Analysis

Confirming an inverted U-shaped relationship

Year = 2019

- **Peak at Gini 0.457** indicates optimal consumer advocacy conditions at moderate inequality.
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Year = 2020

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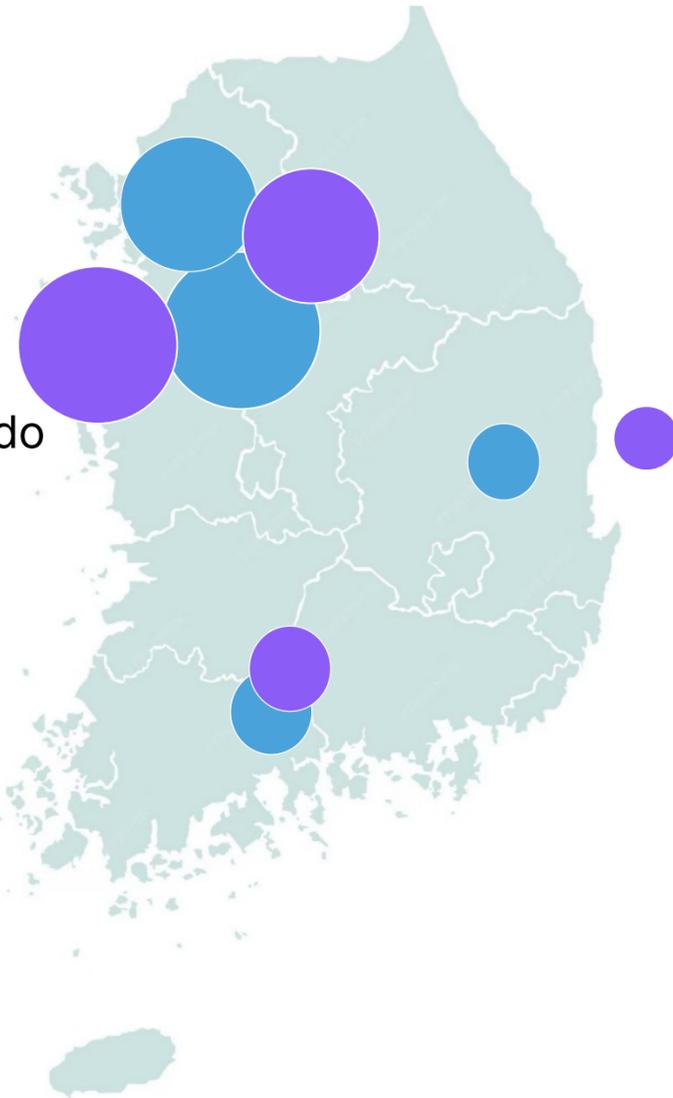
Confirming an inverted U-shaped relationship

Year = 2019

Group 1: Low Inequality Regions
(Gini ≤ 0.457)

▲ High GRDP
: Ansan-si, Gyeonggi-do,
 Geumcheon-gu, Seoul
▼ Low GRDP
: Yeongyang-gun, Gyeongsangbuk-do
Gurye-gun, Jeollanam-do

Group 2: High Inequality Regions
Gini > 0.457)

