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TESIS DOCTORAL

El papel de la cadena de suministros y los inversores en la sostenibilidad y resiliencia de empresas internacionales

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Índice

Índice de tablas

Índice de figuras

Capítulo 1. Introducción

La sostenibilidad empresarial es un tema que ha ido creciendo en interés para la sociedad, con consumidores cada vez más preocupados por comprar productos y servicios que tengan en cuenta criterios de respeto al medioambiente y que sean también respetuosos con otras cuestiones sociales, como las condiciones laborales o el impacto en las comunidades donde se desarrollan las actividades empresariales. Esto ha generado que cada vez haya más estudios sobre cómo abordan las empresas la temática de la sostenibilidad y los efectos que esta tiene sobre los planteamientos y resultados de la empresa. Sin embargo, aunque en los últimos años se ha estudiado de forma abundante este fenómeno, aún quedan algunas incógnitas y trabajos pendientes. Concretamente, una de las cuestiones que aún no ha sido estudiada en profundidad es el análisis de la sostenibilidad en la empresa, pero no desde la perspectiva de la empresa de forma individual exclusivamente, sino de cómo la relación con distintos *stakeholders* o grupos de interés afecta a la sostenibilidad empresarial y, por consiguiente, a los resultados financieros o la resiliencia de la empresa. Por ello, el estudio de distintos *stakeholders*, como pueden ser los componentes de la cadena de suministros o los inversores de una empresa, puede resultar interesante por la importancia que tienen dentro del proceso productivo o en la toma de decisiones, respectivamente, lo cual expondremos a continuación.

El creciente proceso de internacionalización de la economía (globalización), unido a la simultánea tendencia a derivar actividades de la empresa a proveedores fuera de la misma (*outsourcing*), han aumentado la importancia de la cadena de suministros en la última década. La cadena de suministros integra el continuo flujo de materiales, fondos e información a través de diversas áreas, con participación de distintas organizaciones que actúan como proveedores y/o clientes de las interacciones. Una adecuada gestión de la cadena de suministros puede dar lugar a una reducción de costes en las operaciones de la empresa, un aumento en la calidad de sus productos o servicios, o una mayor flexibilidad. Sin embargo, una mayor importancia de la cadena de suministros también puede conllevar la aparición de posibles problemas en la calidad de los productos, la reputación y flexibilidad de la empresa, como consecuencia de que operaciones importantes se desarrollan fuera de su control directo. Los problemas pueden ser especialmente acusados en el ámbito de la sostenibilidad, donde los incentivos y preferencias de las distintas organizaciones en la cadena de valor pueden ser divergentes como consecuencia de las diferentes relaciones con *stakeholders*, regulaciones, o prioridades de negocio. La presencia de operaciones internacionales todavía incrementa más esa heterogeneidad, y las dificultades en la coordinación de procesos que incluyan la sostenibilidad de las

operaciones a través de la consideración de sus implicaciones sociales, económicas y medioambientales.

En los últimos años, la gestión sostenible de la cadena de suministros está recibiendo también una atención creciente; no obstante, los trabajos empíricos desarrollados presentan numerosas limitaciones. Por un lado, los trabajos que analizan la relación entre la gestión sostenible de la cadena de suministros y los resultados medioambientales y financieros de la empresa no llegan a resultados concluyentes. Por otro lado, debido a la dificultad de obtener información fiable relacionada con la cadena de suministros, muchos estudios empíricos desarrollados son de carácter descriptivo, basados en estudios de caso. Otros estudios se apoyan en las opiniones de los directivos con respecto a la gestión medioambiental de su cadena de suministros (Ashby *et al.*, 2012). Por tanto, los estudios empíricos en este campo presentan numerosas limitaciones. En la actualidad, gracias a ciertas iniciativas de organismos internacionales como la Global Reporting Initiative (GRI), las grandes empresas están aumentando la información que ofrecen a la sociedad sobre su sostenibilidad y sobre la de los proveedores y clientes con los que tienen relación (Huo *et al.*, 2014).

Pese a las limitaciones comentadas, la literatura ha avanzado en el consenso de considerar que la gestión sostenible de la cadena de suministros es importante para mejorar el desempeño medioambiental (Sarkis, 2003). Además, se ha establecido que las mejores cadenas de suministros son aquellas que son ágiles, adaptables y están alineadas con sus proveedores (Lee, 2004). Reforzando esta idea, trabajos como el de Handfield *et al.* (2015) han llegado a la conclusión de que el alineamiento general con los proveedores repercute positivamente en el desempeño financiero de la empresa y sobre la resiliencia (Chunsheng *et al.*, 2019).

Adicionalmente, el estudio sobre el papel de los inversores ha crecido exponencialmente en esta temática debido al aumento de su preocupación por la sostenibilidad. Como ejemplo, cada vez es más habitual encontrar fondos de inversión que solo operan con empresas que sobrepasan unos determinados requisitos de sostenibilidad. Es más, ya existen agencias de *rating* que evalúan a las empresas en base a su sostenibilidad y hacen recomendaciones de inversiones llamadas «verdes», como RobecoSAM que trabaja asociada a Standard and Poor's (S&P). Este fenómeno, que ya está empezando a ser estudiado en la literatura (Argento *et al.*, 2019), permite hacerse una idea de la importancia que tiene estudiar el rol que juegan los inversores sobre el desarrollo medioambiental de las empresas. Uniendo este factor al de la

cadena de suministros y al de la escasa atención que ha recibido la internacionalización de la cadena de suministros y de los inversores, midiendo la distancia que hay entre las condiciones de los países de los proveedores, clientes e inversores con el país de la empresa, se abren nuevas incógnitas y preguntas que deben ser abordadas por los investigadores (Busse *et al.*, 2016).

Estos antecedentes nos llevan a formularnos una pregunta general a la que se intenta dar respuesta con este proyecto de tesis doctoral:

- ¿Cómo influyen la cadena de suministros y el rol de los inversores en la sostenibilidad de las empresas internacionales y las consecuencias de esta?

Esta pregunta se desglosaría en otras preguntas más concretas, como pueden ser:

- ¿De qué forma afecta la relación con los proveedores a la sostenibilidad de la empresa?
- Dentro de las cadenas de suministros de empresas internacionales, ¿existen diferencias en la sostenibilidad empresarial motivadas por las diferencias en las regulaciones entre los países donde operan las empresas y sus proveedores?
- Cuando una empresa es más sostenible, ¿la relación con sus proveedores se ve mejorada y esto genera beneficios en la resiliencia de la empresa?
- ¿Qué papel juegan los inversores en la toma de decisiones sostenibles en la empresa?
- ¿Dicho papel se ve afectado por la diferencia entre inversores nacionales o internacionales?

1.1. Delimitación del tema objeto de estudio y relevancia del mismo

Partiendo de las preguntas que acabamos de plantear, se requiere que delimitemos la forma en que llevar a cabo el estudio. Podemos distinguir dos grandes actores que actúan sobre la empresa y que reciben la atención de esta tesis. Por un lado, el papel de la cadena de suministros, y por otro, el de los inversores. En ambos casos, pretendemos analizar cómo pueden afectar a la sostenibilidad de la empresa, y en el caso de la cadena de suministros, si la sostenibilidad tiene alguna connotación en el área financiera, mejorando la resiliencia de la empresa. Ambos actores están

íntimamente relacionados por tres motivos principalmente. El primero es que en ambos casos nos encontramos ante *stakeholders*, fundamentales para el devenir de una empresa, especialmente si lo analizamos desde la perspectiva de la teoría de la dependencia de recursos (Pfeffer & Salancik, 1978). El segundo motivo es que, en el fondo, un inversor también actúa como un proveedor de capital, por tanto, aunque no se suele considerar dentro de la literatura como un elemento de la cadena de suministros, gran parte de los efectos y relaciones que proponemos pueden tener efectos o justificaciones similares (Skipworth *et al.*, 2015; Alora & Barua, 2021). Por último, en este trabajo damos una especial relevancia al elemento de la internacionalización junto con el de la sostenibilidad, y a este respecto, dada la globalización existente, es difícil encontrarse empresas que no tengan proveedores e inversores que proceden de distintas partes del mundo y que no tienen que ser del mismo país o región de la empresa focal (Siegel *et al.*, 2013; Beugelsdijk *et al.*, 2018; Zhu *et al.*, 2019).

Por otro lado, en esta tesis centramos nuestro estudio sobre la sostenibilidad y la resiliencia como *outputs* a analizar. En los capítulos 2 y 3, sobre todo, nos centramos en ver las causas que llevan a una mejora en las políticas medioambientales que realizan las empresas, que son uno de los elementos claves de la sostenibilidad, ya sea por una mejora del alineamiento positivo de las políticas medioambientales, es decir, que tanto la empresa como sus proveedores lleven a cabo el mayor número de políticas medioambientales positivas conjuntamente (capítulo 2), o por una mejora en la proactividad medioambiental de la empresa directamente (capítulo 3).

Sin embargo, en el capítulo 4 de esta tesis, nuestro trabajo se centra en ver cuáles son las consecuencias positivas de esas mejoras en la sostenibilidad que pueden afectar a la resiliencia de las empresas. Las políticas medioambientales y la proactividad medioambiental han sido estudiadas ya de forma destacada en los trabajos de este campo (Aragón-Correa & Sharma, 2003; González-Benito & González-Benito, 2006). Las empresas presentan una actitud proactiva medioambiental como estrategia para diferenciar su comportamiento de las prácticas establecidas dentro del contexto en el que operan, para ser percibidas como más comprometidas con el medioambiente. Este énfasis otorga legitimidad y reputación ante el mercado. Por eso, es importante estudiar aquellos elementos que pueden favorecer dichos comportamientos o ver qué situaciones hacen más propicia la aparición de los planteamientos medioambientales más positivos, especialmente en las cadenas de suministros (Sarkis, 2003; Schnittfeld & Busch, 2016), o cuándo se ven involucrados los inversores (Calza *et al.*, 2016). Por

otro lado, aunque aún existe un cierto debate sobre las ventajas que puede reportar dicho comportamiento en cuestiones financieras, la mayoría de los estudios apunta a que mejoran el desempeño financiero, aunque sea de forma indirecta. Nosotros queremos ahondar en esa cuestión, analizando los efectos que la sostenibilidad puede tener sobre la resiliencia de las empresas.

En el primer trabajo, segundo capítulo de esta tesis, nos centramos en la cadena de suministros y en el impacto positivo que pueden tener, sobre los aspectos medioambientales de la empresa, una buena coordinación y una mayor dependencia de una empresa con respecto a sus proveedores. La especialización de las empresas y la competencia internacional han servido para aumentar el interés en las relaciones entre empresas en una cadena de suministro (Malviya & Kant, 2015). Además, debido a la presión de los distintos *stakeholders* que instan a las empresas a ser más responsables con el medioambiente, el concepto de alineación estratégica entre proveedores y compradores ha atraído la atención tanto de la academia como de los directivos. Esta atención se debe a que el concepto ofrece una oportunidad para optimizar y promover la producción y el consumo sostenibles a través de nuevos modelos basados en el crecimiento continuo y recursos ilimitados. Si bien se han identificado varias ventajas que surgen de la aplicación de esta coordinación, hay poca investigación sobre los impulsores, barreras y prácticas en este campo relevante (Govindan & Hasanagic, 2018; Stewart & Niero, 2018). En este sentido, nosotros con este trabajo pretendemos analizar qué factores llevan a un mayor alineamiento y coordinación entre los compradores y sus proveedores para la alineación de las políticas ambientales. Explicamos los factores que conllevan la alineación de las políticas ambientales prestando atención a cómo esta alineación puede verse afectada por las relaciones de dependencia entre una empresa y su proveedor, argumentándolo en base a la teoría de la dependencia de recursos (Pfeffer & Salancik, 1978).

La dependencia en la relación comprador-proveedor puede definirse como la necesidad de una empresa de mantener sus relaciones comerciales con proveedores/compradores para lograr sus objetivos (Narasimhan *et al.*, 2009). Desde la perspectiva ambiental, algunos de los principales problemas y riesgos que un comprador encuentra con su proveedor se encuentran en las áreas de accidentes ambientales, contaminación y emisión de gases de efecto invernadero, contaminación del aire, el agua o el suelo, desperdicio de producto o energía, exceso de embalaje, e incumplimiento de las leyes de sostenibilidad (Giannakis & Papadopoulos, 2016). Todas estas cuestiones provocadas por un proveedor pueden generar problemas para

el comprador, por ejemplo, riesgo de reputación (Roehrich *et al.*, 2014), riesgo de sostenibilidad (Hajmohammad & Vachon, 2016), o la necesidad de reducir malentendidos o desviaciones de la estrategia de la cadena de suministro que pueden disminuir el desempeño ambiental (Blome *et al.*, 2014). Además, en un contexto de globalización, es importante analizar el impacto que las regulaciones de los países en los que operan los proveedores y compradores pueden tener en la consecución de esos objetivos y en los posibles riesgos y dificultades para alinear las políticas medioambientales (Busse *et al.*, 2016).

En el segundo trabajo, tercer capítulo de la tesis, analizamos el papel que juegan los inversores sobre la proactividad medioambiental de las empresas. Partiendo de la base de que los inversores han aumentado su preocupación por las temáticas medioambientales (Argento *et al.*, 2019), y que su rol en la toma de decisiones en la empresa ha pasado de un papel más pasivo a más activo (Paruchuri & Misangyi, 2015; Alda, 2019), el análisis de su papel cobra una importancia significativa. Al observar este fenómeno desde el punto de vista de la teoría institucional, los académicos han estudiado cómo diferentes prácticas ambientales pueden actuar como diferentes plantillas dentro de un contexto institucional, lo que lleva a ciertos propietarios a preservar su rentabilidad al influir en los gerentes para que se involucren en prácticas más sostenibles (Bansal & Clelland, 2004; Berrone *et al.*, 2010). Esta no siempre es una tarea fácil, dado que los inversores dominantes de diferentes países pueden tener opiniones divergentes sobre lo que es correcto (Faelten *et al.*, 2015; Beugelsdijke *et al.*, 2018), y pueden variar en su comprensión de la estrategia ambiental de la empresa. Por lo tanto, las diferencias institucionales del país de origen de los inversores juegan un papel particular en su influencia sobre las prácticas sostenibles.

Existe un especial gap en cuanto a las diferencias que puede haber en cuanto al papel de los inversores atendiendo a su procedencia (inversores nacionales o internacionales). En particular, los inversores extranjeros pueden apoyar inversiones sostenibles cuando surgen buenas oportunidades, pero pueden conducir a una inversión insuficiente si las identifican como amenazas que ponen en peligro sus ganancias económicas futuras (Aguilera & Jackson, 2003; Ahmadjian & Robbins, 2005; David *et al.*, 2006; Kim *et al.*, 2008). En la misma línea, se cree que los inversores nacionales están más comprometidos con las prácticas sostenibles, ya que están más alineados con el contexto local (Aguilera & Jackson, 2003; Ahmadjian & Robbins, 2005); sin embargo, este factor puede provocar una menor proactividad ambiental debido al deseo de mantener el *statu quo* y, por lo tanto, no mejorar los resultados

ambientales. Además, las culturas de los inversores extranjeros y nacionales difieren según su país de origen, lo que genera conflictos (Desender *et al.*, 2016), y los inversores extranjeros logran imponer sus preferencias ambientales (Kim *et al.*, 2019; Tsang *et al.*, 2019), o fracasan en sus intentos luego de una fuerte oposición y resistencia de los nacionales (Baik *et al.*, 2013). Por tanto, resulta de interés analizar de manera conjunta y clara cuál es el efecto que tienen estas variables sobre la proactividad medioambiental de la empresa.

En el tercer trabajo, cuarto capítulo de esta tesis, centramos nuestro estudio en los efectos que tiene la sostenibilidad de los proveedores y de la propia empresa sobre la resiliencia de la empresa. La resiliencia es un concepto interdisciplinar, enfocando cada disciplina en diferentes aspectos y creando definiciones diversas pero relacionadas (Folke, 2006; Linnenluecke, 2017). La resiliencia, aplicada a los sistemas organizacionales, incorpora las ideas de adaptación, aprendizaje y autoorganización, además de la capacidad de persistir después de una perturbación (Folke, 2006). Por lo tanto, la resiliencia de los sistemas organizacionales, no solo aparece en respuesta a momentos de crisis, sino que se aplica continuamente cuando los sistemas se anticipan y ajustan a los cambios en el entorno (Hamel & Välikangas, 2003; Gittell *et al.*, 2006; Ortiz de Mandojana & Bansal, 2016). La idea de anticipación y adaptación explica que la investigación sobre la resiliencia organizacional se haya explorado en gran medida por separado de la gestión de crisis, bajo el supuesto de que las organizaciones resilientes evitan las crisis (Williams *et al.*, 2017). Así, mientras que la investigación sobre gestión de crisis se centra en la capacidad de devolver el funcionamiento normal de las organizaciones y los sistemas después de una crisis, la resiliencia se centra en la capacidad de mantener un desempeño confiable a pesar de la adversidad.

La resiliencia es un proceso interactivo de adaptación relacionado con las capacidades de la empresa para comprender, responder y absorber variaciones; mantener, recuperar y/o construir nuevos recursos (Williams *et al.*, 2017). Lengnick-Hall & Beck (2005, p. 750) definen la resiliencia como una combinación única de propiedades cognitivas, conductuales y contextuales que aumentan la capacidad de una empresa para comprender su situación actual y desarrollar respuestas personalizadas que reflejen esa comprensión. En un trabajo posterior, Lengnick-Hall *et al.* (2011, p. 244) definen la resiliencia como la capacidad de una empresa para absorber, desarrollar respuestas específicas a situaciones específicas y, en última instancia, participar en actividades para capitalizar y adaptarse a sorpresas disruptivas que potencialmente amenazan la supervivencia de la organización. Por lo tanto, con base en esta literatura

previa, la resiliencia organizacional tiene dos dimensiones. Williams *et al.* (2017) definen la resiliencia como el proceso mediante el cual un actor (es decir, un individuo, una organización o una comunidad) construye y utiliza sus dotes de capacidad para interactuar con el entorno de una manera que ajusta y mantiene el funcionamiento antes, durante y después de la adversidad. Por lo tanto, podemos hablar de resiliencia como capacidades previas a la adversidad o crisis, por un lado, y por otro, como la organización y ajuste durante una crisis, y la respuesta y recuperación posterior. Además, se ha desarrollado el concepto y existe una definición de resiliencia de la cadena de suministros que es «la capacidad de adaptación de la cadena de suministro para prepararse para eventos inesperados, responder a interrupciones y recuperarse de ellos manteniendo la continuidad de las operaciones en el nivel deseado de conectividad y control sobre la estructura y función» (Ponomarov & Holcomb, 2009, p. 131). Entonces, podemos decir que la cadena de suministros tiene un papel importante en la resiliencia de una empresa y, si asumimos el papel de la sostenibilidad relacionada con el desempeño financiero, tal vez esto también sucede no solo a nivel de empresa, sino también a nivel de la cadena de suministros en su conjunto (Pagell & Wu, 2009). Por tanto, investigar las implicaciones de la sostenibilidad a nivel de la cadena de suministros sobre los procesos que generan resiliencia, tanto en su dimensión previa a la crisis como en la de desarrollo y recuperación tras una crisis, puede ser relevante.

Adicionalmente a los comentarios previos, que tienen un enfoque más académico, consideramos que esta tesis y los elementos que estudia están en consonancia con demandas reales de las empresas y la sociedad en general por dos razones principalmente.

La primera es que, dada la situación actual en la que aún se notan los efectos de la pandemia global generada por la COVID-19, el mundo en general ha sufrido un importante golpe que ha tensionado las cadenas de suministros. Esto ha hecho aún más relevante si cabe la importancia de que las empresas y las cadenas de suministros sean lo más resilientes posible para evitar desaparecer en momentos de tanta dificultad, o que puedan seguir operando cuando los proveedores no pueden actuar como en situaciones normales. La segunda es que el hilo conductor de esta tesis, que es la sostenibilidad principalmente, está siendo el gran enfoque del mundo desarrollado para evitar en la medida de lo posible el cambio climático. A este respecto, sirven como ejemplo el lanzamiento por parte de la ONU de los Objetivos de Desarrollo Sostenible (ODS) o los dos planes de inversiones más ambiciosos de la

historia reciente por parte de las administraciones públicas. Nos referimos al llamado Green New Deal lanzado por el Gobierno de Estados Unidos para alcanzar el reto de emisiones 0 en 2050 y al Plan de Recuperación para Europa que, entre sus varios objetivos, pone como dos focos importantes crear una Europa más resiliente y verde.

1.1.1. Objetivos de la investigación

El principal objetivo de este proyecto de investigación es dar respuesta a la pregunta que nos planteábamos al principio, es decir, cómo influyen la cadena de suministros y el rol de los inversores en la sostenibilidad de las empresas internacionales y las consecuencias de esta. Aunque todo el trabajo de esta tesis guarda un hilo conductor común referente al estudio de distintas perspectivas de la sostenibilidad de empresas internacionales desde una perspectiva de la interacción con dos grupos distintos de *stakeholders*, cada trabajo también ha dado lugar a sus objetivos específicos que surgen a partir del objetivo general:

- Revisar el estado de la literatura sobre relaciones entre la empresa y la cadena de suministros y los inversores.
- Analizar si el alineamiento de las políticas medioambientales entre las empresas y su cadena de suministros viene determinado por relaciones de dependencia y coordinación.
- Estudiar la posibilidad de que la distancia regulatoria entre el país de la empresa y de los proveedores modere las relaciones anteriores.
- Analizar qué impacto tiene la procedencia de los inversores de una empresa sobre la proactividad medioambiental de la empresa.
- Estudiar si el perfil medioambiental del país de origen de los inversores modera la influencia que estos pueden tener sobre la proactividad medioambiental de la empresa.
- Conseguir resultados que sean útiles para la academia y para los gestores de empresas multinacionales y los reguladores públicos.

1.1.2. Metodología

Para el desarrollo de esta tesis doctoral, hemos seguido una metodología general que puede resumirse en los siguientes pasos:

1. Profunda revisión de la literatura más relevante del campo de estudio comentado anteriormente.

2. Planteamiento definitivo de objetivos concretos de investigación partiendo de la base de los formulados en el apartado anterior y formulación de hipótesis de investigación.

3. Recogida de datos secundarios operativos, medioambientales y financieros a través de bases de datos de una muestra significativa de empresas.

4. Uso de distintas técnicas estadísticas para el contraste de las hipótesis y para la obtención de datos con significación.

