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DOCTORADO EN PSICOLOGÍA DE LOS RECURSOS HUMANOS

Justicia organizacional en el sector servicios: El impacto de “peer justice” sobre el desempeño de la organización, la calidad percibida por los clientes y el bienestar de los empleados

TESIS DOCTORAL

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SUMMARY

The aim of this doctoral thesis is to examine the impact of peer justice—i.e., unit-level perceptions of the fairness with which coworkers generally treat one another—in service organizations. Five empirical studies were conducted to this end, using two samples from the health care industry, and controlling the effect of its counterpart, justice climate—i.e., unit-level perceptions of the fairness with which the unit is collectively treated by an authority figure. Sample 1 consisted of 79 supervisors, 532 employees, and 748 customers nested in 79 work units, whereas Sample 2 consisted of 692 employees nested in 111 work units. Study 1 tests the validity of peer justice and justice climate as second-order constructs. Study 2 tests a structural equation model in which peer justice and justice climate relate to unit-level performance, through the mediating role of service climate—a critical predictor of performance within service organizations. Study 3 tests a multilevel Justice-Quality model in which peer justice and justice climate relate to employees' shared perceptions of service quality which, in turn, translate to customers' perceptions of service quality and, finally, to customers' quality of life. Study 4 tests the cross-level effect of peer justice on the core dimensions of burnout—emotional exhaustion and cynicism—, above and beyond the effect of justice climate. Study 5 tests the role of justice climate strength—i.e., degree of agreement among members of the same work unit on whether the unit has been treated fairly by the authority figures—as a moderator of the effect of justice climate on peer justice. Despite showing the importance of authority figures as sources of justice, the results of the five studies presented in this doctoral thesis indicate that this source is not sufficient to explain the effects of shared justice perceptions. Altogether, the results reported in this doctoral thesis provide evidence that support the positive impact of peer justice on service organizations. We discuss the theoretical and practical implications of these findings.

BLOQUE I: INTRODUCCIÓN

1. INTRODUCCIÓN GENERAL

“La nuestra se ha convertido (...) en una sociedad de organizaciones. Nacemos dentro de organizaciones y nos educamos dentro de organizaciones para que luego podamos trabajar dentro de organizaciones. Finalmente, las organizaciones nos entierran” (Mintzberg, 1991, p. 13). Conocer los fenómenos organizacionales que favorecen el adecuado funcionamiento de estas organizaciones para las personas y grupos es, por tanto, un aspecto crucial para la sociedad.

A partir del estudio de la gestión de recursos humanos y comportamiento organizacional se ha observado que las organizaciones tienden a funcionar mejor cuando los empleados que trabajan en ellas se encuentran bien tratados (Grönroos, 1990). Por ello, el estudio de la justicia organizacional ha resultado un área especialmente relevante en este sentido ya que las percepciones de justicia que realizan los empleados en el trabajo afectan, directa o indirectamente, su productividad y bienestar. Ahora bien, a pesar de que el estudio de la justicia organizacional ha permitido mejorar nuestro conocimiento acerca del funcionamiento de las organizaciones, esta área de estudio se enfrenta a nuevos desafíos.

Para adaptarse a los cambios sociales, económicos y tecnológicos, las organizaciones han transformado sus sistemas organizativos y sus procesos de trabajo (Ilgen, Hollenbeck, Johnson, y Jundt, 2005; Mathieu, Maynard, Rapp, y Gilson, 2008). Poco a poco, las estructuras tradicionales, caracterizadas por su alto nivel de centralización y verticalidad, se han transformado en estructuras más descentralizadas y horizontales. Esta transformación ha implicado un incremento en la autonomía y la importancia que se asigna a la interrelación y coordinación entre los miembros y grupos de una organización. Una de las consecuencias claves de este proceso ha sido pasar de

estructuras de trabajo focalizadas en el individuo a estructuras de trabajo focalizadas en los grupos de empleados. En este contexto, los colectivos de empleados, tales como unidades de trabajo, equipos o departamentos, se han convertido en la unidad básica de análisis, diseño y gestión en las organizaciones.

Gracias a diferentes desarrollos teóricos y metodológicos, el estudio de la justicia organizacional ha evolucionado de tal forma que ha sido capaz de incorporar los nuevos desafíos impuestos por esta nueva manera de organizar el trabajo y su énfasis en el grupo como unidad relevante. A partir de estos avances, la investigación en justicia organizacional ha desarrollado un área específica que se ha centrado en lo que se denomina como *clima de justicia*. Este fenómeno ha permitido examinar los efectos que poseen las percepciones compartidas de justicia que se generan en los grupos de trabajo. Esta área específica de estudio ha permitido volcar los conocimientos de justicia organizacional a los fenómenos grupales y las influencias que estos poseen en las organizaciones.

La investigación acerca de clima de justicia se ha centrado en los efectos que poseen las figuras de autoridad sobre las unidades de trabajo. Es decir, el foco de atención ha sido puesto en el clima de justicia que caracteriza el modo en que los empleados de una misma unidad de trabajo son tratados por una persona o entidad que se encuentra en una posición jerárquica superior a la de sus miembros, por ejemplo el supervisor inmediato. Si bien este objeto de estudio ha sido muy beneficioso para la comprensión del funcionamiento de las organizaciones, el foco en las figuras de autoridad corresponde a una naturaleza vertical en la estructuración del trabajo. Por consiguiente, aún resta por explorar fuentes de justicia que se correspondan con las nuevas estructuras de trabajo más horizontales.

Recientemente, la literatura en justicia organizacional ha demostrado que una fuente con particular potencial para influenciar el funcionamiento de las organizaciones son los mismos compañeros de trabajo que poseen los empleados. Fruto del incremento de autonomía y flexibilidad que han experimentado las nuevas estructuras de trabajo, los compañeros de trabajo representan actualmente una de las características más destacadas de la vida laboral de las personas (Dutton y Ragins, 2007). Es razonable argumentar, por tanto, que las percepciones compartidas de justicia que se forman en relación con el trato que reciben los empleados por parte de sus propios compañeros de trabajo, denominado *clima de justicia entre compañeros*, puede representar un importante predictor de su desempeño y bienestar.

Las organizaciones de servicios representan un sector que puede beneficiarse particularmente del estudio del clima de justicia entre compañeros de trabajo. Ello se debe a que este tipo de organizaciones depende en gran medida del trabajo conjunto que desarrollan los empleados de una misma unidad de trabajo. La adecuada prestación de un servicio no la realiza de manera independiente un solo individuo, sino que depende de la colaboración de sus compañeros de unidad (Boshoff y Allen, 2000; George y Weimerskirch, 1994; Sacramento, Chang y West, 2006; Shemwell, Yavas y Bilgin, 1998). Por tanto, la existencia de un clima justo entre los compañeros de trabajo podría facilitar la consecución de los objetivos de estas organizaciones y su bienestar, mientras que un clima injusto podría ser una barrera importante. No obstante, aún no existe suficiente evidencia empírica que permita estimar el impacto real del clima de justicia entre compañeros. Por consiguiente, el objetivo fundamental de la presente investigación es examinar el impacto que posee el clima de justicia entre compañeros en las organizaciones de servicios.

Dicho objetivo fundamental se abordará a través de cinco estudios. En primer lugar, se procederá a la validación de las dos medidas de clima de justicia, es decir, clima de justicia entre compañeros y clima de justicia propiciado por las figuras de autoridad (Estudio 1). Posteriormente, se indagará el impacto que poseen el clima de justicia entre compañeros y el clima de justicia propiciado por las figuras de autoridad sobre variables claves para el funcionamiento competitivo y sostenible de las organizaciones como el desempeño de la organización (Estudio 2), la calidad de servicio y la calidad de vida que perciben los clientes (Estudio 3) y el bienestar de los empleados (Estudio 4). Una vez examinado el impacto del clima de justicia entre los compañeros en las organizaciones de servicios de las muestras utilizadas, se intentará identificar uno de los factores clave que llevan a que los compañeros de trabajo se traten justa o injustamente. Para ello, se indagará el efecto de la fuerza del clima de justicia sobre el clima de justicia entre los compañeros de trabajo (Estudio 5). La Figura 1 presenta un diagrama de los cinco estudios.

En los siguientes apartados se realiza una descripción de las organizaciones de servicios y sus características, seguida por una descripción de los conceptos vinculados al estudio de la justicia organizacional y de las demás variables consideradas en el presente trabajo de investigación. Posteriormente se presentan los cinco estudios empíricos que componen este trabajo. Si bien estos estudios pueden ser abordados de manera independiente, la articulación conjunta de los mismos pretende responder al objetivo fundamental de esta tesis doctoral. Finalmente, se presenta una discusión general donde se desarrollan las contribuciones teóricas y prácticas derivadas de esta investigación.

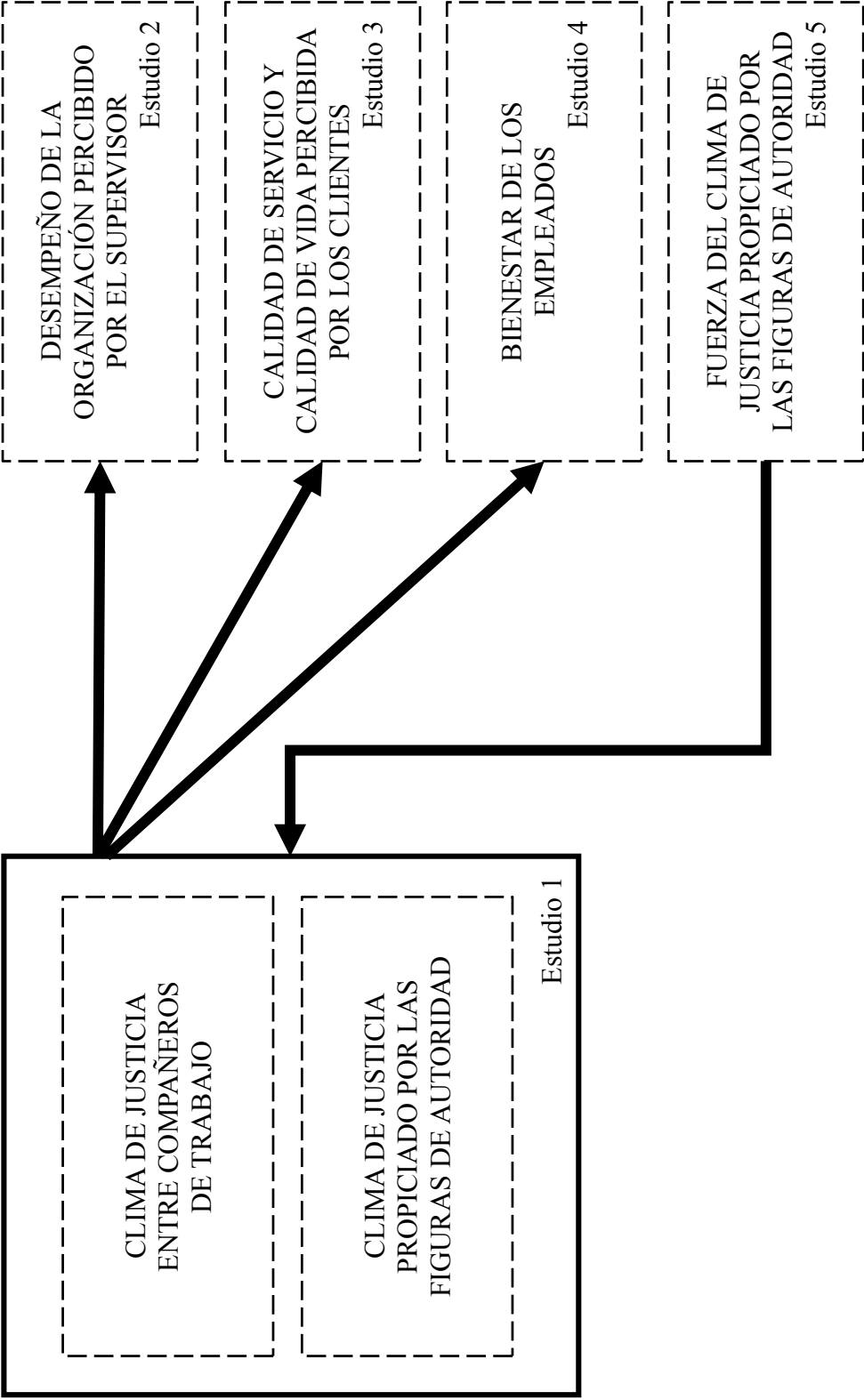


Figura 1. Estudios de investigación.

2. ORGANIZACIONES DE SERVICIOS

Es bien conocido el predominio del sector servicios sobre el sector de producción de bienes de consumo. Los datos ofrecidos por el Fondo Monetario Internacional (World Economic Outlook Database, 2012) confirman la importancia del sector servicios para la economía global. En el año 2012, el 63,6% del Producto Interno Bruto (PIB) mundial correspondió al sector servicios, mientras que el PIB restante se dividió entre la producción de bienes (30,5%) y la industria agrícola (5,9%). Esta tendencia es aún mayor en países europeos. Con la excepción de Estados Unidos y Japón, ocho de los 10 países con mayor porcentaje de PIB correspondiente al sector servicios son europeos (Francia: 79,8%, Estados Unidos: 79,7%, Grecia: 78,9%, Reino Unido: 78,3%, Bélgica: 77,7%, Dinamarca: 76,4%, Italia: 73,8, Países Bajos: 73,2%, España: 72,6%, Japón: 71,4%).

El predominio del sector servicios ha impulsado a las organizaciones a incrementar sus esfuerzos en la búsqueda de la excelencia en la prestación de los servicios como una estrategia de competitividad (Schneider, 1990). Esta estrategia ha demostrado su utilidad ya que se ha observado que las organizaciones que mejoran la prestación de los servicios que ofrecen a sus clientes tienden a obtener un mayor retorno de la inversión (p.e., Ogden y Watson, 1999).

Ahora bien, para incrementar la excelencia del servicio, las organizaciones de servicio deben tener en cuenta una serie de características que las distinguen de las organizaciones que producen bienes de consumo. Estas características se presentan en el siguiente apartado.

2.1. Características de las organizaciones de servicios

Los servicios son productos específicos que se diferencian de los bienes de consumo por una serie de características (Gabbot y Hogg, 1994; Grönroos, 1978;

Parasuraman, Zeithaml y Berry, 1985). Estas características pueden considerarse como variables en un continuo con dos extremos. Mientras que en un extremo se encontraría lo que se ha denominado un *servicio puro*, en el otro extremo se encontraría lo que se denominado un *bien de consumo puro* (Schneider y White, 2004). Las características definitorias de los servicios son:

- *Intangibilidad*: a diferencia de los productos de consumo que se caracterizan por ser tangibles, los servicios se caracterizan por su naturaleza intangible. Si bien su prestación puede realizarse a través del uso de materiales tangibles (p.e., un tomógrafo), el servicio (p.e., médico) en sí mismo es de carácter intangible. Tal como señaló Schneider y Bowen (1985), los servicios ofrecen experiencias psicológicas más que posesiones físicas.
- *Simultaneidad*: la prestación de un servicio requiere normalmente de la presencia o participación del cliente. Esto implica que los servicios son producidos y consumidos de manera simultánea. Los bienes de consumo, en cambio, pueden ser producidos en un determinado momento y consumidos en otro (p.e., un libro).
- *Participación del cliente*: la participación activa del cliente suele ser más importante en la prestación de un servicio que en la producción de un bien de consumo. Esta coproducción del servicio se debe a la elevada implicación de los clientes durante la prestación del mismo (p.e., la asistencia de un estudiante a una clase universitaria) (Bowen, Siehl y Schneider, 1989).
- *Caducidad*: mientras que los productos de consumo pueden ser producidos y almacenados para su posterior venta, la prestación de un servicio carece normalmente de esta posibilidad. Los servicios, por tanto, se encuentran mayormente sujetos a fluctuaciones de la demanda ya que un servicio no prestado, generalmente, no puede ser recuperado.

- *Heterogeneidad*: la prestación de un servicio varía en función de las personas que lo prestan, las personas que lo reciben y del momento temporal en que se presta. En consecuencia, resulta más complicado garantizar la homogeneidad, consistencia y estandarización de un servicio que de un bien de consumo.

Tal como se infiere de estas características, la complejidad de la naturaleza humana hace de la interacción entre los empleados que ofrecen servicios y los clientes que reciben los servicios un desafío crítico para el sector. Existe consenso en que este desafío requiere que las organizaciones proporcionen a sus empleados un contexto favorable y los recursos necesarios para que los mismos puedan prestar a sus clientes servicios con altos niveles de excelencia (p.e., Grönroos, 1990; Heskett, Sasser y Schlesinger, 1997; Reynoso y Moores, 1995). En este sentido, el trato que reciben los empleados por parte de las organizaciones y sus miembros es un aspecto crítico para la búsqueda de la excelencia. Según esta lógica, los empleados deben sentirse a gusto en la organización donde trabajan de forma tal que los servicios que ofrezcan satisfagan a los clientes (Bettencourt y Brown, 1997). El sentirse a gusto, no obstante, no puede ser reducido al salario de estos empleados. Los empleados valoran una diversidad de beneficios materiales y psicosociales, tal como el trato digno y respetuoso que reciben de otras personas. Las organizaciones de servicios que tienen en cuenta la importancia de estos beneficios pueden promover una mayor motivación en sus empleados para que contribuyan a los objetivos de la organización. Las percepciones de justicia de estos empleados adquieren, pues, un rol crítico en estas organizaciones. Tal como se describe en el siguiente apartado, el estudio de las percepciones de justicia en el ámbito del trabajo ha sido denominado en la literatura como *justicia organizacional*.

3. JUSTICIA ORGANIZACIONAL

La naturaleza social del ser humano y su dependencia respecto a otros seres humanos ha favorecido el desarrollo de sistemas emocionales y cognitivos que permiten valorar la calidad moral de los comportamientos propios y de los demás (Greene, Nystrom, Engell, Darley y Cohen, 2004; Hsu, Anen y Quartz, 2008; Sanfey, Rilling, Aronson, Nystrom y Cohen, 2003). Este resultado evolutivo resulta crítico para la regulación de nuestras relaciones interpersonales y, por tanto, para facilitar la vida en sociedad—un organismo solitario no necesita normas morales porque no puede dañar a nadie más que a sí mismo (Høgh-Oleson, 2010). Es decir, las personas utilizan sus percepciones de justicia para orientarse en sus relaciones interpersonales con los demás (Moore y Gino, 2013).

La justicia organizacional es un área de estudio del comportamiento organizacional que se centra en las percepciones de justicia que tienen lugar en el ámbito de trabajo de las personas (Lin y Tyler, 1988). Su objetivo es investigar el impacto de las percepciones de justicia sobre el funcionamiento de la organización (Greenberg, 1990). Para ello, la justicia organizacional se focaliza en cómo los empleados juzgan las acciones de los demás y cómo estos juicios promueven determinadas actitudes y comportamientos que afectan el funcionamiento de la organización (Folger, 2001).

Diversos trabajos han demostrado la importancia que posee la justicia para las organizaciones. El trato justo a los empleados se ha relacionado con altos niveles de desempeño (Devonish y Greenidge, 2010), satisfacción con el trabajo y compromiso con la organización (Korsgaard, Schweiger y Sapienza, 1995), comportamientos de ciudadanía (Konovsky y Pugh, 1994; Podsakoff, MacKenzie y Fetter, 1993), aumento del afecto positivo y disminución del afecto negativo (Van den Bos, 2001; Weiss, Suckow y Cropanzano, 1999), la aceptación de políticas organizacionales (Greenberg, 1994) y de

los supervisores (Huo, Smith, Tyler y Lind, 1996), mejor salud mental (Spell y Arnold, 2007), disminución del estrés (Cropanzano, Goldman y Benson, 2005), entre otras variables. En contraposición, el trato injusto a los empleados se ha relacionado con la reducción de estos resultados beneficiosos y con reacciones contraproducentes, tales como el comportamiento de robo (Greenberg y Scott, 1996), el absentismo, (Shapira-lishchinsky y Rosenblatt, 2009) o la posibilidad de demandar a los antiguos empleadores (Lind, Greenberg, Scott y Welchans, 2000). Estos y otros muchos estudios que han sido objeto de múltiples meta-análisis (p.e., Cohen-Charash y Spector, 2001; Colquitt, Conlon, Wesson, Porter, y Ng. 2001; Colquitt et al., 2013; Robbins, Ford y Tetrick, 2012) han hecho de la justicia organizacional un constructo clave en el estudio de las organizaciones.

Los avances conseguidos en el estudio de la justicia organizacional han sido aplicados a una multitud de procedimientos vinculados a la gestión de recursos humanos. Algunos de estos procedimientos incluyen a las evaluaciones de desempeño (Korsgaard y Roberson, 1995), la selección de personal (Gilliland, 1994), la distribución de recompensas (Dulebohn y Martocchio, 1998; Scarpello y Jones, 1996), los procesos de despido (Konovsky y Brockner, 1993) y la resolución de conflictos (Goldman, Cropanzano, Stein, y Benson, 2008).

3.1. Percepciones de justicia organizacional

Las percepciones de justicia organizacional se forman en función de los eventos que se experimentan en el trabajo (Cropanzano, Stein y Nadisic, 2011). Estos eventos se juzgan a partir de referentes que habitualmente se denominan “normas”, “estándares”, “reglas” o “criterios” de justicia, que tienen una naturaleza subjetiva. Cuando un evento, como el aumento de salario de un compañero de trabajo, es consistente con estos criterios de referencia, se juzga el evento como justo. Al contrario, cuando el evento no es

consistente con estos criterios de referencia, el evento se juzga como injusto (Hollensbe, Khazanchi y Masterson, 2008).

A lo largo del tiempo, la investigación sobre justicia organizacional ha identificado tres tipos específicos de eventos que poseen gran relevancia para las percepciones de justicia de las personas en el lugar de trabajo. Estos eventos se relacionan con las recompensas, los procedimientos y las interacciones que tienen lugar en el trabajo. A continuación se describen las dimensiones específicas de justicia organizacional que se han derivado de estos eventos. Posteriormente, se describe lo que recientemente ha sido denominado como justicia global.

3.1.1. Justicia distributiva

La *justicia distributiva* hace referencia al grado de justicia que se percibe en relación con las compensaciones que se obtienen por el trabajo realizado. La regla más utilizada para realizar valoraciones de justicia distributiva es la regla de la equidad de Adams (1965). Según esta regla, las personas comparan dos ratios. La primera ratio se obtiene a partir de dividir las recompensas que la propia persona ha obtenido entre las contribuciones que ha realizado (recompensas/contribuciones). La segunda ratio corresponde a la división de las recompensas recibidas por otro referente significativo—persona o grupo de personas—entre las contribuciones que este otro referente ha realizado. Según esta regla, una persona interpretará un evento como justo cuando exista un equilibrio entre ambas ratios. Cuando la comparación entre ratios indique que una persona está inadecuada o excesivamente compensada se interpretará el evento como injusto. Es decir, una persona valorará como justo las recompensas obtenidas si éstas son proporcionales a la cantidad y calidad de sus contribuciones, teniendo en cuenta a otro referente significativo.

3.1.2. Justicia procedimental

La *justicia procedimental* hace referencia al grado de justicia de un proceso de toma de decisiones o conjunto de normas que se utilizan para la distribución de compensaciones. Según Thibaut y Walker (1975), una persona valorará como justa una compensación si ha tenido la posibilidad de que se escuche su opinión—hacerse oír—o de influir en el proceso de toma de decisiones o implementación de las normas. Leventhal, Karuza y Fry (1980) sugieren seis criterios, complementarios entre sí, para decidir si un procedimiento es justo o no. Estos criterios hacen referencia a: a) la consistencia en la aplicación de procedimientos: que los procedimientos sean aplicados a todas las personas y a lo largo del tiempo por igual; b) la representatividad del criterio de decisión empleado: que la posición de todos los grupos de interés, mayoritarios y minoritarios, sea considerada; c) la supresión del sesgo en los procesos de toma de decisiones: que no existan intereses individuales que alteren los resultados del proceso; d) la corregibilidad en caso de error: que exista la posibilidad de apelar las decisiones tomadas; e) la precisión de la información utilizada: que las decisiones se realicen a partir de información certera; y d) la ética de los procedimientos: que las decisiones sean consistentes con las normas morales prevalentes.

3.1.3. Justicia interaccional

La *justicia interaccional* hace referencia al grado de justicia que se manifiesta a través de la calidad de las interacciones sociales. La percepción de este tipo de justicia tiene lugar durante la ejecución de los procedimientos a partir de los cuales se distribuyen las recompensas (Bies y Moag, 1986). Según Greenberg (1993), la justicia interaccional se encuentra compuesta por dos dimensiones, la *justicia interpersonal* y la *justicia informacional*. La primera dimensión hace referencia a la dignidad y respecto del trato ofrecido durante la interacción. Un ejemplo de falta de justicia interpersonal es cuando

un trabajador se comunica con otro utilizando un tono de voz violento o innecesariamente elevado. La segunda dimensión hace referencia a la calidad de la información, en términos de precisión, relevancia y minuciosidad. Un ejemplo de falta de justicia informacional es cuando no se comunican detalles suficientes para comprender por qué una evaluación de desempeño puede tener una valoración positiva o negativa.

3.1.4. Justicia global

En general, la investigación sobre justicia organizacional se ha centrado en el estudio de las cuatro dimensiones específicas de justicia mencionadas anteriormente: justicia distributiva, justicia procedimental, justicia interpersonal y justicia informacional. Cohen-Charash y Spector (2001) y Colquitt et al. (2001) realizaron dos meta-análisis en los que no sólo observaron la existencia de estas cuatro dimensiones, sino que también observaron que estas dimensiones se comportan de manera diferente. A pesar de su distinción conceptual, diversos trabajos han cuestionado la relevancia de estas dimensiones para capturar fehacientemente las experiencias de justicia en la organización (p.e., Ambrose y Arnaud, 2005; Lind, 2001). A estos cuestionamientos se suma la idea de que las cuatro dimensiones pudieran no ser independientes, debido a las altas correlaciones existentes entre las mismas (p.e., Ambrose y Schminke, 2009; Choi, 2008; Greenberg, 2001; Hauenstein, McGonigle, y Flinder, 2001; Holtz y Harold, 2009; Jones y Martens, 2009; Kim y Leung, 2007). A partir de estas discusiones, la investigación sobre la justicia organizacional ha propuesto el concepto de *justicia global*.

La justicia global hace referencia a las percepciones holísticas de justicia que forman los empleados dentro de las organizaciones (Ambrose y Schminke, 2009). La *teoría heurística de la justicia* (en inglés, *fairness heuristic theory*) sugiere que la importancia de esta dimensión global radica en el proceso de formación de las percepciones de justicia (Lind, 2001). Según esta teoría, este proceso se compone de dos

fases. Durante la primera fase, denominada *fase de juicio*, el individuo se basa en su experiencia de un evento de justicia—sea éste de carácter distributivo, procedimental, interpersonal o informacional—para elaborar un juicio global de justicia. Durante la siguiente fase, denominada *fase de uso*, el individuo utilizará el juicio global de justicia elaborado en la fase previa para valorar los subsiguientes eventos a los que se enfrente. Es decir, el juicio global de justicia actúa como un heurístico—o atajo cognitivo—que guiará las posteriores actitudes y comportamientos del individuo frente a los nuevos eventos de justicia que experimente. Si, por ejemplo, durante la fase de juicio un individuo dispone de información relacionada a justicia procedimental pero no de justicia interpersonal, su juicio global se basará en la información de justicia procedimental. En consecuencia, este juicio global será la base de las siguientes valoraciones que realice de justicia interpersonal. Esto ha sido denominado *efecto de sustitución* (van den Bos, Wilke, Lind y Vermunt, 1998). Tal como sugiere el ejemplo anterior, la información provista por la justicia procedimental sustituye la información faltante de justicia interpersonal. Ambrose y Schminke (2005) señalan que, a pesar de la distinción conceptual entre las dimensiones específicas de justicia, el efecto de sustitución permite explicar las altas correlaciones que se observan en la literatura. Siguiendo el ejemplo anterior, las percepciones de justicia procedimental e interpersonal se basan en el mismo juicio global.

Ambrose y Schminke (2009) pusieron a prueba el modelo teórico propuesto por la teoría heurística de la justicia (Lind, 2001). Estos autores observaron que las percepciones globales de justicia se originan a partir de los eventos específicos que experimentan los empleados en relación con las compensaciones, procedimientos e interacciones en el trabajo. En consonancia con el modelo propuesto por dicha teoría y las hipótesis sugeridas por diversos investigadores (Colquitt y Shaw, 2005; Scott, Colquitt y Zepata-Phelan, 2007; Greenberg, 2001; Shapiro, 2001), Ambrose y Schminke (2009)

observaron que las percepciones globales de justicia actuaron como mediador entre las dimensiones específicas de justicia y seis variables criterio: satisfacción en el trabajo, compromiso con la organización, intención de abandono de la organización, desempeño de la tarea, conducta de ciudadanía organizacional y conducta de desviación organizacional. Estos resultados reflejan la importancia tanto de las dimensiones específicas de justicia como de la dimensión de justicia global en relación con las percepciones que realizan los individuos sobre el trato que reciben en el trabajo y las actitudes y comportamiento que de ellas se derivan.

3.2. Perspectiva multifoco

La responsabilidad moral es un concepto que ha sido ampliamente estudiado tanto desde la investigación de comportamientos éticos como desde el estudio de la justicia organizacional (Weiner, 1995). La primera línea de investigación ha demostrado, por ejemplo, la importancia que tiene la atribución de culpa como predictor de respuestas a comportamientos injustos (p.e., Aquino, Tripp y Bies, 2001). Por su parte, el estudio de la justicia organizacional ha abordado la importancia de la responsabilidad moral a través de una de sus teorías, la teoría de la justicia (en inglés, *fairness theory*) (Folger y Cropanzano, 2001; Folger, Cropanzano y Goldman, 2005). Esta teoría sugiere que las percepciones de justicia se forman a partir de un proceso donde se valora la responsabilidad de quien ha cometido un acto de (in)justicia. Según este marco teórico, sólo se determinan como injustos aquellos actos que satisfacen las siguientes condiciones: a) el responsable del acto podría haber actuado de otra forma y no lo hizo, y b) el responsable del acto violó una norma moral. Cuando ambas condiciones se satisfacen, la víctima—o el observador del acto—formará una percepción de (in)justicia. Se espera que luego estas percepciones generen respuestas actitudinales y comportamentales dirigidas a quien ha sido identificado como responsable del acto (in)justo.

A pesar de la importancia que posee la identificación de los responsables de actos (in)justos, la investigación sobre justicia organizacional se ha centrado en el estudio de las distintas dimensiones de justicia, según fueran de naturaleza distributiva, procedimental, interpersonal o informacional. Si bien esta tradición ha permitido el avance en el conocimiento de la justicia organizacional, la falta de identificación del responsable moral sólo facilita una representación incompleta del fenómeno bajo estudio. Es decir, cuando no se considera el responsable de un acto de (in)justicia, se pueden estudiar las actitudes y comportamientos generales que la percepción de justicia genera pero no las actitudes y comportamientos dirigidas al responsable del acto *per se* (Greenbaum, Folger y Ford, 2011) ni tampoco los efectos diferenciales en función de la persona o grupo que cometiera el acto de (in)justicia. La perspectiva multifoco busca complementar el estudio de la justicia organizacional poniendo el acento en la importancia que posee la identificación del foco o fuente de justicia—agente responsable del evento de (in)justicia (Cropanzano, Byrne, Bobocel y Rupp, 2001). Durante su desempeño diario, los empleados interaccionan con múltiples entidades y personas con las cuales establecen relaciones de intercambio (Blau, 1964). A partir de esas relaciones de intercambio, las personas pueden formar percepciones de justicia respecto a cada una de las entidades o personas con las que interaccionan. Por tanto, mientras que el interés en el estudio de las dimensiones específicas de justicia se situaba en *qué* eventos se valoran en términos de justicia, el interés desde la perspectiva multifoco está en el *quién* es el responsable de que esos eventos sean justos o injustos.

La investigación desde la perspectiva multifoco ha resultado muy fructífera. Se ha observado, por ejemplo, que los empleados generan percepciones de justicia siguiendo tres tipos de fuentes de información. El primer grupo se refiere a las fuentes de justicia que tienen una posición de autoridad superior a quien realiza la valoración, tal como el

supervisor o la misma organización (Byrne, 1999; Olkkonen y Lipponen, 2006; Rupp y Cropanzano, 2002; Rupp, Shao, Jones y Liao, 2014). El segundo grupo se refiere a las fuentes de justicia que tienen el mismo grado de autoridad que quien realiza la valoración. Este segundo grupo hace referencia a los compañeros de trabajo que ocupan la misma posición en la escala jerárquica de la organización (Branscombe, Spears, Ellemers y Doosje, 2002; Lavelle, Rupp y Brockner 2007; Lavelle et al., 2009). El último grupo se refiere a las fuentes de justicia que son externas a la organización. La investigación en este grupo se ha centrado en los clientes como fuentes de justicia (Rupp, McCance, Spencer y Sonnttag, 2008; Rupp y Spencer, 2006; Skarlicki, van Jaarsveld y Walker, 2008; Spencer y Rupp, 2009).

Otro resultado importante que se ha observado desde la perspectiva multifoco hace referencia a las relaciones entre percepciones de justicia y variables criterio (Lavelle et al., 2007). Tal y como indica Rupp et al. (2014) en su meta-análisis, la intensidad de la relación varía de acuerdo a la proximidad entre la fuente de justicia y la fuente de la variable criterio. El trato justo de un supervisor, por ejemplo, tendrá un efecto más fuerte sobre las conductas de ciudadanía de sus empleados que se dirigen al supervisor que frente a las conductas de ciudadanía de sus empleados que se dirigen a sus compañeros de trabajo.

La perspectiva multifoco ha permitido, por tanto, que los estudiosos de justicia organizacional adopten una visión más congruente con las nuevas estructuras de trabajo donde las relaciones supervisor-subordinados sólo representan una fracción de la complejidad organizacional. La consideración de otras fuentes de justicia, tal como los compañeros de trabajo o los clientes, permite indagar en otros mecanismos a través de los cuales facilitar la consecución de objetivos organizacionales y el bienestar de los trabajadores. A este respecto, otro fenómeno que resulta importante considerar para

comprender mejor el funcionamiento de las organizaciones son los procesos de socialización que tienen lugar dentro de las organizaciones y mediante los cuales los empleados de una misma unidad de trabajo forman percepciones compartidas de justicia. Este fenómeno, también conocido como justicia colectiva, se describe en el siguiente apartado.

3.3. Percepciones compartidas de justicia

Mientras realizan su trabajo, los empleados están inmersos en distintas redes sociales que toman la forma de equipos de trabajo, departamentos, organizaciones, federaciones, entre otros. El estudio de la justicia organizacional no es ajeno a esta realidad social de los trabajadores. El interés por una línea de investigación focalizada en la justicia organizacional como un fenómeno de naturaleza colectiva surge a partir de tres tendencias presentes en la investigación, las cuales se describen a continuación.

La primera tendencia corresponde a la transformación observada durante las últimas décadas con respecto a la forma en la que las organizaciones estructuran su trabajo. Se ha pasado de una estructura focalizada en el individuo a una estructura centrada en colectivos de empleados que pueden tomar la forma de equipos o departamentos, entre otras configuraciones (Guzzo y Dickson, 1996; Ilgen et al., 2005; Lawer, Morhman y Ledford, 1995). Este cambio ha sido consecuencia de las demandas, en términos de eficiencia e innovación, que se requiere para alcanzar altos niveles de competitividad (Hackman, 1987). Diversos estudios han demostrado que estas configuraciones colectivas presentan multitud de ventajas. Los resultados obtenidos por Sundstrom, Demeause y Futrell (1990), por ejemplo, mostraron que el trabajo estructurado en colectivos de empleados promueve el acceso a conocimientos e ideas que facilitan un mejor desempeño. Gladstein (1984), por su parte, sugirió que las

configuraciones grupales incrementan la motivación de los empleados, así como sus niveles de efectividad en la consecución de sus tareas.