▲ High GRDP
: Hwaseong-si, Gyeonggi-do,
Gangnam-gu, Seoul
▼ Low GRDP
: Ulleung-gun, Gyeongsangbuk-do,
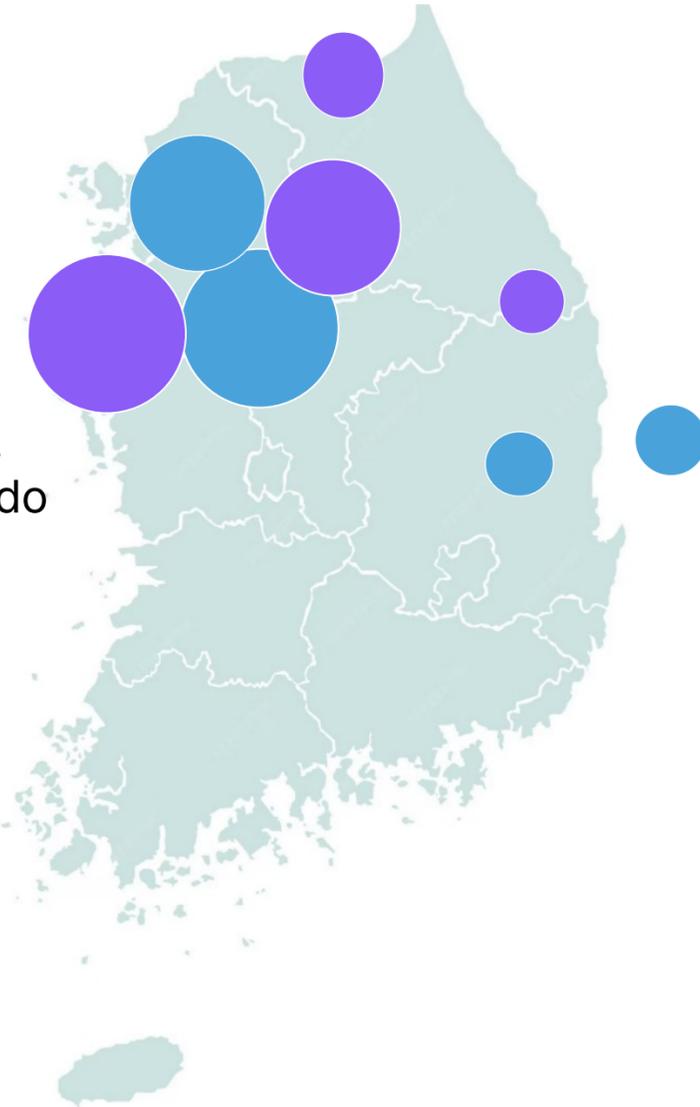 Jangsu-gun, Jeollabuk-do

Year = 2020

Group 1: Low Inequality Regions
(Gini ≤ 0.456)

▲ High GRDP
: Ansan-si, Gyeonggi-do,
 Geumcheon-gu, Seoul
▼ Low GRDP
: Ulleung-gun, Gyeongsangbuk-do,
Yeongyang-gun, Gyeongsangbuk-do

Group 2: High Inequality Regions
(Gini > 0.456)

▲ High GRDP
: Hwaseong-si, Gyeonggi-do,
Gangnam-gu, Seoul
▼ Low GRDP
: Taebaek-si, Gangwon-do
Yanggu-gun, Gangwon-do

4-3. Ad-hoc Analyses

Differences between Areas of Low and High Economic Inequality

- Both 2019 and 2020 show **consistent patterns in the average characteristics of the two groups**, with significant differences observed in key variables across the groups.
- **Group 2** (where higher inequality is associated with fewer complaints) is characterized by significantly higher GRDP and population density, as well as a larger share of the working-age population (20–59), whereas **Group 1** has a higher proportion of older adults (60+) and occupies larger land areas.

Variable	Year = 2019							Year = 2020						
	Group 1(n=101)	Group 2(n=128)	Mean Diff.	t-stat	p-value	Cohen's d	Levene's	Group 1(n=117)	Group 2(n=112)	Mean Diff.	t-stat	p-value	Cohen's d	Levene's
	Mean	Mean						Mean	Mean					
Gini Index	0.421	0.521	-0.100	-20.565	0.000	-2.605	0.000	0.413	0.524	-0.111	-22.524	0.000	-3.009	-3.009
GRDP*	3652593	11600000	8104361	-6.693	0.000	-0.808	0.000	3458068	12900000	-9394167	-7.089	0.000	-0.955	0.000
Population Density	2141.134	4350.607	-2209.473	-3.207	0.002	-0.411	0.004	1885.435	4873.345	-2987.910	-4.303	0.000	-0.574	0.000
Land Area(km2)	495	394	100	1.989	0.048	0.265	0.077	525	348	177	3.599	0.000	0.476	0.710
Sex Ratio**	1.007	1.003	0.004	0.564	0.574	0.075	0.985	1.013	0.996	0.017	2.258	0.025	0.299	0.475
Age 0-19 (%)	25.578	23.829	1.749	0.487	0.627	0.065	0.135	13.130	17.191	-4.061	-10.741	0.000	-1.420	0.839
Age 20-39 (%)	20.147	25.454	-5.307	-8.030	0.000	-1.090	0.039	19.538	25.888	-6.350	-10.077	0.000	-1.324	0.001
Age 40-59 (%)	29.731	31.963	-2.233	-4.399	0.000	-0.623	0.001	30.472	32.369	-1.897	-6.918	0.000	-0.909	0.001
Age 60-79 (%)	28.065	20.896	7.169	9.101	0.000	1.211	0.238	29.037	20.482	8.555	12.043	0.000	1.581	0.001
Age 80+ (%)	9.343	4.886	4.457	5.777	0.000	0.822	0.000	7.824	4.071	3.753	10.681	0.000	1.395	0.000