5. Elaboración de conclusiones a partir de los datos obtenidos, revisión de las limitaciones del estudio y proposición de futuras líneas de investigación.

Cada trabajo de los que componen la tesis tiene alguna especificidad en cuanto a su metodología que se expone más detenidamente en cada uno de sus capítulos correspondientes, pero a continuación se exponen las principales cuestiones metodológicas de cada uno de ellos.

En el capítulo 2, utilizamos una muestra de 251 parejas de proveedores/compradores obtenida de la base de datos Bloomberg, de las cuales obtenemos datos medioambientales para poder calcular el alineamiento de sus políticas medioambientales, así como datos financieros y operativos para calcular la dependencia entre empresas y proveedores y las distintas variables de control necesarias para poder hacer un análisis adecuado. Varios estudios tratan el alineamiento de las empresas con sus proveedores desde distintas perspectivas o tipos de estrategia (Handfield *et al.*, 2015). En nuestro caso, nos centraremos en aquellos que guardan relación con cuestiones medioambientales. Por tanto, la variable que utilizamos para medir la alineación entre proveedores y empresas es si disponen o no de una serie de políticas medioambientales en común. En concreto, y por sus nombres en inglés, serían: *environmental verification*, *sustainable supplier guidelines*, *environmental quality management*, *waste*, *water and emission reduction policies*, *energy efficiency and climate change and biodiversity policies*. Para calcular la dependencia que tiene la empresa principal sobre sus proveedores a la hora de alinear sus políticas medioambientales, utilizamos la cantidad de dinero que supone la relación entre la empresa y su proveedor (Kim & Davis, 2016). Otra de las medidas usadas para analizar el mayor o menor alineamiento de las empresas con sus proveedores es la de los mecanismos interorganizacionales

medioambientales que usan las empresas. Este mecanismo proporciona pautas sobre la reducción de desechos, el uso de recursos o las emisiones ambientales, y también puede fomentar la introducción de elementos relacionados con los sistemas de gestión ambiental en la cadena de suministro (Hervani *et al.*, 2005). Además, se utiliza la base de datos del Banco Mundial y del World Economic Forum (2015) para calcular la distancia medioambiental regulatoria y variables de control. En cuanto a la técnica estadística, utilizamos una regresión con moderación para testar las hipótesis con datos de corte transversal para el año 2014.

En el capítulo 3, utilizamos una muestra de datos de panel no balanceados entre 2006 y 2017, que incluyen 12 527 observaciones de 1532 empresas diferentes de 11 sectores económicos y de 23 países. Para analizar la proactividad medioambiental se ha usado la variable disponible en Thomson Reuters Eikon, *environmental innovation category score*, que muestra los esfuerzos realizados por la empresa para mejorar su huella medioambiental a través del uso de nuevas tecnologías e innovación. Para analizar el perfil de los inversores nacionales e internacionales y su capacidad de decisión sobre la empresa, utilizamos datos también obtenidos de Eikon con una metodología similar a la realizada en estudios previos (Cundill *et al.*, 2018; Kim *et al.*, 2019). Para medir el nivel de la cultura ambiental del país de los inversores, usamos el Índice de Desempeño Ambiental (EPI), como se usa en otros estudios (por ejemplo, Leyva-de la Hiz *et al.*, 2018). En este estudio también se requieren varias variables de control tanto financieras como de gobernanza, que también se toman de Eikon. Para este trabajo utilizamos un modelo de efectos aleatorios sobre el panel de datos para probar nuestras hipótesis.

En el capítulo 4, utilizamos dos muestras, una de 296 parejas de proveedores/compradores para analizar el efecto del compromiso con la sostenibilidad de los proveedores sobre la resiliencia de una empresa antes de una crisis, y otra muestra de 132 para analizar la resiliencia durante y después de una crisis. La resiliencia, que es la variable dependiente y clave en este trabajo, la medimos de dos formas distintas, atendiendo a si la analizamos como la capacidad de la empresa de evitar o resistir una crisis o para medir la recuperación durante o tras la crisis. Para el primer caso, utilizamos el indicador Altman's Z-Score que indica la posibilidad de que una empresa sufra una suspensión de pagos o una crisis financiera importante. Esta variable ya ha sido utilizada para medir la resiliencia en la literatura (Dolz *et al.*, 2018). Para medir cómo las empresas pueden recuperarse de la crisis, creamos una variable con la variación entre los ingresos de un año a otro (Martin & Holweg, 2017).

El compromiso con la sostenibilidad lo medimos con la puntuación RobecoSAM, que se basa en preguntas individuales de tres dimensiones: económica, medioambiental y social. Esta medida es bastante reciente, pero el prestigio de RobecoSAM es significativo y se está utilizando en algunos trabajos del campo (Argento *et al.*, 2019). Para medir el tamaño de la empresa utilizamos el total de activos (Radu & Francoeur, 2017). En este estudio también utilizamos varias variables de control que obtenemos de la base de datos Bloomberg. El análisis estadístico en este caso es una regresión moderadora con datos de corte transversal.

Los paquetes de *software* estadísticos utilizados durante la tesis han sido SPSS y STATA.

1.1.3. Estructura del trabajo de investigación

Este trabajo de investigación contiene, además de este capítulo de introducción, tres capítulos adicionales que se corresponden con tres trabajos de investigación que se encuentran redactados en inglés, y un último capítulo con las conclusiones y comentarios finales que cierran el trabajo realizado en la tesis. A continuación, se describen de forma breve los contenidos de los capítulos mencionados.

En el capítulo 2 de esta tesis se recoge el trabajo «Aligning Environmental Policies In International Supply Chains: The Moderating Effect Of The Environmental Regulatory Distance», centrado en analizar, desde una perspectiva de la teoría de la dependencia de recursos (Pfeffer & Salancik, 1978), cómo la dependencia y los mecanismos interorganizacionales de gobernanza medioambiental establecidos entre proveedor y comprador pueden ayudar a mejorar el alineamiento de las políticas medioambientales existentes entre ambos. Todo ello es analizado también teniendo en cuenta el papel moderador que puede tener la distancia regulatoria existente entre los países a los que pertenecen respectivamente el proveedor y el comprador.

La literatura previa ha hecho un trabajo importante para destacar la importancia que tiene la dependencia de los compradores sobre los proveedores y las situaciones de desnivel en cuanto a poder entre ambos, y las implicaciones que pueden tener para distintas perspectivas de la empresa (Touboulic *et al.*, 2014). Sin embargo, no se ha estudiado de forma profunda cómo puede afectar esta dependencia en las políticas medioambientales y si existen mecanismos que puedan mitigar y ayudar a la consecución de unas mejores políticas medioambientales. Igualmente, diversos autores han analizado el papel de la distancia regulatoria en distintas relaciones,

incluidas las de sostenibilidad medioambiental de la cadena de suministros (Busse *et al.*, 2017), pero su uso como variable moderadora en esta situación es novedoso.

El capítulo 3 de esta tesis recoge el trabajo de investigación «'Shareholders' environmental profile and its impact on firm's environmental proactivity: An Institutional Approach», ya publicado (Bueno-García *et al.*, 2021). Tanto la academia como los directivos y expertos en finanzas no se ponen de acuerdo en las preferencias medioambientales de los distintos tipos de inversores. Por eso, en este trabajo analizamos las diferencias entre las influencias de los inversores extranjeros y nacionales sobre la proactividad ambiental de las empresas. Este análisis se realiza utilizando como marco teórico una variante de la teoría institucional que refleja dos tipos de procesos opuestos (el desinstitucionalismo y el institucionalismo defensivo) (Farjoun, 2002; Maguire & Hardy, 2009), que pueden afectar a las decisiones medioambientales de las empresas, teniendo a los inversores extranjeros como agentes desinstitucionalizadores y a los inversores nacionales como agentes del institucionalismo defensivo. El desinstitucionalismo es el fenómeno que hace referencia dentro de la teoría institucional al cuestionamiento de la legitimidad de las prácticas existentes debido a que agentes externos destacan su desarrollo no apropiado y, por lo tanto, abogan por el abandono de las prácticas previamente institucionalizadas. Sin embargo, la desinstitucionalización impulsada por agentes externos puede no tener éxito debido a los intentos de agentes internos de defender las prácticas existentes, en cuyo caso los agentes intentan controlar los recursos suficientes para imponer su punto de vista y sus objetivos y, por lo tanto, mitigar o detener el abandono de las prácticas existentes.

Adicionalmente, argumentamos que el perfil ambiental de los respectivos países de origen de los inversores modifica dichos procesos, ya que el país de origen incorpora percepciones culturales específicas dentro de los agentes de una empresa (Drogendijk & Holm, 2012; Zhu *et al.*, 2019), y así intensifica su influencia sobre lo que debe cambiarse o defenderse.

En el capítulo 4 de la tesis encontramos el trabajo «Pre-Adversity And In-Crisis Resilience: The Importance Of Sustainable Business Relationships». En este trabajo analizamos si la sostenibilidad de la empresa afecta a la relación con los proveedores que se comportan con una mayor preocupación por la sostenibilidad, y esto tiene efectos sobre la resiliencia de la empresa, partiendo de estudios previos que han analizado la importancia de la sostenibilidad de la empresa sobre la resiliencia (Ortiz

de Mandojana & Bansal, 2016). Utilizando como base teórica la definición y dimensiones de la resiliencia hechas por Williams *et al.* (2017), planteamos la hipótesis de cómo afectan los aspectos de la sostenibilidad a la relación con el proveedor y la implicación que tiene esta sobre las distintas dimensiones de la resiliencia. Siguiendo este marco, analizamos el impacto de la sostenibilidad de los proveedores sobre la llamada resiliencia previa a la adversidad, y después la resiliencia durante una crisis y la posterior recuperación. Adicionalmente, comprobamos si el compromiso por la sostenibilidad de la empresa y su tamaño pueden moderar los efectos comentados anteriormente.

Por último, en el capítulo 5 encontramos una recapitulación con las principales conclusiones de esta tesis. Haciendo referencia también a las aportaciones que consideramos que este trabajo puede aportar a la academia y a gestores y reguladores públicos, y comentando las limitaciones encontradas durante el desarrollo de todo el trabajo de investigación; cerrando, finalmente, con una mención a futuras líneas de investigación con las que continuar el camino comenzado con esta tesis.

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Capítulo 2. Aligning environmental policies in International Supply Chains: the moderating effect of the environmental regulatory distance

2.1. Introduction

Firms' specialization and international competence have served to increase interest in the relationships between firms in a supply chain (Malviya & Kant, 2015). Previous literature has analysed the positive implications of strategic coordination between suppliers and buyers in the supply chain (Lee, 2004; Handfield *et al.*, 2015; Skipworth *et al.*, 2015; Gligor *et al.*, 2020); however, the factors influencing the generation of that coordination have received limited attention (Huo *et al.*, 2017; Reimann & Ketchen, 2017). In a global context, and with stakeholder pressure urging more environmentally responsible firms, the concept of the strategic coordination between suppliers and buyers has gained attention from both academia and practitioners. This attention is because the concept offers an opportunity to optimize and promote sustainable production and consumption through new models based on continuous growth and limitless resources. Even though various advantages have been identified that emerge from the application of this coordination, there is little investigation into the drivers, barriers and practices in this relevant field (Govindan & Hasanagic, 2018; Stewart & Niero, 2018). However, there is a small consensus that considers alignment as one of the key elements for the success of strategic coordination between suppliers and buyers; indeed, it is considered a requirement for it, especially in the energy sector (Pan *et al.*, 2015). Along with this, government pressure through regulation seems to be another key factor that can help achieve an efficient alignment (Govindan & Hasanagic, 2018).

Thus, this manuscript analyses how dependence and interorganizational environmental governance mechanisms influence the strategic alignment between suppliers and their buyers, and the moderating influence of firms' international locations on these coordinated efforts due to differences in the environmental regulations of each country.

Alignment is the adjustment of one component in relation to another component so that the arrangement can lead to the optimal consequence of the relationship between the components (Nadler & Tushman, 1980). Specifically, strategic alignment is the consistency of the activities that implement the differentiating attributes of strategy (Kaplan & Norton, 2006). Several studies have analysed the positive effects on the financial performance of the company generated by the alignment of various strategies between suppliers and buyers (e.g. Handfield *et al.*, 2015; Skipworth *et al.*, 2015). Alignment allows sharing more information and knowledge (Vachon &

Klassen, 2006) and reduces misunderstandings or deviations from the supply chain strategy that can reduce performance (Blome *et al.*, 2014). However, the literature has not clearly established the reasons that buyers and suppliers align their policies (Wong *et al.*, 2012) and, specifically, their environmental policies (Tachizawa & Wong, 2015). This construct can be considered similar to integration, but in the case of integration it must have a clear intention of doing the process and in alignment, it can just be that the policies are consistent with or without intention. So when integration is a process of interaction and collaboration in which manufacturing, purchasing and logistics work together in a cooperative manner to arrive at mutually acceptable outcomes for their organization (Pagell, 2004), alignment is the consistency of the activities that the buyer and supplier have in common without the need of interaction or collaboration.

We focus our interest on the factors influencing the alignment of environmental policies between a firm and its main supplier. Our selection is justified by the importance and the difficulties of environmental alignment in supply chains (e.g. Sarkis *et al.*, 2011). On the one hand, sustainability issues are growing in importance for companies due to stakeholder pressure and there is a growing trend to ask for solutions affecting not only an individual company but the whole supply chain (Huang & Li, 2018). On the other hand, buyers are often asked to consider their suppliers' sustainability approaches and make sure that their approaches are coherent (Schnittfeld & Busch, 2016). Previous studies have proposed that the alignment of environmental policies can bring different benefits to the entire supply chain (Baier *et al.*, 2020).

We draw on resource dependence theory (RDT) (Pfeffer & Salancik, 1978) for our propositions in this paper. RDT argues that in order to survive, firms depend on resource exchanges with multiple actors, such as suppliers, buyers or competitors, that control critical resources. In this view, the objective of the company is to reduce dependence, and in a buyer-supplier relationship, this implies reducing dependence in that relationship. We consider that alignment of environmental policies may be the response from companies to external pressures regarding sustainability in the supply chain. We try to explain the factors that carry the alignment of environmental policies by paying attention to how this alignment may affect the dependence relationships between a firm and its supplier.

Using RDT, we propose that both the dependence that a buyer has from its main supplier and the existence of interorganizational mechanisms improve the alignment

of environmental policies between these organizations in a supply chain. Additionally, we consider that the environmental regulatory distance between the countries of the buyer and the supplier reinforces these relations. Our paper makes four contributions to the previous literature.

Firstly, although previous literature has shown the positive consequences of alignment on effectiveness and efficiency in the supply chain, we contribute by clarifying the factors that bring about the alignment of companies on environmental policies in the context of a buyer-supplier relationship. Secondly, we extend the RDT literature about the buyer-supplier relationship by examining alignment in the environmental arena. Thirdly, we analyse the moderating effects of the environmental regulatory distance between companies' countries on the relationship between dependence and alignment of environmental policies. Finally, we provide reinforced empirical evidence using robust secondary data for our analysis: most previous empirical studies on alignment in supply chains are based on descriptive case studies or rely on managers' views (Ashby *et al.*, 2012), which may generate subjective bias.

In this paper, we begin with a brief review of the literature relevant to the development of specific research hypotheses. We then describe the data and the empirical analysis, followed by a discussion of the results. Finally, the conclusions are presented, along with implications, limitations and future research questions.

2.2. Theoretical background and hypotheses

2.2.1. Buyer-Supplier Dependence as a Source of Alignment on Environmental Policies

When a company needs a scarce resource or cannot control all the conditions needed to achieve a certain goal, that company has depends on another firm that can provide that. This issue is the base concept of the RDT (Pfeffer & Salancik, 1978).

Dependence in the buyer-supplier relationship can be defined as a firm's need to maintain its business relationships with suppliers/buyers to achieve its goals (Narasimhan *et al.*, 2009). Task interdependence determines that firms require resources from external organizations to survive and develop (McCarter & Northcraft, 2007). The buyer and supplier dependence structure has been analysed previously in the literature and is considered one of the key determinant factors to improve performance in the supply chain (Kraljic, 1983). The degree of dependence

of one party determines the power of that party in relation to the other. So, the RDT literature considers organizational success as power maximization, meaning dependence reduction (Ulrich & Barney, 1984). A buyer will therefore try to reduce dependence on its supplier to be more successful.

A buyer's dependence on a supplier may emerge if the supplier's environmental policy and approach positively or negatively affect the buyers' business. From the environmental or sustainability perspective, some of the main problems and risks that a buyer encounters with its supplier are in the areas of environmental accidents; pollution and the emission of greenhouse gases; pollution of air, water or soil; product waste or energy; excessive packaging; and non-compliance with sustainability laws (Giannakis & Papadopoulos, 2016). All of these issues caused by a supplier can generate problems for the buyer, for example, reputational risk (Roehrich *et al.*, 2014), sustainability risk (Hajmohammad & Vachon, 2016), and the need to reduce misunderstandings or deviations from the supply chain strategy that can diminish the environmental performance (Blome *et al.*, 2014). Three main reasons explain why a buyer that depends on its supplier will realize important incentives for being environmentally aligned with its suppliers. This alignment means to be in a similar concern about sustainability and focused on reducing the problem and risks mentioned before, establishing similar policies and systems related to environmental issues.

The first reason is related to pressure from stakeholders and the interest in avoiding any reputational risk. Stakeholders can demand or pressure the buyer to comply with standards such as those pertaining to the International Organization for Standardization (ISO) (Bandyopadhyay, 2005). Moreover, when ethical dilemmas arise, companies are often held responsible for the behaviour of their suppliers, so the buyer depends on the correct behaviour of the supplier. In order to minimize the risk incurred by scandals in their suppliers, buyers will tend to put pressure on their suppliers to adopt codes of conduct and more sustainable business practices (Pedersen & Andersen, 2006; Touboulic *et al.*, 2014). In other words, when buyers depend on their suppliers, the buyers see clear reputational incentives to make sure that their environmental policies are aligned.

The second reason is related to the power of the supplier. A situation of buyer dependence implies that the supplier can force the buyer to follow his environmental philosophy. In this situation, the supplier may act opportunistically (Ireland & Webb,

2007; Kaufmann *et al.*, 2018) and make agreements that will benefit its own interests, or encourage the buyer to make most of the investments or relationship-specific alignments (Casciaro & Piskorski, 2005; Zhang & Huo, 2013). On the other hand, a careful and controlled use of that power can promote alignment and have positive effects on performance, providing a better understanding of suppliers and the sources of their dependencies (Chae *et al.*, 2017). For example, the bigger member of the buyer-supplier relationship can force the smaller one to adopt some environmental policies, like certifications or environmentally sound practices (González *et al.*, 2008).

The third reason for the alignment of environmental policies is related to the market. Companies that exist in the market can require a minimum of environmental policies or standards in order for other organizations to work with them. In this context, if the buyer does not fit with all the market standards, it will have a reduced list of suppliers with which to work. In this situation, the buyer is really dependent on a small group of suppliers. However, Cox *et al.* (2002) have shown that power is not static, and buyers can use various strategies to alter dependency. Such strategies can help move, for example, from situations of supplier dominance to interdependence (Touboulic *et al.*, 2014). If the buyer aligns his policies with the supplier, it will be easier to learn and develop better environmental policies. In other words, the buyer will be able to find more suppliers that require a high level of environmental commitment.

Thus, as a first hypothesis, we want to test if a buyer's dependence on its supplier generates greater alignment on environmental policies due to pressure from the stakeholders, the power used by the supplier, and the buyer's need to adapt its policies to fit with the market. Thus, we propose:

> *H1: Higher levels of buyer dependency on a supplier will generate greater alignment of environmental policies.*

2.2.2. The Effect of a Firm's Utilization of Interorganizational Environmental Governance Mechanisms on the Alignment of Environmental Policies

Existing studies based on RDT perspectives identify antecedents for the successful relationship between firms and their partners and the governance mechanisms of these relationships (e.g. Huang & Li, 2018). To ensure the stable supply of resources from other parties, an organization may establish governance mechanisms to reduce the uncertainty associated with dependence on the supplier (Brito & Miguel, 2017). Also, sustainability initiatives often involve the need for collaboration between buyers and suppliers. The lack of collaboration may decrease the sustainability features, this is one of the main reasons why the companies try to use the mechanism to improve governance and collaboration within the supplier's relations. From an RDT perspective, the purposes of these governance mechanisms are to guarantee organizations access to resources in a standardized way, to stabilize conditions of provided outcomes, and to comply with environmental regulations (Handfield, 1993). These governance mechanisms manage interdependence between organizations and reduce the dependence and power imbalance (Pfeffer & Salancik, 1978; Handfield, 1993; Paulraj & Chen, 2007; Singh *et al.*, 2011).

In an environmental context, interorganizational environmental management is one of the governance mechanisms that a firm can use to coordinate and control the ecological and social impacts in supplier relationships and supply chains (Schnittfeld & Busch, 2016). There is extensive literature that has analysed interorganizational environmental management and how this is implemented in the buyer-supplier relationship (Sarkis *et al.*, 2011; Malviya & Kant, 2015). Interorganizational environmental management can include many different mechanisms which act over upstream (green purchasing, green supplier development, inbound logistics, transportation), internal (environmental management systems, environmentally conscious manufacturing), downstream (green marketing, outbound logistics) and 'closing-the-loop' activities (reverse logistics) (Hervani *et al.*, 2005).

These mechanisms help to avoid the risks of dependence among different organizations by improving the environmental performance of the supply chain without forcing the supplier (or the buyer) to adopt an environmental policy. These mechanisms can reduce dependence through collaboration, control of the environmental scope, and the establishment of some green standards. The final outputs are positive for both the buyer and the supplier because the cooperation of

suppliers is essential to reduce waste and emissions, and generally improve environmental indicators in a company (e.g. Schaltegger & Burritt, 2014).