La segunda tendencia corresponde al nivel de análisis adoptado por la investigación en comportamiento organizacional. La utilización cada vez mayor de configuraciones colectivas en las organizaciones ha hecho evidente que el estudio en exclusiva de los individuos como unidad de análisis no resulta suficiente para entender toda la complejidad de los fenómenos organizacionales. Ello se debe a que los individuos que componen una unidad de trabajo no son enteramente independientes unos de otros (Chan, 1998). La consiguiente necesidad de diferenciar entre individuos y grupos ha derivado en el desarrollo de múltiples teorías y técnicas de análisis estadístico (p.e., Bliese, 2000; Kozlowski y Klein, 2000; Ostroff, Kinicki y Tamkins, 2003). Estos avances han posibilitado el estudio de las organizaciones como sistemas complejos integrados por diferentes unidades de análisis que corresponden a distintos niveles de la organización que interaccionan entre sí (nivel individual, nivel diádico, nivel de equipo, nivel de departamento, nivel de organización). A partir de estos desarrollos resulta posible estudiar las variables de interés y sus consecuencias según los niveles de análisis que correspondan (Kozlowski y Klein, 2000). Por ejemplo, en organizaciones donde la estructura del trabajo implica el desempeño colaborativo a partir del trabajo conjunto de sus empleados puede resultar más pertinente valorar el desempeño a nivel grupal que el desempeño a nivel individual, ya que este último puede variar de acuerdo a los roles de cada miembro del grupo (ver Colquitt, Noe y Jackson, 2002). Estas perspectivas multinivel y transnivel representan una de las grandes tendencias en el estudio del comportamiento organizacional ya que permiten incrementar la madurez de la investigación y de la teoría al poner en conexión diferentes niveles de análisis (Kozlowski y Klein, 2000).

La tercera tendencia que ha resaltado la importancia de las interacciones sociales en el estudio de la justicia organizacional corresponde a una serie de resultados experimentales que han mostrado que la preocupación por la justicia no es un fenómeno enteramente egoísta. De acuerdo a estos estudios, las personas se preocupan por el modo en que otros individuos son tratados (Colquitt, 2004). De hecho, las personas muestran reacciones actitudinales y comportamentales cuando son testigos del trato injusto recibido por otros individuos (Ellard y Skarlicki, 2002; Folger y Cropanzano, 2001; Skarlicki y Kulik, 2005), aun cuando no se identifican con la víctima (Turillo, Folger, Lavelle, Umphress y Gee, 2002), y aun cuando esa reacción puede resultarles costosa (Kahneman, Knetsch y Thaler, 1986; Rupp y Bell, 2010). Estos trabajos han derivado en lo que se ha denominado el *modelo deontológico de justicia* (en inglés, *deontic justice model*). Este modelo sugiere que las personas repudian todo acto de injusticia que es cometido a terceros que no lo merecen (Cropanzano, Goldman y Folger, 2003), por lo que se convierte en un ejemplo adicional que refleja la importancia de la naturaleza social que poseen las percepciones de justicia.

Durante los últimos 15 años estas tendencias han tenido como consecuencia el desarrollado de una línea de investigación que busca comprender los mecanismos sociales que llevan a las personas a compartir sus percepciones sobre la justicia que experimentan en sus trabajos. Los investigadores han acudido a diferentes modelos para explicar cómo las personas que trabajan en estructuras de trabajo colectivas pueden llegar a compartir sus percepciones de justicia. A continuación se detallan brevemente los dos modelos más citados en la literatura.

3.3.1. Teoría del procesamiento de la información social

La *teoría del procesamiento de la información social* (en inglés, *social information processing theory*) sugiere que los empleados no trabajan aislados unos de

otros (Salancik y Pfeffer, 1978). Por el contrario, es usual que los empleados se sumerjan en dinámicas sociales con personas de su contexto laboral, tal como puede suceder durante una discusión de trabajo o inclusive un descanso. Según esta teoría, los empleados utilizan la información recogida durante esas interacciones con otros para dotar de sentido los eventos frente a los que están expuestos, como pueden ser las prácticas de recursos humanos de una organización, sus valores o normas (p.e., Weiss y Nowicki, 1981). Es decir, los empleados pueden hacer juicios en relación con el trato justo o injusto que reciben a partir del uso de información proveniente de otros empleados (Hollensbe, Khazanchi y Masterson, 2008). De esta forma, la información social recogida durante las interacciones con los compañeros de trabajo resulta clave para interpretar los eventos que se experimentan en el trabajo.

En apoyo de esta teoría, Roberson (2006a, 2006b) observó que cuando un individuo experimenta un evento determinado (p.e., el despido de un empleado), acude en búsqueda de sus compañeros de grupo para discutir la experiencia e intercambiar interpretaciones sobre la misma. Roberson (2006a) denominó este proceso como un *comportamiento de dotación de sentido* (en inglés, *sense-making behavior*). Según sugiere la teoría del procesamiento de la información social, y tal como demostró Roberson, a medida que pasa el tiempo, las percepciones de justicia de cada uno de los miembros del grupo tienden a converger. Esto se debe a que las percepciones de cada uno de los miembros se forman a partir de la información social que se comparte en ese grupo. Roberson también observó que cuanto más tiempo destinan los miembros de un grupo a actividades de dotación de sentido, mayor es el grado de acuerdo que muestran sus miembros con respecto al evento de justicia que se valora.

3.3.2. Modelo de atracción-selección-atrición

El *modelo atracción-selección-atrición* (en inglés, *attraction-selection-attrition*) sugiere que las organizaciones atraen, seleccionan y retienen a aquellos trabajadores que poseen características similares a las de la misma organización (Schneider, Goldstein y Smith, 1995). Esta teoría se divide en tres secciones. La primera sección refiere a que no todas las organizaciones atraen a los mismos trabajadores. Cada organización atrae a aquellos trabajadores que tienen personalidades que son congruentes con los objetivos de la organización. La segunda sección hace referencia al proceso de reclutamiento y selección de trabajadores. Las organizaciones contratan a trabajadores que presentan aquellos atributos que la organización considera más deseables. La tercera sección hace referencia al ajuste entre trabajador y organización, una vez que la persona ya se encuentra trabajando. Aquellos trabajadores que no se sientan a gusto, o que no se sientan valorados por la organización, tenderán a abandonar su puesto de trabajo. Al contrario, aquellos trabajadores que se encuentren a gusto, y cuya organización los valore, querrán continuar en su puesto de trabajo. Esta teoría sugiere, por tanto, que a medida que pasa el tiempo, el proceso de atracción-selección-atrición de empleados aumentará el grado de homogeneidad de los trabajadores que componen la organización. De acuerdo a esta teoría, es razonable esperar que el aumento de la homogeneidad de la plantilla derive en interpretaciones similares acerca de los factores presentes en el entorno de trabajo. En otras palabras, como los trabajadores tenderán a presentar características similares se espera que perciban su contexto de forma parecida.

En apoyo de esta teoría, Colquitt, Noe y Jackson (2002) observaron una relación significativa entre la diversidad demográfica—en términos de edad, etnia y sexo—de los miembros de una organización y la convergencia de las percepciones de justicia de estos miembros. Específicamente, los resultados de Colquitt et al. indicaron que a medida que

aumenta la diversidad demográfica de los miembros de una organización, disminuye el grado de acuerdo que estos empleados muestran con respecto a sus percepciones de justicia.

3.3.3. Clima de justicia

La teoría del procesamiento de la información social y el modelo de atracción-selección-atrición, descritos en el apartado anterior, proporcionan las bases para asumir la existencia de percepciones colectivas de justicia. De acuerdo con estos marcos conceptuales, los empleados que trabajan en una misma estructura, ya sea un equipo o la misma organización, forman percepciones compartidas acerca de los eventos que experimentan. Así pues, un grupo de empleados puede desarrollar percepciones compartidas acerca del trato justo o injusto que recibe dentro de la organización. En la literatura sobre justicia organizacional, este fenómeno que refiere a las percepciones compartidas de justicia ha sido definido como *clima de justicia*.

Mossholder, Bennett y Martin (1998) fueron los primeros en investigar las percepciones compartidas de justicia. Estos autores se centraron en el estudio de las percepciones compartidas de justicia acerca de los procedimientos seguidos por los supervisores y la organización, a lo que denominaron *contexto de justicia procedimental*. La principal contribución de su estudio fue corroborar que el contexto de justicia procedimental se relaciona con la satisfacción de los empleados, aun luego de controlar los efectos de las percepciones individuales de justicia procedimental. Estos resultados demostraron, por tanto, que las percepciones compartidas de justicia predicen varianza más allá de lo que cada miembro del grupo percibe individualmente.

Naumann y Bennett (2000) replicaron los resultados de Mossholder et al. (1998). Sus resultados mostraron nuevamente que las percepciones compartidas de justicia acerca de los procedimientos predicen variables criterio—comportamientos de ayuda entre los

empleados—, tras controlar el efecto de las percepciones individuales de justicia procedimental. Naumann y Bennett fueron los primeros en argumentar que este efecto se debe a que los miembros de un grupo determinan sus comportamientos y actitudes no sólo a partir del trato que experimentan personalmente, sino que además consideran el trato que recibe el grupo en su conjunto. Estos autores también fueron los primeros en referirse a las percepciones de justicia compartidas como clima de justicia, fenómeno al que definieron como “una cognición grupal acerca de cómo el grupo en su conjunto es tratado” (p. 882).

A partir de los estudios de Mossholder et al. (1998) y Naumann y Bennett (2000), el estudio del clima de justicia ha considerado no sólo las percepciones compartidas de justicia procedimental, sino también las percepciones compartidas de justicia distributiva (p.e., Lipponen y Wisse, 2010), justicia interpersonal (p.e., Dayan, Benedetto y Colak, 2009), justicia informacional (p.e., Mayer, Nishii, Schneider y Goldstein, 2007) e, inclusive, justicia global (p.e., Priesemuth, Arnaud y Schminke, 2013). Estos estudios han examinado el clima de justicia como variable antecedente (p.e., Dietz, Robinson, Folger, Baron y Schulz, 2003), mediadora (p.e., Walumbwa, Hartnell y Oke, 2010), moduladora (p.e., Trevor y Nyberg, 2008) y resultado (p.e., Colquitt, Noe y Jackson, 2002). Whitman, Caleo, Carpenter, Horner y Bernerth (2012) realizaron un meta-análisis en el que se resumen estos esfuerzos de investigación del clima de justicia a lo largo del tiempo. Tal como indican estos autores, el trato que reciben los grupos en términos de justicia por parte de sus autoridades es un predictor importante de variables que refieren al desempeño del grupo—como la productividad o la satisfacción de clientes—, a los procesos internos al grupo—como los comportamientos de ciudadanía organizacional o la cohesión—, a las actitudes compartidas del grupo—como la satisfacción con el trabajo o el compromiso con la organización—y a los comportamientos contraproducentes del grupo—como el

absentismo o la intención de abandono de la organización. Los resultados de Whitman et al. son un claro ejemplo del valor estratégico que ofrece el clima de justicia para las organizaciones que estructuran su trabajo mediante configuraciones colectivas de sus empleados (equipos, departamentos, etc.).

Como se ha señalado en este apartado, los trabajos que han examinado el clima de justicia se han centrado tradicionalmente en el trato que recibe el grupo por parte del supervisor o la organización misma. Es decir, la literatura de clima de justicia se ha centrado en el estudio del trato justo o injusto que reciben los grupos de empleados por parte de aquellas personas o entidades que poseen autoridad jerárquica sobre los mismos. No obstante, desde la perspectiva multifoco, descrita anteriormente, se ha observado que los miembros de una organización pueden formar percepciones de justicia a partir de otras fuentes de justicia, más allá de las figuras de autoridad. Por tanto, es razonable argumentar que los grupos de empleados pueden formar percepciones compartidas acerca del trato que reciben de estas otras fuentes de justicia. Recientemente se ha observado que, además del clima de justicia que forman los grupos a partir del trato que reciben por parte de quienes tienen autoridad jerárquica, los grupos también forman percepciones compartidas acerca de trato que reciben de sus propios compañeros de trabajo. Para diferenciarlo del clima de justicia que refiere al trato recibido por aquellos que se encuentran en una posición de autoridad jerárquica—clima de justicia propiciado por las figuras de autoridad; en inglés *justice climate*—, este nuevo fenómeno ha sido denominado en la investigación como *clima de justicia entre compañeros* (en inglés, *peer justice*) (Cropanzano, Li y Benson, 2011; Li y Cropanzano, 2009).

3.3.4. Clima de justicia entre compañeros de trabajo

Tal como se ha explicado en el apartado anterior, la investigación acerca del clima de justicia se ha centrado, tradicionalmente, en el clima de justicia propiciado por las

figuras de autoridad, es decir, en el trato que recibe el grupo por parte de aquellas figuras que tienen autoridad sobre el mismo. No obstante, recientemente, esta investigación ha incorporado el estudio de un clima adicional de justicia: el clima de justicia entre compañeros. Este clima se ha centrado en el trato que dan y reciben las personas que tienen igual nivel jerárquico y que suelen conformar un equipo o grupo de trabajo. Es decir, mientras el primero se ha focalizado en el trato que recibe el grupo desde fuera—por parte de supervisores o la misma organización—, el segundo se ha centrado en el trato que recibe el grupo desde dentro—por parte de los mismos compañeros de trabajo (Cropanzano, Li y James, 2007).

La importancia del clima de justicia entre compañeros no sólo radica en que presta atención a los fenómenos de interacción social que derivan en percepciones compartidas, sino que además focaliza la atención en un agente crítico para las organizaciones que buscan conseguir sus objetivos a partir del trabajo conjunto de sus empleados. En estas organizaciones, los compañeros de trabajo representan un aspecto clave ya que la calidad de las relaciones interpersonales entre los mismos influye sobre aspectos críticos tales como los procesos de coordinación (Gittell, 2003), la detección de errores (Weick y Roberts, 1993) y el aprendizaje de comportamientos que facilitan la consecución de objetivos organizacionales (Lewin y Regine, 2000).

Cropanzano et al. (2011) fueron los primeros investigadores en aportar evidencia empírica sobre el clima de justicia entre compañeros de trabajo. Sus resultados mostraron que el clima de justicia entre compañeros acerca de los procedimientos que son seguidos dentro del grupo y las interacciones que toman lugar entre sus miembros se encuentran relacionados con el desempeño del grupo y sus comportamientos de ciudadanía. Esta relación se da a partir del rol mediador de los procesos internos del grupo—comunicación, coordinación, contribución, cohesión, esfuerzo y apoyo. Cropanzano y colaboradores

también observaron que el clima de justicia entre compañeros predice varianza aún después de controlar las percepciones individuales de cada miembro del grupo. Estos resultados sugieren que el clima de justicia entre compañeros representa un fenómeno organizacional que es conceptualmente distinto a las percepciones individuales de sus miembros.

Posteriormente, Li, Cropanzano y Bagger (2013) realizaron un estudio donde se centraron no sólo en las percepciones globales acerca del clima de justicia entre compañeros, sino también en las percepciones globales acerca del clima de justicia propiciado por las figuras de autoridad. Sus resultados mostraron que sólo el primero se encuentra relacionado a los procesos de cooperación dentro del grupo. Estos procesos a su vez se relacionaron con la satisfacción con el grupo pero no con su nivel de desempeño.

Al igual que Li et al. (2013), Cropanzano, Walumbwa y Aryee (2013) realizaron un estudio donde se centraron no sólo en las percepciones globales acerca del clima de justicia entre compañeros, sino también en las percepciones globales acerca del clima de justicia propiciado por las figuras de autoridad. Estos autores pusieron a prueba un modelo de liderazgo. Sus resultados mostraron que el liderazgo transformacional está relacionado con el liderazgo ético, lo cual a su vez tiene un efecto positivo sobre ambos climas de justicia. Finalmente, el modelo de Cropanzano et al. permite observar que tanto el clima de justicia entre compañeros como el clima de justicia propiciado por las figuras de autoridad se encuentran relacionados con los comportamientos éticos y comportamientos de aprendizaje del grupo.

Los trabajos sobre el clima de justicia entre compañeros sugieren que este fenómeno puede representar un factor crítico para promover el adecuado funcionamiento de las organizaciones modernas. No obstante, la evidencia empírica es aún escasa. Los trabajos de Cropanzano et al. (2011) y Li et al. (2013), por ejemplo, han sido realizados

utilizando datos provenientes de estudiantes universitarios. A pesar de haber facilitado el avance del conocimiento respecto a este clima de justicia, estos trabajos se han diseñado teniendo en cuenta actividades realizadas en el ámbito académico. La presente tesis doctoral pretende profundizar en el impacto que posee el clima de justicia entre compañeros en un contexto real de trabajo. Para ello, se centrará en las organizaciones de servicios. En el siguiente apartado se describe en detalle el modo en que se abordará el presente objetivo fundamental.

4. IMPORTANCIA DEL CLIMA DE JUSTICIA ENTRE COMPAÑEROS

La gestión estratégica de recursos humanos requiere la consideración de factores de productividad (McMahan, Virick y Wright, 1999; Wright y McMahan, 1992) y factores relevantes para los grupos de interés de la organización (Colakoglu, Lepak y Hong, 2006; Ferris, Arthur, Berkson, Kaplan, Harrell-Cook, y Frink, 1998; Tsui, 1987). En el sector servicios, estos grupos de interés son principalmente los clientes y empleados de contacto, ya que ambos son claves durante la prestación de servicios (Grönroos, 1990). De acuerdo con esta aproximación estratégica a los recursos humanos, la presente tesis doctoral examinará el impacto del clima de justicia entre compañeros a partir de las valoraciones de tres puntos vistas distintos que son claves para las organizaciones de servicios. El primer punto de vista será el de los supervisores que dirigen las unidades de trabajo de la organización. El segundo punto de vista será el de los clientes que reciben los servicios de estas unidades de trabajo. El tercer y último punto de vista será el de los empleados que conforman dichas unidades de trabajo.

A partir del abordaje de múltiples informantes, la presente investigación pretende obtener una valoración fiable del impacto que poseen las percepciones compartidas acerca del trato justo o injusto que se otorgan entre sí los compañeros de trabajo. Para maximizar

la fiabilidad de estos resultados, la presente investigación no sólo considerará el clima de justicia entre compañeros, sino también el clima de justicia propiciado por las figuras de autoridad. Esto permitirá la obtención de una valoración del impacto del clima de justicia entre compañeros más próxima a la realidad, ya que se controlarán los efectos del clima de justicia propiciado por las figuras de autoridad.

Antes de valorar el impacto que posee el clima de justicia entre los compañeros y el clima de justicia propiciado por las figuras de autoridad para cada uno de los informantes sugeridos—supervisores, clientes y empleados—es importante contar con medidas validadas. Por tanto, el primer objetivo de esta tesis doctoral será:

Objetivo 1. *Validar las medidas de clima de justicia entre compañeros y el clima de justicia propiciado por las figuras de autoridad.*

4.1. Impacto del clima de justicia entre compañeros desde el punto de vista del supervisor

Para valorar el impacto que posee el clima de justicia entre compañeros desde el punto de vista del supervisor, en este apartado se describen dos constructos que resultan claves para este informante. Estos constructos son el desempeño de la unidad de trabajo y el clima de servicio presente en la misma.

4.1.1. Desempeño de la unidad de trabajo

Para todo supervisor, uno de los objetivos clave de su puesto de trabajo es que los empleados que tiene bajo su mando muestren un alto nivel de desempeño (Kramer, 1996). Esta responsabilidad hace de este informante uno de los agentes organizacionales más fiables para valorar el desempeño de los empleados (Conway y Huffcutt, 1997; Viswesvaran, Ones y Schmidt, 1996).

Desde la psicología del trabajo y las organizaciones se ha definido el desempeño como las conductas en el trabajo que facilitan la consecución de los objetivos

organizacionales (Campbell, McCloy, Oppler y Sager, 1993). Dependiendo de los modos a través de los cuales se estructura el trabajo, algunas organizaciones centran su interés en el desempeño de los individuos, mientras que otras centran su interés en el desempeño de las unidades de trabajo en su conjunto (p.e., Colquitt, Noe y Jackson, 2002; Colquitt, LePine, Piccolo, Zapata y Rich, 2011). En las organizaciones de servicios, la valoración que realizan los supervisores acerca del desempeño de sus empleados se suele corresponder con la valoración del desempeño de la unidad de trabajo en su conjunto, no de cada empleado en particular (Colquitt, Noe y Jackson, 2002). Esto se debe a que la prestación de servicios requiere normalmente del trabajo colaborativo de los empleados de la unidad (p.e., Boshoff y Allen, 2000). Es decir, la interdependencia de las tareas en la prestación de servicios hace que el supervisor centre su atención en el desempeño de la unidad en su conjunto.

Ahora bien, en las organizaciones de servicios, entre el 65% y el 75% de los empleados desarrollan tareas que implican el contacto directo con clientes (Horwitz y Neville, 1996). Tal como se ha señalado en un apartado anterior, el desarrollo de estas tareas está sujeto a la naturaleza cambiante que posee el encuentro entre empleados y clientes. La intangibilidad del servicio, la simultaneidad con la que éste es producido y consumido, su heterogeneidad, así como la presencia del cliente en la interacción, son algunos ejemplos de las características que hacen de la prestación de servicios una actividad compleja (Schneider, Ehrhart, Mayer, Saltz y Niles-Jolly, 2005). Para facilitar el desempeño de sus empleados, los supervisores de las organizaciones de servicio buscan promover lo que ha sido denominado como clima de servicio.

4.1.2. Clima de servicio

El clima de servicio hace referencia a las percepciones compartidas de los empleados con respecto a las prácticas y procedimientos que son premiados, apoyados y

esperados por la organización en relación con el servicio al cliente y a la calidad en el servicio (Schneider, White y Paul, 1998). Es decir, este clima tiene la función de guiar el comportamiento de sus empleados cuando estos interactúan con los clientes de la organización. Un alto nivel de clima de servicio refleja, por tanto, que la organización considera de gran relevancia la interacción entre empleados y clientes que tiene lugar cuando se presta un servicio y, en consecuencia, reconoce y apoya aquellas prácticas y procedimientos que facilitan dicho encuentro.

Diversos estudios han mostrado que el clima de servicio media la relación entre las prácticas internas de las organizaciones, con respecto a sus propios empleados, y los comportamientos que estos realizan cuando interaccionan con los clientes (Borucki y Burke, 1999; Liao y Chuang, 2004, 2007; Salanova, Agut y Peiró, 2005; Schneider et al., 1998). Hong, Liao, Hu y Jiang (2013) realizaron un meta-análisis donde confirmaron este efecto mediador del clima de servicio. Esta literatura sugiere pues, que el trato que reciben los empleados dentro de la organización influye en los comportamientos de estos cuando interactúan con los clientes. Tal y como sugiere la investigación sobre justicia organizacional, ésta actúa como indicador del trato que los empleados reciben dentro de la organización (p.e., Colquitt et al., 2001). Por tanto, es razonable esperar que el clima de servicio que perciben las unidades de trabajo actúe como mediador entre el trato justo que se otorgan los compañeros de trabajo unos a otros y los esfuerzos que estos hacen durante la interacción con clientes. De la misma forma, resulta razonable esperar que el clima de servicio que perciben las unidades de trabajo también actúe como mediador entre el trato justo que recibe la unidad por parte de las figuras de autoridad y los esfuerzos que estos hacen durante la interacción con clientes. Así pues, el segundo objetivo general de investigación será:

Objetivo 2. *Determinar la importancia del clima de justicia entre compañeros y el clima de justicia propiciado por las figuras de autoridad en las percepciones compartidas de clima de servicio y desempeño de la unidad de trabajo.*

4.2. Impacto del clima de justicia entre compañeros desde el punto de vista de los clientes

Para valorar el impacto que posee el clima de justicia entre compañeros desde el punto de vista del cliente, nos hemos de referir a los constructos de calidad de servicio y de calidad de vida.

4.2.1. Calidad de servicio

Durante las últimas décadas se ha observado un importante incremento en el interés de las organizaciones en la calidad de los servicios que ofrecen, como una estrategia para aumentar su competitividad. No obstante, existen diversos enfoques acerca de cómo puede abordarse la calidad. De hecho, Reeves y Bednar (1994) han identificado hasta cuatro formas de entender la calidad: calidad como excelencia, calidad como valor, calidad como ajuste a las especificaciones y calidad como satisfacción de las expectativas de los clientes.

La *calidad como excelencia* sostiene que sólo el mejor producto o servicio será aquel que pueda ser considerado como de calidad. Según este enfoque se entiende a “lo mejor” en un sentido absoluto. Las organizaciones que adopten este enfoque trabajarán con el objetivo de conseguir el mejor resultado posible. La *calidad como valor*, por su parte, hace referencia a la combinación entre precio y calidad. De acuerdo a este enfoque, cada cliente tendrá el mejor producto o servicio según el requerimiento que tenga del mismo y del precio que éste posea. En otras palabras, este enfoque resalta la eficiencia del producto o servicio. La *calidad como ajuste a las especificaciones* se define a partir

de la búsqueda de una producción estandarizada de productos o servicios. Este enfoque se basa en especificaciones estadísticas que permitan controlar si los criterios cuantificables esperados han sido alcanzados. La *calidad como satisfacción de las expectativas de los clientes* pone el énfasis en el grado en que se satisfacen las expectativas del cliente. Este enfoque, a diferencia de los anteriores, se basa en la naturaleza subjetiva de las percepciones de los clientes.

El enfoque de la calidad como satisfacción de los clientes se ha ido consolidando como una de las maneras más relevantes de entender la calidad. En el caso de las organizaciones de servicios, esto se debe principalmente al rol activo que poseen los clientes durante la entrega y recepción de los servicios y, en consecuencia, a la relevancia que poseen sus percepciones para determinar si el servicio ha superado o no las expectativas que se tenían. Basados en este enfoque, Parasuraman et al., (1985) definieron a la calidad de servicio percibida por el cliente como “un juicio global o actitud que se refiere a la superioridad de un servicio” (p. 3). De acuerdo con este esquema, dicha superioridad implica que la calidad de servicio percibida por el cliente se encuentra por encima de sus expectativas previas.

Si bien la investigación sobre calidad de servicio ha sido muy extensa, existen dos escuelas que han representado las corrientes más influyentes en la investigación: la Escuela Nórdica de Marketing de Servicios y la Escuela Norteamericana (Martínez-Tur, Peiró y Ramos, 2001). Ambas escuelas consideran que la calidad de servicio es el resultado de un proceso de comparación entre el servicio esperado por el cliente y el servicio recibido por el cliente (Grönross, 1984). La Escuela Nórdica de Marketing de Servicios distinguió entre una dimensión instrumental, que hace referencia a la calidad del resultado (lo que el cliente recibe), y una dimensión relacional, que hace referencia a la calidad del proceso (cómo se presta el servicio). La Escuela Norteamericana, en

cambio, se centró mayormente en los aspectos que refieren al proceso de prestación del servicio o aspectos intangibles (cómo se ofrece).

A pesar de las diferencias entre la Escuela Nórdica de Marketing de Servicios y la Escuela Norteamericana, ambas coinciden en la relevancia que posee la interacción social entre empleado y cliente. Este interés en el encuentro que tiene lugar entre empleados y clientes ha sido abordado desde la justicia organizacional. En un estudio pionero, Masterson (2001) confirmó que el trato (in)justo que reciben los empleados de sus autoridades influye en los esfuerzos que estos ponen cuando interactúan con sus clientes. Siguiendo esta lógica, es esperable que el contexto de justicia dentro de la organización se relacione con la calidad de servicio que prestan sus unidades de trabajo y, por tanto, la calidad de servicio que perciben sus clientes. Comprender, por tanto, si el clima de justicia entre compañeros y el clima de justicia propiciado por las autoridades motiva a los empleados a prestar servicios de calidad que se traduzcan en percepciones de calidad por parte de sus clientes representa una importante oportunidad para las organizaciones que deseen mejorar la calidad de sus servicios.

Ahora bien, existen diversas razones por las cuales las organizaciones buscan aumentar la calidad de servicio de sus servicios. La investigación en esta temática ha demostrado, por ejemplo, que la calidad de servicio es un importante predictor de la satisfacción del cliente (p.e., Ham y Hayduk, 2003), de la rentabilidad económica de la organización (Marinova, Ye y Singh, 2008; Reeves y Bednar, 1994; Rust, Zahorick y Keiningham, 1995), de la lealtad del cliente (Hong y Goo, 2004; Lewis y Soureli, 2006; Oliver, 1980; Patterson, 1993), de los comentarios positivos que realizan los clientes a otros clientes potenciales (Oliver y Swan, 1989; Zeithaml, Berry y Parasuraman, 1993), entre otros resultados organizacionales. Tomados en su conjunto, estos resultados vinculan la calidad de servicio con el beneficio económico de la organización. No

obstante, la calidad de servicio también influye sobre otras variables, más allá de aquellas que generalmente se vinculan a beneficios económicos. A este respecto, existe consenso en que las organizaciones no deben gestionarse sólo a partir de la valoración de sus resultados económicos (Kaplan y Norton, 1992; Tschopp, 2003). De hecho, el enfoque de la triple cuenta de resultados (en inglés, *triple-bottom line approach*) señala precisamente esta cuestión. Además de la tradicional dimensión económica, este enfoque señala la importancia del desempeño social e, inclusive, el desempeño medioambiental de las organizaciones (Clarke, 2001; Elkington, 1999; Gilkison, 2003). Así, un buen desempeño en estas tres dimensiones permitiría maximizar los beneficios para la organización y minimizar los efectos negativos sobre la sociedad y el medio ambiente.

La línea de investigación que ha derivado del enfoque de la triple cuenta de resultados ha demostrado que las organizaciones que actúan de forma responsable poseen mejor reputación y mayor implicación por parte de sus grupos de interés (Hennig-Thurau, Gwinner, Walsh, y Gremler, 2004; Jansen, Zhang, Sobel, y Chowdury, 2009; Tench y Yeomans, 2006; Zhang, Jansen, y Chowdhury, 2011) que las organizaciones que no actúan de tal modo. Más importante aún, las organizaciones que actúan de forma responsable tienden a incrementar más sus beneficios que las que no actúan de tal modo (p.e., Birth, Illia, Lurati y Zamparini, 2009; Pinillos, 2009; Villafañe, 2009).

Así pues, si bien las organizaciones deben mejorar la calidad de servicio de manera continuada para satisfacer la creciente demanda cualitativa de sus clientes (p.e., Homburg, Wieseke y Bornemann, 2009), también es cierto que los beneficios de la calidad se pueden extender a la sociedad y, en consecuencia, facilitar la sostenibilidad de la misma. En otras palabras, la calidad de servicio ofrece una estrategia para aumentar la competitividad de las organizaciones no sólo por su efecto sobre los tradicionales indicadores de rendimiento económico, sino también por su efecto sobre indicadores

vinculados al rendimiento social y medioambiental. De acuerdo a esta lógica, en el presente trabajo se investigará la influencia de la calidad de servicio sobre la calidad de vida de los clientes en un intento por extender los efectos de la calidad de servicio más allá de los resultados organizacionales clásicos (p.e., lealtad del cliente, satisfacción del cliente, etc.).

4.2.2. Calidad de vida

La importancia del bienestar de la sociedad no ha sido ajena al mundo de las organizaciones. Según Kotler, Adam, Brown y Armstrong (2003), las organizaciones deben ofrecer un valor superior a los clientes de una manera que mantenga y mejore el consumo de productos y servicios pero también mantenga y mejore el bienestar de la sociedad. De forma similar, Sirgy (1996) señala que el marketing no se debe reducir a la generación de beneficios. Al contrario, este autor sugiere que para posibilitar la generación de beneficios no sólo a corto plazo, sino también a largo plazo, las organizaciones deben fomentar el bienestar de sus clientes. La calidad de vida de las personas que consumen los bienes y servicios producidos por las organizaciones cobra, por tanto, una importancia crucial para los objetivos a largo plazo de estas organizaciones. Diversos estudios mantienen esta postura, señalando que la calidad de vida representa el nuevo paradigma que guiará la planificación estratégica de las campañas de marketing (Aubert-Gamet y Cova 1999; Lee y Sirgy, 2004; Sirgy, Samli y Meadow, 1982; Sirgy y Lee, 1996).

Así pues, la calidad de vida resulta un constructo que posibilita el estudio de resultados organizacionales de naturaleza social. La Organización Mundial de la Salud (OMS, 1997) define a este constructo como:

“la percepción que un individuo tiene de su lugar en la existencia, en el contexto de la cultura y del sistema de valores en los que vive y en relación con sus objetivos, sus

expectativas, sus normas, sus inquietudes. Se trata de un concepto que está influido por la salud física del sujeto, su estado psicológico, su nivel de independencia, sus relaciones sociales, así como su relación con su entorno” (p. 1).

A pesar de que desde el marketing se ha reconocido la importancia de la calidad de vida para distintos ámbitos, tal como el turismo, las finanzas, los servicios de salud, o la restauración, este constructo aún no se ha aplicado a la prestación de servicios propiamente dicha. No obstante, tal como señalan Gutek (1995) y Lee, Sirgy, Larsen y Wright (2002), servicios tales como los de salud, educación, bancarios, o de ocio, representan una importante faceta del estilo de vida de sus clientes. Por tanto, la calidad de servicio—tanto instrumental como relacional—que los clientes reciben cuando solicitan estos servicios puede tener un importante efecto sobre su calidad de vida.

Tal como se ha señalado anteriormente, el contexto de justicia en la organización, caracterizado por el clima de justicia entre compañeros y el clima de justicia propiciado por las figuras de autoridad, puede relacionarse con la calidad de servicio que prestan las unidades de trabajo y reciben los clientes. Ahora bien, tal como se ha sugerido en este apartado, la calidad de servicio puede, a su vez, tener un efecto sobre la calidad de vida de los clientes. Así pues, el tercer objetivo general de la presente investigación será:

Objetivo 3. Determinar la importancia del clima de justicia entre compañeros y el clima de justicia propiciado por las figuras de autoridad en las percepciones de calidad de servicio de las unidades de trabajo que prestan los servicios y los clientes que los reciben y la calidad de vida de estos últimos.

4.3. Impacto del clima de justicia entre compañeros desde el punto de vista de los empleados

Para valorar el impacto que posee el clima de justicia entre compañeros desde el punto de vista de los trabajadores, en este apartado se describe un constructo que resulta clave para el bienestar de este colectivo en el sector servicios, el síndrome del quemado en el trabajo.

4.3.1. Síndrome del quemado en el trabajo

El bienestar de los empleados es un aspecto crítico para toda organización. Tal como se sugiere desde la triple cuenta de resultados, la carencia de bienestar en los empleados de una organización es un indicador de que ésta puede no estar actuando de una forma totalmente responsable, en términos de su desempeño social (Clarke, 2001). Aún más determinante para la gestión de las organizaciones ha sido el hecho de que la falta de bienestar de los empleados afecta negativamente el desempeño económico de las organizaciones (Weinberg y Cooper, 2012). Durante décadas, por tanto, la importancia del bienestar en el trabajo ha llamado la atención de una variedad de especialistas que han explorado la salud en el trabajo. El constructo más popular que ha sido vinculado al bienestar de los empleados es el síndrome del quemado en el trabajo (en inglés, *burnout*).

El síndrome del quemado en el trabajo ha sido definido como una respuesta prolongada a los estresores presentes en el trabajo (Maslach, Schaufeli y Leiter, 2001). Este síndrome se encuentra compuesto por tres dimensiones. La primera dimensión, denominada agotamiento emocional, hace referencia a un profundo sentimiento de falta de energía en el trabajo. La segunda dimensión, conocida como cinismo o despersonalización, hace referencia a una actitud de indiferencia hacia el trabajo. La tercera y última dimensión, falta de autoeficacia, hace referencia a la falta de logro, de productividad e incompetencia en el trabajo (Leiter y Maslach, 2001). Esta última

dimensión, no obstante, parece ser una consecuencia más que un componente del síndrome del quemado. En consecuencia, el estudio de este síndrome ha tendido a centrarse en el estudio del agotamiento emocional y el cinismo, dimensiones a las que se ha denominado como núcleo de este síndrome (p.e., Salanova, Peiró y Schaufeli, 2002; Grau, Salanova y Peiró, 2001; Salanova, Llorens, Cifre, Martínez y Schaufeli, 2003).