*: Gross Regional Domestic Product(Unit: million Korean Won)
**: Population Density = population/km2
**: Sex Ratio = (Number of males ÷ Number of females) × 100

4-3. Ad-hoc Analyses

Differences between Areas of Low and High Economic Inequality

- **Group 1** focuses on **routine complaints** (inquiries, service issues) while **Group 2** addresses **serious concerns** (safety, contract terminations), reflecting distinct complaint severity patterns.

Variable **Complaint Reasons***	Year = 2019							Year = 2020						
	Group 1(n=101)	Group 2(n=128)	Mean Diff.	t-stat	p-value	Cohen's d	Levene's	Group 1(n=117)	Group 2(n=112)	Mean Diff.	t-stat	p-value	Cohen's d	Levene's
	Mean	Mean						Mean	Mean					
1. Misleading Advertising	0.010	0.011	-0.001	-1.093	0.276	-0.149	0.001	0.014	0.014	-0.001	-0.571	0.569	-0.074	0.000
2. Contract Terms	0.007	0.007	0.000	0.325	0.745	0.046	0.000	0.011	0.013	-0.001	-1.071	0.286	-0.141	0.011
3. Pricing and Fees	0.021	0.019	0.002	1.187	0.237	0.165	0.001	0.030	0.027	0.004	2.645	0.009	0.345	0.000
4. Interest and Service Charges	0.004	0.004	0.001	1.041	0.300	0.151	0.000	0.004	0.005	-0.001	-2.408	0.017	-0.316	0.000
5. Contracts by Incompetent Persons	0.000	0.001	0.000	-0.962	0.337	-0.128	0.337	0.001	0.001	0.000	0.016	0.987	0.002	0.205
6. Withdrawal of Subscription	0.066	0.066	0.000	-0.101	0.920	-0.014	0.000	0.091	0.094	-0.003	-1.196	0.233	-0.157	0.000
7. Nonperformance of Contracts	0.096	0.095	0.000	0.142	0.887	0.020	0.000	0.155	0.152	0.002	0.765	0.445	0.100	0.002
8. Product/Service Quality	0.131	0.134	-0.004	-1.087	0.279	-0.153	0.000	0.198	0.193	0.005	1.498	0.136	0.196	0.002

*: Number of Complaints per Capita by Complaint Reason

4-3. Ad-hoc Analyses

Differences between Areas of Low and High Economic Inequality

- **Group 1** focuses on **routine complaints** (inquiries, service issues) while **Group 2** addresses **serious concerns** (safety, contract terminations), reflecting distinct complaint severity patterns.

Variable **Complaint Reasons***	Year = 2019							Year = 2020						
	Group 1(n=101)	Group 2(n=128)	Mean Diff.	t-stat	p-value	Cohen's d	Levene's	Group 1(n=117)	Group 2(n=112)	Mean Diff.	t-stat	p-value	Cohen's d	Levene's
	Mean	Mean						Mean	Mean					
9. Safety(Product/Facility)	0.013	0.013	0.000	0.389	0.698	0.054	0.001	0.011	0.014	-0.003	-3.348	0.001	-0.438	0.000
10. After-service issues	0.048	0.044	0.003	1.629	0.105	0.230	0.000	0.076	0.061	0.015	5.662	0.000	0.739	0.000
11. Contract Cancellation/Termination	0.118	0.129	-0.011	-3.040	0.003	-0.409	0.263	0.221	0.248	-0.027	-5.886	0.000	-0.775	0.020
12. Unfair Debt Collection	0.001	0.001	0.000	1.418	0.158	0.189	0.128	0.002	0.001	0.001	2.333	0.021	0.303	0.000
13. Trade Practices	0.006	0.006	0.001	0.756	0.451	0.107	0.000	0.010	0.009	0.001	1.260	0.209	0.165	0.000
14. Legal and Institutional Issues	0.001	0.001	0.000	-0.336	0.737	-0.045	0.557	0.002	0.002	0.000	0.985	0.326	0.128	0.001
15. Unfair Practices	0.032	0.032	0.000	-0.208	0.835	-0.029	0.000	0.056	0.053	0.003	1.445	0.150	0.189	0.001
16. Simple Inquiries	0.056	0.049	0.007	3.039	0.003	0.432	0.000	0.085	0.084	0.001	0.340	0.734	0.044	0.000