Hence, we propose that the existence of interorganizational environmental governance mechanisms generates an alignment of some behaviours of the buyer and the supplier. In the environmental arena, this will be particularly because the exchange of environmental management information, which is inside the interorganizational environmental management mechanism, usually improves the performance of the buyer and the supplier (Lai *et al.*, 2015). So, if the buyer has an interorganizational environmental management mechanism, it can influence its supplier to adopt similar environmental policies, and it is possible that the relationship brings that alignment due to the exchange of information and collaboration. Thus, we propose:

> *H2: The buyer that has established an interorganizational environmental management mechanism with its supplier will generate greater alignment of environmental policies.*

2.2.3. The Moderating Effect of the Regulatory Distance between Countries on the Alignment on Environmental Policies

Firms depend not only on national suppliers but also increasingly on other suppliers in foreign countries for raw materials or intermediate products (Xia, 2011). International suppliers add another dimension of risk and difficulty because they require a cross-border relationship. So, managing a foreign supplier requires increased attention to the institutional profile differences throughout these chains. Regulatory distance refers to the differences between countries' legal institutions, laws and regulations; meanwhile, informal institutional distance results from differences in values, beliefs, customs, traditions and codes of conduct (North, 1990). Some papers have studied the informal distance between buyers and suppliers, discovering that similar cultures generate better performance of the supply chain, which reduces when they have different cultures (Cadden *et al.*, 2013); or, differences can generate communication problems (Freeman & Browne, 2004). A shared supply chain culture of norm-based trust and openness may yield better outcomes and reduced conflict and uncertainty throughout the supply chain (Cadden *et al.*, 2013). In the context of a cross-border relationship and its implications for environmental policies, regulatory distance looks especially relevant because it includes rules, sanctions and legal

requirements that are coercive and are tied to asymmetric power relationships (Touboulic *et al.*, 2014).

Focusing on the institutional regulations or the regulatory distance between countries on environmental issues, Zhu & Sarkis (2007) show how political pressure can affect companies' acceptance of different practices of interorganizational environmental governance mechanisms. Coercive pressures seem to be the strongest influence on late adopters of environmental practice. So, when the buyer and supplier countries' institutional environment is different, there are likely to be more problems surrounding companies' communication, collaboration and commitment to environmental issues (Busse *et al.*, 2017).

We expect that the environmental regulatory distance moderates the effect of dependence on the alignment of environmental policies. Three different factors justify our expectations. Firstly, a small distance between the buyer and the supplier makes it easier to see and understand the resources provided by the supplier (Leonidou *et al.*, 2011). Moreover, the possibility of implementing any adjustment to those resources will be simpler (Leonidou *et al.*, 2011). In this context, alignment could be less necessary. However, if the distance is high, the situation is the opposite, and the buyer and supplier should make a greater effort to solve these problems: that will be an incentive to improve the alignment of their environmental policies.

Secondly, a high regulatory distance implies higher levels of uncertainty and risk (Busse *et al.*, 2016). This is because the firms participating in the relationship may not know all aspects of the other country's regulation or cannot adapt easily to some of them. So, if dependence on resources or supplier generates uncertainty and risk, this distance increase that uncertainty and risk (Sreedevi & Saranga, 2017). In other words, environmental regulatory distance can increase the uncertainty and risk that the dependence on resources generates. To solve this problem, the buyer can make a greater effort to align its environmental policies with the supplier to fit with the other country's regulation, and try to improve information sharing (Busse *et al.*, 2017).

Thirdly, stronger environmental institutional pressures may constrain natural resource-intensive adaptation by creating legitimacy challenges for firms (Kotler, 2011; Tashman & Rivera, 2016). It is important for a firm to comply with stakeholders' legitimacy challenges, which could be different in each country. What is important for a stakeholder with high environmental regulation could be less important for a stakeholder from a country with less environmental regulation.

Moreover, when the buyer and supplier try to solve these challenges in order to "appear legitimate to key stakeholders" (Marquis *et al.*, 2007, p. 932), it could be that they have to reach different levels of legitimation due to different perspectives of legitimation from the stakeholders. Thus, with a high environmental regulatory distance, dependence on the supplier is more relevant for the buyer, and the efforts that it must make to align the environmental policies will be greater to comply with the most demanding stakeholders. Thus, we propose:

> *H3a: With a high level of environmental regulatory distance, there will be a stronger positive relationship between buyer-supplier dependence and the alignment of environmental policies.*

We also consider the environmental regulatory distance as a moderator of the relationship between the interorganizational environmental management mechanism and the alignment of environmental policies. Among the other factors that could affect this relationship indirectly, we consider that there are some differences between dependence and the implementation of a mechanism when we talk about the moderating effect of the regulatory environmental distance.

If the distance is high between buyer and supplier, the implementation of an effective interorganizational environmental management mechanism will be more difficult due to complications of transferring routines from one partner to the other (Kostova, 1999). The literature has shown that regulatory distance directly affects multinationals (Xu & Shenkar, 2002) and a multinational and subsidiaries that are placed in foreign markets need to adapt the internal processes of their relationship to the resources available and to the institutions of the local environment (Kostova & Roth, 2002). A multinational and its subsidiaries in this situation have a similar approach to the buyer-supplier relationship. Since internal processes and practices often make a major contribution to firms' competitive advantages, the ability to transfer them to other countries is essential. One example of such adaptation is the interorganizational environmental management mechanism (Christmann & Taylor, 2001). Moreover, environmental regulatory distance can increase the need to implement an interorganizational environmental management mechanism in order to increase the alignment of environmental policies. In this sense Dong *et al.* (2016) show that when the regulatory distance is high, the companies make a strong effort to align their policies to solve problems related to high distance, such as misunderstanding or role hazard. Thus, we propose:

H3b: With a high level of environmental regulatory distance, there will be a stronger positive relationship between the interorganizational environmental management mechanism and the alignment of environmental policies.

2.3. Methodology

2.3.1. Data Source and Sample

Although a buyer can have more than one supplier, we focus only on the main supplier because the buyer depends more on it. Thus, in order to test the hypotheses, we need companies that operate with suppliers, and their disclosure of information about them. Likewise, we wanted to have a homogeneous sector in terms of pollution and characteristics; because of that, we chose the energy sector and related industries. Energy industries are appropriate for the aims of our study for two main reasons. First, the energy sector is one of the most polluting sectors and its importance to climate change is crucial. The second reason is the stakeholders' concern and the pressure of regulations on this sector (International Energy Agency, 2015, 2016). In recent years, we have seen countries establishing some new agreements on emissions reduction (United Nations Climate Change Conference, also known as COP 21, held in Paris, 2015) that will have a clear impact on the energy sector due to heavier regulations and pressure to be more efficient and reduce emissions (International Energy Agency, 2015, 2016).

A two-step process was adopted to determine our final sample of firms in the energy sector. Firstly, we identified firms in the Bloomberg database for the energy sector (code 10) and the electric utilities (code 551010), gas utilities (code 551020), and independent power and renewable utilities (code 551050). Renewable utilities are a subsector of utilities but are industries related to the energy sector following the Global Industry Classification Standard (GICS) codification. Secondly, in order to identify the companies for this study, we selected all the public companies without location restrictions from the energy sector, avoiding subsidiaries and choosing consolidated groups and only those which have data on the main supplier, because the database only provides in-depth information about the main supplier. With these requirements, we obtained a base of 763 pairs of companies. Finally, when we established all the variables required for our analysis, we obtained 251 that had information for all the variables. The year of the study is 2014 because the

environmental information is updated with some delay and 2014 was the most recent complete year when we started our research.

Our variables have been measured using data from the Bloomberg database. However, we also use data from the World Bank to analyse the economic growth of the supplier and buyer country, and in order to calculate the environmental regulatory distance between countries, we have used data from the World Economic Forum (2015).

2.3.2. Dependent Variable

"Alignment of Environmental Policies". Previous studies analysed alignment or integration among the supply chain or suppliers using questionnaires to managers about the alignment with suppliers (e.g. Zhang & Huo, 2013; Handfield *et al.*, 2015; Skipworth *et al.*, 2015). However, another study (Hanson *et al.*, 2011), focused on different ways of measuring alignment, suggests ways of measuring that can be achieved using secondary data. Following this idea, we will consider in our paper that the supplier and the buyer have an alignment if they have established a similar environmental policy. These environmental policies are measured through nine different items that reflect the firm's practice regarding the existence of environmental verification, sustainable supplier guidelines, environmental quality management, waste, water and emission reduction policies, energy efficiency and climate change and biodiversity policies, respectively. The definition of each of these items can be found in Appendix A.

These nine items can take two possible options: 1 when each of these practices exists and 0 otherwise. Using this approach to alignment, we will consider that a company is in positive alignment with its supplier if the two companies develop these practices regarding their environmental policies. To make a comparison of the companies possible, we create an alignment index that shows how many cases of positive alignment each buyer-supplier pair has of the total number of possible practices. So, it could be 0 if they do not have any alignment in environmental policies until 9 if they have alignment in all the environmental policies. The variable is presented as a percentage in order to improve the display of some of the figures in the results, where higher values mean strong alignment and lower values mean limited (or null) alignment in the environmental policies.

2.3.3. Independent Variables

"Dependence on the Supplier". Previous measurements of dependence have used questionnaires (e.g. Zhang & Huo, 2013; Touboulic *et al.*, 2014). Most recent studies have used proxies like inventory turnover (e.g. cost of goods sold divided by the average inventory) to ascertain the dependence that a buyer has on its collective suppliers (Kim & Davis, 2016). We also use an objective measurement, using the total amount of money that the relationship means to the buyer and supplier. So, we take the total cost of the relationship from the main supplier of the buyer. As we mention in the control variables, we also consider the percentage of cost that the main supplier represents to the buyer over the total of the suppliers. This measure is available from the Bloomberg database. Our measure is appropriate for analysing the influence of dependence on the alignment between the main supplier and the buyer due to a more direct and specific approach compared with the inventory turnover.

"Interorganizational Environmental Governance Mechanisms". In this paper, we focus on whether the company has implemented specific initiatives to manage the coordination and governance with the environmental approach of its supply chain. This mechanism provides guidelines on waste reduction, resource use or environmental emissions, and may also encourage the introduction of elements related to environmental management systems in the supply chain. This mechanism can include upstream (green purchasing, green supplier development, inbound logistics, transportation), internal (environmental management systems, environmentally conscious manufacturing), downstream (green marketing, outbound logistics), and 'closing-the-loop' (reverse logistics) activities (Hervani *et al.*, 2005). This variable is measured as environmental supply chain management system in the Bloomberg database. Its value there is dichotomous: 0 when it is not implemented or 1 otherwise.

"Environmental Regulatory Distance between Countries". To calculate the environmental regulatory distance, we follow Rivera & Oh (2013) and use the questions in the World Economic Forum Global Competitiveness Report 2014–2015 related to the stringency of environmental regulations and enforcement of environmental regulations. These questions made to managers and firms leaders show the perception that firms have about the regulatory framework of each country. Using the results of the questions given to each country, we apply the Kogut & Singh (1988) formula, used originally to calculate differences between countries' cultures, to calculate the differences in the environmental regulation between buyers' countries

and suppliers' countries. I_{Ki} and I_{Kj} are the values of question k (k = 1–2) for country i and country j, respectively. V_k is the variance of the question k.

$$Environmental\ Regulatory\ Distance = \sum_{k=1}^{2} \left(\frac{\left(I_{Ki} - I_{Kj}\right)^2 / V_k}{2}\right)$$

Higher values of this variable mean a wide environmental regulatory distance between countries and lower values mean a more limited distance. If the value is 0 means that there is no distance because the focal firm and main supplier are from the same country.

2.3.4. Control Variables

In addition to the measures described above, we control for eleven variables. Given the existence of multiple factors with the potential to influence the final alignment of environmental policies among two firms in the supply chain, it is important to make great efforts to control for multiple variables in the buyer, the supplier and their relationship. Specifically, we control for the size using total assets, revenue and profitability of both companies and the percentage of the total cost that the main supplier means for the buyer. Controlling for size and financial performance is necessary for environmental management studies (e.g. Bansal, 2005) to control those companies that can invest more in sustainability due to better resources. Due to a possible relationship between innovation and alignment (Sadiq-Jajja *et al.*, 2014), we control for the expenditure on R&D of both firms. As we use the distance between countries in terms of regulatory environmental distance, we consider it appropriate to control for the economic growth of the country.

2.4. Results

We used moderated regression analysis (Hayes, 2013) to test the hypotheses, introducing the moderating effect as a multiplicative variable. Table 1 presents the descriptive statistics and correlations for the variables that were examined in our study. We had previously checked the conformity of our data to the assumptions of our analytic tools, and the extent of heteroscedasticity, autocorrelation, and multicollinearity among the independent variables. The heteroscedasticity test (Breusch-Pagan) was not significant, so homoskedasticity can be assumed and our calculations were free of any significant heteroscedasticity problem. The test of autocorrelation (Durbin-Watson) shows a lack of any significant problem with

autocorrelation due to a value of 2.03. Analysis of variance inflation factors (VIF) showed that multicollinearity was not a problem for our analysis, with most of the VIF values below five (the highest value is 5.52 but just in one variable), as recommended by the literature (Hair *et al.*, 2009).

Table 2.1. Descriptive Statistics and Correlations

		Mean	Standard Deviation	1	2	3	4	5	6	7	8	9	10
1	Alignment of environmental policies	0.38	0.31										
2	Revenue of buyer	16072.07	40873.81	0.21***									
3	Revenue of supplier	22802.99	36066.24	0.20**	-0.03								
4	ROA of buyer	2.93	5.80	0.08	0.04	0.02							
5	ROA of supplier	3.98	4.29	0.08	–0.08†	0.09	0.07						
6	Total assets of buyer	25782.06	47517.40	0.23**	0.86***	-0.02	0.02	-0.10†					
7	Total assets of supplier	45659.82	99733.99	0.16*	-0.02	0.68***	0.06	0.01	0.05				
8	% of supply cost	7.26	12.19	-0.03	-0.06	0.18**	-0.05	-0.14*	-0.06	0.05			
9	R&D expense of buyer	45.72	166.37	0.19**	0.68***	-0.03	0.06	-0.06	0.76***	0.01	-0.04		
10	R&D expense of supplier	657.87	1322.82	0.20**	-0.01	0.60***	0.01	0.18**	0.01	0.63***	-0.12*	-0.01	
11	Economic growth of buyer country	2.61	2.09	-0.16**	0.05	0.08	0.14*	0.09†	-0.02	0.03	-0.02	-0.01	0.0
12	Economic growth of supplier country	2.31	1.71	-0.23***	-0.06	-0.06	0.14*	0.12*	-0.03	-0.01	0.07	-0.04	-0.1
13	Dependence	55.18	144.63	0.18**	0.33***	0.03	0.01	-0.10	0.37***	0.01	0.28***	0.27***	-0.1
14	Interorganizational environmental management	0.35	0.48	0.43***	0.13*	0.02**	-0.04	-0.07	0.20**	0.04	0.02	0.09†	0.14
15	Environmental regulatory distance	0.36	2.18	0.20**	0.11*	0.19**	0.04	-0.03	0.05	0.07	0.04	-0.01	0.19

N = 251; † p < 0.10; * p < 0.055; ** p < 0.01; *** p < 0.001

The results from the regression analyses are listed in Table II. Model 1 presents our results for the control variables. In model 2, we add the independent variables dependence on the supplier, environmental supply chain management, and regulatory environmental distance. We test the moderating variables in two different models to avoid multicollinearity. So, in model 3, we introduce the moderation of regulatory environmental distance in the dependence on the supplier. Finally, in model 4, we test the moderation of regulatory environmental distance in the interorganizational environmental management mechanism. The F test was used in all models to understand improvements that were a result of the incorporation of the variables in each step.

Table 2.2. Results of the Moderated Hierarchical Regression Analysisa

	Model 1	VIF	Model 2	VIF	Model 3
Intercept	0.37 (0.04) ***		0.26 (0.04) ***		0.26 (0.04) ***
Revenue of buyer	3.38*E-7 (0.00)	4.16	4.43*E-7 (0.00)	4.25	1.05*E-7 (0.00)
Revenue of supplier	1.29*E-6 (0.00) †	2.28	1.26*E-6 (0.00) †	2.33	1.34*E-6 (0.00) *
ROA of buyer	0.01 (0.00) †	1.04	0.01 (0.00)	1.05	0.01 (0.00)
ROA of supplier	0.01 (0.00)	1.12	0.01 (0.00) *	1.12	0.01 (0.00) **
Total assets of buyer	1.22*E-6 (0.00)	5.19	7.45*E-8 (0.00)	5.51	1.31*E-7 (0.00)
Total assets of supplier	-1.91*E-8 (0.00)	2.33	1.37*E-7 (0.00)	2.37	1.26*E-7 (0.00)
% of supply cost	7.04*E-5 (0.00)	1.16	-0.01 (0.00)	1.27	-0.01 (0.00)
R&D expense of buyer	2.65*E-5 (0.00)	2.36	0.00 (0.00)	2.40	0.00 (0.00)
R&D expense of supplier	1.76*E-5 (0.00)	2.07	-5.60*E-6 (0.00)	2.20	-2.51*E-6 (0.00)
Economic growth of buyer country	-0.02 (0.10)	1.40	-0.01 (0.01)	1.49	-0.01 (0.01)
Economic growth of supplier country	-0.03 (0.01) *	1.43	-0.02 (0.01) †	1.48	-0.03 (0.02) *
Dependence			0.00 (0.00)	1.36	0.00 (0.00)
Interorganizational environmental mechanism			0.23 (0.04) ***	1.29	0.22 (0.04) ***
Environmental regulatory distance			0.02 (0.01) *	1.14	0.01 (0.01)
Dependence * Environmental regulatory distance					0.00 (0.00) **
Interorganizational environmental * Environmental regulatory distance					
R^2	0.18		0.30		0.33
Adjusted R^2	0.14		0.26		0.28
Change in *F*	4.60***		14.54***		7.52**

Dependent variable: Alignment of environmental policies; [a] Non-standardized regression coefficients are shown. Standard errors are in p
0.055; ** p < 0.01; *** p < 0.001

The three first models show good fits, but not the fourth. In relation to the control variables, model 1 shows that some of them influence the alignment of environmental policies—specifically, the revenue of the supplier, the buyer ROA and the economic growth of the supplier country. The other control variables were not significant for the sampled firms.

In model 2, our results show that dependence on the supplier is not positively related to the alignment of environmental policies ($b = 0.00$, n.s.). Thus, Hypothesis 1 is not supported for our sampled firms. Furthermore, the adoption of an environmental supply chain management mechanism is positively related to the alignment of environmental policies ($b = 0.23$, $p < 0.001$). Hence, hypothesis 2 is supported. In model 3, we find that environmental regulatory distance imposes a moderating effect on the relationship between dependence on supplier and the alignment of environmental policies ($b = 0.00$, $p < 0.01$). So, although hypothesis 1 is not supported, we see that when we introduce the effect of the environmental regulatory distance, dependence is important to determinate the alignment of environmental policies. Consequently, hypothesis 3a is supported by our data, unlike hypothesis 3b ($b = 0.01$, n.s.) tested in model 4, which focuses on the effect of environmental regulatory distance on the interorganizational environmental management mechanism. Figure 1 presents the moderating effect of environmental regulatory distance and shows that dependence is positive for increasing alignment, only when the environmental regulatory distance appears. This effect increases with a higher level of distance. Thus, while dependence on the supplier (hypothesis 1) does not show a direct effect for our sampled firms, it has a positive effect on the alignment of environmental policies when the environmental regulatory distance is considered (hypothesis 3a). This figure has been created with the Process matrix and the Johnson-Neyman output.

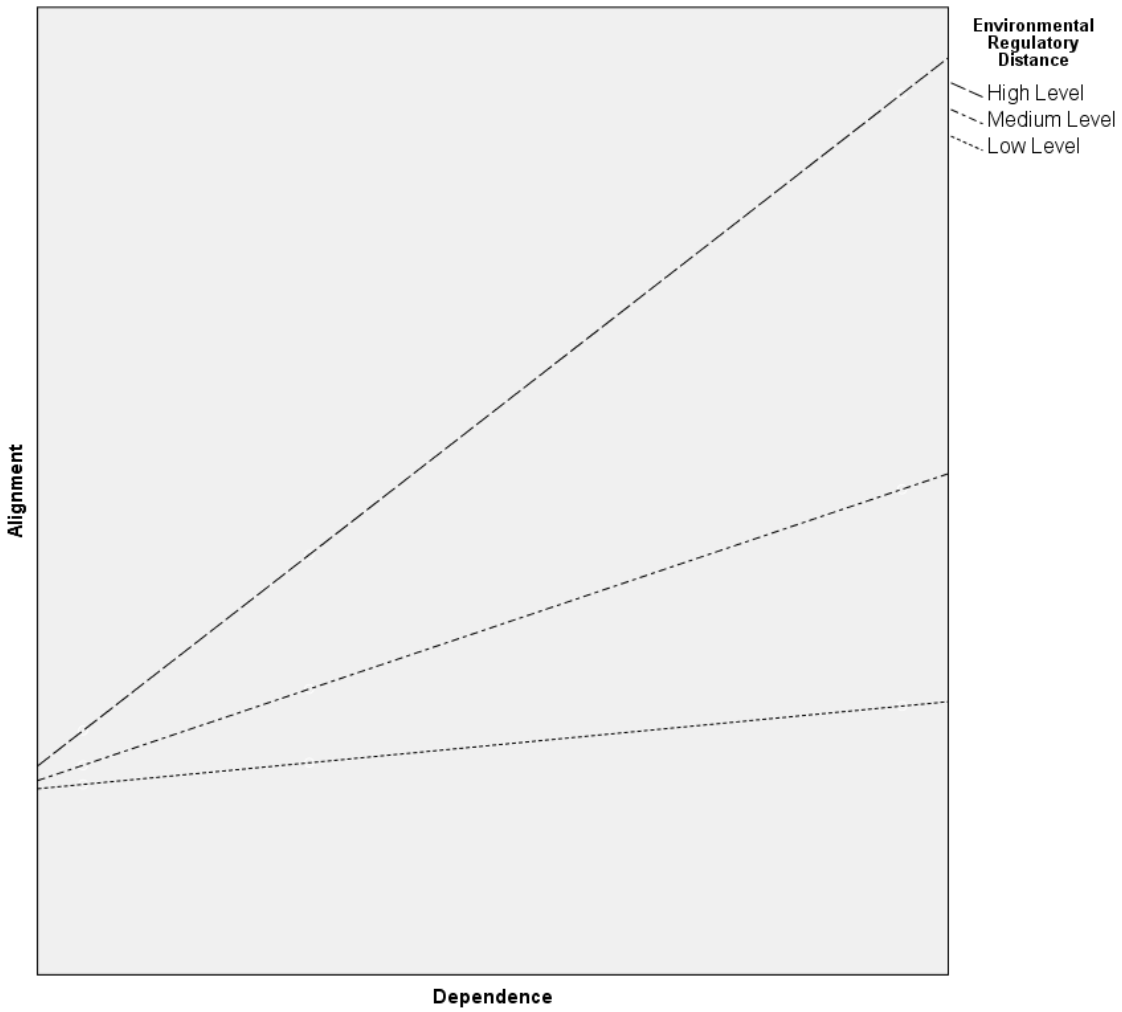

Figure 2.1. H3a. Moderation Effect of Regulatory Distance on the Relationship between Align-ment of Environmental Policies and Dependence on Supplier

2.5. Discussion, Limitations and Future Research

We study how dependence and interorganizational environmental management mechanism influence the strategic alignment between suppliers and their buyers. We also analyse the influence of the regulatory distance between the countries on dependence and the coordination efforts and mechanisms.

