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DESIGUALDAD ECONÓMICA Y ACTITUDES HACIA LA DEMOCRACIA

ECONOMIC INEQUALITY AND ATTITUDES TOWARD DEMOCRACY

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Resumen

La desigualdad económica y el funcionamiento de la democracia son dos de los temas más relevantes y con efectos más importantes en las sociedades contemporáneas. La desigualdad en el mundo y en España ha crecido rápidamente en los últimos años (Piketty, 2020) y se espera que siga creciendo en el futuro (Alvaredo et al., 2017) si no se toman medidas concretas para evitarlo (Farhat, 2020; Stiglitz, 2016). Además, la popularidad de las democracias en todo el mundo y la satisfacción con el funcionamiento de la democracia y las instituciones democráticas han disminuido (Brosius et al., 2020; Catterberg & Moreno, 2006; Freedom House, 2021).

Así, en esta tesis pretendemos analizar la relación entre la desigualdad económica y las actitudes hacia la democracia. En particular, la parte empírica de esta tesis trata de averiguar cómo afectan las percepciones de desigualdad económica a la confianza en las instituciones, las percepciones y la satisfacción con el sistema político democrático, las percepciones de eficacia política de la ciudadanía y el comportamiento cívico y político (es decir, las intenciones de cooperar y participar en acciones colectivas).

La presente tesis se estructura en tres secciones. La primera sección, el Capítulo 1, presenta el marco conceptual. En el Capítulo 2 esbozamos nuestras preguntas de investigación y los objetivos específicos de las mismas.

En la segunda parte, presentamos los estudios empíricos. En el Capítulo 3, nos propusimos adaptar la escala de apoyo a la desigualdad económica (SEIS, Wiwad et al., 2019), y examinamos mediante dos estudios correlacionales cómo se relaciona con otras variables sociopolíticas. Nuestros resultados mostraron que SEIS presenta evidencias de validez y fiabilidad. Por ejemplo, se demostró que esta medida se encuentra estrechamente relacionada con otras medidas de actitudes hacia la desigualdad, y con la percepción de calidez y competencia de las personas en situación de pobreza.

En el Capítulo 4 realizamos tres experimentos para examinar el efecto de la desigualdad percibida en la confianza institucional, la democracia percibida, la satisfacción con la democracia, la eficacia política y las acciones colectivas dirigidas a la preservación del medioambiente. Hallamos que las percepciones de desigualdad influyen en las actitudes hacia el sistema político, concretamente reduciendo la confianza institucional de los individuos, la democracia percibida, la satisfacción con la democracia y la eficacia política. También investigamos los mecanismos psicológicos que explican esos efectos. Nuestra investigación demostró que la confianza institucional es uno de los mecanismos que explica la relación entre la desigualdad económica percibida y la eficacia política o entre la primera y la intención de participar en acciones colectivas.

En el Capítulo 5 nos propusimos analizar el efecto causal de la desigualdad económica y la elección democrática sobre el comportamiento cooperativo utilizando un juego económico. Encontramos que en la condición de desigualdad económica los niveles de cooperación fueron más bajos que en el contexto de baja desigualdad económica. Aunque no encontramos pruebas del efecto positivo de la condición de elección democrática (frente a la no democrática) sobre la cooperación, ya que nuestros resultados mostraron que cuando se introducía una regla cooperativa —mediante un procedimiento democrático o no— para motivar la cooperación, las diferencias entre las condiciones de desigualdad desaparecían.

En el Capítulo 6, manipulamos la democracia percibida y examinamos su impacto en la desigualdad inferida. Como esperábamos, percibir que en un contexto predomina un sistema democrático (frente a un contexto no democrático) provocó inferencias sobre la desigualdad económica más bajas. La percepción de la democracia también afectó a otras características percibidas del contexto, como el desempeño económico, la riqueza y el desarrollo económico.

En la tercera y última parte de esta tesis (Capítulo 7), discutimos nuestros resultados de acuerdo con las preguntas que guiaron la investigación. También destacamos las implicaciones de las conclusiones de la presente investigación, las limitaciones de los estudios realizados y nuevas ideas para futuras líneas de investigación.

En resumen, la desigualdad económica afecta negativamente al funcionamiento del sistema sociopolítico, lo que en última instancia conduce a la desigualdad política. La desigualdad económica percibida afecta a las actitudes hacia la democracia y el sistema político en general, y reduce el interés por participar en política, lo que también contribuye a la desigualdad política. Como consecuencia, las decisiones políticas beneficiarán a la población de manera desigual, lo que en última instancia contribuiría al mantenimiento de la desigualdad económica (Bartels, 2016; Farhat, 2020).

Overview

Economic inequality and the functioning of democracy are two of the most relevant and controversial issues in contemporary societies. Inequality in the world and in Spain has proliferated in recent years (Piketty, 2019) and is expected to continue growing in the future (Alvaredo et al., 2018) if no concrete measures are taken to prevent it (Farhat, 2020; Stiglitz, 2016). Furthermore, the popularity of democracies around the world, and the satisfaction with the way democracy and democratic institutions work have declined (Brosius et al., 2020; Catterberg & Moreno, 2006; Freedom House, 2021).

Accordingly, in this dissertation, we aim to analyze the relationship between economic inequality and attitudes toward democracy. Particularly, the empirical part of this thesis tried to find out how perceptions of economic inequality affect trust in institutions, perceptions of and satisfaction with the democratic political system, perceptions of citizens' political efficacy, and civic and political behavior (i.e., intentions to cooperate and participate in collective action).

The current dissertation is structured in three sections. The first section, Chapter 1, presents the conceptual framework. In Chapter 2, we outline our research questions, aims, and specific objectives.

In the second part, we present the empirical studies. In Chapter 3, we aimed to adapt the support for economic inequality scale (SEIS, Wiwad et al., 2019), and examined through two correlational studies how it is related to other socio-political variables. Our results showed that SEIS has good sources of validity and reliability evidence. For instance, it showed that it is closely related to other measures of attitudes toward inequality, and to perceived warmth and competence of people in poverty.

In Chapter 4, we conducted three experiments to examine the effect of perceived inequality on institutional trust, perceived democracy, satisfaction with democracy, political

efficacy, and environmental collective actions. We found that perceptions of inequality influence attitudes toward the political system, specifically reducing individuals' institutional trust, perceived democracy, satisfaction with democracy, and political efficacy. We also aimed to explore the psychological mechanisms that explain those effects. Our research showed that institutional trust mediates the effect of perceived inequality on political efficacy, and on intentions to participate in collective action.

In Chapter 5, we aimed to analyze the causal effect of economic inequality and democratic choice on cooperative behavior using an economic game. We found that in the economic inequality condition, levels of cooperation were lower compared with contexts of low economic inequality. Although we found no evidence for the positive effect of the democratic (vs. non-democratic) choice condition on cooperation, results showed that when a cooperative rule— through a democratic procedure or not— was introduced to motivate cooperation, the differences between inequality conditions disappeared.

In Chapter 6, we manipulated perceived democracy and examined its impact on inferred inequality. As expected, perceiving a highly democratic context (vs. a non-democratic context) trigger lower levels of inferred economic inequality. Perceiving democracy also affected other perceived features of the context, such as economic performance, wealth, and economic development.

In the third and last part of this thesis (Chapter 7), we discuss our findings in accordance with our guiding research questions. We also highlight the implications of the current research findings, the limitations of the studies conducted, and new ideas for future lines of research.

In short, economic inequality negatively affects the functioning of the socio-political system, ultimately leading to political inequality. Perceived economic inequality affects attitudes toward democracy and the political system in general, and reduces interest in

participating in politics, which also contributes to political inequality. Consequently, political decisions will benefit the population unequally, thus ultimately contributing to the maintenance of economic inequality (Bartels, 2016; Farhat, 2020).

CAPÍTULOS TEÓRICOS

THEORETICAL CHAPTERS

Capítulo 1

Problemas de las Sociedades Actuales

Dos de los problemas más relevantes y debatidos en las sociedades actuales son la desigualdad económica y el funcionamiento de la democracia. En los últimos años, el aumento de la desigualdad y del descontento de la ciudadanía con los sistemas democráticos ha sido paralelo. La desigualdad económica se refiere a la distribución desigual de la riqueza y los recursos entre las personas y grupos de una sociedad, lo que puede tener consecuencias negativas para el bienestar y la estabilidad social (Buttrick y Osihi, 2017; Van de Werfhorst y Salverda, 2012; Wilkinson y Pickett, 2017). Por otro lado, la democracia se considera como el sistema político que tiene como objetivo la participación ciudadana en la toma de decisiones y la protección de los derechos y libertades de las personas (Brander et al., 2015). Sin embargo, la implementación de la democracia no siempre ha sido exitosa, y a menudo se ha enfrentado a desafíos como la corrupción y la manipulación de las élites políticas y económicas. Estos dos problemas reflejan características estructurales del entorno y están estrechamente relacionados, ya que la desigualdad económica puede comprometer la calidad de la democracia, limitando el acceso de ciertos grupos de la sociedad a la toma de decisiones y generando desconfianza en las instituciones políticas (Bartels, 2016; Houle, 2018; Krieckhaus et al., 2014). Por tanto, es crucial abordar estos desafíos para construir sociedades más justas y equitativas.

1.1.La desigualdad económica

La desigualdad económica supone un reto para las sociedades actuales. La desigualdad en el mundo y en España ha sido un tema relevante puesto que ha crecido rápidamente en los últimos años (Piketty, 2019; Wilkinson y Pickett, 2017) y se espera que siga creciendo en el futuro (Alvaredo et al., 2018) si no se toman medidas específicas para evitarlo (Farhat, 2020; Stiglitz, 2016; *World Inequality Lab* [WID], 2018). Supone, por tanto, un problema que debe ser abordado de manera prioritaria y así

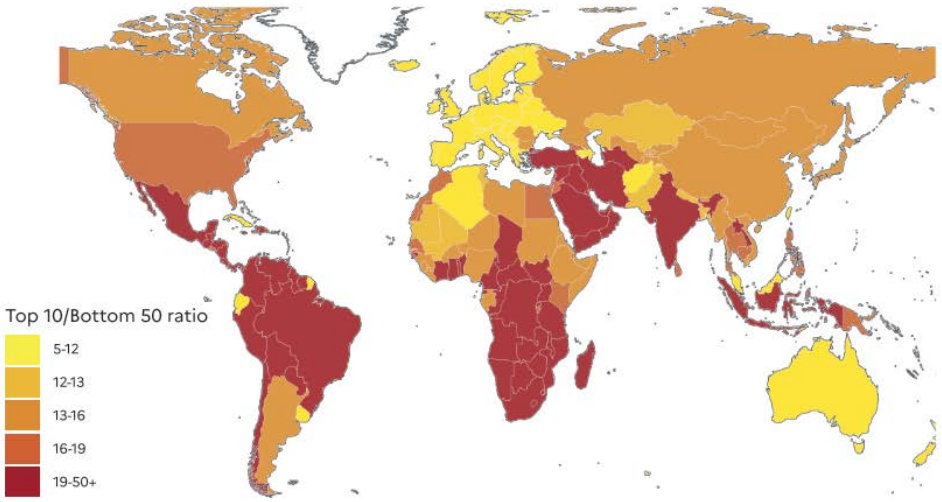
lo sugieren diferentes organizaciones internacionales (Fondo Monetario Internacional [FMI], 2020; Organización de las Naciones Unidas [ONU], 2021).

En general, la desigualdad económica se refiere a la distribución asimétrica de riqueza y recursos entre las personas o grupos de una sociedad (e.g., las personas que más y las que menos recursos tienen; Brown-Iannuzi y McKee, 2019; García-Sánchez et al., 2018; Peterson, 2017). La desigualdad económica engloba la distribución desigual de salarios (i.e., dinero que se percibe por la remuneración a cambio de un trabajo), la desigualdad de ingresos (i.e., salarios más el flujo de dinero proveniente rentas, inversiones, etc.), y la desigualdad de riqueza (que suma todo el capital o activos financieros que posee una persona, incluyendo las propiedades y los ahorros; Brown-Iannuzzi et al., 2017).

A nivel mundial, la desigualdad económica ha aumentado en las últimas décadas, con un creciente número de personas viviendo en la pobreza y un pequeño grupo de personas acumulando grandes cantidades de riqueza (Chancel et al., 2022) (Figura 1.1). Aunque haya habido cierto crecimiento económico, la riqueza de carácter privado dentro de un país ha aumentado en los últimos años, mientras que la riqueza pública ha disminuido, lo que ha hecho que aumenten las diferencias económicas entre la ciudadanía (Alvaredo et al., 2018). Por ejemplo, en 2022, el número de millonarios y personas con un gran patrimonio ha seguido aumentando (Shorrocks et al., 2022). En este sentido, el aumento de la riqueza del 1% más rico de la población conlleva inevitablemente un aumento de la desigualdad en el mundo (Chancel et al., 2022; Shorrocks et al., 2022).

Figura 1.1

Brecha de ingresos entre el 10% más rico de la población mundial y el 50% más pobre en 2021.

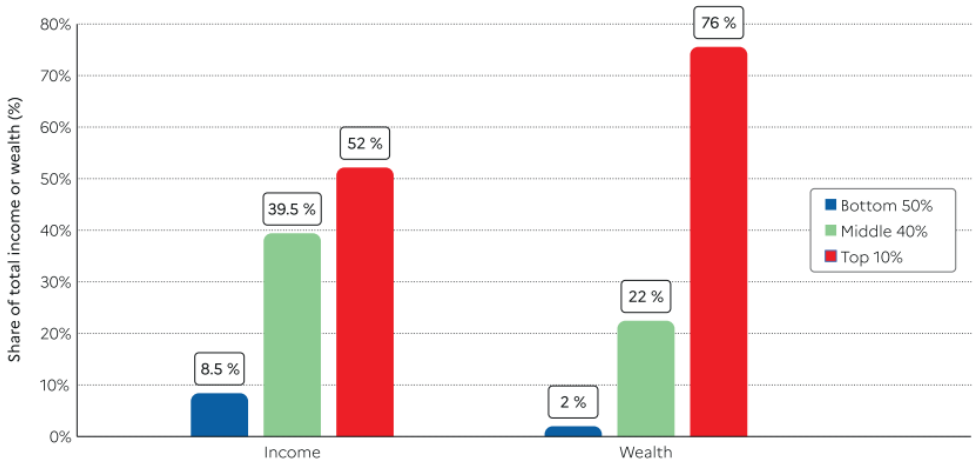


Nota. Extraído del último informe del World Inequality Lab (Chancel et al., 2022).

El último informe sobre desigualdad en el mundo apunta que la brecha de ingresos del 10% más rico y del 50% más pobre se ha más que duplicado desde 1820 (Chancel et al., 2022). Actualmente, el 10% más rico de la población mundial recibe el 52% del ingreso global (lo que supera cinco veces la media global), mientras que la mitad más pobre de la población gana el 8,5% del mismo. Las diferencias se incrementan si hablamos de desigualdad en términos de riqueza (Scheve y Stasavage, 2017; Stiglitz, 2016), donde el decil más rico disfrutaba del 82% de la riqueza global, mientras que el 50% más pobre de la sociedad poseía menos del 1% de la riqueza mundial total a finales de 2021 (Shorrocks et al., 2022) (Figura 1.2).

Figura 1.2

Desigualdad de ingresos y de riqueza en 2021.



Nota. Extraído del último informe del World Inequality Lab (Chancel et al., 2022).

Comparando las regiones del mundo, Europa destaca como una región relativamente igualitaria, puesto que, en su conjunto, el 40% de la población gana significativamente más que el 10% más rico (Chancel et al., 2022). Aun así, existen diferencias de ingresos. En términos contextuales, en España la desigualdad objetiva también ha crecido durante los últimos 20 años (Shorrocks et al., 2022) y ha llegado a ser uno de los países más desiguales de la Unión Europea (EUROSTAT, 2023). Dicho de otro modo, España presenta valores en algunos indicadores de desigualdad que están por encima de la media de la Unión Europea. Por ejemplo, el ingreso medio del 40% más pobre de la población es inferior a la media de países europeos, mientras que el índice de desigualdad S80/S20 es bastante superior en España (EUROSTAT, 2023). La reducción de la desigualdad económica representa un objetivo para las sociedades contemporáneas, incluida la española. Por tanto, es importante abordar la desigualdad económica no sólo como un problema económico, sino también como un problema social y psicológico que afecta a la calidad de vida de las personas.

1.1.1. Consecuencias de la desigualdad económica desde la perspectiva psicosocial

Dado que la desigualdad económica en el mundo y en España ha sido un tema relevante en los últimos años, algunas investigaciones realizadas desde diferentes disciplinas han indagado en las consecuencias de la desigualdad.

Los niveles de desigualdad no afectan sólo a las personas más desfavorecidas, sino que afecta también —aunque en menor medida— a todo el conjunto de la sociedad (Peterson, 2017; Wilkinson y Pickett, 2017). Cuando la desigualdad económica aumenta en la sociedad hay una mayor tasa de crímenes (Van Wilsem, 2004), incrementa la comparación social con las personas que nos rodean (Cheung y Lucas, 2016), y hay una disminución en la confianza generalizada y social (Gustavsson y Jordahl, 2008; Rothstein y Uslaner, 2005; Uslaner y Brown, 2005). Es decir, la desigualdad afecta a condiciones estructurales como la seguridad, pero también impacta negativamente en las relaciones sociales y los procesos psicológicos (Carvacho y Álvarez, 2019). También en sociedades desiguales las personas tienden a ser menos agradables con las demás (de Vries et al., 2011), y se muestran menos dispuestas a cooperar (Paskov y Dewilde, 2012). En su conjunto, la evidencia apunta a que, considerados en su conjunto, diversos indicadores de la cohesión social se asocian negativamente con la desigualdad objetiva que existe en los países (Buttrick y Osihi, 2017; Van de Werfhorst y Salverda, 2012; Wilkinson y Pickett, 2017).

Pero toda la evidencia revisada hasta el momento se basa en estudios correlacionales. Sin embargo, de forma complementaria, también existe evidencia empírica obtenida a través de estudios experimentales que muestran el efecto causal de la desigualdad sobre diversas actitudes y comportamientos de las personas. Por ejemplo, ver la desigualdad en un contexto determinado inhibe la disposición a cooperar con otras personas en juegos económicos como el Dilema del Prisionero o el Juego de

Bienes Públicos (Aksoy, 2019; Fung y Au, 2014; Nishi et al., 2015; Schlösser et al., 2020). De forma similar, Duquette y Hargarden (2019) demostraron que la desigualdad económica tiene un efecto negativo sobre las donaciones caritativas en un experimento de economía conductual.

Además de los resultados encontrados acerca del efecto de la desigualdad objetiva sobre el comportamiento, se han llevado a cabo estudios para conocer las consecuencias de percibir la desigualdad económica. Por ejemplo, percibir desigualdad en el entorno aumenta la ansiedad por el estatus (Melita et al., 2021), promueve la percepción del entorno como altamente competitivo lo que, a su vez, influye en las metas personales y motivaciones personales (Sánchez-Rodríguez et al., 2019; Sommet et al., 2018); aumenta la probabilidad de comportarse de manera independiente e individualista (Sánchez-Rodríguez et al., 2019); e incrementa la tendencia a realizar actos de corrupción y primar los intereses personales (Wei et al., 2022).

En la misma línea, recientemente, se ha propuesto que el nivel de desigualdad económica funciona como una guía para inferir otras características del clima normativo de la sociedad (Moreno-Bella et al., 2022; Sánchez-Rodríguez et al., 2023). Es decir, la desigualdad económica percibida permite a las personas anticipar aspectos importantes de sus contextos y predecir cómo se comportarán las demás dentro de ellos. Entendiendo el clima normativo como el conjunto de rasgos que los individuos perciben como generalizados en un contexto social (Sánchez-Rodríguez et al., 2020). Dicha inferencia del clima normativo, a su vez, puede potencialmente guiar los pensamientos, las emociones y los comportamientos de las personas. En cierta medida, este modelo conecta variables estructurales como el nivel de desigualdad, con efectos a nivel individual (Sánchez-Rodríguez et al., 2023). Por tanto, la percepción de variables

estructurales de nuestro entorno influye en otras características que inferimos de él, y también en nuestras actitudes y comportamientos.

1.1.2. La desigualdad económica percibida y cómo se estudia

La percepción de desigualdad económica es la percepción individual de cómo se distribuyen los recursos económicos entre las personas que conforman una sociedad (García-Sánchez et al., 2018; Kim et al., 2017). Estas percepciones pueden influir en las actitudes políticas o estereotipos y en la disposición para apoyar políticas públicas y participar en acciones colectivas (García-Castro et al., 2022; Jetten y Peters, 2019). Dado que las personas tienden a adaptarse a su entorno en función del nivel de desigualdad económica presente, necesitan ser capaces de percibirlo; de lo contrario, no sabrán qué conductas y actitudes son las más apropiadas dado el entorno (Sánchez-Rodríguez et al., 2023).

Trabajos previos han resaltado la importancia de la percepción subjetiva de la desigualdad a la hora de entender las consecuencias de la misma (Willis et al., 2022). La percepción de desigualdad se correlaciona más fuertemente que la desigualdad objetiva con las preferencias de redistribución (Evans y Kelly, 2018; García-Castro et al., 2022; García-Castro et al., 2020; Gimpelson y Treisman, 2018; Niehues, 2014), con el apoyo a políticas igualitarias (Kteily et al., 2016), y con la reducción de las creencias meritocráticas en la determinación de los salarios (Kuhn, 2019).

Sin embargo, las medidas de desigualdad económica percibida utilizadas también pueden condicionar la percepción de desigualdad (Jachimowicz et al., 2022). Estas pueden basarse en: evaluaciones generales sobre la estructura de la sociedad (i.e., figuras esquemáticas que representan sociedades; Bavetta et al., 2019), estimaciones cuantitativas de ingresos o riqueza (i.e., brechas de ingresos; García-Sánchez et al., 2019) o, como se ha propuesto más recientemente, experiencias de la vida cotidiana y

comparaciones sociales en el entorno cercano (García-Castro et al., 2020; García-Castro et al., 2019).

La mayoría de las medidas de percepción de desigualdad se relacionan de forma positiva con las actitudes favorables hacia la redistribución (García-Castro et al., 2022). Estos mismos autores, no obstante, encontraron que la relación encontrada entre las medidas de desigualdad percibida fue mediada por variables actitudinales como la intolerancia hacia la desigualdad. Así, percibir la desigualdad en la vida cotidiana incrementó la intolerancia hacia la desigualdad económica; ésta, a su vez, aumentó las preferencias hacia la redistribución (García-Castro et al., 2022; García-Castro et al., 2020; Wiwad et al., 2019).

Por consiguiente, las actitudes hacia la desigualdad económica podrían predecir las preferencias de las personas por las políticas redistributivas y otras medidas dirigidas a la reducción de la disparidad en la distribución económica (García-Sánchez et al., 2018; Krijnen et al., 2021; Rodríguez-Bailón et al., 2017). De hecho, estudiar las actitudes que mantienen las desigualdades existentes es relevante (Benson et al., 2021; Roex et al., 2019) y pretende contribuir a la reducción de las desigualdades sociales (Piff et al., 2020; Willis et al., 2022; Wiwad et al., 2019).

Por lo general, existe una correlación negativa entre la percepción de desigualdad económica y el apoyo hacia la desigualdad económica (Fatke, 2018; Kuhn, 2019). Dicho de otro modo, cuánta más desigualdad se percibe, menos se tolera. Sin embargo, gran parte de los trabajos que han estudiado las actitudes hacia la desigualdad han operacionalizado las actitudes hacia la desigualdad utilizando una medida de un solo ítem (Bavetta et al., 2019; Castillo, 2011; Kiatpongsan & Norton, 2014; basadas en la medida de ISSP Research Group, 2012) lo que puede presentar algunos problemas (e.g., incapacidad para comprobar la fiabilidad, baja sensibilidad, disminución del

tamaño del efecto sobre otras variables; Meyvis & Van Osselaer, 2018, etc.). Derivado de estas limitaciones, Wiwad y colaboradores (2019) desarrollaron una escala para medir las actitudes hacia la desigualdad económica que abarca las creencias de los individuos sobre la desigualdad económica y su evaluación positiva o negativa de la misma. Es decir, esta medida trata de captar cómo las personas apoyan o se oponen al nivel de desigualdad que perciben. O, dicho de otro modo, en qué medida toleran la desigualdad económica. En este sentido, podríamos decir que los conceptos de tolerancia y apoyo a la desigualdad son sinónimos (Wiwad et al., 2019).

1.2.El estado de la democracia y la confianza en el gobierno

En los últimos años hemos vivido un descenso en la popularidad de las democracias a nivel mundial, y también un creciente descontento con la forma en que funciona la democracia y las instituciones democráticas (Brosius et al., 2020; Catterberg y Moreno, 2006; Freedom House, 2021).

De partida, la democracia en sí es un concepto complejo, y que se ha definido de diversas formas y desde distintas disciplinas. La democracia es un sistema de gobierno en el que todas las personas del estado con derecho a voto participan en la toma de decisiones, generalmente a través de representantes elegidos/as (Brander et al., 2015). En un sentido más amplio también hace referencia a las condiciones que se dan habitualmente en un sistema de este tipo como, por ejemplo, que todas las personas tienen los mismos derechos, que se toleran y respetan las opiniones de todas ellas, trato justo e igualitario por parte del Estado, institución, organización, etc. (Oxford English Dictionary, n.d.).

La democracia, que protege los derechos fundamentales y se basa en el estado de derecho y la separación de poderes, era el sistema más consolidado del mundo a finales de 2017 (Zamfir y Dobreva, 2019). Sin embargo, se habla de un estancamiento en el

nivel de democracia a nivel global (Zamfir y Dobreva, 2019), e incluso, de una recesión democrática mundial que comenzó en 2006 y permanece en la actualidad (Diamond, 2015). Hasta las regiones más democráticas, como Europa y América, han experimentado un decremento en sus estándares (Zamfir y Dobreva, 2019).

Pero, ¿cómo se evalúa la democracia de un contexto? La evaluación de la democracia involucra diversos aspectos. Entendida como una serie de prácticas y principios que institucionalizan y, en última instancia, protegen la libertad, sería una variable continua; es decir, los países podrían presentar diferentes grados de democracia (*The Economist Intelligence Unit* [EIU], 2020).

Existen varias clasificaciones del nivel de democracia de los países del mundo. Un ejemplo sería la medida de libertad política de *Freedom House*, que evalúa el proceso electoral y el pluralismo político y, en menor medida, el funcionamiento del gobierno y algunos aspectos de la participación (EIU, 2020; *Freedom House*, 2021). Esta clasificación ofrece datos sobre países de Europa del este y Asia occidental mientras que no reporta datos de España. *The Polity Project*, por su parte, examina el desempeño institucional de las autoridades gubernamentales de los estados de todo el mundo —e.g., en función del proceso de selección del personal, el ejercicio de la autoridad, el nivel de competencia política— y las sitúa en un continuo que va desde un tipo de gobierno autoritario hasta uno democrático, con fines de análisis comparativo y cuantitativo (*Center for Systemic Peace* [CSP], 2018).

Asimismo, *The Economist Intelligence Unit* (2020) ofrece un informe anual sobre el estado de la democracia en todo el mundo que recoge las evaluaciones de expertos y de encuestas de opinión pública internacionales y regionales (e.g., *World Values Survey*, Latinobarómetro). Este informe ofrece una medida ampliamente utilizada (e.g., Chen et al., 2021; Öniş, 2017) y parsimoniosa del estado de la

democracia en todo el mundo en función de cinco dimensiones: proceso electoral y pluralismo, libertades civiles, funcionamiento del gobierno, participación política y cultura política (Tabla 1.1). Por ello, nos centraremos en esta última clasificación, que distingue entre democracias “plenas” y “defectuosa” en función de la puntuación más alta o más baja en su índice general.

Las democracias plenas respetan las libertades políticas básicas y las libertades civiles, promueven una cultura política que mantenga la democracia. En ellas, el funcionamiento del gobierno se considera satisfactorio y existe un control efectivo del gobierno, los medios de comunicación son independientes y diversos, el poder judicial es independiente y las decisiones judiciales se hacen cumplir (EIU, 2021). Sin embargo, en los países clasificados como democracias defectuosas existen debilidades significativas en determinados aspectos de la democracia como problemas de gobernabilidad, una cultura política rezagada y bajos niveles de participación política.

El sistema democrático, a pesar de estar más consolidado que cualquier otro sistema de gobierno a nivel global (Zamfir y Dobreva, 2019), no logra ser mayoritario. En el año en el que se comenzó esta tesis, menos la mitad de la población mundial vivía bajo alguna forma de democracia (47.7%; EIU, 2019). De forma similar, el último informe (EIU, 2021) señala que menos de la mitad de la población mundial (45.7%) vive en una democracia de algún tipo, de los cuales sólo el 6.4% reside en una democracia plena. Dicho de otra manera, el 44.3% de los países recogidos en este índice son considerados democracias, ubicándose la mayoría de las democracias plenas en los países europeos de la Organización para la Cooperación y Desarrollo Económico (OCDE) y Norte América (EIU, 2019).

Tabla 1.1

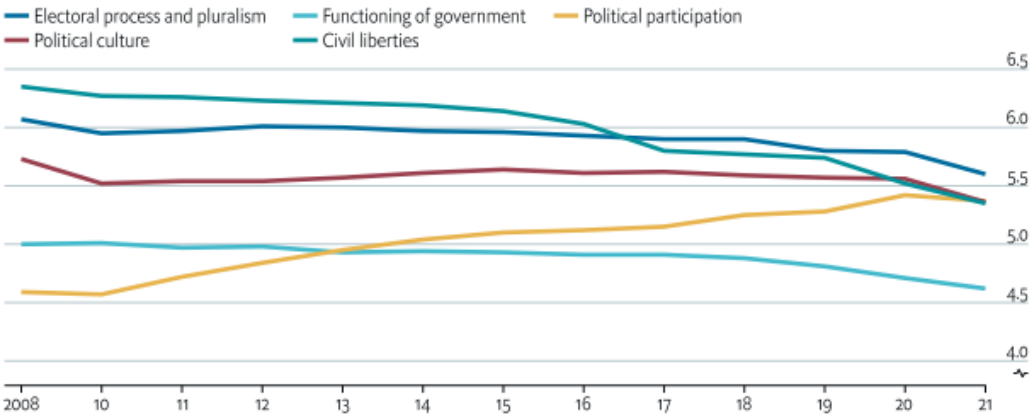
Dimensiones del índice de democracia de The Economist Intelligence Unit (2021) y los distintos rasgos incluidos dentro de ellas.

Dimensiones a evaluar por el índice de democracia				
Proceso electoral y pluralismo	Libertades civiles	Funcionamiento del gobierno	Participación política	Cultura política
▪ Elecciones libres y justas. ▪ Sufragio universal. ▪ Leyes para regular la igualdad de oportunidades en las campañas políticas. ▪ Transparencia en la financiación de los partidos. ▪ Acceso abierto a cargos públicos. ▪ Derecho a formar organizaciones políticas y cívicas.	▪ Libertad individual. ▪ Libertad de expresión. ▪ Libertad de prensa. ▪ Derecho de asociación y sindicalización. ▪ Independencia del poder judicial. ▪ Igualdad ante la ley. ▪ Grado de protección de la propiedad privada. ▪ Tolerancia religiosa. ▪ Percepción de respeto de los derechos humanos. ▪ Percepción de discriminación por etnia o creencias religiosas.	▪ Las personas elegidas como representantes deciden sobre las políticas. ▪ Sistema de control sobre la autoridad gubernamental. ▪ Transparencia en el funcionamiento del gobierno. ▪ Nivel de corrupción. ▪ Autonomía del gobierno independiente del ejército y servicios de seguridad, poderes extranjeros o grupos de poder económicos, religiosos, etc. ▪ Confianza en las instituciones.	▪ Porcentaje de participación en las elecciones. ▪ Participación de las minorías étnicas, religiosas, etc. en el proceso político. ▪ Preparación de la población para participar en manifestaciones. ▪ Alfabetización de la población. ▪ Interés y compromiso de la ciudadanía con la política.	▪ Consenso y cohesión social para sustentar la democracia estable y operativa. ▪ Preferencia ante otro tipo de gobierno: liderazgo autoritario, gobierno militar, tecnocrático. ▪ Percepción de la democracia: beneficios para el orden público y el sistema económico. ▪ Apoyo a la democracia. ▪ Separación del Estado de la Iglesia.

Los resultados reportados en el *Democracy Index* (EIU, 2019, 2021) muestran que parte de la población mundial está desilusionada con las instituciones políticas formales y con la aplicación práctica de la democracia. Este hecho se refleja en la dimensión "funcionamiento del gobierno" que es la peor puntuada a nivel general del índice de democracia (Figura 1.3). Eso se debe a los bajos niveles de transparencia, la baja responsabilidad percibida por parte de los gobiernos y por la existencia de corrupción en el interior de los mismos.

Figura 1.3

Evolución de la democracia entre el año 2008 y el 2021 de los países evaluados en el Democracy Index.



Nota. Extraído del último informe del Democracy Index (EIU, 2021).

En Europa, el descontento con la democracia también se atribuye a la disfunción institucional y un sistema de partidos políticos cada vez menos representativo (EIU, 2021). Además, los datos reflejan una falta de confianza en que el gobierno actúe por y para los intereses de la mayoría de la población, que se refleja en la dimensión de "cultura política", también en descenso de 2008 a 2021. España, en el último año, ha pasado de una democracia plena a una democracia defectuosa según el *Democracy Index* (EIU, 2021), presentando el índice de democracia más bajo en los últimos 14 años.

A la par que ha aumentado el descontento con la democracia, ha habido un surgimiento del populismo, y líderes autoritarios (EIU, 2019; *Freedom House*, 2021; Torres-Vega et al., 2021) que han aprovechado esta situación para ganar poder, lo cual supone un riesgo para las instituciones de la democracia representativa, que como consecuencia se pueden debilitar aún más en el futuro (EIU, 2019). A pesar de la cierta insatisfacción con la forma en que funcionan sus gobiernos democráticos, una gran mayoría de la población sigue prefiriendo la democracia sobre otros sistemas de gobierno (Eurobarómetro, 2018). Por tanto, la preservación de la democracia, su correcto funcionamiento y el de sus instituciones es muy relevante en las sociedades actuales. Además, la democracia tiene otra serie de ventajas, puesto que algunas investigaciones apuntan a que gracias a ella las sociedades son más resistentes al conflicto, es garantía de paz, respeto de los derechos humanos y posibilita el estado de bienestar (Albright y Jomaa, 2017; Reiter, 2017; Zamfir y Dobreva, 2019).

1.2.1. Las actitudes hacia la democracia y el sistema político

La evaluación por parte de las personas acerca del sistema democrático y cómo funciona en su entorno cercano conforman las actitudes hacia la democracia. En la literatura se han englobado bajo este término las opiniones de las personas con respecto al gobierno, la satisfacción con su desempeño, y sobre su propio papel en el sistema democrático (Jurado y Navarrete, 2021; Schäfer, 2012; Wike y Schumacher, 2020).

Se han propuesto algunos eventos que han contribuido al descenso del apoyo hacia la democracia; por ejemplo, la insatisfacción con el desempeño económico, o el aumento de la desigualdad económica tras la crisis económica de 2008 (Zamfir y Dobreva, 2019). Es cierto que las condiciones económicas influyen en los resultados de las elecciones en las democracias (Lewis-Beck y Stegmaier, 2000). En este sentido, el/la

votante medio responsabiliza al gobierno por el desempeño económico, recompensándolo o castigándolo en las urnas.

Además, también se han mencionado otros posibles desencadenantes del descontento con el sistema democrático: la decepción por la falta de igualdad y equidad, el descontento con quienes se dedican a la política, el cinismo sobre el compromiso de las élites políticas, la frustración de la ciudadanía por no ser consultada ante algunas decisiones importantes, y la ira hacia la corrupción (EIU, 2021; Zamfir y Dobreva, 2019). Sin embargo, de todos estos elementos, a los que más peso le da la ciudadanía son a los relacionados con los temas económicos (Lewis-Beck y Stegmaier, 2000).