*: Number of Complaints per Capita by Complaint Reason

4-3. Ad-hoc Analyses

Differences between Areas of Low and High Economic Inequality

- **Group 1** seeks **information** while **Group 2** seeks **problem resolution**, suggesting inequality influences different complaint behaviors

Variable **Complaint Results***	Year = 2019							Year = 2020						
	Group 1(n=101) Mean	Group 2(n=128) Mean	Mean Diff.	t-stat	p-value	Cohen's d	Levene's	Group 1(n=117) Mean	Group 2(n=112) Mean	Mean Diff.	t-stat	p-value	Cohen's d	Levene's
1. Explanation of Dispute Resolution Standards	0.112	0.128	-0.016	ㅎ-5.095	0.000	-0.678	-0.678	0.167	0.187	-0.020	-5.434	0.000	-0.718	0.103
2. Legal/Regulatory Explanation	0.058	0.062	-0.004	-1.673	0.096	-0.223	0.529	0.088	0.092	-0.004	-1.289	0.199	-0.169	0.003
3. Provision of Product Information	0.023	0.018	0.005	2.805	0.006	0.388	0.009	0.030	0.026	0.005	2.171	0.031	0.285	0.011
4. Provision of Market Information	0.022	0.018	0.005	3.099	0.002	0.432	0.000	0.035	0.028	0.008	2.824	0.005	0.369	0.000
5. Guidance to Business Consultation Office	0.001	0.001	0.000	0.519	0.604	0.069	0.179	0.003	0.002	0.001	2.146	0.033	0.280	0.001
6. Referral/Transfer to Other Agencies	0.008	0.009	0.000	-0.477	0.634	-0.067	0.000	0.013	0.013	0.001	0.943	0.347	0.123	0.000
7. Provision of Other Information	0.161	0.149	0.011	2.792	0.006	0.372	0.066	0.235	0.233	0.002	0.347	0.729	0.045	0.003
8. Test Results / Garment Review Requests	0.008	0.009	-0.001	-1.667	0.097	-0.232	0.000	0.008	0.011	-0.003	-4.323	0.000	-0.568	0.000

*: Number of Complaints per Capita by Complaint Reason

4-3. Ad-hoc Analyses

Differences between Areas of Low and High Economic Inequality

- **Group 1** seeks **information** while **Group 2** seeks **problem resolution**, suggesting inequality influences different complaint behaviors

Variable **Complaint Results***	Year = 2019							Year = 2020						
	Group 1(n=101)	Group 2(n=128)	Mean Diff.	t-stat	p-value	Cohen's d	Levene's	Group 1(n=117)	Group 2(n=112)	Mean Diff.	t-stat	p-value	Cohen's d	Levene's
	Mean	Mean						Mean	Mean					
9. Business Self-Consultation Outcomes	0.008	0.013	-0.005	-5.396	0.000	-0.718	0.212	0.012	0.016	-0.005	-4.262	0.000	-0.563	0.070
10. Rejection	0.000	0.000	0.000	-2.578	0.011	-0.313	0.019	0.000	0.000	0.000	-0.916	0.361	-0.121	0.361
11. Guidance for Filing Relief Requests	0.062	0.075	-0.013	-4.048	0.000	-0.549	0.032	0.106	0.131	-0.025	-5.892	0.000	-0.775	0.043
12. Additional Document Requests	0.000	0.000	0.000	-0.888	0.376	-0.118	0.376	.	.	.	.	.	.	.
13. Follow-up Consultations	0.001	0.001	0.000	-0.349	0.727	-0.046	0.729	0.001	0.000	0.000	1.095	0.275	0.145	0.275
14. Repairs and Maintenance Outcomes	0.012	0.010	0.002	2.117	0.036	0.293	0.005	0.024	0.018	0.007	4.603	0.000	0.600	0.000
15. Exchange Outcomes	0.005	0.005	0.000	0.654	0.514	0.090	0.001	0.062	0.061	0.001	0.438	0.662	0.057	0.000
16. Refund Outcomes	0.032	0.030	0.001	0.818	0.415	0.114	0.002	0.036	0.027	0.010	5.518	0.000	0.722	0.000