We found an interesting result about dependence in our study. Our model cannot show that dependence has a direct positive effect on the alignment of environmental policies in the sampled firms (hypothesis 1); however, when the environmental regulatory distance is wide (hypothesis 3a), dependence has an important positive effect on alignment. This could be because, in the case of environmental policies, the companies make a concerted effort when they want to fit in with environmental

regulations to avoid fines or to have more legitimacy for stakeholders. On the other hand, our model shows that the adoption of an interorganizational environmental management mechanism is positively related to the alignment of environmental policies (hypothesis 2); this is important, because this mechanism is implemented, among other reasons, to reduce dependence and the risk associated with suppliers. It is also important that our idea about the influence of environmental regulatory distance affecting this system (hypothesis 3b) does not have a statistical effect. So, companies will make the same effort to implement this kind of mechanism without concern for the differences in regulation, simply in order to reduce dependence.

This study makes contributions to research on RDT and corporate environmental management. Firstly, we answer some calls for a better RDT approach to supply chains (e.g. Touboulic *et al.*, 2014; Schnittfeld & Busch, 2016) and we establish one main reason for the alignment, which is now one of the most important constructs studied in operations research due to the effect that alignment has on effectiveness and efficiency in the supply chain (Lee, 2004). Secondly, we help clarify the factors that bring alignment on environmental policies to companies in the context of the buyer-supplier relationship and dependence, which has not been done before: previous research has focused on the consequences of alignment, and we show that interorganizational environmental management mechanisms which are collaborative and not forced are crucial for bringing about this alignment. Thirdly, we show that the environmental regulatory distance moderates the relationship between dependence and alignment, which has not been analysed previously and allows a new possibility for studies mixing RDT and institutional theory; it also answers the call for more studies about regulatory distance and the supply chain (Busse *et al.*, 2016). This is also important because there is little information about these issues and, in a global market, dependence and different regulations are critical for a company's success. Finally, our model is constructed using secondary data, which is not common in this area because many empirical studies developed in relation to the supply chain are based on descriptive case studies or rely on the opinions of managers (Ashby *et al.*, 2012) that often generate subjective bias limitations. In this study, we are able to test our hypotheses with secondary data, avoiding the subjectivity and limitations of a case study or surveys thanks to some initiatives of international organizations that cause large companies to increase the information they publish on their environmental performance. They also give information about the suppliers to whom they are related, which can allow deeper empirical studies on these concepts (Huo *et al.*, 2014).

We also consider some managerial implications. Firstly, our results show that if a company works with a supplier whose country has had a different regulatory environment, it will be more inclined to align environmental policies than if it works with a supplier from the same country or without a different level of regulation. Secondly, our results may help managers to identify the benefits of implementing an interorganizational environmental management mechanism due to its importance and effectiveness in aligning environmental policies, which implies better efficiency (Lee, 2004). Another important issue is that this kind of mechanism is more collaborative than a coercive way of doing things. The possible effect on legitimacy for stakeholders could also be relevant for managers.

This study has some limitations. Firstly, the database that we used does not provide historical data on supplier information at the moment that we did the data collection: it only discloses the most recent information on that relationship, so we can only use companies whose data is from 2014, the year of our study, or from the year before or after, assuming that the buyer-supplier relationship that we are measuring remains stable for a 12-month period. This is a similar approach to that taken in previous papers using such data (Kim & Davis, 2016). Secondly, we only consider a dyadic relationship (just one buyer and supplier) due to the difficulty of obtaining detailed objective data of buyer-supplier relationships; however, we studied the most important supplier for each buyer and each relationship has different percentages of dependence, so it is quite controlled. Thirdly, we have focused our study on only one polluting sector: it may be interesting to repeat a similar research in other sectors, perhaps in one of the less polluting sectors: we expect that the results will be similar because the concept of dependence is the same. The difference is the impact of each sector on climate change. Finally, we have studied dependence on suppliers as a key generator of alignment, but we are aware that dependence on buyers or other aspects of a supply chain will be important for alignment, too. We hope future research will overcome these limitations.

We also consider as future lines of research the study of other dimensions of the supply chain, like complexity or different kinds of distance, to understand all the factors that can affect the alignment of environmental policies apart from dependence and environmental regulatory distance. Study of the agility and adaptability of the supply chain linked to environmental issues can be interesting, too, because these two factors and alignment are the three most important efficiency factors in the supply chain (Lee, 2004): we consider that they should be studied from

a different perspective, that of resource dependence theory. Apart from environmental issues, the implications of innovation and alignment in the supply chain have not been studied completely (Sadiq-Jajja *et al.*, 2014) and offer an opportunity to complement the literature on the buyer-supplier relationship.

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Appendix A. Definitions of Environmental Policies

Variable	Definition
Verification type	Indicates whether the company's environmental policies and data were subject to an independent assessment for the reporting period.
Sustainable supplier guidelines	Indicates whether a supplier's guidelines, that encompass all environmental, social and governance (ESG) areas, are publicly disclosed.
Environmental quality management policy	Indicates whether the company has introduced any kind of environmental quality management and/or environmental management system to help reduce the environmental footprint of its operations.
Climate change policy	Indicates whether the company has outlined its intention to help reduce global emissions of the greenhouse gases that cause climate change through its ongoing operations and/or the use of its products and services. Examples might include efforts to reduce greenhouse gas (GHG) emissions, efforts to improve energy efficiency, efforts to derive energy from cleaner fuel sources, investment in product development to reduce emissions generated, energy consumed in the use of the company's products, etc.
Emission reduction	Indicates whether the company has implemented any initiatives to reduce its environmental emissions to air.
Energy efficiency policy	Indicates whether the company has implemented any initiatives to make its use of energy more efficient.
Biodiversity policy	Indicates whether the company has implemented any initiatives to ensure the protection of biodiversity. This might include trees and vegetation as well as wildlife and endangered species.
Waste reduction	Indicates whether the company has implemented any initiatives to reduce the waste generated during the course of its operations.
Water policy	Indicates whether the organization has undertaken any initiatives to reduce the quantity of water used or to improve the efficiency of its processes, and whether the company is considering the potential water stress to its areas of operation.

Capítulo 3. Shareholders' environmental profile and its impact on firm's environmental proactivity: An Institutional Approach

3.1. Introduction

In an increasingly globalized world where firm ownership has tended to become distributed between dominant shareholders – those with sufficient shares outstanding allowing them to have a significant influence over the decision-making process (Licht, 2001) – dominant shareholders' concerns about environmental issues have experienced an increase across frontiers (Lori & Schneider, 2002; Mackey *et al.*, 2007; Argento *et al.*, 2019). In fact, with the passage of time, the attitude of certain shareholders when it comes to using their ability to influence the direction of the company has changed from a more passive role to a more active role (Diestre & Rajagopalan, 2014; Paruchuri & Misangyi, 2015; Alda, 2019) leading to them having a greater influence over the firm's environmental strategy (e.g. Berrone *et al.*, 2010; Walls *et al.*, 2012; Calza *et al.*, 2016; Doluca *et al.*, 2018). For example, Robeco SAM is a specialist investment firm focused exclusively on sustainable investing which has created several scores and is well known in the management literature (Argento *et al.*, 2019), also publishing the globally recognized Dow Jones Sustainability together with Standard and Poor's (S&P) and Dow Jones indexes. The relevance of Robeco SAM rests on its attempts to influence the environmental strategy of firms and shareholders from other countries with different green standards. This case illustrates how dominant shareholders' interests in environmental issues go beyond frontiers but may differ across countries.

Observing this phenomenon, institutional theory scholars have long studied how different environmental practices may act as different templates within an institutional context, leading certain owners to preserve their profitability by influencing managers to engage in more sustainable practices (Bansal & Clelland, 2004; Berrone *et al.*, 2010). This is not always an easy task, given that dominant shareholders from different countries may have divergent views about what is right (Faelten *et al.*, 2015; Rejchrt & Higgs, 2015; Beugelsdijk *et al.*, 2018), and may vary in their understanding of the firm's environmental strategy. Hence, shareholders' home country's institutional differences play a particular role in their influence on sustainable practices.

In this sense, there is a lack of consensus in the literature regarding foreign and national shareholders' influence on firms' environmental strategy. In particular, foreign shareholders may support sustainable investments when good opportunities appear, but they may lead to underinvestment if they identify them as threats which jeopardize their future economic profits (Aguilera & Jackson, 2003; Ahmadjian &

Robbins, 2005; David *et al.*, 2006; Kim *et al.*, 2008). In the same vein, national shareholders are thought to be more committed to sustainable practices since they are more closely aligned with the local context (Aguilera & Jackson, 2003; Ahmadjian & Robbins, 2005); however, this factor may provoke lower environmental proactivity due to a desire to maintain the status quo and thus not improve environmental results. Moreover, the cultures of foreign and national shareholders differ depending on their home country, leading to conflicts (Desender *et al.*, 2016), with the foreign shareholders either succeeding in imposing their environmental preferences (Kim *et al.*, 2019; Tsang *et al.*, 2019), or failing in their attempts following strong opposition and resistance from nationals (Baik *et al.*, 2013). This being the case, what extent do foreign and national shareholders' influences over firm's environmental proactivity depend on their home country? Furthermore, which of these influences is the stronger?

Based on the institutional theory different processes (Farjoun, 2002; Maguire & Hardy, 2009), in this paper, we analyze dominant foreign shareholders as deinstitutionalization agents who will try to improve a firm's environmental proactivity, whereas dominant national shareholders are defensive institutionalism agents who will try to retain established green practices. Additionally, we argue that the environmental profile of shareholders' respective home countries modifies such processes, since the particular home country embeds specific cultural perceptions within a firm's agents (Drogendijk & Holm, 2012; Siegel *et al.*, 2013; Zhu *et al.*, 2019) and thus intensifies their influence over what must be changed or defended. We finally test the joint effect of these processes to shed light on which is stronger, since foreign shareholders' actions to improve green practices may triumph over national shareholders' defensive actions (Ahmadjian & Robbins, 2005) or may be stopped by existing home country practices (Slangen & van Tulder, 2009; Ortiz de Mandojana *et al.*, 2016).

This paper thus examines the institutional theory literature as well as relevant insights into shareholders' influence over a firm's environmental strategy. We found that foreign shareholders are successful in their deinstitutionalization process, increasing firms' environmental proactivity, when they are nationals of countries with a strong environmental profile. However, their efforts lead to lower environmental results when they are from countries with lower environmental standards, but only if they operate within firms based in more sustainable countries. Ultimately, our paper suggests the idea that deinstitutionalization forces are stronger than defensive

institutionalism (Ahmadjian & Robbins, 2005), and, moreover, it shows how the deinstitutionalization process is further activated when agents and firms' cultural distance is higher (Xu & Shenkar, 2002; Schwens *et al.*, 2011; Drogendijk & Holm, 2012; Siegel *et al.*, 2013).

The paper is structured as follows. In the next section, we present the theoretical background and develop our hypotheses. Then, we describe our dataset and the methodology we employed to test it, followed by our results. Finally, we conclude with a discussion of the implications, limitations, and future research avenues.

3.2. Theoretical background and hypotheses

3.2.1. Environmental proactivity within a deinstitutionalization and defensive institutionalism framework

The concept of firms' environmental proactivity necessarily implies a move to improve existing green practices. In this sense, environmental proactivity is understood as the extent to which a firm voluntarily implements innovative environmental practices to reduce its environmental impacts, avoiding penalties rather than reacting to them, and with the potential to generate a competitive advantage from its proactivity (e.g. Aragón-Correa & Sharma, 2003; González-Benito & González-Benito, 2006; González-Benito & González-Benito, 2010). Firms present an environmentally proactive attitude as a strategy to distinguish their behavior from established green practices within the context in which they operate, through being perceived as more environmentally committed (Kock *et al.*, 2012; Berrone *et al.*, 2013; Aragón-Correa *et al.*, 2016), since this emphasis on investments in green innovation provides legitimacy and reputation in the community. Therefore, environmental proactivity is a firm outcome which essentially requires changes, that is, improving a firm's green behavior beyond existing environmental practices within an institutional context (Aragón-Correa, 1998; Aragón-Correa & Sharma, 2003; González-Benito & González-Benito, 2006).

Institutional theory postulates that existing practices comprise an established template which makes firms behave in the same way to survive in contexts where they face regulatory, normative, and/or competitive pressures (DiMaggio & Powell, 1983). Ergo, institutionalized practices are established, and conformity is secured, through which firms acquire legitimacy (Scott, 2001). In certain contexts, the legitimacy of existing practices may be called into question (Ahmadjian & Robinson, 2001) due to

outsider agents highlighting their unappropriated development (Maguire & Hardy, 2009) and thus such previously institutionalized practices are abandoned (Farjoun, 2002). This phenomenon is called the "deinstitutionalization process" and may lead to a change in existing practices, due to the institutional pillars becoming independent and beginning to collapse (Ahmadjian & Robbins, 2005). However, outsider-driven deinstitutionalization may not succeed due to insiders' attempts to defend existing practices in a defensive institutional way (Maguire & Hardy, 2009), in which case insiders control sufficient resources to impose their view and their goals and thus mitigate or stop the abandonment of existing practices. Therefore, the change of existing practices within an institutional environment will initiate a deinstitutionalization process which may lead to defensive institutionalism.

Taking this as a basis, the same logic regarding the deinstitutionalization and defensive institutionalism process applies to firms' corporate governance dynamics, since the ownership of firms is strongly influenced by the institutional environment because shareholders have close ties with the institutional context (e.g. Tihanyi *et al.*, 2003; Berrone *et al.*, 2010; Gómez-Mejía *et al.*, 2010; Argento *et al.*, 2019; Tsang *et al.*, 2019) as they are used to worrying about what is required to maximize their profits. Together, they will try to bring about change to a firm's environmental practices depending their outsider or insider position within the firm's institutional environment.

Hence, we assert in the following section that foreign shareholders are deinstitutionalization agents, whereas national shareholders are defensive institutionalism agents, which implies a differential influence on a firm's environmental proactivity. We argue that deinstitutionalization driven by foreign shareholders will lead to better environmental proactivity, whereas the defensive institutionalism of national shareholders will imply lower levels of environmental proactivity, since a firm's environmentally proactive behavior necessarily includes changes in existing green practices.

3.2.2. The influence of foreign and national shareholders on a firm's environmental proactivity

In a global world, certain shareholders may have a particular interest in changing green practices so as to achieve higher profits in the future. Indeed, improving firms' environmental practices may become a competitive advantage for handling the emerging global demand of green products (Bansal & Roth, 2000; Kock *et al.*, 2012),

due to the avoidance of potential environmental litigation and by satisfying an emerging demand (Cormier & Magnan, 2015). As such, dominant shareholders will exert a different influence on a firm's environmental proactivity according to how they identify environmental changes as future gains (e.g. Berrone *et al.*, 2010; Calza *et al.*, 2016; Shubham *et al.*, 2018). Specifically, the literature places a special emphasis on the distinction between dominant foreign and national shareholders (Ahmadjian & Robbins, 2005; David *et al.*, 2010), describing foreign shareholders as having a more distant relationship with the firms in which they hold shares as they come from a different culture, and national shareholders as corporations and institutions with close relational ties with firms.

On the one hand, foreign shareholders have fewer links to the institutional environment and the environmental standards of the home country of the firm in which they hold shares. Hence, they may more readily identify poor environmental and cultural practices because they are accustomed to different environmental standards, and thus they will try to enact a process to change such established practices, thereby starting a deinstitutionalization process. While foreign shareholders have stronger links with the institutional environment of their country of origin, they lack close ties with firms' domestic agents (Aguilera & Jackson, 2003; Ahmadjian & Robbins, 2005). This may mean that when foreign shareholders operate within a particular national system, their governance logic and interests move in a different direction from domestic practices (Desender *et al.*, 2016), and they therefore start to change practices in ways that national agents had not previously considered.

In addition, their lower level of motivation for retaining national practices is also due to their higher international position. In general, foreign shareholders are more likely to operate in an international arena (Argento *et al.*, 2019; Tsang *et al.*, 2019), so they are more in touch with green requirements and they tend to present similar interests in international scenarios (e.g. Tihanyi *et al.*, 2003; Gómez-Mejía *et al.*, 2010), particularly when it comes to environmental concerns (e.g. Kalt *et al.*, 2018) given that institutional pressures receive greater prominence in the international sphere (e.g. González-Benito & González-Benito, 2006; Berrone *et al.*, 2013; Aragón-Correa *et al.*, 2016). They may try to push local partners to invest more in technology development since they are more in contact with good opportunities abroad (Chang *et al.*, 2006; Choi *et al.*, 2012), and so they may be more able to identify those practices with higher legitimacy in global markets. Therefore, they will try to influence the use of good

green practices and improve the firm's environmental results above and beyond what is required from the institutional framework.

On the other hand, national shareholders are more closely linked with the national culture of a firm's country of origin because they are more deeply embedded in the local system (Ahmadjian & Robbins, 2005; Berrone *et al.*, 2010). National shareholders are comfortable with and accustomed to local cultural and environmental standards, so they are more concerned about maintaining what is required by local institutions because they consider these established practices to be the correct ones. This means that national shareholders are closer to the firm's existing corporate governance, since its corporate practices are a key institutional element of a nation's business system, which reflects economic and social templates in a country (Aguilera & Jackson, 2003). Such proximity will lead them to defend what is already established, since national shareholders understand how to preserve the financial gains from their shareholdings in firms through maintaining business and reciprocal relationships with those firms that yield benefits (Aguilera & Jackson, 2003) within an institutional environment. In this situation, they allow managers and employees to appropriate more of the rents arising from the firm's operations in global markets (David *et al.*, 2010) to obtain a stronger position within the company through more welcome governance practices (Desender *et al.*, 2016). As such, they tend to reinforce their profits by maintaining existing green practices to stay in line with institutional requirements, and so they will try to defend the already institutionalized structure.

As environmental proactivity implies changes to improve existing environmental practices, dominant foreign shareholders will drive better environmental proactivity as deinstitutionalization agents, while dominant national shareholders will promote lower environmental proactivity due to performing defensive institutionalism of such practices. Hence, we develop the following hypotheses:

> *H1a: A higher presence of dominant foreign shareholders will lead to a deinstitutionalization process and this will lead to higher level of firm's environmental proactivity.*
>
> *H1b: A higher presence of dominant national shareholders will lead to a defensive institutionalism process and this will lead to lower level of a firm's environmental proactivity.*

3.2.3. The moderating effect of the shareholders' home country's environmental profile

Home country is a determinant factor for companies and their internal agents in determining different behaviors and the perception of green practices. Various studies have examined the cultural features of agents with differing backgrounds (Hofstede, 2001; Doidge *et al.*, 2007), including cultural differences across countries. Indeed, institutional theory argues that agents and firms from different countries differ in behaviors and strategies when they attempt to understand a new market (Drogendijk & Holm, 2012; Siegel *et al.*, 2013), due to each country possessing a particular set of institutions that shapes their perceptions (Wan & Hoskisson, 2003).

In particular, there is a growing interest in environmental factors of cultural country profile, although it is more evident in some countries than in others. Specifically, some works highlight that proactive environmental behavior differs between firms from different countries (Chatterji *et al.*, 2009; Dögl & Behnam, 2015) due to different institutional pressures for improving green practices (e.g. González-Benito & González-Benito, 2006; González-Benito & González-Benito, 2010; Berrone *et al.*, 2013). For example, there is a marked difference between developed countries and developing countries (Li *et al.*, 2018) due to the dissimilar institutional environments and differences in culture, and that these differences are especially evident in the environmental behavior (e.g. Edwards *et al.*, 2002; Damert & Baumgartner, 2018).

As such, the particular institutional framework leads to cultural preferences becoming embedded into its members, including environmental, social, and ethical awareness of internal firm's agents (Bansal & Roth, 2000; Paulraj, 2009). Thus, the home country's institutional environment shapes agents' perceptions of environmentally sustainable practices – perceptions which differ depending on the specific country.

In this sense, the dominant shareholders' culture will vary according to their home country (Faelten *et al.*, 2015; Rejchrt & Higgs, 2015; Beugelsdijk *et al.*, 2018), due to it being influenced by national structures which shape their practices abroad (Kim *et al.*, 2008; Zhu *et al.*, 2019) and thus their identification of business opportunities from proactive environmental strategies (Bansal & Roth, 2000). Therefore, dominant shareholders' home countries will cause them to amplify or mitigate their behaviors; that is, their deinstitutionalization and defensive institutionalization processes towards environmental practices.

The deinstitutionalization process could be more or less intense, depending on the country's environmental culture. Foreign shareholders from a country with a more environmental commitment will exert a greater influence over institutionalized practices due to their being accustomed to higher standards of corporate governance and environmental practice (e.g. David *et al.*, 2006; Tsang *et al.*, 2019). As such, a larger presence of foreign shareholders from countries with higher governance practices will lead to more responsible firm behavior (Kim *et al.*, 2019; Tsang *et al.*, 2019), due to the greater intensity of the desire to import better practices (Miletkov *et al.*, 2017). Hence, the deinstitutionalization forces introduced by foreign shareholders will have a more positive impact on a firm's environmental proactivity if the shareholders come from more environmentally sustainable countries.

In contrast, the degree of national shareholders' defensive institutionalism will also depend on the environmental culture of their home country. Dominant shareholders from emerging economies are used to having weak levels of environmental protection (Kim *et al.*, 2008), so they may give green improvements lower priority. This is because the level of attention paid to environmental behaviors is higher in developed nations, whereas in developing countries it is less high (Aragón-Correa *et al.*, 2016). As national shareholders are more embedded in the local system (Ahmadjian & Robbins, 2005; Berrone *et al.*, 2010), they will seek to defend existing negative practices if they are based in countries where the environment is not a priority. As such, the negative effect of national shareholders based in a country with low environmental protection goals on a firm's environmental proactivity will be amplified.