Un aspecto muy relevante de las actitudes hacia el sistema político y democrático es la confianza que la población tiene hacia diversas instituciones que operan en su entorno (e.g., el gobierno central, los partidos políticos, el sistema judicial, etc.). Se puede entender la confianza en las instituciones como el nexo de unión entre la ciudadanía y las instituciones democráticas (Catterberg y Moreno, 2006). Es decir, la confianza institucional alude a la utilidad esperada de las instituciones y se basa en las evaluaciones de la ciudadanía del desempeño institucional (Catterberg y Moreno, 2006; Letki, 2006) y de sus expectativas hacia el mismo (García-Sánchez et al., 2020). En cierta medida, podría entenderse como la distancia percibida entre el pueblo y las organizaciones gubernamentales.

Por otra parte, se puede entender que las instituciones democráticas son los organismos responsables con capacidad para resolver el conflicto distributivo que supone la desigualdad (Acemoglu y Robinson, 2006; Boix, 2003; Meltzer y Richard, 1981). Así, si un sistema democrático no cumple con esta función de redistribución, la ciudadanía puede llegar a estar descontenta con ello y lo apoyarían en menor medida (Easton, 1975). Es decir, si las personas perciben las desigualdades y las consideran

injustas, su confianza en el sistema político y económico puede disminuir (Benson et al., 2021).

1.2.2. La eficacia política percibida como antecedente de la participación

La eficacia política refleja las expectativas de las personas sobre la posibilidad de ejercer un impacto en el proceso político (Campbell et al., 1954; Niemi, et al., 1991). Las personas que se sientan representadas en política, estarán más comprometidas políticamente (Andersen, 2012) y serán más activas en el sistema electoral (Lee y Kwon, 2019). En cambio, si la ciudadanía siente que no tienen ningún tipo de control sobre sus gobiernos o sus vidas, tal como se ha reportado en algunos informes recientes (EIU, 2021), disminuirá su participación en política.

En relación a ello, la investigación ha sugerido que el sistema democrático estimula la eficacia externa e interna de la ciudadanía (Midtbø, 2018), alentando así a los y las ciudadanas a creer que la política de alguna manera es importante (Clarke et al. 2010). La democracia aumentaría la percepción de las/os ciudadanas/os de que su opinión política es tenida en cuenta por el Gobierno por varias razones. En primer lugar, los gobiernos democráticos muestran una mayor capacidad de respuesta a las necesidades de la población, en comparación con gobiernos autocráticos (Midtbø, 2018). Esto se reflejaría en una mayor eficacia política externa. Y, en segundo lugar, las democracias fortalecen la eficacia interna, es decir, la percepción de los individuos acerca de su capacidad para informarse e involucrarse en la política, especialmente de las personas de bajos ingresos (Niemi et al. 1991).

La eficacia política también tiene un efecto movilizador que se refleja en diferentes formas de participación (Amnå et al., 2004; Jiang, 2016; Kahne y Westheimer, 2006; Shore, 2020; Solhaug, 2006). Así, la eficacia política percibida es una precursora de algunas actividades políticas, como la participación en foros

representativos (Amnå et al., 2004), o quizás la más relevante, el voto (Shore, 2020). Es, por tanto, un concepto fundamental para entender cómo se asocian las preocupaciones por la desigualdad con las distintas formas de participación política que se dan en contextos democráticos (Silagadze et al., 2022; Zumárraga-Espinosa, 2020).

1.3. Relación entre la desigualdad económica y las actitudes hacia la democracia

Un área muy relacionada con la desigualdad económica y la intención de reducir la desigualdad es la política. En primer lugar, la desigualdad tiende a mantenerse a sí misma (Alvaredo et al., 2018; Rodríguez-Bailón et al., 2017). En cambio, la toma de decisiones de determinadas políticas concretas pueden conformar actos intencionados dirigidos a la reducción de la misma (Farhat, 2020; Stiglitz, 2016; WID, 2018). En segundo lugar, el efecto de la desigualdad económica sobre diversas actitudes sociopolíticas y sobre la participación política puede influir en la representación global de la población y de sus intereses en este ámbito, reduciendo la probabilidad de que se lleven a cabo políticas igualitarias, como desarrollamos más adelante.

Respecto a cómo la desigualdad afecta a la democracia y los sistemas políticos, hay cierta evidencia a nivel de país. La desigualdad económica objetiva afecta negativamente la calidad y el buen funcionamiento del sistema democrático (Krieckhaus et al., 2014; Uslaner y Brown, 2005). La desigualdad no solo afecta al sistema político, sino que también influye en la percepción que las personas tienen de la sociedad (Lee et al., 2021; Teymoori et al., 2017; Wu y Chang, 2019). Existen diversos estudios sobre cómo la desigualdad impacta en diversas actitudes sociopolíticas, especialmente sobre el descontento generalizado con el régimen político y el sistema democrático (Anderson y Singer, 2008; Foster y Frieden, 2017; Loveless y Whitefield, 2011). Por ejemplo, en

países más desiguales se apoya en menor medida la democracia (Andersen, 2012; Anderson y Singer, 2008).

Tal y como se propone en el modelo ENIM (Sánchez-Rodríguez et al., 2023), las personas pueden anticipar aspectos importantes de sus contextos a partir de la desigualdad económica que perciben. En esta línea, es probable que los individuos infieran el nivel de democracia de esa sociedad y también la confianza que le inspiran determinadas instituciones. Con respecto a lo primero, la valoración de un estado como democrático variará según cómo se entienda el concepto de democracia. Por ejemplo, la ciudadanía puede entender que un estado democrático es aquel en el que se celebran elecciones libres periódicamente, o en el que sus habitantes cuenten con derechos como la participación en las decisiones políticas y cierta igualdad social (Abellán Artacho y Cabrera-Álvarez, 2023; Alonso, 2016). Por tanto, percibir desigualdad puede hacer que la sociedad no se perciba como tan democrática. Además, la gente puede pensar que la desigualdad no es compatible con los principios de representación democrática (Dahl, 1971; López y Dubrow, 2020; Wong, 2021).

Además, del nivel de desigualdad de un país se pueden extraer algunas características de la sociedad, como la confiabilidad de sus instituciones públicas y la desigualdad política que se infiere (Rueschmeyer, 2004; Scheve y Stasavage, 2017). En este sentido, la desigualdad económica se ha asociado a una reducción de la confianza en las instituciones políticas en países europeos (Anderson y Singer, 2008; Goubin, 2018; Krieckhaus et al., 2014; Lipps y Schraff, 2020; Schäfer, 2012). A nivel subjetivo, las percepciones de la gente acerca de la desigualdad se relacionan negativamente con actitudes positivas hacia las instituciones democráticas (Loveless, 2016; Simpson y Loveless, 2017), la confianza hacia el gobierno y con la percepción de que las políticas públicas están destinadas a resolver los problemas sociales (Arsenio, 2018; García-

Sánchez et al., 2018; Kuziemko et al., 2015; Son Hing et al., 2019). Adicionalmente, según Loveless (2016), la desigualdad percibida contribuye a la percepción del fracaso de las instituciones democráticas para abordar los problemas relacionados con la desigualdad. La relación negativa entre la desigualdad económica y las actitudes hacia la democracia y las instituciones se da particularmente entre las personas de bajos ingresos y con ideología de izquierda (Andersen, 2012; Anderson y Singer, 2008).

También la desigualdad aumenta la brecha en la satisfacción con la democracia entre quienes ganaron y perdieron en el proceso electoral; en otras palabras, cuanta más desigualdad existe más distancia hay entre la satisfacción con la democracia de las personas que votaron al partido electo y las que no (Han y Chang, 2016). Adicionalmente, Wu y Chang (2019) presentaron evidencia experimental de cómo tanto la desigualdad objetiva (utilizando índices económicos) como percibida se relacionan con la reducción de la satisfacción con la democracia. En su estudio, además, mostraron que la desigualdad percibida predice en mayor medida que la desigualdad objetiva la satisfacción con la democracia en línea con lo sugerido por las investigaciones sobre desigualdad en psicología social (García-Castro et al., 2020; García-Sánchez et al., 2018; Melita et al., 2021; Moreno-Bella at al., 2019; Rodríguez-Bailón, 2020; Velandia-Morales et al., 2022).

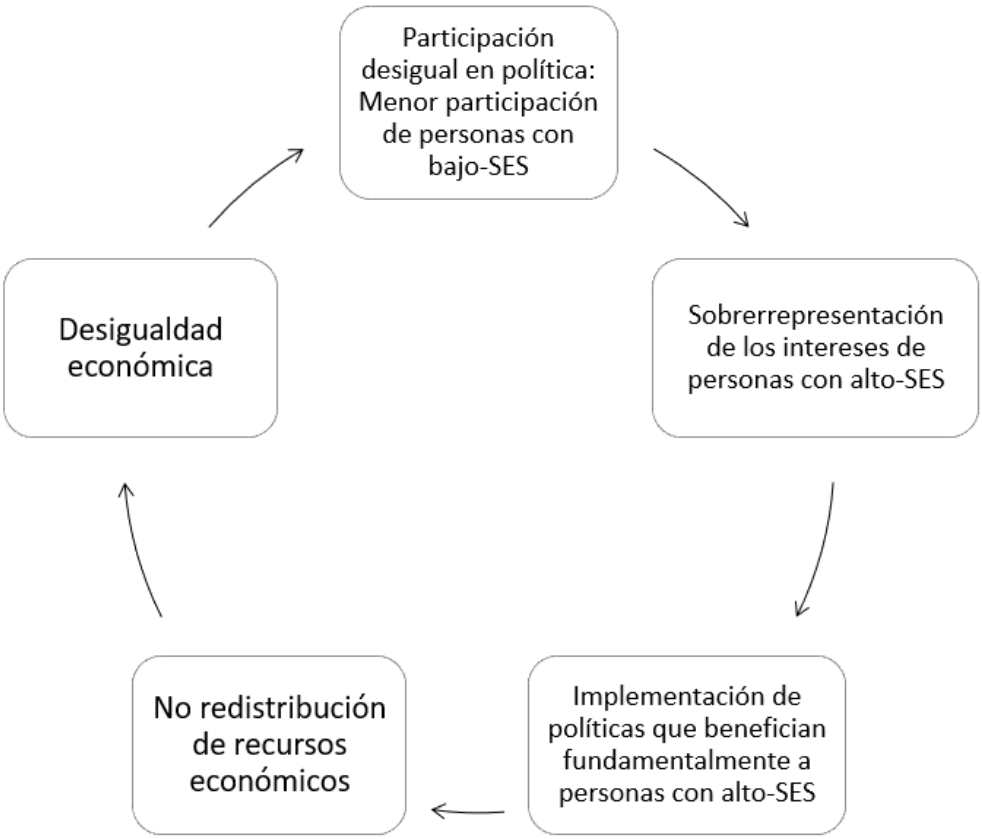
Un efecto importante del nivel de desigualdad económica es el que se da sobre el comportamiento político de la población. Así, la desigualdad hace que la ciudadanía esté menos interesada en la participación política (Scervini y Segatti, 2012; Solt, 2008; Uslaner y Brown, 2005; Zmerli y Castillo, 2015; Wong y Wong, 2022), y también participa menos cívicamente (Lancee y Van de Werfhorst, 2012; Lee y Kwon, 2019). Los estudios de Scervini y Segatti (2012) sugerían que la desigualdad vendría a acentuar las diferencias ya existentes en otros sentidos. En concreto, la participación política de

las personas con un alto nivel educativo no se vería afectada por la desigualdad objetiva. En cambio, se reduce en gran media la participación política de las personas con bajo nivel educativo. Estos resultados coinciden con los resultados de la investigación de Kraus et al. (2015), que encuentra que las personas que se identifican con una clase social alta, mayor nivel educativo y mayor nivel de ingresos se sienten más eficaces políticamente y participan más en política en comparación con las personas de menos estatus socioeconómico.

Así, la desigualdad económica también representa una amenaza a los sistemas políticos e instituciones democráticas en general. El nivel de desigualdad económica menoscaba la democracia cuando algunas élites con mayor poder económico ejercen gran influencia en el diseño de políticas públicas que reflejan sus preferencias políticas y maximizan sus beneficios (Bartels, 2016; Gilens, 2005). En este sentido, la desigualdad económica produce desigualdad política, lo que a su vez redunda en mayor desigualdad económica (Houle, 2018; Kelly y Enns, 2010) (Figura 1.4).

Figura 1.4

Relación circular entre la desigualdad económica y la desigualdad política.



Nota. Elaboración propia a partir de la literatura citada (Bartels, 2016; Gilens, 2005; Houle, 2018; Kelly y Enns, 2010). SES = estatus socioeconómico.

La desigualdad política se ve reflejada en una mayor presencia en los círculos de poder de las clases más aventajadas y en la sobrerrepresentación de sus intereses (Bonica et al., 2013; Gilens, 2005). Pero no sólo la influencia de las personas más poderosas se puede dar a través de una mayor presencia en política, sino que también puede guiar las opiniones de las personas en situación de pobreza hacia la derecha política y posiciones más conservadoras ideológicamente; por ejemplo, a través de la desinformación (Jacobs y Shapiro 2000; Kelly y Enns, 2010).

En esta dirección, la desigualdad económica percibida puede impactar negativamente en las creencias subjetivas de las personas acerca de su capacidad para participar en política de manera efectiva (Lee et al., 2021). Según Lee et al. (2021), percibir el entorno como desigual se asocia con una menor eficacia política. Así, la

percepción de un entorno con alta desigualdad económica, pocas características democráticas, e instituciones poco confiables puede hacer que la ciudadanía sienta que el terreno político está desligado de los intereses de la mayoría de la población, y, por ende, de los suyos propios. Lo que conllevaría a un alejamiento de la política y una menor probabilidad de participación en ella a distintos niveles.

Por el contrario, la participación de gran parte de la población en política contribuye tanto al mantenimiento y funcionamiento del sistema democrático como a la reducción de la desigualdad económica objetiva (Abellán Artacho y Cabrera-Álvarez, 2023; Scheve y Stasavage, 2017; van Deth, 2014).

En cuanto al papel de las actitudes hacia la desigualdad, se ha encontrado que la tolerancia hacia la desigualdad de los individuos se relaciona con la preocupación y las actitudes hacia el sistema económico y político en general (Loveless, 2016). Asimismo, las personas que apoyan en mayor medida la desigualdad y mantienen creencias que justifican el sistema económico serían menos críticas con las instituciones y el sistema democrático (Anderson & Singer, 2008; Tan et al., 2016).

Además de las actitudes hacia la desigualdad, otro tipo de actitudes pueden influir en la relación entre la percepción de desigualdad económica y el apoyo a políticas redistributivas. Es decir, aunque las personas estén de acuerdo en que la redistribución pueda ser una estrategia adecuada para reducir la desigualdad, no creen que el gobierno (por falta de capacidad, por su nivel de corrupción, etc.) sea capaz de hacerlo.

En resumen, la desigualdad económica influye negativamente en el funcionamiento del sistema sociopolítico, lo que conlleva en última instancia a la desigualdad política. La desigualdad política implica un impacto desigual de la opinión de la población en las decisiones políticas que se toman en un determinado contexto

(e.g., un país), de manera que pueden estar alineadas y beneficiar diferencialmente a la población. Normalmente, las personas de alto estatus socioeconómico son las que tiene más poder en la toma de decisiones políticas, y es más probable que vean implementadas políticas que vayan en favor de sus intereses, contribuyendo, a la postre, al mantenimiento de la desigualdad económica (Bartels, 2016; Farhat, 2020; Gilens, 2005).

En este sentido, conocer con más detalle la relación causal entre la desigualdad percibida y las actitudes hacia el sistema económico y político nos parece muy relevante para entender el comportamiento de las personas en el ámbito político. En concreto, la parte empírica de esta tesis trata de conocer cómo afecta la percepción de la desigualdad económica a la confianza en las instituciones, la percepción y satisfacción con el entorno democrático, la percepción de eficacia política de la ciudadanía, y al comportamiento (i.e., intención de cooperar y participar en acciones colectivas). En definitiva, la investigación de esta problemática busca contribuir al diseño de una sociedad más igualitaria y democrática.

Chapter 2

Motivation and Goals of the Research

A challenge for social psychology is to contribute scientific knowledge to the reduction of the main problems of contemporary societies. Both the degree of economic inequality and the level of democracy are key variables of the socio-political context in which people live—and they directly influence their lives. This dissertation examines the relationship between these two important constructs.

Certainly, in the collective imagination, people tend to associate a high-quality democracy with low inequality. For example, citizens believe that it is the responsibility of a democratic government to ensure that the entire population can satisfy its economic needs (*Centro de Investigaciones Sociológicas* [CIS], 2009, 2012) or to implement policies that redistribute resources (European Social Survey [ESS], 2012; World Values Survey [WVS], 2014). Therefore, this thesis analyzes how economic inequality affects attitudes and behaviors in the socio-political sphere.

To meet this end, we started —in Chapter 1— by reviewing the current scholarship about economic inequality, focusing on its impact on certain psychological processes. Furthermore, we also review the literature about attitudes toward democracy and other related constructs, such as institutional trust and political efficacy.

We then continue with the empirical chapters. Although there have been previous studies about the psychosocial consequences of economic inequality on socio-political attitudes, most of the evidence presented is based on correlational findings from national and international surveys (Anderson & Singer, 2008; Foster & Frieden, 2017; Krieckhaus et al., 2014; Loveless & Whitefield, 2011; Uslaner & Brown, 2005). To date, however, there is little experimental evidence of these same relationships. Given the importance of the effects of perceived economic inequality (Jetten & Peters, 2019; Willis et al., 2022), in this thesis, we will focus on analyzing the effects of perceived economic inequality on attitudes toward democracy and institutions in an

experimental way. Specifically, the aim of the current research is to gain an in-depth understanding of the psychosocial effects of economic inequality on perceptions of democracy, trust in institutions, and other behavioral variables such as perceived political efficacy and intentions to cooperate for the common good. In order to achieve this main objective, here (in Chapter 2), we formulated a number of research questions and specific objectives. In Table 2, we outline the general aim and main hypotheses to be addressed empirically in this thesis.

In the first series of studies (Chapter 3), we asked the following research question: How to measure attitudes toward inequality and how do they relate to other attitudinal variables in Spain? This is important because attitudes toward inequality have been shown to be related to other attitudes toward the economic system, such as perceptions of economic inequality (García-Castro et al., 2020), system-justifying ideologies (Wiwad et al., 2019), beliefs in a just world (Barreiro et al., 2018), or procedural fairness (Tassinari & Jasinskaja-Lahti, 2020). Moreover, attitudes toward economic inequality could predict people's preferences for redistributive policies and other measures aimed at reducing disparities in the economic distribution (García-Sánchez et al., 2018; Krinjen et al., 2021; Rodríguez-Bailón et al., 2017). Specifically, previous research proposed attitudes toward inequality as the psychological mechanism that explained the effect of perceived inequality on redistribution preferences (García-Castro et al., 2022; García-Castro et al., 2020; Wiwad et al., 2019). However, the study of attitudes toward inequality is mainly based on non-Spanish samples (Mercier et al., 2020; Sommet et al., 2019; Tassinari & Jasinskaja-Lahti, 2020). In order to know how attitudes toward inequality work in a Spanish context, we adapted the support for economic inequality scale (SEIS, Wiwad et al., 2019) to this context. This measure evaluates people’s tendency to have positive attitudes toward economic inequality and

can contribute to deepening our understanding of the main question of this dissertation: The relationship between perceived economic inequality and perceived democracy (see Table 2).

In particular, the first study (Study 1) aimed to test the psychometric properties and explore the factorial structure of S-SEIS and examine whether it is related to other similar constructs. Specifically, Study 1 examined the relationship between support for inequality and intolerance toward inequality. We expected that participants who showed greater support for economic inequality also reported less intolerance of inequality (**H1**).

Previous research has mentioned that attitudes toward inequality may also be related to attributing poverty to situational factors (Piff et al., 2020) and how groups at the bottom of the economic ladder are perceived (Durante et al., 2013). For example, people tend to be less supportive of redistribution due to the perceived incompetence of people in poverty (Tanjitpiyanond et al., 2022), which in turns, contributes to maintaining inequality (Durante & Fiske, 2017; Fiske & Durante, 2019). In this sense, attributing negative characteristics to people in poverty could act as a mechanism to justify levels of inequality. Therefore, we consider it relevant to explore the perceptions of lower social class groups in relation to the two main dimensions: warmth and competence. In Study 2, we examined whether the participants who reported higher support for economic inequality also perceived people in poverty as less warm (**H2**) and (b) competent (**H3**).

Having examined the attitudes and perceptions of inequality in the Spanish context, in the second series of studies (Chapter 4), we wanted to analyze further the causal effect of perceived economic inequality on socio-political attitudes. There are several studies on how objective inequality affects institutional trust and satisfaction

with democracy (Anderson & Singer, 2008; Goubin, 2018; Foster & Frieden, 2017; Lipps & Schraff, 2020; Loveless & Whitefield, 2011). In addition, previous literature has shown how important it is to perceive inequality to infer other normative characteristics of societies (Moreno-Bella et al., 2022; Sánchez-Rodríguez et al., 2019; Sommet et al., 2022). In this research, we proposed that other characteristics of societies can be inferred from the unequal nature of the context, such as the extent to which citizens trust their public institutions, the level of perceived democracy of the country, and how much they feel they are listened to by politicians. Consequently, we asked: How does perceived inequality affect sociopolitical attitudes and behavior?

However, most of these studies are based on survey or archival data and correlation-based analytical approaches (Andersen, 2012; Lee & Kwon, 2019). As such, in this chapter, we conducted two studies (Study 1 and Study 3) in which the perception of economic inequality was experimentally manipulated in a fictitious society—using the Bimboola paradigm (Sánchez-Rodriguez et al., 2019). In Study 1, we expected that in the society with high (vs. low) economic inequality, participants reported lower levels of trust (**H4**), lower levels of perceived democracy (**H5**), lower satisfaction with democracy (**H6**), and lower political efficacy (**H7a**).

Then, we aimed to run a conceptual replication, that is, to test a different experimental paradigm for manipulating economic inequality in Study 2 (Crandall & Sherman, 2016). Additionally, we wanted to answer the following question: Which psychological mechanisms could explain the effect of perceived economic inequality on political efficacy? Perceived economic inequality may affect people's subjective beliefs about their ability to participate effectively in politics (Lee et al., 2021). This perception of political efficacy is closely linked to the prevailing political climate and positively correlates with institutional trust and the perceived level of democracy (Kölln et al.,

2013; Zumárraga-Espinosa, 2020). Following this relationship, we examined whether institutional trust (**H7b**) and the perceived level of democracy of the context (**H7b**) mediated the effect of perceived inequality on political efficacy.

After Study 2, we decided to analyze the overall effect of perceptions of economic inequality on our sociopolitical variables in Study 1 and Study 2 (Lynch et al., 2015). Since the most consistent result regarding the possible mediators tested in Studies 1 and 2 was institutional trust, in the following study (Study 3), we intended to demonstrate the mediational role of institutional trust by manipulating it; said otherwise, we used an experimental mediation approach (Spencer et al., 2005). Moreover, in this study, we aimed to analyze whether the proposed chain also applied to a behavioral measure as environmental collective actions. For doing this, we aimed to manipulate both the independent variable and the mediation effect: we examined whether there was an interaction effect of perceived inequality and institutional trust on political efficacy (**H8**) and collective actions (**H9**).

In addition to the effects of inequality on socio-political attitudes, the literature has echoed the negative consequences of inequality on cooperation (Paskov & Dewilde, 2012; Duquette & Hargarden, 2019). There is also empirical evidence from experimental studies supporting the causal effect of perceived inequality on cooperation in economic games (Aksoy, 2019; Nishi et al., 2015; Schlösser et al., 2020). However, the results found in this line are inconsistent, sometimes showing effects in opposite directions (Fung & Au, 2014; Melamed et al., 2022; Nishi et al., 2015; Sadrieh & Verbon, 2006). Therefore, in Chapter 5, we present a study that tries to answer the question: How do perceived inequality and democratic choice affect cooperative behavior?

On the one hand, we were interested in finding out the effect of perceived inequality on cooperative behavior (**H10**). Given that there is evidence showing that democratic choice increased satisfaction and willingness to cooperate in both economic games and applied domains (Dal Bó et al., 2010; Olken, 2010; Sutter et al., 2010), we aimed to investigate the effect of democratically (vs. non-democratically) chosen norms on cooperative behavior (**H11**).

According to Oishi et al. (2015), the environment in which people live provides various physical and social aspects that guide their behavior and social engagement. Consequently, factors related to a country's perceived level of democracy, such as the reliability of its public institutions and political inequality, could reveal specific features of the society (Rueschmeyer, 2004; Scheve & Stasavage, 2017). While theoretical work has suggested a possible link between democracy and inequality (Dahl, 1971; Rueschmeyer, 2004), there has been no empirical testing of the relationship between perceptions of democracy and inferred levels of economic inequality.

In Chapter 6, we aimed to experimentally investigate the potential effect of perceived democracy on perceived levels of inequality. It was hypothesized that participants knowing the non-democratic character of a context will infer higher levels of inequality than those exposed to a democratic context (**H12**). To test this hypothesis, two pre-registered studies were conducted. The first involved an experimental manipulation of the level of perceived democracy in a fictional society, while the second aimed to conceptually replicate the findings of Study 1 in order to provide consistency and robustness to the previous results.

Regarding the structure of the doctoral thesis, the different empirical chapters are independent scientific articles, so each chapter presents an introduction and a general discussion. Consequently, it is possible that some of the arguments presented in

the different chapters may be redundant; also, the tables and figures are listed according to the chapter to which they belong. After the empirical chapters, we present the general discussion of the results found in this dissertation in English. Additionally, we include a section with supplementary material (e.g., experimental manipulations used, instruments, additional analyses) and the bibliographical references used in the dissertation.

Following the guidelines of the International Graduate School of the University of Granada in order to meet the requirements for an international doctorate, some chapters are presented in Spanish (theoretical chapter) and others in English (empirical chapters and the discussion section). Finally, we have tried to use inclusive language throughout the chapters.

Table 2

Summary of the goals, research questions and hypotheses of the current research.

General Aim To analyze the relationship between perceived economic inequality and sociopolitical attitudes			
Research Question	**Specific aim**	**Hypothesis**	**Chapter & Study**
1. How to measure attitudes toward inequality and how do they relate to other attitudinal variables in Spain?	To analyze the psychometric properties and the factorial structure of the Spanish version of the SEIS (S-SEIS), to obtain validity evidence, and to test its reliability in Spain.	Participants who report higher support for economic inequality will report lower intolerance toward inequality (**H1**) and will perceive people in poverty as less warm (**H2**) and less competent (**H3**) compared to people who support inequality to a lower extent.	Chapter 3: Studies 1 & 2 (H1-H3).
2. How does perceived inequality affect sociopolitical	To examine the effect of perceived inequality on institutional trust, perceived democracy,	In the society with high (vs. low) economic inequality, participants will report: lower levels of trust (**H4**), perceived democracy (**H5**),	Chapter 4: Studies 1 & 2 (H1-H4a).

attitudes and behavior?	satisfaction with democracy, and political efficacy.	satisfaction with democracy (**H6**), and political efficacy (**H7a**).	
3. Which psychological mechanisms could explain the effect of perceived economic inequality on political efficacy and other forms of civic participation?	To analyze the mediating role of institutional trust and perceived democracy on the effect of perceived inequality on political efficacy. Experimentally manipulate institutional trust to test its mediational effect in the relationship between inequality and political efficacy. To analyze if institutional trust also mediates the effect of perceived inequality on environmental collective actions.	Institutional trust (**H7b)** and perceived democracy (**H7c)** will mediate the effect of perceived inequality on political efficacy. There will be an interaction between perceived inequality and institutional trust in political efficacy (**H8**) and collective actions (**H9**). High inequality (vs. low) will lead to lower levels of political efficacy and collective actions, and this effect will be stronger when institutional trust is low (vs. high).	Chapter 4: Studies 1 & 2 (H4b-H4c). Study 3 (H5-H6).
4. How do perceived inequality and democratic choice affect cooperative behavior?	To analyze the causal effect of economic inequality and democratic choice on cooperative behavior.	In the condition of high (vs. low) economic inequality: cooperation levels will be lower (**H10)**. In the democratic choice (vs. non-democratic choice) condition: cooperation will be higher (**H11)**.	Chapter 5: Study 1 (H1-H2).
5. How does perceived democracy affect individuals' inferred economic inequality?	To analyze the effect of perceiving a democratic context on the inferred level of inequality.	In the condition of high democracy (vs. low) participants will report lower levels of inferred economic inequality (**H12)**.	Chapter 6: Studies 1 & 2 (H1).

EMPIRICAL CHAPTERS

CAPÍTULOS EMPÍRICOS

Chapter 3

Spanish Version of the Support for Economic Inequality Scale (S-SEIS)

Spanish Version of the Support for Economic Inequality Scale (S-SEIS)

Versión Española de la Escala de Apoyo a la Desigualdad Económica (S-SEIS)

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Resumen

Antecedentes: La versión Española de la Escala de Apoyo a la Desigualdad Económica (S-SEIS) evalúa la tendencia de las personas a tener actitudes positivas hacia la desigualdad económica. Método: Se realizaron dos estudios correlacionales, uno exploratorio (N = 619) y otro confirmatorio (N = 562). Resultados: S-SEIS mostró una buena fiabilidad en los dos estudios. El análisis factorial mostró una estructura unifactorial en el Estudio 1 que se confirmó en el Estudio 2. Igualmente encontramos una relación entre S-SEIS y otras medidas de actitudes hacia la desigualdad ampliamente utilizadas, como la intolerancia hacia la desigualdad. S-SEIS correlaciona positivamente con la creencia en un mundo justo, la orientación hacia la dominancia social (SDO), la justificación del sistema económico (ESJ), la confianza institucional y la democracia percibida; correlaciona negativamente con la intolerancia hacia la desigualdad, la desigualdad percibida, la sociabilidad/competencia percibida de las personas en situación de pobreza y el apoyo a la redistribución. Conclusiones: Los hallazgos sugieren que la S-SEIS es una medida válida para evaluar el apoyo a la desigualdad económica en muestras españolas.

*Palabras clave***:** actitudes hacia la desigualdad, desigualdad económica, adaptación española, apoyo a la desigualdad económica, validez.

Abstract

Background: This research presents the adaptation and validity evidence of the Spanish version of the Support for Economic Inequality Scale (S-SEIS). This measure evaluates people's tendency to have positive attitudes toward economic inequality. Method: Two correlational studies were conducted, one exploratory (N = 619) and one confirmatory (N = 562). Results: S-SEIS showed good reliability in both studies. The factorial analysis showed a one-factor structure in Study 1 that was confirmed in Study 2. We also found a relationship between S-SEIS and other extensively used measures of attitudes toward inequality, such as intolerance toward inequality. S-SEIS positively correlates with belief in a just world, social dominance orientation (SDO), economic system justification (ESJ), institutional trust, and perceived democracy; it correlates negatively with intolerance toward inequality, perceived inequality, perceived warmth/competence of people in poverty and support for redistribution. Conclusions: The current research findings suggest that S-SEIS is a valuable instrument for evaluating the support of economic inequality in Spanish samples.

*Keywords***:** attitudes toward inequality, economic inequality, Spanish version, support for economic inequality, validity.

Introduction

Europe is now more unequal than it was four decades ago. Notably, inequality has been increasing in Spain in the last few years (Blanchet et al., 2019). The negative impact of such disparities has become a challenge for current societies. The 2030 Agenda has identified the reduction of inequality as one of the most critical fronts for sustainable development (United Nations, 2021). Thus, achieving a more egalitarian and equitable society will require a comprehensive agenda for reducing economic inequalities.

From this perspective, examining the attitudes that maintain existing inequalities is relevant (Benson et al., 2021; Roex et al., 2019) and seems to be a promising field aimed at lessening societal inequalities (García-Castro et al., 2020; Piff et al., 2020; Willis et al., 2022; Wiwad et al., 2019). In this paper, we aim to find validity evidence in Spanish samples for one of the most relevant scales developed for this purpose: the Support for Economic Inequality Scale (SEIS; Wiwad et al., 2019). We believe this could help expand our knowledge about attitudes toward economic inequality in Spain.

Past studies have shown that attitudes toward inequality could predict individuals' preferences for redistributive policies and other specific measures aimed at reducing disparities (García-Castro et al., 2020; García-Sánchez et al., 2018; Krinjen et al., 2021; Rodríguez-Bailón et al., 2017). However, these studies have operationalized attitudes toward inequality using a single-item measure adapted from the International Social Survey Programme (ISSP; ISSP Research Group, 2012): "Income differences in [country] are too large" (p. 3). This measure has been extensively used in previous research and is usually called intolerance toward inequality (Bavetta et al., 2019; Castillo, 2011; García-Castro et al., 2022; Kiatpongsan & Norton, 2014).

However, using this single-item measure for assessing attitudes toward inequality may have some problems (e.g., inability to test reliability, low sensitivity, decreased effect size; Meyvis & Van Osselaer, 2018). As such, SEIS was developed to measure support for economic inequality, which encompasses individuals' beliefs about the perceived degree of economic inequality and their positive or negative evaluation of it (Wiwad et al., 2019). Said otherwise, SEIS tries to capture how individuals support or oppose the level of inequality they perceive. From this perspective, support for inequality and intolerance toward inequality—the construct usually measured using a single item—may represent opposing sides of the continuum of attitudes toward inequality (Wiwad et al., 2019). The main difference between support for and intolerance toward inequality is how they are measured in the literature.

The SEIS represents a recent and accurate measure to assess attitudes toward inequality. It has shown high reliability, convergent and discriminant evidence of validity (Wiwad et al., 2019). Importantly, this measure has been widely used and is positively related to the belief that life is a zero-sum game (Davidai & Ongis, 2019) and the belief in free will (Mercier et al., 2020); conversely, it is negatively related to perceived procedural justice (Tassinari & Jasinskaja-Lahti, 2020) and situational attributions for poverty (Piff et al., 2020).

However, most of these studies have been conducted with samples from the United States. In our research, we aimed to analyze the psychometric properties and the factor structure of the Spanish version of the SEIS (S-SEIS), obtain evidence of its validity, and test its reliability in Spain. We also tested relationships between the S-SEIS and other variables previously identified as correlates of support for economic inequality (Wiwad et al., 2019).

For instance, there is a negative correlation between supporting and perceiving economic inequality (Kuhn, 2019). In exploring the link between perceived inequality and support for inequality, we used three scales: a 3-item scale of perceived inequality (Sommet et al., 2019), a diagrammatic measure of the perception of economic inequality (ISSP Research Group, 2012), and the Perceived Economic Inequality in Everyday Life (PEIEL) scale (García-Castro et al., 2019), which was developed in the Spanish context. The two former instruments assess inequality in a more general and abstract way, the first using a Likert answer scale and the second using graphic options. However, the PEIEL scale more directly and meaningfully evaluates inequality by pointing out the individual's experiences of inequality in everyday life (García-Castro et al., 2019). Recent literature has shown that perceiving inequality in everyday life increases intolerance toward economic inequality, which, in turn, can increase the preference for redistribution (García-Castro et al., 2022). Likewise, higher SEIS ratings are negatively related to support for redistribution (Wiwad et al., 2019).

Attitudes toward inequality may also be related to how groups on the bottom of the economic ladder are perceived (Durante et al., 2013; Piff et al., 2020). Warmth (i.e., trustworthiness and friendliness) describes groups' stereotypic inclination for cooperation, whereas competence (i.e., capability and agency) describes their ability to act on their intentions (Fiske et al., 2002). People in poverty tend to be seen as incompetent (i.e., low in competence dimension; Durante et al., 2017), but there is less consensus in the social perception of their warmth (Connor et al., 2021; Durante et al., 2017).