La investigación acerca de las consecuencias negativas del síndrome del quemado ha sido muy extensa. Se ha observado, por ejemplo, que los empleados que se ven afectados por este síndrome muestran más problemas de salud mental y física (Schaufeli y Enzmann, 1998; Melamed, Shirom, Toker, Berliner y Shapira, 2006), una disminución en su compromiso con la organización y en sus comportamientos de ciudadanía (Cropanzano, Rupp y Byrne, 2003; Wright y Bonnet, 1997), bajos niveles de satisfacción con el trabajo (Aiken, Clarke, Sloane, Sochalski y Silber, 2002) e, inclusive, menores niveles de desempeño (Wright y Bonett, 1997). En respuesta a esta evidencia, los especialistas en el síndrome del quemado han comenzado a diseñar e implementar intervenciones dirigidas a atenuar sus efectos negativos (p.e., Le Blanc, Hox y Schallfeli, 2007; Maslach, Leiter y Jackson, 2012). Por consiguiente, la identificación de los factores desencadenantes resulta crítica para desarrollar estrategias de afrontamiento que favorezca la resiliencia de aquellos empleados que se encuentren en condiciones que faciliten la aparición de los síntomas de este síndrome.

En general, los estudios que abordan el síndrome del quemado centran su atención en el contexto de trabajo de los empleados y, en particular, en la presencia de estresores interpersonales en ese ambiente (p.e., Borgogni, Consiglio, Alessandri y Schaufeli, 2012). En este sentido, el estudio de la justicia organizacional ha resultado muy útil para comprender este fenómeno. Ello se debe a que las percepciones de justicia organizacional

indican el grado de reciprocidad que existe entre los empleados de una organización y, por tanto, la calidad de las relaciones interpersonales (Maslach y Leiter, 2008).

Ahora bien, las demandas interpersonales no se limitan al vínculo entre trabajadores y autoridades (Mount, Barrick y Stewart, 1998). Durante las últimas décadas, tal como se ha comentado anteriormente, se ha observado, por una parte, un incrementado en la utilización de estructuras colectivas de trabajo (p.e., equipos). Esto ha derivado en una mayor frecuencia de interacción entre los compañeros de trabajo y, en consecuencia, en una mayor demanda de esfuerzos interpersonales dirigidos a interaccionar con los compañeros de trabajo. El aumento en el interés por prestar servicios de calidad, por otra parte, también ha llevado a una mayor demanda de esfuerzos interpersonales dirigidos a interaccionar con los clientes. Siguiendo esta lógica, el clima de justicia entre compañeros y el clima de justicia propiciado por las figuras de autoridad pueden ser desencadenantes del síndrome del quemado de los empleados ya que representan dos indicadores contextuales clave de la calidad de las relaciones de reciprocidad en el trabajo. Así pues, el cuarto objetivo general de la presente investigación será:

Objetivo 4. Determinar la importancia del clima de justicia entre compañeros y el clima de justicia propiciado por las figuras de autoridad en las percepciones del síndrome del quemado en el trabajo de los empleados.

5. PROFUNDIZANDO LA COMPRENSIÓN DEL CLIMA DE JUSTICIA ENTRE COMPAÑEROS

Una vez examinado el impacto que posee el clima de justicia entre los compañeros una pregunta que cobra importancia es, ¿cuáles son los factores que llevan a que los compañeros de trabajo se traten de uno u otro modo? Responder esta pregunta representa

un importante paso en el diseño de intervenciones que fomenten el trato justo entre los compañeros de trabajo.

En la literatura existen diversos estudios acerca del comportamiento moral en las organizaciones que pueden facilitar la comprensión de por qué los compañeros de trabajo se tratan de una u otra forma. El modelo teórico más utilizado a este respecto es la teoría de aprendizaje social (en inglés, *social learning theory*) de Bandura (1977).

5.1. Teoría de aprendizaje social

La teoría del aprendizaje social sugiere que las personas aprenden a partir de la observación del desempeño de personas a las que se considera como modelos dignos de crédito (Bandura, 1977). Una de las premisas fundamentales de esta teoría es justamente que las personas no necesitan experimentar todas las acciones en primera persona. La capacidad cognitiva de las personas permite que éstas aprendan vicariamente, es decir, sin necesidad de que incurran en errores innecesarios. Este aprendizaje vicario ocurre formalmente—p.e., mediante programas de entrenamiento—, pero también informalmente—p.e., mediante la observación de aquellos modelos considerados dignos de crédito. Como el aprendizaje puede ocurrir de forma informal es importante que las personas influyentes en las organizaciones actúen de forma que sea consistente con las conductas y valores que éstas consideran apropiados y deseen promover.

Según la teoría del aprendizaje social existen cuatro componentes que guían el proceso de aprendizaje (Bandura, 1977). El primer componente hace referencia a los denominados procesos atencionales. Para aprender es necesario que quien observa preste atención. En el caso de las organizaciones, el prestigio, por ejemplo, representa un factor que puede facilitar esta atención. Por tanto, indicadores como la posición jerárquica o la antigüedad pueden facilitar que el observador focalice sus recursos atencionales en las conductas de determinadas personas—p.e., el supervisor. El segundo componente hace

referencia a la retención de las conductas observadas en las personas influyentes. Es decir, para aprender también es necesario retener información. Esta retención se realiza a partir de representaciones simbólicas, como las imágenes y la codificación verbal. El tercer componente tiene que ver con la capacidad del observador para reproducir abiertamente las conductas observadas. El último componente hace referencia al refuerzo y a los procesos de motivación. Para aprender es necesario estar motivado. Para este componente resultan claves las percepciones positivas y negativas que se han asociado a las conductas observadas en el modelo del cual se aprende. Este factor motivacional no sólo es importante para transferir lo observado a la práctica, sino también para estimular la recurrencia de los tres componentes mencionados anteriormente.

Diversos estudios han utilizado la teoría del aprendizaje social para comprender las consecuencias de las decisiones con carácter moral que se toman en las organizaciones (Ambrose, Schminke y Mayer, 2013; Mayer, Kuenzi, Greenbaum, Bardes y Salvador, 2009; Schaubroeck et al., 2012). En general, estos estudios se han centrado en las conductas realizadas por los supervisores. Según estos modelos, el poder que poseen los supervisores en las organizaciones hace de los mismos modelos a seguir por parte de sus subordinados. La premisa fundamental de estos modelos es que muchas de las conductas que realizan los supervisores serán aprendidas y, posteriormente, replicadas por sus subordinados.

Recientemente, este modelo ha sido aplicado al estudio de las percepciones compartidas de justicia organizacional. Cropanzano et al. (2013), mostró que el modo en el que las autoridades tratan a sus unidades de trabajo—clima de justicia propiciado por las figuras de autoridad—tiene una influencia sobre el modo en que los compañeros de trabajo se tratan unos a otros—clima de justicia entre compañeros. Estos resultados sugieren que los empleados parecen aprender los comportamientos que observan en sus

supervisores. Si el grupo es tratado justamente por el supervisor, los compañeros de trabajo tienden a tratarse justamente. Al contrario, si el trato que reciben por parte del supervisor es injusto, los compañeros de trabajo tienden a tratarse injustamente. Ahora bien, para que las organizaciones puedan facilitar la transferencia de conductas morales y evitar la transferencia de conductas inmorales resulta necesario identificar los factores que se ven involucrados en este proceso. En este sentido, una condición necesaria para que un colectivo de empleados aprenda y, posteriormente, replique las conductas que observa en sus supervisores es que los miembros del grupo interpreten del mismo modo aquello que ven. Es decir, difícilmente un grupo de empleados replicaría el comportamiento de su supervisor si, como grupo, no están de acuerdo en que el trato que reciben por parte de esta figura de autoridad es justo o injusto. El estudio de la justicia organizacional ha denominado al grado de acuerdo que muestran los empleados de un mismo grupo como *fuerza del clima de justicia*. Este constructo se describe a continuación.

5.2. Fuerza del clima de justicia propiciado por las figuras de autoridad

Para obtener medidas que refieran a constructos de naturaleza grupal es necesario un modelo de composición. Los modelos de composición especifican las relaciones funcionales presentes entre constructos de distintos niveles que se refieren a un mismo contenido (p.e., nivel de equipo o nivel de organización), pero que son cualitativamente diferentes (Chan, 1998). En general, la investigación sobre climas se ha centrado en los *modelos de consenso* (González-Romá, Peiró y Tordera, 2002). De acuerdo con estos modelos, “la similitud intra-unidad entre las percepciones individuales de clima—denominado clima psicológico—es lo que permite obtener otra forma del constructo a niveles superiores de análisis—clima compartido del grupo—, siendo ambas formas del constructo funcionalmente isomorfas” (González-Romá, 2011, p. 49). En los *modelos de*

composición de dispersión, la similitud intra-unidad es un constructo central. Es decir, la similitud intra-unidad deja de ser una condición para la agregación de constructos de niveles superiores y pasa a ser el fenómeno de interés. La investigación sobre climas organizacionales se ha basado en los modelos de dispersión para definir lo que se ha denominado como la fuerza del clima. Este constructo se refiere al grado de acuerdo—similitud intra-unidad—de las percepciones individuales de clima (Chan, 1998).

Desde el estudio de la justicia organizacional se ha hecho uso del concepto de fuerza del clima para comprender mejor los efectos de las variables a nivel grupal que se refieren a justicia (p.e., Colquitt et al., 2002). En general, estos esfuerzos han sido aplicados al estudio del clima de justicia propiciado por las figuras de autoridad. Mientras este tipo de clima resalta el nivel de justicia que recibe el grupo por parte del supervisor o la organización, la fuerza de este clima pone el énfasis en el grado de acuerdo que existe entre los empleados con respecto al nivel de justicia que recibe el grupo por parte de estas figuras de autoridad (p.e., Naumann y Bennett, 2000).

Ahora bien, a partir de las contribuciones de la teoría del aprendizaje social (Bandura, 1977), se ha observado que el nivel de clima de justicia propiciado por las figuras de autoridad está relacionado con el nivel de clima de justicia presente entre los compañeros de trabajo (Cropanzano et al., 2013). Tal como se sugirió anteriormente, esta relación puede depender del grado de acuerdo que muestran los miembros de la unidad con respecto al trato que reciben por parte de sus autoridades, es decir, puede depender de la fuerza del clima. La pregunta que surge es, ¿las unidades replican el trato que reciben de sus autoridades aun cuando sus miembros no están de acuerdo respecto al nivel de justicia que reciben por parte de las mismas? Para responder a esta pregunta se deriva el quinto objetivo general de investigación, el cual será:

Objetivo 5. Determinar el rol que posee la fuerza del clima de justicia en la relación entre el clima de justicia propiciado por las figuras de autoridad y el clima de justicia entre compañeros.

6. RESUMEN

A lo largo de este bloque se ha revisado la investigación acerca de justicia organizacional y cómo se ha derivado de ésta el constructo central de la presente investigación: el clima de justicia entre compañeros. Asimismo, se ha realizado una descripción del sector de servicios, así como de los demás constructos implicados en esta tesis doctoral. Estos constructos han sido considerados desde diversas perspectivas, incluyendo supervisores, clientes y empleados. Todo lo expuesto ha permitido establecer los cinco objetivos generales de investigación que serán abordados en los cinco estudios empíricos que se presentan en el siguiente bloque.

BLOQUE II: ESTUDIOS DE INVESTIGACIÓN

En el presente bloque se presentan los cinco estudios que componen la presente investigación. El capítulo comienza, no obstante, con una breve recapitulación de los objetivos de estudio de la presente tesis doctoral. Posteriormente, se realiza una descripción de las muestras y los procedimientos que fueron utilizados para su recogida. Finalmente, se presentan, uno a uno, los cinco estudios que componen la tesis doctoral.

1. RECAPITULACIÓN DE OBJETIVOS

Retomando lo dicho en el bloque anterior, la transformación hacia estructuras de trabajo más descentralizadas y horizontales conlleva la creciente importancia que se asigna a las interacciones sociales entre los trabajadores que componen la organización (p.e., Mathieu et al., 2008). Este fenómeno resulta aún más importante en organizaciones como las del sector servicios donde la prestación de servicios implica, en general, no sólo el trabajo colaborativo entre trabajadores, sino también la interacción con clientes, quienes requieren servicios de elevada heterogeneidad (p.e., Boshoff y Allen, 2000). La investigación en justicia organizacional no ha sido ajena a estos desafíos, de los cuales se ha derivado un área de investigación que focaliza su atención en las percepciones compartidas de justicia. Si bien la investigación en esta temática ha resultado muy fructífera, su objeto de estudio se ha concentrado en el clima de justicia propiciado por las figuras de autoridad. Los investigadores, no obstante, inciden en la importancia de una fuente adicional de justicia, los compañeros de trabajo. El clima de justicia entre compañeros, que centra su atención en el trato justo o injusto que se prestan los compañeros de trabajo unos a otros, surge, por tanto, para complementar la investigación sobre las percepciones compartidas de justicia organizacional, la cual se ha centrado tradicionalmente en las figuras de autoridad. La comprensión de este fenómeno puede resultar de particular utilidad para las organizaciones de servicios ya que, tal como se ha

mencionado anteriormente, dependen en gran medida del trabajo colaborativo de sus miembros. A partir de ello, se deriva el objetivo fundamental de la presente tesis doctoral que es examinar el impacto que posee el clima de justicia entre compañeros en las organizaciones de servicios. A partir de este objetivo se han formulado otros, los cuales guiarán los cinco estudios empíricos que componen esta investigación. Estos objetivos se recapitulan a continuación:

Objetivo 1. *Validar las medidas de clima de justicia entre compañeros y el clima de justicia propiciado por las figuras de autoridad.*

Objetivo 2. *Determinar la importancia del clima de justicia entre compañeros y el clima de justicia propiciado por las figuras de autoridad en las percepciones compartidas de clima de servicio y desempeño de la unidad de trabajo.*

Objetivo 3. *Determinar la importancia del clima de justicia entre compañeros y el clima de justicia propiciado por las figuras de autoridad en las percepciones de calidad de servicio de las unidades de trabajo que prestan los servicios y los clientes que los reciben y la calidad de vida de estos últimos.*

Objetivo 4. *Determinar la importancia del clima de justicia entre compañeros y el clima de justicia propiciado por las figuras de autoridad en las percepciones del síndrome del quemado en el trabajo de los empleados.*

Objetivo 5. *Determinar el rol que posee la fuerza del clima de justicia en la relación entre el clima de justicia propiciado por las figuras de autoridad y el clima de justicia entre compañeros.*

Debe tenerse presente que estos objetivos tienen un carácter general. Cada uno de los cinco estudios que componen esta investigación aborda de forma acotada y detallada un objetivo diferente. Por tanto, en cada estudio se presenta una revisión de la investigación pertinente a ese objetivo, a partir de la cual se derivan las hipótesis específicas de investigación.

2. MUESTRA

Para la consecución de los objetivos de estudio propuestos en la presente tesis doctoral se utilizaron dos muestras, ambas provenientes del sector servicios de España. Sendas muestras estuvieron compuestas por organizaciones vinculadas a la prestación de servicios de salud. Más precisamente, las organizaciones participantes fueron organizaciones de atención a personas con discapacidad intelectual. Todas las organizaciones participantes formaban parte de la Confederación Española de Organizaciones en Favor de las Personas con Discapacidad Intelectual, también conocida como FEAPS. Esta confederación se encuentra compuesta por más de 800 organizaciones que prestan servicios a personas con discapacidad intelectual. Tal como se detalla a continuación, las razones que llevaron a la selección de estas organizaciones fueron varias.

Las organizaciones pertenecientes a FEAPS forman parte del sector servicios y, por tanto, presentan las características típicas de este sector, tales como la *intangibilidad* de los servicios, la *simultaneidad* de su producción y consumo, así como la *caducidad* de los servicios prestados. La *participación del cliente* y la *heterogeneidad* de los servicios representan, no obstante, las dos características más sobresalientes de estas organizaciones. La prestación de servicios a los clientes que asisten a estas organizaciones requiere necesariamente de su presencia física. Esto implica que la mayoría de las

personas que trabajan en estas organizaciones deben interactuar de forma cotidiana con sus clientes. Además, estos clientes requieren servicios de gran heterogeneidad, lo cual dificulta la posibilidad de garantizar su prestación de manera homogénea y, en consecuencia, estandarizada. Esto implica que las conductas adecuadas para dar respuesta a las necesidades específicas de cada cliente difícilmente pueden ser especificadas previamente (Schneider y White, 2004).

Otra ventaja que ofrecen estas organizaciones para la consecución de los objetivos de investigación es que la heterogeneidad de los servicios que prestan implica el trabajo colaborativo de sus empleados. Esta configuración de trabajo implica un alto grado de interacción no sólo con los clientes, sino también entre los mismos compañeros de trabajo. Esto representa otra ventaja ya que la interacción entre compañeros de trabajo facilita la emergencia de percepciones compartidas, tales como el clima de justicia propiciado por las figuras de autoridad y el clima de justicia entre compañeros, constructos claves de la presente tesis doctoral (ver Roberson, 2006a).

Una ventaja adicional es que las características inherentes al sector servicios en general, y al sector de atención a personas con discapacidad intelectual en particular, han llevado a FEAPS a desarrollar e implementar lo que han denominado como el Modelo Calidad FEAPS. Este interés por la calidad representa una ventaja importante para la presente investigación ya que ha resaltado en sus organizaciones y los empleados que las componen la relevancia de ciertas prácticas y procedimientos que resultan claves a efectos de esta tesis doctoral. Estas prácticas y procedimientos vinculados a la prestación de servicios facilitan el acceso a conceptos como el desempeño de la organización, el clima de servicio presente en la misma o la calidad de servicio que ésta presta.

Finalmente, estas organizaciones ofrecen un espacio idóneo para la evaluación de otros constructos que también resultan claves en este trabajo, tales como la calidad de

vida de los clientes y el síndrome del quemado de los empleados. La importancia de la calidad de vida de sus clientes se encuentra detallada en la misión institucional de FEAPS, donde se indica que la misma representa un objetivo primordial de la confederación. La importancia del síndrome del quemado en el trabajo, por su parte, se debe a que la prestación de servicios vinculados a la salud resulta una tarea particularmente demandante para los trabajadores que los prestan (p.e., Prins, Gazendam-Donofrio, Tubben, Van Der Heijden, Van De Wiel y Hoekstra-Weebers, 2007).

3. PROCEDIMIENTO DE RECOGIDA DE DATOS

El procedimiento de recogida de datos de las dos muestras utilizadas se financió a partir de los dos proyectos en los que se enmarca el presente trabajo de investigación. La recogida de datos de la Muestra 1 se realizó en el marco del proyecto denominado “Service quality and its relationships with well-being and quality of life of mentally disabled persons and their families”, financiado por el Ministerio de Ciencia e Innovación (código de referencia: SEJ2005-05375). La recogida de datos de la Muestra 2 se realizó en el marco del proyecto denominado “Antecedents of mutual trust between professionals and families and its impact on the autonomy and quality of life of intellectually disabled persons: A survey and experimental study”, financiado por el Ministerio de Economía y Competitividad de España (código de referencia: PSI2010-21891). A continuación se describe el procedimiento de recogida de datos seguido, el cual fue idéntico para ambas muestras.

El procedimiento de recogida de datos comenzó a partir de la puesta en contacto con miembros de la junta directiva de FEAPS. Una vez presentados los objetivos de estudio de los proyectos en los que se enmarca el presente trabajo de investigación y solicitada la participación de FEAPS, se llegó a un acuerdo en el que miembros del

Instituto de Investigación en Psicología de los Recursos Humanos, del Desarrollo Organizacional y de la Calidad de Vida laboral (IDOCAL) de la Universidad de Valencia colaborarían junto con los miembros de FEAPS en la recogida de datos.

Por medio de correos internos, FEAPS instó a la participación voluntaria de organizaciones que formaran parte de la confederación. Una vez identificadas las organizaciones que participarían del proyecto, cada organización nombró a un empleado como responsable de gestionar la participación de la entidad en el proyecto. Posteriormente, se organizaron reuniones en distintas regiones del territorio español adonde asistieron, en grupo, los responsables de las organizaciones de estas regiones a quienes se entrenó en el procedimiento que debían seguir en la recogida de datos. Un ejemplo de este entrenamiento correspondió a la selección de las personas que participarían del proyecto. Se entrenó a estos responsables para que eligieran a las personas que participarían del proyecto según procesos de selección aleatoria, siempre que no resultara viable la participación de todos los informantes.

La Muestra 1 fue recogida en el año 2007 y la Muestra 2 en el año 2012. Si bien ambas muestras pertenecen a organizaciones que prestan servicios de atención a personas con discapacidad intelectual, las organizaciones participantes de la Muestra 1 difieren de las organizaciones participantes de la Muestra 2. La Muestra 1 fue utilizada en los cinco estudios que componen la tesis doctoral. Por su parte, la Muestra 2 fue utilizada en el Estudio 4 y 5.

Para la Muestra 1 se recogieron datos de tres fuentes de información: supervisores, empleados y familiares o tutores legales de las personas con discapacidad intelectual. Para la Muestra 2 sólo se recogieron datos de una fuente de información: los empleados. En ambos casos el método utilizado para la recogida de los datos consistió en el pase de un cuestionario que de manera voluntaria cumplimentaron los distintos informantes. Para

asegurar la participación anónima y confidencial de todos los informantes, se solicitó a los mismos que sólo hicieran entrega del cuestionario si éste se encontraba en un sobre cerrado, el cual era facilitado durante la entrega del cuestionario. Asimismo, se informó a todos los involucrados en el proceso de recogida de datos que todos los cuestionarios que no se encontraran en un sobre cerrado no serían utilizados.

Para que un supervisor pudiera ser elegido debía tener funciones de gestión sobre empleados que tuvieran contacto directo con las personas con discapacidad intelectual y sus familiares o tutores legales. Para que un empleado pudiera ser elegido debía tener contacto habitual con los familiares o tutores legales de las personas con discapacidad intelectual y con las personas con discapacidad intelectual. Para que un familiar o tutor legal pudiera ser elegido debía asistir con frecuencia a la organización. En el presente trabajo se denomina clientes a los familiares o tutores legales debido a que los mismos asisten a estas organizaciones con el objetivo de que se les preste un servicio específico, es decir, se atiende a la persona con discapacidad intelectual de la cual él o ella es responsable.

A todas las organizaciones que prestaron su colaboración se les elaboró un informe en el cual se incluyó información sobre algunas de las variables medidas, tal como el nivel de calidad de servicio recibida por los familiares o tutores legales, o el nivel de bienestar de sus empleados. En estos informes se compararon los niveles mostrados por la organización para la cual fuera elaborado el informe con los niveles de referencias obtenidos a partir de las demás organizaciones participantes.

A continuación se presentan los cinco estudios que componen esta tesis doctoral. Tal como se señaló previamente, cada uno de estos estudios aborda uno de los cinco objetivos derivados del objetivo fundamental—examinar el impacto que posee el clima de justicia entre compañeros en las organizaciones de servicios—, recapitulados al

comienzo de este bloque. Además de presentar una revisión de la investigación de donde se derivan las hipótesis específicas de investigación, cada estudio presenta, de manera detallada e independiente, los restantes aspectos metodológicos, tales como las medidas y estrategias de análisis utilizadas, así como los resultados obtenidos y una discusión específica de los mismos.

4. ESTUDIO 1: “VALIDATING JUSTICE CLIMATE AND PEER JUSTICE IN A REAL WORK SETTING”

4.1. Abstract

In this study we examined the validity of justice climate and peer justice, measured as second-order constructs, in a real work setting. To this end, we followed a four-step approach. First, we examined the appropriateness of aggregating the first-order facets of justice climate (e.g., procedural justice climate) and peer justice (e.g., procedural peer justice) to the work-unit-level of analysis. Second, we examined the construct validity of justice climate and peer justice as two different factor structures. Third, we examined the hierarchical structure of justice climate and peer justice as second-order factors. Finally, we examined the predictive validity of the second-order factors justice climate and peer justice within a nomological network composed by reciprocity with the supervisor and reciprocity with coworkers. We conducted these analyses in a sample that consisted of 532 employees nested in 79 organizations. In line with previous findings conducted with university students, our results suggest the validity of justice climate and peer justice measured as a second-order factors. We discuss these results and its implications for organizational justice research.

Keywords: Justice climate, peer justice, reciprocity with coworkers, reciprocity with the supervisor

4.2. Introduction

As more and more organizations aim to achieve their goals through work groups and teams (e.g., Colquitt, Zapata-Phelan, & Roberson, 2005), the relationships among coworkers has become crucial. The nature and complexity of tasks in modern organizations requires the existence of well-articulated work units (Wit, Greer, & Jehn, 2012). Cooperation among members of work units permits organizations to better answer societal and economical demands. Work units that fail to articulate their internal processes have to deal with negative consequences, such as social loafing or team conflict, which may affect their effectiveness (Kidwell, & Bennett, 1993; Shaw, Zhu, Duffy, Scott, Shih, & Susanto, 2011).

Organizational justice research has a lot to offer in this domain. To capture the importance organizations assign to work units, organizational justice scholars have developed a line of research called justice climate (e.g., Naumann & Bennett, 2000). This research has focused on how coworkers are treated by an individual or entity outside the group, usually an authority figure (e.g., Colquitt et al., 2005; Ehrhart, 2004; Zhang & Jia, 2013). Despite predicting important organizational outcomes—see Whitman, Caleo, Carpenter, Horner, and Bernerth's (2012) meta-analysis—, justice climate neglects the interaction processes that take place among members of the same work unit. To capture this internal phenomenon, Cropanzano, Li, and James (2007) referred to what goes on inside a work unit as intra-unit justice. Cropanzano, Li, and Benson (2011) later relabeled this construct as peer justice.

Due to the importance attributed to justice climate (see Whitman et al., 2012) and the novelty and potential of peer justice (see Li & Cropanzano, 2009), Li, Cropanzano and Bagger (2013) recently conducted an empirical examination of the factorial structure of these constructs. Consistent with the tendency towards an overall approach to justice

(e.g., Ambrose & Arnaud, 2005; Ambrose & Schminke, 2009; Hauenstein, McGonigle, & Flinder, 2001; Lind & Van den Bos, 2002; Törnblom & Vermunt, 1999), Li et al. observed that justice climate and peer justice were best represented through a hierarchical—second-order—structure that combined the first-order facets of these constructs—i.e., distributive, procedural, and interactional justice. An important remark is that Li and colleagues tested these hierarchical models with a sample of undergraduate students.

In this study thus, we contribute to the justice literature by reexamining the factorial structure of justice climate and peer justice reported by Li et al. (2013) using data collected in a formal work environment of the service industry. Specifically, we test our model with a sample of employees working in health care services in direct contact with customers. The main purpose of these organizations is to improve the quality of life of their customers. Cooperation among coworkers thus is necessary because attending each customer requires the simultaneously involvement of different sets of skills and knowledge. Hence, work-unit members are compelled to work closely together to fully attend their customers' needs. That is to say, the ongoing social interactions that take place in this context provides an ideal setting to examine justice climate and peer justice within a formal work environment.

In the following sections, we first describe the conceptual basis behind the difference between justice climate and peer justice. We then describe the benefits that have motivated scholars towards studying organizational justice through the lens of an overall approach. Finally, we describe the specific steps that will guide our analyses.

Unit-Level Fairness: Justice Climate and Peer Justice

Justice scholars have identified several sources or foci of fairness from which employees can potentially make differential justice perceptions. This line of inquiry that

focuses on the perpetrator of an (in)just act has been referred as *multifoci* research (Liao & Rupp, 2005). In addition to upper management, multifoci research has identified additional sources of fairness such as coworkers, providers, and customers (Branscombe, Spears, Ellemers, & Doosje, 2002; Lavelle, Rupp, & Brockner, 2007; Lavelle et al., 2009). Unit-level research has built upon these findings and distinguished justice climate from peer justice.

Justice climate has been defined as a shared perception of the fairness with which the unit is collectively treated by an authority figure (Li & Cropanzano, 2009). Some scholars noted, however, that during their daily activities, employees do not solely perceive the treatment they receive from outside the group (i.e., justice climate) (Cropanzano et al., 2007). Employees are also capable of perceiving the treatment they receive from within the group (i.e., coworkers) (e.g., Lavelle et al., 2007). Peer justice thus refers to the shared perception of the fairness with which coworkers generally treat one another (Li et al., 2013).

Research on justice climate has been very fruitful, showing that justice climate is related not only with individual-level attitudes and behaviors such as satisfaction, commitment, and helping behaviors (Liao & Rupp, 2005; Mayer, Nishii, Schneider, & Goldstein, 2007; Mossholder, Bennett, & Martin, 1998; Naumann & Bennett, 2000; Walumbwa, Hartnell, & Oke, 2010), but also with unit-level behavior such as team performance, team absenteeism, unit-level organizational commitment, turnover intentions, and customer service orientation (Colquitt et al., 2002; Simons & Roberson, 2003; for a meta-analysis see Whitman et al., 2012).

Peer justice, in contrast, is still a novel construct within the organizational justice literature. Despite its novelty, however, the facets of peer justice have been related to team processes and outcomes such as task performance, team citizenship behaviors

(Cropanzano et al., 2011) and team satisfaction (Li et al., 2013). These studies have been conducted using data collected from undergraduate students.

Overall Approach to Justice in the Workplace

Research has shown that employees develop fairness perceptions from up to four justice events (Colquitt, 2001). Employees judge fairness based on their experiences with resource distribution (*distributive justice*), with the processes through which those resources are allocated (*procedural justice*), and with the quality of social interactions that take place during the allocation of resources (*interactional justice*). Research has further divided interactional justice into *interpersonal justice*—i.e., the extent to which employees are treated with dignity and respect—and *informational justice*—i.e., the extent to which the explanations provided to employees convey information about procedures and outcomes (Bies & Moag, 1986). Even though these facets are conceptually distinct (see Cohen-Charash & Spector, 2001; Colquitt, Conlon, Wesson, Porter, & Ng, 2001), justice scholars have begun to consider an overall approach to justice as an alternative to the more traditional perspective (e.g., Ambrose & Schminke, 2009; Choi, 2008; Greenberg, 2001; Hauenstein et al., 2001; Holtz & Harold, 2009; Jones & Martens, 2009; Kim & Leung, 2007; Lind, 2001).

According to Ambrose and Schminke (2007), the overall approach to organizational justice presents several benefits to the fairness literature. These benefits include a more precise representation of individuals' and groups' justice experiences, in contrast to solely focusing on the discrete justice facets. The overall approach also allows scholars to examine the total impact of justice, rather than the separate effects of its facets. More important, an overall approach to justice facilitates a more parsimonious way to theorize about the effects of justice. Ambrose and Schminke further suggested that these benefits should not be restricted to individual-level research, and made a call for research

at the unit-level of analysis to examine the overall approach to justice. These observations are of great importance for the emerging literature on multifoci climates since it allows justice researchers to focus more clearly on the source of justice (e.g., coworkers). As we describe in the following paragraphs, the overall approach to unit-level fairness is consistent with both empirical evidence and theoretical argumentation.

We first focus on the empirical evidence. For the case of justice climate, research has been accumulated for more than a decade (e.g., Colquitt et al., 2002; Ehrhart, 2004; Liao & Rupp, 2005; Lipponen & Wisse, 2010; Naumann & Bennet, 2000). Whitman et al. (2012) recently conducted a meta-analysis to further scrutinize justice climate. In spite of showing that there is merit in studying the different facets of justice, Whitman et al. reported an average correlation among the facets of justice climate of .55. Cohen, Cohen, West, and Aiken's (2003) typology of effect sizes suggests that a correlation of .10 is weak, .30 is moderate, and .50 is strong. Based on this typology, Whitman et al. argued for the appropriateness of an overall approach to justice climate. In fact, Whitman and colleagues examined the importance of an overall approach to justice climate through a composite of the facets of justice climate. The results showed that overall justice climate was significantly related to unit-level effectiveness, attitudes, processes, and performance providing important support for the total impact of this construct. Research on peer justice has been much scarcer. Only two studies have measured facets of peer justice. Whereas Cropanzano et al. (2011) measured procedural and interpersonal peer justice and reported a correlation of .74, Li et al. (2013) measured distributive, procedural, and interpersonal peer justice and reported an average correlation of .58. Based on Cohen et al.'s (2003) typology of effect sizes, and similar to the case of justice climate, both studies on peer justice reported strong correlations. This is no new for justice scholars. The strong correlations among justice facets has already been reported (see Colquitt et al., 2001;

Colquitt, Scott, Rodell, Long, Zapata, Conlon, & Wesson, 2013) and repeatedly discussed at individual-level of analysis (e.g., Ambrose & Arnaud, 2005; Bies, 2005; Colquitt & Shaw, 2005). The extensive research on organizational justice, the vast research on justice climate, and the preliminary research on peer justice thus suggest the appropriateness of extending the overall approach to peer justice.

We now turn the attention to the theoretical arguments underlying an overall approach to justice climate and peer justice. Fairness heuristic theory (FHT; Lind, 2001) posits that employees face a fundamental social dilemma in the workplace: they do not have enough information to know if they can trust others not to exploit them or exclude them from social relationships. To cope with the little information available they have, employees use cognitive shortcuts—heuristics—to assess fairness-related information. Once a group of employees forms a heuristic judgment of a target (e.g., the supervisor or coworkers), FHT posits they will relay on it as a shortcut to assess subsequent fairness-related events that involve that same target. Fairness heuristic judgments thus acts as an overall perception of justice. That is, after forming a heuristic judgment, employees will interpret subsequent information based on their already established overall framework. More important, FHT posits that heuristics are used within hierarchical (e.g., supervisor-employee) and non-hierarchical (e.g., employee-employee) social relationships. As described by Lind (2001), “the dual threat of exploitation and exclusion upon which much of the theory is based manifests itself very starkly in hierarchical contexts, because of the power differential [justice climate], but it can be just as strong in close equal-power relations [peer justice]” (p. 222). FHT thus not only provides the theoretical argumentation for overall justice judgments, but does so in a way that is consistent with the overall approach to both justice climate and peer justice.

Taken together, both empirical evidence and theory support Ambrose and Schminke's (2007) call for research to examine the overall approach to justice at the unit-level of analysis. In a direct response to that call, Li et al. (2013) tested a model where they operationalized justice climate and peer justice perceptions as hierarchical—second-order—or composite constructs. That is, the overall perception of each source of justice—i.e., justice climate and peer justice—was indicated by the different justice facets. Li et al. argued that “justice perceptions can be considered as a two-level structure, with the first-level indicators representing the various dimensions of justice, and the second-level representing the overall perception of justice” (p. 573). Li et al.'s results showed that justice climate and peer justice were best represented by combining their first-order factors (i.e., facets) into two single second-order factors. Despite the importance of their findings, Li et al. results were obtained through analyzing data from a sample of undergraduate students. As suggested by these authors, there is a need for research to reexamine their findings in a different context. Since students are not subjected to the labor conditions and processes directly connected with the day-to-day life of work groups and organizations as employees are, in this study we aim to replicate Li et al.'s findings with a sample of employees from a formal work setting and, thus, extend their generalizability.

Examining the Structure of Justice Climate and Peer Justice in a Non-student Sample

Replicating the hierarchical structures of justice climate and peer justice observed by Li et al. (2103) represents an important contribution for the organizational justice literature since evidence suggests that results obtained through the use of student subjects may differ from the ones obtained through the use of data from actual employees (Henrich, Heine, & Norenzayan, 2010). In this study we will address the replication of

the hierarchical structure of justice climate and peer justice through a thorough four-step approach.

As indicated by Peterson (2001), students' responses tend to be more homogeneous than nonstudent responses. This increased homogeneity represents an important concern when studying organizational climates such as justice climate and peer justice since it can artificially inflate within-unit agreement. As a first step, thus, we will examine the appropriateness of aggregating the first-order facets of justice climate—i.e., distributive justice climate, procedural justice climate, interpersonal justice climate, and informational justice climate—and peer justice—i.e., distributive peer justice, procedural peer justice, interpersonal peer justice, and informational peer justice—to the unit-level of analysis.

Peterson (2001) also observed that effect sizes derived from student samples—both direction and magnitude—frequently differ from those derive from non-students. Consequently, before testing the hierarchical models of justice climate and peer justice, in a second step, we will examine the construct validity of justice climate and peer justice as two different factor structures. That is, we will examine whether the items of each facet of justice climate and peer justice measure what they intent to measure (Babin, Boles, & Robin, 2000).