*: Number of Complaints per Capita by Complaint Reason

4-3. Ad-hoc Analyses

Differences between Areas of Low and High Economic Inequality

- **Group 1** seeks **information** while **Group 2** seeks **problem resolution**, suggesting inequality influences different complaint behaviors

Variable **Complaint Results***	Year = 2019							Year = 2020						
	Group 1(n=101)	Group 2(n=128)	Mean Diff.	t-stat	p-value	Cohen's d	Levene's	Group 1(n=117)	Group 2(n=112)	Mean Diff.	t-stat	p-value	Cohen's d	Levene's
	Mean	Mean						Mean	Mean					
17. Contract Performance Outcomes	0.016	0.012	0.005	3.599	0.001	0.518	0.000	0.029	0.025	0.004	0.013	2.513	0.329	0.000
18. Contract Cancellation/Termination Outcomes	0.016	0.013	0.002	1.795	0.074	0.242	0.034	0.009	0.009	0.001	0.762	0.447	0.100	0.000
19. Compensation Outcomes	0.005	0.006	0.000	-0.594	0.000	-0.083	0.000	0.009	0.007	0.002	3.139	0.002	0.408	0.000
20. Rectification of Unfair Practices	0.006	0.006	0.001	0.613	0.541	0.001	0.087	0.011	0.009	0.003	2.647	0.009	0.345	0.000
21. Non-Processable Cases	0.006	0.006	0.001	0.904	0.368	0.126	0.000	0.009	0.008	0.002	2.326	0.021	0.303	0.000
22. Failure to Reach Agreement	0.047	0.041	0.006	2.678	0.008	0.367	0.050	0.080	0.071	0.008	3.430	0.001	0.449	0.000
23. Exchange Outcomes	0.000	0.000	0.000	-0.234	0.815	0.815	-0.031	0.000	0.000	0.000	-1.053	0.294	-0.139	0.294

*: Number of Complaints per Capita by Complaint Reason

Contents
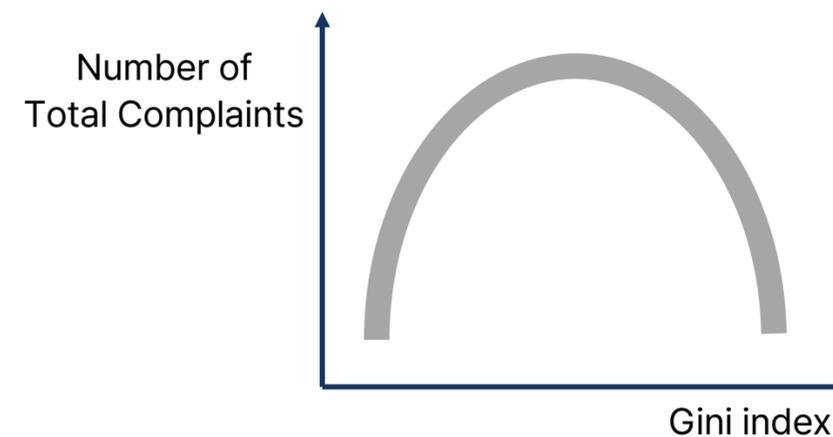
Economic Inequality and
Consumer Complaint Behavior