Furthermore, other studies have found that people in poverty are perceived even more negatively when there are high levels of economic inequality (Sainz et al., 2020). In other words, in highly economically unequal contexts, people in poverty are seen as

lower in competence and warmth (Wiwad et al., 2019). We aimed to explore how support for inequality relates to the social perception of people in poverty and expected that people who support inequality will perceive people in poverty in a more negative way across the two dimensions (i.e., competence and warmth).

Moreover, support for inequality has previously shown convergent validity evidence with other conceptually broad constructs (i.e., system-justifying ideologies; Wiwad et al., 2019), such as belief in a just world (Barreiro et al., 2018; Dalbert, 1999), social dominance orientation (SDO; Pratto et al., 2000; Silván-Ferrero & Bustillos, 2007), and economic system justification (ESJ; Jost & Thompson, 2000). Individuals who report higher levels of SDO tend to support unequal dominance-based relations between groups (Pratto et al., 2000) and report beliefs that support the economic system (Jost & Thompson, 2000; Silván-Ferrero & Bustillos, 2007). Along these lines, we expect that those individuals will also support inequality to a greater extent.

Individuals' tolerance toward inequality is also linked to concerns about economic inequality and attitudes toward the economy and the political system (e.g., institutions; Loveless, 2016). In the political arena, citizens from countries with higher income inequality tend to express more negative attitudes toward institutions (Goubin, 2018) and democracy (Krieckhaus et al., 2014). Furthermore, people's perceptions of inequality are negatively related to positive attitudes toward democratic institutions (Loveless, 2016).

Study 1

To analyze the psychometric properties and explore the factor structure of S-SEIS, we conducted an initial study that, for the first time, provided evidence of the scale's convergent validity. Specifically, this study examined the relationship between two ways of measuring attitudes toward inequality: S-SEIS and the single-item scale

broadly used in previous research (i.e., intolerance toward inequality; Bavetta et al., 2019; Castillo, 2011; García-Castro et al., 2019; Kiatpongsan & Norton, 2014). We expected that participants who demonstrated higher support for economic inequality also reported lower intolerance toward inequality (Hypothesis 1).

Furthermore, given the potential relationship between support for economic inequality and other related constructs, the first study explored the relationship that the support for inequality has with the tolerance of economic inequality, perceived economic inequality, PEIEL, ideal income gaps, and perceived warmth and competence of people at the bottom of the economic ladder. All of the measures included in the exploratory questionnaire, the data, and the results are available at Open Science Framework (OSF; https://osf.io/vp627/?view_only=96b513c9d2bc4f66afc949401b029136).

Method

Participants

We conducted an a priori sample size analysis using G*Power (Faul et al., 2009) for Pearson bivariate correlational test analysis. We estimated standard medium-low effect size (d = .30) to obtain an a priori power of 80% and a p-value of .05. The estimated sample size was 356, and we tried to get that minimum size after exclusions. We used as inclusion criteria participants' Spanish nationality, living more than five years in Spain, and older than 18 (see preregistration at OSF). Given that we collected the data with the university mail service prevented us from knowing the amount of involvement of participants. Therefore, we planned to collect the responses of more participants than needed to get the minimum sample required after exclusions. The questionnaire was completed by 656 participants. The data from 37 people were excluded from the analysis because they were not Spanish nationals or had not

residence in Spain for more than five years. A total of 619 participants (72.2% women, 26.8% men, 1.3% other indicated), ranging from 18 to 78 years old (M = 24.83, SD = 8.44), participated in this study.

Instruments

S-SEIS. The scale includes Spain as a reference in the five items (Table 3.1; adapted from Wiwad et al., 2019). We used a Likert scale for answers ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), α = .72.

Intolerance Toward Inequality. We used an adapted version of the ISSP (ISSP Research Group, 2012) item, "Differences in income in Spain are too large." We used a Likert-type answer scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Table 3.1

Factor Analysis of the Spanish Version of the Support for Economic Inequality Scale (S-SEIS).

Final version of the S-SEIS	Factor loading	
	Study 1	Study 2
1. Se han exagerado mucho las consecuencias negativas de la desigualdad económica [The negative consequences of economic inequality have been largely exaggerated].	.52	.56
2. La desigualdad económica está causando muchos de los problemas de España [Economic inequality is causing many of Spain's problems]. (R)	.77	.77
3. Estoy muy preocupado/a por el grado de desigualdad económica que existe actualmente en España [I am very concerned about the current level of economic inequality in Spain today]. (R)	.81	.79
4. La desigualdad económica no es un problema [Economic inequality is not a problem].	.62	.73
5. Tenemos que hacer todo lo posible para reducir la desigualdad económica que existe en España en la actualidad [We need to do everything possible to reduce economic inequality in Spain today]. (R)	.70	.79

Note. R = Reversed item.

Perceived Economic Inequality. We adapted the scale from Sommet et al. (2019). Participants indicated their level of agreement with three statements about inequality (e.g., "In Spain, there is a huge gap between rich and poor"), by using a 1 to 7 Likert scale (*not at all* to *completely*), $\alpha = .86$.

Ideal Income Gap. We used the measure adapted from Castillo (2011) and ISPP Research Group (2012). Participants answered the following questions using an open-response format: "What do you think a highly qualified person with a highly responsible position in the company should earn per month on average?" and "What about of a non-qualified person with a position of little responsibility in the company?". This operationalization reflects the differences in ideal compensation for high- and low-status jobs. The index is calculated as the ideal earning for a high-status jobs divided by the ideal earning for a low-status jobs. Higher scores indicate higher ideal inequality levels.

PEIEL. We used the 12-item scale from García-Castro et al. (2019). The scale used a 7-point Likert response format ranging from 1 (*completely disagree*) to 7 (*completely agree*) for statements about personal encounters with inequality (e.g., "Among the people I know, some have bigger and more luxurious homes than others"), $\alpha = .90$.

Diagrammatic Measure of the Perception of Economic Inequality (ISSP Research Group, 2012). This measure consists of five graphs ordered by their different distributions of resources (1 = *more inequality* to 5 = *less inequality*). Among the five graphs, participants should choose the one that best represent the economic structure of current Spanish society.

Perceived Warmth and Competence of People in Poverty. We used nine traits to evaluate participants' perception of low-SES people (adapted from Fiske et al.,

2002). They were asked to what extent people in poverty were characterized by competence (e.g., competent, intelligent) and warmth (e.g., warm, honest). Participants answered using a Likert scale ranging from 1 (*not at all*) to 5 (*very much*). We used competence (α = .86) and warmth (α = .92) as independent dimensions.

Subjective Socioeconomic Status (SSS). Participants completed the MacArthur Scale of Subjective Socioeconomic Status (Adler et al., 2000). They had to choose which rung of a 10-rung ladder best represented their positions in the social hierarchy (M = 5.31; SD = 1.50).

Political Ideology. Participants self-placed on a scale ranging from 1 (*extremely left-wing*) to 7 (*extremely right-wing*, M = 3.98; SD = 1.74).

Demographic Information. Finally, participants provided information about their age, gender, nationality, years living in Spain, native languages, level of education (from 1 = *none* to 9 = *Ph.D.*), degree (in case they were at the university level or higher), professional status, income (open response), and the number of family members.

Procedure

The study was approved by the Ethical Committee of the University of Granada (Reference: 969/CEIH/2019). To build a Spanish version of the SEIS, we translated, adapted, and aimed to find validity evidence for this instrument in Spain. Previously, four social psychology researchers translated the SEIS (Wiwad et al., 2019) into Spanish, from which they independently obtained four versions (Table S1). We qualitatively analyzed these translations, which were very similar and only presented small discrepancies. A preliminary version in Spanish was generated from this review. The Spanish version was independently translated into English by a professional translator who did not previously know the original scale. In addition, we compared the

new version in English with the original version, evaluating each item's semantic and conceptual equivalence. Minimal changes were made to one of the five items to improve its representativeness and comprehensibility by using the criterion of maximum semantic fidelity to the original version of the scale (Hambleton, 2005). After that, we discussed the Spanish version of the items (Delgado-Rico et al., 2012) and reached a consensus about the final version.

Participants were contacted through the university mail service. They were invited to answer an anonymous questionnaire voluntarily, and provided informed consent before answering the questionnaire.

Data analysis

First, Cronbach's alphas were calculated on each scale to confirm their reliability. Then, we carried out item analysis, especially the discrimination index (corrected item-total correlation). An exploratory factor analysis was conducted to examine the factor structure and to find evidence based on internal structure. Pearson bivariate correlations of all variables were computed.

Results

The items showed discrimination indices (indicated by the item's correlation to the corrected total) between .35 and .59, as well as a good ability to capture the participants' variation in the measured construct ($SD_{\text{all items}} > 1$, Table S2). The mean of the scale was close to the left side of the distribution ($M = 2.20$, $SD = 0.98$).

The result of the Bartlett sphericity test ($\chi^2 = 640.86$, $p < .001$) and the KMO index (.73) indicated the suitability of the correlation matrix for the exploratory factor analysis of the scale through the extraction of principal components. The exploratory factor analysis revealed a single factor with an eigenvalue higher than 1, which explains

47.75% of the variance. The saturation of the items in this factor ranged between .53 and .81.

The scale showed good internal consistency ($\alpha = .72$, $r = .72$) and evidence of convergent validity related to intolerance toward inequality (see Table 3.2). Then, a regression analysis was performed, and it was found to be statistically significant ($R^2 = .26$, $\Delta R^2 = .26$, F (1, 617) = 218.25, $p < .001$). SEIS significantly predicted intolerance toward inequality ($\beta = -.63$, $p < .001$, $d = .35$). See Table S3 for regression analysis with all of Study 1's variables. We computed the Variance Inflation Factors for each predictor and the Klein test for multicollinearity (Table S4).

Table 3.2

Descriptive Statistics and Pearson Bivariate Correlations between the Variables Measured in Study 1 and S-SEIS.

Variable	*M*	*SD*	S-SEIS	
			r	*p*
S-SEIS	2.20	0.98		
Intolerance Toward Inequality	5.72	1.21	-.511**	<.001
Perceived Income Inequality	6	1.06	-.483**	<.001
Ideal Income Gaps	815.76	20129.11	.025	.539
PEIEL	5.71	1.07	-.314**	<.001
Inequality Diagram	2.54	1.06	.257**	<.001
Warmth	3.81	0.75	-.350**	<.001
Competence	3.67	0.83	-.389**	<.001

Note. $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

S-SEIS ratings were negatively related to perceived income inequality, PEIEL, and perceived warmth and competence of people in poverty. S-SEIS ratings were

positively associated with the values assigned to the diagrammatic measure of the perception of economic inequality. However, S-SEIS was not related to the ideal income gap.

Discussion of Study 1

This study provided evidence of the one-factor structure of the S-SEIS scale. Likewise, it showed that it presents adequate reliability. We found evidence of the scale's convergent validity, as it is negatively related to another way of measuring attitudes toward inequality through a single-item scale (i.e., intolerance toward inequality). Different exploratory analyses also found that the scale's value was (a) negatively associated with perceived income inequality, PEIEL, and perceived warmth and competence of people in poverty and (b) positively related to perceived inequality using a diagrammatic measure. The relationship between S-SEIS and the diagrammatic measure goes opposite to that between S-SEIS and the other measures of perceived inequality because the diagrammatic scale range went from high to low inequality. People who report support for inequality tend to perceive low levels of inequality in their country and everyday life and tolerate the perceived disparity. This finding is particularly relevant because support for and intolerance toward inequality may represent the opposing sides of the continuum of attitudes toward this disparity (Wiwad et al., 2019). That is how the negative correlation between S-SEIS and intolerance toward inequality is explained. Moreover, participants who support economic inequality tend to perceive people in poverty as lower in warmth and competence.

In contrast, ideal income gaps were not shown to be related to support for inequality, which may not be surprising, given the limitations of the use of the pay ratios measure (Castillo et al., 2022). Particularly problematic are the anchoring effect

caused by the assessment of current inequality and the bias effect that prevents its interpretation as a measure of desired levels of equality (Pedersen & Mutz, 2019).

In sum, the S-SEIS showed good validity evidence and sound reliability indices showing relationships with constructs relevant to the study of the causes and consequences of SEIS ratings.

Study 2

We conducted a second study to confirm the S-SEIS's one-factor structure and provide further convergent evidence. Specifically, this study examined whether the participants who reported higher support for economic inequality also perceived people in poverty as less: (a) warm (Hypothesis 2) and (b) competent (Hypothesis 3).

Furthermore, we aimed to explore the relationships between support for inequality and certain ideological measures, such as belief in a just world, SDO, and ESJ. We also included for exploratory purposes other measures related to redistribution preferences, institutional trust and perceived level of democracy.

Method

Participants

The initial sample was composed of 595 participants. The data from 33 people were excluded from the analysis because they were not Spanish nationals. A total of 562 people (72.1% women, 26.7% men, 1.2% indicated other) ranging between 18 and 66 years old (M = 24.86, SD = 8.90) participated in Study 2.

Instruments

As in Study 1, we included the S-SEIS (α = .78, r = .69) and the same measures of perceived warmth (α = .91) and competence (α = .81) of people in poverty, SSS (M = 5.47, SD = 1.48), political ideology (M = 4.09, SD = 1.77), and the demographic information previously used. In addition to these, we included the following measures:

Beliefs in a Just World. We used a 6-item scale (Barreiro et al., 2018; adapted from the original scale of Dalbert, 1999). The answer scale has a 5-point Likert format ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) in response to statements like "I am confident that justice always prevails over injustice", $\alpha = .79$.

SDO. We used a 16-item scale (Silván-Ferrero & Bustillos, 2007; adapted from the original scale by Pratto et al., 1994). The scale has a 7- point Likert response format ranging from 1 (*strongly disagree*) to 7 (*strongly agree,* e.g. "The value of some groups of people is greater than that of others", $\alpha = .86$).

ESJ. We used a 7-item scale (Jaume et al., 2012; adapted from Jost & Thompson, 2000). The scale has a 7- point Likert response format ranging from 1 (*strongly disagree*) to 7 (*strongly agree,* e.g. "The gap between social classes reflects differences in the natural order of things," $\alpha = .83$).

Support for Redistribution. We used a 4-item scale (Wiwad et al., 2019; adapted from WVS, 2014). The scale has a 4-point Likert response format ranging from 1 (*nothing at all*) to 4 (*a lot,* e.g. "To what extent do you think government policies and programs are able to reduce poverty in this country?", $\alpha = .81$).

Institutional Trust. We adapted five items from the European Social Survey (2018). The scale has a 7-point Likert response format ranging from 1 (*strongly distrust*) to 7 (*strongly trust*) that participants were asked to use in response to questions like "To what extent do you trust the following institutions from Spain? President and their counselors, Parliament, political parties, legal system and the Police," $\alpha = .71$.

Perceived Democracy. We adapted 10 items from the WVS (2014) and the Democracy Index 2018 (The Economist Intelligence Unit, 2018). The response format ranged from 1 (*strongly disagree*) to 7 (*strongly agree*, e.g. "The electoral process in Spain is just, fair, and transparent", $\alpha = .73$).

Procedure

Same as in Study 1.

Data analysis

Same as in Study 1. Given that the theoretical definition of the construct implies a one-dimensional scale structure and that the exploratory factor analysis in Study 1 revealed a single factor, we conducted a confirmatory factor analysis using a robust maximum likelihood estimator, and we determined the model's fit by jointly evaluating the Standardized Root Mean Square Residual (SRMR), Comparative Fit Index (CFI) and Tucker Lewis Index (TLI; Kaplan, 2009). Besides, we ran linear regression analyses, including the S-SEIS as the predictor variable and perceived warmth (a) and competence of people in poverty (b) as criterion.

Results

As in Study 1, the items showed good discrimination indices that ranged between .38 and .62, as well as a good ability to capture the participants' variation in the construct measured ($SD_{\text{all items}} > 1$).

The confirmatory factor analysis indicated an acceptable one-dimensional model (*SRMR* = .044, *CFI* = .950, *TLI* = .901). The single factor of the scale also showed good reliability. We found good construct reliability (Jöreskog Rho = .782) and composite reliability (*CR* =.779; Ab Hamid et al., 2017; Hair et al., 2014), and an average variance extracted of .415, which showed acceptable evidence of convergent validity (Fornell & Larcker, 1981). Performing multigroup analyses, we found configural invariance between Spanish and USA samples (Wiwad et al., 2019; see Table S12 and Table S13).

S-SEIS was negatively related to the perceived warmth and competence of people in poverty (see Table 3.3). Therefore, the negative relationship between support for economic inequality and the perception of low-SES individuals as warm and

competent were replicated in this second study (Hypothesis 2-3). The findings revealed that S-SEIS significantly predicted low perceived warmth (R^2 = .11, ΔR^2 = .11, F (1, 560) = 69.26, p < .001, f^2 = .12) and competence (R^2 = .09, ΔR^2 = .09, F (1, 560) = 57.47, p < .001, f^2 = .10) of people with low socioeconomic resources. That is, S-SEIS predicted perceived warmth (β = −.33, p < .001) and competence of people with low-SES (β = −.31, p < .001). See Table S7 for regression analysis with all the variables included in Study 2. We did not detect multicollinearity issues with any predictor (see Table S8).

Table 3.3

Descriptive Statistics and Pearson Bivariate Correlations between the Variables Measured in Study 2 and S-SEIS.

Variable	*M*	*SD*	S-SEIS	
			r	*p*
S-SEIS	2.19	1.00		
Warmth	3.64	0.76	-.332**	<.001
Competence	3.61	0.76	-.305**	<.001
Beliefs in a Just World	2.54	0.74	.283**	<.001
SDO	2.25	0.86	.593**	<.001
ESJ	2.68	0.81	.498**	<.001
Support for Redistribution	3.58	0.53	-.479**	<.001
Institutional Trust	3.17	1.06	.129**	.002
Perceived Democracy	4.27	0.90	.217**	<.001

Note. *p < .05, **p < .01, ***p < .001.

S-SEIS was positively related to belief in a just world, SDO, ESJ, institutional trust, and perceived democracy. Additionally, S-SEIS was negatively associated with support for redistribution.

Discussion of Study 2

In line with the results of the original SEIS (Wiwad et al., 2019), this second study confirmed the S-SEIS one-factor structure. It showed a good fit in the confirmatory factor analysis undertaken.

This study replicated Study 1, finding that the S-SEIS value was negatively related to the perceived warmth and competence of people of low SES (Wiwad et al., 2019). These results are congruent with the predictions of Piff et al. (2020) on the relationship between support for economic inequality and negative attributions to people in poverty, probably as a mechanism to justify inequality levels. The relations between variables that emerged in this study suggest that when people in poverty are judged after activating economic inequality they are evaluated more negatively (and not ambivalently) because in participants' minds people in poverty have completely failed. This finding aligns with Connor et al. (2021) and Tanjitpiyanond et al. (2022), who agreed that people in poverty are negatively stereotyped in general. They are not only seen as incompetent and unassertive but also immoral, cold, and less than human in unequal contexts (see Sainz et al., 2020). Crucially, people tend to support redistribution to a lesser extent due to the perceived incompetence of people in poverty (Tanjitpiyanond et al., 2022). In our studies, that would be especially true of those who support inequality.

Validity evidence of S-SEIS was provided by the positive correlation between S-SEIS and beliefs in a just world, SDO, and ESJ, as well as by the negative correlation between S-SEIS and support for redistribution. We found a moderate correlation between support for inequality, SDO, and ESJ. This makes sense given that orientation toward dominance and the justification of the economic system implies, to a certain extent, the acceptance of existing inequalities between groups (Jylhä, 2016; Pratto et al.,

2000) even though these represent different theoretical constructs (Jost & Thompson, 2000). In this sense, support for inequality is related to ideologies that support the existing social order and the prevailing economic structure of society (Krinjen et al., 2021; Silván-Ferrero & Bustillos, 2007). At the same time, a negative and medium-sized correlational index links support for inequality to support for redistribution, which is in line with previous literature (Wiwad et al., 2019). If people attribute existing inequality to external factors, they may be more sensitive to these disparities and more prone to address them. In contrast, when people accept economic differences between groups, they have no interest in reducing these inequalities.

Furthermore, participants with higher scores on the S-SEIS showed higher institutional trust and higher perceived democracy in Spain. This builds on literature showing that individuals' tolerance toward inequality is not limited to economic concerns but linked to attitudes toward democracy's institutions (Loveless, 2016). As suggested by Loveless (2016), when inequality is perceived, people could share criticism of the economic and political systems, expected to be fair and egalitarian. Similarly, perceptions of fairness influence public support for the performance of the political system and approval of the current government (Linde et al., 2012). According to Benson et al. (2021), people who perceive inequality as a consequence of the sociopolitical context are more likely to recognize inequalities and could share criticism of the economic and political systems.

Conversely, legitimizing ideologies help coordinate beliefs, actions, and institutional practices that maintain hierarchy (Phelan & Rudman, 2011; Vargas-Salfate et al., 2018). Our results indicate that a part of society that supports inequality might not be sensitive to the existence of an institutional and political climate that contributes to maintaining inequality. People who support inequality to a greater extent and hold

beliefs that justify the economic system would be less critical of institutions and the democratic system (Anderson & Singer, 2008; Tan et al., 2016).

Discussion

The studies presented show validity evidences, and reliability of the S-SEIS. Through two studies, evidence of the one-factor structure of the scale was found, similar to the structure of the original scale (Wiwad et al., 2019). We also provided empirical test in favor of the relationship between S-SEIS and other extensively used measures of attitudes toward inequality (i.e., intolerance toward inequality; ISSP Research Group, 2012), as well other relevant constructs such as perception of inequality. Likewise, S-SEIS predicted negative stereotypes of people in poverty.

Additionally, we found evidences of convergent validity concerning ideological constructs such as belief in a just world, SDO, ESJ, and support for redistribution, as shown by the original English version of the scale. Moreover, we found that S-SEIS is not very strongly associated with these ideological variables ($r < .60$). Therefore, the relevant role of S-SEIS in the study of attitudes toward inequality is confirmed, along with the scale's capacity to capture individual differences in the way people accept disparities.

The extent to which inequality and its causes are perceived is relevant to understanding social and economic dynamics within current societies. If individuals perceive inequalities as unfair, their faith in their political and economic systems may decrease (Benson et al., 2021). This is especially true when this perception of fairness partly results from how inequality is thought to arise. Following this reasoning, we could expect that individuals who perceive inequality as a systematic problem created by society's impaired functioning will tend to oppose these differences. In this sense, we found that people who support inequality tend to perceive low levels of inequality in

their country and their everyday life and highly tolerate the inequality they do perceive (García-Castro et al., 2022).

Previous literature has shown how important it is to perceive inequality to infer other normative features of societies (Moreno-Bella et al., 2019). In the same direction, supporting inequality affects how individuals perceive people of low SES. In the current research, we found that support for inequality is negatively related to the perceived warmth and competence of people in poverty, which is in line with previous studies (Durante et al., 2013; Wiwad et al., 2019). Considering that stereotypes contribute to the maintenance of inequality (Durante & Fiske, 2017; Fiske & Durante, 2019), further research could explore whether that negative social image represents a route by which individuals justify inequality.

In sum, given the inequality levels in Spain (Blanchet et al., 2019) and the associated negative consequences for society (Willis et al., 2022), the study of attitudes toward inequality and how they are related to the intention to reduce those disparities is a promising field (Benson et al., 2021; García-Castro et al., 2020). However, previous literature is mainly based on non-Spanish samples (Mercier et al., 2020; Sommet et al., 2019; Tassinari & Jasinskaja-Lahti, 2020). In this paper, we aimed to find validity evidence in Spanish samples for one of the most relevant scales for measuring attitudes toward economic inequality. SEIS (Wiwad et al., 2019) overcome the problems of using single-item measures for assessing attitudes toward inequality (e.g., ISSP Research Group, 2012), such as the inability to test reliability and low sensitivity (Meyvis & Van Osselaer, 2018). While adapting S-SEIS to a Spanish population, we used a proper adjudication of the altered scale without assuming the items would function as they did in the original studies when the content changed (Wiwad et al., 2019).

In both studies, we found satisfactory reliability indicators (Hair et al., 2014). As a limitation, the indicator of internal consistency in Study 1 was not as high as that of the original English version of SEIS. Fortunately, it increased in Study 2. We also found evidences of the S-SEIS scale's internal structure and convergent validity, which respectively support the factorial structure of the scale and the relationship between test scores and related constructs.

An essential value of adapting the SEIS scale to Spanish samples is that it opens new avenues of research on factors related to support of inequality in the Spanish context.

Some other constructs have previously been connected to attitudes toward inequality. For instance, tolerance toward inequality increases when belief in meritocracy is stronger, and higher income levels are related to higher inequality tolerance (Roex et al., 2019). Further studies could explore the links between these variables using the S-SEIS.

There is no other psychometrically adjudicated measure of support for economic inequality with evidence of validity in Spain. Using this measure in future studies will contribute to measuring economic inequality more efficiently and effectively. Having a valid and reliable measurement instrument that enables researchers to ascertain the degree to which people are concerned with the disparity in their society may allow new avenues of research to be pursued. These avenues can explain how economic inequality creates dysfunctional societies and maintains the social structure in which it exists; new research may also develop to address these issues.

Supplementary Material

of

Spanish version of the Support for Economic Inequality Scale (S-SEIS)

1. Study 1

1.2. Table S1

1.3. Table S2

1.4. Table S3

1.5. Table S4

1.6. Table S5

1.7. Table S6

2. Study 2

2.2. Exploratory variables and analyses

2.3. Table S7

2.4. Table S8

2.5. Table S9

2.6. Table S10

2.7. Table S11

2.8. Table S12

2.9. Table S13

Study 1

Table S1

Versions of the Spanish Version of "The Support for Economic Inequality Scale" (Wiwad et al., 2019).

Item	Original	Expert 1	Expert 2	Expert 3	Expert 4	Professional Translator
1	The negative consequences of economic inequality have been largely exaggerated.	Se han exagerado mucho las consecuencias negativas de la desigualdad económica.	Se han exagerado mucho las consecuencias negativas de la desigualdad económica.	Se han exagerado mucho las consecuencias negativas de la desigualdad económica.	Se han exagerado mucho las consecuencias negativas de la desigualdad económica.	The negative consequences of economic inequality have been largely exaggerated.
2	Economic inequality is causing many of the world's problems. (R)	La desigualdad económica está causando muchos de los problemas de España.	La desigualdad económica está causando la mayoría de los problemas de España.	La desigualdad económica está causando muchos de los problemas mundiales.	La desigualdad económica está causando muchos de los problemas de España.	Economic inequality is causing many of Spain's problems.
3	I am very disturbed by the amount of economic inequality in the world today. (R)	Estoy muy preocupado/a por el grado de desigualdad económica que existe actualmente en España.	Estoy muy preocupado/a por la cantidad de desigualdad económica que hay en España actualmente.	Estoy muy preocupado/a por el grado de desigualdad económica que existe actualmente en el mundo.	Estoy muy preocupado/a por el grado de desigualdad económica que existe actualmente en España.	I am very concerned about the current level of economic inequality in Spain.
4	Economic inequality is not a problem.	La desigualdad económica no es un problema.	La desigualdad económica no es un problema.	La desigualdad económica no es un problema.	La desigualdad económica no es un problema.	Economic inequality is not a problem.
5	We need to do everything possible to reduce economic inequality in the world today. (R)	Debemos hacer todo lo posible para reducir la desigualdad económica que existe en España en la actualidad.	Debemos hacer todo lo posible para reducir la desigualdad económica que existe en España en la actualidad.	Necesitamos hacer todo lo posible para reducir la desigualdad económica que existe actualmente en el mundo.	Tenemos que hacer todo lo posible para reducir la desigualdad económica que existe en España en la actualidad	We need to do everything possible to reduce economic inequality in Spain today.

Table S2

Item's Correlation to the Corrected Total in Study 1 and Study 2.

Item	*Item's correlation to the corrected total*	
	Study 1	Study 2
1	.345	.380
2	.545	.600
3	.588	.620
4	.430	.556
5	.482	.618

Note. The discrimination index is acceptable with values over .30 (Kheyami et al., 2018; Romero et al., 2015).

Table S3

Regression Analysis with the Main Variables of Study 1 and S-SEIS as a Criterion.

Variable	B	SE	β	*t*	*p*
Constant	5.87	.28		20.94	<.001
Intolerance Toward Inequality	-.24	.03	-.30	-6.97	<.001
Perceived Income Inequality	-.17	.04	-.19	-4.37	<.001
Ideal Income Gaps	-.00	.00	-.01	-.22	.83
PEIEL	-.05	.03	-.05	-1.38	.17
Inequality Diagram	.06	.03	.06	1.84	.07
Warmth	-.10	.07	-.07	-1.47	.14
Competence	-.21	.06	-.18	-3.59	<.001
		F (7, 609) = 51.36***, R2 = .37, ΔR2 = .37***			

Note. *** p <.001. SE = Standard Error.

Table S4

Assessment of Multicollinearity in Study 1.

Variable	Variance Inflation Factor	Klein's Test for Multicollinearity
S-SEIS		
Intolerance Toward Inequality	1.73	1
Perceived Income Inequality	1.79	1
Ideal Income Gaps	1.01	0
PEIEL	1.27	0
Inequality Diagram	1.13	0
Warmth	2.37	1
Competence	2.41	1

Note. In Klein's test for multicollinearity 1 means collinearity is detected in the test, and 0 means collinearity was not detected in the test (Jianu, 2017; Klein, 1962). However, VIFs under 3.3 will are considered as indicative of non-collinearity (Kock & Lynn, 2012).

Table S5

Correlations between the Main Variables of Study 1. Means (and Standard Deviations) are Presented in the Diagonal.

	1	2	3	4	5	6	7	8	9	10
1. SEIS	2.20 (.98)									
2. Intolerance Towards Inequality	-.511**	5.72 (1.21)								
3. Perceived Income Inequality	-.483**	.625**	6.00 (1.06)							
4. Ideal Income Gaps	.025	-.057	-.038	815.76 (20129.11)						
5. PEIEL	-.314**	.381**	.406**	-.008	5.71 (1.07)					
6. Inequality Diagram	.257**	-.274**	-.266**	-.020	-.220**	2.54 (1.06)				
7. Warmth	-.350**	.252**	.290**	-.080*	.249**	-.138**	3.81 (.75)			
8. Competence	-.389**	.269**	.309**	-.016	.254**	-.195**	.755**	3.67 (.83)		
9. Political Ideology	.425**	-.346**	-.306**	.047	-.179**	.215**	-.228**	-.308**	3.98 (1.74)	
10. Subjective SES	.188**	-.219**	-.135**	.073	-.182**	.269**	-.138**	-.193**	.286**	5.31 (1.50)

Note. * $p < .05$, ** $p < .01$. SEIS = Support for Economic Inequality Scale. PEIEL = Perception of Economic Inequality in Everyday Life. SES = Socioeconomic Status.

The Unequal-Length Spearman Brown split-half coefficient showed a good correlation (r = .71) according to Okkes (2015).

Table S6

Goodness-of-fit Chi-Square Tests for the Five-item Scale in Study 1

Chi-Square	df	p-value	Chi-square/df
480.81	6	< .001	80.14
397.58	6	< .001	66.26
284.20	6	< .001	47.37
1803.89	6	< .001	300.65
999.29	6	< .001	166.55

Study 2

Exploratory variables and analyses

Some exploratory variables were included in Study 2 in order to explore the links to SEIS.

Political Efficacy

We used an adaptation of the item from the European Social Survey (ESS, 2018). Participants answered the following questions using a 1 (*strongly disagree*) to 7(*strongly agree*) Likert scale: "The political system of Spain allows people like you to have an influence in political decisions".

Affective Polarization

Participants answered a question about their general impression of people who think politically different than them based on affective polarization measures of Lauka et al. (2018) and Boxel et al. (2017). Answers ranged from 1 (*very negative*) to 7 (*very positive*): “Your general impression about people who think different than you politically is...very negative/very positive”.

Perceived Polarization

We used a single-item measure for perceived polarization. The answer scale used was a Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*): “To what extent do you think that the Spanish society is ideologically divided?”.

Table S7

Regression Analysis with the Main Variables of Study 2 and S-SEIS as a Criterion.

Variable	B	SE	β	*t*	*p*
Constant	2.47	.37		6.60	<.001
Warmth	-.16	.05	-.12	-3.00	.00
Competence	-.01	.05	-.01	-.19	.85
Beliefs in a Just World	-.06	.05	-.04	-1.05	.29
SDO	.41	.05	.36	9.30	<.001
Economic System Justification	.25	.05	.20	4.85	<.001
Support for Redistribution	-.43	.07	-.23	-6.63	<.001
Institutional Trust	-.02	.04	-.02	-.48	.63
Perceived Democracy	.12	.04	.11	2.77	.01
		F (8, 553) = 62.53***, R2 = .48, ΔR2 = .48***			

Note. *** p <.001. SE = Standard Error. SDO = Social Dominance Orientation.

Table S8

Assessment of Multicollinearity in Study 2.

Variable	Variance Inflation Factor	Klein's Test for Multicollinearity
S-SEIS		
Warmth	1.80	0
Competence	1.83	0
Beliefs in a Just World	1.73	0
SDO	1.55	0
Economic System Justification	1.86	0
Support for Redistribution	1.27	0
Institutional Trust	1.61	0
Perceived Democracy	1.54	0

Note. VIFs under 3.3 will are considered as indicative of non-collinearity (Kock & Lynn, 2012). In Klein's test for multicollinearity 1 means collinearity is detected in the test, and 0 means collinearity was not detected in the test (Jianu, 2017; Klein, 1962). We did not detect multicollinearity issues with any predictor.

The Unequal-Length Spearman Brown split-half coefficient showed a good correlation (r = .78; Okkes, 2015).

Table S9

Correlations between the Main Variables of Study 2. Means (and Standard Deviations) are Presented in the Diagonal.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	SEIS	2.19 (1.00)													
2.	Warmth	-.332**	3.64 (.76)												
3.	Competence	-.305**	.649**	3.61 (.76)											
4.	JWB	.283**	-.077	-.131**	2.54 (.74)										
5.	SDO	.593**	-.292**	-.295**	.352**	2.25 (.86)									
6.	ESJ	.498**	-.220**	-.311**	.552**	.517**	2.68 (.81)								
7.	Support for Redistribution	-.479**	.241**	.207**	-.193**	-.403**	-.352**	3.58 (.53)							
8.	Institutional Trust	.129**	.019	-.046	.433**	.162**	.219**	-.028	3.17 (1.06)						
9.	Perceived Democracy	.217**	-.012	-.068	.390**	.169**	.251**	-.108*	.564**	4.27 (.90)					
10.	Political Ideology	.500**	-.240**	-.271**	.376**	.473**	.556**	-.320**	.182**	.265**	4.09 (1.77)				
11.	Subjective SES	.259**	-.126**	-.206**	.261**	.241**	.340**	-.188**	.215**	.246**	.304**	5.47 (1.48)			
12.	Political Efficacy	.066	.061	-.022	.321**	.113**	.165**	-.020	.462**	.430**	.050	.150**	3.12 (1.51)		
13.	Affective Polarization	.200**	-.048	-.020	.170**	.106*	.272**	-.101*	.147**	.142**	.234**	.138**	.025	3.75 (1.30)	
14.	Perceived Polarization	-.186**	.086*	.099*	-.197**	-.135**	-.076	.090*	-.114**	.005	-.098*	-.034	-.066	-.096*	5.87 (1.03)

Note. *$p < .05$, ** $p < .01$. SEIS = Support for Economic Inequality Scale. JWB = Just World Beliefs. SDO = Social Dominance Orientation. EJS = Economic System Justification. SES = Socioeconomic Status.

Table S10

Regression Analysis with the Main Variables of Study 2 and S-SEIS as a Criterion Using Group-based Dominance and Opposition to Equality instead of Social Dominance Scale.