In a third step we will test the hierarchical structure of justice climate and peer justice reported by Li et al. (2013). That is, we will explore an additional model in which two second-order factors (justice climate or peer justice) account for the relationship between their corresponding first-order factors (distributive, procedural, interpersonal, and informational justice). We will use indicators of scale convergent and discriminant validity to examine all these structures.

Finally, in a fourth step we will examine the predictive validity of justice climate and peer justice—as second-order factors—within a clear nomological network. That is, we will examine the behavior of justice climate and peer justice when related to proximal versus distal outcomes. To this end, we consider the relationships from justice climate and peer justice to two measures of employee reciprocity: perceived reciprocity with the supervisor and perceived reciprocity with coworkers. As a general construct, reciprocity is defined as a “continuum ranging from under-benefitted reciprocity (when the person perceives that he/she is receiving less than he/she deserves) to balanced reciprocity (when the person perceives that there is an equilibrium) to over-benefitted reciprocity (when the person perceives that he/she is receiving more than he/she deserves)” (Moliner, Martínez-Tur, Peiró, Ramos, & Cropanzano, 2013, p. 31). Since justice climate refers to the perceptions of the fair treatment provided by authorities, we expect that justice climate will present a stronger relationship to reciprocity with the supervisor than the relationship between peer justice and this variable. Similarly, since peer justice refers to the perceptions of the fair treatment among coworkers, we expect that peer justice will present a stronger relationship to reciprocity with the coworkers than the relationship between justice climate and this variable.

4.3. Method

Sample and Procedure

We surveyed a total of 760 employees from 98 organizations affiliated with the Confederation of Organizations for Persons with Intellectual Disability (FEAPS, Spain). These organizations thus pertain to the health care industry and provide services to persons with intellectual disability. Each organization is considered as a work unit of FEAPS.

Participation was confidential and voluntary. Each organization randomly chose their employees. Since the variables of this study were based on aggregated measures, we used data only when there were at least three employees per work unit. After deleting cases with missing data the final sample was 532 employees nested in 79 work units. Work units ranged from 3 to 12 employees (mean = 6.73, $SD = 2.20$). The average age of employees was 35.24 years ($SD = 8.76$), their average organizational tenure was 6.91 years ($SD = 6.58$), 71.06% were women and 55.73% had earned a university degree.

Measures

Both justice climate and peer justice were assessed using the referent shift consensus model (Chan, 1998). Instead of focusing on the treatment received by each individual (“I am treated...”), the referent shift consensus model focus all respondents on the work unit as a whole (“We are treated...”). According to Bashshur, Rupp, and Christopher (2004), this approach leads to more agreement within units and a better ability to distinguish between units than direct consensus models, which focus on the treatment received by each member of the unit.

Justice climate. We assessed *justice climate* based on the 20-item scale developed by Colquitt (2001) using a 7-point Likert scale (ranging from 1, *strongly disagree* to 7, *strongly agree*). Four items referred to distributive justice, 7 items to procedural justice, 4 items to interpersonal justice, and 5 items to informational justice (see the entire scale in Anexo I).

Peer justice. We assessed *peer justice* based on the scale developed by Li and Cropanzano (2009), using a 5-point Likert scale (ranging from 1, *strongly disagree* to 5, *strongly agree*). Considering the importance attributed to informational justice, we added additional items referring to informational justice. Not only was this decision consistent with previous recommendations (see Colquitt, 2001; Colquitt & Shaw, 2005), but also

allowed us to make peer justice directly comparable to the measure of justice climate. The final peer justice scale contained 16 items. Participants were instructed to focus their attention on the way coworkers treat each other. Two items specifically referred to distributive peer justice, 5 items to procedural peer justice, 4 items to interpersonal peer justice, and 5 items to informational peer justice (see the entire scale in the Anexo I).

Perceived reciprocity. We assessed *perceived reciprocity with the supervisor and coworkers* with two single items traditionally used in the reciprocity literature (e.g. Buunk, Doosje, Jans, & Hopstaken, 1993; Hatfield, Traupmann, Sprecher, Utne, & Hay, 1985, Moliner et al., 2013). Employees were requested to consider the relationships with the supervisors and their coworkers. Then, employees had to endorse the statement that best characterized each relationship. Five possible answers were presented: (1) ‘I give much more to my supervisor/coworkers than I receive in return’; (2) ‘I give more to my supervisor/coworkers than I receive in return’; (3) ‘We both/all provide the same amount to one another’; (4) ‘My supervisor/coworkers give(s) me more than I provide in return’; (5) ‘My supervisor/coworkers give(s) me much more than I provide in return’.

4.4. Results

Step 1: Aggregating the Facets of Justice Climate and Peer Justice

In order to examine the appropriateness of working with aggregated data, we followed two complementary approaches indicated by Kozlowski and Klein (2000): a consensus-based approach (calculation of the average deviation index, $AD_{M(j)}$) and a consistency-based approach (calculation the intraclass correlation coefficient, $ICC(1)$). The $AD_{M(j)}$ presents some advantages over the interrater agreement index (rwg; James, Demaree, & Wolf, 1984). The $AD_{M(j)}$ only requires a priori specification of a null response range of interrater agreement, since it does not require the modeling of the

random or null response distribution. In addition, the estimates provided by the $AD_{M(J)}$ are in the metric of the original response scale (González-Romá, Peiró, & Tordera, 2002). To determine cut-off criteria for the $AD_{M(J)}$, we followed Dunlap, Burke, and Smith-Crowe (2003), who recommended cut-off values of .83 for 5-point Likert scales, and 1.17 for 7-point scales. The ICC(1) represents the influence of group membership over the reliability and degree of group members' responses (Bliese, 2000). To examine the adequacy of the ICC values, we followed LeBreton and Senter (2008). Additionally, we computed one-way analysis of variance (ANOVA) to ascertain whether there was between-unit discrimination among the studied variables (Chan, 1998).

The aggregation indexes for the studied work units were: for distributive justice climate the mean $AD_{M(J)}$ was .99 ($SD = .34$) and the ICC(1) was .31; for procedural justice climate the mean $AD_{M(J)}$ was .83 ($SD = .31$) and the ICC(1) was .27; for interpersonal justice climate the mean $AD_{M(J)}$ was .72 ($SD = .33$) and the ICC(1) was .20; for informational justice climate the mean $AD_{M(J)}$ was .77 ($SD = .32$) and the ICC(1) was .26; for distributive peer justice the mean $AD_{M(J)}$ was .71 ($SD = .26$) and the ICC(1) was .12; for procedural peer justice the mean $AD_{M(J)}$ was .55 ($SD = .18$) and the ICC(1) was .27; for interpersonal peer justice the mean $AD_{M(J)}$ was .53 ($SD = .21$) and the ICC(1) was .37; for informational peer justice the mean $AD_{M(J)}$ was .46 ($SD = .16$) and the ICC(1) was .20. The results obtained by the ANOVAs showed a significant degree of between-units discrimination: distributive justice climate: $F(78, 453) = 4.01, p < .01$; procedural justice climate: $F(78, 453) = 3.56, p < .01$; interpersonal justice climate: $F(78, 453) = 2.65, p < .01$; informational justice climate: $F(78, 453) = 3.36, p < .01$; distributive peer justice: $F(78, 453) = 1.88, p < .01$; procedural peer justice: $F(78, 453) = 3.54, p < .01$; interpersonal peer justice: $F(78, 453) = 5.09, p < .01$; and informational peer justice: $F(78, 453) = 2.65, p < .01$.

With the exception of distributive justice climate and distributive peer justice, all the remaining justice facets—procedural justice climate, interpersonal justice climate, informational justice climate, procedural peer justice, interpersonal peer justice, and informational peer justice—showed sufficient levels of within-unit agreement and between-unit differentiation. Interestingly, distributive justice climate and distributive peer justice were the only facets that failed to show within-unit agreement, as denoted by the sum of each mean $AD_{M(j)}$ with its corresponding standard deviation. Because these results prevent from arguing that a distributive climate might have emerged, before taking any other action, we decided to further assess the level of agreement using a different index. To this end we computed James et al.'s (1984) r_{wg} index. Despite the limitations presented by the r_{wg} index, this index is one of the most common indicators of within-unit agreement among unit-level scholars (LeBreton & Senter, 2008).

Even though heuristics are arbitrary, unit-level research has typically used a cut-off value of .70 for the r_{wg} index (LeBreton & Senter, 2008). Whereas the average $r_{wg(j)}$ values for procedural justice climate, interpersonal justice climate, informational justice climate, procedural peer justice, interpersonal peer justice, and informational peer justice were all above the recommended cut-off value (.74, .77, .71, .79, .81, .79, respectively), the average $r_{wg(j)}$ values shown by distributive justice climate and distributive peer justice were not sufficient to argue for the emergence of these climates (.51 and .51, respectively). It is important to recall that, as with the other justice facets, both distributive justice climate and distributive peer justice were measured based on the referent-shift consensus model proposed by Chan (1998). That is, to rate the items, each individual employee was asked to focus on the treatment received by the group as a whole. Hence, the referent of these items was the group, not the individual. Taking into account the low level of agreement shown by the work units and the referent used to measure these

constructs, we decided to exclude the items referring to distributive justice climate and distributive peer justice from the following analyses. In the discussion section we provide several arguments that may help understand why unit members did not show sufficient within-unit agreement regarding their distributive justice perceptions.

In the sections to follow we conduct a series of confirmatory factor analyses (CFA). Since justice climate and peer justice are both, in nature, unit-level phenomenon we run these analyses using aggregated data. By doing so we make sure the level of analysis aligns with the level of theory (Kozlowski & Klein, 2000).

Step 2: First-Order Structures

First-order structure of justice climate. We first tested a model that anticipated that justice climate is a three-factor construct composed by the facets that showed within-unit agreement and between-unit differentiation—procedural justice climate, interpersonal justice climate, and informational justice climate. To assess model fit, we computed the following fit indices: the Root Mean Square Residual (RMSEA)—values smaller than .10 indicate an acceptable fit (Browne & Cudeck, 1993)—, Non-Normed Fit Index (NNFI)—values greater than .95 indicate good fit—Comparative Fit Index (CFI)—values close to .95 indicate good fit (Hu & Bentler, 1999)—Standardized Root Mean Square Residual (SRMR)—values greater than .10 indicate model rejection (Marsh, Hau, & Wen, 2004). Since chi-square largely depends on sample size (Cheung & Rensvold, 2002; Meade, Johnson, & Braddy, 2008), scholars recommend to compare models based on more practical criteria. Cheung and Rensvold (2002) and Widaman (1985), for instance, suggest that an improvement in model fit should be supported by an increase of .010 in CFI or NNFI (Δ CFI and Δ NNFI). Chen (2007) suggests that a decrease of .015 in RMSEA (Δ RMSEA) or .030 in SRMR (Δ SRMR) also supports an improvement in model fit.

The three-factor structure (see Figure 2a) provided a good fit to the data: $\chi^2 = 165.35$, $df = 101$, $p < .01$; RMSEA = .090; CFI = .983; NNFI = .980; SRMR = .053. Despite all item-factor loadings being significant ($p < .01$), one item referring to interpersonal justice climate was below the recommended .70 (Shipp, Burns, & Desmul, 2010). As depicted on Table 1, all remaining item-factor loadings ranged from .79 to .98, suggesting scale convergence (Anderson & Gerbing, 1988). We tested a model without the item that presented a low item-factor loading but did not observe an improvement over the model representing all the items ($\chi^2 = 156.21$, $df = 87$, $p < .01$; RMSEA = .101 (90% CI = .075, .126); CFI = .981; NNFI = .977; SRMR = .051; Δ RMSEA < .015; Δ CFI < .010; Δ NNFI < .010; Δ SRMR < .030). Thus, we decided to conserve the model with all the items. The average variance extracted (AVE) for each justice climate facet, ranging from .74 to .88, exceeded the criterion of .50, and was larger than the square of any correlation between the factors, providing support for the convergent and discriminant validity of the construct (Fornell & Larcker, 1981). To further test the adequacy of the three-factor structure, we compared the three-factor structure to an alternative model represented by a one-factor structure. The results of the one-factor structure showed a worst fit to the data than the three-factor structure ($\chi^2 = 850.30$, $df = 104$, $p < .01$; RMSEA = .303 (90% CI = .285, .322); CFI = .806; NNFI = .776; SRMR = .136; Δ RMSEA < .015; Δ CFI < .010; Δ NNFI < .010; Δ SRMR < .030), providing additional support for the three-factor structure of justice climate.

First-order structure of peer justice. Similar to justice climate, we first tested a model that anticipated that peer justice is a three-factor construct composed by the facets that showed within-unit agreement and between-unit differentiation—procedural peer justice, interpersonal peer justice, and informational peer justice. The fit to the data of the three-factor structure was satisfactory: $\chi^2 = 130.42$, $df = 74$, $p < .01$; RMSEA = .099; CFI

= .984; NNFI = .981; SRMR = .029. We decided to eliminate, however, two items—one referring to procedural peer justice and one referring to informational peer justice—because they presented high standardized residuals (Kline, 2011). The model with fewer items (see Figure 2b) presented an improvement over the model with all the items ($\chi^2 = 56.33$, $df = 51$, $p > .05$; RMSEA = .037; CFI = .998; NNFI = .997; SRMR = .026; Δ RMSEA > .015; Δ CFI > .010; Δ NNFI > .010; Δ SRMR = .003). As depicted on Table 2, all item-factor loadings were significant ($p < .01$) and above the recommended .70 and all the AVE for each factor ranged from .70 to .81 exceeding the criterion of .50, providing support for the convergent validity of the construct. We further compared the three-factor structure to an alternative model represented by a one-factor structure. This general one-factor structure did not show an improvement over the three-factor structure ($\chi^2 = 90.76$, $df = 54$, $p < .01$; RMSEA = .093; CFI = .986; NNFI = .983; SRMR = .036; Δ RMSEA < .015; Δ CFI < .010; Δ NNFI < .010; Δ SRMR < .030). Despite observing that the three-factor structure showed a better fit to the data, none of the AVE of these three factors were larger than the square of the correlations between the factors. That is, the AVE did not provide support for the discriminant validity of procedural peer justice, interpersonal peer justice, and informational peer justice (Fornell & Larcker, 1981). Altogether, the lack of sufficient discriminant validity of the first-order facets of peer justice provides preliminary support for the hierarchical structure—overall approach—proposed by Li et al. (2013).

Step 3: Hierarchical Structure of Justice Climate and Peer Justice

Li et al. (2013) observed that justice climate and peer justice were best represented through a hierarchical structure that combined the first-order facets of these constructs. If we were to independently test the hierarchical structure of justice climate and peer justice, we would obtain the exact same results as for the three-factor structure. To avoid

duplicating results, Li et al. compared each hierarchical—second-order—model to a first-order model with the covariance among the factors constrained to zero. While this procedure is theoretically plausible, the vast empirical evidence from previous research suggests that justice factors are highly correlated (e.g., Whitman et al., 2012). Consequently, we decided to extend the procedure followed by Li et al. and test an integrative model of unit-level fairness. That is, we created two second-order structures to represent the three underlying facets of justice for each type of unit-level fairness—justice climate and peer justice. Thus, in this model the relationship among procedural justice climate, interpersonal justice climate, and informational justice climate can be accounted for by the higher level construct justice climate, whereas the relationship among procedural peer justice, interpersonal peer justice, and informational peer justice can be accounted for by the higher level construct peer justice (see Figure 3). The fit for the model was: $\chi^2 = 494.31$, $df = 343$, $p < .01$; RMSEA = .075; CFI = .980; NNFI = .978; SRMR = .105. Past research, such as the one conducted by Kim (2005) and Marsh et al. (2004), has demonstrated that SRMR is sensitive to sample size since it decreases as sample size increases (Chen, 2007) and, thus, suggests not to be overly critical if is not quite .099. Based on these recommendations, we argue that the model showed an acceptable fit to the data. As depicted on Table 3, all first-order factor loadings were significant ($p < .01$) and above the recommended .70. Moreover, the AVE for each second-order factor ranged from .72 to .93 exceeding the criterion of .50 and, thus, providing support for the convergent validity of both constructs. More important, the AVE was larger than the square of the correlation between the second-order factors, providing support for the discriminant validity between justice climate and peer justice (Fornell & Larcker, 1981).

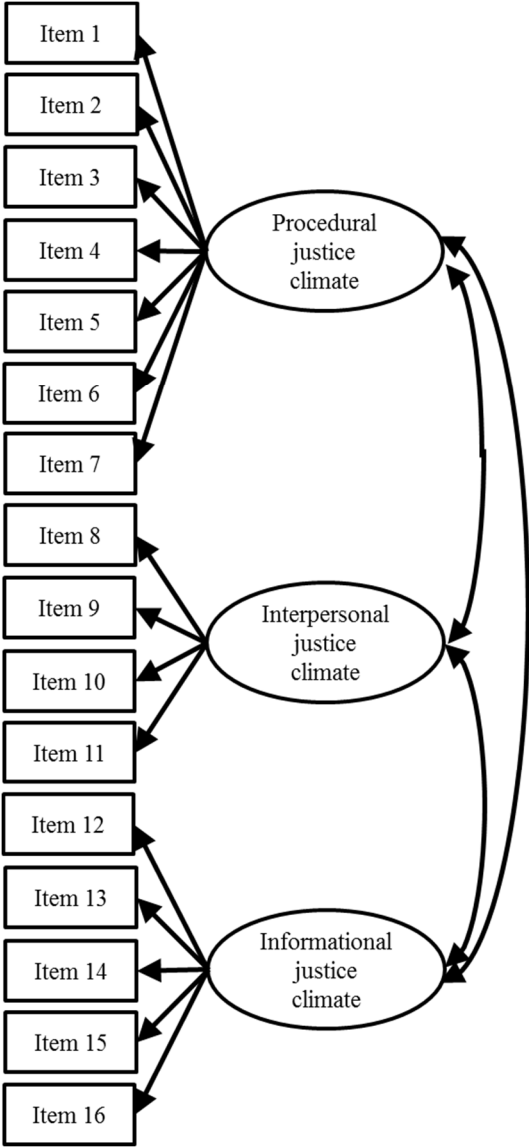


Figure 2a

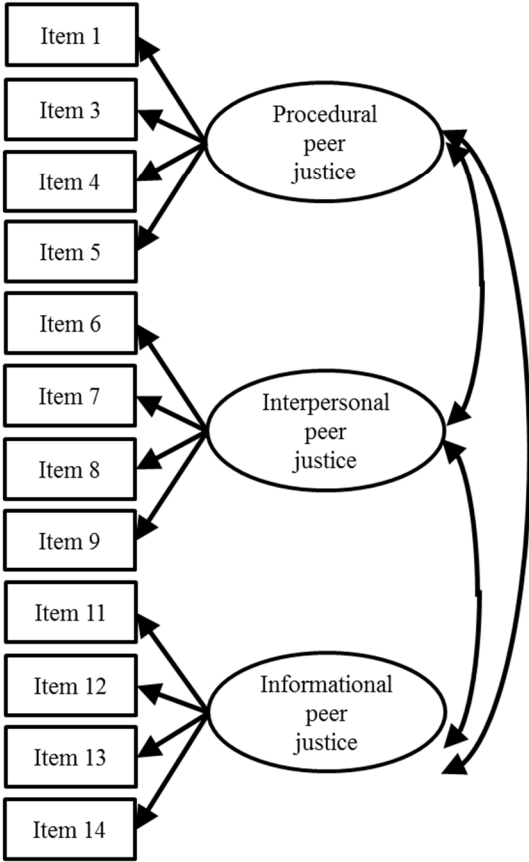


Figure 2b

Figure 2. Models tested in Step 2.

Table 1. *Standardized Confirmatory factor analysis (CFA) loading estimates*

			Procedural justice climate	Interpersonal justice climate	Informational justice climate
	<i>Means</i>	<i>SD</i>			
Item 1	5.31	.89	.88		
Item 2	5.15	.84	.89		
Item 3	4.70	.96	.90		
Item 4	5.19	.98	.90		
Item 5	4.97	.89	.93		
Item 6	5.19	.76	.79		
Item 7	5.56	.79	.89		
Item 8	6.04	.69		.94	
Item 9	6.20	.63		.98	
Item 10	6.18	.64		.96	
Item 11	5.39	1.01		.44	
Item 12	5.57	.80			.83
Item 13	5.53	.86			.95
Item 14	5.54	.78			.96
Item 15	5.37	.86			.97
Item 16	5.40	.86			.96
AVE			.78	.74	.88
Reliability estimates			.96	.89	.97

AVE = Average variance extracted. All factor loading estimates were significant ($p < .01$).

Table 2. *Standardized Confirmatory factor analysis (CFA) loading estimates*

			Procedural peer justice	Interpersonal peer justice	Informational peer justice
	<i>Means</i>	<i>SD</i>			
Item 1	3.89	.53	.82		
Item 3	3.59	.59	.84		
Item 4	3.75	.55	.91		
Item 5	3.62	.57	.94		
Item 6	3.47	.85		.80	
Item 7	4.00	.53		.73	
Item 8	4.04	.57		.93	
Item 9	4.18	.53		.88	
Item 11	3.92	.50			.85
Item 12	4.13	.42			.88
Item 13	3.93	.48			.92
Item 14	3.98	.44			.94
AVE			.77	.70	.81
Reliability estimates			.93	.90	.94

AVE = Average variance extracted. All factor loading estimates were significant ($p < .01$).

Table 3. *Standardized Confirmatory factor analysis (CFA) loading estimates*

	<i>Means</i>	<i>SD</i>	Justice climate	Peer justice
Procedural justice climate	5.31	.89	.75	
Interpersonal justice climate	5.15	.84	.88	
Informational justice climate	4.70	.96	.90	
Procedural peer justice	5.19	.98		.95
Interpersonal peer justice	4.97	.89		.99
Informational peer justice	5.19	.76		.95
AVE			.72	.93
Reliability estimates			.97	.97

AVE = Average variance extracted. All factor loading estimates were significant ($p < .01$).

Even though these findings satisfactorily demonstrate the distinction between justice climate and peer justice, we ran an additional CFA without marking any differences regarding the two types of unit-level fairness. To this end, we created a second-order structure—i.e., justice as a whole—, where the six facets of justice—procedural justice climate, interpersonal justice climate, informational justice climate, procedural peer justice, interpersonal peer justice, and informational peer justice—loaded independently from their source. The difference between models revealed that the model that considered the two types of unit-level fairness separately yielded a better fit ($\chi^2 = 509.70$, $df = 344$, $p < .01$; RMSEA = .079; CFI = .979; NNFI = .976; SRMR = .217; Δ RMSEA > .015; Δ CFI > .010; Δ NNFI > .010; Δ SRMR > .030).

In spite of the high correlations between the justice facets—procedural justice climate, interpersonal justice climate, informational justice climate procedural peer justice, interpersonal peer justice, and informational peer justice—, Table 4 shows that the correlations between justice climate and its facets are higher than the correlations between justice climate and the facets of peer justice. The same goes for peer justice; the correlations between peer justice and its facets are higher than the correlations between peer justice and the facets of justice climate.

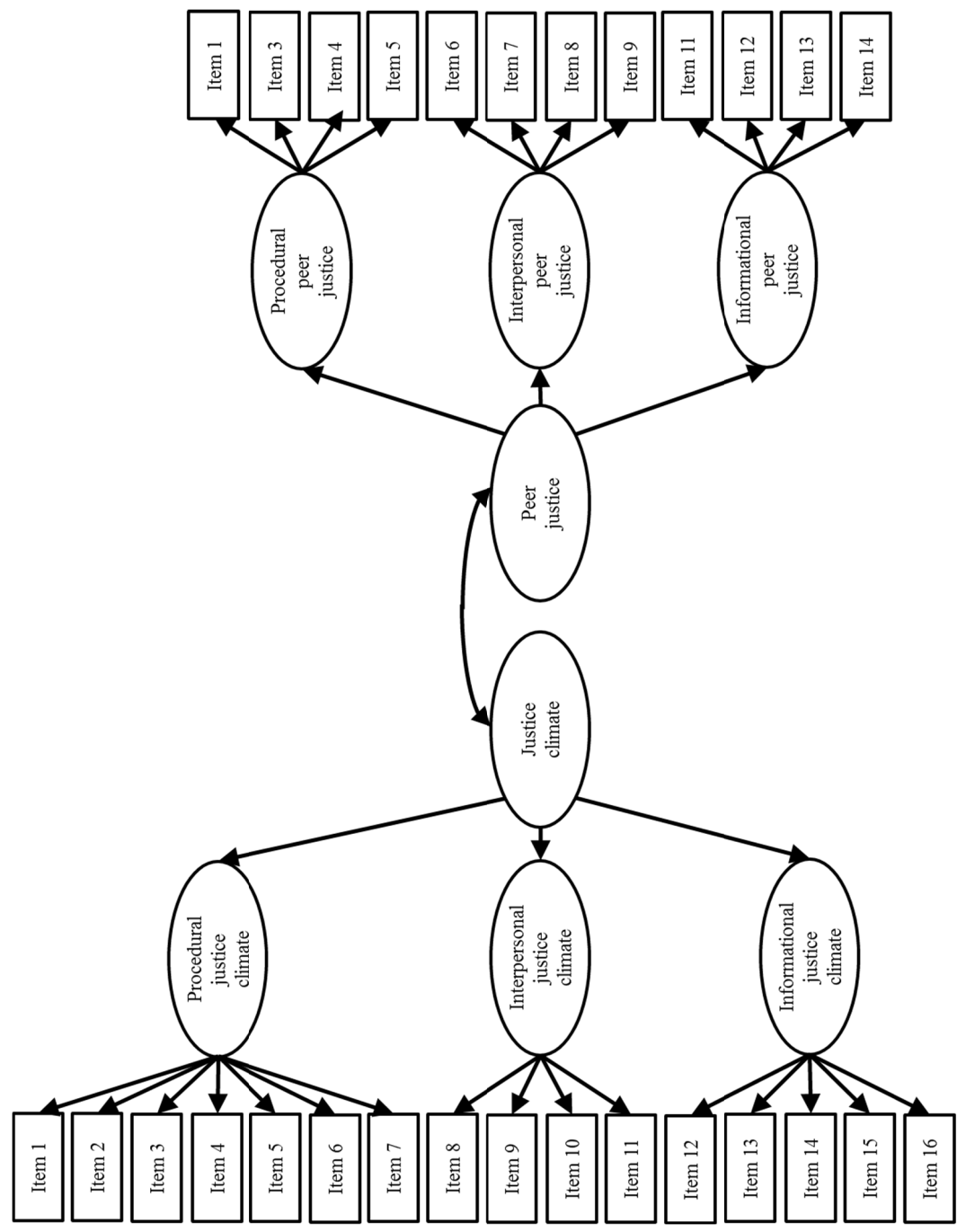


Figure 3. Model tested in Step 3.

Table 4. Means, standard deviations, and correlations

	Mean	SD	1	2	3	4	5	6	7	8
Procedural justice climate	5.15	.79	-							
Interpersonal justice climate	5.95	.61	.65**	-						
Informational justice climate	5.48	.78	.65**	.76**	-					
Procedural peer justice	3.71	.50	.53**	.26*	.34**	-				
Interpersonal peer justice	3.92	.57	.47**	.24*	.25**	.87**	-			
Informational peer justice	3.99	.42	.41**	.21	.31**	.86**	.84**	-		
Justice climate	5.53	.65	.87**	.89**	.91**	.37**	.37**	.36**	-	
Peer justice	3.87	.47	.50**	.25*	.32**	.96**	.96**	.94**	.41**	-

$n = 79$. * $p < .05$. ** $p < .01$.

Table 5. *Results of Random Coefficient Modeling Analyses*

	Reciprocity with the supervisor			Reciprocity with coworkers		
	Null model	Model 1	Model 2	Null model	Model 1	Model 2
Level 1 (<i>n</i> = 532)						
Intercept	2.46** (.06)	2.46** (.06)	2.45** (.05)	2.94** (.05)	2.93** (.06)	2.93** (.04)
Gender		-.01 (.10)	.01 (.09)		.06 (.08)	.08 (.08)
Organizational tenure		-.02 (.01)	-.02 (.01)		-.02 (.01)	-.01 (.01)
Level 2 (<i>n</i> = 79)						
Work-unit size		.02 (.02)	.02 (.02)		.02 (.02)	.03 (.02)
Justice climate			.50** (.07)			-.04 (.06)
Peer justice			.04 (.09)			.61** (.08)
Within-unit variance (σ^2)	.588	.556	.553	.481	.442	.438
Between-unit variance (τ_{00})	.119	.119	.036	.085	.085	.035
Within-unit R2		5.44%	5.95%		8.11%	8.94%
Between-unit R2		.00%	69.75%		.00%	58.82%
Number of free parameters	3	11	13	3	11	13
Model deviance (χ^2)	1293.88	1279.18	1230.84	1180.76	1160.16	1115.88
Δdf	---	8	2	---	8	2
$\Delta \chi^2$	---	14.70	48.34**	---	20.60**	44.28**

Standard errors are reported in parentheses. * $p < .05$. ** $p < .01$.

Step 4: Predictive Validity of Justice Climate and Peer Justice

In order to examine the predictive validity of justice climate and peer justice, we tested the relationship of these constructs with two types of reciprocity, reciprocity with the supervisor and reciprocity with coworkers. Whereas justice climate and peer justice are unit-level constructs, perceive reciprocity with the supervisor and with coworkers are individual-level constructs. Thus, to adequately test these cross-level relationships we used hierarchical linear modeling (HLM). This methodology allows the simultaneous examination of the effects of variables at both the individual and unit levels (Raudenbush & Bryk, 2002). Due to potential effects of employees' gender, organizational tenure, and work-unit size on relationship quality (e.g., Bauer & Green, 1996; Colquitt et al., 2002; Wayne, Liden, & Sparrowe, 1994), we controlled the effects of these variables. Moreover, we followed Hofmann and Gavin (1998) recommendations and grand-mean centered all independent variables, and Bliese (2002) to compute the variance explained by each set of predictors [$1 - (\text{variance with predictors} / \text{variance without predictors})$].

Before testing the cross-level effect of justice climate and peer justice, we examined the degree of between-group variance in the two dependent variables. Model 0 (null model) revealed that 16.83% of the variance in reciprocity with the supervisor and 15.02% of the variance in reciprocity with coworkers reside in between units ($\tau_{00} = .119$, $\chi^2 = 1293.88$, $df = 3$, $p < .01$; $\tau_{00} = .085$, $\chi^2 = 1180.76$, $df = 3$, $p < .01$; respectively). As Table 5 shows, justice climate had a significant cross-level relationship with perceived reciprocity with the supervisor ($\gamma = .50$, $p < .01$), even after controlling for gender, organizational tenure, work-unit size, and peer justice. Peer justice had no effect on perceived reciprocity with the supervisor. In contrast, peer justice had a significant cross-level relationship with perceived reciprocity with coworkers ($\gamma = .61$, $p < .01$), even after controlling for gender, organizational tenure, work-unit size, and justice climate. Justice

climate had no effect on perceived reciprocity with coworkers. Altogether, these results support the predictive validity of justice climate and peer justice as these constructs behave distinctively when related to proximal versus distal variables such as reciprocity with the supervisor and reciprocity with coworkers.

4.5. Discussion

In the present study, we reexamined Li et al.'s (2013) hierarchical structure of justice climate and peer justice, which they originally validated separately for each construct and with data from US undergraduate students. To do so, we used data collected from health care organizations from Spain. This study is the first to simultaneously examine the structure of justice climate and peer justice and, thus, rigorously confirm the convergent and discriminant validity of these hierarchical constructs (see Figure 3). This study also represents the first intent to validate these measures with data collected within a formal work environment as the one provided by the health care industry. Similar to Li et al. results', we observed that justice climate and peer justice can be modeled as two distinct hierarchical—second-order—constructs. Finally, we also observed that justice climate and peer justice show a clear distinctive behavior when related to proximal versus distal variables such as reciprocity with the supervisor and reciprocity with coworkers. In the following sections we discuss the specificity of these results and its implications for the justice literature.

Aggregating the Facets of Justice Climate and Peer Justice

When working with shared perceptions, an important requirement for researchers is to justify that employees that work in the same unit report similar levels of the constructs being measured (e.g., justice climate, peer justice) and that units can be differentiated based on those same constructs (Kozlowski & Klein, 2000; Chan, 1998).

In our sample we did not observe sufficient levels of agreement for distributive perceptions. That is, whereas individuals within the same work unit reported similar perceptions for procedural justice climate, interpersonal justice climate, informational justice climate, procedural peer justice, interpersonal peer justice, and informational peer justice, they did not report similar perceptions for distributive justice climate and distributive peer justice. Even though the lack of agreement seems to be related to the distributive facet *per se* rather than to the source of justice, we believe that the interpretation of these results should be done separately for justice climate and peer justice. In the following paragraphs thus we provide a series of reasons that may help explain the lack of within-unit agreement shown by distributive justice climate and distributive peer justice.

Aggregating distributive justice climate. Social information processing theory (SIP) argues that employees do not operate in a vacuum. Instead, individuals use information modeled from others which, over time, results in shared perceptions about practices, values, and norms (Salancik & Pfeffer, 1978). Roberson (2006a, 2006b) argues that these shared perceptions are reached through a process of collective sense-making. As explained by Roberson (2006a), the social interaction that takes place between unit members may facilitate social comparison and the creation of shared evaluations of the unit's treatment. More important, Roberson demonstrated that the more time spent interacting—sense-making—the higher the convergence of unit members' perceptions. That is, “given that longer interaction times provide additional opportunities for social influence and comparison, (...) the duration of team sense-making discussions may be influential in the development of team justice climates” (Roberson, 2006a, p. 189).

Based upon our results, we argue that the unit members from our sample may have not engaged long enough in sense-making activities directed towards the allocation of

resources done by authority figures (distributive justice climate). We have identified two reasons that may have influenced the time individuals employ to discuss the distribution of outcomes. As we describe next, the first reason has to do with the nature of distributive justice perceptions. The second reason has to do with a contextual factor of the Spanish organizations that attend persons with intellectual disability.

The first reason involves the two justice facets most studied among the fairness literature, distributive and procedural justice (e.g., Ambrose & Arnaud, 2005). Interestingly, the amount of studies that measured these facets greatly varies depending on the level of analysis. Based on Colquitt et al.'s (2013) meta-analysis conducted at the individual-level of analysis, we observed that around 76% of the studies that met their inclusion criteria measured the procedural facet of justice and around 67% measured the distributive facet. Whitman et al.'s (2012) meta-analysis conducted with unit-level data, however, showed the opposite pattern. Whereas 92% of the studies that met the inclusion criteria for Whitman et al.'s meta-analysis measured the procedural facet, only 24% measured the distributive facet of justice. Despite the relative importance attributed to these facets for each level of analysis, the substantive variation of these percentages, in addition to our results, questions the nature of the level of distributive justice climate. It is not clear whether distributive justice does in fact emerge as a climate *per se* or if it remains as an individual perception. It is possible that the personality, job role, social status, and the individual trajectory of each employee influences the way each unit member assesses the fairness in which outcomes are allocated (e.g., Bangwayo-Skeete, Rahim, & Zikhali, 2013; Barr, Burns, Miller, & Shaw, 2011; Birnbaum & Stegner, 1979; Cappelen, Hole, Sorensen, & Tungodden, 2007; Stouten, Kuppens, & Decoster, 2013). In fact, self-serving bias research has shown that distributive justice judgments are often biased (e.g., Messick & Sentis, 1979; Konow, 2000; Ross & Sicoly, 1979; Thompson &

Loewenstein, 1992). Hence, it is feasible that biased perceptions of distributive justice may affect the interaction processes that take place when coworkers engage in sense-making activities (e.g., Barr et al., 2011). Because of the existence of biased perceptions, employees might require more time and clarification of the criteria to appraise the distribution of resources as just or unjust than they do for other facets of justice (e.g., procedural justice climate). In other words, the existence of biased perceptions might require a more thorough sense-making process to develop shared perceptions of distributive justice. Thus, translated to scholarly research, biased perceptions of distributive justice might be more detrimental for the study of distributive justice climate than for the study of individual-level distributive perceptions. Therefore, it is important that future research addresses the emerging nature of unit-level distributive justice. To do so, we propose scholars should not only consider the *functional approach* to unit-level phenomenon but also the *structural approach*. Whereas the *functional approach* emphasizes the effects of a unit-level construct within an organizational system, the structural approach posits that unit-level constructs originate from individuals and are shaped through a social interaction process between members within the same unit (Morgeson & Hofmann, 1999). The present study provides an example of the difficulties to capture this occurrence, that is, the structural emergence of distributive justice climate. As commented throughout this section, we did not observe sufficient within-unit agreement to justify that a climate of distribute justice had emerged.