Following these arguments, we can hypothesize as follows:

> *H2a: The foreign shareholders' environmental country profile moderates the relationship between foreign shareholders and the deinstitutionalization process, increasing the positive effect for higher levels of environmental proactivity.*

> *H2b: The foreign shareholders' environmental country profile moderates the relationship between foreign shareholders and defensive institutionalism, increasing the positive effect for higher levels of environmental proactivity.*

3.2.4. A three-way interaction: How much of a cultural clash?

Ultimately, blocks of foreigners and nationals will meet and jointly try to impose their different preferences depending on their home country's culture, which sometimes may lead to a potentially conflicting situation: a cultural clash. In fact, literature supports the notion that a cultural clash arises from divergent organizational characteristics and behaviors (Kelley & Worthley, 1981; Scarborough, 2000), where frictions between an investing agent and the invested firm depend on the cultural distance of the countries involved (Drogendijk & Holm, 2012; Siegel *et al.*, 2013). The institutional distance between the countries generates disagreements over environmental interests between the host firm and the foreign shareholder and tends to increase the challenges of doing business in the host country (Xu & Shenkar, 2002; Schwens *et al.*, 2011), thus jeopardizing environmental investments. In sum, a cultural clash exists: foreign shareholders will try to implement their own environmental practices in the country of destination (deinstitutionalization), and then – at the same time – nationals will use every defense mechanism (defensive institutionalization) in order to maintain existing environmental practices.

For these reasons, the environmental country profiles of both foreign and national shareholders will jointly influence the firm's environmental proactivity. As the presence of foreigners from high environmental countries increases, the deinstitutionalizing force will increase; however, it may be mitigated by the presence of a dominant national investor from a country with a significantly different environmental culture; that is, with a low environmental country profile. Indeed, as the national structures shape the orientation of firm's internal agents to ease or challenge the action of the shareholders (Zhu *et al.*, 2019), dominant foreign shareholders from highly environmentally conscious countries can operate within firms where internal agents do not have a preference for developing higher green practices (Darnall *et al.*, 2010; Kock *et al.*, 2012). For example, the actions of independent directors to improve environmental practices are mitigated due to existing structures of national agents within the focal firm (Ortiz de Mandojana *et al.*, 2016). As such, foreign shareholders may find it difficult to adapt to the national practices and preferences of the country in which the investments are made (Slangen & van Tulder, 2009) if greater discrepancies with institutionalized practices are in operation.

Conversely, we argue if the percentage of nationals increases, defensive institutional strength will increase, but it will be mitigated depending on the presence of a

dominant foreign investor from a sustainable country. Firms' agents may feel pressured to adopt environmentally proactive practices by foreign shareholders that decide to invest in them (Clarkson *et al.*, 2008) because foreign shareholders may have a better reputation due to being in contact with more sustainable practices overseas. Therefore, national shareholders and managers may be influenced to improve legitimacy when poor practices appear (Ahmadjian & Robbins, 2005). Hence, national shareholders' defensive institutionalization may be mitigated by the presence of a dominant foreign shareholder from a highly environmentally conscious country.

Therefore, the interaction between foreign and national shareholders will jointly influence the firm's environmental proactivity where, depending on the environmental profile of their home country, deinstitutionalization and defensive institutionalism forces will mitigate against each other. Thus, we propose:

> *H3a: The foreign and national shareholders' countries' environmental profiles jointly moderate the relationship between foreign shareholders' deinstitutionalization process and the firm's environmental proactivity.*
>
> *H3b: The foreign and national shareholders' countries' environmental profiles jointly moderate the relationship between national shareholders' defensive institutionalism and the firm's environmental proactivity.*

3.3. Methodology

3.3.1. Sample

We selected MSCI World Index companies, a global index that covers 85% of market capitalization for each of the 23 different countries in which its firms are based. Hence, our original sample included 1,626 international firms from the 11 different economic sectors of the database during the period ranging between 2006 and 2017 (i.e. 12 years). The relevance of the firms involved and their different home countries make this sample appropriate for the objectives of this paper, in analyzing the relationship between the different natures of a firm's dominant shareholders and its environmental proactivity in international contexts.

Our final analysis uses an unbalanced panel dataset including 12,527 observations from 1,532 different firms. We can see in Table 1 the variety of different countries included in the analysis, with a higher percentage of firms belonging to the United States, Japan, Canada, and Australia. We also considered companies from Singapore,

China, and several European countries. Some firms in the original sample were not included in this analysis because of missing data. Each observation includes information about the nature of the dominant shareholders, the environmental situation, and the financial information for a firm in a specific year. We collected the information from the Environmental, Social and Governance (ESG) templates and the shareholder reports in the Thomson Reuters Eikon database.

Table 3.1. Firm countries for final sample

Country	Number of Firms	Percentage
United States	542	35.38
Japan	309	20.17
United Kingdom	98	6.40
Canada	86	5.61
France	72	4.70
Australia	63	4.11
Germany	60	3.92
Switzerland	44	2.87
China	33	2.15
Sweden	28	1.83
Ireland	24	1.57
Singapore	23	1.50
Netherlands	22	1.44
Spain	21	1.37
Italy	19	1.24
Denmark	17	1.11
Finland	13	0.85
Belgium	10	0.65
Israel	10	0.65
Norway	10	0.65
New Zealand	7	0.46
Austria	6	0.39
Luxembourg	6	0.39
Macau	3	0.20
Portugal	3	0.20
Argentina	1	0.07
Mexico	1	0.07
Papua Guinea	1	0.07
TOTAL	1532	100

3.3.2. Operating Variables

Environmental Proactivity

Measuring environmental proactivity is not an easy task. Several scholars started to analyze environmental performance as a proxy for environmental proactivity (e.g. Darnall & Edwards Jr., 2006; Berrone & Gómez-Mejía, 2009; Kock *et al.*, 2012). However, a proactive strategy is not only about performance, since environmental performance levels may actually differ from an environmental proactive attitude (e.g. Walls *et al.*, 2012; Aragón-Correa *et al.*, 2016; Radu & Francoeur, 2017), as we noted earlier. For this reason, other authors sought better environmental proactivity measures using environmental scores such as the Carbon Disclosure Project, which includes the commitment of institutional shareholders to climate change and the publication of environmental information (Calza *et al.*, 2016). More recently, multiple works have highlighted the potential of measuring environmental innovation as a good proxy for proactivity (e.g. Ortiz de Mandojana *et al.*, 2012; Berrone *et al.*, 2013; Radu & Francoeur, 2017; Leyva-de la Hiz *et al.*, 2018) because an environmental proactive strategy relies on increasing green innovation investments, as these investments seek to improve existing environmental results (Cormier & Magnan, 2015; Radu & Francoeur, 2017). Hence, higher green innovation investments imply a greater commitment to the natural environment over existing demands that go beyond simply matching regulatory requirements.

Therefore, we have opted to use the "environmental innovation category score" from the Thomson Reuters Eikon database, defined as an indicator which "reflects a company's capacity to reduce the environmental costs and burdens for its customers, and thereby creating new market opportunities through new environmental technologies and processes or eco-designed products". This value ranges between 0 and 100, where higher values mean greater levels of environmental proactivity. We consider this variable a good proxy for measuring the response of the firm to shareholders' demands because this variable focuses on the efforts of the company to do more than is legally required. Several studies have been identified in the literature a range from reactive to proactive corporate behavior (Hart, 1995; Aragón-Correa, 1998), with regard to differences in firms' environmental responsiveness (Bansal & Roth, 2000). Some of these studies specifically state that firms implement their responses as a result of shareholder pressures (Henriques & Sadorsky, 1999; Buysse & Verbeke, 2003). Furthermore, this variable is different from environmental performance, which can be a result of other factors, like the resources of the firm

and the sector; typically, the companies with better environmental performance are those with less proactivity as they consider that they have met the requirements. So, the real influence of a shareholder can be seen in proactivity and not in environmental performance.

Dominant foreign and national shareholders

In line with previous ownership studies in the management literature (e.g. Calza *et al.*, 2016; Desender *et al.*, 2016; Kim *et al.*, 2019), we measure our shareholders' variables as the percentage of each type of shareholder. This option is a good proxy for different shareholders, since an increase in the percentage of a specific type will increase the presence of such a group in the ownership structure, making a higher level of activism or greater influence in the direction of their interests more likely (e.g. Dam & Scholtens, 2013; Cundill *et al.*, 2018). Hence, an increase in the percentage of a specific shareholder group will lead to more powerful pressures on managers to implement their environmental preferences, thereby making sure that such preferences are reflected in a firm's environmental behavior.

We used information from the Thomson Reuters Eikon database to distinguish between dominant shareholders' different national cultures, focusing on their country. Specifically, we calculated the percentage of shares held by all foreign and national shareholders per firm, aggregating all dominant shareholders' shares for each company-year. We have excluded both foreign and national shareholders holding less than 1% of the total portfolio, as is done in other management studies (e.g. Johnson & Greening, 1999), since those shareholders with less than 1% are not thought to have a real and tangible influence on corporate strategy. Therefore, we focused on studying the behavior of dominant shareholder blocks – those with enough capacity to have an influence on firm strategy – and we excluded floating capital from our analysis. Hence, our variable "foreign shareholders" is the sum of the percentages of all foreign shareholders with more than 1% of the total portfolio, while the variable "national shareholders" is the sum of the percentages of all national shareholders with more than 1% of the total portfolio.

Country's environmental profile

To measure the country level of environmental culture of the dominant shareholders, we selected the Environmental Performance Index (EPI), as used in other studies (e.g. Siegel *et al.*, 2013; Leyva-de la Hiz *et al.*, 2018), to get a score for each country from 2006 to 2017, and then set the value for each country-year. EPI is produced by Yale

University (e.g. Wendling *et al.*, 2018) by aggregating several environmental items, such as water waste, energy, and other factors, and taking into account countries' features, such as Gross Domestic Product. This index is ranged between 0 for the worst environmental value and 100 for the maximum environmental performance for a country.

Therefore, we use the EPI of the firm's country for each year to measure the national shareholders' environmental profile, which we labelled "National EPI". For the environmental country profile of foreign shareholders, we selected the EPI of the country of the main foreign investor, labelled as "Foreign EPI". It is not possible to take in to account all the countries of the foreign investors within the shareholders portfolio using this measurement, but we also included the percentage of shares held by this main foreign investor to control this fact in a first step. However, we had to remove this variable due to strong collinearity with the variable of percentage of foreign shareholders, since in a wide range of cases both percentages were the same. So, the EPI of the main foreign shareholder is a good proxy for the environmental country profile of foreign shareholders.

Control variables

Previous environmental literature has found that multiple internal variables may influence the firm's environmental proactivity. We have controlled the firm size (Size), measured as the natural logarithm of the firm's total annual assets (Johnson & Greening, 1999; Berrone & Gómez-Mejía, 2009; Radu & Francoeur, 2017), the financial situation of the firm by using the firm's return on asset (ROA) (Dam & Scholtens, 2013), and the firm value using the natural logarithm of the firm's annual capitalization (Capitalization) in line with previous ownership and environmental studies (e.g. Calza *et al.*, 2016). Moreover, we include a sector dummy variable to account for the different industries of the firms in our analysis.

Because there are other variables related to the governance situation, we include ownership concentration, measured using the Herfindahl-Hirschman Index (HHI), since it takes into account information about all shareholders of a firm (Dam & Scholtens, 2013). We have separately produced a concentration index for both foreign (Foreign Concentration) and national (National Concentration) shareholders to independently control for their powerful influence. Additionally, we included a proxy of good governance from the Thomson Reuters Eikon database, including the Corporate Governance Pillar Score (Governance), defined as a "measurement of

company's system and processes, which ensure that its board members and executive act in the best interest of its long term shareholders". By using these control variables, we aim to mitigate for the limitations of not knowing all the information about the shareholders because they can have different profiles (investment funds, pension funds, governments…). Moreover, we address the diversity of foreign shareholders within a portfolio by setting as a control variable the number of different foreign countries present in the firm's dominant shareholders' portfolio for each year (Nº of countries).

Method

We used STATA 12 software, using a Random Effect model to test our hypotheses. Random effect (RE) presents some advantages with respect to Fixed Effect (FE): (1) RE disseminates variance components for times and error, assuming the same intercepts and slopes; (2) FE requires significant variation of variable values to be an efficient technique and provide consistent estimators; (3) FE may lead to a multicollinearity problem due to allowing the inclusion of sector dummies, so we need to use RE in order to control the effect of firms belonging to different economic industries adding sector dummies. Results were consistent where similar values were obtained by using both fixed and random effects. Moreover, we performed a Breusch-Pagan Lagrange Multiplier test to manage heterogeneity (Breusch & Pagan, 1980) to check whether panel regression is the correct statistical technique rather than linear regression. We used a Robust Standard Errors cluster at firm level to avoid serial correlation and heteroscedasticity and controlled with year dummies to manage for temporal effect. Finally, similar to other studies of ownership (e.g. Earnhart & Lizal, 2006; Kock *et al.*, 2012), we selected our dependent variable as one year lagged, so that dependent environmental proactivity is recorded for the period from 2007 to 2018, and all of the independent variables are for 2006 to 2017. This allowed us to better disseminate the effect of dominant shareholders on environmental proactivity, since their influence does not provoke immediate changes in the firm's strategy, needing at least one year to show potential impact.

3.4. Results

Table 4 contains the descriptive summary and Pearson correlation values for each variable used in this paper. We observe that variance inflation factors (VIF) are within acceptable values, ranged between 1.08 and 3.52 with a mean of 1.87, suggesting that

the correlation between variables does not generate relevant multicollinearity issues in our analysis.

Table 3.2. Descriptive statistics and Pearson correlations

Variable	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
(1) Env. Proactivity	59.165	26.729	1.000							
(2) Foreign Shareholders	13.865	16.052	0.004	1.000						
(3) National Shareholders	30.359	20.645	-0.134***	-0.506***	1.000					
(4) Foreign EPI	71.289	10.671	0.016*	-0.107***	0.160***	1.000				
(5) National EPI	71.795	10.32	0.140***	0.078***	-0.130***	0.610***	1.000			
(6) Size	24.447	2.344	0.194***	-0.149***	-0.224***	-0.036***	0.041***	1.000		
(7) ROA	5.337	7.014	-0.108***	0.023**	0.012	0.012	-0.046***	-0.256***	1.000	
(8) Capitalization	24.116	2.031	0.097***	-0.135***	-0.187***	-0.000	0.017*	0.846***	-0.011	
(9) Governance	56.211	20.909	0.175***	-0.025***	-0.195***	0.023**	0.073***	0.146***	-0.057***	0
(10) Nº of countries	2.092	1.179	0.088***	0.428***	-0.326***	0.016*	0.228***	-0.082***	-0.005	-0
(11) Foreign Concentration	183.38	667.543	-0.024***	0.696***	-0.274***	-0.048***	-0.050***	-0.048***	0.047***	-
(12) National Concentration	421.749	825.767	-0.011	-0.186***	0.555***	0.017*	-0.018**	-0.045***	0.031***	-0

Significance level * at 0.1; ** at 0.05; *** at 0.01

Table 5 presents the results of the random effect models. Model 1 shows control variables results. This model shows a positive and significant effect of firm size on environmental proactivity in line with previous literature (Johnson & Greening, 1999; Berrone & Gómez-Mejía, 2009; Radu & Francoeur, 2017) since bigger firms have more resources and tools to improve environmental results. Similarly, we find a positive and significant effect of governance on environmental proactivity, suggesting that companies whose board members and executive act in the best interests of its long-term shareholders will improve their environmental results. In addition, this model shows a different effect for the variables foreign and national concentration, supporting our view regarding independent control for their influence.

Model 2 was used to test Hypotheses 1a and 1b. For foreign shareholders, we find no significant coefficient regarding the direct effect of foreign shareholders on environmental proactivity for the sampled firms, so we reject Hypothesis 1a. For national shareholders, we observe a negative and significant effect on a firm's environmental proactivity, with a coefficient (β=-0.104 |p-valor <0.01). This result provides support for our baseline Hypothesis 1b, which predicts that a higher presence of national shareholders has a negative effect on environmental proactivity.

Model 3 was used to test Hypothesis 2a. The p-value observed for the moderating coefficient is significant (β=-0.003 | p-value < 0.05), and thus this result provides statistical support for Hypothesis 2a. Model 4 analyzes Hypothesis 2b, which predicts that the national shareholder country would moderate the negative relationship between national shareholders and environmental proactivity. In this case, we find a significant p-value for the interaction variable coefficient at 10% (p-valor<0.1) that provides statistical support for Hypothesis 2b.

Table 3.3. Statistical results for random effect models

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Controls						
Size	2.132***	1.977***	1.955***	1.991***	1.922***	1.939***
	(0.412)	(0.411)	(0.410)	(0.411)	(0.410)	(0.411)
ROA	0.017	0.008	0.009	0.010	0.011	0.009
	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)
Capitalization	-0.026	-0.101	-0.083	-0.126	-0.077	-0.110
	(0.421)	(0.418)	(0.416)	(0.418)	(0.416)	(0.417)
Governance	0.076***	0.074***	0.074***	0.073***	0.073***	0.073***
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
Nº of countries	0.097	-0.032	-0.026	-0.029	-0.045	-0.038
	(0.253)	(0.270)	(0.270)	(0.270)	(0.270)	(0.271)
Foreign Concentration	-0.002***	-0.003***	-0.003***	-0.003***	-0.003***	-0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
National Concentration	0.001	0.002***	0.002***	0.002***	0.002***	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Direct effects						
(FS) Foreign Shareholders		0.004	-0.173*	0.010	-0.985**	0.012
		(0.040)	(0.094)	(0.040)	(0.497)	(0.040)
(NS) National Shareholders		-0.104***	-0.102***	-0.239***	-0.101***	-0.317***
		(0.031)	(0.031)	(0.079)	(0.031)	(0.499)
(FE) Foreign EPI		0.035	-0.003	0.042	-0.017	0.364
		(0.046)	(0.048)	(0.046)	(0.240)	(0.284)
(NE) National EPI		0.049	0.060	-0.019	0.120	0.179
		(0.067)	(0.067)	(0.080)	(0.258)	(0.275)
Interactions						
FS X FE			0.003**		0.018**	
			(0.001)		(0.007)	
NS X NE				0.002*		0.005
				(0.001)		(0.007)
Three way interaction						
FS X NE					0.009	
					(0.007)	
FE X NE					-0.000	-0.004
					(0.003)	(0.004)
						-0.001
						(0.007)
Three way Moderating effect						
FS X FE NE					-0.0002*	
					(0.0001)	

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Controls						
NS X NE X FE						-0.0001
						(0.0001)
Sector dummies	YES	YES	YES	YES	YES	YES
Year dummies	YES	YES	YES	YES	YES	YES
R2	6.91%	8.28%	8.36%	8.24%	8.32%	8.31%
Wald Chi	4239.15***	4364.32***	4371.04***	4376.19***	4386.29***	4386.14***
ΔWald Chi		13.86***	4.07**	3.42*	11.70**	7.24

Significance level * at 10%; ** at 5%; *** at 1%. Robust Standard Errors in brackets

Figures 2 and 3 graphically depict both relationships. The country's environmental profile does moderate the relationship between both foreign and national shareholders with environmental proactivity, and these moderating effects are as predicted. For foreign shareholders, Figure 1 shows that the influence of foreign shareholders on environmental proactivity is more positive for higher levels of the foreign country's environmental profile, and reduces the positive effect for lower levels, providing support for Hypothesis 2a. Similarly, Figure 2 shows that the influence of national shareholders on environmental proactivity is more negative for lower levels of the national country's environmental profile, and reduces the negative effect for higher levels, providing support for Hypothesis 2b.

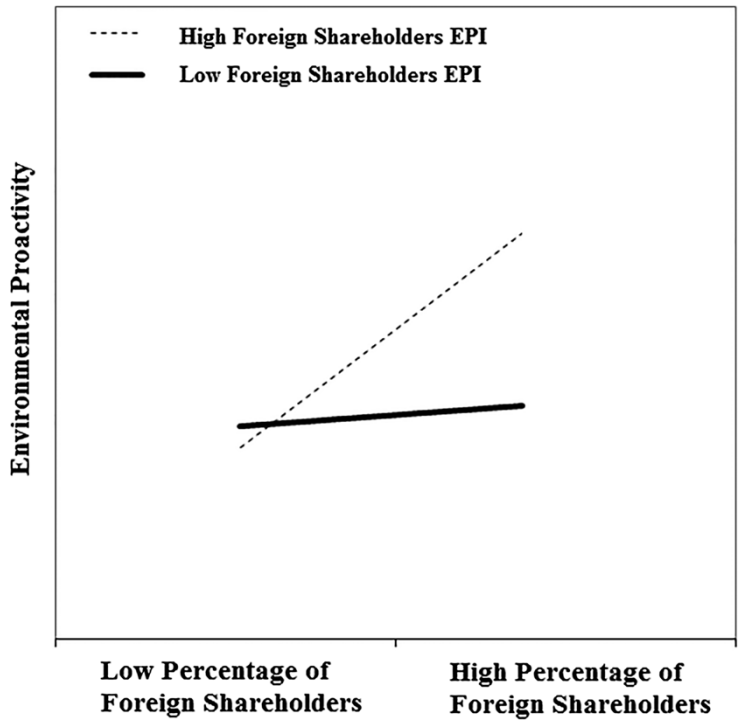

Figure 3.1. Moderating effect of foreign shareholders Environmental Performance Index (EPI) on foreign shareholders

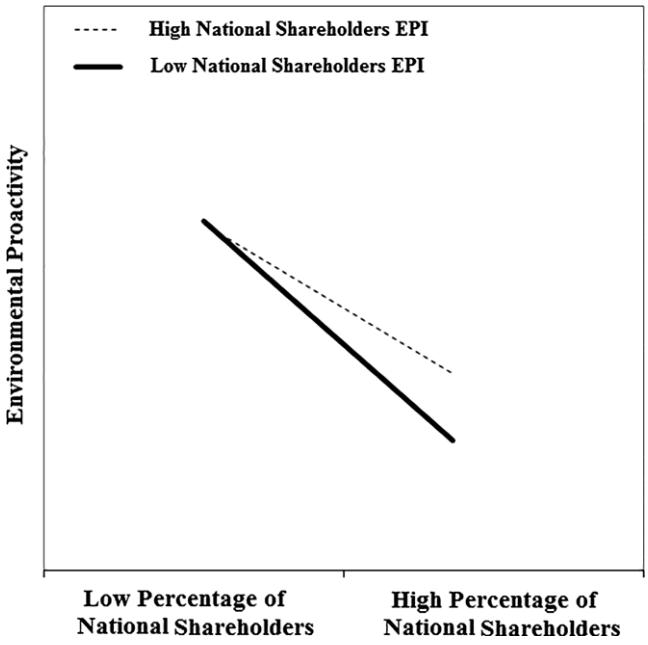

Figure 3.2. Moderating effect of national shareholders Environmental Performance Index (EPI) on national shareholders

Model 5 was used to test Hypothesis 3a. The p-value observed for the moderating coefficient is significant (p-value < 0.1), and thus this result provides statistical support for Hypothesis 3a. Finally, Model 6 analyzes Hypothesis 3b, where we did not find a significant p-value for the interaction variable coefficient, so Hypothesis 3b is rejected.