Variable	B	SE	β	*t*	*p*
Constant	2.48	.37		6.64	<.001
Warmth	-.17	.06	-.13	-3.06	.00
Competence	-.01	.05	-.01	-.19	.85
Beliefs in a Just World	-.06	.05	-.04	-1.07	.28
Group-based Dominance	.16	.05	.14	2.92	.00
Opposition to Equality	.26	.05	.25	4.93	<.001
Economic System Justification	.24	.05	.20	4.61	<.001
Support for Redistribution	-.43	.07	-.23	-6.55	<.001
Institutional Trust	-.02	.04	-.02	-.44	.66
Perceived Democracy	.12	.04	.11	2.75	.01
			F (9, 552) = 55.71***,		
			R2 = .48, ΔR2 = .47***		

Note. *** $p < .001$. SE = Standard Error.

Table S11

Goodness-of-fit Chi-Square tests for the Five-item Scale in Study 2

Chi-Square	df	p-value	Chi-square/df
464.34	6	< .001	77.39
379.39	6	< .001	63.23
234.88	6	< .001	39.15
1685.72	6	< .001	280.95
842.43	6	< .001	140.41

We found an RMSEA of .105.

Table S12

Multigroup Confirmatory Factor Analysis between USA Sample (Wiwad et al., 2019) and Spanish Sample of Study 2.

	CFI	TLI	RMSEA	SRMR
Configural invariance	.939	.879	.180	.041

Note. CFI = Comparative Fit Index, TLI = Tucker-Lewis Index, RMSEA = Root Mean Square Error of Approximation, SRMR = Standardized Root Mean Square Residual. The results suggested that configural invariance was demonstrated for the SEIS Scale. The multigroup confirmatory factor analysis yields a satisfactory fit in the reported indexes, which justified the adjustment of the model (He & van de Vijver, 2012). Thus, the same factor pattern structure was established.

Table S13

Invariance Parameters in Multigroup Confirmatory Factor Analysis between USA Sample (Wiwad et al., 2019) and Spanish Sample of Study 2.

	df	Chi-Square	Chi-Square difference	Df difference	*p*
Configural invariance	10	201.32			
Metric invariance	14	237.68	36.361	4	<.001
Scalar invariance	18	447.83	210.154	4	<.001
Residual invariance	23	598.82	150.988	5	<.001

Note. The chi-square difference tests were significant. The statistically significant results suggest a lack of metric, scalar, and residual invariance for S-SEIS.

Chapter 4

The Effect of Perceived Economic Inequality on Political Attitudes: Institutional Trust, Perceived Democracy, Satisfaction with Democracy, Political Efficacy and Environmental Collective Actions

The Effect of Perceived Economic Inequality on Political Attitudes: Institutional Trust, Perceived Democracy, Satisfaction With Democracy, Political Efficacy and Environmental Collective Actions

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Abstract

Economic inequality has devastating consequences for the people and the society in general, but little attention has been paid to the impact of perceived economic inequality on citizens' socio-political attitudes. The current research examines the effect of perceived inequality on institutional trust, perceived democracy, satisfaction with democracy, political efficacy, and environmental collective actions. We conducted two experiments (Study 1: N = 168; Study 2: N = 125) by manipulating the degree of economic inequality and measuring institutional trust, perceived democracy, satisfaction with democracy, and political efficacy. In Study 3 (N = 638), we manipulated perceived inequality (high vs. low) and institutional trust (high vs. low) to test the interaction effect on political efficacy and on environmental collective actions. We showed that, compared to the low-inequality condition, participants in the high-inequality condition reported lower institutional trust, lower satisfaction with democracy and political efficacy. We found an indirect effect of economic inequality on political efficacy through institutional trust. Furthermore, we found an interaction effect of inequality and institutional trust on collective actions. Being exposed to inequality might undermine the disposition to participate in political and civic movements when institutions cannot be trusted.

Keywords: perceived economic inequality, institutional trust, perceived democracy, satisfaction with democracy, political efficacy, collective action.

Introduction

World income inequality is severe, and it will keep increasing if the actual economic and political conditions do not change (World Inequality Lab, 2018). The current COVID-19-related recession has revealed the unequal impact on population health, education, and employment as a function of individuals' socioeconomic status (Lynch, 2020; Rodríguez-Bailón, 2020), exacerbating existing inequalities (United Nations [UN], 2020).

The gap between rich and poor people has consequences for people and society in general. Although it is well-established that when economic inequality increases in a society, there is an associated depression in trust, cooperation, and social cohesion (Gustavsson & Jordahl, 2008; Van de Werfhorst & Salverda, 2012), little attention has been paid to the impact of economic inequality on citizens' socio-political attitudes. Economic inequality can weaken the basis of democratic society (Oh, 2012), institutional trust (Anderson & Singer, 2008; Lipps & Schraff, 2020), and involvement of citizens in the political system (Solt, 2008). However, previous research on the effect of economic inequality on political conditions has mainly used correlational methodology (Andersen, 2012; Lee & Kwon, 2019) and focused on objective —not subjective— economic inequality. Critically, this research assumes that people perceive inequality correctly, but literature has shown the opposite (Gimpelson & Treisman, 2018; Norton et al., 2014). Moreover, some research showed that perceived inequality is essential to understand the psychological consequences of inequality: it correlates stronger than objective inequality with redistribution preferences (García-Castro et al., 2020; Niehues, 2014), support for egalitarian policies (Kteily et al., 2016), and can weaken meritocratic beliefs in determining wages (Kuhn, 2019). Little research has

directly examined whether perceived inequality cause negative levels of trust in institutions, perceived democracy and political efficacy.

In the current studies, we examine whether manipulating inequality may lead people to evaluate the performance of political figures negatively and perceive a decrement in the level of democracy of the country, political efficacy, and civic participation.

Evidence of the Influence of Economic Inequality on Political Attitudes

Previous literature has shown how important it is to perceive inequality to infer other normative features of societies (Moreno-Bella et al., 2022; Sánchez-Rodríguez et al., 2019; Sommet et al., 2022). For example, the perception of unequal contexts enhances the extent to which individualism becomes normative in society and raises a competitive climate (Nishi et al., 2015; Sánchez-Rodríguez et al., 2019), and where individuals are perceived in terms of traits more closely to masculinity (and less associated with femininity; e.g., agency, Moreno-Bella et al., 2022). Besides, perceiving economic inequality fuels people's perception of the collapse of their society—captured by the concept of anomie (Sprong et al., 2019; Teymoori et al., 2017). In this paper, we suggest that other characteristics of society could be inferred from the unequal nature of the context, such as the extent to which citizens trust their public institutions and the level of perceived democracy of the country.

Institutional trust has been defined as the expected utility of institutions and is based on citizen evaluations of institutional performance (Catterberg & Moreno, 2006; Letki, 2006) and their expectations (García-Sánchez et al., 2020). In countries with higher levels of income inequality, citizens tend to express more negative attitudes toward public institutions (Goubin, 2018; Schäfer, 2012). This is an important fact that

cannot be neglected, as institutional trust is a reflection of healthy political societies (Oh, 2012).

Individuals increasingly believe that social rights and efforts to combat social inequalities constitute a central element of democratic citizenship (Oser & Hooghe, 2018). The perception of economic inequality can influence the perceived democratic level in society since people are inclined to think that inequality is not compatible with the principles of democratic representation (Dahl, 1971). In other words, individuals who see how unequal a particular context is could infer other negative characteristics from it such as a low democratic performance. Furthermore, reduced democratic support and satisfaction of citizens for their political system could be a consequence when an unfair income distribution in society is perceived (Wu & Chang, 2019).

Perceived income inequality can have consequences on people's subjective beliefs about their ability to participate in politics effectively (Lee et al., 2021). That is, people who perceive an unfair income distribution are more likely to express a low level of political efficacy. Political efficacy captures the individuals' feelings about the possibility of exerting an impact on the political process (Campbell et al., 1954), that is, to what extent people perceive being able to influence political decisions in their country through individual political action. Hence, political efficacy is highly linked to the current political context, and positively related to institutional trust and the perceived level of democracy (Kölln et al., 2013; Zumárraga-Espinosa, 2020). Political efficacy also has a mobilizing effect in different forms of political participation (Amnå et al., 2004; Jiang, 2016; Kahne & Westheimer, 2006; Shore, 2020). Therefore, it constitutes a fundamental concept for understanding how worries over inequality are associated with the different forms of political participation that take place in democratic contexts (Silagadze et al., 2022; Zumárraga-Espinosa, 2020).

Additionally, higher levels of economic inequality are related to lower political participation (Solt, 2008; Zmerli & Castillo, 2015). In this line, inequality influences citizens' engagement in non-institutional forms of political participation (Lancee & Van de Werfhorst, 2012; Lee & Kwon, 2019).

In general, the concentration of power caused by inequality would restrain the political participation of regular citizens who feel their interests are not defended. Less privileged individuals might experience lower political efficacy—perceiving that their concerns are ignored by their own government (Zumárraga-Espinosa, 2020), which in turn predicts political participation (Solhaug, 2006) also negatively affected by perceived economic inequality (Loveless, 2013; Norris, 2015). Said otherwise, those who believe that their desired outcomes are likely to be achieved would be more politically engaged (Andersen, 2012) and more active in the electoral process (Lee & Kwon, 2019).

All in all, in this paper, we predict that economic inequality has an impact on political efficacy and on non-institutional participation. Furthermore, we expect that this effect is mediated by the perception of democracy in the society and the extent to which their institutions are trusted.

The Current Research

We predicted that high (vs. low) inequality would decrease institutional trust, perceived democracy, satisfaction with democracy, and political efficacy. We tested these hypotheses in three preregistered studies. First, we conducted an experimental study, manipulating the level of economic inequality in a fictional society. Afterward, we conducted a second experiment aiming to conceptually replicate the results of Study 1 during the COVID-19 health pandemic, but with a more ecological manipulation. Finally, in Study 3, we manipulated institutional trust to test its mediational role on the

path from inequality to political efficacy (Spencer et al., 2005) and to test the effect on environmental collective actions. All materials and data sets can be found online (See https://osf.io/39sut/?view_only=c828c8d5c83b42b38c361fd80c0d2e1b). We report all measures, manipulations, and exclusions in all studies.

Study 1

In this study, we aimed to analyze the negative impact of perceiving inequality over several political attitudes. To this end, we conducted an experiment to test the effect of perceived economic inequality on institutional trust and perceived democracy. Additionally, we explored the effect of economic inequality on satisfaction with democracy and political efficacy.

Preregistered Design and Hypotheses

We preregistered two hypotheses (see preregistration at OSF)[2].

H1. We expect an effect of perceived inequality (high vs. low) on institutional trust. Particularly, in the condition of High Inequality (compared to the Low Inequality condition), participants would report lower levels of trust.

H2. We expect an effect of perceived inequality on perceived democracy. That is, in the High Inequality condition (compared to the Low Inequality condition), participants would report lower levels of perceived democracy in the fictitious society.

Method

Participants

We conducted an a priori sample size analysis using G*Power (Faul et al., 2009) for an ANOVA test[1]. Given that we did not have previous studies to estimate our effect size, we estimated a standard medium effect size (d = .25) to obtain an a priori power of 80% and a p-value of .05. We tried to get a minimum of 128 participants after exclusions, as estimated. Given that we anticipated that some participants would be

people from overseas and they would not have a good level of Spanish or knowledge about inequality, institutions, and democratic characteristics of Spain, we included as inclusion criterion that participants have to have Spanish nationality or to have lived more than five years in Spain, to be older than 18 and to answer the comprehension check correctly.

The initial sample was composed of 178 participants. However, 10 participants were excluded because they did not report Spanish as their nationality or living in Spain for at least five years. Therefore, the final sample consisted of 168 (M = 20.66 years, SD = 3.57, 87.3 % Female) Spanish undergraduate students.

Procedure and Measurements

Participants were contacted through the University webpage, and then they were invited to answer an anonymous questionnaire voluntarily. All participants provided informed consent before answering the questionnaire.

Economic Inequality. We used the Bimboola Paradigm (Jetten et al., 2015; Sánchez-Rodríguez et al., 2019): participants are supposed to start a new life in Bimboola, which consisted of three income groups. Participants were assigned to the middle-income group. In the High Inequality condition, the differences in income between the wealthiest group and the poor group are much bigger than in the Low Inequality condition.

Participants were randomly assigned to the experimental conditions (high vs. low inequality). Participants were asked to imagine their life in this new society and pursue the essentials they think they could afford when living in Bimboola.

Then, participants were asked, as a manipulation check, “To what extent is Bimboola’s economic distribution unequal/equal?”—reversed item— (1 = *not*

unequal/equal at all, 7 = *very unequal/equal*, ρ = .891; Eisinga et al., 2013). As a comprehension check, we asked the participants which group they had been assigned to.

Afterward participants answered the following measures:

Institutional Trust. Five items were adapted from the ESS (2018): "To what extent do you trust the following institutions from Bimboola: President and their counselors, Parliament, political parties, legal system, and the Police" (from 1 = *strongly distrusted* to 7 = *strongly trusted*; α = .912).

Perceived Democracy. Ten items were adapted from the World Values Survey (WVS, 2012) and the Democracy Index 2018 (The Economist Intelligence Unit, 2018). Response format ranged from 1 (*strongly disagree*) to 7 (*strongly agree*, α = .865) (e.g., "The electoral process in Bimboola is just, fair and transparent").

Satisfaction With Democracy. We used an item adapted from the ESS (2018): "To what extent Bimboola's citizens are satisfied with the way democracy works in their country" from 1 (*very dissatisfied*) to 7 (*very satisfied*).

Political Efficacy. We used an item about external political efficacy adapted from the ESS (2018): "The political system of Bimboola allows people like you to influence political decisions" that ranged from 1 (*strongly disagree*) to 7 (*strongly agree*).

Subjective Socioeconomic Status (SSS). Participants completed the MacArthur Scale of Subjective Socioeconomic Status (Adler et al., 2000). Participants had to choose which rung of a 10-rung ladder better represented their positions in the social hierarchy.

Political Ideology. Participants rated their political ideologies on a scale ranging from 1 (*extremely left-wing*) to 10 (*extremely right-wing*).

Demographics. Participants provided information about their ages, genders, nationalities, years living in Spain, level of education (from 1 = *none* to 9 = *Ph.D.*), degree (if they were at University level or higher), professional status (from 1 = *unemployed* to 5 = *retired*), income level (open response) and the number of family members.

Results

Manipulation Check. We conducted an independent samples t-test analysis on the economic inequality manipulation check. Participants assigned to the High Inequality condition perceived more economic inequality (M = 6.48, SD = 0.94) than those in the Low Inequality condition (M = 3.38, SD = 1.29) $t(145.85) = -17.71$, $p < .001$, $d = -1.62$.

Preregistered Hypotheses. Supporting H1, a significant difference on institutional trustbetween the High (M = 2.65, SD = 1.10) and the Low Inequality condition (M = 4.35, SD = 1.12) was found, $t(166) = 9.95$, $p < .001$, $d = 1.22$.

Furthermore, results showed that participants in the High Inequality condition have lower levels of perceived democracy of Bimboola society (M = 3.45, SD = .82) than the participants in the Low Inequality condition (M = 4.75, SD = 1.00) $t(164) = 9.19$, $p < .001$, $d = 1.16$ corroborating H2.

Exploratory Analyses. We conducted two independent samples t-test analyses to analyze the effect of economic inequality on satisfaction with democracy and political efficacy. Results showed a significant difference in satisfaction with democracy as a function of the Inequality condition (M_{high} = 2.95, SD_{high} = 1.17; M_{low} = 4.49, SD_{low} = 1.21; $t[163.09] = 8.34$, $p < .001$, $d = 1.09$). Likewise, a main effect of economic inequality was found on political efficacy (M_{high} = 2.94, SD_{high} = 1.57; M_{low} = 4.40, SD_{low} = 1.21; $t[160.72] = 6.75$, $p < .001$, $d = .92$).

As a robustness check, all preregistered, and exploratory analyses were performed again, including participants' SSS and political ideology as covariables. To that end, we conducted between groups ANOVA (high vs. low inequality) with Bonferroni corrections. The results showed the same pattern and significant findings as those reported above.

Table 4.1

Mediation Model of the Inequality Manipulation Decreasing Political Efficacy Through Institutional Trust in Study 1.

	Institutional Trust (a path)		Political Efficacy (b path)	
Background	Coeff.	95% CI	Coeff.	95% CI
Constant	.64*** (.08)	[.47, .81]	.21 (.11)	[-.00, .42]
Inequality	-1.25*** (.12)	[-1.48, -1.02]	-.44** (.17)	[-.77, -.11]
Institutional Trust			.42*** (.09)	[.25, .60]
SSS	.12* (.06)	[.00, .24]	.04 (.07)	[-.09, .18]
Political Ideology	.19** (.06)	[.07, .30]	-.04 (.07)	[-.18, .09]
	R^2 = .45		R^2 = .34	
	$F(3, 161) = 43.08$, $p < .001$		$F(4, 160) = 20.59$, $p < .001$	
Total effect	R^2 = .24	$F(3, 161) = 17.03$, $p < .001$	-.97*** (.14)	[-1.24, -.70]
Indirect Effect	Coeff.		95% CI	
I → IT → PE (ab path)	-.53 (.12)		[-.78, -.30]	

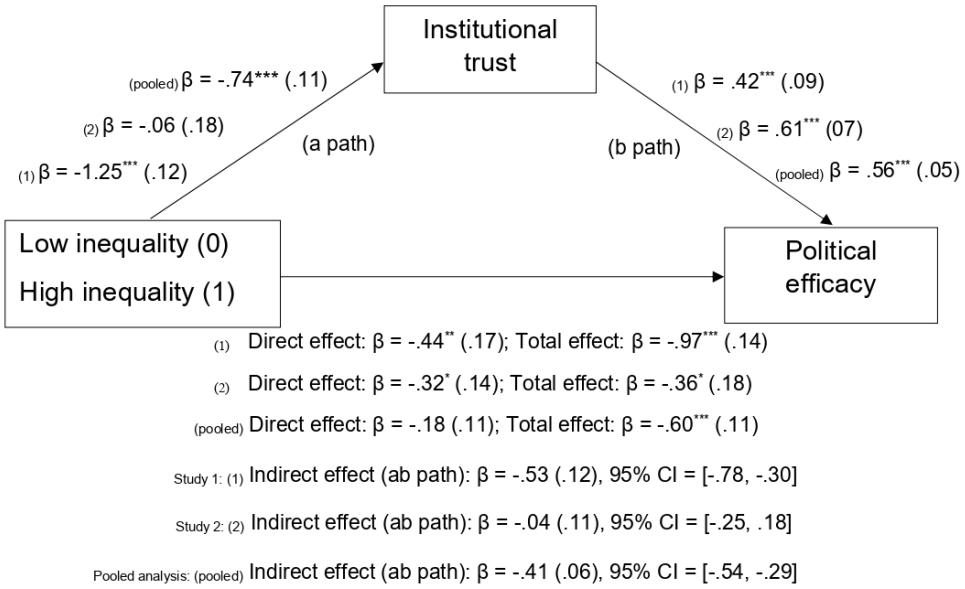
Note. Coefficients are standardized; standard error in parenthesis. Indirect effect is partially standardized. I = Inequality; IT = Institutional Trust; PE = Political Efficacy; 95% CI= confidence interval. * $p < .05$, ** $p < .01$, ***$p < .001$

We run a mediational analysis to know whether institutional trust or perceived democracy mediates the relationship between perceived economic inequality and political efficacy. Mediation analyses were performed using the Process macro for SPSS with 5000 resamples (Hayes, 2013; model 4). The mediator, the outcome variable and the covariates were standardized prior to analysis. Results showed an indirect effect of Perceived Inequality (coded as 0 = Low, 1 = High) on political efficacy through institutional trust, *indirect effect* $_{\text{partially standardized}}$ = -.53, CI_{95} = [-.78, -.30] (Table 4.1). That is, receiving information about high levels of inequality in Bimboola society decreases institutional trust, B = -1.25, $p < .001$ (a path), which in turns decreases perceived political efficacy in that society, B = .42, $p < .001$ (b path). The direct effect

remained significant after including institutional trust, *direct effect* $_{standardized}$ = -.44, p = .01 (See Figure 4.1).

Figure 4.1

Summary of the Mediation Model of the Inequality Manipulation Decreasing Political Efficacy Through Institutional Trust in Studies 1 and 2.



Note. Coefficients are standardized; standard error in parenthesis; * $p < .05$, ** $p < .01$, ***$p < .001$

Table 4.2

Mediation Model of the Inequality Manipulation Decreasing Political Efficacy Through Perceived Democracy in Study 1.

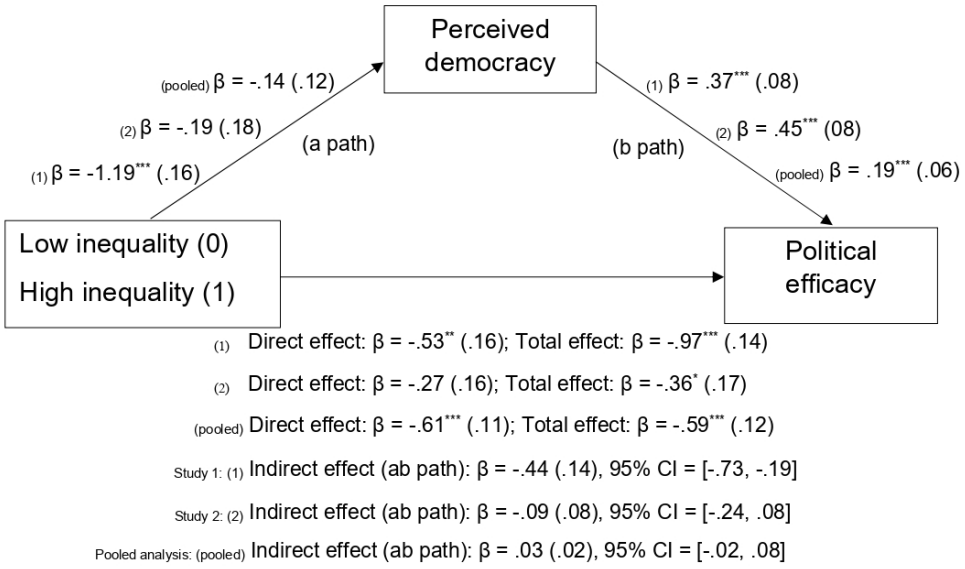
	Perceived Democracy (a path)		Political Efficacy (b path)	
Background	Coeff.	95% CI	Coeff.	95% CI
Constant	.60*** (.09)	[.43, .78]	.26* (.11)	[.05, .47]
Inequality	-1.19*** (.13)	[-1.44, -.94]	-.53** (.16)	[-.85, -.21]
Perceived Democracy			.37*** (.08)	[.21, .53]
SSS	.12 (.07)	[-.01, .24]	.05 (.07)	[-.08, .19]
Political Ideology	.07 (.07)	[-.06, .20]	.01 (.07)	[-.12, .14]
	R^2 = .37		R^2 = .33	
	$F(3, 161) = 31.16$, $p < .001$		$F(4, 160) = 19.36$, $p < .001$	
Total effect	R^2 = .24	$F(3, 161) = 17.03$, $p < .001$	-.97*** (.14)	[-1.24, -.70]
Indirect Effect	Coeff.		95% CI	
I → D → PE (ab path)	-.44 (.14)		[-.73, -.19]	

Note. Coefficients are standardized; standard error in parenthesis. Indirect effect is partially standardized. I = Inequality; D = Perceived Democracy; PE = Political Efficacy; 95% CI= confidence interval. * $p < .05$, ** $p < .01$, ***$p < .001$

We also found a significant indirect effect of the Inequality manipulation on political efficacy through perceived democracy, *indirect effect* $_{\text{partially standardized}}$ = -.44, CI_{95} = [-.73, -.19]. The direct effect remained significant after including perceived democracy, *direct effect* $_{\text{standardized}}$ = -.53, p = .001 (Table 4.2). Perceiving high inequality in Bimboola decreases perceived democracy, B = -1.19, p < .001 (a path), which in turn decreases perceived political efficacy in that society, B = .37, p < .001 (b path). See Figure 4.2.

Figure 4.2

Summary of the Mediation Model of the Inequality Manipulation Decreasing Political Efficacy via Perceived Democracy in Studies 1 and 2.



Note. Coefficients are standardized; standard error in parenthesis; * p < .05, ** p < .01, ***p < .001

Discussion

Our results supported H1 and H2, showing that a context of high economic inequality leads people to perceive that their institutions are less trustworthy and that the country is less democratic compared to a context with low inequality. Additionally, the more economic inequality individuals perceive, the less political efficacy they perceive and the less satisfaction with the way democracy works in a fictitious society. Exploring

possible mechanisms, we did find evidence that institutional trust and perceived democracy mediated the effect of economic inequality on political efficacy. Higher perceived inequality leads to lower trust in public institutions (e.g., Government), which in turn, lead to lower perceived political efficacy among citizens of Bimboola. Moreover, the level of perceived inequality influences the perceived degree of democracy of a country, and that has an impact on the perceived political efficacy of its inhabitants.

Although the results of Study 1 are promising, we used a manipulation of inequality in a fictitious context in it. That means that participants formed attitudes toward fictitious institutions and inferred features of a non-real context. In order to improve the realistic validity of the results of Study 1, we try to replicate it in Study 2 with a more ecological manipulation.

Study 2

We intended to confirm the negative impact of perceived economic inequality over institutional trust, perceived democracy, satisfaction with democracy, and political efficacy in a real context. Additionally, we tested the indirect effects of perceived inequality on political efficacy through institutional trust and perceived democracy.

Preregistered Design and Hypotheses

In light of the results of Study 1, we preregistered H1 and H2 again apart from the following hypotheses (see preregistration at OSF):

H3. We expect an effect of perceived inequality (high vs. low) on satisfaction with democracy. Participants would report lower satisfaction with democracy in the country in the High Inequality condition (compared to the Low Inequality condition).

H4a. An effect of perceived inequality (high vs. low) on political efficacy. We predict that participants would report lower political efficacy in the High Inequality condition (compared to the Low Inequality condition).

H4b. Indirect effect of perceived inequality on political efficacy through institutional trust.

H4c. Indirect effect of perceived inequality on political efficacy through perceived democracy.

Method

Participants

We conducted a priori sample size analysis for independent samples t-test analysis (80% power, $\alpha = .05$, $d = .05$). The estimated sample size was 128, and we tried to get that minimum after exclusions.

The initial sample included 131 participants that completed the questionnaire. However, 6 participants were excluded because they did not report a Spanish nationality or lived in Spain for at least five years. Therefore, the final sample consisted of 125 (M = 39.91 years, SD = 15.70, 62.4 % Female) people from the University community.

Procedure and Measurements

Participants were contacted through the University mail service and invited to voluntarily answer an anonymous questionnaire after providing informed consent.

Economic Inequality. We presented a piece of news about economic inequality in Spain, manipulating the expected level of inequality after the COVID-19 pandemic crisis in the country (high vs. low) (see https://osf.io/39sut/?view_only=c828c8d5c83b42b38c361fd80c0d2e1b). In the High Inequality condition, experts suggested that inequality in Spain after the recovery from the COVID-19 crisis would be higher since the precarious workers had suffered the

crisis consequences the most, so the difference in the life's conditions of people with high vs. low would likely increase. In contrast, in the Low Inequality condition, it is said that experts suggested that the inequality after the recovery from the health and economic crisis will be lower since it had affected in a generalized form the overall Spanish society.

Afterward, participants were asked to provide open-ended responses to the following statements: "How do you think the economic situation will affect non-essential consumption (e.g., clothes) of people with high and low economic resources within a year?" and "Which activities people with high and low resources will do in their free time (e.g., sports) within a year?". After that, participants answered two manipulation checks: "Differences between people with high and low resources in Spain will be high/low"— reversed item—: 1 (*strongly disagree*) to 7 (*strongly agree*; ρ = .661; Eisinga et al., 2013).

Afterward, participants answered the same measures as in Study 1: Institutional trust (α = .728), Perceived Democracy (α = .739), Satisfaction With Democracy, and Political Efficacy in Spain. Also, the participants completed SSS, Political Ideology, and Demographics.

Results

Manipulation Check. We conducted an independent samples t-test analysis on the economic inequality manipulation check. Our manipulation worked well as participants assigned to the High Inequality condition perceived more economic inequality (M = 6.22, SD = 1.18) than those in the Low Inequality condition (M = 5.37, SD = 1.52) $t(120.52) = -3.46$, $p = .001$, $d = -.59$.

Preregistered Hypotheses. Following our plan of preregistered analyses and testing our hypotheses, we conducted four independent samples t-tests. We found no

difference in institutional trust (H1), perceived democracy (H2), nor satisfaction with democracy (H3; See Table 4.3). However, as predicted, results showed a significant difference between conditions on political efficacy (H4a); in the High Inequality condition, perceived political efficacy in Spain was lower than in the Low Condition.

Table 4.3

Mean Differences Between the High and the Low Inequality Conditions on Institutional Trust, Perceived Democracy, Satisfaction With Democracy and Political Efficacy in Study 2.

		High inequality		Low inequality				95% CI		
Variable	*n*	*M*	*SD*	*M*	*SD*	*t*	*p*	*LL*	*UL*	*Cohen's d*
Institutional Trust	125	3.53	1.10	3.64	1.20	.55	.58	-.29	.52	.10
Perceived Democracy	125	4.39	.82	4.54	1.04	.88	.38	-.19	.48	.16
Satisfaction With Democracy	125	3.78	1.68	3.86	1.42	.302	.76	-.47	.63	.05
Political Efficacy	125	2.58	1.68	3.17	1.59	2.01	.046	.01	1.17	.36

Note. CI= confidence interval, *LL*= lower limit, *UL*= upper limit.

As a robustness check, we conducted a between-groups ANOVA (high vs. low inequality) with Bonferroni corrections, including participants' SSS and political ideology as covariables. The results were virtually the same as those reported above.

We did not test H4b and H4c given that we did not find a main effect of the experimental manipulation on institutional trust nor perceived democracy, the mediator variables. As such, we were not able to perform a mediation analysis.

Discussion

The goals of Study 2 were to replicate Study 1 results in a more ecological context to validate our findings in actual society. In this case, we included the COVID-19 pandemic crisis as the general context and some speculations about the predicted level of inequality after the recovery from the health and economic crisis. Since on that

time, some economic experts and academics were predicting an equalizing effect of the pandemic (Cockburn, 2020; Milanovic, 2020), and the opposed prediction (Furceri et al., 2020), we thought that the new manipulation could be credible and effective. Also, we thought that participants would perceive the long-term effects of the pandemic and the subsequent recovery set as a far enough scenario but ecological as it referred to Spain.

We found no difference in institutional trust (H1), perceived democracy (H2), nor satisfaction with democracy (H3). However, our results supported H4a, showing that a context of high economic inequality leads people to perceive that political efficacy in Spain is lower than in a context of low inequality. This result suggests that when people are in contexts of high perceived inequality, they tend to think that the Government would not hear their political interests. Conversely, people feel that they had a say in their country's political decisions when they perceived it as more economically equal.

A limitation found in this study is that the manipulation of inequality seems to be problematic. Although participants' scores of perceived inequality showed significant differences between the high and the low inequality conditions, the percentage of participants in the low inequality condition who perceived that inequality after the COVID-19 crisis would be higher was similar to the percentage of participants who perceived that inequality would be lower after the recovery of the crisis. So, the low inequality condition was not successful in making participants to perceive low level of inequality. This fact may explain why we did not replicate all the findings of Study 1.

A second limitation of this study might be due to the pandemic context when the data collection was carried out. In the pandemic crisis context, there might be some uncontrolled variables that influence the data (e.g., negative affective state associated

with the pandemic situation, Restubog et al., 2020). Moreover, the pandemic has led to a decline in public trust in government, as many citizens doubted the effectiveness of governments' coping strategies during the pandemic and their responsiveness to individual concerns (The Economist Intelligence Unit, 2020). Furthermore, in light of the results, we suggest that another reason which could explain the unsuccessful manipulation could be that participants' attitudes toward Spanish institutions are difficult to change by reading a text since they are firmly built. Additionally, Spain reported low levels of government trust (Brosius et al., 2020), which showed that people in Spain tend to evaluate their national institutions negatively. So, people must already have a set of beliefs and attitudes toward their country's institutions, thus being difficult to change by experimental manipulation.

Overall Effect of Perceived Economic Inequality

The limitations of the manipulation of Study 2 may make it not strong enough to affect attitudes toward institutions and democracy. Despite the results obtained in Study 2 did not replicate all the findings of Study 1, it followed the expected tendency: Although there were no significant differences between the High and the Low Inequality condition in Study 2, institutional trust, perceived democracy, and satisfaction with democracy tended to be higher in the low (vs. high) unequal context as preregistered.

We, therefore, decided to test whether the perception of economic inequality influences our sociopolitical variables by using different operationalizations of perceived inequality (Crandall & Sherman, 2016; Lynch et al., 2015). To estimate the overall effect sizes on institutional trust, perceived democracy, satisfaction with democracy, and political efficacy as a function of the Inequality condition, we conducted a pooled analysis of Studies 1 and 2 presented in this paper. After

standardizing the dependent variables, we ran independent samples t-test analysis to test our hypotheses. Results showed a significant difference on institutional trust between the High (M = -.36, SD = .96) and the Low Inequality condition (M = .36, SD = .91; $t(291) = 6.67$, $p < .001$, $d = .72$). However, we did not find support for H2, given there were not a significant difference on perceived democracy (M_{high} = .05, SD_{high} = .96; M_{low} = -.07, SD_{low} = 1.02; $t[289] = -1.07$, $p = .28$, $d = .12$). We also found significant mean difference on satisfaction with democracy as a function of the Inequality condition M_{high} = -.33, SD_{high} = .93; M_{low} = .32, SD_{low} = .96), $t(289) = 5.85$, $p < .001$, $d = .65$. Furthermore, supporting H4a, there were a significant difference on political efficacy, $t(283.27) = 4.91$, $p < .001$, $d = .55$, i.e., participants' perception of political efficacy was lower in the High Inequality condition (M = -.28, SD = 1.04) compared with the Low Inequality condition (M = .27, SD = .88). As a robustness check, these analyses were performed again including the type of study, participants' SSS, and political ideology as covariable. To that end, we conducted between groups ANOVA (high vs. low inequality) with Bonferroni corrections. The results were virtually the same as those reported above.

In order to corroborate that institutional trust mediates the relation between perceived economic inequality and political efficacy, we run a mediation analysis using the Process macro for SPSS with 5000 resamples (Hayes, 2013; model 4). Measures of mediator, outcome, and covariates were standardized prior to analysis. We included the type of study, participants' SSS, and political ideology as covariates. There were no significant effects due to the type of study. Results revealed that there was an indirect effect between Inequality (0 = Low, 1 = High) and political efficacy through institutional trust, *indirect effect* $_{\text{partially standardized}}$ = -.41 (.06), CI_{95} = [-.54, -.29] (Table 4.4).

That is, perceiving High Inequality decreases institutional trust, B = -.74, p < .001 (a path), which in turn, triggers a decrease of perceived political efficacy in the society, B = .56, p < .001 (b path). The direct effect was no longer significant when the institutional trust was included, *direct effect* $_{\text{standardized}}$ = -.18, p = .09. This suggests a full mediation of institutional trust between the effect of economic inequality and political efficacy (See Figure 4.1 for a summary of the mediation model of the inequality manipulation decreasing political efficacy via institutional trust).

Table 4.4

Mediation Model of the Inequality Manipulation Decreasing Political Efficacy Through Institutional Trust in Pooled analysis.