The second reason that may help explain why unit members may have not engaged long enough in sense-making activities of distributive justice climate perceptions has to do with a contextual factor of the organizations that participated in the study, that is, Spanish organizations that attend persons with intellectual disability. This contextual factor is the existence of specific collective agreements—also known as collective

bargaining agreements—that regulate the activities of the Spanish health care organizations that provide attention to persons with intellectual disability. These agreements, which are generally negotiated every five years, determine employees' timetables, wages, holidays, among other practices and norms (e.g., BOE, 2012). This factor seems to promote an equality principle among all the stakeholders related to these organizations. Employees' benefits—such as increases in salary—are fixed by these collective agreements that disregard the exact amount of effort employees put into their jobs (e.g., BOE, 2006, June 27). Equality theory (Leung & Bond, 1984) though, differs from the most common approach to operationalize distributive perceptions (e.g., Ambrose & Arnaud, 2005; Colquitt, 2001) which we used to measure distribute justice climate in this study. This later theory has been referred as equity theory and dictates that employees are compensated—for instance with an increase of their salary, a promotion, a newer computer—based upon the size of their contribution—for instance, the number of work hours, education degree, experience, or skills (Adams, 1963, 1965). In an industry as specific as the one described in this study where most of the norms seem to have been formulated based on an equality principle, employees might be more reluctant to engage in social interactions aiming to discuss if the benefits or resources they receive are fair based on the contributions they make. The social nature of these organizations might even amplify the unwillingness of their employees to discuss their distributive justice climate perceptions. Consequently, since employees from these organizations might not engage as much as they would do in other sectors in interactions about the fairness of the outcomes they receive, it is reasonable to expect each of them will have different opinions. That is, this lack of collective sense-making would translate into a low level of agreement within units.

Aggregating distributive peer justice. To our knowledge only two studies have measured facets of peer justice. These studies were conducted by Cropanzano et al. (2011) and Li et al. (2013) and both used data from undergraduate students, who might not have been sufficiently familiarized with the full array of work benefits (e.g., salary, promotions, working hours) that characterize formal work settings. More important, only Li et al. measured distributive peer justice. Even though variables from student samples tend to show higher homogeneity than variables from formal work environments (Peterson, 2001), Li et al. reported that distributive peer justice did not show an r_{wg} index above the typically cut off value of .70 (LeBreton & Senter, 2008); their r_{wg} index for this variable was marginal, .66.

Taken together, Li et al. (2013) and the results of the present study raise a concern originally indicated by Ambrose and Schminke (2007), who questioned the relevancy of some of the peer justice facets. According to these scholars, coworkers do sometimes make allocation decisions (i.e., distributive justice). Most of the times, however, allocation decisions are not the role of coworkers. Typically, these decisions depend on the organization and the supervisor. In the organizations from our sample, the allocation decisions of work units may have been limited not only by the organization or the supervisor but also by the protocols unit members have to follow when attending their customers (i.e., persons with intellectual disability). If unit allocation decisions were not entirely within the reach of coworkers, then employees may have experienced difficulty to assess distributive peer justice affecting, in turn, the level of within-unit agreement shown by unit members.

As an additional remark, we argue that in organizations as the ones used in the present study, instrumental assets are not the only resources being allocated. In these service organizations the encounters between employees and customers are characterized

by a lengthy duration, an affective implication, and a close spatial proximity (Price, Arnould, & Tierney, 1995). It is understandable thus, that the emotional assets being transferred become more salient. That is, in work units where employees have to work together while closely attending persons with intellectual disability, the allocation of emotional assets within the unit might become considerably more important than in other service organizations such as hospitals, where encounters with customers (i.e., patients) are much briefer and separated in time. How could this have influenced the level of agreement of individuals' distributive peer justice perceptions? By not considering items referring to the allocation of socio-emotional assets within the unit, we might have disregarded an important aspect of the phenomenon of distributive peer justice climate.

A final remark that may help explain the low level of within-unit agreement applies to both distributive peer justice and distributive justice climate. As explained for justice climate, it seems that research on distributive justice differs depending on the level of interest. Distributive justice has been thoroughly examined at the individual-level of analysis (see Colquitt et al., 2013) but, as depicted by Li and Cropanzano (2009), “there is little research on collective perceptions of distributive justice” (p. 3) (see also Whitman et al., 2012). Disregarding if the source of justice is within the unit (peer justice) or outside the unit (justice climate), it might be possible that individuals do not engage in social interactions about their distributive perceptions as frequently as they do for other facets of justice. Since employees' compensations represent an important aspect of their distributive perceptions, we draw on this literature to set an example. U.S. employees, for instance, seem to favor pay secrecy (Hrnext.com Survey, 2001). More important, many organizations tend to promote pay secrecy as a way to motivate their employees and reduce workplace conflict (Colella, Paetzold, Zardkoohi, & Wesson, 2007). Thus, employees and organizations seem to jointly reinforce a culture where no compensation

information is shared. This “cultural taboo regarding money”, as indicated by Trachtman (1999), may extend to other benefits and resources employees receive in the workplace such as a new computer or a bigger office. In environments where there is an implicit understanding amongst coworkers not to discuss their compensation, employees would probably avoid sharing their individual perceptions on distributive justice. During social interactions, employees would rather share their perceptions on other topics with less cultural burden. In consequence, we believe employees would not engage in discussions about the outcomes *per se* they receive as frequently as they would engage in discussions about how those outcomes are allocated (procedural justice), if they are treated with respect (interpersonal justice), or if they receive adequate explanations for the outcomes they receive (informational justice). Future research interested in the process of emergence of the different justice facets should further examine this line of inquiry.

First-Order Approach Versus Second-Order Approach

Our results showed that, within Spanish health care employees, justice climate can be represented as a three first-order construct—procedural, interpersonal, and information justice climate—or as a second-order—hierarchical—, such that an overall perception of justice climate is indicated by the different justice facets. The results for peer justice were different. Despite showing a good fit to the data, the facets of peer justice presented strong correlations that prevent us from arguing that there is sufficient differentiation among them and, in turn, compel us to discard the first-order approach. For the second-order approach, however, the relationship among procedural peer justice, interpersonal peer justice, and informational peer justice was accounted for by the higher-level construct peer justice. We believe thus that, within Spanish health care employees, peer justice is best represented as a second-order construct. These results provide useful insights to the justice literature.

Since our results for justice climate replicate those found by Li et al. (2013), we believe that researchers interested in this construct can operationalize it by using either a first-order approach (where the focus is put on the facets of justice climate; see Figure 2a) or a second-order approach or overall approach (where the focus is put on justice climate as a composite; see Figure 3). As previously suggested by Li and colleagues, this decision should be guided by theory and pragmatic reasons.

When interested in peer justice, researchers should be more careful. Our results, do not support the findings by Li and colleagues obtained by analyzing data collected from undergraduate students (see Figure 2b). Our results only support the second-order structure of peer justice (see Figure 3) because the three-factor structure of peer justice did not show sufficient discriminant validity among its factors. That is, unit members did not seem to adequately distinguish between procedural, interpersonal, and informational peer justice. Despite the lack of discriminant validity, the three-factor model did show a good fit to the data. These results might be explained by Rupp and Paddock's (2010) dynamic model of justice which integrates different frameworks to help understand the development of source-based climates—such as peer justice or justice climate—over time.

According to Rupp and Paddock's (2010) dynamic model, during their daily work employees individually experience justice-related events in the form of a facet of justice (e.g., interpersonal justice). This experience is then translated into an emotional reaction (Weiss & Cropanzano, 1996) which, in turn, triggers a cognitive process that requires the identification of the perpetrator of the (in)justice (e.g., the supervisor, coworkers, customers) (Lind, 2001). Thus, over time, all justice-related events, whether related to outcomes, processes, interpersonal treatment, or quality of information, are categorized into source-based justice perceptions (e.g., supervisory-based justice, coworker-based

justice, customer-based justice). These source-based justice perceptions are then aggregated to the work unit level through a parallel socialization process, such as the one previously described by social information processing theory (Salancik & Pfeffer, 1978). This social process results in what have been referred as multifoci justice climates or source-based justice climates, such as the ones examined in this study (justice climate and peer justice). The good fit to the data of the three-factor structure of peer justice and the lack of discriminant validity of this model then could be two sides of the same coin that might be explained by the cross-sectional nature of our data.

As depicted by Rupp and Paddock's (2010) model, as time goes by, the salience of justice events is transferred to the salience of the source of justice. Thus, if we were to measure individual perceptions of coworker-based justice in newly formed teams, the discriminant validity of the facets would be greater than if we were to measure it in more experienced teams. Based on these arguments it is possible to conceive the legitimacy of a model showing good fit to the data and a simultaneous lack of discriminant validity, as shown by the three-factor model of peer justice. When measuring shared perceptions of coworker-based justice—peer justice—with a cross-sectional design as we did in the present study, it is possible to observe that the facets of peer justice are valid indicators of peer justice (evidenced by the good fit to the data). This might be explained because the facets represent the most archaic part of the development of justice perceptions, the events. That is, all employees experienced in some way those justice events. The simultaneous lack of discriminant validity of the facets of peer justice might be explained because, over time, the source of justice has become more salient. That is why if we had focused solely on newly formed units, we would have probably observed a greater discriminant validity between the facets of peer justice. Based on Rupp and Paddock's model, these results might have affected peer justice and not justice climate because

employees simply spend much more time interacting with their coworkers than they do interacting with their authorities. Hence, future research interest in the facets of peer justice should pay special attention to the importance of considering the time employees have already spent working as a unit. This is particularly important for scholars interested in organizations that present similar characteristics as the ones used in this study, where employees are required to work closely together in order to fully attend their customers.

Predictive Validity of Justice Climate and Peer Justice

As a final contribution, we explored the behavior of justice climate and peer justice within a nomological network that consisted of reciprocity with the supervisor and reciprocity with coworkers. As expected, justice climate presented a stronger relationship to reciprocity with the supervisor than the relationship between peer justice and this dependent variable. Similarly, peer justice presented a stronger relationship to reciprocity with the coworkers than the relationship between justice climate and this dependent variable. These results suggest that employees are not only capable of distinguishing between justice climate and peer justice, but also that these climates behave distinctively within their nomological network.

Limitations and Strengths

As with any research, the present study presents some limitations. The main limitation of this study refers to its cross-sectional nature. As previously discussed, we believe that a longitudinal assessment of justice climate and peer justice, would have permitted us to test if the factorial structures of these constructs vary over time. This represents an important avenue for future research.

The nature of the study sample (i.e., organizations for the attention to persons with intellectual disability) has an important advantage. Since employees are required to work

closely together, the manner in which these organizations attend their customers facilitates the study of unit-level phenomena. This specific sector, however, also presents some contextual factors—which were thoroughly discussed—that might have influenced our results (e.g., the existence of collective agreements, and the social nature of organizational goals). Despite those factors, the data collected from these Spanish organizations was useful to replicate the findings by Li et al. (2013), which they reported based on a sample of U.S. undergraduate students.

Despite these limitations, this study provides evidence of the validity of justice climate and peer justice as two hierarchical constructs that evidence the importance of considering different sources of fairness within the workplace. In addition to the more consolidated research on justice climate, the validation of peer justice as a second-order construct represents an important contribution as in most service organizations services are delivered by coworkers working together (e.g., Gilson, Shalley, & Blum, 2001). In these sense, in addition to justice climate, peer justice offers a key opportunity to explore work-unit processes and outcomes.

**5. ESTUDIO 2: “FAIRNESS AND PERFORMANCE AT THE UNIT LEVEL:
THE MEDIATING ROLE OF SERVICE CLIMATE”**

5.1. Abstract

Recent studies suggest that work units form two types of fairness climates. Whereas justice climate refers to the treatment work units receive from outside the unit—authority figures—, peer justice refers to the treatment work units receive from within the unit—coworkers. Based on effort-reward imbalance model we tested a structural equation model in which justice climate and peer justice are related to the performance of the work unit, through the mediating role of service climate—a critical predictor of performance within service organizations. We tested this model with a multi-informant design with a sample of 532 employees and 79 supervisors nested in 79 health care organizations. As expected, justice climate and peer justice significantly predicted unit-level performance, through the mediating role of service climate. We discuss the theoretical implications of these findings.

Keywords: Justice climate, peer justice, performance, service climate.

5.2. Introduction

During the last 15 years, organizations' increased reliance on groups has motivated justice scholars to focus their research on group settings (Cropanzano & Schminke, 2001). This increased concern on unit-level justice can be evidenced by Whitman, Caleo, Carpenter, Horner, and Bernerth's (2012) meta-analysis. In their study, Whitman et al. suggest that managers should be aware of employees' shared perceptions of justice since it is an important predictor of their attitudes, processes, withdrawal behaviors, and performance. Despite its importance, most research conducted at the unit-level has focus primarily on authority figures as the source of (un)fair treatment. Justice scholars have recently argued though that work units do not only mind the treatment they receive by their authorities—this has been called *justice climate* (Colquitt, Noe, & Jackson, 2002)—but also care about the treatment they receive from their coworkers—this has been called *peer justice* (Cropanzano, Li, & Benson, 2011). The question that now rises is, do justice standards applied to coworkers (peer justice) facilitate unit processes that lead to high levels of performance beyond the justice standards (justice climate) that apply to managers and the organization?

Several studies provide evidence of the relationship of the path from justice climate to performance (Colquitt et al., 2002; Lipponen & Wisse, 2010; Luo, 2008; Naumann & Bennett, 2002). To our knowledge, however, only two studies have examined the path from peer justice to performance and have done so with data collected from university students. On one hand, Cropanzano et al. (2011) reported a significant path from peer justice to performance, but did not controlled for the effect of justice climate. On the other hand, Li, Cropanzano, and Bagger (2013) did controlled for the effect of justice climate, but failed to observe a significant link between peer justice and performance, and even between justice climate and performance. In this study we aim to

deepen our understanding of the path from peer justice to performance, while controlling the effect of justice climate. In doing so, the present study makes three contributions to the fairness literature.

The first contribution of this study is to reexamine the path from justice climate and peer justice to performance in order to provide clarification on the existing mixed evidence particularly regarding the relationship with peer justice. To that end, we propose a model based on effort-reward imbalance model (Siegrist, 1996) which maintains that effort at work is spent as part of a social contract that reciprocates effort by fair treatment.

As a second contribution we provide a different sample than the one used in the two previous studies that examined the peer justice-performance link (Cropanzano et al., 2011; Li et al., 2013). The few studies that tested this link did it with samples that consisted of university students. This represents an important concern since evidence suggests that direction and magnitude of effect sizes derived from student samples frequently differ from those derive from non-students (Peterson, 2001). Hence, our second contribution to the fairness literature is to test a model of unit-level fairness with data collected in a formal work environment such as the one provided by the service industry. Specifically, we test our model with a sample composed by employees working in health care organizations in direct contact with customers. This represents an ideal setting within the service industry for assessing unit-level fairness since employees have to work coordinated in order to attend their customers, facilitating the emergence of shared justice perceptions.

Based on numerous studies that have stressed out the importance of the context in which desired outcomes are measured (e.g., Griffin, Neal, & Neale, 2000; Kane, 1997), the third contribution of this study is to provide managers and scholars with a model of unit-level fairness that adequately fits the health care industry. This contribution is

twofold. First, since employees working in this sector are required to work closely together to fully satisfy customers' demands, we measured performance as a unit-level outcome rather than an individual outcome. Hence, we asked supervisors to rate their work unit performance as a whole. Past research suggests that supervisor ratings are the most common and reliable way to measure performance (Conway & Huffcutt, 1997; Viswesvaran, Ones, & Schmidt, 1996). Second, we propose a context-specific mediator to examine the mechanism through which unit-level fairness affects unit-level performance in this industry. To deliver high levels of service quality, service organizations promote specific service behaviors aiming to increase work units performance. Over time thus, a service climate emerges. This specific climate has been defined as the employee's shared perceptions of the practices, procedures, and behaviors that get rewarded, supported, and expected with regard to customer service and customer service quality (Schneider, White, & Paul, 1998). Past research suggests that service climate is an important predictor of performance within service organizations (e.g., Borucki & Burke, 1999; Liao & Chuang, 2004, 2007; Salanova, Agut, & Peiró, 2005) because it guides employees' behaviors when interacting with customers. Based on previous research that argues that what happens internally in an organization has an effect on the behavior of employees in their interactions with customers (Schneider, Salvaggio, & Subirats, 2002), we expect that the fair treatment received by work units—from authorities and from within its members—will enhance work units' perceptions of the service climate—and the behaviors it endorses—promoted by the organization. Thus, we measure service climate to articulate the path from unit-level fairness to unit-level performance. Even though research suggests service climate may be a mechanism through which justice climate enhances work-unit outcomes (e.g., Simons & Roberson, 2003), there is no available information on service climate as a mediator between peer

justice and unit-level performance. This is an important query within service research as more and more organizations are providing their services through collective efforts that require employees to repeatedly engage in social interactions with each other.

To sum up, we propose and test a model of unit-level fairness within the service industry that explores the links from two distinct shared justice constructs—justice climate and peer justice—to unit-level performance through the mediating role of service climate. In the sections to follow we will further describe the proposed model, our conceptual framework, and the hypotheses guiding this study.

Unit-Level Fairness

Overall justice. Research has shown that employees judge fairness based on their experiences with resource distribution (*distributive justice*), with the processes through which those resources are allocated (*procedural justice*), the dignity and respect they receive (*interpersonal justice*), and the extent to which procedures and events are explained thoroughly (*informational justice*; Colquitt, 2001). Even though these facets are conceptually distinct (see Cohen-Charash & Spector, 2001; Colquitt, Conlon, Wesson, Porter, & Ng, 2001), justice scholars have begun to consider an overall approach to justice as an alternative to the more traditional perspective (e.g., Ambrose & Schminke, 2009; Choi, 2008; Greenberg, 2001; Hauenstein, McGonigle, & Flinder, 2001; Holtz & Harold, 2009; Jones & Martens, 2009; Kim & Leung, 2007; Lind, 2001). Following this line of work, Li et al. (2013) recently reported that justice climate and peer justice could be better modeled through a hierarchical structure were justice facets are combined into a single second-order indicator—justice climate or peer justice. In this study we follow this overall approach to unit-level fairness as it facilitates a more parsimonious approach to the sources of justice (see Ambrose & Schminke, 2007).

Justice climate and peer justice. Even though justice perceptions generally refer to the way employees are treated by an authority figure (Colquitt, Zapata-Phelan, & Roberson, 2005), research on this field has identified other sources of fairness. One of those sources are the coworkers or peers (Branscombe, Spears, Ellemers, & Doosje, 2002; Lavelle, Rupp, & Brockner, 2007; Lavelle, Brockner, & Konovsky, 2009). Unit-level research has built upon these findings and distinguished justice climate from peer justice.

Justice climate refers to how a group of employees collectively evaluates the treatment they receive from an authority figure (e.g., Colquitt et al., 2002). As depicted by Whitman et al.'s (2012) meta-analysis, justice climate represents a key predictor of relevant outcomes, such as commitment, job satisfaction, citizenship behaviors, cooperative behaviors, absenteeism, turnover, theft, and profit, among others. Moreover, the study of this variable has provided researchers with a solid framework for understanding organizational phenomena including leadership (e.g., Cho & Dansereau, 2010), the dynamics of organizational change (e.g., Caldwell, Liu, Fedor, & Herold, 2009), and the management of strategic relationships (e.g., Johnson, Korsgaard, & Sapienza, 2002).

Peer justice refers to “the shared perceptions of the extent to which unit members treat each other fairly” (Cropanzano, Li, & James, 2007, p. 22). Despite its recent origin, research on peer justice has already demonstrated that the way coworkers treat one another has important consequences. For instance, Cropanzano, Walumbwa, and Aryee (2013) showed that peer justice was related to group ethical and learning behavior, even after controlling for the effect of its counterpart, justice climate. In a previous study, Cropanzano et al. (2011) showed that peer justice promoted effective team processes, which in turn promoted high levels of citizenship behaviors and performance. Despite showing that peer justice enhances performance levels, Cropanzano et al. (2011) did not

account for the possible effect of justice climate. In a later study conducted by Li et al. (2013), where researchers also accounted for justice climate, nor justice climate nor peer justice presented relationships with performance. These mixed results prevent fairness scholars from confirming or disconfirming the relevance of peer justice for promoting behaviors and attitudes that help to increase performance levels. In this study, we test the path from justice climate and peer justice to unit-level performance within a sample of employees working in health care organizations. Moreover, we examine the unit-level fairness-unit-level performance path through the mediating mechanism of service climate, a key variable within the service industry.

Service Climate

Service climate has provided a useful indicator that helps organizations measure if their core values and beliefs about service are present at the bottom line (Horwitz & Neville, 1996). Hence, organizations that consider service quality as a strategic imperative can use service climate to assess if their employees perceive the importance of service excellence. The significance of service climate relies on its role as key linkage in translating internal practices into organizational performance (Schneider, Ehrhart, Mayer, Saltz, & Niles-Jolly, 2005). In fact, several studies have reported a positive path from service climate to performance (e.g., Borucki & Burke, 1999; Liao & Chuang, 2004, 2007; Martínez-Tur, Tordera, Peiró y Potočnik, 2011; Potočnik, Tordera, Martínez-Tur, Peiró y Ramos, 2011; Salanova et al., 2005; Schneider et al., 1998).

Because performance can be enhanced in part by creating a high service climate among bottom line employees we will examine how two distinct types of unit-level justice—justice climate and peer justice—can jointly enhance this specific organizational climate. We address these paths in the following sections.

Theoretical Framework

Effort-reward imbalance model suggests that people at work that devote efforts to contribute to the performance of their organization expect to be rewarded in return for their efforts (Siegrist, 1996, 2002). If employees are not adequately rewarded, this model suggests they will react negatively. Evidence in this regard shows that employees that are not adequately rewarded react by showing negative attitudes and behaviors, such as low commitment and withdrawal behaviors (e.g., Godin & Kittel, 2004). We apply this logic to the service industry.

To promote high performance among their work units, service organizations communicate to their employees how they expect them to behave. As previously described, organizations do this by promoting a specific service climate which communicates the values and behaviors that work units need to follow when interacting with customers. Because fairness is an indicator of how much employees are valued members of any given social unit, been treated fairly acts as a reward (Tyler & Lind, 1992). From an effort-reward imbalance perspective, we believe that fairness as a reward can alter the effort work units put into the service climate promoted by the organization, as this climate conveys information regarding how the organization expects them to perform when interacting with customers. Even though we expect both justice climate and peer justice to be positively related to service climate, we argue that distinct mechanisms might be guiding each path.

For the case of justice climate, we expect a straight forward mechanism. We believe that the message carried by the fair treatment provided by authority figures—that is, that they represent an important part of the organization—, will be reciprocated by an increased attention to the service climate that the organization wants to promote. Evidence from unit-level fairness research supports this assertion since employees that perceive to

be treated fairly by their authorities tend to be more committed to the organization than employees that perceive unfair treatment from their authorities (Deery & Iverson, 2005; Liao & Rupp, 2005; Simons & Roberson, 2003; Walumbwa, Wu, & Orwa, 2008; Yang, Mossholder, & Peng, 2007).

For the case of peer justice, we expect a more internally-focused process. We believe that the message of esteem and mutual recognition among coworkers transmitted by high peer justice, will be reciprocated within the unit by an increased manifestation of unit-directed attitudes and behaviors that help the group achieve its goals. As service climate guides the work-units' goals in terms of what is expected of them, we expect that high peer justice will translate into higher perceptions of that construct. Several studies on intra-group respect provides preliminary support for this process, as this variable has been related to willingness to engage in group-serving behavior (Ellemers, Sleebos, Stam, & de Gilder, 2013; Simon & Sturmer, 2005), efforts to improve the group (Branscombe, Spears, Ellemers, & Doosje, 2002; Smith & Tyler, 1997; Spears, Ellemers, & Doosje, 2005), and cooperation in social dilemmas (De Cremer, 2002).

As explained so far, our model suggests that service climate perceptions may be perceived more strongly by work-units that receive fair treatment—high justice climate or high peer justice—than by work units that receive unfair treatment—low justice climate or low peer justice. Now, based on previous findings that suggest that service climate translates internal practices into performance (e.g., Schneider et al., 2005; Schneider et al., 1998), we expect that service climate will be positively related to performance. Based on this framework, we derive the following hypotheses.

Hypothesis 1: Service climate will mediate the relationship between justice climate and unit-level performance.

Hypothesis 2: Service climate will mediate the relationship between peer justice and unit-level performance.

In sum, our model suggests that service climate mediates the relationship between two types of unit-level fairness—justice climate and peer justice—and unit-level performance. We make an additional but important note to this model. Several studies have shown that moral behavior at one level trickles down to lower levels of the hierarchy (e.g., Mayer, Kuenzi, Greenbaum, Bardes, & Salvador, 2009; Schaubroeck et al., 2013). Following this line of research, Cropanzano et al. (2013) argued that analogously to how supervisors model the one-on-one treatment that they receive from the upper hierarchy, work units as a whole may also model the treatment they receive from their authorities (i.e., justice climate). Cropanzano and colleagues tested this proposition by modeling unit-level fairness as a causal path from justice climate to peer justice and observed that employees did actually modeled the behavior that the supervisor exhibited toward their work unit as a whole. Thus, in the present study, instead of modelling justice climate and peer justice simply as covariates, we model them following the trickle-down logic proposed by Cropanzano and colleagues. That is, we model unit-level fairness with a path from justice climate to peer justice (see Figure 4).

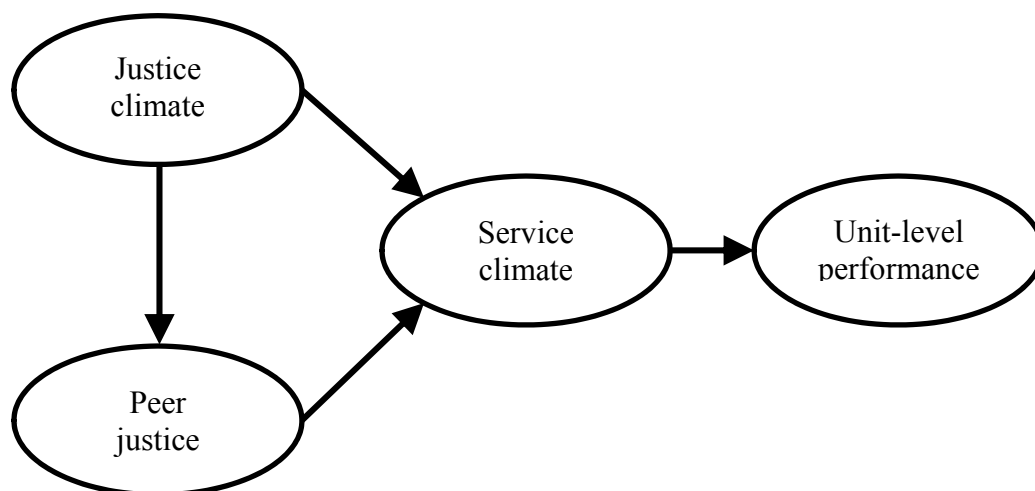


Figure 4. *Proposed model linking unit-level fairness, service climate, and unit-level performance.*

5.3. Method

Participants and Procedures

To test the proposed model, we recruited 98 organizations affiliated with the Confederation of Organizations for Persons with Intellectual Disability (FEAPS, Spain). Each organization is considered as a work unit of FEAPS, providing services to individuals with intellectual disability. From these 98 work units, we surveyed two different sources of information—760 employees and 98 supervisors. In order to participate in the study, employees had to have direct contact with their customers—people with intellectual disability and their legal guardians. Participation was confidential and voluntary. Organizations randomly chose their employees.

Since the study was based on aggregated measures, we used data only when there were three or more employee's usable surveys per work unit. After deleting cases with missing data the final sample was 532 employees nested in 79 work units and 79 supervisors. Work units ranged from 3 to 12 employees (mean = 6.73, $SD = 2.20$). The average age of employees was 35.24 years ($SD = 8.76$), their average organizational tenure was 6.91 years ($SD = 6.58$), 71.06% were women and 55.73% had earned a university degree. The average age of supervisors was 41.34 years ($SD = 8.81$), their average organizational tenure was 13.35 years ($SD = 8.81$), 52.56% were women and 92.31% had earned a university degree.

Measures

Justice climate. We assessed *justice climate* with the scale developed by Colquitt (2001) and validated in Study 1 of this doctoral thesis, using a 7-point Likert scale (ranging from 1, *strongly disagree* to 7, *strongly agree*). Seven items referred to

procedural justice, 4 items to interpersonal justice, and 5 items to informational justice. The alpha coefficient of justice climate was .97.

Peer justice. We assessed *peer justice* based on the scale developed by Li and Cropanzano (2009) and validated in Study 1, using a 5-point Likert scale (ranging from 1, *strongly disagree* to 5, *strongly agree*). Four items referred to procedural peer justice, 4 items to interpersonal peer justice, and 4 items to informational peer justice. The alpha coefficient of peer justice was .97.

Service climate. To assess service climate we used the reduced version of the Global Service Climate Scale, based on the scale developed by Schneider et al. (1998), and further validated by Carrasco, Martínez-Tur, Peiró, and Moliner (2012) with a Spanish sample collected among service organizations. One item was excluded in the analyses in order to preserve conceptual distinction, since we considered it a content-valid indicator of the measure unit-level performance. The final scale contained 3 items, which were scored on a 7-point rating scale ranging from 1 (completely agree) to 7 (completely disagree). An example item is “The overall quality of service provided by our organization to customers is excellent”. The alpha coefficient of justice climate was .79.

Unit-level performance. To assess work units’ performance we adapted the 3-item scale developed by Peccei and Rosenthal (2001) and further validated by Cheung and To (2010). Since we were interested on work-unit performance, instead of asking employees for their individual self-report performance we asked the supervisor of each work unit to assess their unit’s performance. All items were scored on a 7-point rating scale ranging from 1 (completely agree) to 7 (completely disagree). An example item is “The employees know how to solve the problems that may arise when working with persons with intellectual disability”. The alpha coefficient of justice climate was .87.

Control variable. Based on previous research that suggests a negative relationship between justice climate and work-unit size, we controlled the effect of work-unit size (Colquitt, Noe, & Jackson, 2002). We also controlled supervisor tenure as this variable may influence supervisors' performance ratings (Castro, Douglas, Hochwarter, Ferris, & Frink, 2003).

Data Analyses

First, we examined the appropriateness of working with aggregated data. In order to do this, we followed two complementary approaches indicated in Kozlowski and Klein (2000): a consensus-based approach (calculation of the average deviation index, $AD_{M(J)}$; Dunlap, Burke, & Smith-Crowe, 2003) and a consistency-based approach (calculation of the intraclass correlation coefficient, $ICC(1)$, Lebreton & Senter, 2008). Additionally, we computed one-way analysis of variance (ANOVA) to ascertain whether there was between-unit discrimination among the studied variables (Chan, 1998).

After examining the appropriateness of aggregating the study variables, we followed Anderson and Gerbing's (1988) two-step approach to assess the adequacy of our hypothesized model. To that end, we run a series of confirmatory factor analyses (CFA) to test the fit of competing models.

Finally, we tested the proposed structural equation model using IBM SPSS AMOS 21's maximum likelihood procedure (Arbuckle, 2012). To assess model fit, we computed the following fit indices: the Root Mean Square Residual (RMSEA)—values smaller than .10 indicate an acceptable fit (Browne & Cudeck, 1993)—, Non-Normed Fit Index (NNFI)—values greater than .95 indicate good fit—Comparative Fit Index (CFI)—values close to .95 indicate good fit (Hu & Bentler, 1999)—Standardized Root Mean Square Residual (SRMR)—values greater than .10 indicate model rejection (Marsh, Hau, & Wen, 2004). Since chi-square largely depends on sample size (Cheung & Rensvold, 2002;

Meade, Johnson, & Braddy, 2008), scholars recommend to compare models based on more practical criteria. Cheung and Rensvold (2002) and Widaman (1985), for instance, suggest that an improvement in model fit should be supported by an increase of .010 in CFI or NNFI (Δ CFI and Δ NNFI). Chen (2007) suggests that a decrease of .015 in RMSEA (Δ RMSEA) or .030 in SRMR (Δ SRMR) also supports an improvement in model fit.

5.4. Results

Data aggregation

The within-unit agreement indexes for the studied work units were: for justice climate the mean $AD_{M(J)}$ was .78 (SD = .25) and the ICC(1) was .27; for peer justice the mean $AD_{M(J)}$ was .51 (SD = .16) and the ICC(1) was .34; and for service climate the mean $AD_{M(J)}$ was .71 (SD = .28) and the ICC(1) was .25. The results obtained by the ANOVAs showed significant between-unit discrimination: justice climate: $F(78, 453) = 3.55, p < .01$; peer justice: $F(78, 453) = 4.52, p < .01$; and service climate: $F(78, 453) = 3.26, p < .01$. Altogether, the variables of the present study showed sufficient levels of within-unit agreement and between-unit differentiation.

Descriptive Statistics

Means, standard deviations, coefficient alphas, and scale correlations are presented in Table 6. As depicted on this table, we examined the correlations between work-unit size and the variables from the proposed model. Since work-unit size was not correlated with any of the study variables, we determined that work-unit size could not serve as a problematic variable in our analyses (Becker, 2005). Thus, to conserve statistical power, we decided not to include work-unit size in the final analyses.

Table 6. Means, standard deviations, and correlations

	<i>Mean</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
Work-unit size	6.73	2.20	-					
Supervisor tenure	13.35	8.81	.10	-				
Justice climate	5.53	.65	.01	-.09	-			
Peer justice	3.87	.47	-.10	-.10	.41**	-		
Service Climate	5.16	.61	-.01	.09	.54**	.57**	-	
Performance	6.00	.69	-.08	.18	.17	.14	.32**	-

n = 79. * *p* < .05. ** *p* < .01.

Structural Equation Modelling

Measurement issues. Before testing our hypothesized structural model we run a CFA containing all the variables considered by our model. Based on previous recommendations (see Hall, Snell, & Foust, 1999), we used the facets of justice climate and peer justice as indicators of the superordinate constructs in order to maintain a favorable indicator-to-sample-size ratio. After examining the modification indexes, we added an error covariance between two indicators of justice climate: interpersonal justice climate and informational justice climate. This error covariance is consistent with previous research arguing that interpersonal and informational justice are subdimensions of interactional justice (see Bies & Moag, 1986; Colquitt, 2001). The results of the final model revealed an excellent fit to the data ($\chi^2 = 64.781$, $df = 47$, $p < .05$; RMSEA = .070; CFI = .971; NNFI = .960; SRMR = .061). This final model was an improvement over the model without the added error covariance ($\chi^2 = 92.55$, $df = 48$, $p < .05$; RMSEA = .109; CFI = .928; NNFI = .901; SRMR = .072; Δ RMSEA > .015, Δ CFI > .010, Δ NNFI > .010, Δ SRMR = .011). More important, the model with the covariance was an improvement over a model that forced all employees' indicators into one general factor ($\chi^2 = 181.13$, $df = 52$, $p < .05$; RMSEA = .178; CFI = .792; NNFI = .736; SRMR = .143; Δ RMSEA > .015, Δ CFI > .010, Δ NNFI > .010, Δ SRMR > .030) and an improvement over a model a model that forced all employee and supervisors' indicators into one general factor ($\chi^2 =$

291.41, $df = 53$, $p < .05$; RMSEA = .240; CFI = .615; NNFI = .521; SRMR = .190 (Δ RMSEA > .015, Δ CFI > .010, Δ NNFI > .010, Δ SRMR > .030), suggesting that respondents were able to differentiate among study variables.

Hypothesized model. The results of the hypothesized model revealed an excellent fit to the data ($\chi^2 = 65.358$, $df = 49$, $p < .05$; RMSEA = .065; CFI = .974; NNFI = .964; SRMR = .063).