Figures 4 and 5 show the relationship between foreign shareholders with environmental proactivity when they jointly interact with the foreign and national countries' environmental profiles. Figure 4 presents this phenomenon for companies based in countries with low environmental profiles, where a slight effect appears when foreign shareholders are also from countries with low environmental profiles. However, as the number of foreign shareholders from countries with high environmental profiles increases, a firm's environmental proactivity will improve, leading to an environmental deinstitutionalization.

For companies based in countries with a high national environmental profile, Figure 5 shows that, in the extent to which foreign shareholders from high environmental countries increase, environmental proactivity slightly improves its levels. However, if foreign shareholders come from countries with low environmental profiles, an increase of foreign shareholders will negatively impact a firm's environmental proactivity levels. Hence, when foreign and national shareholders are from good environmental countries, deinstitutionalization and defensive institutionalism

processes do not arise, which leads to consensus on good environmental practices. By contrast, we find here a singular case when foreign shareholders come from poor environmental countries, where negative environmental deinstitutionalization will occur in the extent to which the percentage of foreign shareholders increases.

With Figures 3 and 4, we find a statistically significant effect for our Hypothesis 3b, but in an opposite sense than hypothesized. These results suggest that the deinstitutionalization effect of foreign shareholders is not mitigated by the presence of dominant national shareholders: It is further activated when the difference of foreign and national shareholders environmental home country profile is high, that is, when the cultural distant between both environmental country profiles is high.

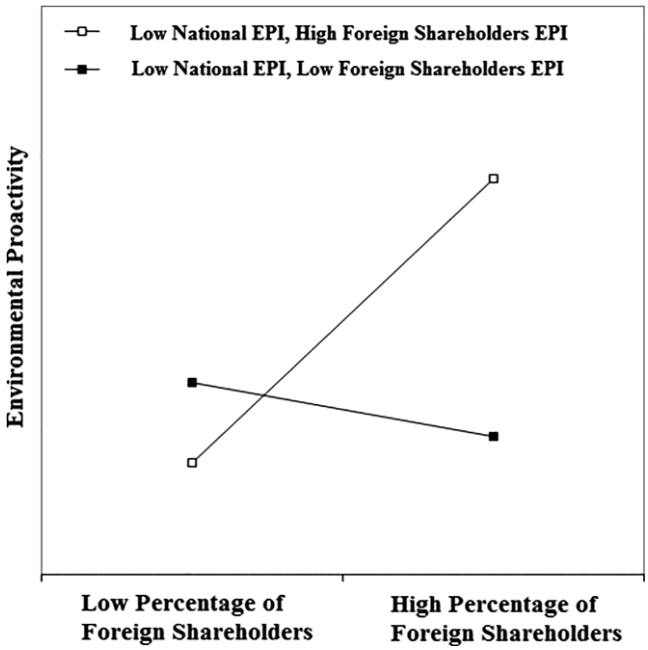

Figure 3.3. Moderating effect of foreign shareholders Environmental Performance Index (EPI) for low national EPI countries

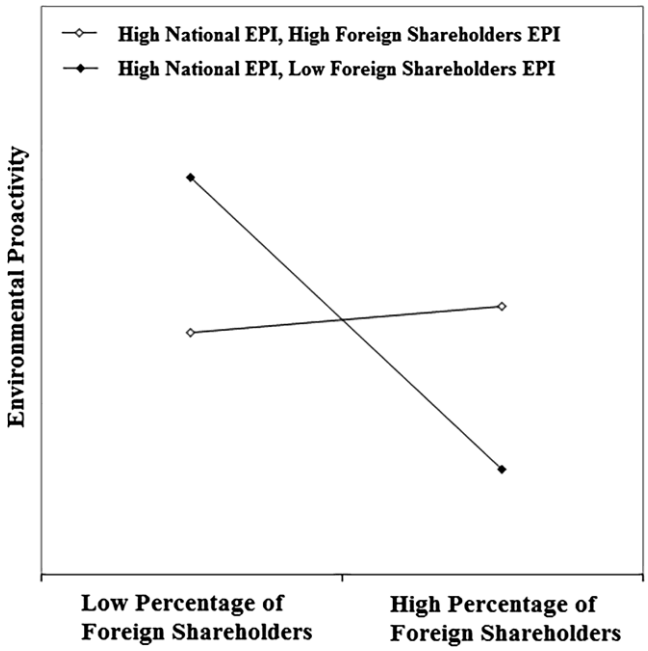

Figure 3.4. Moderating effect of foreign shareholders Environmental Performance Index (EPI) for high national EPI countries

3.5. Discussion, limitations, and future research

Previous studies have analyzed the effect that the environmental commitment or culture of a country has on managers and firms. Each country, with its respective level of environmental commitment, whether it is a country with a high level of environmental proactivity or a country that is not very aware of its impacts on the environment, has defined specific targets to be achieved, and this can be beneficial for the performance and environmental proactivity of the firm, as several scholars have demonstrated (e.g. Chakrabarti *et al.*, 2009; Reus & Lamont, 2009; Zhu & Qian, 2015; Huang *et al.*, 2016). Our results suggest that firms can learn from foreign shareholders located in culturally distant countries, acquire new knowledge about environmental practices that they had not previously identified, and put them into practice, thus building new capacities to survive. Moreover, we identify that there are certain different situations in which the effect of deinstitutionalization and defensive institutionalism affect the degree of environmental proactivity.

Our research makes some contributions to the literature. First, our findings extend the applications of institutional theory and the specific framework of deinstitutionalization and defensive institutionalism. Research on the links between dominant shareholders and environmental proactivity has been limited and focused on corporate and institutional ownership (Calza *et al.*, 2016; Alda, 2019), while our

work represents a further step in the application of this concept in the context of the distance in behavior between national and foreign shareholders. We show that foreign shareholders do succeed in their deinstitutionalization process, increasing the firm's environmental proactivity when they are from environmentally conscious countries, but, surprisingly, their presence leads to lower environmental results when they are from worse environmental countries, but only if they operate within firms based in more sustainable countries. By contrast, although firms with a higher presence of national shareholders tend to exhibit worse environmental proactivity, national shareholders are not able to stop the influence of foreigners and thus defensive institutionalism succumbs to deinstitutionalization forces. Together, these results confirm the notion that deinstitutionalization forces are stronger than defensive institutionalism (Ahmadjian & Robbins, 2005), and, moreover, show how the deinstitutionalization process is further activated when agents' and firms' cultural distances are higher (Xu & Shenkar, 2002; Schwens *et al.*, 2011; Drogendijk & Holm, 2012; Siegel *et al.*, 2013); that is, the change will be greater when they identify existing practices as more different from their own. Finally, our contribution to the identification of the importance of the EPI of the countries in moderating these relationships and the changes in the institutionalization forces is also of relevance.

As regards managerial implications, our study offers some recommendations to managers on how they should deal with the different pressures exerted by dominant shareholders (national or foreign). For example, managers may play a mediating role between the different influences of the dominant shareholders, as seen in previous studies (Chithambo *et al.*, 2020). It is also important for dominant shareholders, in the context of the new call for green and sustainable investing, to acquire knowledge and capital to increase environmental proactivity. Our study clarifies which pressures lead to higher environmental proactivity, which complements previous work in the field (Shubham *et al.*, 2018), and how managers can interpret the cultural clash between national shareholders and international shareholders in terms of improving environmental proactivity.

Although we consider our results to be important for academia and practitioners, this work is not free of limitations. The main limitation is that we have used only the EPI of the top shareholder of each company in order to calculate the moderation variable. We also have only tested one investing index, even though this includes firms from many different countries and sectors. Finally, this analysis is focused on big public

companies and therefore the effect for small or medium-sized companies could be different due to different institutional scenarios.

In terms of future avenues of research, one way of reducing some of the limitations of this paper could be by testing other indices, for example. Another important aspect could be the study of the influence of foreign and national shareholders on resilience or innovation, as well as analyzes of whether the moderation effect of the environmental profile of the dominant shareholders country affects those variables. A study of other stakeholders and their different effects due to country of origin could be interesting, too, allowing the dissemination of different views of a firm's strategy depending on national cultures.

Finally, we hope that this study has clarified the relevance of the dominant shareholders' profile in terms of environmental proactivity and will further help to motivate and trigger future research in this direction.

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Capítulo 4. Pre-adversity and in-crisis resilience: the importance of sustainable business relationships

4.1. Introduction

The concept of resilience has attracted more and more attention from scholars and practitioners during the last decade due to the complex context and the quick changes of markets and regulations. These have continuously increased the level of uncertainty for organizations in contexts that are frequently abnormal, exceptional, or extreme (Linnenluecke, 2017; Hällgren *et al.*, 2018). The COVID-19 pandemic has caused an upsurge in the number of papers dedicated to this topic, and questions about how to improve and create more resilient organizations have arisen (Sarkis, 2020; Shih, 2020).

In the managerial context, the social and economic relevance of resilience has also increased. For example, in 2017, ISO 22316:2017 was introduced specifically to certify firms' resilience capability and security. According to this ISO, an organization's resilience is influenced by the unique interaction between and combination of strategic and operational factors. Organizations can only be more or less resilient; there is no absolute measure or definitive goal. A commitment to enhancing organizational resilience contributes to an improved ability to anticipate and address risks and vulnerabilities, increased coordination and integration of management disciplines to improve coherence and performance, and a greater understanding of the interested parties and dependencies that support the strategic goals and objectives.

Resilience has been defined as the ability of a system to absorb disturbances without modifying its primary function and structure and its capacity to recover from a disturbance (Pimm, 1991; Holling, 1996). In management academia, organizational resilience is defined as the ability of organizations to anticipate, avoid, and adjust to shocks in their environment (Ortiz de Mandojana & Bansal, 2016, p. 1615). Considering this definition in greater depth, Williams *et al.* (2017) distinguished three dimensions of resilience depending on the moment at which the firm is experiencing a shock or disruption: pre-adversity capabilities and capabilities in times of crisis and recovery.

Nowadays, one of the main challenges for firms is related to the risks of disruption among their suppliers (Ponomarov & Holcomb, 2009; Pettit *et al.*, 2019). Connections with suppliers are stronger than ever today. Most firms subcontract many of their production processes, creating huge dependency on their supply chain. This dependence increases the uncertainty and difficulties related to the external environment as it involves additional factors and the possibility of more complicated

external disruptions. As a result, firms' ability to predict accurately and manage the disruptions related to the supply chain is an important part of their resilience. Therefore, we can say that the supply chain has an important role in firms' resilience because it can be developed not only at the firm level but also through the supply chain connections (Ponomarov & Holcomb, 2009). That brings us to the concept of supply chain resilience, which is "the adaptive capability of the supply chain to prepare for unexpected events, respond to disruptions, and recover from them by maintaining continuity of operations at the desired level of connectedness and control over structure and function" (Ponomarov & Holcomb, 2009, p. 131).

The strong connection between sustainability and organizational resilience has been highlighted in the previous literature. For example, Ortiz de Mandojana & Bansal (2016) found that sustainable practices help firms to become more resilient, which assists them in avoiding crises and bouncing back from shocks. The literature has also studied sustainability and resilience within the context of the supply chain. Studies have shown that, in certain types of crisis, some elements of sustainability favour a better recovery from a crisis (e.g. Fahimnia & Jabbarzadeh, 2016; Jabbarzadeh *et al.*, 2018). Miller & Engemann (2019), for example, proposed different strategies from the sustainability perspective to foster resilience in a supply chain context, like managing relationships with communities or governments, recycling, or managing natural resources. However, they did not test these strategies and their effects on resilience empirically. Shashi *et al.* (2020) argued in their review that a limited number of papers have investigated sustainability and resilience in the context of supply chains and called for deeper empirical testing of that relationship. Therefore, more in-depth work is needed to understand and clarify how sustainability can improve the resilience of supply chains, especially differentiating between those advantages that can be generated to avoid crises and those that favour a recovery.

Thus, the goal of this paper is to determine whether relationships with sustainability-committed suppliers could help focal firms to cope with and avoid adverse events by increasing their resilience. We argue that, when suppliers have a strong commitment to sustainability, they develop long-term strategies based on trust, mutual benefits, and proactivity. This type of values and strategic preferences could benefit focal firms, which can increase their resilience, for example by sharing relevant information with their suppliers or by obtaining advantages like support in dealing with a disruption. We also propose that suppliers with a high level of sustainability commitment can be more prone to offer support when the focal firms are large because of the visibility

of their help and their greater legitimacy. Additionally, we propose that focal firms' own sustainability commitment and size can moderate the positive effect of the suppliers' commitment on the possibility of avoiding adverse events or coping with them if they finally happen, respectively.

As we mentioned earlier, there are different dimensions of resilience (pre-adversity capabilities and capabilities in times of crisis and recovery); therefore, we analysed and tested the sustainability commitment of suppliers in two different contexts. First, to test pre-adversity capabilities, we needed firms that are not undergoing a crisis. Second, to test capabilities in times of crisis and recovery, we needed firms that have suffered a crisis. Therefore, we tested our hypotheses on a sample of 296 and 132 firms, respectively, using two models in a moderated regression analysis.

The paper is structured as follows. In the next section, we draw on the resilience literature to develop four hypotheses that relate the sustainability of suppliers to the resilience of companies. Thereafter, we describe our dataset and the methodology employed to analyse it. Afterwards, we present the results of our analyses, and we conclude with a discussion of their implications.

4.2. Theoretical background and hypotheses

4.2.1. Organizational Resilience

Resilience is an interdisciplinary concept, and each discipline approaches different aspects, creating diverse but related definitions (Folke, 2006; Linnenluecke, 2017). In this sense, ecological resilience, for example, has been defined as the ability of a system to absorb disturbances without modifying its primary function and structure (Holling, 1996), whereas engineering resilience emphasizes the speed of recovery after a disturbance (Pimm, 1991). Resilience as applied to social systems incorporates the ideas of adaptation, learning, and self-organization in addition to the ability to persist after a disturbance (Folke, 2006). Therefore, resilience in social systems not only appears in response to a crisis but is continually applied when systems anticipate and adjust to changes in the environment (Hamel & Välikangas, 2003; Gittell *et al.*, 2006; Ortiz de Mandojana & Bansal, 2016).

The ideas of anticipation and adaptation explain why organizational resilience has largely been explored separately from crisis management, on the assumption that resilient organizations avoid crises (Williams *et al.*, 2017). Thus, while research on

crisis management has focused on the ability to restore the normal functioning of organizations and systems after a crisis, resilience focuses on the ability to maintain reliable performance despite adversity. Resilience is an interactive process of adaptation related to firms' capabilities of understanding, responding to, and absorbing variations as well as maintaining, recovering, and/or building new resources (Williams *et al.*, 2017).

Lengnick-Hall & Beck (2005, p. 750) defined resilience as a unique combination of cognitive, behavioural, and contextual properties that enhances a company's ability to understand its current situation and develop customized responses that reflect that understanding. In a later work, Lengnick-Hall *et al.* (2011, p. 244) defined resilience as a company's ability to absorb and develop specific responses to particular situations and, ultimately, to engage in activities with the purpose of capitalizing on and adapting to disruptive surprises that potentially threaten its survival.

Therefore, based on this previous literature, organizational resilience has two dimensions. If we think of resilience as an outcome and couple it with the crisis-as-event perspective, resilience is naturally situated after the event. A mark of resilience is the ability to recover. However, if we think of resilience as a process and couple it with the crisis-as-process perspective, resilience is naturally situated earlier. Williams *et al.* (2017) defined resilience as the process by which an actor (i.e., an individual, organization, or community) builds and uses its capability endowments to interact with the environment in a way that positively adjusts and maintains its functioning prior to, during, and following adversity. Thus, resilience can be defined as pre-adversity capabilities, organization, and adjustment in times of crisis as well as post-crisis resilience response and recovery.

Following Williams *et al.* (2017), we will present two groups of hypotheses. The first one is related to the pre-adversity capabilities of firms that have not yet suffered a crisis. The second one concerns the in-crisis and post-crisis capabilities or recovery.

4.2.2. Achieving Pre-adversity Resilience through the Sustainability Commitment of Suppliers

Williams *et al.* (2017) argued that there are different kinds of capabilities and endowments that generate pre-adversity resilience: financial, cognitive, behavioural, emotion regulating, and relational. We propose that the sustainability commitment of suppliers can increase firms' resilience because this commitment allows them to increase these five capabilities and endowments, generating pre-adversity resilience.

First, in terms of financial capabilities, it is clear that all organizations need resources to survive in a competitive environment. Many studies have shown the interaction between financial variables and resilience (Trahms *et al.*, 2013) and indicated that companies with better financial reserves have better performance and are more able to avoid the effects of adversity than companies without them (Gittell *et al.*, 2006). Golicic & Smith (2013), in a meta-analysis, defended the idea that the sustainability commitment of the members of a supply chain can improve the financial performance of the entire supply chain. This positive effect generates greater financial resources for the members of the supply chain, which can be distributed among them and finally improve their resilience (Golicic & Smith, 2013). The existence of suppliers that are committed to sustainability and provide firms with resources helps to fight adversity due to the exchange of resources and interdependence (Touboulic *et al.*, 2014).

Second, cognitive capabilities, which include vision, a sense of purpose, strong values, knowledge, and expertise, are a key factor in detecting a possible crisis or problem and avoiding or solving it before it appears (Lengnick-Hall & Beck, 2005; Lengnick-Hall *et al.*, 2011). However, this is not only an intra-organizational capability because, if a good exchange of information and knowledge exists in a supply chain (Vachon & Klassen, 2006), it reduces misunderstandings or deviations from the supply chain (Blome *et al.*, 2014). Moreover, a shared supply chain culture based on norms, trust, values, and openness may yield better outcomes and reduce conflict and uncertainty throughout the supply chain (Cadden *et al.*, 2013). We propose that suppliers with stronger sustainability commitment will provide focal firms with more information and knowledge because of their strong values and commitment and that they will be more prone to share their expertise to help in resolving the situation for other firms in the supply chain.

Third, behavioural capabilities involve action alternatives and behavioural repertoires that facilitate the processing and sharing of information, the work task, and so forth (Tushman & Nadler, 1978; Williams *et al.*, 2017). Behavioural capabilities also involve establishing a comfortable diffusion of decision making across units (to enable interpretation and action on relevant information) as well as practising cooperative and coordinating behaviours (Boin & Lagadec, 2000). Furthermore, better integration with the supplier can be considered as a behavioural capability, which is fundamental to avoiding and responding to crises (Kull *et al.*, 2019). When focal firms have better integration with suppliers that are committed to sustainability, they can be granted better understanding and problem solving generated by the expertise of the suppliers that have faced sustainability concerns (for example workers' strikes or environmental disasters), which can help in facing or avoiding disruption.

Fourth, emotion regulation capabilities refer to individuals' and organizations' emotional capital for dealing with adverse situations. Endowments such as hope and emotions play a role in resolving stressful or risky situations (Williams *et al.*, 2017). In this kind of capabilities, the human relationships between suppliers and focal firms are important because the suppliers' commitment and collaboration in problematic situations can help to avoid a crisis. In particular, when sustainability issues arise, the strong commitment of suppliers could lead to greater emotional preoccupation with the destiny of the focal firms due to the relationship between them (Eweje & Sakaki, 2015; Kovács & Sigala, 2021).

Finally, relational capabilities refer to the different connections that a company has: in other words, the network in which it is embedded. These connections are especially important for avoiding a crisis because they are necessary to create a scenario in which cognitive, behavioural, and emotional capabilities can be activated (Williams *et al.*, 2017). In this particular case, the supply chain itself is the vital network to avert a crisis (Pettit *et al.*, 2019). Firms' suppliers are important in fostering their flexibility and adaptability. Good relationships with suppliers help to encourage creativity and problem-solving skills that contribute to the development of new, quality products that are tailored to customers' demands. In addition, a high level of inter-firm trust facilitates the development of solutions to unanticipated changes in the environment (usually not explicitly covered by contracts), helping to direct the common effort towards determining the best way to achieve mutually beneficial solutions rather than assigning blame and debating responsibility for bearing the cost of changes and managing the different risks that may arise (Zaheer *et al.*, 1998; Lee, 2004; Sreedevi &

Saranga, 2017). Thus, we argue that being part of a network in which other firms (suppliers) are committed to sustainability will generate a better scenario for focal firms to prevent disruptions due to the high level of inter-firm trust facilitating mutually beneficial solutions or better creativity, among others.

To summarize, we propose that, when suppliers are committed to sustainability, they will be more likely to help companies in trouble or at least give them more resources and possibilities to improve their capabilities, which could assist in resisting or avoiding a crisis. These suppliers are more future-oriented and can help the firms that they supply, for example by offering an extended period of payment when the focal firms face financial problems (financial capabilities). Another way of helping could be to provide early information about new materials, changes in price tendencies, or other important events (cognitive capabilities). The expertise and integration with this kind of suppliers can improve firms' legitimacy with clients, increasing their performance. Socially responsible suppliers will be more prone to help firms deal with different kinds of problems before they evolve into a crisis (emotion regulation capabilities). All of these activities and events, combined with the proper element of relationships generated within the supply chain (relational capabilities), can help focal firms to prepare for unexpected events, respond to minor disruptions, and recover from them by maintaining continuity of operations at the desired level of connectedness and control over structure and function without falling into a crisis. Thus, our first hypothesis is the following:

> *H1: The sustainability commitment of suppliers increases the pre-adversity resilience of firms.*

Another element related to suppliers that we consider to be able to boost the pre-adversity resilience of firms is strategic alignment. Strategic alignment is the consistency of the activities that implement the differentiating attributes of a strategy (Kaplan & Norton, 2006). In this context, alignment refers to the attempt to have similar sustainability commitment policies to achieve common goals within the supply chain. To reach that goal, the sustainability commitment of firms should be as high as possible to be in accordance with the expectations of their suppliers, so we can talk about strategic sustainability alignment. Previous studies have shown that better alignment with suppliers has a positive impact on companies' economic performance (Blome *et al.*, 2014) as well as its functional performance (Vachon & Klassen, 2006; Schaltegger & Burritt, 2014). It has also been shown by Aslam *et al.* (2020) that, in

combination with adaptability, the alignment with the supplier can increase the resilience of a firm. For example, previous works have indicated that aligning the environmental approaches of a company with those of its suppliers could lead to improved environmental performance, thanks to the exchange of information and knowledge (Vachon & Klassen, 2006) as well as to the collaboration in the development of practices (e.g. Sarkis, 2003; Schaltegger & Burritt, 2014) and the reduction of waste throughout the supply chain (Peck, 2005). Strategic alignment with suppliers, by favouring the exchange of information and knowledge as well as collaboration (Vachon & Klassen, 2006; Schaltegger & Burritt, 2014; Azadegan & Dooley, 2021), can facilitate the development of financial, cognitive, behavioural, emotional, and relational skills to avoid adversity (Aslam *et al.*, 2020). For example, supply networks can implement standards that increase firms' pre-adversity resilience. Therefore, by advocating that all the members of the supply chain (upstream tier suppliers and downstream wholesalers and retailers) implement the industry standards for risk and resilience (like ISO22316), companies can ensure that their partners will be as prepared as they are. Ensuring compliance with these requirements at the vertical (supply chain) and the horizontal (among competitors in the same tier of the chain) levels provides assurance that the proprietary supply network as a whole is better protected (Azadegan & Dooley, 2021). Hence, it is expected that, if strategic sustainability alignment is achieved, resilience can be enhanced.