	Institutional Trust (a path)		Political Efficacy (b path)	
Background	Coeff.	95% CI	Coeff.	95% CI
Constant	.40* (.13)	[.15, .65]	.08 (.12)	[-.15, .31]
Inequality	-.74*** (.11)	[-.96, -.52]	-.18 (.11)	[-.39, .03]
Institutional Trust			.56*** (.05)	[.46, .67]
SSS	.15** (.06)	[.04, .26]	-.02 (.05)	[-.12, .08]
Political Ideology	.10 (.06)	[-.01, .21]	-.10 (.05)	[-.20, .00]
Study	-.02 (.06)	[-.13, .09]	-.00 (.05)	[-.10, .09]
	R^2 = .18		R^2 = .35	
	$F(4, 277) = 15.03$, p < .001		$F(5, 276) = 29.99$, p < .001	
Total effect	R^2 = .09	$F(4, 277) = 7.22$, p < .001	-.60*** (.11)	[-.82, -.37]
Indirect Effect	Coeff.		95% CI	
I → IT → PE (ab path)	-.41 (.06)		[-.54, -.29]	

Note. Coefficients are standardized; standard error in parenthesis. Indirect effect is partially standardized. I = Inequality; IT = Institutional Trust; PE = Political Efficacy; 95% CI= confidence interval. * p < .05, ** p < .01, ***p < .001

We did not test H4c given that we did not find a main effect of the experimental manipulation on perceived democracy, the mediator variable. As such, we were not able to perform this mediation analysis (See Figure 4.2 for a summary of the mediation model of the inequality manipulation decreasing political efficacy via perceived democracy).

Study 3

Given that the inequality manipulation of Study 2 seemed not strong enough to replicate results from Study 1, we intended to replicate the results by focusing this time

on the mediational path. So, the main goal of Study 3 was to manipulate our IV together with institutional trust in order to test its mediational role. This way, the mediational role of institutional trust can be examined and demonstrate the proposed causal chain (Spencer et al., 2005). As said in the introduction, not only economic inequality has an impact on political efficacy, but also on citizens' engagement in non-institutional forms of political participation (Lancee & Van de Werfhorst, 2012; Zmerli & Castillo, 2015). That is why; additionally, we aimed to test the interaction effect of perceived inequality and institutional trust on a proxy of a behavioral measure such as environmental collective actions. We selected a type of participation not related to inequality in order to avoid two possible conflicting effects: inequality discourages participation (Zmerli & Castillo, 2015), but there are more reasons to reduce inequality (García-Castro et al., 2020). Then, we selected collective actions to protect the environment and minimize behaviors that negatively impact the environment as an example of transnational and global movements (Carmona-Moya et al., 2019; De la Torre, 2011), which represents one of the more relevant civic participation in the last years (e.g., Fridays for future).

Preregistered Design and Hypotheses

We conducted a third experiment to test the indirect path from perceived inequality to political efficacy and environmental collective actions via institutional trust (see preregistration at OSF).

H5. There will be an interaction effect between perceived inequality (high vs. low) and institutional trust (high vs. low) on political efficacy. Particularly, the condition of High Inequality will lead to lower levels of political efficacy compared to the Low Inequality condition, and this effect will be stronger when institutional trust is low.

H6. There will be an interaction effect between perceived inequality and institutional trust on environmental collective actions. The condition of High Inequality will lead to lower levels of environmental collective actions compared to Low Inequality condition, and this effect will be stronger when institutional trust is low.

Method

Participants

The estimated sample size was 256 for ANOVA test analysis (80% power, α = .05, d = .25), and we tried to get that minimum after exclusions. The exclusion criteria were the same as in Studies 1 and 2.

The final sample consisted of 638 (M = 22.12 years, SD = 5.15, 73.2 % Female) participants from the University community. How we collected the data with the University mail service prevented us from knowing the participation and which proportion of the questionnaire will be completed. Given our previous experience in reaching participants, the amount of participation is unpredictable, sometimes is high, and other times is low. So, we usually collect more sample than needed due to the variability and diversity of the participants in order to reach the minimum sample required after exclusions.

Procedure and Measurements

We manipulated inequality and institutional trust. Participants were randomly assigned to one of four conditions.

Economic Inequality. As in Study 1, we manipulated economic inequality by using the Bimboola Paradigm (Jetten et al., 2015; Sánchez-Rodríguez et al., 2019).

Institutional Trust. A scenario of high or low trusted institutions in Bimboola was used. In the High Institutional Trust condition, participants read that in Bimboola, there were competent institutions with honest representatives guided by inhabitants'

interests. On the contrary, in the Low Institutional Trust condition, they read that in Bimboola, there were low competent institutions with dishonest and self-interest-motivated representatives (See https://osf.io/39sut/?view_only=c828c8d5c83b42b38c361fd80c0d2e1b). Participants answered a manipulation check: "To what extent Bimboola's institutions are trusted?": 1 (*not trustworthy at all*) to 7 (*very trustworthy*).

Afterward, participants answered the following measures:

Political Efficacy. We used the same item of external political efficacy as in Studies 1 and 2, adding three items of internal political efficacy (Zumárraga-Espinosa, 2020, adapted from Niemi et al., 1991). An index of the four items was calculated to measure political efficacy. E.g., "I consider myself to be well qualified to participate in politics," $\alpha = .773$. Response format ranged from 1 (*strongly disagree*) to 7 (*strongly agree*).

Environmental Collective Actions. A six-item scale adapted from the Spanish version of the Environmental Action Scale (Carmona-Moya et al., 2019; adapted from Alisat & Riemer, 2015) was used. Answers ranged from 1 (*never*) to 7 (*frequently*) (e.g., "to what extent will you use online tools to raise awareness about the importance of recycling," $\alpha = .833$).

Afterward, participants answered the same measures as in Studies 1 and 2: SSS, Political Ideology, and Demographics.

Results

Manipulation Check. We conducted an independent samples t-test analysis on the economic inequality manipulation check. Participants assigned to the High Inequality condition perceived more economic inequality ($M = 6.49$, $SD = .90$) than those in the Low Inequality condition ($M = 3.33$, $SD = 1.30$) $t(553.30) = -35.59$, $p =$

.001, d = -1.63 . The institutional trust manipulation check was also successful; participants assigned to the High Institutional Trust condition perceived more institutional trust (M = 4.90, SD = 1.65) than those in the Low Institutional Trust condition (M = 1.76, SD = 1.10) $t(530)$ = -28.16, p = .001, d = -1.5.

Preregistered Hypotheses. Following our plan of preregistered analyses and corroborating our hypotheses, we conducted a 2 (high vs. low inequality) x 2 (high vs. low institutional trust) between groups ANOVA. A significant main effect of perceived inequality was found on political efficacy and environmental collective actions. Results showed a significant difference on political efficacy between groups, F (1, 634) = 45.6; $p < .001$, $\eta^2 = .067$ (M_{high} = 3.34, SD_{high} = 1.29; M_{low} = 3.91, SD_{low} = 1.49). Moreover, same result was found related to environmental collective actions, F (1, 633) = 5.70; p = .02, $\eta^2 = .009$ (M_{high} = 5.11, SD_{high} = 1.25; M_{low} = 5.32, SD_{low} = 1.08). Likewise, significant differences were found in political efficacy between the High and the Low Institutional Trust, F (1, 634) = 202.27; $p < .001$, $\eta^2 = .24$ (M_{high} = 4.29, SD_{high} = 1.34; M_{low} = 2.98, SD_{low} = 1.17), but not on environmental collective actions, F (1, 633) = .002; p = .97, $\eta^2 = .00$, M_{high} = 5.21, SD_{high} = 1.23; M_{low} = 5.22, SD_{low} = 1.12.

More importantly, results showed a significant interaction effect between Inequality X Institutional Trust on political efficacy (H5), F (1, 634) = 20.6; $p < .001$, η^2 = .031. We conducted planned contrasts between groups to test this interaction according to our hypotheses. Results showed that although in both High and Low Economic Inequality conditions, lower political efficacy was perceived in the Low Institutional Trust condition (M_{high} = 2.87, SD = 1.12; M_{low} = 3.08, SD = 1.22) than in the High Institutional Trust condition (M_{high} = 3.79, SD = 1.29; M_{low} = 4.86, SD = 1.16), $p_{high} < .001$, I.C. 95% [-1.18, -.66]; $p_{low} < .001$, I.C. 95% [-2.05, -1.52], when Institutional Trust was high, there were significant differences on political efficacy

between the High (M = 3.79, SD = 1.29) and the Low Inequality condition (M = 4.86, SD = 1.16), $p < .001$, I.C. 95% [.80, 1.35]. Whereas in the Low Institutional Trust condition, there were no significant differences in political efficacy between the High (M = 2.87, SD = 1.12) and the Low Inequality condition (M = 3.08, SD = 1.22), p = .11, I.C. 95% [-.04, .47].

In order to test H6, we conducted the same Inequality X Institutional Trust interaction analysis on environmental collective actions. Results revealed a significant interaction, F (1, 633) = 4.38; p = .037, η^2 = .007, showing that in the High and the Low Inequality conditions, there were no significant differences on environmental collective actions between the High Institutional Trust condition (M_{high} = 5.02, SD = 1.34; M_{low} = 5.43, SD = 1.06) and the Low Institutional Trust condition (M_{high} = 5.21, SD = 1.15; M_{low}= 5.24, SD = 1.09), p_{high} = .17, I.C. 95% [-.08, .46]; p_{low} = .11, I.C. 95% [-.43, .04]. In contrast, when Institutional Trust was high, there were significant differences in environmental collective actions between the High (M = 5.02, SD = 1.34) and the Low Inequality condition (M = 5.43, SD = 1.06), p = .003, I.C. 95% [.15, .68]. Whereas in the Low Institutional Trust condition, there were no significant differences in environmental collective actions between the High and the Low Inequality condition, p = .83, I.C. 95% [-.22, .27].

Discussion

Exploring the mechanisms suggested after the results of Study 1, study we found evidence that institutional trust mediated the effect of economic inequality on political efficacy in the current. As predicted, our findings showed a significant interaction effect between perceived inequality and institutional trust on political efficacy. Our results partially supported H5, showing that a context of high perceived economic inequality and low institutional trust leads people to perceive that political efficacy is lower than in

the low inequality and high institutional trust condition. The perception of an unequal context decreases the perceived political efficacy within the country, and this effect is stronger when people trust their institutions, contrary to what we expected.

We predicted that the effect would be stronger when the institutional trust was low because we thought that in this context, inequality would be particularly important. The joint effects of high inequality and low trust would decline citizens' political efficacy the most. However, our findings showed that inequality is more important when institutional trust is high—said otherwise, when individuals perceive institutions as trustworthy, economic inequality matters and has a differential impact on political efficacy. The same pattern was found when testing H6: we found the interaction between perceived inequality and institutional trust on environmental collective actions. However, the effect was stronger when the institutional trust was high (vs. low).

These findings suggest that a high institutional trust is a base for individuals to consider participating in society (Lee & Schachter, 2018; Loveless, 2013). Besides, when economic inequality is low, individuals are more likely to perceive themselves as politically effective and willing to take action.

General Discussion

The purpose of this research was to analyze the effect of economic inequality on political attitudes. Our studies revealed that participants reported lower institutional trust, a lower degree of perceived democracy, lower satisfaction with democracy, and lower political efficacy when inequality was high compared to a context of low inequality. We presented evidence supporting institutional trust's mediational role in perceived inequality's effect on political efficacy and environmental collective actions.

As reviewed above, economic inequality has several negative outcomes on society, e.g., lower political participation, greater endorsement of authoritarian values,

and preference for strong leaders—even when these leaders are willing to challenge democratic values (Solt, 2012; Sprong et al., 2019). However, inequality not only impacts the political system but also affects the individuals' perception of society (Lee et al., 2021; Teymoori et al., 2017; Wu & Chang, 2019). The way citizens perceive their society as socially integrated and effectively regulated by their leaders is a sign of the correct functioning of the social system. Indeed, the sense of anomie is more likely to appear in those countries hit by the 2008 global financial crisis (e.g., Spain; Teymoori et al., 2016). The current aimed to explore the effect of the economic inequality perceptions about society on attitudes that could be predictive of civic behaviors and attitudes, such as the perception of political efficacy and the intention to participate in collective actions.

In contrast with the vast majority of the previous research based on survey or archival data and correlation-based analytic approach (Andersen, 2012; Lee & Kwon, 2019), we used experiments in which factors are manipulated and their causal effects examined. Certainly, we proposed an indirect path for the effect of perceived inequality on political efficacy through institutional trust. The current study provides experimental evidence supporting the mediational role of that path. However, the indirect effect through perceived democracy was not consistent in our studies. Further research should explore the mediating role of perceived democracy in the effect of perceived inequality on political efficacy.

Our findings seem to align with previous results, which argued that political institutions mediate individuals' responses to political outcomes (Anderson & Guillory, 1997). The current results added that attitudes toward institutions are one of the factors influencing other political attitudes and the intention to participate in collective actions. Likewise, a decline in trust in the main society's institutions reflects disillusionment in

the population (Catterberg & Moreno, 2006). As expected, people negatively evaluate their impact on politics and society when they perceive higher levels of inequality and their institutions as low trustworthy. Therefore, in these economic and political contexts, existing levels of economic and political inequality will be maintained or increased (Schäfer, 2012).

In order to reverse this dynamic, developing policies to reduce inequality and implementing tools to control the performance of the country's institutions could increase citizen participation. In this regard, the lower the inequality and the higher the institutional trust, the higher the political efficacy and intentions to participate in collective actions. Simply working toward increasing institutional trust can counterbalance the negative effects of inequality (García-Sánchez et al., 2020). For example, a rise in institutional trust could increase electoral turnout, tax compliance and to boost support for universal solutions of income security (Gärtner & Prado, 2016; Hammar, 2009). Besides, wide-ranging participation in the electoral process and support for redistributive measures imply support for the democratic political system and the welfare state. In the current studies, individuals seem to be more sensitive to perceived inequality when institutional trust is high. Then, individuals feel higher political efficacy and are more willing to participate in civic society (e.g., collective actions), which will ultimately contribute to a more egalitarian society.

Furthermore, income equality is a precondition to trust the government and institutions (Gärtner & Prado, 2016) and to consider a country as democratic (Oser & Hooghe, 2018). By reducing economic inequality, power disparities would be lower, and it will promote civic engagement, political participation, institutional trust, and motivate people to support democracy and civic movements (Andersen, 2012; García-Sánchez et al., 2020). Therefore, the current understanding of democratic support would

benefit from incorporating economic inequality as a fundamental political issue in democratic systems (Krieckhaus et al., 2014). The current pandemic has supported that politics has a major impact on our everyday lives, with the tangible impact of policy interventions on people's liberties and livelihoods being felt intensely (The Economist Intelligence Unit, 2020).

Limitations and Future Research

First, the unprecedented pandemic context could have influenced the results reported since we did not know the effect of some uncontrolled variables. The emotional state, personal hitting of the pandemic health and economic crisis, and some other factors could influence the extraordinary context where studies were carried out (specially Studies 2 & 3) (Restubog et al., 2020).

We should be cautious with the conclusions that could be drawn from the current findings when the manipulation was based on a fictitious society. Although the overall effect of inequality on institutional trust and political efficacy seems consistent, we could not replicate the Study 1 & 3 results in a more ecological context. One reason to explain this result may be the manipulation of economic inequality. In order to solve this limitation, future studies may develop a new procedure to manipulate economic inequality in Spain that could be used to replicate the results obtained. Related to this, participants' attitudes toward real institutions seem difficult to change across the studies, possibly due to their consistency (Devos et al., 2002). Therefore, future research aimed at deepening the knowledge about institutional trust and specific measures to study it is needed. We also encourage researchers to confirm the interaction effect of perceived inequality and institutional trust in actual people's attitudes, other ways of participation, support for policies, and vote intentions.

Concerning the perceived democracy measure used here, we consider that the measure used may be a bit crude. In the current studies, the perception of democracy was operationalized from some of the categories of a democracy degree index (The Economist Intelligence Unit, 2018) but excluded others in order to simplify. Future studies should review the operationalization of perceived democracy.

Another limitation of the current research is the tool that we used to distribute the questionnaire. Although the University mail service reaches a broad part of the University community, participation in the study seems to be unpredictable and uncontrollable. In the current studies, a high proportion of participants started to answer the questionnaire, but they did not reach the main dependent variables questions.

Finally, the features of the culture where the studies took part prevent us from generalizing our findings to other contexts. In this line, we analyze the perception of inequality with participants from the University community in a single country. It would be worth exploring the effect of perceived economic inequality on political attitudes with other samples and in other countries.

Conclusion

Perceived economic inequality negatively impacts institutional trust, satisfaction with democracy, and political efficacy. Furthermore, being exposed to an economically unequal context where institutions cannot be trusted might undermine the disposition to participate in political and civic movements, thus hindering an egalitarian social change.

Notes

1. We will present independent samples t-test analyses for testing Study 1 hypotheses as in the subsequent studies.
2. Hypotheses were rewritten in this manuscript for a better understanding.

Supplementary Material

of

The Effect of Perceived Economic Inequality on Political Attitudes: Institutional Trust, Perceived Democracy, Satisfaction With Democracy, Political Efficacy and Environmental Collective Actions

1. **Study 1: Supplementary Materials**
    - 1.1. Data collection
    - 1.2. Measures
    - 1.3. Table S1
2. **Study 2: Supplementary Materials**
    - 2.2. Data collection
    - 2.3. Measures
    - 2.4. Table S2
    - 2.5. Table S3
    - 2.6. Table S4
3. **Study 3: Supplementary Materials**
    - 3.1. Data collection
    - 3.2. Additional measure
    - 3.3. Exploratory analysis
    - 3.4. Table S5

Study 1: Supplementary Materials

Data collection

Data was collected from November 2019 to January 2020. Participants were compensated with 0,1 points in one of their subjects of the Department of Social Psychology.

Measures

Income. Income was asked with an open-end response. We calculated an index of income per consumption unit with the following formula: Income per consumption unit=Income/[1+(0,5*adults) + (0,3*children)] (Esteban-Yago & Losa-Carmona, 2015).

Table S1

Bivariate Correlations between the main variables of Study 1. Means (and standard deviations) are presented in the diagonal.

	1	2	3	4	5	6	7	8	9	10	11
11. Inequality	.52 (.50)										
12. Institutional Trust	-.61**	3.47 (1.40)									
13. Perceived Democracy	-.58**	.70**	4.08 (1.12)								
14. Satisfaction With Democracy	-.55**	.62**	.69**	3.70 (1.42)							
15. Political Efficacy	-.46	.54**	.53**	.55**	3.64 (1.58)						
16. SSS	.06	.13	.10	.11	.07	5.74 (1.19)					
17. Political Ideology	.01	.22**	.10	.06	.06	.25**	3.58 (1.72)				
18. Age	-.08	.06	-.06	-.01	.02	-.26**	-.04	20.66 (3.57)			
19. Gender	.10	-.13	-.21**	-.16*	-.15	.02	.09	.05	.87 (.33)		
20. Educational level	-.09	.03	-.03	-.03	-.01	-.10	.03	.16*	.10	6.76 (.52)	
21. Income	-.00	-.03	-.15	-.12	.02	.07	.12	.15*	.05	.21**	1282.77 (2064.34)

Note. * $p < .05$, ** $p < .01$. SSS: Subjective Socioeconomic Status. Gender: 0 = Man, 1 = Woman, 2 = Other.

Study 2: Supplementary Materials

Data collection

Data was collected in April and May 2020. Participants were not compensated for their participation.

Measures

Support for Measures to Mitigate the Effect of the Pandemic and to Reduce the Inequality derived from the COVID-19 Crisis. Two scales were included for exploratory purposes of this research, based on the measures adopted by the Spanish Government to mitigate the effects of the pandemic, and on measures to reduce the economic inequality, discussed inside the Government, during the pandemic. It includes: 9 item-scale indicating support for the measures adopted to mitigate the pandemic crisis impact (e.g., temporary ban on layoffs due to the coronavirus) and 7-item scale indicating support for measures aimed at reducing inequality (e.g., special tax on large fortunes).

Table S2

Bivariate Correlations between the main variables of Study 2. Means (and standard deviations) are presented in the diagonal.

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Inequality	.47 (.50)												
2. Institutional Trust	-.05	3.58 (1.15)											
3. Perceived Democracy	-.08	.60**	4.48 (.94)										
4. Satisfaction With Democracy	-.03	.52**	.56**	3.82 (1.55)									
5. Political Efficacy	-.18*	.63**	.45**	.47**	2.89 (1.66)								
6. SSS	-.13	.07	-.06	-.09	-.09	5.67 (1.52)							
7. Political Ideology	.04	-.12	.07	-.15	-.26*	.20*	3.74 (1.77)						
8. Age	.07	.00	.16	.08	-.19*	.23*	.28**	39.91 (15.70)					
9. Gender	-.15	.00	-.22*	.07	.16	.09	-.32**	-.33**	.66 (.51)				
10. Educational level	.03	.13	.04	.11	.05	.25**	.06	.18	.07	7.49 (1.13)			
11. Income	-.09	-.08	-.07	.07	-.06	.13	-.06	.24**	.04	.09	1114.52 (1540.86)		
12. Pandemic Measures	.10	.23**	.33**	.20*	.09	-.01	-.25**	.03	-.03	.02	.11	6.41 (.93)	
13. Inequality Measures	-.04	.13	-.02	.12	.14	-.16	-.58**	-.18	.25**	-.10	.13	.58**	5.25 (1.41)

Note. $^{*}p < .05$, $^{**}p < .01$. SSS: Subjective Socioeconomic Status. Gender: 0 = Man, 1 = Woman, 2 = Other.

Table S3

Mediation Model of the Inequality Manipulation Decreasing Political Efficacy Through Institutional Trust in Study 2.

	Institutional Trust (a path)		Political Efficacy (b path)	
Background	Coeff.	95% CI	Coeff.	95% CI
Constant	.03(.13)	[-.22, .27]	.14 (.09)	[-.05, .32]
Inequality	-.06 (.18)	[-.42, .30]	-.32* (.14)	[-.59, -.05]
Institutional Trust			.61*** (.07)	[.48, .75]
SSS	.10 (.09)	[-.09, .28]	-.12 (.07)	[-.26, .02]
Political Ideology	-.14 (.09)	[-.32, .04]	-.15* (.07)	[-.30, -.02]
	R^2 = .03		R^2 = .46	
	$F(3, 121) = 1.06$, p = .36		$F(4, 120) = 25.82$, p < .001	
Total effect	R^2 = .10	$F(3, 121) = 4.45$, p = .005	-.36* (.18)	[-.71, -.01]
Indirect Effect	Coeff.		95% CI	
I → IT → PE (ab path)	-.04 (.11)		[-.25, .18]	

Note. Coefficients are standardized; standard error in parenthesis. Indirect effect is partially standardized. I = Inequality; IT = Institutional Trust; PE = Political Efficacy; 95% CI= confidence interval. * $p < .05$, ** $p < .01$, ***$p < .001$

Table S4

Mediation Model of the Inequality Manipulation Decreasing Political Efficacy Through Perceived Democracy in Study 2.

	Perceived Democracy (a path)		Political Efficacy (b path)	
Background	Coeff.	95% CI	Coeff.	95% CI
Constant	.06 (.12)	[-.18, .30]	.13 (.11)	[-.08, .34]
Inequality	-.19 (.18)	[-.54, .17]	-.27 (.16)	[-.58, .04]
Perceived Democracy			.45*** (.08)	[.30, .62]
SSS	-.08 (.09)	[-.27, .09]	-.02 (.08)	[-.18, .13]
Political Ideology	.08 (.09)	[-.10, .27]	-.28** (.08)	[-.44, -.13]
	R^2 = .02		R^2 = .30	
	$F(3, 121) = .73$, $p = .54$		$F(4, 120) = 12.92$, $p < .001$	
Total effect	R^2 = .10	$F(3, 121) = 4.45$, $p = .005$	-.36* (.17)	[-.71, -.01]

Indirect Effect	Coeff.	95% CI
I → D → PE (ab path)	-.09 (.08)	[-.24, .08]

Note. Coefficients are standardized; standard error in parenthesis. Indirect effect is partially standardized. I = Inequality; D = Perceived Democracy; PE = Political Efficacy; 95% CI= confidence interval. * $p < .05$, ** $p < .01$, ***$p < .001$

Study 3: Supplementary Materials

Data collection

Although data collection was preregistered from February to April 2020 and in person, we stopped collecting data after the declaration of the state of alarm caused by COVID-19 pandemic. Data was collected online in September and October 2020. Participants were invited to participate in a raffle of 50€.

Additional measure

In Study 3, we also measure collective actions toward the reduction of economic inequality. A six-item scale adapted from Tausch et al. (2011) was used. Participants answered by using a 1 to 7 Likert-type scale (*unlikely-very likely*). E.g.: “To what extent would you participate in a debate about economic inequality?”, “To what extent would you sign an online petition asking the government to reduce income differences?”, α = .802.

Exploratory analysis

With exploratory purposes, we conducted an independent samples t test analyses to test the effect of economic inequality on collective actions toward the reduction of economic inequality. Results showed a significant difference on inequality collective actions between groups, t(634) = -3, p = .003, d = -.24 (M_{high} = 5.14, SD_{high} = 1.28; M_{low} = 4.83, SD_{low} = 1.29). This result suggest that inequality levels has an impact on collective actions aimed to reduce inequality. In this case, the higher the perceived inequality, the higher the intention to participate in collective actions to reduce inequality. This result is preliminary and should be replicated. But it could suggest that the degree of society response to inequality is directly linked with the perceived level of inequality (Fatke, 2018).

Table S5

Bivariate Correlations between the main variables of Study 3. Means (and standard deviations) are presented in the diagonal.

	1	2	3	4	5	6	7	8	9	10	11
1. Inequality	.51 (.50)										
2. Institutional Trust	.04	.49 (.50)									
3. Political Efficacy	-.20**	.47**	3.62 (1.42)								
4. Environmental CA	-.09*	-.00	.14**	5.22 (1.17)							
5. Inequality CA	.12**	.02	.09*	.57**	4.99 (1.29)						
6. SSS	.01	-.04	.00	.08*	-.07	5.47 (1.40)					
7. Political Ideology	-.00	.01	-.06	-.27	-.36**	-.21**	3.98 (1.71)				
8. Age	.04	.04	.05	.00	.00	-.08*	-.05	22.12 (5.15)			
9. Gender	.05	-.00	-.08*	.21**	.19**	.05	-.13**	-.16**	.77 (.47)		
10. Educational level	-.03	-.00	.02	.03	.06	.11**	-.07	.24**	.01	6.85 (.75)	
11. Income	.04	.06	.12**	-.02	-.03	.10*	.03	.09**	-.05	.08*	496.14 (1030.07)

Note. * $p < .05$, ** $p < .01$. CA: Collective action. SSS: Subjective Socioeconomic Status. Gender: 0 = Man, 1 = Woman, 2 = Other.

Chapter 5

The Effect of Economic Inequality on Individuals' Cooperative Behavior Using an Economic Game

The Effect of Economic Inequality on Individuals' Cooperative Behavior Using an Economic Game

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Abstract

In this study we tested whether economic inequality and democratic choices affected individuals' cooperative behavior. We expected two main effects: First one of inequality on cooperation and another of democratic choice on cooperation. We used the public goods game (N = 479), in which participants were given a certain number of tokens and decided how many they wanted to keep in their private fund and how many they wanted to share in the public goods. To manipulate economic inequality, we distributed participants' initial tokens either equally, unequally or very unequally. To manipulation democratic choice, we presented a prescriptive norm to punish the free-riders, either chosen by the participants or imposed. Cooperative behavior was measured by the number of tokens that participants invested in the public goods ark. A mix design was used, including one between participants manipulated factor (democratic choice) and other one manipulated within participants (inequality distribution). As predicted, our findings showed a significant difference between the high and the low inequality condition on cooperative behavior. Participants cooperate with more tokens in the low (vs. high) inequality condition. However, when the prescriptive norm was introduced, this difference between inequality conditions disappeared. No differences in cooperation were found when the prescriptive norm was either democratically voted or imposed. Our findings showed evidence about the reduction of cooperation in unequal contexts. Additionally, prescriptive norms could reduce differences in cooperative behavior independently of inequality levels. The results show that the study of prescriptive norms could contribute to foment redistribution and tax compliance.

Keywords: economic inequality, democracy premium, cooperation, public goods game, prescriptive norms.

Introduction

The gap between rich and poor people has individual and societal consequences (Wright, 2000). Of all the negative consequences of inequality in current societies, some authors suggest that inequality has its most fundamental effects on the quality of social relations (Wilkinson & Pickett, 2017). For instance, previous research showed a negative association between economic inequality at the state level and trust, political attitudes, and solidarity: When economic inequality increases in a society there is an associated decrease in generalized trust (Buttrick & Oishi, 2017; Gustavsson & Jordahl, 2008; Uslaner & Brown, 2005) and trust in political institutions accompanied by a depression in political participation and political interest (Van de Werfhorst & Salverda, 2012). Even civic participation is significantly lower in unequal societies (Lancee & Van de Werfhorst, 2012; Schröder & Neumayr, 2021). Likewise, Paskov and Dewilde (2012) found less solidarity—as the willingness to contribute to the welfare of other people—in unequal countries.

Based on these correlational studies, the aim of the current research is to analyse the causal effect of economic inequality on cooperative behavior. First, we reviewed the experimental evidence of how economic inequality impacts cooperation. Adding to previous studies, we controlled for class or socioeconomic status and the configuration of the groups in our experiment.

Cooperation to overcome social problems benefits groups and society in general (Vollan et al., 2017). Cooperation motivates a more cohesive society but also influences the economy by preventing non-cooperative behavior, such as tax evasion, which could contribute to reducing inequality. For instance, paying taxes can be considered a form of cooperative behavior since it contributes to the maintenance of the welfare state and has a positive outcome for all citizens as sources of funding for social programs and public

investments (World Bank Group, 2020). In the present research, we studied some factors that could promote higher cooperation using an economic paradigm.

The Effect of Economic Inequality on Cooperation in Experimental Games

Previous research has studied the effect of economic inequality on generosity (Coté et al., 2015) and the disposition to cooperate (Schlösser et al., 2020). Particularly, most of these studies used experimental settings such as economic games and social dilemmas (i.e., prisoner's dilemma or public goods game) to test the effect of inequality on cooperation. The evidence on this effect is mixed, and results tend to be inconsistent.

As such, some studies found a positive or a null relationship between inequality and cooperation, while others found a negative effect of inequality on cooperation (Melamed et al., 2022; Sadrieh & Verbon, 2006). For example, Melamed et al. (2022) found that inequality tends to increase cooperation in a dynamic network. That is, participants, increased their cooperation in the prisoner's dilemma when the initial endowment was unequal. However, in this experiment, participants could choose with whom to cooperate and had information about each other's endowments. In addition, this study included wealth productivity as the key manipulation: in the control condition, participants always received twice the other's endowment, whereas, in the wealth productivity condition, participants received benefits as a function of others' endowment. The greater the other's endowment, the greater the benefits. Although the effect was small, their data suggests that the presence of wealth productivity in social relationships promotes cooperation when there is inequality in the system (Melamed et al., 2022). Similarly, Sadrieh and Verbon (2006) found cooperation to be unaffected by the degree of inequality in a dynamic public goods game.

Despite the previous results, there are other studies that show a negative effect of unequal distribution on cooperative behavior in economic experiments (Askoy, 2019;

Fung & Au, 2014; Nishi et al., 2015). Recently, Askoy (2019) found that inequality reduced the overall level of cooperation. Unfortunately, in his study, inequality was manipulated as having advantages or disadvantages over other participants, which is closer to a socioeconomic status manipulation than to an inequality one (Eckel et al., 2010; Martinangeli & Martinsson, 2020; Osman et al., 2018). Therefore, the experiment's design does not allow testing the simple effect of inequality. Additionally, Fung and Au (2014) manipulated both inequality and symmetry in the heterogeneous distribution. In the symmetric condition, the differences between the lowest and middle endowments and between the highest and middle endowments were equal (e.g., 25-30-35). In contrast, in the asymmetric condition, there was one uniquely large endowment in the group, and the remaining endowments were equal (e.g., 25-25-40). They found that in groups with symmetric heterogeneity in their distributions, cooperation rates decreased when inequality was high (Fung & Au, 2014). Furthermore, Nishi et al. (2015) manipulated socioeconomic status, inequality, and its visibility—in the invisible condition, participants only knew their own accumulated wealth, while in the visible condition, participants could also see the accumulated wealth of other participants. They found that it was precisely the visibility of inequality that reduced cooperation (Nishi et al., 2015).

In light of the previous results, we aimed to test the simple effect of inequality on cooperation by simplifying the procedure of the public goods economic game. Particularly, we expected to find a negative effect of inequality on the disposition to cooperate. Contrary to the studies presented above, in our experiment, we will control by class or socioeconomic status and the configuration of the groups.

Complementary to the negative effect of inequality in cooperation, we also wanted to explore other variables that can indeed increase cooperative behavior. In this line, social norms have been shown to guide behavior (Nolan et al., 2008; Reynolds, 2019). In

particular, prescriptive norms indicate desirable behavior and usually lead to a sanction if they are not met (Sevillano & Olivos, 2019). Previous research has shown evidence of the role of prescriptive norms in maintaining cooperation (Fehr & Schmidt, 1999); what is more, the norms chosen democratically have a stronger effect on behavior (Sutter et al., 2010).

Democracy Premium

The democracy premium effect is the preference for norms chosen democratically by individuals (Sutter et al., 2010). Indeed, some authors found that democratic participation rights promote increased cooperation and reduced in tax evasion (Frey et al., 2004; Pommerehne & Weck-Hannemann, 1996). Therefore, when people can choose between some options or rules, the likelihood of cooperation is higher than when they cannot decide. The democratic choice is related to higher satisfaction and disposition to cooperate (Olken, 2010; Sutter et al., 2010). More specifically, the democratic choice is related to higher satisfaction with the procedure, higher willingness to contribute to the project, and greater benefits in local interventions (Olken, 2010).

There is some evidence of a democracy premium effect in experimental settings (Dal Bó et al., 2010; Sutter et al., 2010). In this literature, when participants choose a norm or institution, it is considered endogenously decided by the group, whereas when the experimenter imposes the decision, it is considered exogenously decided. For instance, Dal Bó et al. (2010) showed how the effect of a given policy (e.g., giving a fine to individuals that do not cooperate in the prisoner's dilemma) on the level of cooperation is greater when it is chosen democratically by the individuals (endogenously decided) than when the computer imposed it (exogenously decided). Likewise, Sutter et al. (2010) showed a significant positive effect of democratic choice

on the level of cooperation. They conducted an experiment in which group members could democratically decide by voting whether to punish or reward other members in order to enhance cooperation in a public goods game. In this condition, participants could vote for their preferred institution to regulate the provision of the public good. In contrast, in the non-democratic condition, participants were assigned an institution by the experimenter to regulate the game (Sutter et al., 2010).

In contrast, Vollan et al. (2017) found an association between participants' values and their decision in the exogenous and endogenous implementation of a rule in China. In this case, participants who placed a higher value on accepting authority cooperated more when the rule was imposed exogenously than when it was chosen endogenously. This result highlights the role of congruence with individual values and societal norms, which seems to be key to studying the democracy premium effect. In our case, we expected to find evidence in favor of the democracy premium as the other studies conducted in Western countries (Dal Bó et al., 2010; Sutter et al., 2010), where participants tend to value the democratic choice more than the authoritarian choice.

The aim of the current research is twofold. First, given the inconsistency in the literature about the effect of inequality on cooperative behavior, we aim to gather more evidence about the effects of inequality on cooperation in experimental settings. Second, we tried to analyze if the democratic choice, when included as a new rule on the game, increases cooperation as suggested by the literature on the democracy premium.

The Current Research

In this study, we tested whether the perceived economic inequality and democratic election affected individuals' cooperative behavior. We preregistered the following hypotheses.

H1. We expected a main effect of perceived inequality (high vs. low) on cooperation. Particularly, the condition of high economic inequality will lead to lower levels of cooperation compared to the low economic inequality condition.

H2. We expected a main effect of democratic choice (democratic choice vs. non-democratic choice) on cooperation. Particularly, the condition of democratic choice will lead to higher levels of cooperation compared to the non-democratic choice condition.

H3. We expected an interaction effect between economic inequality (high vs. low) and democratic choice (democratic choice vs. non-democratic choice) on cooperation.

All materials and data sets can be found online (See https://osf.io/nhyua/?view_only=d5058e802c954dfa9d66bbd8d7f293dd). We report all measures, manipulations, and exclusions of the study.