Before presenting the results of the hypothesized paths we make a note regarding the modeling of the unit-level fairness constructs. As previously mentioned, consistent with trickle-down research on fairness (see Cropanzano et al., 2013), instead of modeling justice climate and peer justice as covariates, we modeled them with a path from justice climate to peer justice. Similar to Cropanzano et al.s' (2013) results, justice climate presented a positive and significant relationship with peer justice ($\gamma = .52$, $p < .01$) suggesting that unit members model the treatment they receive from authority figures (i.e., justice climate).

We now focus on the hypothesized paths. As expected, justice climate and peer justice were both positively and significantly related to service climate. The relationship between justice climate and service climate was, however, stronger ($\gamma = .64$, $p < .01$) than the relationship between peer justice and service climate ($\beta = .30$, $p < .05$). Moving forward, service climate presented a positive and significant relationship with unit-level performance ($\beta = .31$, $p < .05$). These results provide preliminary evidence for Hypothesis 1 and 2.

To test the mediational effect of justice climate and peer justice on unit-level performance via service climate, we tested an alternative structural model which added the direct paths from the justice variables to unit-level performance. The fit of the alternative model was very similar to that of our hypothesized model, suggesting that

there was no improvement over the previous and more parsimonious model ($\chi^2 = 64.781$, $df = 47$, $p < .05$; RMSEA = .070; CFI = .971; NNFI = .960; SRMR = .061; Δ RMSEA < .015; Δ CFI < .010; Δ NNFI < .010; Δ SRMR < .030). More importantly, the direct paths from justice climate and peer justice to performance were not significant (-.06 n.s. and -.16 n.s., respectively). Overall, these results suggest a total mediation from justice climate and peer justice to unit-level performance via service climate.

To further test the mediational effects of justice climate and peer justice on unit-level performance we used bootstrapping (Selig & Preacher, 2008). This technique allowed us to compute the indirect effects that take place through service climate. The indirect effect of justice climate on performance through service climate was not zero by a 95% bias-corrected bootstrap confidence interval based on 5,000 bootstrap samples (.06 to .42, with a point estimate of .24). Similarly, the indirect effect of peer justice on performance through service climate was not zero by a 95% bias-corrected bootstrap confidence interval based on 5,000 bootstrap samples (.02 to .22, with a point estimate of .09). Even though not initially hypothesized, we also tested the indirect effect of justice climate on service climate through the mediating role of peer justice. The indirect effects of justice climate on service climate was not zero by a 95% bias-corrected bootstrap confidence interval based on 5,000 bootstrap samples (.04 to .32, with a point estimate of .16). Taken as a whole, these results confirm our hypotheses and the adequacy of the proposed model.

5.5. Discussion

We proposed a model based on effort-reward imbalance model (Siegrist, 1996, 2002) that aims to deepen our understanding of two types of unit-level fairness phenomena, justice climate and peer justice, and their importance for the service industry. We argued that the esteem and recognition signaled by the fair treatment work units

receive from their authorities and their members act as a reward that increases the units' attention towards service climate—a shared perception that transmits the values and behaviors that are expected in relation to customer service (Schneider et al., 1998). Moreover, based on previous findings, we argued that service climate would be related to unit-level performance. We tested these paths with a multi-informant design.

Our findings confirmed the hypothesized model. Justice climate showed an indirect effect to unit-level performance via service climate, even after controlling the effect of peer justice. More important, peer justice also showed an indirect effect to unit-level performance via service climate, even after controlling the effect of justice climate. These results provide clarification for the existing mixed evidence reported by Cropanzano et al. (2011) and Li et al. (2013) using data from undergraduate students. Moreover, we do so by using data collected from a formal work environment such as the one provided by the health care industry. Based on our results, the importance of peer justice does not seem to be limited to group processes and behaviors, such as ethical and learning behavior (Cropanzano et al., 2013). Instead, the importance of peer justice seems to extend, through the mediating role of service climate, to more salient organizational-relevant outcomes, as indicated by the indirect effect on work-unit performance rated by the supervisor. Jointly considering justice climate and peer justice, thus, represents an important avenue for future research as organizations continue to structure their work based on group efforts.

In addition to clarifying the importance of unit-level fairness for performance, the present study adds to the service literature by extending the antecedents of service climate. Previous findings have shown that leaders and supervisors represent a key role in developing high levels of service climate (e.g., Schneider et al., 2005). This is important as this shared perception guides the attitudes and behaviors of employees in the

service process (Hong, Liao, Hu, & Jiang, 2013). This line of research that focuses on leaders and supervisors as agents that shape service climate perceptions is consistent with research on justice climate. Simons and Roberson (2003), for instance, showed that shared perceptions about management procedural and interpersonal justice had an effect on employee commitment which, in turn, predicted service behavior. This literature, generally referred as linkage research (e.g., Schneider, Ashworth, Higgs, & Carr, 1996), suggests that what happens internally in an organization, has an effect on employees' behaviors and attitudes when interacting with customers (Schneider et al., 2002). Our results clearly support this framework as justice climate was related to service climate and, in turn, to work-unit performance in service organizations. The fact that peer justice increases service climate, even after controlling justice climate, however, suggests that organizations should not focus solely on their leaders' and supervisors' actions. Based on our results, what happens internally in an organization is not just matter of those in authority. Fair treatment among coworkers also represents an internal aspect of organizations that influences the way employees perceive they should behave when interacting with customers. Of course, this does not rule out the importance of leaders and supervisors. In fact, as suggested and tested by Cropanzano et al. (2013), coworkers seem to model the treatment they receive from those in management. Our results did in fact replicate this path from justice climate to peer justice. Nonetheless, considering the increased use of team autonomy within modern organizations (e.g., Marchington, 2000), it is important that future research further explores the importance of coworkers as an antecedent of the way service organizations engage with their customers.

This study also contributes to the effort-reward imbalance model (Siegrist 1996, 2002) by proposing justice climate and peer justice as two distinct shared perceptions that communicate employees the degree to which they are valued members of the

organization. Interpreting justice climate and peer justice as two distinct rewards, thus, opens new avenues for future research. As an illustration, we propose two examples. Van Dyne and LePine (1998) have shown that performance can be understood as the combination of in-role and extra-role performance. These performance constructs parallel two constructs that are specific to the service industry: functional service quality and relational service quality. Whereas the first construct refers to the instrumentality and efficiency in which core services are delivered, the latter refers to the relational—emotional—benefits customers receive beyond the core service (Gwinner, Gremler, & Bitner, 1998; Peiró, Martínez-Tur, & Ramos, 2005). We believe that testing the effects of justice climate and peer justice on functional and relational service quality could provide more depth into more specific performance indicators that will help scholars and practitioners to further improve the employee-customer encounter. Moreover, Spell and Arnold (2007) have shown that shared perceptions of fairness signaling lack of reciprocity negatively influences employees' level of well-being (Spell & Arnold, 2007). This research, however, has focused on the fair treatment provided by management. Thus, future research would benefit from examining the joint effects of both justice climate and peer justice on well-being indicators.

Limitations and Strengths

As happens with all studies, this study presented some limitations and some strengths. The main limitation of this study relies on the cross-sectional nature of the data collected, which prevents from drawing definitive causal conclusions. Future research should address this using a longitudinal design. One strength is that we considered measures from employees and their supervisors. This strategy helped us to reduce the effects of self-report measures and, thus, common method variance. Moreover, supervisors are the most reliable way to measure employees' performance (e.g., Conway

& Huffcutt, 1997). Another strength relies on the collective nature of the constructs we measured (i.e., justice climate, peer justice, service climate, unit-level performance) since mono-method bias becomes a less egregious threat with aggregated data (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). An additional note is that our research sample provided an excellent setting for examining unit-level phenomena, such as justice climate and peer justice, because employees working in health care organizations need to collaborate with their coworkers in order to achieve organizational goals. That is, the way these organizations structure their work facilitates the emergence of shared perceptions. Despite this strength, it would be important for future research to replicate these findings in a different service sector.

In spite of these limitations, the current study makes a significant contribution to previous knowledge: it provides clarification on the existing mixed evidence that explored the relationship between peer justice and performance. We do so with a model that takes into account a key construct within service research—service climate—and the way employees work together to deliver their services (i.e., unit-level performance). Our results suggest that both justice climate and peer justice have an indirect effect on unit-level performance through the mediating role of service climate. All in all, this study calls the attention for service organizations aiming to provide high quality service to consider the importance of the treatment they provide to its work units, but also the treatment that employees provide to one another within each unit, since both types of treatment influence the service process.

**6. ESTUDIO 3: “UNIT-LEVEL FAIRNESS AND QUALITY WITHIN THE
HEALTH CARE INDUSTRY: A JUSTICE-QUALITY MODEL”**

6.1. Abstract

We propose and test a Justice-Quality model designed for service organizations. In this model peer justice and justice climate are related to the service quality provided by the work unit. Based on the effort-reward imbalance model, we propose that units perceiving fair treatment provide better delivery of the core service (functional service quality) and better relational service beyond the core service (relational service quality). We also test whether the cross-level relationship of high service quality delivered by work units translates into high customer ratings of the service quality they receive. Furthermore, we propose that high service quality increases the work unit's influence on their customers' quality of life (QoL). We test these hypotheses using hierarchical linear modeling with 532 employees and 748 customers nested in 79 health care organizations. Customers' ratings were assessed by the legal guardians of the persons with intellectual disability. Results showed that justice climate is related to functional service quality, while peer justice is related to relational service quality. Additionally, results showed that high service quality delivered by work units relates to high customer ratings, which, in turn, are associated with the perceived influence of work units on customers' QoL. We discuss the implications for justice and service research.

Keywords: Justice climate, peer justice, quality of life, service quality.

6.2. Introduction

As societies advance, health systems tend to extend their services to include anyone who is in need of assistance (Walsh, Kerr, & van Schrojenstein Lantman-De Valk, 2003). Providing services that improve the quality of life of the people who access this sector thus represents a crucial challenge that has been acknowledged by several international organizations (The World Bank, 2007; United Nations, 2006; World Health Organization, 2007). Despite the extensive literature on service organizations, to our knowledge there are no integrative models that help scholars and practitioners to understand how these organizations can improve the quality of life of their customers. Thus, in this study we aim to provide scholars and managers related to this sector with a hierarchically-structured model that helps them to understand and improve the quality of life of their customers through the quality efforts of employees. Even though we designed this model based on a specific context, we believe its rationale could be applied to other service organizations that share similar features, such as the extended duration of the relationship of the employee-customer encounter over time, the strong affective content of this interaction, and the spatial proximity that takes place during this event (Price, Arnould, & Tierney, 1995).

Based on the premise that organizations' employees need to feel fairly treated in order to offer the best possible service encounters to their customers (Masterson, 2001), our model integrates perspectives from organizational justice, service quality and quality of life. Specifically, we propose what we have called a Justice-Quality model for health care organizations. As depicted in Figure 5, the model first describes how fairly-treated employees perform high service quality as a work unit. Second, the model articulates the service encounter between the work unit and each individual customer by exploring how employees' self-judgments about their unit's service quality efforts relate to the

customer's service quality evaluations. Finally, the model examines links from service quality to the perceived influence of the work unit on the customer's quality of life, a relevant but understudied outcome within this sub-sector of the health industry.

In addition to providing an integrative model for health care organizations to improve the quality of life of their customers, this study makes three specific contributions to the existing literature. First, it contributes to the literature on unit-level justice, which has recently taken on two perspectives—justice climate and peer justice. *Justice climate* refers to how a group of employees collectively evaluate the treatment they receive from an authority, such as the supervisor or the organization as a whole (e.g., Colquitt, Noe, & Jackson, 2002). The other perspective on unit-level fairness involves the way coworkers treat each other. Cropanzano, Li, and Benson (2011) referred to this as “peer justice”. Even though justice climate and peer justice are differentiated in the literature, it is important for research to examine whether these constructs behave differently when related to other criterion variables (Li, Cropanzano, & Bagger, 2013). With these considerations in mind, the present study tests the complementary impact of these two perspectives—justice climate and peer justice—by exploring how each of them relates to service quality.

Second, we seek to make a contribution to the service quality literature on organizations that provide health care services. Previous research efforts have suggested the existence of a link from organizational justice to customer service quality perceptions (Masterson, 2001; Maxham, Netemeyer, & Lichtenstein, 2008; Simons & Roberson, 2003). We extend previous efforts by differentiating two main dimensions of service quality: functional service quality and relational service quality. While *functional service quality* refers to the degree to which the expected service is delivered in an instrumental and efficient manner, *relational service quality* describes benefits customers receive

above and beyond the core service performance (Gwinner, Gremler, & Bitner, 1998; Peiró, Martínez-Tur, & Ramos, 2005). Based on this approach, we examine the differential relationship of each type of justice (justice climate and peer justice) with each type of service quality (functional service quality and relational service quality). Furthermore, we examine the employee-customer encounter by testing the cross-level relationship between the functional and relational service quality delivered by work units and perceived by customers. As customers in these organizations receive their services from the whole unit—rather than from one employee—, we test our hypotheses using a multilevel design that adequately accounts for the different levels considered by our model.

Third, the present study contributes to the emerging literature on quality of life (QoL). This study extends earlier research (Dagger & Sweeney, 2006) by arguing that service quality is associated with QoL. To this end, we examine the service encounter that takes place in this industry between care providers (boundary employees) and customers.

The following sections present the formal theoretical model and accompanying hypotheses, depicted in Figure 5.

Overall Unit-Level Fairness: Justice Climate and Peer Justice

Overall justice. Research has shown that workers are able to judge fairness based on different events that take place within the workplace: the outcomes they receive (*distributive justice*), the processes through which those outcomes are allocated (*procedural justice*), the extent to which procedures and events are explained (*informational justice*), and the extent to which one is treated with dignity and respect (*interpersonal justice*) (Colquitt, 2001). Although conceptually distinct (Colquitt, Conlon, Wesson, Porter, & Ng, 2001), in practice these dimensions are highly correlated (e.g., Ambrose & Arnaud, 2005). Therefore, it has become common for scholars to

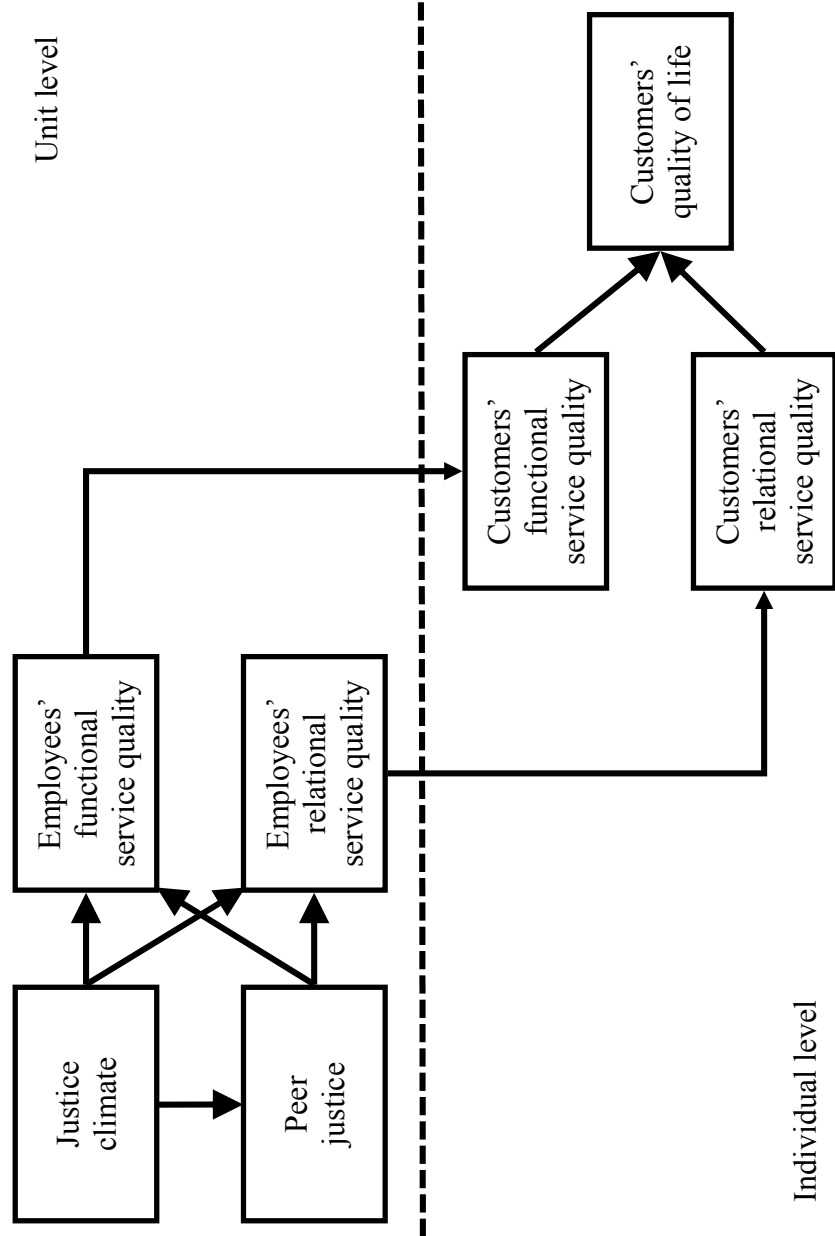


Figure 5. Proposed model linking unit-level fairness, service quality, and quality of life.

collapse the four dimensions into a single score. This approach is consistent with Whitman, Caleo, Carpenter, Horner, and Bernerth's (2012) meta-analysis, in which they studied the shared perceptions of treatment by authority figures. Through a composite of the facets of justice, they examined the importance of collective overall fairness. Whitman et al. observed that this hierarchical construct was significantly related to unit-level effectiveness, attitudes, processes and performance. Although their findings also showed that there is merit in studying the different facets of justice, they argued that the high correlations between them suggest the appropriateness of considering the hierarchical approach when examining collective fairness. These observations are consistent with several fairness publications that have suggested an overall approach to justice (e.g., Ambrose & Arnaud, 2005; Ambrose & Schminke, 2007; Greenberg, 2001; Hauenstein, McGonigle, & Flinder, 2001; Lind, 2001), and even empirically tested it (e.g., Ambrose & Schminke, 2009; Choi, 2008; Holtz & Harold, 2009; Jones & Martens, 2009; Kim & Leung, 2007).

Unit-level justice. According to Rupp and Paddock (2010), individuals do not evaluate fairness in isolation from one another. Instead, justice perceptions often emerge at the unit level through a shared social process (see also, Roberson, 2006a). Rupp and Paddock further suggest that these shared justice perceptions result from at least two mechanisms—attraction-selection-attrition (ASA) and social information processing (SIP). The ASA model suggests that individuals with similar characteristics are attracted to, selected into, and retained by the same group (Schneider, Goldstein, & Smith, 1995). Thus, work-unit coworkers who share similar values, rules and procedures facilitate the emergence of shared climates (Schneider & Reichers, 1983), such as fairness climates (Mossholder, Bennett y Martin, 1998; Naumann & Bennett, 2000). The SIP model suggests that individuals use information modeled from others (e.g., coworkers) in

developing shared perceptions about practices, values and norms (Salancik & Pfeffer, 1978). In fact, fairness heuristic theory (Lind, 2001) suggests that the use of information retrieved from others allows individuals to judge justice-related events and sources with only limited information. As individuals work in groups, this shared information causes justice perceptions to become more similar within work units (Hollensbe, Khazanchi, & Masterson, 2008). Together, these theoretical perspectives provide the basis for arguing for the existence of collective justice beyond the individual level (see also, Colquitt, Zapata-Phelan, & Roberson, 2005; Li & Cropanzano, 2009; Rupp, Bashshur, & Liao, 2007a, 2007b).

Two types of unit-level justice—justice climate and peer justice. These unit-level evaluations can have two targets, as there is a differentiation between outside (justice climate) and inside (peer justice) sources of justice (Li & Cropanzano, 2009). Previous research supports this differentiation. Employees, for instance, are able to distinguish the support they receive from their coworkers from the support authorities provide to the unit (e.g., Howes, Cropanzano, Grandey, & Mohler, 2000).

Justice climate. Justice climate refers to the collective perceptions of team members about the way their group is treated by authority figures (Li & Cropanzano, 2009). Thus, it refers to how a social unit believes it is treated by outsiders (Cropanzano, Li, & James, 2007). Justice climate is well consolidated in the literature, helping to predict worker attitudes (Spell & Arnold, 2007), job performance (Naumann & Bennett, 2000) and absenteeism (Colquitt et al., 2002). Li et al. (2013) recently conducted an empirical examination of the factorial structure of justice climate. Consistent with the tendency toward an overall approach to justice (e.g., Ambrose & Arnaud, 2005), Li et al. observed that justice climate was best represented through a hierarchical structure that combined the first-order facets of this construct (e.g., interpersonal, and informational justice) into

a superordinate construct—justice climate as a second-order factor. Hence, the same approach, which was validated in Study 1 of the present doctoral thesis, will be employed in the present study.

Peer justice. Peer justice refers to the collective perceptions about how team members treat each other (Cropanzano et al., 2011). Little research has been conducted on this topic. Cropanzano et al. studied undergraduate business students working in teams on class projects. In these teams, peer justice promoted effective team processes, which, in turn, engendered citizenship behaviors and a better final grade. In a later study with a similar sample, Li et al. (2013) were unable to replicate the findings on performance. However, these authors found that peer justice predicted team satisfaction through the mediating role of cooperative teamwork processes. More importantly, peer justice predicted team satisfaction beyond the effects of justice climate. These findings attest, albeit tentatively, to the importance of peer justice and the need to consider it as a useful predictor, along with the better established effects of justice climate. Similar to its counterpart justice climate, Li et al. (2013) found that the hierarchical structure provided the best fitting model of peer justice. This approach, which was also validated in Study 1 of the present doctoral thesis, will be employed in the present study.

Modeling unit-level fairness. Consistent with previous research on trickles-down models of justice (Mayer, Kuenzi, Greenbaum, Bardes, & Salvador, 2009; Schaubroeck et al., 2012), Cropanzano et al. (2013) recently observed that work units tend to model the treatment they receive from those in power (i.e., justice climate). Hence, in the present study, instead of modelling justice climate and peer justice as covariates, we model them following the trickle-down logic proposed by Cropanzano et al. That is, we model unit-level fairness with a path from justice climate to peer justice (see Figure 5).

Service Quality

Overall, service quality is generally described as the excellence or superiority of a service (Parasuraman, Zeithaml, & Berry, 1985). Initial efforts to understand this construct focused on the functional aspects of the services being delivered (Babin, Darden, & Griffin, 1994). This focus, however, disregarded the relational facets underlying employee-customer interactions. Thus, recent studies have differentiated functional from relational service quality (e.g., Peiró et al., 2005; Potočník, Tordera, Martínez-Tur, Peiró & Ramos, 2011). Because of the proximal interaction between the service provider and the customer and the emotional content of the service encounter and delivery, the inclusion of relational service quality is especially relevant in therapeutic settings (Gallan, Jarvis, Brown, & Bitner, 2013; Gaur, Xu, Quazi, & Nandi, 2011) such as the health care industry.

Functional service quality describes employees' efforts to deliver the core service in an instrumental and efficient manner. This approach assumes that customers are rational processors who evaluate the degree to which boundary employees fulfill their prescribed tasks in an optimal way. In contrast, relational service quality focuses on emotional facets of service encounters, with benefits for customers above and beyond the core service (Gwinner et al., 1998). It describes employee efforts that are difficult to prescribe, but that have a positive influence on customers, such as delivering "little extras", putting special interest into customers' well-being, or putting themselves in the customer's place. In a cross-cultural research study, Sánchez-Hernandez, Martínez-Tur, Peiró, and Ramos (2009) confirmed the existence of both dimensions of service quality. Despite referring to specific characteristics of the service encounter—such as the reliability or authenticity of the employees providing the service—, functional and relational service quality can be broadly understood as in-role and extra-role performance

(Van Dyne & LePine, 1998). It is important to note, however, that relational service quality focuses on the way that tasks—including in-role tasks—are performed, that is, in a friendly, respectful way that signals appreciation and esteem (Semmer, Elfering, Jacobshagen, Perrot, Beehr, & Boos, 2008).

One of the critical peculiarities of services is the simultaneity of production and consumption (Larsson & Bowen, 1989). In other words, the customer is usually physically present while the service is being delivered and used, participating in the process and interacting with boundary employees (Peiró et al., 2005). Both providers and customers are involved in producing high quality service. Hence, it is important to distinguish the perceptions of each stakeholder, as well as the relationships between them (Schneider, Salvaggio, & Subirats, 2002). In the following paragraphs, functional and relational service quality are considered from two perspectives—that of the work unit providing the service and that of the customer receiving the service.

Unit-level fairness and functional service quality. Previous research efforts indicate that justice influences employees' behavior toward customers. Unfairly treated employees have been found to reduce their efforts in their interactions with customers, thus lowering their job performance (Bettencourt & Brown, 1997). Accordingly, service employees are likely to compensate for unfair conditions by reducing their service performance. For instance, Maxham and Netemeyer (2003) observed a significant relationship between justice and extra-role customer service. More recently, Maxham et al. (2008) observed significant links from justice to in-role performance and extra-role performance toward the customer, at both the individual and branch levels. While these studies are promising, they do not address the central predictors in the present study—justice climate and peer justice.

The effort-reward imbalance model (Siegrist, 1996) maintains that “effort at work is spent as part of a socially organized exchange process to which society at large contributes in terms of rewards” (p. 29). Based on the notion of reciprocity, the effort-reward imbalance model suggests that employees will have strong negative emotions when the effort they devote to their job is not adequately acknowledged through intrinsic (e.g., esteem and recognition) or extrinsic rewards (e.g., pay and promotions) (Siegrist, 1996, 2002). That is, this model claims that persistent reward frustration reduces employees’ commitment, while increasing withdrawal behaviors (e.g., Godin & Kittel, 2004). Since fairness informs employees about the degree to which they are valued—or esteemed—members of the organization (Tyler & Lind, 1992), work units perceiving fair treatment from their supervisor and the organization (justice climate) would display a higher effort to provide high functional service quality than work units perceiving unfair treatment. Evidence from individual-level fairness research supports this contention. For example, Masterson (2001) studied university instructors and found that those who felt they were treated fairly by administrators were more committed to the organization and, in turn, made more effort toward their customers (students). Similarly, we propose justice climate as a precursor of groups’ in-role performance in terms of functional service quality.

A similar logic may apply to peer justice. Since organizations that provide health services require their employees to work close together to fully attend to their customers, what happens within their work units in terms of peer justice might be closely related to the effort work units make in delivering the organization’s core services—functional service quality. From an effort-reward imbalance perspective (Siegrist, 1996, 2002), work units that perceive fair treatment among unit members will be more motivated to keep contributing to the way the work unit as a whole delivers core services to customers. The

two studies mentioned above provide some preliminary results. The results by Cropanzano et al. (2011) showed that both procedural peer justice and interactional peer justice had indirect effects on performance. Unfortunately, consistent performance effects were not found in a second study by Li et al. (2013). Given the inconsistency of these effects, there is a need for further research on this issue. As both of these two initial studies involved relatively small numbers of work teams, we suggest that with a larger sample of groups, the theoretically predicted relationship between peer justice and functional service quality will be observed. Based on the arguments made above, we propose the following hypotheses:

Hypothesis 1: Justice climate is directly and positively related to the functional service quality perceived by work units.

Hypothesis 2: Peer justice is directly and positively related to the functional service quality perceived by work units.

Unit-level fairness and relational service quality. The effort-reward imbalance model also provides a useful framework to hypothesize about the relational facet of service quality. As suggested by this framework, recurrent frustration affects the effort employees put into their jobs (Siegrist, 1996, 2002). We propose that these reactions would be likely to affect the quality of work units' efforts in interacting with their customers. Specifically, we believe that unfair treatment would be likely to engender a low level of relational service quality within the work unit.

The literature on displaced aggression, whereby a person unwilling to confront the source of mistreatment chooses instead to mistreat a less powerful target (Marcus-Newhall, Pedersen, Carlson, & Miller, 2000), supports this last contention. This line of research argues that displaced aggression is a way to preserve one's positive image (Bushman & Baumeister, 1998). As indicated by this literature, displaced aggression can

be triggered by unjust acts by others (Tedeschi & Norman, 1985). An illustrative example is that employees who feel abused by their supervisor displace their aggression by targeting less powerful others (e.g., Hoobler & Brass, 2006; Long-Zeng, Ho, Liu, & Resick, 2012). Based on the effort-reward imbalance model, we argue that work units that are not sufficiently rewarded—do not perceive themselves as valued by the organization and its supervisors, as denoted by an unfair justice climate—will be more inclined to displace their unfair perceptions toward their customers. That is, work units perceiving unfair justice climate will display less extra-role behaviors in terms of little extras or to behave empathically when interacting with customers. In contrast, work units that are adequately rewarded—perceive themselves as valued by the organization and its supervisors, as denoted by a fair justice climate—will be more inclined to perform more extra-role behaviors towards their customers (relational service quality). These work units will behave in an attentive and considerate way when interacting with customers.

A similar explanation may apply to the peer justice-relational service quality link. Since displaced aggression tends to target less powerful targets (e.g., Hoobler & Brass, 2006), employees who do not feel appropriately rewarded for the effort they put into helping the work unit to deliver high service quality will be more inclined to act less respectfully and attentively when interacting with their customers. In contrast, work units where coworkers treat each other fairly will behave empathically and cooperatively with customers, displaying care and special interest beyond the performance of the core service. Based on these arguments, we propose the following hypotheses:

Hypothesis 3: Justice climate is directly and positively related to the relational service quality perceived by work units.

Hypothesis 4: Peer justice is directly and positively related to the relational service quality perceived by work units.

Customer perceptions of service quality. Although relational benefits are present within a broader array of service situations, including brief service encounters (Dubé & Menon, 1998), they are more evident in long-term relationships (Gwinner et al., 1998). However, most of the research that has differentiated between customers' perceptions of functional and relational service quality has been conducted in service sectors characterized by brief encounters, such as hotels and restaurants (e.g., Peiró et al., 2005; Potočnik et al., 2011; Sánchez-Hernández, Martínez-Tur, Peiró, & Moliner, 2010). Thus, this study extends previous research by examining customers' perceptions of functional and relational service quality in organizations where employees and customers develop longer relationships such as the ones observed in the health industry.

According to Schneider et al. (2002), customer benefits are enhanced when service employees knowingly make a deliberate effort to do their best work. This effort is then translated into high customer ratings of service quality. Conversely, providers who knowingly fail to do high quality work tend to engender corresponding low ratings from customers. For this reason, we expect the functional service quality perceived by work units to be related to the functional service quality perceived by each individual customer. Similarly, we expect the relational service quality perceived by work units to be related to customers' perceptions of the relational service quality they receive. Accordingly, we propose the following hypotheses for empirical testing.

Hypothesis 5: The functional service quality perceived by work units is directly and positively related to customers' perceptions of functional service quality.

Hypothesis 6: The relational service quality perceived by work units is directly and positively related to customers' perceptions of relational service quality.

Quality of Life (QoL)

Traditionally, delivering high service quality represented a competitive advantage since it helped organizations to enhance their financial profitability (Anderson, Fornell, & Lehmann, 1994) by influencing customers' attitudes and behaviors (e.g., Chandrashekar, Rotte, Tax, & Grewal, 2007). However, in specific contexts such as the ones explored in this study—health care organizations—, organizations do not necessarily use service quality as a means to directly enhance their financial profitability (West, 2013). Instead, these organizations use service quality mainly because it provides a framework with which to improve their customers' quality of life. The definition of QoL states that this construct is a “multidimensional phenomenon composed of core domains influenced by personal characteristics and environmental factors; these core domains are the same for all people, although they may vary individually in relative value and importance” (Schalock, Keith, Verdugo, & Gomez, 2010, p. 21). Based on this definition, Moliner, Gracia, Lorente, and Martínez-Tur (2013) recently developed and validated a contextualized measure that considers the improvement in QoL due to the actions and activities of organizations delivering health care services.

Determinants of the perceived influence of the work unit on the customers' QoL. Despite the increasing interest in QoL as an important outcome in the health care industry (e.g., Schalock et al., 2010), the study of QoL determinants has concentrated its efforts on individual differences, such as personality (Eklund, Bäckström, & Hansson, 2003) or coping behaviors (Ritsner, Ben-Avi, Ponizovsky, Timinsky, Bistrov, & Modai, 2003). However, some authors have argued that an organization's service quality has a significant impact on QoL (e.g., Schalock, Verdugo, Bonham, Fantova, & van Loon, 2008; Wu, Mak, & Wan, 2007). Nevertheless, with the exception of Wu, Mak, and Wan (2007), who reported significant relationships between the design of services and

customers' QoL, the investigation of relationships between service quality and QoL has been neglected.

Service quality is an environmental factor for customers, where the social interaction with employees plays a prominent role. In the health care industry in general, employees are responsible for delivering services, and their efforts are critical to understanding customer experiences and reactions (Gruber & Frugone, 2011; Peltier, Boyt, & Schibrowsky, 1998). Service encounters between providers and customers include not only technical/instrumental facets, but also the satisfaction of health service recipients' social needs (Gaur et al., 2011). Thus, the differentiation between functional and relational service quality is relevant in predicting customers' QoL. Functional service quality allows critical goals in service delivery to be efficiently achieved. Because the improvement in QoL is one of these goals, when work units are competent in functional terms, it is likely that the perceived influence of the work unit on its customers' QoL will be higher. Relational service quality has a special relationship with customers' QoL. Many organizations within the health care industry present high scores on the three characteristics of service encounters that increase the importance of emotional and relational bonds between employees and customers: extended duration, affective content, and spatial proximity (Price et al., 1995). As part of their daily activities, employees interact directly with customers, and this interaction is not restricted to only one specific contact. In addition, an important emotional labor takes place, since the nature of the service is to help others, and there is a generalized assumption that this type of service encounter cannot be restricted to functional elements. Finally, there is an important spatial proximity in service encounters, facilitating open relationships beyond mere transactions (Bove & Johnson, 2000). Consequently, efforts made by members of work units, in terms

of relational service quality, are likely to be precursors of customers' QoL perceptions.

Based on the above, the following hypotheses are proposed:

Hypothesis 7: Customers' perceptions of functional service quality are directly and positively related to their perceptions of QoL.

Hypothesis 8: Customers' perceptions of relational service quality are directly and positively related to their perceptions of QoL.

In summary, our model proposes links from two types of unit-level fairness (justice climate and peer justice) to functional and relational service quality perceived by work units. Consistent with Figure 5, work-unit employees who perceive that they are treated fairly invest efforts in terms of service quality. In addition, work units that positively judge the quality of their functional and relational service cause customers to make similarly favorable judgments. Work units that evaluate the quality of their functional and relational service as less effective also cause customers to share their less favorable judgments. In other words, a high quality service encounter begins when providers want to deliver the best service possible and, as a result, customers report high service quality. Finally, the model examines the relationship between customers' perceptions of service quality and the influence the work unit has on their QoL. We test this model in a real organizational context, with the participation of work units consisting of boundary employees and customers of organizations pertaining to the health care industry.

6.3. Method

The study hypotheses were tested using a cross-sectional survey design. Data collection was thus designed to minimize common source variance. Accordingly, this study implemented a multi-informant design; we collected employee and customer measures.

Sample and Procedure

To test the conceptual model, we recruited 98 organizations, each affiliated with the Confederation of Organizations for Persons with Intellectual Disability (FEAPS, Spain). Each organization is considered as a work unit of FEAPS, providing services to persons with intellectual disability (PID). From these 98 work units, we surveyed two different informants—760 employees and 1180 customers. The main professions of these employees—social workers, psychologists, occupational therapists, physiotherapists, and primary health care workers—were similar to those described by the World Health Organization (2007) as the most frequent professions in these types of organizations. The customers of these organizations were the legal guardians of the persons with intellectual disability. That is, we assessed the legal guardians' perceptions on service quality and actions of organizations oriented to the improvement of QoL of the persons with intellectual disability. This is a common approach in this sub-sector (e.g., Schalock et al., 2010). Because legal guardians attend organizations like the ones sampled in this study to receive a specific service, from now on we will refer to them as customers. In order to participate in the study, employees had to have direct contact with persons with intellectual disability and their legal guardians as part of their daily work. The legal guardian was always a person who had direct knowledge of and frequent contact with the organization in question. On average, the legal guardians had been taking the persons with intellectual disability to these organizations for 11.14 years; thus, they were familiar with the organization, its activities and its employees.