Inequality Effects on Consumer Complaint Behavior

- The relationship between economic inequality and public consumer complaint behavior is not linear, but shows an inverted U-shape with peak complaints at moderate inequality levels (Gini ≈ 0.45-0.46).
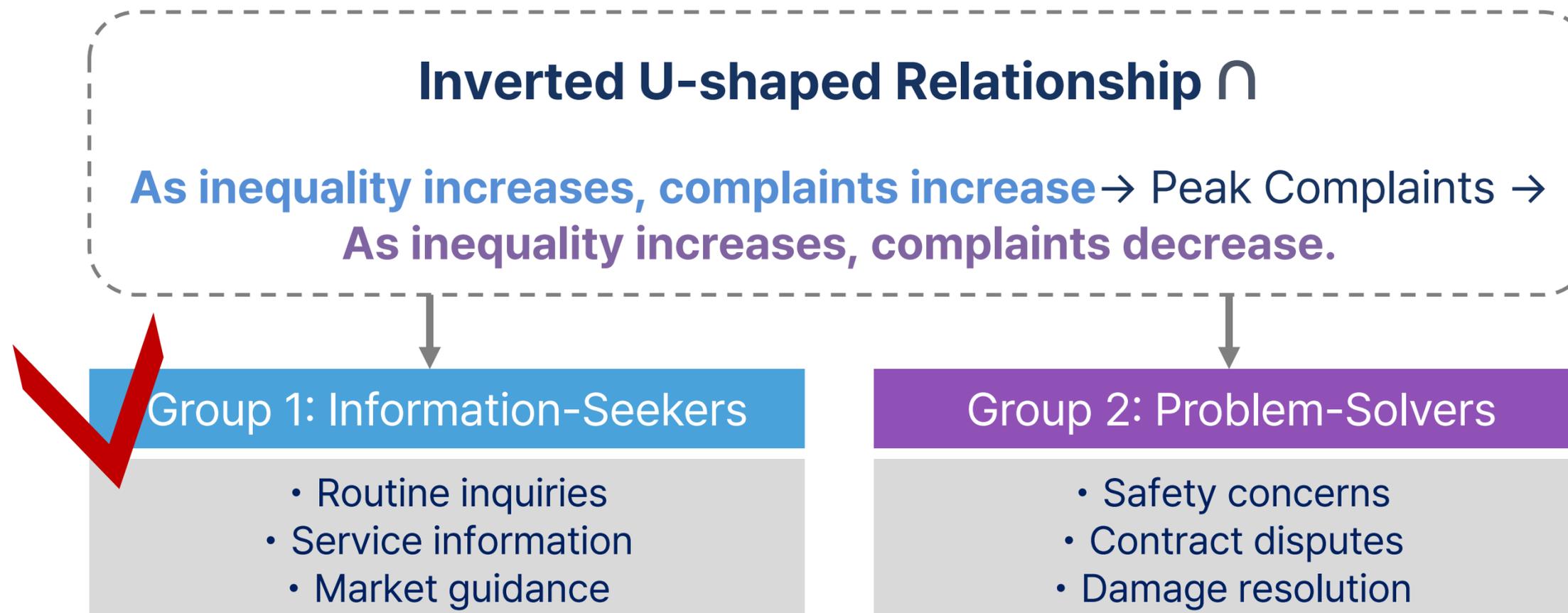
Inverted U-shaped Relationship

Number of
Total Complaints

Gini index

As inequality increases, complaints increase → Peak Complaints
→ **As inequality increases, complaints decrease.**