Method

Participants

We conducted an a priori sample size analysis using G*Power (Faul et al., 2009) for repeated measures ANOVA test analysis with a between-group factor. We estimated a standard small effect size (d = .15) to obtain an a priori power of 95% and a p-value of .05 (See sensitivity power analyses in the Supplementary Materials at OSF). The estimated sample size was 116, and we tried to get that minimum after exclusions. Given that we anticipated that some participants would be people from overseas and they would not have a good level of Spanish or knowledge about inequality and some other features of the country, we included as an inclusion criterion that participants should have Spanish nationality or have lived more than five years in Spain, to be older than 18, to have answered the comprehension checks correctly and to have completed all the dependent measures (see preregistration at OSF).

The way we collected the data with the University mail service prevented us from knowing the amount of participation and which proportion of the questionnaire will be completed. Given our previous experience in reaching participants, the amount of participation is unpredictable, sometimes is high, and other times is low. Therefore, we usually collect more sample than needed due to the variability and diversity of the participants in order to reach the minimum sample required after exclusions. The initial sample was composed of 539 participants, but the data from 32 of these people were excluded from the analysis because two were younger than 18 years old, 19 were not residents of Spain for more than five years, 28 did not answer the two-comprehension check correctly, and 11 did not fully complete the questionnaire. A total of 479 people (65.5% females, 32.9% males, 2% other indicated) between the ages of 18 and 71 (M = 23.82, SD = 7.91) participated in the study.

Procedure

Participants were contacted through the University mail service. They were invited to answer an anonymous questionnaire voluntarily. All participants provided informed consent before answering the questionnaire. Data were collected in October 2021.

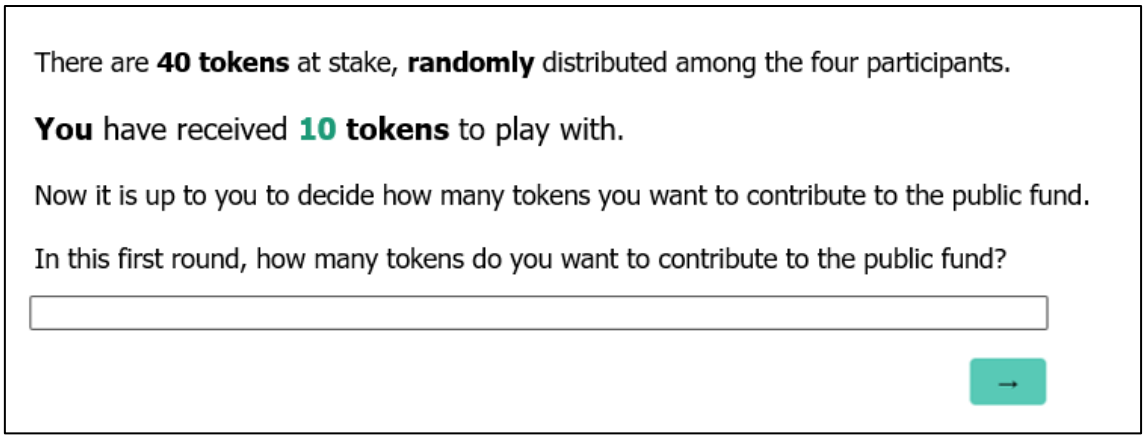
We used a public goods game (Kagel & Roth, 1995; Ledyar, 1995; Vollan et al., 2017). In the public goods game, participants received an endowment and had to decide their contribution to the public good. Each token that participants saved in their private fund has a value of one, while each token inverted in the public good doubled its value. The total of tokens in the public goods fund was divided equally between the four participants, regardless of their individual contributions. Then, individuals' gain from each round was formed by the number of tokens kept in the private fund plus the received number of tokens from the public goods. The above public good problem was

explained to the subjects in the instructions (see Instructions at OSF). After subjects had read the instructions, they had to answer two control questions that tested their understanding of this public goods problem. First, participants answered the value of each token in the private and the public fund, i.e., “Which value has 1 token in your private fund?”, “Which value has 1 token in the public fund?”. Answers options were “1 token = 1 token”, “1 token = 2 tokens”, and “I don’t remember.” Instructions were shown again to participants if any of the two comprehension checks were incorrectly answered. Afterward, three examples were presented in random order, where the initial endowment was egalitarian, and the contributions to the public good varied respectively (high, medium, or low). Then, participants were asked again if they understood the game (yes/no question). Participants who answered no were automatically excluded from the study. To motivate participation, we held a raffle of two 50-euro prizes, which were randomly drawn among the participants of the experiment. We told them that the total number of tokens collected in the final round would be converted into entries for the raffle. In other words, if a player has collected 15 tokens, they receive 15 entries for the raffle.

Before the manipulation, participants were told that they would play with responses given by previous players and started the game by completing a control round. In the control round, participants received information about the total number of tokens and how many they got. However, no information about the distribution of tokens between the four players was given (See Figure 5.1). After reading this information, they decided on the number of tokens inverted for the public good.

Figure 5.1

Control round.

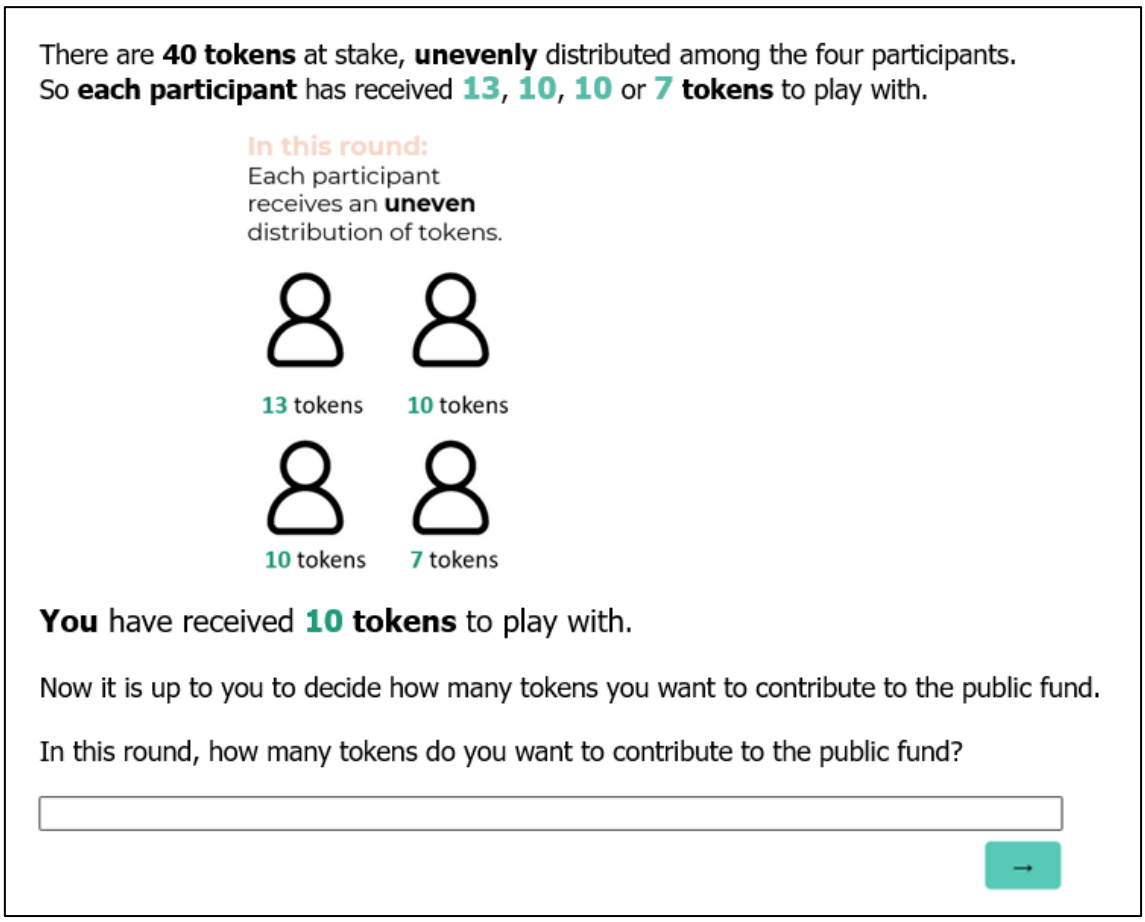


Manipulation of Economic Inequality

To manipulate perceived economic inequality, we distributed the initial endowment (40 tokens in total) for the four participants either equally, unequally, or very unequally. In the high inequality condition, the initial distribution of tokens was very unequal (18, 2, 10, 10), while in the low inequality condition, the initial distribution of tokens was unequal (13, 7, 10, 10) and completely equal in the egalitarian condition: each participant received the same number of tokens (10) (See Figure 5.2 for an example). In all conditions, participants always received 10 tokens, so just the context of inequality is what actually differed from one condition to the other.

Figure 5.2

Example of inequality manipulation: low inequality condition.



Manipulation of Democratic Choice

As a manipulation of democratic choice, we presented a rule to punish the free-riders in the second round (Dal Bó et al., 2010; Vollan et al., 2017), which punishes the lack of contribution to the public good, i.e., people who do not invest at least half of their tokens in the public fund would lose half of the tokens at the end of each round. In the democratic condition, participants were asked if they wanted to apply the new rule or not. In the non-democratic condition, participants read that the person responsible for the game decided to apply the new rule. Then, participants were asked, as a manipulation check, "To what extent could you decide about the application of the new norm?" (1= *not at all*, 7 = *totally*).

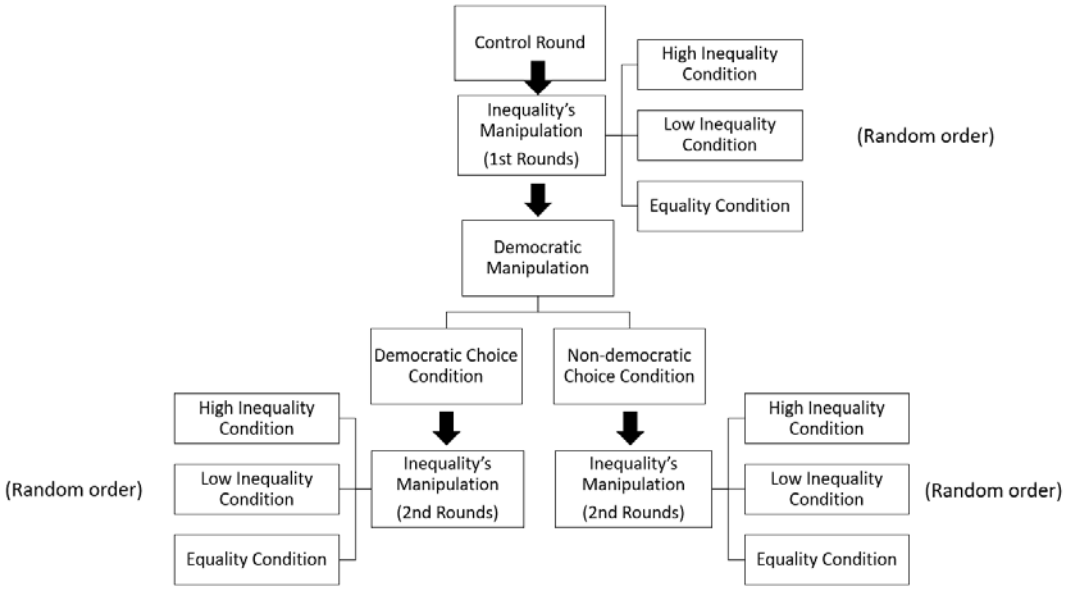
Design

Thus, in this study, we used a mixed 3 (Inequality: High, Low, Equality) x 2 (Democracy: Democratic vs. Non-democratic choice) x 2 (Round: 1 vs. 2) design, with the first factor manipulated within participants and the second between groups.

Seven rounds were played in total: an initial control round and two rounds of each inequality condition. Particularly, the order was as follows: 1) control round, 2) first rounds of each of the inequality conditions in random order (high inequality, low inequality, equality), 3) then half of the participants were presented with one of the two democratic conditions (democratic choice vs. non-democratic choice), 4) second rounds of each of the inequality conditions in random order (high inequality, low inequality, equality) (Figure 5.3).

Figure 5.3

Design of the Experiment.



Measures

Cooperative Behavior

Our main dependent variable was measured by asking individuals how many tokens they wanted to share in the public fund in each round, i.e., "How many tokens do you want to give to the public goods?". Participants chose from 0 to 10 tokens.

Support For Inequality

The Spanish version of the Support for Economic Inequality Scale was used (S-SEIS; Montoya-Lozano et al., 2022, adapted from the original scale of Wiwad et al., 2019). Response format ranged from 1 (*strongly disagree*) to 7 (*strongly agree*, α = .766).

Democratic Values

Participants answered five items about the importance of living in a democratic country by using items adapted from ESS (2012). E.g., "How important is it for you… to live in a country democratically ruled?", "…that the justice system treats everyone equally?" Response format ranged from 1 (*strongly disagree*) to 7 (*strongly agree*, α = .865).

Subjective Socioeconomic Status (SES)

Participants completed the MacArthur Scale of SES (Adler et al., 2000). Participants had to choose which rung of a 10-rung ladder better represented their positions in the social hierarchy.

Political Ideology

Participants rated their political ideologies on a scale ranging from 1 (*extremely left-wing*) to 10 (*extremely right-wing*).

Demographics

Finally, participants provided information about their age, gender, nationality, years living in Spain, level of education (from 1 = *none* to 8 = *Ph.D.*), degree (if they were doing undergraduate or postgraduate studies), professional status (from 1 =

unemployed to 8 = *retired*), income level (open response) and the number of family members.

Results

Manipulation Check

We conducted an independent samples t-test analysis on the democratic choice manipulation check. Participants assigned to the Democratic Choice condition perceived higher opportunities to decide about the application of the rule (M = 4.60, SD = 2.14) than those in the Non-democratic Choice condition (M = 2.49, SD = 2.11) $t(477) = -10.90$, $p < .001$, $d = -.89$.

Preregistered Hypotheses

We tested the simple effect of economic inequality in the first round independently from the next rounds to test H1. A mixed-design ANOVA was performed subsequently to test the hypotheses H2 and H3, using a 3 (Economic inequality: Equality vs. Low Inequality vs. High inequality) x 2 (Democratic choice: Democratic vs. Non-democratic) x 2 (Round: 1 vs. 2) design, with repeated measures for the first and the third variable. We tested simple effects within the same mixed-design ANOVA, adjusting for multiple comparisons (Bonferroni).

A significant simple effect of Economic Inequality was found in the first round of the experiment, F (1, 477) = .49, p = .001, $\eta\rho^2$ = .001 (H1). There were significant differences in cooperation between the low and the high economic inequality condition (see Table 5.1-5.2). As expected in H1, cooperation was higher when inequality levels were lower. Additionally, cooperation increased in the equal and low inequality condition compared to the control round (M_{R1} = 3.24, 95% CI = [3.03, 3.45]).

Table 5.1

Means, Standard Deviations, and 95% Confidence Intervals of Results of Mix-design ANOVA.

1st Rounds						2nd Rounds					
						Democratic Choice					
Equality		Low Inequality		High Inequality		Equality		Low Inequality		High Inequality	
M (SD)	**95% CI**	**M (SD)**	**95% CI**	**M (SD)**	**95% CI**	**M (SD)**	**95% CI**	**M (SD)**	**95% CI**	**M (SD)**	**95% CI**
3.57 (2.90)	[3.13, 3.83]	3.60 (2.67)	[3.36, 3.84]	3.33 (2.74)	[3.09, 3.58]	5.95 (1.92)	[5.71, 6.20]	5.89 (1.73)	[5.67, 6.11]	5.95 (1.80)	[5.72, 6.18]
						Non-Democratic Choice					
						Equality		Low Inequality		High Inequality	
						M (SD)	**95% CI**	**M (SD)**	**95% CI**	**M (SD)**	**95% CI**
						6.08 (1.92)	[5.83, 6.32]	5.87 (1.70)	[5.65, 6.08]	6.06 (1.81)	[5.83, 6.29]

Note. The design included 3 (Economic inequality: Equality vs. Low Inequality vs. High inequality) x 2 (Democratic choice: Democratic vs. Non-democratic) x 2 (Round: 1 vs. 2) factors. Ratings were given from 0 to 10.

To test H2, we examined the main effect of Democratic Choice on the second round of the experiment (Table 5.2). We did this because we wanted to analyze the effect of democratic choice manipulation. Therefore, the effect of the manipulation before inclusion (i.e., the first round) was not of interest to us. Analyzing the second round, we found no significant effect of the manipulation of democratic choice on cooperation (F [1, 477] = .49, p = .48, $\eta\rho^2$ = .001), contrary to what we expected in H2.

Following H3, we tested the interaction effect of Economic Inequality x Democratic Choice (Table 5.2). Unfortunately, we did not find such an interaction effect, F (2, 954) = .77, p = .46, $\eta\rho^2$ = .003. Therefore, we found no evidence to support H3. Nevertheless, a significant simple effect of Round was found, F (1, 477) = 823.99, p <. 001, $\eta\rho^2$ = .63. Particularly, cooperative behavior was higher in the second round (M = 5.97, 95% CI = [5.83, 6.11]) compared to the first round (M = 3.50, 95% CI = [3.28, 3.72]). That is, across all the experimental conditions of inequality, cooperation was higher in the second round compared with the first round: for equality (M_{R2} = 6.01, 95% CI = [5.84, 6.18]; F [1, 477] = 458.78, p < .001, $\eta\rho^2$ = .49), low inequality (M_{R2} = 5.88, 95% CI = [5.72, 6.03]; F [1, 477] = 451.80, p < .001, $\eta\rho^2$ = .486), and high inequality (M_{R2} = 6.00, 95% CI = [5.84, 6.17]; F [1, 477] = 4620.15, p < .001, $\eta\rho^2$ = .565 (Table 5.1). This means that the introduction of the sanction norm made people cooperate more than when the norm was not included.

Additionally, we found a significant two-way interaction of Economic Inequality x Round, F (2, 954) = 6.13, p =. 002, $\eta\rho^2$ = .03 (Table 5.2). In the first round, as we have shown before, participants cooperated more in the low inequality condition than in the high inequality condition. Given that this two-way interaction was not qualified by the manipulation of democracy, this happened when any norm for punishing free riders was introduced. However, in the second round, the differences between the conditions were reduced by the introduction of the sanction norm.

Table 5.2

Results From a Mix-design ANOVA: 3 (Economic Inequality: Equality vs. Low Inequality vs. High inequality) x 2 (Democratic Choice: Democratic vs. Non-democratic) x 2 (Round: 1 vs. 2).

	F	p-value	$\eta\rho^2$
EI	1.20	.302	.005
R	823.99	.000	.633

DC	.490	.484	.001
EI x R	6.13	.002	.025
DC x R	4.75	.030	.010
EI x DC	.77	.463	.003
EI x R x DC	1.94	.144	.008

Note. EI: Economic Inequality, R: Round, DC: Democratic Choice.

Finally, we did not find a significant three-way interaction between economic inequality, round, and democratic choice, F (2, 954) = 1.94, p = .14, $\eta\rho^2$ = .01. These results suggest that the sanction norm for punishing free riders diminished the effect of inequality in general, regardless of whether it was democratically chosen or not.

Exploratory analyses

Considering that the effect of democratic choice might be different for those who vote in favor than for those against the application of the rule (Dal Bó et al., 2010; Vollan et al., 2017), we analyzed how the choice made by participants influenced cooperation (Table 5.3), perceived fairness, and satisfaction with the game (Table S2 in Supplementary Materials at OSF). Although both groups had punctuations over the middle point of the scale in these variables, there were significant differences between those who voted yes and no for applying the punishment rule. Specifically, people who voted in favor of the application of the rule showed higher cooperation compared to those who voted against it.

Table 5.3
Mean Differences Between Participants who vote yes and no in the Democratic Condition on Cooperation (exploratory analyses).

Variable		Democratic Condition-Yes		Democratic Condition-No				95% CI		
	n	*M*	*SD*	*M*	*SD*	*t*	*p*	*LL*	*UL*	*Cohen's d*
Cooperation	239	6.20	1.47	5.37	1.59	-4.00	.00	-1.24	-.42	-.53

Note. CI= confidence interval, *LL*= lower limit, *UL*= upper limit.

Discussion

In this experiment, we replicated findings from previous studies where economic inequality undermined overall cooperation in groups (Aksoy, 2019; Fung & Au, 2014). Consistent with our predictions, the effect of inequality on cooperation was negative in the rounds where no punishment rule was included. Moreover, the effect of inequality disappeared when the sanction rule was included since cooperation increased notably in all the conditions of inequality.

Our results suggest that unequal contexts discourage cooperation (Paskov & Dewilde, 2012; Schlösser et al., 2020). The greater the economic inequality people perceive, the more people perceive differences between themselves and the others with whom they have to interact in their everyday life. This social distance can generate a more fragmented society (Willis et al., 2022).

Similarly, correlational evidence revealed that in more unequal societies, people showed lower levels of general trust, and it is more difficult for them to share common goals and have contact with each other (Buttrick & Oishi, 2017; Coté et al., 2015; Gustavsson & Jordahl, 2008; Melamed et al., 2022; Schröder & Neumayr, 2021; Van de Werfhorst & Salverda, 2012). In order to avoid a fragmented society, it is important to understand the role of certain variables in promoting behavior that supports cohesion. That is the case of cooperation, which has a positive impact on society (Vollan et al., 2017; World Bank Group, 2020).

In the current study, cooperation was higher in the second round compared with the first round when the “penalty rule” was included in the game. As previous evidence has shown, the inclusion of norms can reduce the non-cooperative behavior of participants (Fehr & Schmidt, 1999; Sutter et al., 2010; Vollan et al., 2017). In short, the rule

included suggested that cooperating is the appropriate behavior (Vollan et al., 2017). Thus, introducing prescriptive norms promote higher cooperation regardless of the levels of inequality. Particularly, as we found in our study, the punishment was effective in sustaining high levels of cooperation (Sutter et al., 2010). These results are also consistent with the idea that individuals infer competitive norms from contexts with high economic inequality and then they act accordingly (Sánchez-Rodríguez et al., 2020; Sommet et al., 2023); said otherwise, individuals act more competitively in highly unequal contexts because they think that is the descriptive norm: This is how most people behave in these contexts. As such, when another norm that promotes cooperation has introduced the effects of inequality on competition will vanish (Sánchez-Rodríguez et al., 2023).

On the other hand, Sutter et al. (2010) and Dal Bó et al. (2010) found that a democratic choice of rules and policies positively influences cooperative behavior. However, we did not find differences between the democratic choice and the non-democratic choice condition. Some of the reasons why we did not find the effect of democracy premium might be that letting subjects vote is not sufficient for achieving higher contribution levels. Sutter et al. (2010) let participants decide which rule to apply between the three options and also to who applied the rule. Furthermore, they identified the importance of the certainty of their decisions to participants (i.e., the voting outcome would be implemented for sure). In our study, people who voted against the application of the rule did not see that their election was consequential. For instance, we found a higher perception of fairness and satisfaction with the game for those who voted in favor of the rule compared to those who voted against it (See Supplementary Materials at OSF). The independent variable (democratic choice) and the decision that is supposedly taken democratically among the participants in the game (which may or

may not coincide with their individual choice) are two variables that could be confounded and of which we cannot see their independent effects. In this sense, the manipulation of democratic choice could depend on whether we listen to their choice or not. That could be including some noise in our design and effects found related to democracy premium.

Implications

Features such as economic and political equality and trust creates a context that seems to favor cooperation (Sum & Bădescu, 2018). The present study suggested that when these features are not met, still prescriptive norms can increase cooperative behavior. According to Reynolds (2019), the use of social norms as solutions to social issues and problems offers much promise. Following this suggestion, using norms to describe the desired behavior in citizens could also contribute to a more cohesive and egalitarian society (see also Sánchez-Rodríguez et a., 2023).

Cooperation is a behavior that benefits individuals and other people when working toward the same end. Therefore, it promotes social cohesion in society. Moreover, research in the educational contexts found cooperation to be a skill that contributes to the sustainability of democracy (Sum & Bădescu, 2018). This is important since the democratic context is the environment where institutions could apply reducing inequality measures. Ultimately, the political system and institutions are responsible for reducing inequality (Acemoglu & Robinson, 2006; Wong, 2016) and efficient provision of public goods (Deacon, 2009). In this line, there are some *fiscal instruments to that end, specially taxation and income transfers to the poorest segment of society are the most direct way to keep inequality in check (Bourguignon, 2018). For those mechanisms,* cooperative behavior has an important role.

First, preferring redistribution is to agree with a more egalitarian distribution of economic resources, which can be considered as looking for the common good in a certain way. To achieve the application of policies aimed at redistributing resources, citizens have to vote for politics or parties that would decide about them, which implies taking action. Second, governments need to design a tax compliance system that will encourage taxpayers to participate (World Bank Group, 2020). The implementation of measures to reduce non-cooperative behavior, such as the reduction of tax evasion, can involve prescriptive norms of the desirable behavior and sanctions for those not following the rule. These kinds of behavior have several benefits for the reduction of inequality and for society in general. For instance, in more equal countries, some indicators of social cohesion, such as generalized trust and social capital, are better (Elgar, 2010; Elgar & Aitken, 2011; Rothstein & Uslaner, 2005).

Limitations and Future Research

The main limitation of the current study might be the manipulation of the democratic choice. Contrary to our expectations, we did not find the democracy premium effect. Perhaps it was because the manipulation was not credible enough or because it was a simulation of choice, but the game did not take into account the real vote in the decision, for example. Following other studies' design (Sutter et al., 2010), letting subjects vote is not sufficient for achieving higher contribution levels to the common goods; however, wider choice and the certainty of the application of individuals' choice are also important to find the democracy premium effect. A way to improve the manipulation could include more options, deciding to whom to apply the rule, and also participating in the decision of other norms of the game, which require a more complex design.

Furthermore, another limitation of the study was the sample. Participants were Spanish and from the university community, with similar sociodemographic characteristics (i.e., medium subjective socioeconomic status and political ideology skewed to the left) and lower support for economic inequality. Thus, the features of the culture where the studies took part prevent us from generalizing our findings to other contexts. It would be worth exploring the effect of perceived economic inequality on cooperation with other samples and in other countries.

Overall, we found a positive effect of including the punishment rule on cooperation. Future research could replicate this effect by including a reward condition in the second round in order to analyze the comparative benefits of including prescriptive norms (versus not including them) in the economic game.

Conclusion

Unequal contexts dissuade people from cooperating with others. In contrast, offering information about the low inequality or equality of the context increases the likelihood of cooperative behavior. Additionally, prescriptive norms that guide the appropriate behavior could reduce differences in cooperation independently of inequality levels.

Supplementary Material

of

The Effect of Economic Inequality on Individuals' Cooperative Behavior Using an Economic Game

1. **Method: Additional Measures.**
2. **Table of Bivariate Correlations.**
3. **Sensitivity Power Analyses.**
4. **Exploratory Analyses.**

1. Method

Additional measures

Opinion Towards Choice

We asked three questions to explore the preference for choosing the application of the norm. E.g.: “To what extent do you think is positive to have the chance to choose the application of the norm?”. The answer scale ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). And, also participants were asked open-ended questions about the norms that they would apply and the initial distribution of tokens. E.g.: “If you would have the chance to decide individually, which would be the value of tokens given to the public good fund?”.

Satisfaction With the Game

To measure the degree of satisfaction/dissatisfaction with the way the game works we used the following question: “To what extent are you satisfied with the way the game works?”. The answer scale ranged from 1 (*very dissatisfied*) to 7 (*very satisfied*).

Fairness

Participants answered the following question: “Do you think that the initial distribution of tokens was fair?”. The answer scale ranged from 1 (*not fair at all*) to 7 (*completely fair*).

Cooperative And Competitive Orientation

We adapted some items from the Cooperative Orientation Scale ($\alpha = .754$) and the Competitive Orientation Scale ($\alpha = .681$, Chen et al., 2011). E.g.: “It is important to coordinate with others”, “I hope to do better than others even when working together in a team”. Response format ranged from 1 (*strongly disagree*) to 7 (*strongly agree*).

Past Collective Actions

Participants indicated the frequency of participation in six different types of collective actions in the last 12 months adapted from the European Social Survey (ESS, 2016). E.g.: “In the last 12 months have you sign a petition?”. Response format ranged from 1 (*never*) to 7 (*many times*, $\alpha = .655$).

Perceived Inequality

We used an adaptation of the three-item scale from Sommet et al. (2019). Response format ranged from 1 (*not at all*) to 7 (*completely*, $\alpha = .870$): e.g. “In Spain, there is a huge gap between rich and poor”.

Group Norms

We asked participants to what extent they consider other participants would cooperate by using the same answer type as in previous questions. E.g.: “To what extent do you think other participants will give most of their tokens to the public goods fund?”.

2. Table S1

Bivariate Correlations Between the Main Variables of the Study. Means (and standard deviations) are presented in the diagonal.

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	23.96 (8.07)												
2. Gender	-.10*	1.68 (.50)											
3. Political Ideology	-.04	-.17**	3.97 (1.75)										
4. SES	.01	-.04	.23**	5.43 (1.39)									
5. Income	-.03	-.03	.09*	.16*	4376.31 (9362.59)								
6. Cooperation	.06	.01	-.06	.04	-.06	4.73 (1.79)							
7. Perceived Fairness	-.04	.06	.10*	.01	.02	.13**	3.53 (1.57)						
8. Satisfaction With the Game	-.07	.04	.03	-.00	.02	.19**	.43**	4.99 (1.44)					
9. S-SEIS	-.04	-.23**	.58**	.19**	.06	-.09	.11*	-.03	2.17 (1.01)				
10. Democratic values	-.01	-.04	-.10*	.08	.06	-.06	-.14**	-.06	-.15**	6.57 (.78)			
11. Cooperative Skills	-.01	.08	-.22**	.02	.03	.22**	.01	.19**	-.24**	.14**	6.12 (.99)		
12. Competitive Skills	-.03	-.08	.12**	.11*	.10*	-.13**	-.07	.01	.12**	.05	-.08	3.58 (1.62)	

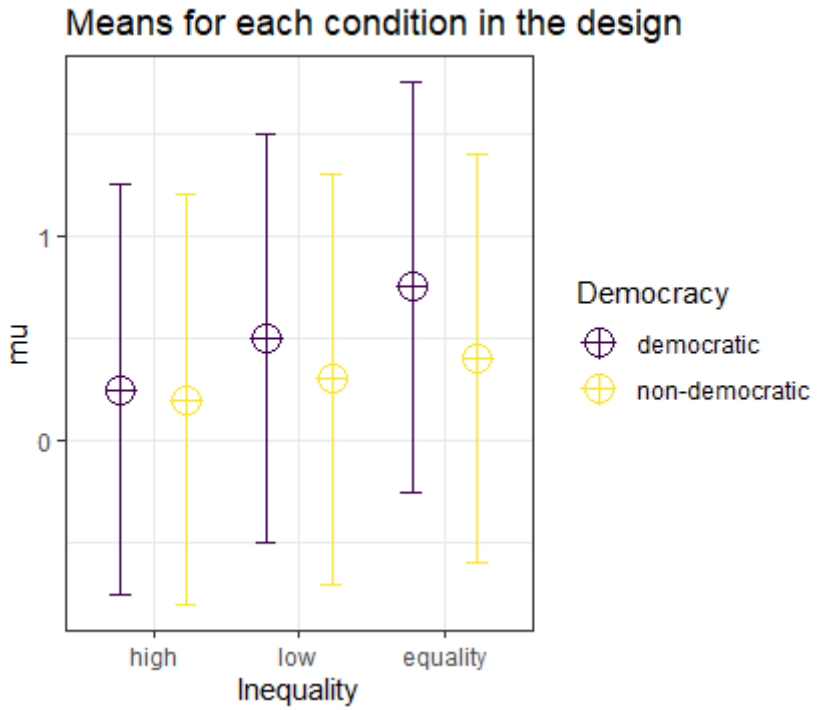
13. Group norm	-.01	-.05	-.01	-.00	-.06	.38**	.14**	.10*	.02	-.15**	.05	-.13**	3.17 (1.35)

Note. *$p < .05$, **$p < .01$. SSS: Subjective Socioeconomic Status. Gender: 0 = Man, 1 = Woman, 2 = Other.

3. Sensitivity Power Analyses

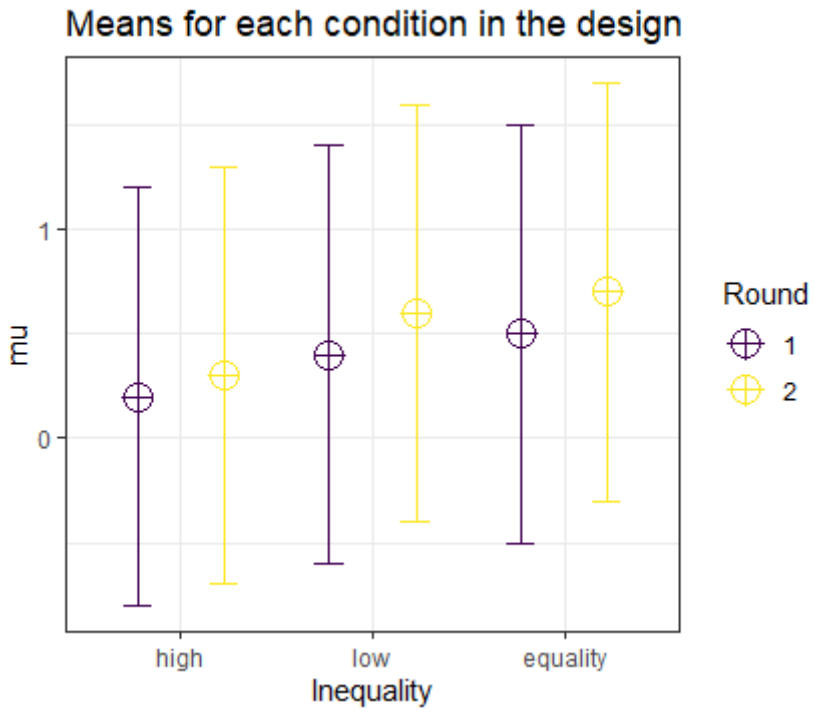
We run a sensitivity power analysis following Lakens & Caldwell (2021). It showed that our sample gives enough power (power of 96.61%, p-value of .05) to detect an effect of the democracy premium as small as *Cohen's f* = .12. However, we did not find such main effect on the second round. The same happened with the interaction between Democracy and Inequality (power of 99.03%, p-value of .05, *Cohen's f* = .11). Probably, because the effect of the included penalty rule was high.

Figure S1



Given our sample, we had enough participants to test the main effect of inequality and round (power of 100%, p-value of .05, *Cohen's f* = .25). In contrast, our sample size did not give enough power (power of 33.95%, p-value of .05) to detect an effect of the interaction between inequality and round as small as Cohen's f = .04. Fortunately, we did find the interaction effect due to the big effect size.

Figure S2


Means for each condition in the design
mu
1
0
high
low
equality
Inequality
Round
1
2

4. Exploratory Analyses

In order to explain why we did not find the democracy premium, we analyzed the differences between the democratic and the non-democratic condition. We conducted two independent samples t-test analyses to test the effect of democratic choice on perceived fairness in the token's distribution. Results showed a significant difference in fairness between groups, t (477) = -4.20, $p < .001$, $d = .36$ ($M_{high} = 3.82$, $SD_{high} = 1.50$; $M_{low} = 3.23$, $SD_{low} = 1.58$). This is an interesting result since all the participants completed rounds with equal, unequal, and very unequal distributions. Then, this effect could be a part of the democracy premium by which participants who have the chance to decide about the rules of the game feel that there was more fairness within the game, compared to the non-democratic choice condition.

Likewise, when the democratic condition was presented, participants perceive themselves as being more cooperative compared to when the non-democratic condition was presented, t (477) = -2.11, $p = .035$, $d = .19$ ($M_{high} = 6.21$, $SD_{high} = .91$; $M_{low} = 6.02$, $SD_{low} = 1.06$). This effect could also be a congruence effect, in which people who cooperate define themselves as cooperative because this behavior is salient after the task.