Participation was confidential and voluntary. Each organization randomly chose their employees and their customers. Since the employees' variables were based on aggregated measures, we used data only when there were three or more individuals per work unit. As one would expect when collecting detailed information from multiple

sources, there was some missing data. After deleting cases with missing data the final sample was 532 employees and 748 customers nested in 79 work units. Work units ranged from 3 to 12 employees (mean = 6.73, $SD = 2.20$) and from 3 to 22 customers (mean = 9.49, $SD = 3.54$). The average age of employees was 35.24 years ($SD = 8.76$), their average organizational tenure was 6.91 years ($SD = 6.58$), 71.06% were women and 55.73% had earned a university degree. The average age of customers was 58.00 years ($SD = 11.63$), 61.59% were women, and 77.58% were either the father or mother of the PID.

Measures

Prior to data collection, we conducted a pilot study to review the items for our measures. In this pilot study, a group of experts pertaining to FEAPS, with the help of a group of researchers, analyzed the items in order to adapt the wording to adequately fit the research setting.

All unit-level constructs—justice climate, peer justice, and the service quality provided by the work-unit—were assessed using the referent shift consensus model (Chan, 1998). By focusing all respondents on the work unit as a whole, this approach not only makes it possible to observe patterns of agreement for each construct (e.g., Rupp et al., 2007a) but also presents superior psychometric properties (Bashshur, Rupp, & Christopher, 2004).

Justice climate. We assessed *justice climate* with the scale developed by Colquitt (2001) and validated in Study 1 of the present doctoral thesis, using a 7-point Likert scale (ranging from 1, *strongly disagree* to 7, *strongly agree*). Seven items referred to procedural justice, 4 items to interpersonal justice, and 5 items to informational justice. The alpha coefficient of justice climate in Sample 1 was .97.

Peer justice. We assessed *peer justice* based on the scale developed by Li and Cropanzano (2009) and validated in Study 1 of the present doctoral thesis, using a 5-point Likert scale (ranging from 1, *strongly disagree* to 5, *strongly agree*). Four items referred to procedural peer justice, 4 items to interpersonal peer justice, and 4 items to informational peer justice. The alpha coefficient of peer justice in Sample 1 was .97.

Employees' perceptions of service quality. Employees rated the quality of the service their work unit provides. To assess their perceptions of service quality, we used a short version of the functional-relational service quality scale validated by Sánchez-Hernández et al. (2010) in a cross-cultural investigation. Functional service quality included 4 items measuring employee reliability, responsiveness, assurance, and personalized attention. An example item was: “We assist the intellectually disabled people as quickly as required by each situation”. Relational service quality included 3 items measuring authentic understanding, extras, and empathy. An example item was: “We do things to make the people with intellectual disability feel important and special”. All items were rated on a 7-point Likert scale. Anchors ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). The alpha coefficients for employees' perceptions of functional and relational service quality at the work-unit level were .85 and .91, respectively.

In order to verify that employees' functional and relational service quality represented distinct constructs, we ran two CFAs. We modeled service quality as having two factors (i.e., functional and relational service quality), and compared it with a single-factor structure (i.e., service quality as a whole). To assess model fit, we computed the following fit indices: the Root Mean Square Residual (RMSEA)—values smaller than .10 indicate an acceptable fit (Browne & Cudeck, 1993)—, Non-Normed Fit Index (NNFI)—values greater than .95 indicate good fit—Comparative Fit Index (CFI)—values close to .95 indicate good fit (Hu & Bentler, 1999)—Standardized Root Mean Square Residual

(SRMR)—values greater than .10 indicate model rejection (Marsh, Hau, & Wen, 2004). Since chi-square largely depends on sample size (Cheung & Rensvold, 2002; Meade, Johnson, & Braddy, 2008), scholars recommend to compare models based on more practical criteria. Cheung and Rensvold (2002) and Widaman (1985), for instance, suggest that an improvement in model fit should be supported by an increase of .010 in CFI or NNFI (Δ CFI and Δ NNFI). Chen (2007) suggests that a decrease of .015 in RMSEA (Δ RMSEA) or .030 in SRMR (Δ SRMR) also supports an improvement in model fit.

The results of the two-factor model provided an excellent fit to the data: $\chi^2 = 82.96$, $df = 13$, $p < .01$, RMSEA = .082, NNFI = .959, CFI = .975, SRMR = .072. More important, the two-factor structure provided a better fit than the single-factor structure ($\chi^2 = 260.84$, $df = 14$, $p < .01$; RMSEA = .182; CFI = .910; NNFI = .866; SRMR = .112; Δ RMSEA > .015; Δ CFI > .010; Δ NNFI > .010; Δ SRMR > .030), providing additional support for the difference between employees' perceptions of functional and service quality.

Customers' perceptions of service quality. To assess customers' perceptions of service quality, we used the same 7-point Likert (from 1, *strongly disagree*, to 7, *strongly agree*) functional-relational service quality scale (Sánchez-Hernández et al., 2010) that we used to assess employees' perceptions of service quality. Items were identical to those for employees, except that the wording of the scale was adapted to customers. The focus was the service quality that the PID received from work-unit employees. An example item was: "They (i.e., the employees) do things to make people with intellectual disability feel important and special". The alpha coefficients for customers' perceptions of functional and relational service quality were .77 and .79, respectively.

Customers' perceived influence of the work unit on the QoL of the persons with intellectual disability. We assessed the degree to which the QoL of the PID had

improved due to the actions of the work units, as QoL was perceived by their legal guardians. To this end, we used the scale validated by Moliner et al. (2013). The scale was constructed to represent the classic dimensions of QoL for intellectually disabled individuals (Verdugo, Schalock, Keith, & Stancliffe, 2005). Four items referred to the self-determination of the PID (“This center has motivated me to help foster the independence of the person with intellectual disability under my responsibility”); 5 items referred to family support (e.g., “The quality of life of the person with intellectual disability under my responsibility has been improved because of this center”); 4 items referred to the rights of the PID (e.g., “The center provides me with clear information about the rights of persons with intellectual disability”); and 4 items referred to social inclusion (e.g., “The actions taken by this center have increased the inclusion of the person with intellectual disability under my responsibility in different systems—educational system, public services, etc.”). The ratings were made on a 7-point Likert scale, with options ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The alpha coefficient was .95.

In order to verify that customers were able to differentiate between functional service quality, relational service quality, and quality of life, we ran two additional CFAs. To this end, we compared a model that differentiated between the three constructs with a single-factor model that forced all items to load into one general dimension. The results of three-factor model provided an acceptable fit to the data: $\chi^2 = 1799.19$, $df = 249$, $p < .01$, RMSEA = .091, NNFI = .974, CFI = .977, SRMR = .059. Despite the small practical differences between the three-factor model and the single-factor model ($\chi^2 = 2226.85$, $df = 252$, $p < .01$; RMSEA = .102; CFI = .971; NNFI = .968; SRMR = .065; Δ RMSEA = .009; Δ CFI = .006; Δ NNFI = .006; Δ SRMR = .006), the single-factor model showed an RMSEA above .10, suggesting poor model fit (Browne & Cudek, 1993). More important,

a comparison of both models using the Satorra-Bentler Chi-square difference test for comparing models with maximum likelihood estimation (Satorra & Bentler, 1999) showed that the three-factor model presented a better fit than the alternative single-factor model (the correct chi-square difference was 64.01, $\Delta df = 30$, $p < .01$), providing additional support for the difference between customers' perceptions on functional service quality, relational service quality, and quality of life.

Data analyses

Before testing our hypotheses, we conducted some preliminary analyses to assess the quality of the data collected. In order to work with meaningful data aggregation, we computed the average deviation index ($AD_{M(j)}$; Burke, Finkelstein, & Dusig, 1999) to evaluate the within-group agreement on justice climate, peer justice, and employees' perceptions of functional and relational service quality. To further support the aggregation of these unit-level constructs, we calculated intraclass correlation indexes, ICC(1) and ICC(2) (Bliese, 2000; LeBreton & Senter, 2008), and computed one-way analysis of variance (ANOVA) to ascertain whether there was between-units discrimination (Chan, 1998).

To test Hypotheses 1 to 4, we used ordinary least squares (OLS) regression, since the relationships proposed by these hypotheses involve only unit-level predictions. Hypotheses 5 to 8, however, included two levels—unit-level and individual-level variables. To test these hypotheses, we used hierarchical linear modeling (HLM), as this methodology allows the simultaneous examination of the effects of variables at both the individual and unit levels (Raudenbush & Bryk, 2002). Following previous recommendations (Hofmann, 1997; Raudenbush & Bryk, 2002), prior to testing Hypothesis 5 to 8, we conducted a null model for each of the dependent individual-level variables, as indicated by the stepwise nature of our model. That is, before testing these

hypotheses we assessed the systematic within- and between-unit variance in each individual-level dependent variable (i.e., customers' perceptions of functional service quality, relational service quality, and the unit's influence on the QoL of the PID). Following Hofmann and Gavin (1998), we grand-mean centered all independent variables. To compute the variance explained by each set of predictors, we followed the procedure described by Bliese (2002): $1 - (\text{variance with predictors} / \text{variance without predictors})$.

6.4. Results

Data Aggregation

To justify aggregation, previous research recommends cut-off values below .83 for 5-point Likert scales and below 1.17 for 7-point scales for the $AD_{M(J)}$ index (Dunlap, Burke, & Smith-Crowe, 2003), ICC(1) values above .12 (James, 1982) and ICC(2) values above .47 (Schneider, White, & Paul, 1998). The within-unit agreement indexes for the studied work units were: for justice climate the mean $AD_{M(J)}$ was .78 (SD = .25) and the ICC(1) was .27; for peer justice the mean $AD_{M(J)}$ was .51 (SD = .16) and the ICC(1) was .34, for employees' perception of functional service quality the mean $AD_{M(J)}$ was .75 (SD = .24) and the ICC(1) was .23; and for employees' perception of relational service quality the mean $AD_{M(J)}$ was .56 (SD = .25) and the ICC(1) was .16. The results obtained by the ANOVAs showed a significant degree of between-units discrimination: Justice climate: $F(78, 453) = 3.55, p < .01$; peer justice: $F(78, 453) = 4.52, p < .01$; employees' perception of functional service quality: $F(78, 453) = 2.96, p < .01$; and employees' perception of relational service quality: $F(78, 453) = 2.31, p < .01$. All aggregation indexes were within the recommend cut-off values, and the results obtained by the ANOVAs showed a

significant degree of between-units discrimination. Therefore, we concluded that aggregation was justified and proceeded to aggregate these variables using the average.

Hypothesis Testing

Means, standard deviations, and correlations are presented in Table 7. Before presenting the results of the hypothesized paths we make a note regarding the modeling of the unit-level fairness constructs. Consistent with trickle-down justice models of research on fairness (e.g., Mayer et al., 2009; Schaubroeck et al., 2012), instead of modeling justice climate and peer justice as covariates, we modeled them with a path from justice climate to peer justice. As shown in Table 8, there was a positive and significant relationship between justice climate and peer justice ($B = .41, p < .01$). This result replicates the Cropanzano et al.s' findings, suggesting that work-unit members model the treatment they receive from those in power (i.e., justice climate).

Hypotheses 1 to 4. The first set of hypotheses tested the relationships between two types of unit-level fairness and work units' perceptions of service quality. As previously noted, we used OLS regression to test these hypotheses because all the variables included in these predictions are at the same (unit) level. Our findings offered support for Hypotheses 1 and 4. Justice climate was significantly related to functional service quality ($B = .37, p < .01$; Hypothesis 1), even after controlling for peer justice and the work units' perceptions of relational service quality. The relationship between peer justice and functional service quality, however, was non-significant (Hypothesis 2). We observed the opposite pattern for relational service quality. Justice climate did not show a significant relationship with relational service quality (Hypothesis 3). Peer justice, however, was significantly related to relational service quality ($B = .40, p < .01$ Hypothesis 4), even after controlling for justice climate and work units' perceptions of functional service quality.

Table 7. Means, standard deviations, and correlations of unit-level and individual-level variables

	<i>M</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
Level 2 (<i>n</i> = 79)									
1. Justice climate	5.53	.65	-						
2. Peer justice	3.87	.47	.41**	-					
3. RSQ (employees)	5.91	.48	.22*	.51**	-				
4. FSQ (employees)	5.21	.60	.48**	.39**	.52**	-			
Level 1 (<i>n</i> = 748)									
5. RSQ (customers)	6.17	.80	-	-	-	-	-		
6. FSQ (customers)	6.04	.83	-	-	-	-	.63**	-	
7. Quality of life	5.96	.83	-	-	-	-	.71**	.65**	-

FSQ = Functional service quality; RSQ = Relational service quality. **p* < .05. ***p* < .01.

Table 8. *Ordinary Least Squares (OLS) and Hierarchical Linear Modeling (HLM) Results*

	OLS		HLM			
	Peer justice	FSQ (employees)	RSQ (employees)	FSQ (customers)	RSQ (customers)	QoL (customers)
Level 2 (<i>n</i> = 79)						
Justice climate	.41** (.07)	.37** (.09)	-.15 (.08)	-.14** (.05)	.05 (.04)	.04 (.04)
Peer justice	-	.02 (.14)	.40** (.10)	.10 (.07)	-.02 (.06)	.09 (.06)
RSQ (employees)	-	.43** (.09)	-	-.19** (.07)	.21* (.07)	-.16* (.06)
FSQ (employees)	-	-	.43** (.09)	.26** (.06)	-.10 (.05)	-.02 (.05)
Level 1 (<i>n</i> = 748)						
Intercept	-	-	-	6.04** (.03)	6.16** (.02)	5.95** (.02)
RSQ (customers)	-	-	-	.64** (.04)	-	.51** (.04)
FSQ (customers)	-	-	-	-	.67** (.04)	.34** (.04)
Between-unit variance (τ00)	-	-	-	.016	.010	.015
Within-unit variance (σ2)	-	-	-	.358	.337	.264
Variance explained						
<i>R</i> ² _(OLS)	16.75%**	40.71%**	39.71%	-	-	-
Between-unit <i>R</i> ² _(HLM)	-	-	-	21.05%	34.48%	30.61%
Within-unit <i>R</i> ² _(HLM)	-	-	-	58.59%	54.62%	41.71%
Number of free parameters	-	-	-	10	10	14
Model deviance (χ ²)	-	-	-	1407.48	1362.11	1180.88
Δ <i>df</i>	-	-	-	7	7	11
Δγ ²	-	-	-	407.30**	428.24**	642.93**

OLS = Ordinary least square; HLM = Hierarchical linear modeling; FSQ = Functional service quality; RSQ = Relational service quality; QoL = Quality of life. Standard errors are reported in parentheses. * $p < .05$. ** $p < .01$.

Hypotheses 5 and 6. The second set of hypotheses tested the cross-level relationship between work units' perceptions of service quality and customers' perceptions of service quality at the individual level. As previously noted, we used HLM to adequately test the effects of these hypotheses. Before testing the hypothesized effects, we assessed the systematic within- and between-unit variance in customers' perceptions of functional and relational service quality. Results of the null models revealed that 11.06% of the total variance in customers' perceptions of functional service quality and 4.49% of the total variance in customers' relational service quality resided between units ($\tau_{00} = .076$, $\chi^2 = 1814.78$, $df = 3$, $p < .01$; $\tau_{00} = .029$, $\chi^2 = 1790.35$, $df = 3$, $p < .01$; respectively). Considering the multilevel nature of the data and that the intercept terms of the two variables varied significantly across units (Nezlek, 2008), we proceeded to test cross-level Hypotheses 5 and 6.

As Table 8 shows, work units' perceptions of functional service quality had a significant cross-level relationship with individual-level customers' perceptions of functional service quality ($\gamma = .26$, $p < .01$; Hypothesis 5), even after controlling for justice climate, peer justice, work units' perceptions of relational service quality, and individual-level customers' perceptions of relational service quality. Similarly, work units' perceptions of relational service quality had a significant cross-level relationship with individual-level customers' perceptions of relational service quality ($\gamma = .21$, $p < .05$; Hypothesis 6), even after controlling for justice climate, peer justice, work units' perceptions of functional service quality, and customers' perceptions of functional service quality. These results provide support for Hypotheses 5 and 6.

Hypotheses 7 and 8. The third set of hypotheses tested the relationship between customers' perceptions of service quality and the work unit's influence on their QoL.

Results of the null model revealed that 7.18% of the total variance in customers' quality of life resided between units ($\tau_{00} = .049$, $\chi^2 = 1823.81$, $df = 3$, $p < .01$).

As Table 8 reveals, customers' perceptions of functional and relational service quality were both significantly related to the work unit's influence on their QoL ($\gamma = .34$, $p < .01$; $\gamma = .51$, $p < .01$; respectively), even after controlling for the remaining unit- and individual-level variables considered in the model. These results provide support for Hypotheses 7 and 8.

6.5. Discussion

This study proposed and tested a model that aims to help scholars and practitioners in the health industry to understand how to improve customers' QoL and design internal practices that can help to achieve this outcome. To test this model, we used a multi-informant design that considered employees and customers. Since employees work closely together within their work units to adequately attend to each of their customers, the model design was hierarchically structured to account for the different levels at which employees deliver their services—the work-unit level—and customers receive their care—the individual level. Overall, our findings support the model. In general, we observed that fairness is positively related to work-units' perceptions of the service quality they deliver. In addition, work-units' perceptions of the service quality they deliver are connected to customers' perceptions of the service quality they receive, which, in turn, are linked to their QoL. By providing an integrative model for this sub-sector of the health care industry, this study makes a number of specific contributions to the existing literature that we discuss in the following paragraphs.

Links from Justice Climate and Peer Justice to Service Quality

One of this study's main contributions to the fairness literature is that it provides empirical evidence of the relationship between justice and service quality at the work-unit level, and the distinct behavior of two types of unit-level fairness (justice climate vs. peer justice) in this relationship. While justice climate and peer justice are conceptually distinct constructs, each pertains to unit-level fairness perceptions. The distinction between justice climate and peer justice is quite relevant for current workplaces, since it suggests that relationships with an outsider, as well as within a work unit, can impact performance. Based on the effort-reward imbalance model (Siegrist, 1996, 2002), we argued that work units that perceived high justice climate and high peer justice would make an effort to provide high service quality. A lack of acknowledgment, indicated by perceptions of low justice climate and peer justice, would, in contrast, translate into less effort. Overall, our results suggest that this is the case, since fair climates were associated with high service quality.

Only the study by Li et al. (2013) has compared these two types of unit-level justice perceptions. These authors found evidence that peer justice predicted some outcome variables beyond the effects of justice climate. The present study offers new evidence that peer justice and justice climate could be distinguishable constructs. While the two were correlated ($r = .41, p < .01$), they played differential roles in the nomological network connecting fairness to service quality.

Specifically, our results showed that justice climate (the shared perceptions of how the organization as a whole and its supervisors treat their employees in terms of fairness) was positively related only to work-units' reports of the in-role efficiency with which they provided the core service of the organization (functional service quality), whereas peer justice (the shared perceptions of how coworkers treat each other in terms

of fairness) was positively related only to work-units' perceptions of the relational extra-role benefits they delivered to customers beyond the core service (relational service quality). That is, justice climate was not related to relational service quality, and peer justice was not related to functional service quality. Social information processing theory (Salancik & Pfeffer, 1978) offers a valuable tentative framework to understand this distinct behavioral pattern, and it should be confirmed in further studies. From this standpoint, we know that social context, such as an employee's location in a hierarchical relationship, directs employees' attention to certain information that produces expectations about employees' behavior and the plausible consequences of this behavior (Salancik & Pfeffer, 1978). Supervisors tend to focus on functional aspects as a strategy to secure the instrumental outcomes of employee performance (see Kramer, 1996). Thus, supervisors may pay attention to relational aspects, not because these aspects are intrinsically worthwhile, but because they are means to achieving the instrumental objectives (Kramer, 1996). Our results seem to be consistent with this idea. Work units that perceived fair treatment by their managers and supervisors were more willing to reciprocate by devoting effort to in-role tasks prescribed by the organizational system that represent the managers' and the organization's main concerns (Kramer, 1996). That is, the emphasis was put on tasks regulated by managers, supervisors, and the system as a whole. Work units were especially willing to reciprocate in terms of functional service quality. A similar logic may apply to the peer justice-service quality link. Since in this case of peer justice the source of the fair treatment lies inside the work unit, dedicating effort to tasks prescribed by the organizational system might not be as appreciated as making more relational efforts within the work unit. A recent meta-analysis conducted by Rupp, Shao, Jones, and Liao (2014) provides support for these arguments. As reported by

Rupp and colleagues, source-based justice perceptions more strongly predict outcomes directed at matched sources than justice perceptions that are not source based.

Interestingly, the lack of significance of the link between justice climate and relational service quality might somehow appear contrary to previous research that has linked justice climate and organizational citizenship behaviors (e.g., Naumann & Bennett, 2000; Walumbwa, Wu, & Orwa, 2008). However, none of these studies has simultaneously tested justice climate and peer justice. Our results suggest that the relationship established between justice climate and organizational citizenship behaviors may be altered when peer justice is also considered. Hence, future research interested in the relationship between fairness and organizational citizenship behaviors should consider the influence of peer justice.

These results are also important for other lines of inquiry concerned with fairness as a predictor variable, especially those concerned with the multiple sources present in the workplace (supervisor, the organization as whole, coworkers, customers). An example would be the literature on social identity and, particularly, organizational identification. As in the study of fairness, researchers have observed that there are multiple sources of identification within the workplace, such as the organization and the work unit (e.g., van Knippenberg & van Schie, 2000). Even though some promising results attest to the importance of fairness as an antecedent of these multiple sources of identification, this research has been limited to the facets of justice (e.g., Olkkonen & Lipponen, 2006). We believe constructs such as justice climate and peer justice may add significant value to this type of research, since they make it possible to examine a more proximal link between predictors (e.g., peer justice) and outcomes (e.g., work-unit identification) (see Rupp et al., 2014).

Service Quality

Our results are also relevant to the literature on service quality. It is noteworthy that previous studies have found evidence linking fairness within the workplace and the promotion of service quality (Masterson, 2001; Maxham et al., 2008; Simons & Roberson, 2003). The current study confirms this proposition and goes beyond it to jointly consider two types of unit-level fairness (justice climate and peer justice) and their relationships with two dimensions of service quality (functional and relational). These findings suggest that if organizations wish to offer high service quality, then fairness should be an institutional priority.

Quality of Life

Organizations pertaining to the health care industry focus their attention on their customers' QoL as a strategic goal. Several scholars have argued that, in these organizational settings, the quality of the service delivery has a significant impact on the customers' QoL (see Schalock et al., 2008). However, this proposition was not empirically tested in earlier work, with exceptions exploring the impact of the design of services on customer QoL (Wu et al., 2007). Moreover, previous studies that differentiated between functional and relational service quality have generally reported the predominance of functional service quality over relational service quality in predicting organizational outcomes (e.g., Peiró et al., 2005; Sánchez-Hernández et al., 2010). Nonetheless, our results suggest that both functional and relational service quality are related to the strategic outcome of these organizations, that is, the perceived influence of the work unit on the customers' QoL. Since previous studies have been conducted in service organizations where the employee-customer encounter is characterized as brief (e.g., Peiró et al., 2005; Sánchez-Hernández et al., 2010), this study makes an important contribution by showing the importance of considering relational service quality in

organizations where longer relationships are established. As depicted in Table 8, relational efforts were even more critical for improving customers' QoL than core efforts. Future research interested in service quality or quality of life should take into account the three aspects that characterize emotionally-oriented services (Price et al., 1995), such as organizations that attend to PID. These aspects include the duration of the encounter (which tends to be extended over time), its affective content (boundary employees generally develop an emotional labor in their interactions with customers), and spatial proximity (there is a very proximal relation in the day-to-day interaction). Given the emotional nature of these specific services, effort beyond the core service—relational service quality—is a critical aspect in improving customers' QoL.

Limitations and Strengths

The main limitation of this study can be found in its cross-sectional nature. Although multi-informant designs—such as the one used to test our hypotheses—help to increase causal inference (Rindfleisch, Malter, Ganesan, & Moorman, 2008), the design used in this study does not allow us to draw any definitive causal conclusions. While our results are grounded in earlier studies and consistent with the proposed theoretical framework, future research should incorporate longitudinal studies with more solid tests of causal relationships.

In addition to increasing causal inference (Rindfleisch et al., 2008), having two informants helped us to reduce the effects of self-report measures and, consequently, common method variance (Podsakoff, MacKenzie, & Podsakoff, 2003). Moreover, when using collective constructs such as justice climate or work-unit service quality, mono-method bias becomes a less egregious threat as the aggregation of individual perceptions helps to mitigate the perception-perception inflation (Liao & Rupp, 2005). These strategies facilitate reliable results. Conducting the study in health care organizations that

provide services to PID has important advantages. The services provided by these organizations facilitated the investigation of QoL as an organizational outcome. In addition, the way these organizations provide their services, through specific centers or work units, facilitated the study of the link between boundary employees and customers. Regardless of these advantages, we caution that the results of this study are limited to this specific context. Future research should consider replicating these findings in different health care organizations.

Despite these limitations, the present study provides insights about understanding and improving the QoL of customers in organizational health care settings. In addition, our study contributes to previous knowledge in three specific ways. First, it examines the joint relationship between two unit-level fairness approaches in work units (justice climate and peer justice) and service quality efforts. We observed that these two types of unit-level fairness have differential relationships with service quality dimensions. While justice climate is linked to functional service quality, peer justice is especially connected to relational service quality. Second, we confirm that efforts made by work units are also perceived by external actors (customers). Finally, we provide evidence for the importance of relational service quality efforts, in addition to the more typical functional service quality efforts, in customers' QoL. This Justice-Quality model provides preliminary evidence for the importance of integrating organizational behavior frameworks (e.g., organizational justice) and context-specific outcomes (e.g., service quality and quality of life) to better understand service organizations where employees and customers develop longer relationships than usual.

**7. ESTUDIO 4: “WHAT IS THE ROLE OF PEER JUSTICE IN PREDICTING
BURNOUT? A CROSS-LEVEL APPROACH”**

7.1. Abstract

The aim of this study was to test the relationship between unit-level fairness and the core dimensions of burnout (emotional exhaustion and cynicism). To this end, in addition to examining the way unit members are treated by the organization and its supervisors—*justice climate*—, we explored the joint effect of the more novel construct *peer justice*—i.e., shared perceptions of the extent to which unit members treat each other fairly. Thus, we examined the cross-level effect of justice climate and peer justice on individual-level emotional exhaustion and cynicism. We tested these effects using hierarchical linear modeling (HLM) in two samples from the health care industry—a context particularly acute for burnout manifestations. Sample 1 consisted of 532 employees nested in 79 organizations and Sample 2 of 692 employees nested in 111 organizations. Consistent with previous findings, our results showed that justice climate is related to both core dimensions of burnout. More important, our results showed that peer justice explains cynicism above and beyond the variance explained by its counterpart justice climate. We discuss the contributions of these results for the fairness and occupational health literature.

Keywords: Burnout, cynicism, emotional exhaustion, justice climate, peer justice.

7.2. Introduction

The cost related to employee health care, absenteeism, and loss of productivity is driving organizations to become more and more interested in ways to increase their workforce well-being (Weinberg & Cooper, 2012). Burnout, a significant independent cardiovascular risk factor (e.g., Coursoux, Lehucher-Michel, Marchetti, Chaumet, & Delliaux, 2012; Melamed, Shirom, Toker, Berliner, & Shapira, 2006), represents an important avenue for organizations that aim to increase their employees' well-being.

In this regard, occupational health models point out the influence organizational (in)justice has on employees' physical and psychological well-being (Cropanzano & Wright, 2011; Fassina, Jones, & Uggerslev, 2008; Fox, Spector, & Miles, 2001; Hausknecht, Day, & Thomas, 2004; Shaw, Wild, & Colquitt, 2003). More important, these models suggest that (un)fair treatment impacts one's health through its effects on strain-related outcomes such as burnout. Evidence supports this relationship (for a meta-analysis see Robbins, Ford, & Tetrick, 2012). Hence, accurately exploring the effects of organizational justice on burnout provides a key opportunity for organizations to develop effective evidence-based interventions (Innstrand, Espnes, & Mykletun, 2004).

Interventions to prevent or ameliorate burnout are being more and more designed for, and implemented across, entire work-units (e.g., Halbesleben, Osburn, & Mumford, 2006; Le Blanc, Hox, Schallfeli, Taris, & Peeters, 2007; Maslach, Leiter, & Jackson, 2012). These interventions known as *organization-directed interventions*—aimed to changing the working environment, work tasks or working methods—seem to reduce burnout over longer terms than *person-directed interventions*—aimed at enhancing job competence or teaching relaxations exercises (Westermann, Kozak, Harling, & Nienhaus, 2014). This is consistent with previous research that suggests that social and organizational factors play a greater role in the development of burnout than the one

played by individual-level factors (e.g., Le Blanc et al., 2007; Maslach, Schaufeli, & Leiter, 2001; Schaufeli & Buunk, 2002).

The vast research that has explored the organizational justice-burnout relationship has been conducted at the individual-level of analysis though (e.g., Blau & Anderson, 2005; Gabris & Ihrke, 2001; Janssen, 2004; Howard & Cordes, 2005; Kausto, Elo, Lipponen, & Elovaino, 2005; Kwak, 2006; Moliner, Martínez-Tur, Peiró, & Ramos, 2005; Xie, Schaubroeck, & Lam, 2008). The aim of this study is to provide scholars and practitioners with relevant and accurate data that is consistent with how organizational justice is generally operationalized when designing and implementing burnout interventions. To that end, we test the cross-level relationship between unit-level fairness and individual-level burnout (Figure 6 depicts the proposed multilevel model). With this objective in mind we make a number of contributions.

Our first contribution has to do with the multilevel nature of our approach. Using an individual-level approach does not capture the full complexity of organizational justice as a social phenomenon that emerges within work units (see Chan, 1998) and, thus, limits the effectiveness of human resource management policies and interventions (Kozlowsky & Klein, 2000). By focusing on the level at which burnout interventions are generally designed and implemented, we provide theoretically-driven and application-relevant data to the occupational health literature for scholars and practitioners to make evidence-based decisions (Rousseau, 1995).

Our second contribution adds to the occupational health literature and the fairness literature. In modern organizations, where work is structured more and more through work-unit goals (Cropanzano & Schminke, 2001), the sole examination of authority figures as the source of (un)fair treatment might not be sufficient to account for the social effects of fairness perceptions (Rupp, Bashshur, & Liao, 2007a). Thus, in addition to

examining the way unit members are treated by the organization and its supervisors—*justice climate*—, we explore the joint effect of the more novel construct *peer justice*. Peer justice refers to the shared perceptions of the extent to which unit members treat each other fairly (Cropanzano, Li, & Benson, 2011). Capturing this novel unit-level climate and its effects over burnout represents an important contribution since coworkers are one of the most salient features of employees' social environment (Dutton & Ragins, 2007).

As a third contribution we examine the consistency of our multilevel model by testing our hypotheses in two different samples drawn from the health care industry. We selected the health care system since previous research has shown that burnout is especially acute in these type of settings (e.g., Prins, Gazendam-Donofrio, Tubben, Van Der Heijden, Van De Wiel, & Hoekstra-Weebers, 2007). Additionally, we use two distinct operationalizations of justice climate and peer justice. Based on the results of Study 1 of the present doctoral thesis, on Sample 1 we operationalize justice climate and peer justice as two second-order constructs indicated by their corresponding first-order facets procedural justice climate, interpersonal justice climate, informational justice climate, procedural peer justice, interpersonal peer justice, and informational peer justice. On Sample 2 we operationalize justice climate and peer justice as two single overall dimensions of justice perceptions that are independent from the justice facets. Although both strategies have proven their utility to the literature on unit-level fairness and are expected to show similar effects (see Cropanzano, Walumbwa, & Aryee, 2013; Li, Cropanzano, & Bagger, 2013), it remains unknown whether these distinct operationalizations actually behave in a similar fashion. We will address this in the present study.

In the sections to follow, we define the main constructs of our multilevel model and explain the theoretical framework driving our hypotheses.

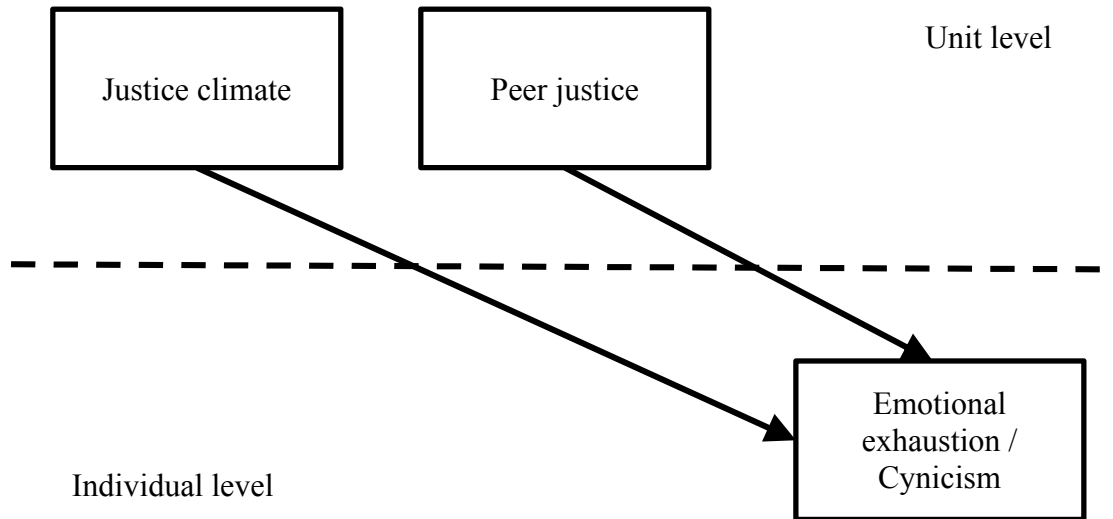


Figure 6. *Proposed model linking unit-level fairness, service quality, and quality of life.*

Burnout

“Burnout is a prolonged response to chronic emotional and interpersonal stressors on the job” (Maslach, Schaufeli, & Leiter, 2001, p. 397). This occupational strain is characterized by two core dimensions: emotional exhaustion and cynicism (Schaufeli & Taris, 2005). Emotional exhaustion refers to the feeling of lacking energy and perceiving emotional and physical resources to be depleted. Cynicism—also conceptualized as depersonalization or withdrawal—refers to a negative, callous, or excessively detached attitude toward other individuals or the job itself (Leiter & Maslach, 2004). In addition to reporting higher physiological symptoms (e.g., Shirom, Westman, Shamai, & Carel, 1997), individuals that report high levels on emotional exhaustion and cynicism tend to show low job satisfaction (e.g., Moore, 2000), low organizational commitment (e.g., Chiaburu, Peng, Oh, Banks, & Lomeli, 2013; Campbell, Perry, Maertz, Allen, & Griffeth, 2013), and increased turnover intentions (e.g., Geurts, Schaufeli, & De Jonge, 1998).

Even though lack of professional efficacy represents an additional characteristic of burnout, lately it has been disregarded as a core aspect of burnout for several reasons. For instance, reduced professional efficacy is not as frequently observed as the core dimensions (Brenninkmeijer, VanYperen, & Buunk, 2001), develops independently from the other dimensions (Leiter, 1993), and also has been found to be a personality trait (e.g., Cordes & Dougherty, 1993; Büssing & Glaser, 2000). Thus, for the purpose of this study, we focus on the core dimensions of burnout: emotional exhaustion and cynicism.

Unit-Level Fairness: Justice Climate and Peer Justice

No strangers to the increased trend toward team structures, researches have observed that justice perceptions in the workplace often emerge at the unit level through a shared social process (Roberson, 2006a). This line of research called justice climate has been very fruitful over the last 15 years. A recent meta-analysis suggest that the way employees collectively evaluates the treatment they receive from authority figures—the organization as a whole and its supervisors—is an important antecedent of their work attitudes, processes, withdrawal behaviors, and performance (Whitman, Caleo, Carpenter, Horner, & Bernerth, 2012).