Therefore, we propose the following hypothesis:

> *H2: The sustainability commitment of firms increases the positive effect of suppliers' sustainability commitment on firms' pre-adversity resilience.*

4.2.3. Resilience in Times of Crisis and Recovery and Sustainability Commitment

The second and third dimensions of resilience are related to situations in times of crisis and after a crisis or during recovery. Resilience allows firms to respond and recover faster from a crisis. Specifically, trust in suppliers can be vital with respect to capabilities during and after a crisis. Considering that many disruptions are external to firms, collective action is needed to deal with them, and firms acknowledge that suppliers can help to find a solution to a collective action problem, especially when their reputations concerning sustainability are interdependent and when there may be negative legitimacy spillover effects (De Bakker *et al.*, 2019). Both focal firms and suppliers can become more resilient and recover faster if they work together

(Azadegan & Dooley, 2021). Firms consequently define a supplier relationship plan to ensure that their corporate behaviour meets the expectations of their suppliers and strengthen their relationships with suppliers that generate value for them and that the collective actions are as sustainable as possible. Although communication and the exchange of information between a supply chain and a firm are necessary to face any type of disruption, Ivanov (2020) proposed that collaboration with other members of the supply chain can help in reducing the disruption and even promote a faster recovery. In this sense, firms can supervise the suppliers and establish procedural guidelines for good coordination and management when an adverse situation arises. In addition, we agree that a stable relationship with suppliers is essential to the contribution of resources in any type of disruption (Eweje & Sakaki, 2015). For instance, Colquitt *et al.* (2011) found that trust based on the integrity of co-workers and the perceived consistency of others was fundamental in a volatile environment to achieve positive results. This finding suggests that organizations that do not anticipate adverse conditions may stop developing elementary skills (e.g., trust). Similarly, Shepherd *et al.* (2014) found that the trust and network relationships among the members of a community affected by a devastating wildfire were critical in the response to the disaster. When the disaster occurred, those who had local values, knowledge, and network relationships were better positioned to gain the trust of the victims of the disaster, which enabled a more immediate and effective response to the widespread suffering. In this case, trust facilitated the resilience of the community. Therefore, a similar effect can be expected from a supplier–focal firm dyad: if suppliers have trust and a greater commitment to sustainability, they can be more prone to work with firms to solve a disruption and recover.

According to Williams *et al.* (2017), there are some important factors in the process of responding to and recovering from a crisis. In the first moment, it is necessary to manage the risk to reduce vulnerability. Given the nature and impact of these crises, a considerable body of research has explored how organizations can anticipate, respond to, and decrease vulnerability in a crisis, particularly while drawing on governmental and non-governmental organizations as resource providers (Drabek & McEntire, 2003). In this sense, there are three different ways of responding to adversity:

- Cognitive responses that help to maintain positive functioning in the face of major disturbances involve actors' ability to notice, interpret, and analyse changes in the environment as well as to formulate responses (Dewald &

Bowen, 2010). When suppliers have a greater commitment to sustainability, they could be encouraged to address the problems of the elements around them, including the focal firms (Kovács & Sigala, 2021).

- Behavioural responses to a major disturbance are a natural extension of cognitive responses as they involve actors implementing solutions or courses of action to address environmental uncertainty. Specifically, a positive behavioural response to an adverse event is "the engine that moves" an actor forwards in the face of uncertainty (Lengnick-Hall & Beck, 2005, p. 751). In a context of uncertainty, the firms with a greater sustainability commitment are those that try to collaborate with clients or suppliers and find the best ways to overcome crises in a satisfactory way (Shih, 2020).

- The context reinforces responses to adversity. The context is important in explaining responses to adversity as it provides the foundational setting in which cognitive and behavioural responses are enacted and integrated (Williams *et al.*, 2017). In our case, the context is the supply chain. The nature of the supply chain makes regular operation, including sustainability, work to support all the firms that are part of the chain (Aslam *et al.*, 2020).

We suggest that the sustainability commitment of their suppliers can make it easier for companies to gain cognitive, behavioural, and contextual reinforcement skills to overcome adversity and enhance recovery. Therefore, we propose the following hypothesis:

> *H3: The sustainability commitment of their suppliers increases the recovery of firms that have suffered a crisis.*

Structural aspects of firms, such as their size, influence their resilience during an economic downturn (Lai *et al.*, 2016). Specifically, smaller firms are more creative than larger firms, and these creative actions help to maintain positive functioning despite the economic downturn. This phenomenon further demonstrates how organizations can leverage various endowments (e.g., employees and managerial skills) associated with the organizational design for resilience (Lai *et al.*, 2016). Brusset & Teller (2017) showed that firms' size is not an impediment to their achievement of resilience, and even small firms with limited capacities can achieve an equal level of resilience to larger firms. In this sense, the positive effect of the firm size on recovery and the possibility of a response is not clear. However, studies relating environmental

sustainability to firm performance have examined firm size, given that larger firms tend to have more resources, enabling them to implement different practices (González-Benito & González-Benito, 2005; Pullman *et al.*, 2009).

We propose that the interaction with suppliers can improve the positive effect of size for two reasons. Suppliers with a strong sustainability commitment can be more prone to offer more support when focal firms are large because of the visibility of their help and the increase in their legitimacy (e.g. if they are seen as employment protectors or as sustainable and innovative firms). Additionally, suppliers with a high level of sustainability commitment could be interested in protecting and helping large firms because, if they fail, the effect on their business and on the whole supply chain could reduce the performance that allows other kinds of good practices to be organized. As a result, we propose the following hypothesis:

> *H4: The sustainability commitment of suppliers moderates the effect of size on the recovery of firms that have suffered a crisis.*

4.3. Methodology

4.3.1. Data Source and Sample

For our study, we used the Bloomberg database as the main source of data. Firstly, we identified the large original equipment manufacturers (OEMs) listed in Forbes 2000. Secondly, we checked how many of them and their first tier of suppliers had data available and retrieved data from them both. This allowed us to create a dataset of 1628 firms (Forbes companies + first tier of suppliers) from all economic sectors and from many countries, especially the USA and developing countries. For them, we collected Bloomberg's Environmental, Social & Governance (ESG) data and some financial measures. Finally, due to the need for information for many different variables, the N for our study was limited to 296 and 132 for H1–H2 and H3–H4, respectively.

Due to the special limitations on downloading information from the Bloomberg database, we only had information on supplier relationships for 2016. However, we had data from firms for 2016 and 2017; therefore, we could avoid endogeneity by lagging the independent and control variables.

4.3.2. Variables

Dependent Variables. Due to our different kinds of hypothesis, we had two different dependent variables: pre-adversity resilience and recovery. To measure pre-adversity resilience (Hypotheses 1 and 2), we used Altman's Z-score, a financial measure of the possibility of becoming bankrupt. To be more accurate, quoting the definition from the Bloomberg database, the Altman Z-score "indicates the probability of a company's filing for bankruptcy within the next two years". The higher the value, the lower the probability of bankruptcy. A score below 1.8 indicates that bankruptcy is imminent, and a score above 3 indicates that bankruptcy is unlikely. This measure has been used many times in financial papers, and it has recently been used to test resilience in management (Dolz *et al.*, 2018). For our purpose and to avoid endogeneity, we used this variable from 2017 while the rest of the variables were lagged from 2016. We also used this variable to establish which firms could be used for testing Hypotheses 3 and 4 due to the necessity of having firms that are suffering from a crisis, so we chose the companies with an Altman's Z-score below 3.

To measure *recovery* (i.e., how companies recover from the crisis), we created a variable with the variation between the revenues from 2016 and those from 2017 (Martin & Holweg, 2017).

Independent Variables. To measure the sustainability commitment of firms and the sustainability commitment of suppliers, we used the RobecoSAM score, which is based on individual questions from three dimensions: economic, environmental, and social. The types and weights of individual questions and criteria are adjusted for each industry-specific questionnaire to reflect the materiality of specific sustainability issues within each industry. RobecoSAM is an investment specialist focused exclusively on sustainability investment. Together with Standard and Poor's (S&P) Dow Jones Indices, RobecoSAM publishes the globally recognized Dow Jones Sustainability Indices. RobecoSAM's scores are based on responses to the RobecoSAM Corporate Sustainability Assessment. This measure was introduced quite recently, but its prestige is important, and it has been used in some papers about management (Argento *et al.*, 2019).

To measure *firm size*, we used the total assets in 2016. This is a common way of measuring companies' size in management and financial papers (Radu & Francoeur, 2017).

Control Variables. In terms of commitment to sustainability, we considered it important to control for the transparency of the firms and the transparency of the suppliers. To measure transparency, we used the ESG disclosure score, which is a measure created by the Bloomberg database. It defined it as the "score based on the extent of a company's Environmental, Social, and Governance (ESG) disclosure. Companies that are not covered by the ESG group will have no score and will be shown as N/A (not applicable). Companies that do not disclose anything will also be shown as N/A. The score ranges from 0.1 for companies that disclose a minimal amount of ESG data to 100 for those that disclose all data points collected by Bloomberg. Each data point is weighted according to its importance, with data such as Greenhouse Gas Emissions carrying more weight than other disclosures. The score is also tailored to different industry sectors. In this way, each company is only evaluated on the basis of the data that are relevant to their industry sector."

Additionally, we controlled for the *sector* and *country* using dummies variables. We created a dummy for each sector using the Global Industry Classification Standard (GICS) classification. Due to the important presence of US companies in the dataset (39% for H1 and H2; 29% for H3 and H4), we established a dummy country variable that is 1 when the firm is from the USA and 0 otherwise.

Finally, we controlled for the *Altman's Z-score of the supplier* to measure the importance of the financial stability of a supplier. We avoided controlling for the typical financial and size variables as the two dependent variables are actually correlated with them because the calculation of Altman's Z-score uses many of that kind of variable and the variation in revenues is part of the financial aspect of a company.

4.4. Results

We used moderated regression analysis (Hayes, 2013) to test the hypotheses, introducing the moderating effect as a multiplicative variable. It is important to mention that, due to our hypotheses, we divided the datasets into two subsets: the first containing all the firms in the sample to test H1–H2 and the second being a subsample that included only the companies in trouble (Altman's Z-score less than 3) to test H3–H4. We had previously checked the conformity of our data to the assumptions of our analytical tools as well as the extent of heteroscedasticity and multicollinearity among the independent variables.

Table 6 presents the descriptive statistics and correlations for the variables that were examined for H1 and H2. All the variables correspond to 2016 except the dependent variable, which was calculated for 2017.

Table 4.1. Descriptive Statistics and Correlations for H1 and H2

		Mean	Standard deviation	1	2	3	4	5
1	Pre-adversity resilience	4.42	3.75					
2	Transparency: firm	34.38	20.43	-0.09*				
3	Transparency: supplier	36.74	21.48	0.07†	-0.02			
4	Altman: supplier	4.20	2.90	0.13*	0.01	0.04		
5	Sustainability commitment: firm	58.67	28.25	-0.10*	0.43***	-0.10*	-0.11*	
6	Sustainability commitment: supplier	63.01	26.99	0.13*	-0.01	0.41***	-0.14**	-0.05

N = 296; † p < 0.10; * p < 0.055; ** p < 0.01; *** p < 0.001.

The results from the regression analyses are shown in Table 7. Model 1 presents our results for the control variables. In Model 2, we added the independent variables *sustainability commitment of the firm* and *sustainability commitment of the supplier*. In Model 3, we tested the same variables but used the dummy *sector* and *country* to control for them. Finally, in Model 4, we tested the moderating effect of the *sustainability commitment of the firm* with the *sustainability commitment of the supplier*. In all the models, the F-test was performed to understand the improvements resulting from the incorporation of the variables in each step.

Table 4.2. Results of the Moderated Hierarchical Regression Analysisa for H1 and H2

	Model 1	VIF	Model 2	VIF	Model 3	VIF	Model 4	VIF
Intercept	3.91 (0.64) ***		3.16 (0.88) ***		0.65 (3.74)		0.20 (3.88)	
Transparency: firm	-0.02 (0.01) †	1.00	-0.02 (0.01)	1.23	-0.01 (0.01)	1.30	-0.01 (0.01)	1.29
Transparency: supplier	0.01 (0.01)	1.00	0.01 (0.01)	1.22	-0.01 (0.01)	1.38	-0.01 (0.01)	1.44
Altman: supplier	0.16 (0.74) *	1.00	0.19 (0.08) *	1.05	0.12 (0.08)	1.11	0.12 (0.08)	1.13
Sustainability commitment: firm			-0.01 (0.01)	1.26	-0.01 (0.01)	1.35	-0.01 (0.02)	6.78
Sustainability commitment: supplier			0.02 (0.01) *	1.24	0.02 (0.01) **	1.33	0.03 (0.02)	6.24
Dummy sector and country	NO		NO		YES		YES	
Interaction sustainability of the firm and supplier							0.00 (0.00)	10.75
R^2	0.03		0.05		0.15		0.15	
Adjusted R^2	0.02		0.03		0.10		0.09	
Change in *F*	3.07*		2.97*		2.85***		0.21	

Dependent variable: Pre-adversity resilience; [a] Non-standardized regression coefficients are shown. Standard errors are in parentheses. N = 296. † p < 0.10; * p < 0.055; ** p < 0.01; *** p < 0.001.

In relation to the control variables, Model 1 shows that some of them influence the *pre-adversity resilience* of firms. The *transparency of the firm* and the Altman's Z-score of the supplier have a significant effect. It is quite curious that transparency has a negative effect on *pre-adversity resilience*. The other control variables are not significant for the sampled firms. In Model 2, our results show that the *sustainability commitment of the supplier* has a positive and significant effect (b = 0.02, * p < 0.055) on pre-adversity resilience. Thus, Hypothesis 1 is supported by our sampled firms. However, Hypothesis 2 is not confirmed by our sampled firms, so we can consider the possibility that suppliers do not care about the sustainability of the firms that they are supplying and that they focus on other aspects, which may be just their own legitimacy or the financial perspectives of the firms. In Model 3, the effect of the *sector* and *country* was checked, and they did not change the results of our hypothesis.

Regarding Hypotheses 3 and 4, we tested them with the subset of companies that were financially distressed in 2016 (Altman's Z-score below 3) and observed that they recovered their revenues by 2017. Table 8 presents the descriptive statistics and correlations for the variables that were examined for these hypotheses.

Table 4.3. Descriptive Statistics and Correlations for H3 and H4

		Mean	Standard deviation	1	2	3	4	5	6
1	Recovery	0.04	0.13						
2	Transparency: firm	35.25	20.89	-0.02					
3	Transparency: supplier	36.25	21.11	0.22**	-0.12†				
4	Altman: supplier	3.68	2.02	0.37***	0.01	0.09			
5	Sustainability commitment: firm	60.52	27.82	-0.13†	0.43***	-0.15*	0.02		
6	Sustainability commitment: supplier	61.20	25.75	0.04	0.04	0.31***	-0.02	-0.02	
7	Size of the firm	53351.20	91925.07	0.05	0.14†	-0.03	0.07	-0.03	-0.05

N = 132; † p < 0.10; * p < 0.055; ** p < 0.01; *** p < 0.001.

The results from the regression analyses are shown in Table 9. Model 1 presents our results for the control variables. In Model 2, we added the independent variables *sustainability commitment of the supplier* and *size of the firm*. In Model 3, we tested the same variables but with sector and country dummies to control for them. Finally, in Model 4, we tested the moderating effect of firm size with the sustainability commitment of the supplier. In all the models, the F-test was performed to understand the improvements resulting from the incorporation of the variables in each step.

Table 4.4. Results of the Moderated Hierarchical Regression Analysisa for H3 and H4

	Model 1	VIF	Model 2	VIF	Model 3
Intercept	-0.09 (0.35) *		0.05 (0.04)		0.01 (0.53)
Transparency: firm	-0.01 (0.01)	1.01	0.01 (0.01)	1.27	0.01 (0.01)
Transparency: supplier	0.01 (0.01) *	1.02	0.01 (0.01) *	1.15	0.01 (0.01) †
Altman: supplier	0.02 (0.01) ***	1.01	0.02 (0.01) ***	1.01	0.03 (0.06) ***
Sustainability commitment: firm			-0.01 (0.01)	1.25	-0.01 (0.01)
Sustainability commitment: supplier			-0.01 (0.01)	1.21	-0.01 (0.01)
Size of the firm			0.01 (0.00)	1.04	0.01 (0.00) †
Dummy sector and country	NO		NO		YES
Interaction sustainability of the supplier and size					
R^2	0.17		0,19		0,32
Adjusted R^2	0.16		0,15		0,22
Change in *F*	9.01***		0,81		1,97*

Dependent variable: recovery of the firm; [a] Non-standardized regression coefficients are shown. Standard errors are in parentheses. N = < 0.001.

Model 1 shows that the *transparency* and *Altman's z-score* of the supplier significantly affect the recovery of firms. In Model 2, we observed that our Hypothesis 3 is not supported. However, when we tested Hypothesis 4 and that moderating effect, we could appreciate that it is significant and positive; thus, it is supported ($b = 0.01$, $* p < 0.055$).

Finally, to see the effect of moderation, we present Figure 6, which shows that the *sustainability commitment of the supplier* increases the positive effect of firms' size on their *recovery*. The results reflect that firms with a high *sustainability commitment of the supplier* have a higher *recovery* rate when they are larger, which supports Hypothesis 4.

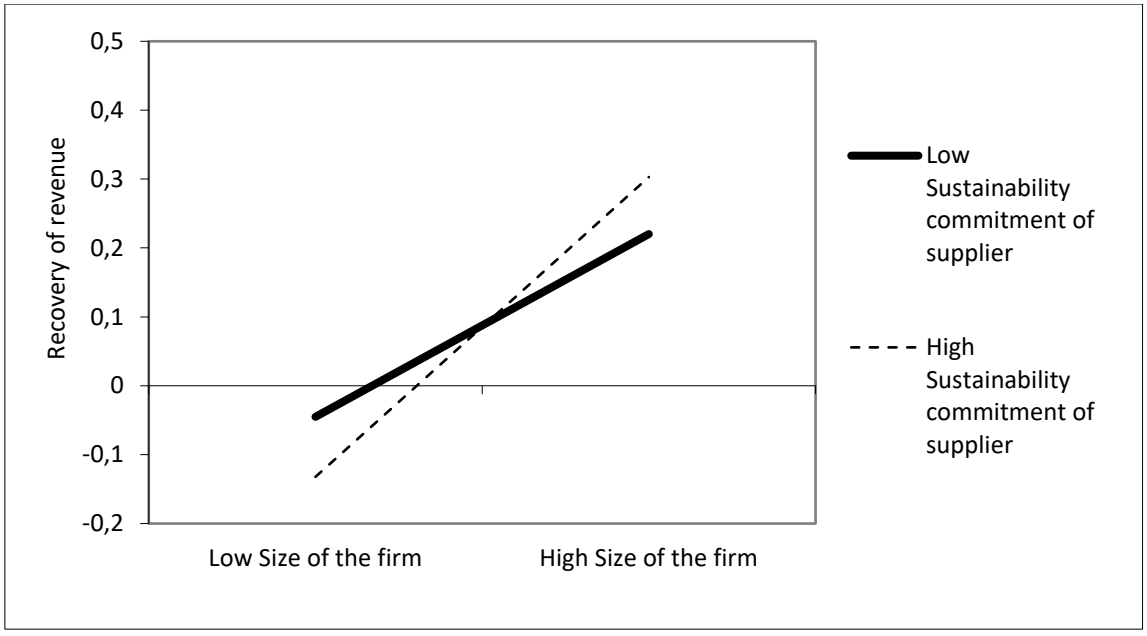

Figure 4.1. H4: Moderation Effect of the Company Size on the Relationship between Suppliers' Sustainability Commitment and Firms' Recovery

4.5. Discussion, limitations, and future research

Companies do not survive simply on the basis of internal resources; they do so on the basis of their ability to adapt and/or interact dynamically with their environment. This paper connects sustainability objectives with companies' vital capacity for long-term organizational resilience. Specifically, we investigated how the sustainability commitment of suppliers can affect the different types of resilience of companies. Regarding this aspect, our results may be interesting to academia and to managers.

The literature has studied the generation of resilience within companies in different ways (Williams *et al.*, 2017). However, many possibilities and lines are continuing to

develop. In the field of sustainability, there are in fact still questions about the effects that it can have on resilience. There are studies that have identified a positive and beneficial relationship in the long term (Ortiz de Mandojana & Bansal, 2016); however, it is also true that some limitations exist regarding the fact that choosing sustainability policies can sometimes lead to worse financial results and therefore resilience can be affected in a negative way (Ivanov, 2018). Our study, which focused on sustainability within supply chains, obtained results that reinforce the idea that sustainability can be beneficial for resilience.

Firstly, we showed that the sustainability commitment of suppliers can improve the pre-adversity resilience of firms. That is to say that, when suppliers have a strong commitment to the environment, community, and other stakeholders, they develop long-term strategies based on trust, mutual benefits, and proactivity. This type of values and strategic preferences could be very important for focal firms, which can increase their pre-adversity resilience, for example by sharing relevant information with suppliers, such as changes in material prices and social trends. It is also relevant that we did not find statistical support showing that the sustainability commitment of firms increases the positive effect of the sustainability commitment of suppliers on the pre-adversity resilience of the firms. This means that, when we talk about the pre-adversity capabilities of a firm, it is the supplier that must be the most sustainable of the two. Therefore, our idea that alignment would lead to greater resilience is not confirmed by our data.