Considering that the effect of the democracy premium might be different for those who vote in favor than for those against the application of the rule (Dal Bó et al., 2010; Vollan et al., 2017), we analyzed how the choice made by participants influenced perceived fairness and satisfaction with the game (Table S2). There were significant differences between those who voted yes and no about applying the punishment rule. Particularly, people who voted in favor of the application of the rule showed higher perceived fairness and satisfaction with the game compared to those who voted against it.

Table S2

Mean Differences Between Participants who vote yes and no in the Democratic Condition on Perceived Fairness, and Satisfaction With the Game.

Variable	*n*	Democratic Condition-Yes *M*	Democratic Condition-Yes *SD*	Democratic Condition-No *M*	Democratic Condition-No *SD*	*t*	*p*	95% CI *LL*	95% CI *UL*	*Cohen's d*
Perceived Fairness	239	4.03	1.49	3.40	1.45	-3.11	.00	-1.03	-.23	-.42
Satisfaction With the Game	329	5.38	1.24	4.53	1.63	-4.50	.00	-1.27	-.44	-.59

Note. CI= confidence interval, *LL*= lower limit, *UL*= upper limit.

Chapter 6

Less Democracy, More Inequality: The Effect of Perceived Democracy on the Inferred Economic Inequality

Less Democracy, More Inequality: The Effect of Perceived Democracy on the Inferred Economic Inequality

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Abstract

Low economic inequality is a feature linked to democratic societies. Given that previous studies have shown that perceiving economic inequality influences the perceived democracy of a country, we aimed to experimentally manipulate the democracy level of a society and test the effect on the inferred economic inequality of it to test the bidirectional relation between these two societal features. We expected that perceiving a low democracy level within a country will lead to infer higher levels of economic inequality. Thus, two experimental studies were conducted, using a unifactorial between-groups design. In Study 1 (N = 253), participants read about a fictitious society, whereas in Study 2 (N = 534) bogus information about a European municipality was presented. In both experiments, participants were assigned to the high or low democratic condition. In the high democratic condition, the country was characterized as having free and fair elections, civil liberties, political pluralism, regulated functioning of its institutions, and equality before the law. On the contrary, in the low democratic condition, these characteristics were not preserved. As predicted, our findings showed a significant difference between the high and the low democratic group on inferred economic inequality. Inferred inequality was higher when the country was featured as less democratic (vs. more). In sum, being exposed to a non-democratic context might increase the inference of economic inequality.

Keywords: *perceived* democracy, *inferred inequality, perceived economic inequality, attitudes, wealth.*

Introduction

Democracy and economic inequality are relevant in the analysis of many current social issues. These structural variables might be related to one another (World Inequality Database, 2023). This means that inequality and a country's level of democracy can be linked.

Inequality has been shown to be an important contextual variable that affects attitudes toward the political system (Goubin, 2020; Lee et al., 2020). For example, in recent years, rising economic inequalities in the aftermath of the economic crisis have increased citizens' unrest with democratic systems (Zamfir & Dobreva, 2019). Objective inequality negatively affects the quality and well-functioning of democratic systems (Krieckhaus et al., 2014; Uslaner & Brown, 2005). Previous research has found that there is less support for the democratic system in unequal contexts (Andersen, 2012; Anderson & Singer, 2008; Krieckhaus et al., 2014). Besides, participants from countries where perceived inequality is high tended to report lower levels of satisfaction with democracy (Wu & Chang, 2019).

In contrast, democracy prevails over the idea of equality (Midtbø, 2018), and a low level of economic inequality is a feature linked to democratic societies (Acemoglu & Robinson, 2006; Oser & Hooghe, 2018). Moreover, Reuveny and Li (2003) found that there was a negative association between the level of democracy and the level of objective inequality in the country. Thus, the higher the level of democracy, the lower the level of economic inequality. In this line, we think that the relationship between inequality and democracy could be bidirectional. For that reason, we could expect an effect of the perceived level of democracy on the inferred level of inequality.

In short, as the literature suggested (Dahl, 1971; Rueschmeyer, 2004), we believe that the perceived level of democracy allows individuals to anticipate important aspects of their contexts, such as economic inequality. In the current research, we aimed to examine whether

manipulating the democracy of a context may lead people to infer the economic inequality in it. We tested these ideas using two experimental preregistered studies.

Democracy as Context

Democracy is a system of governance that is mostly accepted by the international community. Democracy is maintained through measures, laws, and institutions (Bassiouni, 1998). According to United Nations (2004), the key elements of democracy are: respect for human rights and fundamental freedoms, freedom of association, freedom of expression and opinion, access to power and its exercise in accordance with the rule of law, the holding of periodic free and fair elections by universal suffrage and by secret ballot, a pluralistic system of political parties and organizations, the separation of powers, the independence of the judiciary, transparency, and accountability in public administration, and free, independent and pluralistic media. A main idea that could be inferred from these key features of democracy is that, ideally, politics must be separated from the structure of power that usually maintains social inequalities (Rueschmeyer, 2004).

A widely used and parsimony measure of the democracy level is The Democracy Index, which provides an evaluation of the state of democracy worldwide based on five categories (i.e., the electoral process and pluralism, civil liberties, functioning of government, political participation, and political culture; The Economist Intelligence Unit [EIU], 2021).

Then, the democratic system is supposed to lead people to think and have concerns about some features of society apart from the governance system itself (Sen, 1999). Democracy allows citizens to participate in elections —where citizens can defend their own interests— that can make a political difference and improve their environment. Democracies encourage stronger egalitarian values among underprivileged citizens than autocracies, showing higher policy responsiveness and offering transparent and open societies where citizens can express their concerns about how governments deal with inequality (Midtbø,

2018; Sen, 1999). For instance, when voting in elections in democratic countries, people may understand the political agenda of each candidate concerning economic issues if they want to reduce inequality (Lewis-Beck & Stegmaier, 2000). Besides, the understanding of the "economic needs" may require the exercise of political and civil rights, especially those related to the guaranteeing of open discussion, debate, criticism, and dissent, which are central to the process of generating informed and considered choices, and values (Sen, 1999). Those criteria would fit in the civil liberties and political culture categories of The Democracy Index (EIU, 2021).

Consequences of Perceiving Inequality on Democracies

Economic inequality can weaken the basis of democratic societies (Oh, 2012; Rueschmeyer, 2004). Indeed, some authors highlighted that inequality has damaging effects on the longevity and sustainability of democratic systems (Krieckhaus et al., 2014), and the quality of democratic representation (Uslaner & Brown, 2005). For instance, inequality at the country level leads to discontent with the political regime, decreases the support for the democratic system (Anderson & Singer, 2008; Foster & Frieden, 2017; Loveless & Whitefield, 2011), and decreases political and civic participation (Solt, 2008; Uslaner & Brown, 2005). Moreover, when citizens perceive an unfair income distribution in society, their support for the political system and their satisfaction with democracy can be undermined (Montoya-Lozano et al., under review; Wu & Chang, 2019). Besides, a series of experiments revealed that perceiving high inequality caused individuals to perceive lower levels of democracy in their country, also reduced individuals' institutional trust and perceived political efficacy (Montoya-Lozano et al., under review). We consider that there are two reasons why inequality may interfere with the correct functioning of the democratic system. There are two reasons why inequality might interfere with the correct functioning of the democratic system.

First, people may think that inequality is not compatible with the principles of democratic representation (Dahl, 1971; López & Dubrow, 2020; Wong, 2022). Democratic institutions are supposed to solve, between others, the unequal distribution of resources (Acemoglu & Robinson, 2006). In this line, citizens increasingly believe that social rights and efforts to combat social inequalities constitute a central element of democratic citizenship (Oser & Hooghe, 2018). Then, perceiving that the democratic system does not fulfill the function of redistribution may increase dissatisfaction with democracy and decrease support for it (Wu & Chang, 2019).

Second, in more unequal societies, people tend to be segregated into relatively homogeneous socioeconomic groups that occupy different positions within the social hierarchy. This translates to both physical and psychological segregation, as people might feel more socially identified with people who belong to their social class ingroup (Jetten et al., 2017; Mijs & Roe, 2021). On the one hand, when debating about political or economic issues, the more unequal the society is, the less representative the discussion would be because it reflects just one of the segregated groups. Therefore, even if criticism and dissent are allowed in a democratic society (Sen, 1999), the unequal distribution of society and its resources would lower the diversity of perspectives and opinions. This context undermines the possibilities of improving the society and interests in reducing inequality, thus, maintaining the *status quo*.

Previous research has shown the effect of perceived inequality on inferences about the society such as the democratic level (Montoya-Lozano et al., under review; Wu & Chang, 2019). Therefore, in the current research, we wondered about the opposite direction of the relation, i.e., to what extent perceiving a democratic or non-democratic context influences the perception of inequality.

The social context where individuals live provides a set of physical and social features that channel their behaviors and social interactions (Oishi et al., 2015). In this line, some characteristics of society could be gathered from the perceived level of democracy in a country, such as the trustworthiness of their public institutions and the political inequality (Rueschmeyer, 2004; Scheve & Stasavage, 2017). Despite there are some theoretical papers that suggest the effect of democracy on inequality (Dahl, 1971; Rueschmeyer, 2004), the effect of perceiving democracy on the inferred economic inequality has not been previously tested.

The Current Research

The aim of the current research was to experimentally test the negative effect of perceived democracy on perceived inequality. We predicted that participants that know about a non-democratic context will infer higher levels of inequality compared to those who knew about a democratic context. We tested this hypothesis in two preregistered studies. First, we conducted an experimental study, manipulating the level of perceived democracy in a fictional society. Afterward, we conducted a second experiment aiming to conceptually replicate the results of Study 1 in order to give consistency and robustness to the results. All materials and data sets can be found online (See https://osf.io/y4t6j/?view_only=9a06a9345c1c46ff85d7ab6f6e36c1c3). We report all measures, manipulations, and exclusions in all studies.

Study 1

Preregistered design and hypotheses

We preregistered the following hypothesis (see preregistration at OSF):

Hypothesis 1. We expect a main effect of perceived democracy (high vs. low) on inferred economic inequality. Particularly, in the condition of High Democracy (compared to

the Low Democracy condition), participants would report lower levels of inferred economic inequality[1].

Method

Participants

We conducted an a priori sample size analysis using G*Power (Faul et al., 2009) for an independent samples t-test analysis. We estimated a standard medium effect size (d = .50) to obtain an a priori power of 80% and a p-value of .05. The estimated sample size was 128. Given that we anticipated that some participants would be foreigners and they would not have good skills with the Spanish language, we included as exclusion criteria that the nationality should be Spanish or have lived more than five years in Spain, be older than 18 and have answered to the main dependent variables (see preregistration at OSF). We tried to get a minimum of 128 participants after exclusions.

The initial sample was composed of 299 participants. However, 2 participants were younger than 18 years, 13 participants did not report having Spanish nationality or living in Spain in the last five years, and 31 participants did not answer the main dependent variables; consequently, they were excluded. Therefore, the final sample consisted of 253 undergraduate students (M = 21.15 years, SD = 3.70, 64.9 % Female).

Procedure and measurements

Participants were contacted in different buildings of a southern European university, and then they were invited to voluntarily answer an anonymous questionnaire. All participants provided informed consent before answering the questionnaire. Data were collected from December 2019 to January 2020.

Perceived democracy. We manipulated perceived democracy by presenting an extract of a text about a fictitious society called Turkmekistan. Participants were randomly assigned to the high or low democratic condition. In the democratic condition, participants

will read that Turkmekistan is a country with a free and fair electoral process, political pluralism, high political participation, civil liberties, and a regulated functioning of the government (following The Democracy Index categories; EIU, 2021). On the opposite, in the low democratic condition, the electoral process was presented as dishonest, accompanied by lower political participation, little respect for civil liberties, and a poorly regulated functioning of the government (See Supplementary Materials at OSF).

After the manipulation, we asked participants, as a manipulation check, "To what extent do you think that Turkmekistan's society has a democratic government?": 1 (*not democratic at all*) to 9 (*completely democratic*).

Afterward, participants answered the following measures:

Economic Inequality. We used two measures to evaluate inferred inequality. A three-item scale was used to measure inferred economic inequality in the fictitious society (Sommet et al., 2019). The answers type was a Likert scale ranging from 1 (*not at all*) to 7 (*completely*; $\alpha = .908$) (e.g., "In Turkmekistan, there is a huge gap between rich and poor"). We also used the Graphic Notes Inequality Measure (GNIM, Rodriguez-Bailón et al., 2017). Participants were asked to choose among seven graphs the one that most accurately represents the economic structure of Turkmekistan from A/1 (*low inequality*) to G/7 (*high inequality*).

We also measured the following variables as distractors to avoid participant bias and for exploratory purposes.

Economic Performance. To measure the economic performance of the country, we used an item (i.e., "How do you consider Turkmekistan's economic performance to be?"). The answer used an item ranging from 1 (*very bad*) to 7 (*very good*).

Wealth. Wealth was measured by using an item (i.e., "How much wealth do you think there is in Turkmekistan? Please indicate below how much you think Turkmekistan is among

the richest or poorest countries in the world") that ranged from 1 (*between the poorest*) to 7 (*between the richest*).

Economic Development. The following item was used to measure the degree of development of the country, whose answer ranged from 1 to 7 (*underdeveloped/highly developed*): "Think about the degree of economic development you think there is in Turkmekistan".

Subjective Socioeconomic Status (SSS). Participants completed the MacArthur scale of subjective SES (Adler et al., 2000). Participants had to choose which rung of a 10-rung ladder better represented their positions in the social hierarchy, ranging from 1 (*lower social class*) to 10 (*higher social class*).

Political Ideology. Participants rated their political ideologies on a scale ranging from 1 (*extremely left-wing*) to 7 (*extremely right-wing*).

Demographic Information. Finally, participants provided information about their ages, genders, nationalities, years living in Spain, education attainments (on an 8-option scale ranging from 1 = no education to 8 = Ph.D.), degree (in case they were at the university level or higher), professional status (on a 5-option scale: 1 = unemployed, 2 = hourly job, 3 = part-time job, 4 = full-time job, 5 = retired), income (on a 10-option scale ranging from 1 = under 650 euros to 10 = over 5800 euros) and the number of family members.

Results

Manipulation Check. We conducted an independent samples t-test analysis on the democracy manipulation check. Participants assigned to the democratic condition perceived a higher degree of democracy (M = 5.70, SD = .94) than those in the low democracy condition (M = 1.70, SD = .89) $t(251) = -34.88$, $p < .001$, $d = -1.82$.

Preregistered Hypotheses. We ran an independent samples t-test analysis to corroborate Hypothesis 1. Results showed a significant difference in inferred economic

inequality $t(250) = 8.89$, $p < .001$, $d = .98$ between the high ($M = 3.92$, $SD = 1.51$) and the low democracy condition ($M = 5.55$, $SD = 1.40$), when using the three-item scale (Sommet et al., 2019).

We ran the same analysis to corroborate Hypothesis 1 with a different measure of economic inequality (GNIM, Rodriguez-Bailón et al., 2017). Supporting Hypothesis 1, results showed that participants in the high democratic condition have lower levels of inferred inequality of the fictitious country ($M = 2.73$, $SD = 1.87$) than the participants in the low democratic condition ($M = 4.66$, $SD = 1.54$) $t(207.97) = 8.29$, $p < .001$, $d = 1.14$.

Exploratory Analyses. We conducted three independent samples t-test analyses to test the effect of perceived democracy on economic performance, wealth, and development. Results showed a significant difference in economic performance between groups, $t(251) = -8.92$, $p < .001$, $d = -.98$ ($M_{high} = 4.30$, $SD_{high} = 1.26$; $M_{low} = 2.92$, $SD_{low} = 1.20$). Likewise, a significant difference was found in wealth, between the high ($M = 3.66$, $SD = 1.07$) and the low democracy condition ($M = 3.15$, $SD = 1.35$) $t(241.84) = -3.34$, $p = .001$, $d = -.41$. Finally, results also showed a significant difference on economic development between groups, $t(251) = -9.39$, $p < .001$, $d = -1.02$ ($M_{high} = 4.22$, $SD_{high} = 1.25$; $M_{low} = 2.81$, $SD_{low} = 1.13$).

We conducted an ANCOVA (control variables: economic performance, wealth, and economic development) and identified the predicted effect of the democratic condition, $F(1, 246) = 30.74$, $p < .001$, $\eta^2 = -.11$, such that participants in the low democracy condition were more likely to infer higher levels of economic inequality ($M = 5.35$, $SD = .14$) than those in the high democracy condition ($M = 4.15$, $SD = .14$) using the three-item scale by Sommet et al. (2019) after controlling for these three variables. Similarly, the effect of the democratic level on inferred economic inequality was maintained when controlling for those same variables and using the graphic measure instead, $F(1, 208) = 27.12$, $p < .001$, $\eta^2 = -.12$, $M_{low} = 4.40$, $SD_{low} = .18$, $M_{high} = 2.95$, $SD_{high} = .18$.

Discussion

Our results supported H1, showing that a highly democratic context leads people to infer that the level of economic inequality is lower than when a non-democratic context was presented. We found the same results with two different measures of perceived inequality, a three-item scale (Sommet et al., 2019) and a graphic measure (GNIM, Rodriguez-Bailón et al., 2017), which give robustness to our findings.

In addition to these findings, we found that not only people inferred how economically unequal the context would be after reading some democratic (vs. non-democratic) features, but also, they assumed other economic characteristics from the context. Particularly, in contexts of high democratic level, people expected a better economic performance of the fictitious country, a wealthy situation, and perceived the context as highly economically developed. Even though these results were exploratory, they confirmed that when presenting a description of a social context, participants inferred and completed the image of that context with other features that seems coherent with it (Oishi et al., 2015). In this sense, citizens consider low inequality and good economic conditions as basic features in democracies (Dahl, 1971; Fukuyama, 2011; Oser & Hooghe, 2018; Wu & Chang, 2019).

Although the results of Study 1 are promising, we aimed to replicate these results in a second study. In Study 2, we used information about a real town in Europe that we expected to be unknown to most of the participants in order to avoid them having already information about their political system or to have attitudes toward it.

Study 2

Preregistered design and hypotheses

We preregistered the same hypothesis as in Study 1 (see preregistration at OSF):

Hypothesis 1. We expect a main effect of perceived democracy (high vs. low) on inferred economic inequality. Particularly, in the condition of High Democracy (compared to

the Low Democracy condition), participants would report lower levels of inferred economic inequality.

Method

Participants

We conducted an a priori sample size analysis using G*Power (Faul et al., 2009) for an independent samples t-test analysis. We estimated a standard medium effect size (d = .50) to obtain an a priori power of 80% and a p-value of .05. The estimated sample size was 128, so we tried to get that minimum. We had the same exclusion criteria as in Study 1 (see OSF).

The way we collected the data with the University mail service prevented us from knowing in advance the amount of participation and which proportion of the questionnaire will be completed. Given our previous experience in reaching participants, the amount of participation is unpredictable, sometimes is high, and other times is low. So, we usually collect more sample than needed due to the variability and diversity of the participants in order to reach the minimum sample required after exclusions. The initial sample was composed of 865 participants. However, 3 participants were excluded because they did not report Spanish as their nationality or living in Spain for at least five years, and 328 participants were excluded because they did not answer the main dependent variable. Therefore, the final sample consisted of 534 participants (M = 25.02 years, SD = 7.61, 68.4 % Female).

Procedure and measurements

Participants were contacted through the University mail service, and then they were invited to voluntarily answer an anonymous questionnaire. All participants provided informed consent before answering the questionnaire. Data were collected from February 2021 to March 2021.

Perceived Democracy. As in Study 1, we manipulated perceived democracy by presenting an extract of a text including the democratic or non-democratic characteristics of a society, in this case, about the European municipality of Sala. Participants were randomly assigned to the high or low democracy condition (See Supplementary Materials at OSF).

After the manipulation, participants answered the same measures as in Study 1, but this time referring to the municipality of Sala and his Council: manipulation check, Perceived Economic Inequality ($\alpha = .956$; Sommet et al., 2019), the Graphic Notes Inequality Measure (GNIM, Rodriguez-Bailón et al., 2017), Subjective Socioeconomic Status, Political Ideology, and demographic information (income level asked by an open-ended question).

Intolerance Toward Inequality. We included an item in order to measure attitudes toward the perceived inequality in Sala (adapted from ISSP Research Group, 2012) that have been extensively used in the literature (Bavetta et al., 2019; Castillo, 2011; García-Castro et al., 2022; Kiatpongsan & Norton, 2014). Participants indicated their level of agreement/disagreement with the following statement from 1 (*totally disagree*) to 7 (*totally agree*): "The differences in income in Sala are too large."

We also measured the following variables for exploratory purposes: Economic Performance, Wealth, and Economic Development.

Results

Manipulation Check. We conducted an independent samples t-test analysis on the democracy manipulation check. Participants assigned to the democratic condition perceived a higher degree of democracy ($M = 5.88$, $SD = 1.36$) than those in the low democracy condition ($M = 1.90$, $SD = 1.06$) $t(494.12) = -37.65$, $p < .001$, $d = -1.71$.

Preregistered Hypotheses. We ran an independent samples t-test analysis to corroborate Hypothesis 1 using the three-item scale by Sommet et al. (2019). Results showed a significant difference on inferred economic inequality $t(532) = 20.41$, $p < .001$, $d = 1.32$,

between the high (M = 3.05, SD = 1.41) and the low democracy condition (M = 5.58, SD = 1.45).

As a robustness check, we ran the same analysis to test Hypothesis 1 with the graphic measure of inferred inequality. Results showed that participants in the highly democratic condition have lower levels of inferred inequality of the municipality (M = 3.00, SD = 1.64) than the participants in the low democratic condition (M = 5.54, SD = 1.28) t(496.39) = 19.95, $p < .001$, d = 1.31.

Exploratory Analyses. We conducted four independent samples t-test analyses to test the effect of perceived democracy on intolerance toward inequality, economic performance, wealth, and development. There was a significant difference on intolerance toward inequality between groups, t(505.36) = 21.17, $p < .001$, d = 1.35 (M_{high} = 3.10, SD_{high} = 1.55; M_{low} = 5.70, SD_{low} = 1.27). Furthermore, results showed a significant difference in economic performance between groups, t(532) = -19.84, $p < .001$, d = -1.30 (M_{high} = 4.97, SD_{high} = 1.14; M_{low} = 3.01, SD_{low} = 1.15). Likewise, a significant difference was found in wealth between the high (M = 4.26, SD = 1.16) and the low democratic condition (M = 3.21, SD = 1.37) t(522.40) = -9.55, $p < .001$, d = -.76. Results showed a significant difference on economic development between groups, t(532) = -16.63, $p < .001$, d = -1.17 (M_{high} = 4.67, SD_{high} = 1.34; M_{low} = 2.82, SD_{low} = 1.23).

Controlling for economic performance, wealth, and economic development, the effect of the Democracy condition remains, F(1, 529) = 107.23, $p < .001$, η^2 = -.17, such that participants in the low democracy condition were more likely to infer higher levels of economic inequality when using the three-item scale by Sommet et al. (2019) (M = 5.15, SD = .10) than those in the high democracy condition (M = 3.50, SD = .10). Similarly, the effect was maintained when controlling for those same variables but using the graphic measure

(Rodríguez-Bailón et al., 2017), $F(1, 529) = 101.41$, $p < .001$, $\eta^2 = -.16$, $M_{low} = 5.10$, $SD_{low} = .10$, $M_{high} = 3.45$, $SD_{high} = .10$.

Discussion

The goals of Study 2 were to replicate Study 1 results in order to give consistency and robustness to the results obtained in the previous study. Participants probably thought that the country in Study 1 was outside of Europe, so we aimed to replicate these results in a European context. In this case, we used a European town as context.

In this second study, we obtained the same results as in Study 1. In this sense, when the context of high democracy was presented, lower economic inequality was inferred. On the contrary, when a low democratic context was presented, our participants inferred higher levels of economic inequality. The results went in the same direction when participants inferred the economic performance, wealth, and economic development of Sala. Therefore, we replicated all the findings of Study 1's findings.

In Study 2, we also included an additional measure of intolerance toward inequality, and it showed that in low democratic settings, participants tend to tolerate less the inferred level of inequality. That is, in non-democratic contexts, people tend to perceive higher income disparities and therefore justify to a lesser extent those differences. Moreover, there is a high correlation between inferring inequality and not tolerating those levels of inequality. The negative association between perceiving inequality and accepting it has been previously found in the literature (García-Castro et al., 2020). This finding is in line with the theoretical definition of democracy, where equality and justice are core values in it (Bassiouni, 1998; EIU, 2021).

General Discussion

The purpose of this research was to analyze for the first time the effect of perceived democracy on the inference of economic inequality. Our studies revealed that participants

reported a higher level of economic inequality when democracy was low, compared to a context of high democracy in the two preregistered studies. Interestingly, we found evidence of the effect of perceived democracy on inferred economic inequality values both for a fictional society and a real society. This is important because it provides consistency to our results.

Describing a society promotes creating a more complex image of that society in participants' minds. As previous studies have shown, the perceived level of inequality promotes individuals' inferences about other normative society's features (Davidai, 2018; Sánchez-Rodríguez et al., 2019; Sommet et al., 2022; Sprong et al., 2019). In our case, after presenting information about the state of the political system, other features, such as how the economic system works, are inferred (Rueschmeyer, 2004; Scheve & Stasavage, 2017). For instance, our findings suggest that when we perceive a context as democratic, individuals unintentionally include features as equality, well performance of the economic system, wealth, and development as defining structural conditions of that context.

Then, the democratic level could influence the perceived economic inequality, and this, in turn, can influence the perceived political efficacy and the intentions to participate in society (Montoya-Lozano et al., under review), the preference for redistribution (Midtbø, 2018) and the support for social policies (Chi & Kwon, 2016). First, in previous studies, we found a negative effect of perceived economic inequality on institutional trust, degree of perceived democracy, satisfaction with democracy, and political efficacy (Montoya-Lozano et al., under review). In other words, when the context is perceived as highly unequal, individuals tend to trust public institutions less, perceive society as less democratic, report being less satisfied with how democracy works, and perceive themselves as having a lower impact on their country's politics. The latter refers to political efficacy, which has a mobilizing effect in different forms of political participation (Jiang, 2016; Shore, 2020). Certainly, contexts of low inequality in

which there are trustworthy institutions promote perceptions of political efficacy and intentions to participate in collective actions (Gärtner & Prado, 2016; Lancee & Van de Werfhorst, 2012; Montoya-Lozano et al., under review; Zmerli & Castillo, 2015). The consequences of perceiving the context as unequal and non-democratic on participation are relevant since participating in the political system is key to ensuring that the interests of the majority of the population are reflected in government decisions (van Deth, 2014).

As said, perceiving income disparities has negative consequences for political attitudes. Chi & Kwon (2016) suggested that when income inequality and political inequality are closely intertwined, the government could rectify the 'crisis of democracy' by mitigating income inequality through various social policies. Moreover, the reduction of inequality has a positive effect on attitudes toward the political system. For example, income equality seems to be a precondition to trust the government and its institutions (Gärtner & Prado, 2016) and to consider a country as democratic (Oser & Hooghe, 2018).

Complementary, these sociopolitical attitudes toward the political system and public institutions could be influenced by democracy. To a certain extent, some features gathered from the democratic system are that citizens can control the government and protest if it does not keep what it was promised. Democracy stimulates citizens' external and internal efficacy (Midtbø, 2018), thus encouraging citizens to believe that politics somehow matters (Clarke et al., 2010). On the one hand, the democratic political system showed higher policy responsiveness —the extent to which citizens express their satisfaction or dissatisfaction with political decisions and parties through voting— (Midtbø, 2018; Sirovátka et al., 2019). On the other hand, democracies also strengthen the citizens' internal efficacy, that is, perceptions of their ability to become informed about and involved in politics, especially of those from low-income groups (Niemi et al., 1991).

Secondly, both democracy and democratization influence the support for redistribution for several reasons. According to Midtbø (2018), democracy fuels demand among those with low income. Nevertheless, there are also a series of structural conditions in democracies that promote thinking and supporting policies like the redistributive ones (EIU, 2021; Kapstein & Converse, 2019). Political knowledge is a power resource, and its distribution, if profoundly unequal, creates substantial political inequality (Rueschmeyer, 2004). It means that if individuals do not have the same opportunity to access information —e.g., about the economic and the political system— they would be less prepared to participate in the political area and probably would discourage them from voting in the elections (Kraus et al., 2015; Niemi et al., 1991; Scervini & Segatti, 2012). That happens, for example, when low-income individuals do not get enough information to be able to estimate the income distribution, then they could be less likely to support redistribution (Bartels, 2005; Jackson & Payne, 2021). As such, inequality could be maintained and even increased. Conversely, when low-income individuals are informed about the income distribution and qualified to understand this information, added to their confidence in the government's capacity and willingness to redistribute (Midtbø, 2018), citizens could increase their participation in the political process.

In a democracy, derived from the free press and freedom of speech, information can be obtained through relatively reliable and independent sources, and it ensures that news about dire socioeconomic conditions and unfairness is brought to the population (Ross, 2006). Freedom of association facilitates the share of ideas between citizens and the comprehension of political information. These features of the political culture associated with the ideal democratic system could reverse the negative relationship between inequality levels and non-democratic conditions through pluralistic participation in the electoral process and the promotion of support for social policies aimed at reducing economic inequality and its negative consequences. In this sense, there are examples of successful application of

redistributive policies in countries where high political participation may indicate democratic equality (Rueschmeyer, 2004).

Third, from a neomaterialistic perspective, the objective level of economic inequality is associated with structural conditions such as the health and education systems, transportation, and environmental policies (Lynch et al., 2000, 2004). Similarly, some structural conditions, such as the concentration of power and the weakness of institutions in terms of control of their performance and transparency, can erode the democratic system (Kapstein & Converse, 2019). In fact, the level of political and social authoritarianism in Western countries has become a concerning and significant issue (Torres-Vega et al., 2021). In this sense, many countries faced growing nationalist sentiment and a rise in the parliamentary representation of far-right parties (e.g., Spain; Moreno, 2019). As they restrict the space in which human rights defenders and civil society operate, it becomes increasingly difficult to provide support to these central drivers of democratization (Zamfir & Dobreva, 2019). All in all, these characteristics negatively affect the functioning of the government. On the contrary, the democratic system and its structural apparatus try to maintain themselves as a main goal (Rueschmeyer, 2004).

In light of our results, preserving a more democratic system and reducing inequality are the main goals to improve societal conditions for all citizens. Concretely, implementing tools to control the performance of the political system and developing policies to reduce inequality could increase citizen participation. In fact, high participation in the electoral process and in politics, in general, ensures democratization (European Economic and Social Committee, 2022). Besides, pluralistic participation in the electoral process and support for measures aimed at reducing disparities imply support for the democratic political system (EIU, 2021) and the welfare state (Esping-Andersen & Myles, 2009).

Limitations and Future Research

First, we should be cautious with the conclusions that could be drawn from the current findings when presenting the democracy level. We considered that the information offered to our participants included some of the features of a democratic system based on The Democracy Index categories (EIU, 2021). However, other categories were excluded in order to simplify (ESS, 2018; UN, 2022). We encourage researchers to develop a more complex manipulation of the democratic level in future studies. And at the same time, trying to control for other variables such as perceived poverty, government corruption, and fairness could also be relevant structural conditions of society, which can influence the perception of inequality as well.

Second, the features of the culture where the studies took part prevent us from generalizing our findings to other contexts. In this line, we analyze the perception of democracy with a student sample (Study 1) and participants from the University community (Study 2) in a single country (Spain). It would be worth exploring the effect of perceived democratic level on perceived economic inequality with other samples and with participants from different societies. Furthermore, cross-cultural studies could be interesting at this point to analyze objective and subjective variables at the same time. For instance, it could be interesting to explore if this effect will be found in countries where democracy is related to high capitalist culture and low government interventionism (Goubin, 2020; Iversen, 2010).

Finally, in our studies, we did not measure how positive or negative were perceived each feature of the country (e.g., democracy level, inequality level, economic development, etc.). Future research should include measures about the value of every societal characteristic to control for them, as a “societal halo effect” (Myers, 2008) or a “primacy effect” (Petronko & Perin, 1970) could be working in the relationship between perceived structural variables. It means that when people perceive a democratic society, they tend to evaluate it as positive and complete the perception of that society as equal, rich, and working properly (Alonso, 2016;

Doucouliagos & Ulubasoglu, 2008). Conversely, low democratic or non-democratic contexts would be negatively evaluated by participants, and other pervasive features would be inferred, such as inequality, economic instability, and corruption (Canache & Allison, 2008; EIU, 2021).

Conclusion

In summary, in the current research, we present evidence that the perception of a democratic context affects inferred inequality. Being exposed to a non-democratic context increase the perception of inequality. These results expand the literature about the consequences of the perceived political system on other structural features of society, providing a bigger picture of the societal perception associated with democracy and economic inequality.

Notes

1. The variables named inferred level of inequality was preregistered as perceived economic inequality, but when writing the manuscript, we considered that inferred level of inequality was a more accurate term.

Supplementary Material

of

The less democratic, the more unequal: The effect of perceived democracy on perceived inequality

1. **Study 1**
2. **Table S1.**
3. **Study 2**
4. **Table S2.**

1. Study 1

All participants were Spanish and ideologically most of them leaned to the left-wing (M = 4.12; SD = 1.99, on a scale from 1 “Left” to 10 “Right”) while their subjective socioeconomic status was close to the half point of the scale (M = 5.53; SD = 1.44, on a scale from 1 “Low” to 10 “High”). The income distribution of our sample shows that 7.4%, 24%, 0%, 20.7%, and 47.9% of participants were respectively in the bottom, second, third, fourth, and top quintile of household income (Eurostat, 2021). Regarding occupation, a large part of the sample was unemployed (87.2%), 7.8% an hour-paid job, 3.7% had a part time job, and 1,2% full time job. In relation to educational level, 1.6% of participants had completed primary and secondary school, 3.7% vocational training, 74.4% high school, 17.9% bachelor degree, 2% master degree and 0.4% doctorate.

We also measured the following variables as distractors to avoid participant bias and for exploratory purposes.

Tourism. To measure the most popular tourism of the country, we used three items: “Which destiny do you think is more popular among tourists in Turkmekistan? (*rural/big cities*)”, “How many tourists do you consider Turkmekistan usually receive? (*many/few*)”, “What is the most common precedence of tourist in Turkmekistan? (*locals/internationals*)”). All the items had a Likert' scale ranged from 1 to 7.

2. Table S1.

Descriptive Statistics and Bivariate Correlations Between the Measures Included in the Study 1.

	Mean (*SD*)	1	2	3	4	5	6	7	8	9	10	11
1. Gender	.69 (.51)	-										
2. Age	21.15 (3.70)	-.05	-									
3. Educational Level	4.16 (.61)	.02	.37***	-								
4. Income Level	2179.49 (1367.64)	-.11	-.06	.02	-							
5. Subjective-SES	5.53 (1.44)	.02	-.04	.06	.46***	-						
6. Political Ideology	4.12 (1.99)	-.12	.05	.02	.21***	.32***	-					
7. Perceived Inequality (Scale)	4.74 (1.67)	-.01	.01	-.13*	.08	-.07	-.04	-				
8. Perceived Inequality (GNIM)	3.67 (1.97)	.08	-.14*	-.14	.03	-.12	-.08	.71***	-			
9. Economic Performance	3.60 (1.40)	-.00	.02	.03	-.09	.00	-.02	-.35***	-.39***	-		
10. Wealth	3.40 (1.25)	-.01	.04	.01	-.02	.07	.00	-.20**	-.20**	.48***	-	
11. Economic Development	3.50 (1.38)	-.08	.03	.08	-.02	.05	.09	-.41***	-.42***	.68***	.55***	-

*Note. *p <.05; **p <.01; ***p <.001.* SES = Socioeconomic status, GNIM = Graphic Notes Inequality Measure (Rodriguez-Bailón et al., 2017), Gender: Man = 0, Woman = 1, Other = 2.