5-1. Discussion

Behavioral Patterns and Underlying Mechanisms

Area with Low Economic Inequality (Group 1)
- Complaints are information-seeking oriented
- Potentially driven by **fairness perception and social comparison**, suggesting that higher inequality may increase awareness of disparities and complaint activity
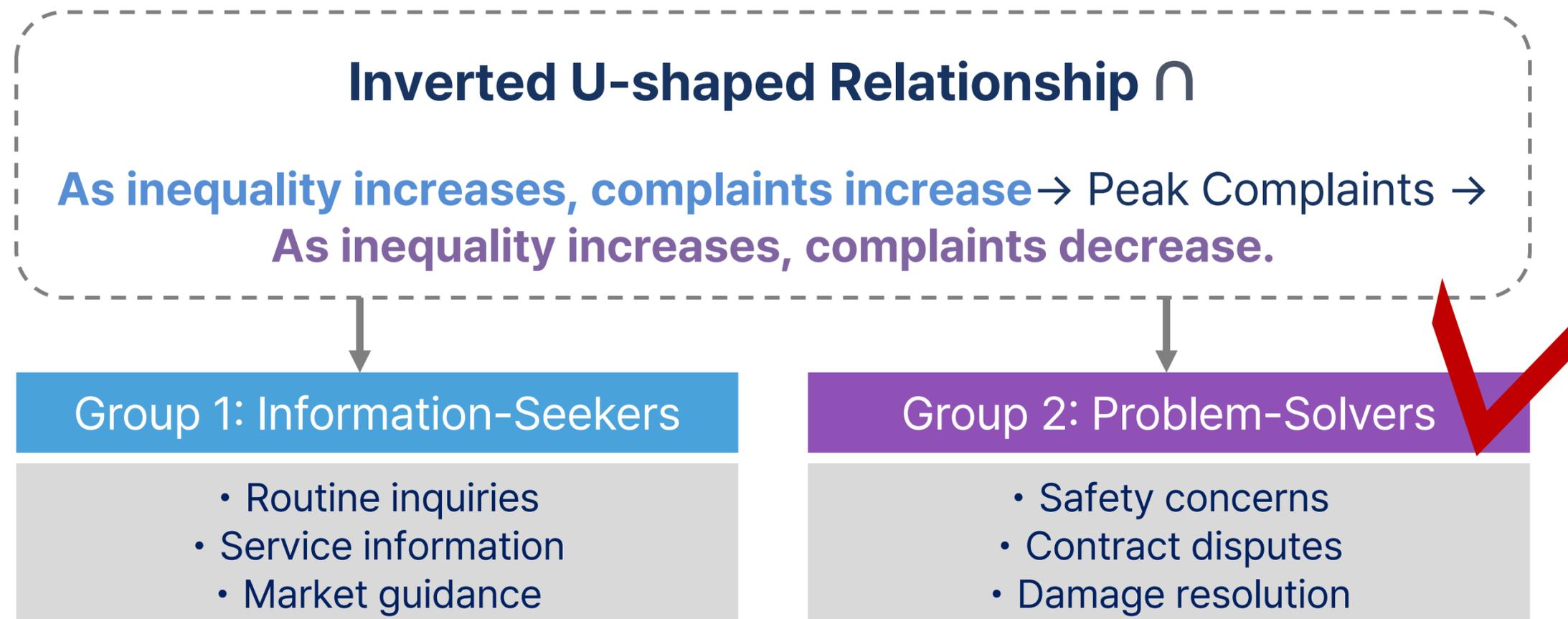- This can be reduced through information provision and market education.

Inverted U-shaped Relationship ∩

As inequality increases, complaints increase→ Peak Complaints →
As inequality increases, complaints decrease.

Group 1: Information-Seekers	Group 2: Problem-Solvers
• Routine inquiries • Service information • Market guidance	• Safety concerns • Contract disputes • Damage resolution

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Behavioral Patterns and Underlying Mechanisms

Area with High Economic Inequality (Group 2)
- Complaints are problem-solving oriented, focusing on consumer rights and damage resolution
- Lower-income consumers appear to show stronger consumer advocacy than affluent groups
- But as inequality increases, **only limited segments engage in complaints**, resulting in lower overall complaint volume

Inverted U-shaped Relationship ∩

As inequality increases, complaints increase→ Peak Complaints →
As inequality increases, complaints decrease.

Group 1: Information-Seekers	Group 2: Problem-Solvers
• Routine inquiries • Service information • Market guidance	• Safety concerns • Contract disputes • Damage resolution

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5-2. Implication

Contributions

- **Scale Extension**: From individual/household to regional-level analysis, providing new approach to consumer behavior research through regional economic context
- **Non-linear Relationship and segmentation**: Identified inverted U-shaped relationship and two regional groups - moderate inequality maximizes complaint activity while extreme inequality suppresses consumer complaints.

Limitations

- **Cross-sectional Analysis**: Limited causal inference capability
- **Ecological Fallacy Risk**: Regional-level analysis may not reflect individual behaviors

Future Research Direction

- **Data Enhancement**: Multi-year data for enhanced data-driven complaint behavior analysis
- **Individual-Level Extension**: Examine how perceived economic inequality influences public voice behavior intentions, testing mediating effects of psychological factors (self-efficacy, compliance tendency, fairness perception)

Thank you for your attention!

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