Secondly, although we did not find direct support for the hypothesis about the sustainability commitment of the suppliers and resilience as the capacity for recovery after a crisis, we found a moderating effect. We can state that suppliers with strong sustainability commitment can be more prone to offer more support when the focal firm is large because of the visibility of their help and the increase in their legitimacy. Additionally, suppliers with strong sustainability commitment could be interested in protecting and helping large firms because, if they fail, the effect on their business and the whole supply chain could generate layoffs or social problems like shortages of products or services that may be necessary for society.

Our research makes important contributions to the extant literature. First, it extends the application of the resilience concept to the supply chain level of analysis. Research on resilience and supply chains has been limited, especially when sustainability is included in the equation (Shashi *et al.*, 2020). Our work represents a further step in

the application of this concept in the context of sustainability resilience in supply chains. Second, we contribute to the literature proposing that relationships with sustainability-committed suppliers could help focal firms to cope with and avoid adverse events by increasing their resilience. The idea that sustainability can help in avoiding some disruptions, or at least in mitigating them (pre-adversity capabilities), is probably one of the most innovative ideas of the paper because resilience has usually been studied after the disruption has appeared or after the recovery from it. Another interesting contribution of our paper is the moderating effect of the sustainability commitment of suppliers on the role that the size of the company plays in the recovery. Taking into account the fact that the literature has ruled out the role played by the size of the company in the recovery, indicating that it is not relevant if the company is small or large (Lai *et al.*, 2016; Brusset & Teller, 2017), we discovered that this effect does occur when the moderating effect of suppliers' sustainability commitment appears. We also want to mention that our work is one of the limited number of studies to have performed an empirical test in the context of sustainability, resilience, and supply chains.

Regarding managerial implications, our study offers some clues to managers of firms that seem to be experiencing financial distress or trying to recover from it, which is particularly useful, especially in relation to substantial disruptions like the COVID-19 pandemic (Shih, 2020). They can now understand that establishing relationships with suppliers that are more committed to sustainability can improve their chances of success in bankruptcy situations and increase their recovery rates. This aspect could be included in ISO 22316:2017 concerning resilience.

This work is not exempt from limitations. First, due to the limited data available, we were only able to conduct a cross-sectional analysis. Second, we could only analyse companies' main supplier and did not have a list of all those suppliers that could be relevant. As future lines of research, we can consider the possibility of increasing the number of years to perform longitudinal analyses and adding information from more suppliers, not only the main one. Another important limitation is that the dataset that we used is based especially on the USA and on large companies. The results could be different for companies from different regions and with different levels of development.

As future lines of research, an important aspect that could be investigated is the influence of customers on resilience, as we only analysed the aspect from the supply

point of view. It might also be interesting to examine the effects of other characteristics of the firm–supplier relationship on the resilience of companies, such as the duration of the relationship with suppliers or the level of internationalization of the supply chain.

This paper provides a better understanding of how sustainability from the environmental, social, and governance perspective can improve the management of supply chains to create resilience. This work is especially important in situations of crises or disruptions, like the one that is happening at this moment due to the necessity of the most resilient supply chains to resist the problems associated with the restrictions and problems generated by the COVID-19 pandemic (Sarkis, 2020). It is also a good start for future lines of research dedicated to analysing the role of sustainability in improving resilience within supply chains.

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Capítulo 5. Conclusiones

5.1. Introducción

Este último capítulo de la tesis lo dedicamos a presentar de forma resumida las principales conclusiones y aportaciones de los trabajos que forman parte de esta tesis. Comenzamos exponiendo las principales conclusiones obtenidas de la tesis en general y de las investigaciones realizadas a lo largo de los tres capítulos anteriores específicamente. A continuación, destacamos las implicaciones que este trabajo puede tener para la academia, para los gestores empresariales y para los reguladores públicos. Por último, mencionamos las limitaciones encontradas durante el trabajo de la tesis y se aportan futuras líneas de investigación.

5.2. Conclusiones del trabajo de investigación

En este apartado destacamos las conclusiones más relevantes de este trabajo. De forma general, hacemos un aporte a los estudios sobre sostenibilidad y resiliencia desde el enfoque de la cadena de suministros y los inversores, utilizando distintas teorías, donde destacan la de la dependencia de recursos y la teoría institucional. Nuestros resultados muestran que distintos factores, como la dependencia de un comprador con su proveedor o la procedencia de los inversores, tienen importantes consecuencias sobre el alineamiento de las políticas medioambientales dentro de la cadena de suministros y la proactividad medioambiental de las empresas, respectivamente. Además, vemos como las diferencias entre las regulaciones medioambientales y la cultura de sostenibilidad de los países moderan las relaciones explicadas anteriormente. Por último, estudiamos cómo la sostenibilidad de la empresa puede tener efectos positivos en la resiliencia de las empresas en un contexto de cadenas de suministro.

Concretamente, en el capítulo 2 estudiamos cómo la dependencia que tiene un comprador sobre su proveedor y el mecanismo de gestión medioambiental interorganizacional que se puede establecer dentro de la cadena de suministros influyen en la alineación estratégica de políticas medioambientales entre proveedores y compradores. Por otro lado, analizamos la influencia, como variable moderadora, de la distancia regulatoria entre los países de referencia del comprador y el proveedor sobre la dependencia y el mecanismo de gestión medioambiental interorganizacional. Encontramos un resultado interesante sobre la dependencia en nuestro estudio. Nuestro modelo no puede mostrar que la dependencia tenga un efecto positivo directo sobre la alineación de las políticas ambientales en las empresas; sin embargo,

cuando la distancia de regulación ambiental es amplia, la dependencia tiene un efecto positivo importante sobre la alineación. Esto podría deberse a que, en el caso de las políticas ambientales, las empresas hacen un esfuerzo concentrado cuando quieren encajar en la normativa ambiental para evitar multas o tener más legitimidad para los grupos de interés, y tratan de presionar más a sus proveedores. Por otro lado, nuestro modelo muestra que la adopción de un mecanismo de gestión ambiental interorganizacional se relaciona positivamente con la alineación de las políticas ambientales; esto es importante porque este mecanismo se implementa, entre otras razones, para reducir la dependencia y el riesgo asociado con los proveedores. También, aunque contrario a nuestra idea de partida, es interesante que nuestra argumentación sobre la influencia de la distancia regulatoria ambiental que afecta a este sistema no tenga un efecto estadístico. Esto puede hacernos pensar que las empresas harán el mismo esfuerzo para implementar este tipo de mecanismo sin preocuparse por las diferencias en la regulación, simplemente por el empeño para reducir la dependencia.

Por otro lado, en el capítulo 3 nuestros resultados sugieren que las empresas pueden verse afectadas por la presión desinstitucionalizadora de inversores extranjeros ubicados en países con culturas medioambientales distantes, adquiriendo nuevos conocimientos sobre prácticas ambientales que no habían identificado previamente y poniéndolos en práctica, construyendo así nuevas capacidades para sobrevivir. Además, identificamos que existen determinadas situaciones diferentes en las que el efecto de la desinstitucionalización y el institucionalismo defensivo inciden en el grado de proactividad ambiental de la empresa. Nuestros datos muestran que los inversores extranjeros tienen éxito en su proceso de desinstitucionalización, aumentando la proactividad ambiental de las empresas, cuando provienen de países con un fuerte perfil ambiental. Sin embargo, sus esfuerzos conducen a resultados ambientales más bajos cuando provienen de países con estándares ambientales más bajos, pero solo si operan dentro de empresas con sede en países más sostenibles. En última instancia, nuestro artículo sugiere la idea de que las fuerzas de desinstitucionalización son más fuertes que el institucionalismo defensivo (Ahmadjian & Robbins, 2005) y, además, muestra cómo el proceso de desinstitucionalización se activa aún más cuando la diferencia entre la cultura medioambiental de los accionistas y las empresas es mayor.

Finalmente, en el capítulo 4 analizamos como las empresas no sobreviven simplemente con los recursos internos; más bien, sobreviven sobre la base de su capacidad para adaptarse y/o interactuar dinámicamente con su entorno, en este caso,

con la cadena de suministros. Este proyecto conecta los objetivos de sostenibilidad con la capacidad vital de la empresa a largo plazo, la resiliencia. Primero, nuestros resultados sugieren que el compromiso de sostenibilidad del proveedor puede mejorar la resiliencia de la empresa antes de la adversidad. Es entonces cuando los proveedores que tienen altos compromisos con el medioambiente, la comunidad y otros grupos de interés, desarrollan estrategias de largo plazo basadas en la confianza, el beneficio mutuo y la proactividad. Este tipo de valores y preferencias estratégicas pueden ser muy importantes para las empresas con las que hacen negocio, que pueden incrementar su resiliencia previa a la adversidad, por ejemplo, al compartir información relevante con el proveedor como cambios en los precios de los materiales, tendencias sociales, entre otros. En segundo lugar, aunque no encontramos apoyo directo a la hipótesis sobre el compromiso de sostenibilidad de los proveedores y la resiliencia como capacidad de recuperación tras una crisis, sí encontramos un efecto moderador. Los proveedores con un alto compromiso por la sostenibilidad pueden ser más propensos a ofrecer más apoyo cuando la empresa compradora es grande, debido probablemente a la visibilidad de su ayuda y al aumento de su legitimidad si la empresa sale adelante. Además, los proveedores con un alto compromiso sostenible podrían estar interesados en proteger y ayudar a las grandes empresas porque, si fracasan, el efecto en su negocio y en toda la cadena de suministro podría reducir su propio desempeño.

5.3. Implicaciones del trabajo de investigación

Consideramos que este trabajo puede tener ciertas implicaciones académicas para la gestión empresarial y para los reguladores públicos.

Implicaciones académicas

Creemos que este trabajo ahonda en la literatura de la sostenibilidad aplicada a las empresas, específicamente a la que estudia el papel de la cadena de suministros y los inversores en este fenómeno. Nuestro trabajo aporta evidencia sobre varios factores que ayudan a fomentar la sostenibilidad de las empresas mediante incrementos en la proactividad medioambiental y el alineamiento de políticas medioambientales dentro de la cadena de suministros; además, aportamos resultados sobre los efectos que esta mejora puede tener sobre la resiliencia.

En el capítulo 2, realizamos aportaciones a la investigación sobre la teoría de la dependencia de recursos y la sostenibilidad empresarial. En primer lugar,

respondemos a las peticiones para una mayor investigación en este campo (por ejemplo, Touboulic *et al.*, 2014; Schnittfeld & Busch, 2016), y establecemos una razón principal para la alineación entre políticas de las empresas y sus proveedores, que ahora es uno de los constructos más importantes estudiados en investigación de operaciones debido al efecto que tiene la alineación sobre la eficacia y la eficiencia en la cadena de suministro (Lee, 2004; Whitten *et al.*, 2012; Olivares *et al.*, 2021). En segundo lugar, ayudamos a aclarar los factores que traen alineación de las políticas ambientales a las empresas en el contexto de la relación comprador-proveedor y la dependencia, lo que no se ha hecho antes. En tercer lugar, mostramos que la distancia regulatoria ambiental modera la relación entre dependencia y alineación, lo que no ha sido analizado previamente y permite una nueva posibilidad de estudios que mezclan la teoría de la dependencia de recursos y la teoría institucional; y también, respondemos a la petición de más estudios sobre la distancia regulatoria y la cadena de suministro (Busse *et al.*, 2016). Esto también es importante porque hay poca información sobre estos temas y, en un mercado global, la dependencia y las diferentes regulaciones son críticas para el éxito de una empresa.

En el capítulo 3, nuestros hallazgos amplían las aplicaciones de la teoría institucional y el marco específico de desinstitucionalización e institucionalismo defensivo. La investigación sobre los vínculos entre los inversores y la proactividad ambiental ha sido limitada y centrada en la propiedad corporativa e institucional (Calza *et al.*, 2016; Alda, 2019), mientras que nuestro trabajo representa un paso más en la aplicación de este concepto en el contexto de las diferencias entre inversores nacionales y extranjeros. En cuanto a la teoría institucional, nuestros resultados apoyan la argumentación de que las fuerzas de desinstitucionalización son más fuertes que el institucionalismo defensivo (Ahmadjian & Robbins, 2005). Finalmente, también es relevante nuestro aporte a la identificación de la importancia del EPI de los países en la moderación de estas relaciones y los cambios en las fuerzas de institucionalización.

En el capítulo 4, extendemos la aplicación del concepto de resiliencia desde el punto de vista de la empresa de forma solitaria a su papel dentro de la cadena de suministros. Nuestro trabajo representa un paso más en la aplicación de este concepto en el contexto de los proveedores. En segundo lugar, contribuimos a la identificación de los determinantes del valor de la cadena de suministro. Proponemos que las relaciones con proveedores sostenibles podrían ayudar a las empresas focales a hacer frente y evitar eventos adversos al aumentar la resiliencia de la empresa. La idea de cómo la sostenibilidad puede ayudar a evitar algunas interrupciones o al menos a mitigarlas

(capacidades previas a la adversidad) es probablemente una de las ideas más innovadoras del artículo, porque la resiliencia generalmente se estudia desde que aparece la disrupción o después de ella para recuperarse de una. Otro aporte interesante de nuestro trabajo es el efecto moderador del compromiso con la sostenibilidad de los proveedores sobre el papel que juega el tamaño de la empresa en la recuperación. Teniendo en cuenta que la literatura había descartado el papel jugado por el tamaño de la empresa en la recuperación, indicando que no era relevante si la empresa era pequeña o grande (Lai *et al.*, 2016; Brusset & Teller, 2017), nuestros resultados revelan que este efecto ocurre cuando aparece el efecto moderador del compromiso con la sostenibilidad del proveedor.

Finalmente, nuestros modelos se han construido utilizando datos secundarios, lo cual no es común en esta área porque muchos estudios empíricos desarrollados en relación con la cadena de suministro se basan en estudios de casos descriptivos o en las opiniones de los gerentes (Ashby *et al.*, 2012), que a menudo generan limitaciones de sesgo subjetivo. En este estudio logramos contrastar nuestras hipótesis con datos secundarios, evitando la subjetividad y las limitaciones de un caso de estudio o encuestas gracias a algunas iniciativas de organismos internacionales que provocan que las grandes empresas aumenten la información que publican sobre su desempeño ambiental. También brindan información sobre los proveedores con los que están relacionados, lo que puede permitir estudios empíricos más profundos sobre estos conceptos (Huo *et al.*, 2014). Este tipo de investigaciones con datos secundarios, aunque estén siendo más demandadas y en nuestra opinión aportan una mejor comprensión de los fenómenos, también deben ser analizados con cuidado (Miller *et al.*, 2021).

Implicaciones para la gestión empresarial y los reguladores públicos

Nuestros resultados del capítulo 2 sugieren que aquellas empresas que trabajan con un proveedor que proviene de un país con un marco regulatorio ambiental distinto, estarán más inclinadas a alinear las políticas ambientales que si trabajan con un proveedor del mismo país o sin un nivel de regulación diferente. Además, nuestros resultados pueden ayudar a los gerentes a identificar los beneficios de implementar un mecanismo de gestión ambiental interorganizacional, debido a su importancia y efectividad en la alineación de políticas ambientales, lo que implica una mayor eficiencia. El posible efecto sobre la legitimidad de las partes interesadas también podría ser relevante para los administradores.

Nuestro estudio en el capítulo 3 ofrece algunas recomendaciones a los directivos sobre cómo deben afrontar las distintas presiones que ejercen los inversores dominantes (nacionales o extranjeros). Por ejemplo, los gerentes pueden jugar un papel mediador entre las diferentes influencias de los inversores dominantes, como se vio en estudios anteriores (Chithambo *et al.*, 2020). También es importante que los inversores dominantes, en el contexto de las presiones de la sociedad para mayores inversiones verdes y sostenibles, adquieran conocimientos y capital para aumentar la proactividad ambiental. Nuestro estudio aclara qué presiones conducen a una mayor proactividad ambiental y cómo los gerentes pueden interpretar el choque cultural entre los inversores nacionales y los inversores internacionales en términos de mejorar la proactividad ambiental.

En el capítulo 2 especialmente, y de forma indirecta en el capítulo 3, aportamos la idea de cómo afectan las diferencias entre las regulaciones medioambientales de los países en los que radican las empresas o sus proveedores/inversores. Esto puede ser un elemento a tener en cuenta por los reguladores públicos ya que nuestro trabajo ofrece una perspectiva en la que estas regulaciones realmente afectan a una mejora en el alineamiento o la proactividad de las políticas medioambientales.

En el capítulo 4, nuestro análisis ofrece algunos consejos para los gerentes de empresas que pueden estar al borde de una crisis o están tratando de recuperarse de una, como por ejemplo la causada por la pandemia de la COVID-19 (Shih, 2020). Ahora pueden entender que establecer relaciones con proveedores que tienen un mayor compromiso de sostenibilidad puede mejorar sus posibilidades de éxito en quiebras y aumentar sus tasas de recuperación. Además, dada la importancia que está cobrando la ISO 22316:2017 ya comentada en el capítulo anterior, este podría ser un aspecto que se puede incluir en dicha certificación o crear una que incluya estas cuestiones de sostenibilidad, además de las que ya existen. Este capítulo proporciona una comprensión más profunda de cómo la sostenibilidad puede mejorar la gestión de la cadena de suministro para crear resiliencia. Esto es especialmente importante en situaciones de crisis o disrupciones como la que está ocurriendo en este momento, debido a la necesidad de contar con las cadenas de suministro más resilientes para resistir los problemas asociados a las restricciones y disrupciones generadas por la COVID-19. También es una buena propuesta para que las empresas piensen mejores formas de estar prevenidas ante las crisis que puedan hacer peligrar su resiliencia en base a la sostenibilidad.

5.4. Limitaciones del trabajo de investigación

Como en toda investigación, esta tesis no se encuentra exenta de ciertas limitaciones. A continuación, procedemos a enumerar las que hemos encontrado durante la realización de los trabajos de investigación que componen los capítulos anteriores:

- Los análisis estadísticos que hemos realizado en los capítulos 2 y 4 son de corte transversal, lo que nos impide estudiar el efecto que el tiempo tiene en las variables analizadas. Esta limitación puede afectar a la asunción de la causalidad de las relaciones propuestas.

- En los capítulos 2 y 4 trabajamos con parejas de proveedores y sus compradores. Dada la dificultad de obtener datos secundarios realistas sobre las relaciones proveedor/comprador, se ha optado por utilizar al mayor proveedor de la empresa; sin embargo, sería interesante analizar las relaciones con un mayor número de proveedores por empresa, pero esa limitación es común en este campo salvo que se recurra a datos de encuestas, que también presentan otro tipo de problemáticas.

- Otra limitación es la relativa a generalizar los resultados obtenidos de cada estudio. En el capítulo 2, nuestro conjunto de datos se limita únicamente al sector energético. Esto puede suponer que en otros sectores que se caractericen por un distinto nivel de regulación o de potencial daño al medioambiente, obtengamos resultados distintos en las hipótesis planteadas. En el capítulo 3, es cierto que utilizamos un panel de datos muy completo que engloba países tanto desarrollados como en vías de desarrollo y todo tipo de sectores, con lo que este problema podría verse más diluido. En cuanto al capítulo 4, la limitación puede verse generada por utilizar las mayores empresas según Forbes y sus principales proveedores.

- Una de las limitaciones específicas del capítulo 4 es que, a la hora de medir la variable moderadora (perfil medioambiental del país del inversor), solo hemos podido hacerlo teniendo en cuenta al inversor dominante de cada empresa; podría ser interesante para futuros trabajos que se analizara en base a un *pool* de inversores.

- También, aunque nosotros consideramos que todas las variables utilizadas son buenos *proxies* para medir los efectos propuestos en nuestras hipótesis, es

cierto que siempre existe la posibilidad de encontrar en la literatura otras variables que puedan aportar una mayor robustez al trabajo aquí realizado.

5.5. Futuras líneas de investigación

Consideramos que este trabajo es solo el comienzo de más posibles estudios que profundicen las temáticas y conceptos tratados, como detallamos a continuación.

En primer lugar, creemos relevante realizar trabajos que solventen algunas de las limitaciones que hemos encontrado al realizar esta tesis. Especialmente, sería interesante intentar hacer estudios longitudinales y de más sectores que los que hemos utilizado en los capítulos 2 y 4. También, el uso de otras variables y el análisis con otras técnicas estadísticas a las usadas en esta tesis podría dar mayor robustez a nuestros hallazgos.

En segundo lugar, nos hemos centrado en el alineamiento de las políticas medioambientales dentro de la cadena de suministros, pero hay otros factores como la complejidad, la agilidad o la adaptabilidad que son también relevantes y podrían arrojar resultados interesantes.

En tercer lugar, otro aspecto importante podría ser el estudio de la influencia de los inversores extranjeros y nacionales sobre la resiliencia o la innovación, así como el análisis de si el efecto moderador del perfil ambiental del país inversor dominante afecta a esas variables. Un estudio de otras partes interesadas y sus diferentes efectos debido al país de origen también podría ser interesante, ya que permitiría difundir diferentes puntos de vista sobre la estrategia de una empresa en función de las culturas nacionales.

En cuarto lugar, nos gustaría proponer un trabajo en el que se analizara de forma conjunta el papel de los inversores y el de la cadena de suministros, que, aunque complejo a la hora de realizar el modelo, podría completar los resultados arrojados por esta tesis.

En quinto lugar, los resultados del último capítulo sugieren una importante utilidad de las cuestiones de sostenibilidad sobre la resiliencia, lo que, además de la importancia para las empresas, a los investigadores en este campo nos puede hacer plantear cuáles son las mejores estrategias de sostenibilidad que lleven a aumentos significativos en la resiliencia de las empresas. Otro aspecto importante podría ser el estudio de la influencia de los clientes sobre la resiliencia, porque solo hemos

analizado el aspecto desde el punto de vista del proveedor. El estudio de otras formas de influir en la resiliencia de la empresa también puede resultar interesante.

En definitiva, creemos que esta tesis abre nuevas vías de investigación que, de hecho, ya estamos aprovechando y utilizando para otros trabajos. La demanda de la sociedad por una preocupación cada vez mayor en cuestiones de sostenibilidad y la importancia de crear empresas y cadenas de suministros más resilientes ponen de manifiesto la relevancia de esta temática durante los próximos años, y esperamos poder seguir contribuyendo a la misma.

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