3. Study 2

All participants were Spanish and ideologically most of them leaned to the left-wing (M = 4.12; SD = 1.80, on a scale from 1 “Left” to 10 “Right”), while their subjective socioeconomic status was relatively high (M = 5.17; SD = 1.55, on a scale from 1 “Low” to 10 “High”). The income distribution of our sample shows that 9.4%, 9.6%, 8.5%, 27.4%, and 45.1% of participants were respectively in the bottom, second, third, fourth, and top quintile of household income (Eurostat, 2021). Regarding occupation, a large part of the sample was students (76.6%), 5.7% was unemployed, 0.6% an hour-paid job, 3.6% had a part time job, 11,7% full time job, 0.8% temporary lay-off due to COVID-19, 0.8% self-employed, and 0.4% retired. In relation to educational level, 0.2% of participants had completed primary and secondary school, 1.3% vocational training, 9.2% high school, 64% bachelor degree, 19.6% master degree and 5.7% doctorate.

Tourism. We also included the same measure of tourism as in Study 1 as distractors to avoid participant bias and for exploratory purposes. In this case, we placed “the municipality of Sala” as reference in the three items.

4. Table S2.

Descriptive Statistics and Bivariate Correlations Between the Measures Included in the Study 2.

	Mean (*SD*)	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender	1.71 (.49)	-											
2. Age	25.02 (7.61)	-.14**	-										
3. Educational Level	7.18 (.74)	-.01	.29***	-									
4. Income Level	3763.47 (7685.46)	.00	.16***	.07	-								
5. Subjective-SES	5.17 (1.55)	-.02	.06	.12**	.13**	-							
6. Political Ideology	4.12 (1.80)	-.16***	.01	.04	.02	.13**	-						
7. Perceived Inequality (Scale)	4.33 (1.91)	.02	.00	.00	-.02	-.05	-.01	-					
8. Perceived Inequality (GNIM)	4.29 (1.94)	.01	.03	.02	-.04	-.07	-.03	.76***	-				
9. Intolerance Toward Inequality	4.42 (1.92)	.03	.04	.02	.00	-.09*	-.07	.78***	.86***	-			
10. Economic Performance	3.98 (1.51)	-.00	.04	.02	.04	.01	-.03	-.60***	-.60***	-.60***	-		
11. Wealth	3.73 (1.38)	-.02	.01	-.02	.06	.01	-.05	-.35***	-.39***	-.42***	.64***	-	
12. Economic Development	3.73 (1.58)	-.05	.03	.03	.03	-.01	-.01	-.56***	-.57***	-.58***	.74***	.65***	-

*Note. *p <.05; **p <.01; ***p <.001.* SES = Socioeconomic status, GNIM = Graphic Notes Inequality Measure (Rodriguez-Bailón et al., 2017), Gender: Man = 1, Woman = 2, Other = 3.

Chapter 7

General Discussion

In this dissertation, we have analyzed the relationship between economic inequality and socio-political attitudes. To this end, we included a total of eight studies in Chapters 3, 4, 5, and 6. In two of these studies (Chapter 3), we adapted the Support for Economic Inequality Scale (SEIS) and examined how it relates to other socio-political variables. In four of the presented studies (Chapters 4-5), we manipulated the level of economic inequality in fictional, real, and game contexts and measured its effects on institutional trust, perceived contextual democracy, satisfaction with democracy, perceived efficacy, and cooperation. In the last series of studies (Chapter 6), we manipulated the perceived democracy and examined its impact on inferred inequality. Overall, results showed that the level of perceived economic inequality is closely related to attitudes toward inequality (Chapter 3). In addition, perceptions of inequality influence attitudes toward the political system, explicitly reducing individuals' institutional trust, perceived democracy, satisfaction with the way democracy works in the context, perceived political efficacy, and intentions to participate in society through collective action or cooperation (Chapters 4-5). Moreover, perceived democracy also influenced inferred inequality (Chapter 6).

We will next summarise the results of these studies. In order to do this, we organize the discussion around the main questions we have tried to answer within the current research. Furthermore, we will comment on our research's general implications and limitations. Finally, we will propose future avenues for research derived from the research presented here that could advance this area of study.

1. How to measure attitudes toward inequality and how do they relate to other attitudinal variables in Spain?

In Chapter 3, we examined how attitudes toward inequality could be measured in Spain. To that end, we adapted the Support for Economic Inequality Scale (SEIS;

Wiwad et al., 2019) to the Spanish context. The measure showed adequate reliability and validity evidence of this measure. As expected, participants who showed greater support for economic inequality also reported less intolerance of inequality (**H1**). This finding suggests that support for inequality and intolerance toward inequality measured the opposing sides of the same construct (i.e., attitudes toward inequality). Moreover, with this measure, we overcome the problems of using single-item measures for assessing attitudes toward inequality (e.g., Bavetta et al., 2019; Castillo, 2011), such as low reliability and low sensitivity (Meyvis & Van Osselaer, 2018).

In addition, through exploratory analyses, we also found that the scale was negatively associated with different measures of similar constructs, such as perceived economic inequality (Sommet et al., 2019), the Perceived Economic Inequality in Everyday Life (PEIEL) Scale (García-Castro et al., 2019), and the diagrammatic measure of perceived economic inequality (ISSP Research Group, 2012)**.** These results revealed that the measure has adequate construct validity evidence.

Concerning the second part of the question, we also analyzed how the SEIS was related to attitudes toward the economic and the socio-political system (Loveless, 2016; Wiwad et al., 2019). Mainly, we focused on how support for inequality was related to how groups at the bottom of the economic distribution were perceived —in terms of warmth and competence. As preregistered, we found that supporting economic inequality was related to perceiving people in poverty as less warm (**H2**) and less competent (**H3**).

Moreover, our results are consistent with those obtained by the authors of the original scale (Heiserman & Simpson, 2017; Wiwad et al., 2019). In addition, we believe that our results are consistent with previous research suggesting that perceptions and attributions of people in poverty can predict attitudes toward the economic and

political system, such as system justification or preferences for redistribution (Piff et al., 2020; Sainz et al., 2020; Tanjitpiyanond et al., 2022). The consequences of negative perceptions of people in poverty may further affect the perpetuation of inequality, as people who show negative social representations of low-status groups would be less likely to take action to reduce inequality (Fiske & Durante, 2019). In this line, our studies have shown that support for inequality is related to a lower preference for redistribution in Spain.

In addition, participants that reported higher levels of support for inequality also showed higher institutional trust and perceived democracy. Then, our findings suggest that the groups in society that support inequality may be insensitive to the presence of an institutional and political climate that contributes to the maintenance of inequality. This idea is in line with previous literature, which states that people who support more inequality and hold beliefs that justify the economic system would be less critical of institutions and the democratic system (Anderson & Singer, 2008; Tan et al., 2016).

2. How does perceived inequality affect socio-political attitudes and behavior?

We also examined the effect of perceived inequality on socio-political attitudes in experiments 1 and 2 (Chapter 4). To do this, we conducted two experiments in which we manipulated economic inequality and measured institutional trust, perceived democracy, satisfaction with democracy, and political efficacy. As expected, in Study 1 of Chapter 4, we found that participants in the high (vs. low) economic inequality society reported lower levels of trust (**H4**), perceived democracy (**H5**), satisfaction with democracy (**H6**), and political efficacy (**H7a**). In Study 2, however, we only replicated the effect of perceived economic inequality on political efficacy (**H7a**). To clarify the inconsistent results between Study 1 and Study 2, we pooled and analyzed the data from both studies. We found that perceived economic inequality negatively impacted

institutional trust (**H4**), satisfaction with democracy (**H6**), and political efficacy (**H7a**). Our results are in line with the previous correlational studies that related objective inequality to institutional trust, dissatisfaction with the way democracy works, and political efficacy (Andersen, 2012; Anderson & Singer, 2008; Goubin, 2018; Foster & Frieden, 2017; Lee & Kwon, 2019; Lipps & Schraff, 2020; Loveless & Whitefield, 2011).

The fact that we did not find the effect of perceived inequality on perceived democracy after analyzing the pooled effect of Studies 1-2 leads us to believe that other variables may be interfering with this effect in Study 2, and that they may be reflected in the overall results. Said otherwise, we found a link between perceived inequality and democracy when we were manipulating inequality in a fictional society but not when we were manipulating inequality in Spain. It may be that the lockdown resulting from the COVID-19 state of alert may have influenced the perception of the Spanish context as a low democratic context, as individual freedom was restricted (Ares et al., 2021; EIU, 2020). This make it harder to get an effect on this particular dependent variable.

3. Which mechanisms could explain the effect of perceived economic inequality on political efficacy and other forms of civic participation?

Having shown that perceived inequality has a negative effect on various socio-political attitudes, we were interested in the psychological mechanisms that explain this relationship. In particular, we were interested in what preceded perceived political efficacy. Previous research has indicated that perceiving that the government ignores what people want is closely related to evaluations of the current political context, the government, and its institutions (Kölln et al., 2013; Zumárraga-Espinosa, 2020).

Exploring these potential mechanisms, in Study 1 of Chapter 4, we found evidence that institutional trust (**H7b**) and perceived democracy (**H7c**) mediate the effect of

economic inequality on political efficacy. In the overall effects analysis, we only replicated the indirect effect of perceived inequality on political efficacy through institutional trust. That is, receiving information about high levels of inequality reduces institutional trust, which, in turn, diminishes perceived political efficacy in society.

Following this path, we aimed to experimentally replicate this causal chain by manipulating both perceived economic inequality and institutional trust (Spencer et al., 2005). In Chapter 4, Study 3 addressed this question. We aimed to analyze the mediational effect of institutional trust in the relationship between inequality and political efficacy. We found that when the institutional trust was high, there were significant differences in political efficacy in the high vs. the low inequality condition. Whereas in the low institutional trust condition, there were no significant differences in political efficacy between the high and the low inequality condition. We partially supported **H8** since our initial hypothesis was that the effect would be more pronounced in cases of low institutional trust, as inequality would be perceived to be of paramount importance in such circumstances. Furthermore, we expected that when inequality is high, and institutional trust is low, we would have the most detrimental effect on citizens' political efficacy.

However, our research revealed that inequality played a more critical role when institutional trust was high. Thus, perceiving an unequal context decreased political efficacy, and this effect was stronger when people trusted their institutions. This finding is in line with studies suggesting that high institutional trust is the basis for individuals to consider participating in society (Lee & Schachter, 2018; Loveless, 2013). In this sense, public institutions are responsible for identifying people's needs and implementing policies to solve social problems (e.g., Acemoglu y Robinson, 2006; Boix, 2003; Meltzer y Richard, 1981). The extent to which people perceive these

institutions are doing their job efficiently and honestly determines their willingness to engage with them. For example, suppose citizens understand that institutions are corrupt, regardless of the social context or economic issues such as inequality. In that case, they will not participate in politics because investing time and effort in it would not make sense (Kölln et al., 2013).

Another mechanism that could explain the relationship between perceived inequality and the intention to participate in collective action to reduce it is institutional trust (**H9**). We found similar results as with political efficacy: in the condition of high (vs. low) inequality, the intention to participate in collective actions was lower, and this effect was stronger when the institutional trust was high (vs. low). Our findings align with previous results showing that the perception of political institutions mediates individuals' responses to political outcomes (Anderson & Guillory, 1997).

4. How do perceived inequality and democratic choice affect cooperative behavior?

In Chapter 4, we found that perceived economic inequality has negative consequences for socio-political attitudes and discourages individuals from showing civic behavior in society. In Chapter 5, we wanted to examine how perceived economic inequality affects other types of behavior, such as cooperation. This relationship has been examined previously in the literature, but with mixed results (Fung & Au, 2014; Melamed et al., 2022; Nishi et al., 2015; Sadrieh & Verbon, 2006). Most studies, however, had found that—in western contexts—norms and decision-making generate more satisfaction and commitment when decided democratically with the people to be regulated by these rules (Dal Bó et al., 2010; Olken, 2010; Sutter et al., 2010). Therefore, we investigated the causal effect of economic inequality and democratic choice on cooperative behavior.

As expected, we found that in the condition of high (vs. low) economic inequality, cooperation levels were lower (**H10**). This finding is in line with the research that supported a negative effect of inequality on cooperation (Aksoy, 2019; Colasante & Russo, 2014; Fung y Au, 2014; Nishi et al., 2015; Schlösser et al., 2020). Participants cooperate with fewer tokens in the high (vs. low) inequality condition. The perception of the environment as more competitive may be one reason people cooperate less in highly unequal environments (Sánchez-Rodríguez et al., 2020; Sommet et al., 2023). However, when a rule was introduced to motivate cooperation by punishing free riders, this difference between inequality conditions disappeared. Thus, the penalty rule promotes cooperation by reducing the effects of inequality on the competitive normative climate—a cooperative rule changes the norms (see Sánchez-Rodríguez et al., 2023).

In contrast, we found no evidence for the positive effect of the democratic (vs. non-democratic) choice condition on cooperation (**H11**). No differences in cooperation were found regardless of whether the norm was chosen democratically or imposed by the experimenter. Some of the reasons why we did not find the effect of the democracy premium may be that allowing subjects to vote is not enough to achieve a higher level of contribution (Sutter et al., 2010). Improvements in the manipulation of democratic choice seemed essential to test whether the democracy premium effect is found in the economic game in the Spanish population since other studies conducted in Western countries have found such an effect (Dal Bó et al., 2010; Sutter et al., 2010), where participants tend to value the democratic choice more than the authoritarian one.

5. How does perceived democracy affect individuals' inferred economic inequality?

In the previous chapters (Chapters 4 and 5), we analyzed some of the effects of perceived economic inequality on citizens' attitudes and behavior. In Chapter 6, we

wanted to examine the effect from the other side of the same coin and tested the effects of the perceived level of democracy on the inference about the levels of inequality. To this end, we conducted a study to analyze the effect of perceiving the context as democratic on inferred levels of inequality. As expected, we found that in the high democracy (vs. low democracy) condition, participants reported lower levels of inferred economic inequality (**H12**). Therefore, we provided evidence that perceptions of a democratic environment affect perceptions of inequality. Specifically, exposure to a non-democratic environment increases perceptions of inequality. These findings add to the body of research examining the effects of perceived political systems on other societal characteristics, thereby contributing to a more comprehensive understanding of societal perceptions of democracy and economic inequality.

Complementarily, we found that the effect of perceived democracy also affected other inferences about the context, such as economic performance, wealth, and development, and attitudes toward inequality (i.e., intolerance toward inequality). Specifically, when participants perceived the non-democratic character from a given context, they inferred negative features of that context, such as worse economic performance, less wealth, and lower levels of economic development than in the democratic context. In addition, people tend to be less tolerant of inequality in the country they read about when it is presented as a non-democratic society than when it is a democratic one. This observation suggests that in non-democratic contexts, individuals are more likely to perceive higher levels of income inequality and subsequently justify such inequality to a lesser extent. This negative relationship between perceived inequality and acceptance of inequality has also been previously documented in the literature on the field (García-Castro et al., 2020; García-Sánchez et al., 2018; Krinjen et al., 2021; Rodríguez-Bailón et al., 2017; Wiwad et al., 2019).

A summary of the empirical evidence reported in each chapter, as well as the research questions and objectives it was intended to answer, is provided in Table 7.1.

Table 7.1

Summary of the goals, research questions, and hypotheses of the current research.

General Aim To analyze the relationship between perceived economic inequality and sociopolitical attitudes				
Research Question	**Specific aim**	**Hypothesis**	**Chapter & Study**	**Answer**
1. How to measure attitudes toward inequality and how do they relate to other attitudinal variables in Spain?	To analyze the psychometric properties and the factor structure of the Spanish version of the SEIS (S-SEIS), obtain validity evidence, and test its reliability in Spain.	Participants who report higher support for economic inequality will report lower intolerance toward inequality (**H1**) and will perceive people in poverty as less warm (**H2**) and less competent (**H3**), compared to people who support inequality to a lower extent.	Chapter 3: Studies 1 & 2 (H1-H3).	S-SEIS showed validity evidence and is a reliable measure of attitudes toward inequality in Spain. Participants who showed greater support for economic inequality also reported less intolerance of inequality (**H1**), and perceived people in poverty as less warm (**H2**) and less competent (**H3**).
2. How does perceived inequality affect sociopolitical attitudes and behavior?	To examine the effect of perceived inequality on institutional trust, perceived democracy, satisfaction with democracy, and political efficacy.	In the society with high (vs. low) economic inequality, participants will report: lower levels of trust (**H4**), perceived democracy (**H5**), satisfaction with democracy (**H6**), and political efficacy (**H7a**).	Chapter 4: Studies 1 & 2 (H1-H4a).	The condition where participants were presented with a high (vs. low) economic inequality society reported lower levels of trust (**H4**), satisfaction with democracy (**H6**), and political efficacy (**H7a**). We did not find an effect of perceived inequality on the perceived level of democracy (**H5**) in the pooled analysis.
3. Which psychological mechanisms could explain the effect of perceived economic inequality on	To analyze the mediating role of institutional trust and perceived democracy on the effect of perceived	Institutional trust (**H7b)** and perceived democracy (**H7c)** will mediate the effect of perceived inequality on political efficacy.	Chapter 4: Studies 1 & 2 (H4b-H4c). Study 3 (H5-H6).	In Study 1, we found that institutional trust (**H7b**) and perceived democracy (**H7c**) mediate the effect of perceived inequality on political efficacy.

political efficacy and other forms of civic participation?	inequality on political efficacy. Experimentally manipulate institutional trust to test its mediational effect in the relationship between inequality and political efficacy. To analyze if institutional trust also mediates the effect of perceived inequality on environmental collective actions.	There will be an interaction between perceived inequality and institutional trust in political efficacy (**H8**) and collective actions (**H9**). High inequality (vs. low) will lead to lower levels of political efficacy and collective actions, and this effect will be stronger when institutional trust is low (vs. high).		In Study 2, we replicated the mediation through institutional trust (**H7b**). Institutional trust mediates the effect of perceived inequality on political efficacy (**H8**) and collective actions (**H9**). However, the perception of an unequal context decreases the perceived political efficacy within the country, and this effect is stronger when people trust their institutions (vs. when institutional trust is low, as we expected).
4. How do perceived inequality and democratic choice affect cooperative behavior?	To analyze the causal effect of economic inequality and democratic choice on cooperative behavior.	In the condition of high (vs. low) economic inequality: cooperation levels will be lower (**H10)**. In the democratic choice (vs. non-democratic choice) condition: cooperation will be higher (**H11)**.	Chapter 5: Study 1 (H1-H2).	In the condition of high (vs. low) economic inequality, cooperation levels were lower (**H10**). However, we did not find evidence for the positive effect of the democratic (vs. non-democratic) choice condition on cooperation (**H11**).
5. How does perceived democracy affect individuals' inferred economic inequality?	To analyze the effect of perceiving the context as democratic/non-democratic on the inferred level of inequality.	In the condition of high democracy (vs. low), participants will report lower levels of inferred economic inequality (**H12)**.	Chapter 6: Studies 1 & 2 (H1).	In the high democracy (vs. low democracy) condition, participants reported lower levels of inferred economic inequality (**H12**).

6. Implications

The results of the current research provide empirical evidence of the relationship between perceptions and attitudes toward economic inequality and the political system. They are one of the first results in the literature showing the link between socio-political

attitudes and perceived economic inequality. In what follows, we highlight some of these studies' theoretical and practical implications.

First, we provide a scale adapted to the Spanish context to measure attitudes toward inequality. The scale has good reliability and validity. In our view, our research contributes to the study of the attitudes toward inequality in our country. Its use can effectively predict other attitudes toward the economic and political system in Spain, in line with research on other countries (Mercier et al., 2020; Tassinari & Jasinskaja-Lahti, 2020; Wiwad et al., 2019).

Second, in our research, we also found empirical evidence of the effect of perceived economic inequality on different socio-political attitudes. In particular, we provided evidence through experiments, in contrast to previous literature that has attempted to study this relationship with correlational studies (Andersen, 2012; Anderson & Singer, 2008; Goubin, 2018; Foster & Frieden, 2017; Lee & Kwon, 2019; Lipps & Schraff, 2020; Loveless & Whitefield, 2011; Wu & Chang, 2019). We believe that our research goes a step further by specifically assessing perceptions of economic inequality rather than objective inequality. The use of perceptions of inequality has previously been used to study the impact of inequality on individuals' attitudes and behavior (García-Castro et al., 2020; García-Sánchez et al., 2018; Melita et al., 2020; Moreno-Bella at al., 2019; Rodríguez-Bailón, 2020; Velandia-Morales et al., 2022), but to our knowledge, the impact on socio-political attitudes has been an area to explore further. As such, we are helping to fill a gap in the literature on the causal effect of the perception of economic inequality on several political attitudes, such as institutional trust, satisfaction with democracy, and political efficacy.

Third, our studies explored the mechanism between perceived inequality and the self-perceived role that citizens believe they have in their socio-political context.

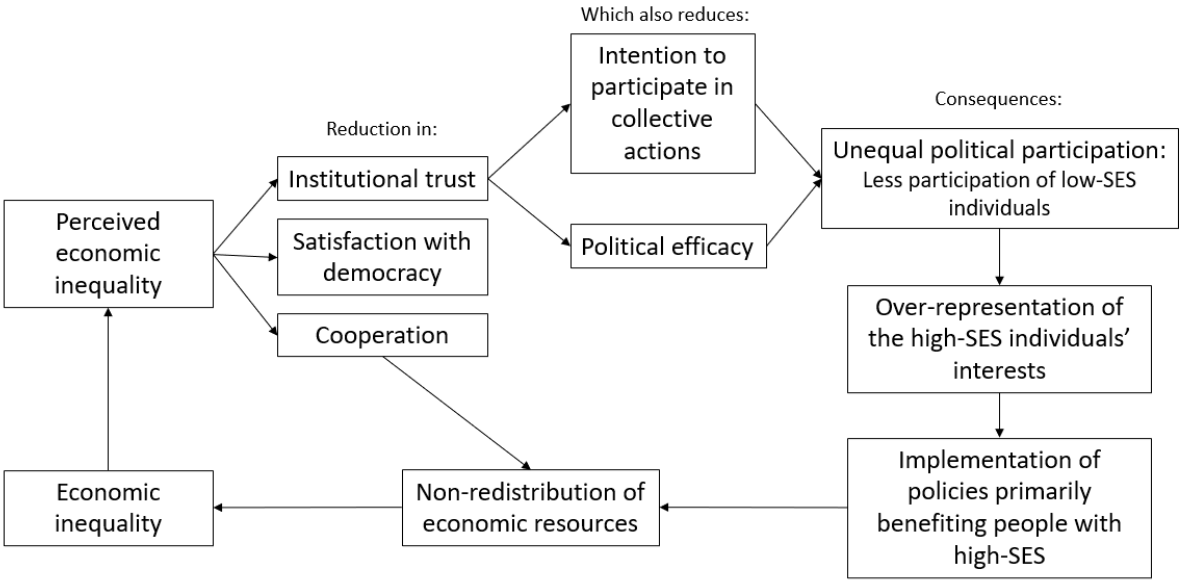
Previous research has suggested a link between political efficacy and evaluations of the political context (Kölln et al., 2013; Lee & Schachter, 2018; Zumárraga-Espinosa, 2020). Beyond this, we provide evidence for the causal relationship between perceived inequality and political efficacy through the indirect route of institutional trust. How citizens perceive their society as socially integrated and effectively regulated by their institutions is a sign of the correct functioning of the social system. Therefore, perceptions of the political system in which people are immersed are relevant to their perceived ability to act within it (Anderson & Guillory, 1997; Clarke et al., 2010; Midtbø, 2018; Niemi et al. 1991). In other words, the extent to which people feel they are being taken into account in politics is, to some extent, determined by the economic inequality they perceive in the system and the level of trust they have in institutions. Thus, perceptions of economic inequality influence how people evaluate the public institutions around them, and this influences, in turn, how effective they feel in participating in them (e.g., protesting to protect the environment).

These findings warn that perceived inequality can lead to political inequality. That is, the perception of an unequal context makes people feel less politically effective, which may lead them to participate less in politics (Shore, 2020; Solhaug, 2006). This fact, combined with the result that inequality is generally more dissuasive for people of lower socioeconomic status —inequality reduces the political participation of people with low resources and education— (Andersen, 2012; Anderson & Singer, 2008; Kraus et al., 2015; Scervini & Segatti, 2012), may have consequences for the unequal representation of certain groups in politics. In particular, it would be reflected by the greater influence of the most power-advantaged social classes and by over-representing their interests (Bonica et al., 2013; Gilens, 2005). According to Pontusson and Rueda (2010), political change in response to inequality is highly dependent on voter turnout

during elections. Furthermore, their research showed that turnout itself might be threatened by the disengagement of those most vulnerable to inequality. This represents a risk to the stability of the democratic system, which is based on the representation of society (Scheve & Stasavage, 2017; van Deth, 2014). In contrast, the participation of a large part of the population in politics contributes to the reduction of objective economic inequality (Abellán Artacho & Cabrera-Álvarez, 2023; Banerjee & Duflo, 2022). Figure 7.1 illustrates this circular relationship.

Figure 7.1

Circular relationship between economic inequality and political inequality.



Note. SES = socio-economic status.

A key aspect of this approach is understanding inequality more as a political decision than an unavoidable circumstance. That is, economic inequality is a structural condition of society that has been achieved through a series of economic and political choices made by governments, such as policies that favor the accumulation of wealth by a large proportion of the population and the fiscal permissiveness of large fortunes (Alonso, 2002; Stiglitz, 2014; World Bank Group, 2020). Similarly, it is possible to reduce economic inequality through policies redistributing resources more fairly among

the population. To the extent that the population participates in political processes, such measures may be more or less supported, depending on the interests of those who participate, their ideology, and the dominant ideology in the context in which they live, among others. Taken together, the findings in Chapter 4 suggest that citizens are likely to need a secure and effective environment before they will consider participating in society and politics.

Our fourth implication is related to cooperation, a variable that was measured in Chapter 5. In short, we found reduced cooperation in unequal contexts. These findings support the negative effect of an unequal distribution on an individual's intentions to cooperate with others (Aksoy, 2019; Colasante & Russo, 2014; Fung y Au, 2014; Nishi et al., 2015; Schlösser et al., 2020). We also provided evidence for the positive effects of prescriptive norms on cooperation (Fehr & Schmidt, 1999; Sevillano & Olivos, 2019). What our results added to the previous research is that prescriptive norms reduced the differences in cooperative behavior, regardless of the level of inequality. Following Reynolds (2019), we believe that the study of prescriptive norms could help solve different social issues, such as inequality. Specially in line with the ENIM model (Sánchez-Rodríguez et al., 2023), rules that encourage cooperation could mitigate the impact of inequality on the competitive normative climate. Our results are encouraging, given that they pointed out that prescriptive norms could promote cooperative behavior related to redistribution and tax compliance in unequal contexts. Further research should explore this line.

Improving cooperation through social norms is crucial as it enhances the sustainability of democracy, as suggested by studies conducted in educational settings (Sum & Bădescu, 2018). In this sense, cooperation promotes collaboration and inclusivity among individuals and groups with diverse perspectives and interests, fosters

positive attitudes toward diversity, promotes empathy, and strengthens social bonds (Santiago & Cerna, 2020).

Fifth, in Chapter 6, we found an effect of perceiving democracy on the inference of inequality. This result provides the first evidence of the effect of the perception of an environment as democratic on the level of inferred economic inequality—and other economic indicators, such as economic performance, wealth, and development. In sum, we showed that there is a circular relation between perceived inequality and perceived democracy.

In the current research, we present some results on how people's views about their environment, including social, cultural, economic, and political factors, have a significant impact on their behavior and decision-making (e.g., Duquette & Hargarden, 2019; Nishi et al., 2015; Sánchez-Rodríguez et al., 2023; Sommet et al., 2018; Zmerli & Castillo, 2015). It shows the key role of individuals' perceptions about where they live when making policy decisions or implementing governance strategies. For example, when politicians choose policies that reflect the interests of the majority of the population and seek the common good, people would think that these policies are implemented to solve social problems (Arsenio, 2018; Kuziemko et al., 2015).

Overall, several practical implications could be derived from the results of our research. First, maintaining a democratic system and reducing inequality are the main objectives for improving social conditions for all citizens. Precisely, implementing mechanisms to monitor the functioning of the political system and formulating policies aimed at reducing inequality can strengthen citizen participation. Indeed, more broadly, active participation in the electoral process and politics is essential to ensure the democratization of society (European Economic and Social Committee, 2022). Sustaining democracy is important to avoid the risk of a rise in populist discourse and a

preference for authoritarian leaders when citizens perceive that society is breaking down (Sprong et al., 2019; Teymoori et al., 2017; Torres-Vega et al., 2021).

Second, supporting pluralistic participation in the electoral process and supporting policies aimed at reducing inequalities are crucial features at the core of the democratic political system (EIU, 2021) and the welfare state (Esping-Andersen & Myles, 2009). A context that supports human rights, decent living conditions, and democratic processes is fundamental to well-being.

Third, regarding institutional trust, increasing the perception of trust among citizens does not seem to be the goal. Instead, the correct functioning of institutions should go hand in hand with transparency, honesty, and real control—and trust should be an effect of it. Ensuring that the institutions operate as intended is the basis on which all other aspects of governance are based, such as the implementation of policies and the delivery of public services.

Forth, it is important to bridge the gap between people and the government. Consequently, when trusting their institutions, individuals feel they have more political efficacy and are more willing to participate in civil society (e.g., collective action), which ultimately contributes to a more egalitarian society. This may also entail positive consequences of the increase in institutional trust, such as increased voter turnout, tax compliance, and support for universal income security solutions (Gärtner & Prado, 2016; Hammar, 2009).

Fifth, we are also concerned about the importance of awareness-raising campaigns that highlight the detrimental effects of current levels of economic inequality and its psycho-social impact on society as a whole. In this sense, knowledge about the levels of inequality is a key factor in understanding how different policies affect people. Access to such data is also part of the democratic context. A healthy democratic context also

promotes political culture (EIU, 2021; Kapstein & Converse, 2019). That includes educating people to be critical of the injustices around them and to be able to evaluate their economic and political systems. By studying attitudes toward inequality, we can work through the improvement of the population's understanding of inequality and inform them accordingly, especially of those who are less critical of the system (e.g., those who are upper-class, right-wing, and supportive of the economic system and inequality; Anderson & Singer, 2008; Tan et al., 2016). Being critical of the system is a symptom of an aware citizenry and a desirable democratic outcome (Hardin, 1999; Warren, 1999; Mishler & Rose, 1997).

7. Limitations

Although we think the results from the studies included in the current research represent a novel contribution to social psychology, as most of the research, they present some limitations. In the following lines, we will summarize some of the limitations that we consider to be common to some of the studies in this dissertation. However, they may have been mentioned earlier in the specific empirical chapters.

First, a significant limitation of our studies is the type of sample we had access to. In our studies, the sample consisted of a population from a university community — students, graduates, administration and services, and research staff. This means we should be cautious about extrapolating our findings to the general population. Many issues, including funding, gave us limited access to more representative samples of the population. Given the goals of the current research line, conducting studies with the general population in highly unequal (vs. less unequal) societies (e.g., countries) would enrich the findings presented here through experimental designs while overcoming the limitation of ecological validity.

Second, we have to consider the threats to ecological validity that may present our research. Conducting experimental studies in which we manipulated the level of inequality in fictional societies and economic games (except for Chapter 3, where we run correlational studies) could pose an important threat to extrapolating the conclusions outside the experimental settings used.

In Studies 1 and 3 in Chapter 4, we used the Bimboola Paradigm, which is a fictitious society, and asked participants what they would think about the political system and institutions of this society, which they did not know. In contrast, in Study 2 in Chapter 4, we tried to use a more ecological reference context as it was Spain. In this case, however, other external factors, such as the COVID-19 lockdown, could have influenced its effect (e.g., perceived democracy).

In Chapter 5, we used the public goods game, which consisted of an economic game where participants played with tokens and decided how much to contribute to public goods. Although the procedure might be similar to tax compliance, we cannot extrapolate our results to the behavior of individuals in real life. Similarly, in Chapter 6, we presented information about the democratic and political features of two countries, one fictional (Study 1) and one real (Study 2), but both were unknown to the participants. This also could limit the ecological validity of these studies.

Throughout our studies, a recurring question has been the possibility of changing attitudes through experimental manipulation. For example, can satisfaction with democracy and institutions be manipulated by reading a piece of news? Comparing the results from fictional environments with the ones of more ecological ones, we concluded that it is easier to influence attitudes when participants have no previous attitudes toward an unknown political system. However, when participants are asked about their surrounding institutions and political context, they already have an opinion

and personal experience of it (Devos et al., 2002). In this case, manipulating attitudes toward the economic and political system presented more difficulties.

8. Future Research

According to the empirical work collected in this thesis, and considering the limitations mentioned above, new lines of research could emerge that would complement our results and help clarify the relationship between perceived economic inequality and sociopolitical attitudes. Some ideas have already been suggested in the various sections of this piece of work and their implications and limitations. Here we present ideas arising from other questions we have raised throughout the development of this research.

Adapting the SEIS scale to Spanish samples was important as it created new opportunities to investigate factors associated with the acceptance of inequality in the Spanish context. It would be worth replicating the relationship found between the scale of support for inequality and attitudes toward the political system, for example, institutional trust or the perception of the environment as democratic. This would complete the picture of how these variables are related and how they might influence other variables, such as behavior. Relating this to the intention to vote or participate in other collective activities aimed at reducing inequality would be relevant to that end. Also, considering that stereotypes contribute to the maintenance of inequality (Durante & Fiske, 2017; Fiske & Durante, 2019), further research could explore whether that negative social image of those more disadvantaged represents a route by which individuals justify and support inequality. These avenues can highlight the ways in which economic inequality can lead to dysfunctional societies and perpetuate existing social structures.

Future studies could develop a new procedure to manipulate economic inequality in Spain, which could be used to replicate the results obtained in Chapter 4. When measuring perceived democracy, we used specific dimensions of the democracy index (EIU, 2018). To demonstrate the robustness of our findings, future research should replicate the results, perhaps improving the accuracy of the perceived democracy measure by measuring it in more detail. We also encourage researchers to replicate the mediation effect of institutional trust on the effect of perceived inequality on people's political attitudes. Our results could also suggest that reducing perceived inequality could increase institutional trust, which in turn, would increase political efficacy. In contrast, when reducing institutional trust, the effect of perceived inequality on political efficacy would disappear. Future research should include a control condition of inequality to try this speculation. We believe that it is important for the field to link the full path from perceived inequality to other forms of participation, policy support, and voting intentions. By investigating this, we would better understand the mechanism by which perceptions of inequality affect perceptions of the political environment and, in turn, participation in it.

Concerning cooperation, our results suggest that including a punishment rule for non-cooperative behavior increases cooperation. To further explore the benefits of using prescriptive norms in economic games, future studies could consider introducing a reward condition for comparative analysis with the punishment rule. In line with Colasante and Russo (2014), it is also important to study the efficiency of different redistributive strategies to analyze how redistributive policies in these games might affect the level of inequality (see Hoenig et al., 2023; Melamed et al., 2022).

In the study of the democratic context, there are other factors and features of society —such as perceived poverty, government responsiveness, and economic

liberalism— which may explain the influence of democracy on perceived inequality. Even if the perceived level of democracy is high and we have a general positive understanding of the democratic system: What policies are being implemented in the country? We did not look at the type of democracy either: whether it is constitutional, parliamentary, etc. It would be interesting to consider those factors that might play a role in the study of societal features and that might contribute to the overall evaluation of the political environment, whether negative or positive.

In summary, the study of the relationship between perceived economic inequality and sociopolitical attitudes opens up a number of possible lines of inquiry. We hope that our contribution served as a starting point to understand better what dynamics are at play in the unequal contexts and what factors may influence people's behavior toward economic inequality and political issues.

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