In addition to forming shared perceptions about those in power—justice climate—, recent findings suggest that people at work also form shared perceptions about those who do not have formal authority over each other, that is, peers (Li, Cropanzano, & Bagger, 2013). This line of research called peer justice focuses on the collective perceptions about how work-unit members treat each other (Cropanzano et al., 2011). Research on peer justice is still scarce. Preliminary evidence, however, suggests that the climate that emerges regarding the way coworkers treat one another has important consequences over group processes and behaviors, such as task, interpersonal, and

cooperative processes (Cropanzano et al., 2011; Li et al., 2013), and ethical and learning behaviors (Cropanzano et al., 2013).

Using an overall approach to justice climate and peer justice. Research has shown that employees are able to differentiate up to four facets of justice—distributive, procedural, interpersonal, and informational justice (Colquitt, Conlon, Wesson, Porter, & Ng, 2001). Recent research, however, suggests that organizational justice may be best assessed by using an overall approach to justice in the workplace (Ambrose & Arnaud, 2005; Ambrose & Schminke, 2009; Colquitt & Shaw, 2005; Greenberg, 2001). This approach represents an important step forward for researchers interested in the different sources of justice as it highlights the notion of accountability, which is a critical aspect of justice judgments (Cropanzano, Chrobot-Mason, Rupp, & Prehar, 2004; Folger & Cropanzano, 2001). That is, this approach facilitates the examination of the total impact of the parties held responsible of the (un)just acts that take place at the workplace (e.g., managers, coworkers). In addition, focusing on the total impact of justice of each source of justice is more parsimonious than the examination of the different effects of each justice facet of each party (Ambrose & Schminke, 2007) and, thus, facilitates the development of a less fragmented literature (Holtz & Harold, 2009).

Research at the unit level of analysis has shown that there are two strategies for operationalizing justice perceptions through an overall approach. The first strategy is based on the previous work by James and McIntyre (1996) who argued that employees develop multiple psychological climates (e.g., leader support, facilitation) which can be accounted by a higher-order construct—i.e., general psychological climate. Li et al. (2013) applied this strategy to justice climate and peer justice using a sample of undergraduate students. Following James and McIntyre, Li and colleagues suggested that justice climate and peer justice may be operationalized as two hierarchical—second-

order—constructs. That is, these authors suggested that overall justice climate would be indicated by the facets of justice climate (e.g., procedural and interpersonal justice climate), whereas overall peer justice would be indicated by the facets of peer justice (e.g., procedural and interpersonal peer justice). Li et al.'s observed that these hierarchical models fit the data better than the models that were composed only by the first-order facets. These results were replicated in Study 1 of the present doctoral thesis using a sample from a formal work environment.

Rather than distinguishing between justice facets, the second strategy for operationalizing justice climate and peer justice through an overall approach focuses on a single—first-order—dimension. This approach is based on the idea that individuals consider fairness as a Gestalt, that is, the facets of fairness “are meaningful only in relation to the overall fairness of the situation” (Tornblom & Vermunt, 1999, p. 51). Priesemuth, Arnaud, and Schminke (2013) successfully applied this single overall dimension strategy to justice climate. Cropanzano et al. (2013) replicated Priesemuth et al.'s results and further extended them by applying the same strategy to peer justice. Thus, research so far has proven that both strategies for operationalizing justice climate and peer justice through an overall approach are useful. However, it remains unknown whether these distinct operationalizations behave in a similar fashion.

Theoretical Framework

Organizational (in)justice is an important stressor within the workplace (e.g., Bakker, Killmer, Siegrist, & Schaufeli, 2000). The scope of this stressor can be quite extensive since employees engage in sense-making activities to interpret the justice events they experience at work (Roberson 2006a, 2006b). This sense-making process facilitates the emergence of shared perceptions of fairness, such as justice climate and peer justice (Rupp & Paddock, 2010). When these climates emerge thus, justice as a

stressor becomes salient to all unit members. In the following paragraphs we propose uncertainty management theory (Lind & van den Bos, 2002) and self-determination theory (Ryan & Deci, 2002) as two theories that can help us comprehend how these fairness climates can differentially affect employees' burnout.

Uncertainty management theory suggests that employees care about justice because they have an innate need for certainty and predictability, and because it provides them with information that can reduce their uncertainties (Lind & van den Bos, 2002; van den Bos & Miedema, 2000). It is important to note that the uncertainty related to those in power might be detrimental for the employees' well-being. Three reasons have been proposed to explain this detrimental effect: uncertainty negatively impacts the coherence of one's perceived self-evaluation (e.g., De Cremer, 2002; Lind & Van den Bos, 2002), reduces the possibility to control and predict the work environment (Lind & Van den Bos, 2002; Thau, Bennett, Mitchell, & Marrs, 2009), and threatens the stability and continuity of our organizational membership—e.g., in terms of pay, job security, or promotions (Eberly, Holley, Johnson, & Mitchell, 2011).

Following this logic, we believe that the level of uncertainty signaled by the (un)fair treatment provided to the work unit by those in power will be related to the level of emotional exhaustion of each unit employee. In other words, the distress conveyed by the uncertainty will emotionally exhaust the employees that work in units characterized by low justice climate. Moreover, to cope with this lack of justice by authority figures, employees will try to protect themselves by behaving in an indifferent and detached manner—i.e., high cynicism. In contrast, employees working in units characterized by a fair treatment by management will experience less emotional exhaustion and less cynicism.

Even though there is no previous evidence testing the cross-level effect of justice climate on emotional exhaustion and cynicism, employees that work in fair environments tend to report more positive attitudes (e.g., job satisfaction) and less withdrawal behaviors (e.g., absenteeism) (see Whitman et al., 2012). These results are similar to what happens with employees that report high levels of well-being (e.g., Diestel & Schmidt, 2011; Tims, Bakker, & Derks, 2013). Thus, based on the above arguments, we propose the following hypothesis.

Hypothesis 1: Justice climate is negatively related to employees' individual-level perceptions of emotional exhaustion (Hypothesis 1a) and cynicism (Hypothesis 1b).

We now turn the attention to the role of peer justice. Coworkers who do not have formal authority over each other are probably not as important as a source of uncertainty as the supervisor or the organization as a whole. From an uncertainty management perspective thus, high peer justice might not be as relevant as high justice climate in preventing employees' burnout. From a self-determination perspective, however, the relevance of peer justice might be different.

Self-determination theory posits that beyond a need to feel competent and autonomous, individuals are motivated to satisfy their need for relatedness, that is, the need to interact and be connected to others (Ryan & Deci, 2002). Good and trustful interpersonal relationships as the ones promoted by high peer justice may help employees satisfy their need for relatedness. Having satisfied their need for relatedness, employees might feel more emotionally supported and, thus, less inclined to suffer from emotional exhaustion. Employees working in environments characterized by the meaningful relationships that exist between coworkers might find themselves to be more attached to their job and, thus, less cynical, than employees that do not have the possibility to share

such a positive environment. In other words, low levels of peer justice may diminish the possibility of satisfying the need for relatedness and, in turn, lead to maladaptive outcomes such as emotional exhaustion and cynicism.

Although there are no studies exploring the relationship between peer justice and burnout, some studies conducted at the individual-level of analysis provide preliminary support for this relationship. For instance, Kop, Euwema, and Schaufeli (1999) reported that reciprocity between coworkers was negatively related with emotional exhaustion and cynicism. Also using coworkers as their main referent, Fernet, Gagné, and Austin (2010) observed that high-quality relationships with coworkers was also negatively related with emotional exhaustion. Research on social support has also suggested the existence of a negative association between interpersonal relationships with coworkers and burnout (Kay-Eccles, 2012). Taken as a whole, these results provide preliminary support for the cross-level effect of peer justice on burnout.

Because we believe the relationship between peer justice and burnout will be driven by the employees' need for relatedness and not by their level of uncertainty—as signaled by justice climate—, and because coworkers represent one of the most salient characteristics of employees' social environment (Dutton & Ragins, 2007), we argue that peer justice will explain incremental variance above and beyond the effect of justice climate. Based on these arguments, we derive the following hypothesis.

Hypothesis 2: Peer justice is negatively related to employees' individual-level perceptions of emotional exhaustion (Hypothesis 2a) and cynicism (Hypothesis 2b) above and beyond the effect of justice climate.

7.3. Method

Participants and Procedure

Samples 1 and 2 were collected from health care organizations specialized in attending persons with intellectual disability. These organizations were affiliated with the Confederation of Organizations for Persons with Intellectual Disability (FEAPS, Spain). Each organization is considered as a work unit of FEAPS. Although both samples were collected in the same industry, Sample 1 and Sample 2 were collected five years apart. More important, the organizations that compose Sample 1 are different from the organizations that compose Sample 2. Participation was confidential and voluntary. Each organization randomly chose their employees. Since some of the study variables were based on aggregated measures, we used data only when there were three or more individuals per work unit.

Sample 1. For Sample 1 we collected data from 770 employees working in 98 work units. After deleting cases with missing data the final sample was 532 employees nested in 79 work units. Work units ranged from 3 to 12 employees (mean = 6.73, $SD = 2.20$). The average age of employees was 35.24 years ($SD = 8.76$), their average organizational tenure was 6.91 years ($SD = 6.58$), 71.06% were women and 55.73% had earned a university degree.

Sample 2. For Sample 2 we collected data from 937 employees working in 118 work units. After deleting cases with missing data the final sample was 692 employees nested in 111 work units. Work units ranged from 3 to 12 employees (mean = 6.23, $SD = 2.65$). The average age of employees was 37.23 years ($SD = 9.20$), their average organizational tenure was 8.54 years ($SD = 7.01$), 73.99% were women and 52.11% had earned a university degree.

Measures

In order to compare if the two operationalizations of justice climate and peer justice show different effects on burnout, we assessed justice constructs using two distinct measures. In Sample 1 we used the second-order approach used by Li et al. (2013), while in Sample 2 we used the overall approach used by Cropanzano et al. (2013).

Measures used in Sample 1. *Justice climate.* We assessed *justice climate* with the scale developed by Colquitt (2001) and validated in Study 1 of the present doctoral thesis, using a 7-point Likert scale (ranging from 1, *strongly disagree* to 7, *strongly agree*). Seven items referred to procedural justice, 4 items to interpersonal justice, and 5 items to informational justice. The alpha coefficient of justice climate in Sample 1 was .97.

Peer justice. We assessed *peer justice* based on the scale developed by Li and Cropanzano (2009) and validated in Study 1 of the present doctoral thesis, using a 5-point Likert scale (ranging from 1, *strongly disagree* to 5, *strongly agree*). Four items referred to procedural peer justice, 4 items to interpersonal peer justice, and 4 items to informational peer justice. The alpha coefficient of peer justice in Sample 1 was .97.

Burnout. The core dimensions of burnout, emotional exhaustion (5 items) and cynicism (5-items), were measured with the Spanish validated version (see Schaufeli, Salanova, González-Romá, & Bakker, 2002) of the Maslach Burnout Inventory—General Survey (MBI-GS; Schaufeli, Leiter, Maslach, & Jackson, 1996). An example item of emotional exhaustion is “At the end of the day I feel tired” and an example item of cynicism is “I have become less enthusiastic about my work”. All items were rated in a Likert response scale ranging from 0 (never) to 6 (everyday). The alpha coefficient of emotional exhaustion was .86 and for cynicism was .83.

In order to verify that emotional exhaustion and cynicism represented distinct constructs, we compared two models using confirmatory factor analyses (CFA). In the first model the observed variables loaded on their respective factors (two-factor model), whereas the second model specified observed variables of the two constructs to load onto the same factor (single-factor model). To assess model fit, we computed the following fit indices: the Root Mean Square Residual (RMSEA)—values smaller than .10 indicate an acceptable fit (Browne & Cudeck, 1993)—, Non-Normed Fit Index (NNFI)—values greater than .95 indicate good fit—Comparative Fit Index (CFI)—values close to .95 indicate good fit (Hu & Bentler, 1999)—Standardized Root Mean Square Residual (SRMR)—values greater than .10 indicate model rejection (Marsh, Hau, & Wen, 2004). As chi-square largely depends on sample size (Cheung & Rensvold, 2002; Meade, Johnson, & Braddy, 2008), we followed previous recommendations that suggest using more practical criteria to compare competing models. According to these recommendations, an improvement in model fit should be supported by an increase of .010 in CFI or TLI (Δ CFI and Δ NNFI) or by a decrease of .015 in RMSEA (Δ RMSEA) or .030 in SRMR (Δ SRMR) (Chen, 2007; Cheung & Rensvold, 2002; Widaman, 1985). The two-factor model provided a good fit to the data ($\chi^2 = 161.94$, $df = 34$, $p < .01$; RMSEA = .085; CFI = .979; NNFI = .972; SRMR = .075) and was a better fit to the data than the single-factor model ($\chi^2 = 672.00$, $df = 35$, $p < .01$; RMSEA = .187; CFI = .893; NNFI = .863; SRMR = .124; Δ RMSEA > .015; Δ CFI > .010; Δ NNFI > .010; Δ SRMR > .030). These results, thus, provided support for operationalizing emotional exhaustion and cynicism as two distinct constructs.

Measures used in Sample 2. *Justice climate.* We assessed justice climate with the 3-item scale developed and validated by Cropanzano et al. (2013), which was based on the Perceived Overall Justice (POJ) previously developed by Ambrose and Schminke

(2009). Items were reported using a 5-point Likert scale (ranging from 1, *strongly disagree* to 5, *strongly agree*). An example item of emotional exhaustion is “In general, this organization treats its workers in a fairly manner”. The alpha coefficient of justice climate was .80.

Peer justice. We assessed peer justice with the 3-item scale also developed and validated by Cropanzano et al. (2013) based on the POJ scale developed by Ambrose and Schminke (2009). Items were reported using a 5-point Likert scale (ranging from 1, *strongly disagree* to 5, *strongly agree*). An example item of emotional exhaustion is “Most of the people who work in this work unit would say they are often treated unfairly by other group members”. The alpha coefficient of justice climate was .85.

Similar to what we did with the burnout measure used in Sample 1, we compared a two-factor model that distinguished between justice climate and peer justice with a single-factor model that specified all observed variables to load onto the same factor. The two-factor model provided a good fit to the data ($\chi^2 = 32.53$, $df = 8$, $p < .01$; RMSEA = .067; CFI = .992; NNFI = .985; SRMR = .051) and was a better fit to the data than the single-factor model ($\chi^2 = 224.89$, $df = 9$, $p < .01$; RMSEA = .186; CFI = .929; NNFI = .881; SRMR = .148; Δ RMSEA > .015; Δ CFI > .010; Δ NNFI > .010; Δ SRMR > .030). These results, thus, provided support for operationalizing justice climate and peer justice as two distinct constructs.

Burnout. To assess emotional exhaustion and cynicism in Sample 2, we used the same scale that we used in Sample 1. The alpha coefficient of emotional exhaustion and cynicism was .86 and .81, respectively.

As in Sample 1, we compared a two-factor to a single-factor model. The two-factor model provided a good fit to the data ($\chi^2 = 197.66$, $df = 34$, $p < .01$; RMSEA = .084; CFI = .979; NNFI = .973; SRMR = .063) and was a better fit to the data than the

single-factor model ($\chi^2 = 734.38$, $df = 35$, $p < .01$; RMSEA = .170; CFI = .912; NNFI = .887; SRMR = .091; Δ RMSEA > .015; Δ CFI > .010; Δ NNFI > .010; Δ SRMR > .030).

Control variables measured in Sample 1 and 2. Based on previous research that reported significant relationships with the study variables, we tested the effect of gender (Maslach et al., 2001), organizational tenure (Brewer & Shapard, 2004), and work-unit size (Colquitt, Noe, & Jackson, 2002).

Data Analyses

To examine the appropriateness of aggregating justice climate and peer justice to the work-unit level, we followed a consensus-based approach (calculation of the average deviation index, $AD_{M(J)}$; Dunlap, Burke, & Smith-Crowe, 2003) complemented by a consistency-based approach (calculation of the intraclass correlation coefficient, ICC(1), Lebreton & Senter, 2008) (see Kozlowski & Klein, 2000). In order to determine whether there was between-unit discrimination among the studied variables (see Chan, 1998), we also we computed one-way analysis of variance (ANOVA).

To test the cross-level effect of justice climate and peer justice on burnout we used hierarchical linear modeling (HLM). This methodology allows the simultaneous examination of the effects of variables at both the individual and unit levels (Raudenbush & Bryk, 2002). To adequately test the hypothesized effects, we followed Hofmann and Gavin (1998) recommendations and grand-mean centered all independent variables. To compute the variance explained by each set of predictors we used the formula $[1 - (\text{variance with predictors} / \text{variance without predictors})]$ (see Bliese, 2002).

7.4. Results

Data aggregation

The within-unit agreement indexes for the studied work units were: for justice climate_(sample 1) the mean $AD_{M(J)}$ was .78 (SD = .25) and the ICC(1) was .27; for justice climate_(sample 2) the mean $AD_{M(J)}$ was .55 (SD = .24) and the ICC(1) was .25; for peer justice_(sample 1) the mean $AD_{M(J)}$ was .51 (SD = .16) and the ICC(1) was .34; and for peer justice_(sample 2) the mean $AD_{M(J)}$ was .49 (SD = .21) and the ICC(1) was .28. The results obtained by the ANOVAs showed a significant degree of between-units discrimination: justice climate_(sample 1): $F(78, 453) = 3.55, p < .01$; justice climate_(sample 2): $F(110, 581) = 3.12, p < .01$; peer justice_(sample 1): $F(78, 453) = 4.52, p < .01$; and peer justice_(sample 2): $F(110, 581) = 3.42, p < .01$. Altogether, the variables of the present study showed sufficient levels of within-unit agreement and between-unit differentiation.

Hierarchical Linear Modeling (HLM)

Means, standard deviations, and scale correlations are presented in Table 9.

Before testing Hypotheses 1 and 2, we examined the degree of between-unit variance in the two dependent variables, that is, emotional exhaustion and cynicism. Results of the null models of Sample 1 revealed that 9.82% of the variance in emotional exhaustion and 11.28% of the variance in cynicism reside between units ($\tau_{00} = .154, p < .01$; $.173, p < .01$; respectively). Similarly, results of the null models of Sample 2 revealed that 14.68% of the variance in emotional exhaustion and 10.22% of the variance in cynicism reside between units ($\tau_{00} = .223, p < .01$; $.146, p < .01$; respectively). Since all intercept terms significantly varied across units for both dependent variables, we proceeded to test the proposed hypotheses using a cross-level rationale.

Table 10 shows the results for emotional exhaustion. Model 1 tested the relationship between the control variables—gender, organizational tenure, and work-unit size—and emotional exhaustion. As shown in Table 10, none of the control variables in Sample 1 or Sample 2 were significantly related to the dependent variable. In Model 2 we tested the additional cross-level effect of justice climate on individual levels of emotional exhaustion. Results for Sample 1 and 2 showed that justice climate was significantly related to emotional exhaustion ($\gamma = -.40, p < .01$; $\gamma = -.48, p < .01$; respectively), providing support for Hypothesis 1a. In addition to justice climate, in Model 3 we added the cross-level effect of peer justice. This variable did not predict additional variance of emotional exhaustion, above and beyond the effect of justice climate. Thus, we found no support for Hypothesis 2a.

Table 11 shows the results for cynicism. Model 1 tested the effect of the control variables—gender, organizational tenure, and work-unit size—on cynicism. As shown in Table 11, gender was significantly related to the dependent variable ($\gamma = .24, p < .01$). This result is consistent with previous findings that have shown that male employees tend to report higher levels of cynicism (Maslach et al., 2001). In Model 2 we tested the additional cross-level effect of justice climate. Similarly to what we reported with emotional exhaustion, results for Sample 1 and 2 showed that justice climate was significantly related to cynicism ($\gamma = -.51, p < .01$; $\gamma = -.49, p < .01$; respectively). Thus, these results provide support for Hypothesis 1b. Finally, in addition to justice climate, in Model 3 we added the cross-level effect of peer justice. Interestingly, peer justice in Sample 1 and 2 was significantly related to cynicism ($\gamma = -.31, p < .05$; $\gamma = -.26, p < .05$; respectively). That is, peer justice was significantly related to cynicism above and beyond the effect of justice climate, providing support for Hypothesis 2b.

Table 9. Means, standard deviations, and correlations

	<i>Mean</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
Sample 1 (work-units <i>n</i> = 79; employees <i>n</i> = 532)									
1. Gender ^a	-	-	-						
2. Organizational tenure	6.91	6.58	.08	-					
3. Emotional exhaustion	2.29	1.25	-.01	.09	-				
4. Cynicism	1.27	1.24	.10*	.15*	.53**	-			
5. Work-unit size	6.73	2.20	-	-	-	-	-		
6. Justice climate	5.53	.61	-	-	-	-	.01	-	
7. Peer justice	3.87	.47	-	-	-	-	-.10	.41**	-
Sample 2 (work-units <i>n</i> = 111; employees <i>n</i> = 692)									
1. Gender ^a	-	-	-						
2. Organizational tenure	8.54	7.01	.07	-					
3. Emotional exhaustion	2.03	1.21	.02	-.01	-				
4. Cynicism	1.13	1.18	.08*	.05	.54**	-			
5. Work-unit size	6.77	2.38	-	-	-	-	-		
6. Justice climate	3.76	.51	-	-	-	-	-.20*	-	
7. Peer justice	4.06	.49	-	-	-	-	-.27**	.52**	-

^a 0 = Woman, 1 = Male. * $p < .05$. ** $p < .01$.

Table 10. Hierarchical linear modeling (HLM) results for emotional exhaustion

	Emotional exhaustion (Sample 1)			Emotional exhaustion (Sample 2)				
	Null model	Model 1	Model 2	Model 3	Null model	Model 1	Model 2	Model 3
Level 1 ($n = 532$)								
Intercept	2.28** (.07)	2.19** (.10)	2.22** (.10)	2.22** (.10)	2.02** (.06)	1.67* (.20)	1.83* (.18)	1.85** (.19)
Gender ^a	-	-.08 (.12)	-.07 (.12)	-.07 (.12)	-	.12 (10)	.09 (10)	.10 (10)
Organizational tenure	-	.02 (.01)	.01 (.01)	.01 (.01)	-	.01 (.01)	.01 (.01)	.01 (.01)
Level 2 ($n = 79$)								
Work-unit size	-	.01 (.03)	.03 (.03)	.03 (.03)	-	.05 (.03)	.03 (.02)	.03 (.02)
Justice climate	-	-	-.40** (.10)	-.36** (.11)	-	-	-.48** (.11)	-.44** (.12)
Peer justice	-	-	-	-.11 (.16)	-	-	-	-.10 (.14)
Within-unit variance (σ^2)	1.414	1.406	1.416	1.414	1.296	1.209	1.211	1.213
Between-unit variance ($\tau 00$)	.154	.154	.089	.088	.223	.220	.166	.165
Within-unit R^2	-	.57%	.00%	.00%	-	6.71%	6.56%	6.40%
Between-unit R^2	-	.00%	42.21%	42.86%	-	1.35%	25.56%	26.01%
Number of free parameters	3	11	12	13	3	11	12	13
Model deviance (χ^2)	1736.75	1730.83	1716.96	1716.40	2425.66	2190.55	2173.45	2172.95
Δdf	-	8	1	1	-	8	1	1
$\Delta \chi^2$	-	5.92	13.87**	.56	-	235.11**	17.10**	.50

Standard errors are reported in parentheses. ^a 0 = Woman, 1 = Male. * $p < .05$. ** $p < .01$.

Table 11. *Hierarchical linear modeling (HLM) results for cynicism*

	Cynicism (Sample 1)			Cynicism (Sample 2)				
	Null model	Model 1	Model 2	Model 3	Null model	Model 1	Model 2	Model 3
Level 1 (<i>n</i> = 692)								
Intercept	1.26** (.07)	1.02** (.10)	1.05** (.09)	1.06** (.09)	1.33** (.06)	.87** (.17)	.98** (.16)	1.03** (.16)
Gender ^a	-	.21 (.13)	.24* (.12)	.23 (.12)	-	.24* (10)	.24* (10)	.24* (10)
Organizational tenure	-	.03 (.01)	.02 (.01)	.02 (.01)	-	.01 (.01)	.01 (.01)	.01 (.01)
Level 2 (<i>n</i> = 111)								
Work-unit size	-	.01 (.03)	.03 (.03)	.03 (.03)	-	.04 (02)	.02 (02)	.02 (02)
Justice climate	-	-	-.51** (.09)	-.41** (.10)	-	-	-.49** (.10)	-.36** (.12)
Peer justice	-	-	-	-.31* (.14)	-	-	-	-.26* (.12)
Within-unit variance (σ^2)	1.361	1.280	1.298	1.292	1.282	1.198	1.197	1.203
Between-unit variance ($\tau 00$)	.173	.173	.041	.008	.146	.144	.100	.089
Within-unit R^2	-	5.95%	4.63%	5.07%	-	6.55%	6.63%	6.16%
Between-unit R^2	-	.00%	76.30%	95.38%	-	1.37%	31.51%	39.04%
Number of free parameters	3	11	12	13	3	11	12	13
Model deviance (χ^2)	1721.51	1705.64	1683.80	1679.39	2396.08	2155.66	2133.20	2128.89
Δdf	-	8	1	1	-	8	1	1
$\Delta \chi^2$	-	15.87*	21.84**	4.41*	-	240.42**	22.46**	4.31*

Standard errors are reported in parentheses. ^a 0 = Woman, 1 = Male. * $p < .05$. ** $p < .01$.

7.5. Discussion

The aim of this study was to test the cross-level effect of justice climate and peer justice on burnouts' core dimensions. Altogether, our results contribute to the fairness literature and occupational health literature by showing the importance of unit-level fairness for the employees' perceptions of burnout.

As expected, justice climate had an important effect on employees' individual level of occupational strain. Specifically, our findings showed that individuals that work in units characterized by the fair treatment provided by management—high justice climate—tend to report feeling less emotionally exhausted than individuals working in units where those in power act in an unfairly manner. Moreover, employees working in units characterized by high level of justice climate also tend to respond by being less detached from their jobs and its tasks—low cynicism—than employees working in units characterized by low level of justice climate. Both relationships took place even after controlling the effect of its counterpart peer justice.

Peer justice showed a different set of results. Individuals that work in units characterized by the fair treatment coworkers provide to each other—high peer justice—did not tend to report reduced feelings of emotional exhaustion above and beyond the emotional distress related to justice climate. Interestingly, high peer justice did relate to reduced feelings of cynicism. More important, this result took place even after controlling the effect of justice climate on emotional exhaustion.

Noteworthy, we observed the same pattern of behavior for justice climate and peer justice in two different samples. Moreover, the pattern of results showed by our findings was the same even though we used two different operationalizations of justice climate and peer justice. The consistency of these results raise two questions that we address in the following paragraphs.

The first question is “why was justice climate the only fairness climate that was related to employees’ emotional exhaustion?”, or what is the same, “why was peer justice not related to emotional exhaustion?”. To answer this question we draw on uncertainty management theory which posits that individuals have a fundamental need to feel certain about their world and their place within it (Lind & Van den Bos, 2002). Being uncertain thus, consumes one’s resources by deteriorating our confidence in how to behave and what to expect from our surroundings. This assertion helps understand why the uncertainty signaled by unfairness might translate into feelings of exhaustion. Now, since the organization and its supervisors have more power over employees’ jobs than coworkers have (Kramer, 1996), employees might feel more threatened to work in a unit characterized by low justice climate than by low peer justice. That is, the uncertainty signaled by an environment characterized by the unfair treatment of those in power might be interpreted as more threatening than the uncertainty signaled by an environment characterized by the unfair treatment of coworkers. Thus, coping with a low level of justice climate might require more personal resources than coping with a low level of peer justice. It is comprehensible then that the sources of fairness that require the depletion of more resources—i.e., authority figures—also produce more feelings of emotional exhaustion. It is also reasonable to think that employees cope with the exhaustion caused by the uncertainty over their jobs—signaled by the low level of justice climate—by progressively withdrawing from their job-related tasks and, thus, behaving in a more cynical manner. Findings from individual-level research support these underlying arguments. Organizations that are fair tend to promote high perceptions of job control—i.e., high certainty—among their employees (Elovainio, Kivimäki, & Helkama, 2001). More important, research in this field has also shown that job control is an important antecedent of employees’ well-being (Bosma et al., 1997; Karasek, 1979).

In the previous paragraph we explained that peer justice might not be related to emotional exhaustion because justice climate may be more important for regulating the depletion of resources as authority figures have more power than coworkers to affect employees' jobs. We now turn our attention to our second question: "why did peer justice relate to cynicism even after controlling the effect of justice climate?". To answer this question we draw on self-determination theory (Ryan & Deci, 2002). As explained above, we believe that justice climate relates to cynicism because it offers a coping mechanism to deal with the feeling of emotional exhaustion originated by the lack of certainty regarding ones job. We believe peer justice, on the other hand, relates to cynicism because it is closely associated with the desire individuals have to satisfy their social need for relatedness. The necessity to relate to others might be satisfied by the emotional bonds that are promoted by the fair treatment coworkers provide to one another. That is, individuals that work in environments that signal the availability of social and emotional support from coworkers might not feel the need to act detached from other individuals and the job itself as employees that work in environments characterized by poor interpersonal relationships might feel. A key aspect here is that the relationship between peer justice and cynicism seems to be independent from the cynicism produced by justice climate. The importance of peer justice for cynicism, thus, relies on the fact that, at work, the need for social relatedness seems to be more fulfilled by the social interactions that take place between coworkers who do not have formal authority over each other than by social interactions with those in power (Dutton & Ragins, 2007). Altogether, these results contribute to the emergent literature focused on the salience of coworkers and how they influence employees' attitudes and behaviors beyond the effect of authority figures (e.g., Chiaburu & Harrison, 2008; Hershcovis & Barling, 2010).

The final contribution to the fairness literature refers to the two strategies used in this study to operationalize justice climate and peer justice as overall constructs. Following Lit et al. (2013) and the results of Study 1, in Sample 1 we operationalized justice climate and peer justice as two second-order constructs indicated by the facets of justice climate (e.g., procedural and interpersonal justice climate) and peer justice (e.g., procedural and interpersonal peer justice). Following Priesemuth et al. (2013), in Sample 2 we operationalized justice climate and peer justice as two single overall dimensions that are independent from the justice facets. As previously explained, both operationalizations presented the same pattern for the relationships analyzed. Hence, these results provide support for the utility of both strategies to operationalize justice climate and peer justice as overall constructs.

Limitations and Strengths

The main limitation of this study refers to its cross-sectional nature. To counter balance this limitation we examined the effect of unit-level fairness on individual-level burnout across two samples. We believe the similarity of the effects observed in both samples provides support for the consistency of our results. Moreover, testing the cross-level effect of unit-level fairness on burnout allowed to reduce concerns regarding method variance (Shoss, Eisenberger, Restubog, & Zagenczyk, 2013).

Another limitation has to do with the theoretical frameworks we used to hypothesize the relationships with burnout. To hypothesize the paths from justice climate we used uncertainty management theory, whereas for peer justice we used self-determination theory. Both frameworks suggest constructs that were not measured in this study. Hence, future research should replicate these findings while considering constructs such as job control or perceived uncertainty—for the case of uncertainty management

theory—, and relatedness satisfaction or quality of interpersonal relationships—for the case of self-determination theory.

The nature of the sample collected (i.e., organizations for the attention to people with intellectual disability) provided an important advantage. In this setting not only is burnout especially acute among employees (p.e., Prins et al., 2007) but also it requires them to work closely with their coworkers, facilitating the emergence of shared climates.

Considering previous findings that suggest that (un)fair treatment impacts employees health through the effects on strain-related phenomena such as burnout (see Robbins et al., 2012), this study attest to the potential of interventions directed to unit-level fairness interventions to improve employees' well-being. By adopting a multilevel approach and distinguishing between justice climate and peer justice, this study contributes to the fairness literature by extending the complexity of organizational justice as a social phenomenon and its relationships with key occupational health outcomes such as emotional exhaustion and cynicism. In this regard, our findings indicate that peer justice plays a key role in predicting employees' attachment toward people at work and their jobs. This observation took place even after controlling for justice climate and, thus, suggests that the sole focus on authority figures does not fully account for the way employees respond to workplace (un)fairness. Altogether, we believe this study provides theoretically-driven and application-relevant information for scholars and practitioners to continue their pursuit to increasing employees' quality of life at work.

**8. ESTUDIO 5: “EXTENDING THE TRICKLE-DOWN JUSTICE MODEL:
JUSTICE CLIMATE STRENGTH AS A MODERATOR OF THE JUSTICE
CLIMATE-PEER JUSTICE RELATIONSHIP”**

8.1. Abstract

The aim of this study was to extend our understanding of the way justice perceptions trickle-down the organization, that is, how justice propagates down the organizational hierarchy. To this end, we examined the degree of agreement among members of the same work unit on whether the unit has been treated fairly by those in power—justice climate strength—as a moderator of the effect of justice climate on peer justice. We tested this effect using two samples from the health care industry. Sample 1 consisted of 532 employees nested in 79 organizations and Sample 2 of 692 employees nested in 111 organizations. Our results replicated the effect of justice climate on peer justice previously reported in the justice literature. More important, our results showed that justice climate strength is an important boundary condition that may amplify—or buffer—the trickle-down effect of justice perceptions within the workplace.

Keywords: Justice climate, justice climate strength, peer justice.

8.2. Introduction

The shift toward groups and unit-based structures in the workplace has promoted the study of organizational justice as a collective phenomenon (Li, Cropanzano, & Bagger, 2013). Over the years, justice climate, defined as the way coworkers are treated by an authority, such as the supervisor or the organization as a whole (Colquitt, Noe, & Jackson, 2002), has proven to be an important predictor of unit-level effectiveness and processes such as citizenship and cooperative behaviors (Whitman, Caleo, Carpenter, Horner, & Bernerth, 2012). Based on multifoci research (Reichers, 1985), however, we know that whereas the supervisor and the organization as a whole comprise authority sources of justice, employees can also develop fairness perceptions regarding other stakeholders such as customers (Rupp, McCance, & Grandey, 2007) and coworkers (Lavelle et al., 2009). Indeed, recent findings argue for the importance of peer justice, defined as employees' shared perceptions of the fairness with which coworkers generally treat one another (Li et al., 2013). Similarly to its counterpart justice climate, peer justice has recently been related to important outcomes such as effective team processes (Cropanzano, Li, & Benson, 2011), team satisfaction, and cooperation (Li et al., 2013). The results reported in Studies 1, 2, 3, and 4 of the present doctoral thesis, provide additional support for the importance of peer justice. The study of this construct thus offers a key opportunity to complement our knowledge regarding the benefits and consequences associated to unit-level fairness. However, even though several studies have examined the antecedents of justice climate (Brown, Trevino, & Harrison, 2005; Cho & Dansereau, 2010; Ehrhart, 2004; Hammer, Bayazit, & Wazeter, 2009; Kroon, van de Voode & van Veldhoven, 2009; Roberson, 2006a, 2006b; Walumbwa Wu, C. y Orwa, 2008; Walumbwa, Hartnell, & Oke, 2010), little do we know about the way work units develop peer justice.

Recent studies on ethical leadership argue that moral behavior at one level trickles down to lower levels of the hierarchy (Ambrose, Schminke, & Mayer, 2013; Mayer, Kuenzi, Greenbaum, Bardes, & Salvador, 2009; Schaubroeck, Hannah, Avolio, Lord, Treviño, Dimotakis, & Peng, 2013). Although these studies focus on management hierarchy, social learning theory (Bandura, 1977, 1986) suggest that the trickle-down model of ethical behavior can be extended to include the ethical behavior of work-unit employees. Based on this framework, Cropanzano, Walumbwa, and Aryee (2013) recently observed with a sample drawn from U.S. banking institutions that the way coworkers are treated by authority figures (i.e., justice climate) has an important influence over the way coworkers treat each other (i.e., peer justice). Because understanding justice trickle-down processes requires identifying the factors that facilitate or inhibit the trickle-down effect (Ambrose et al., 2013), in the present study we extend Cropanzanos' model by adding justice climate strength (the degree to which employees present shared perception about justice climate) as a moderator of this relationship (see Figure 7).

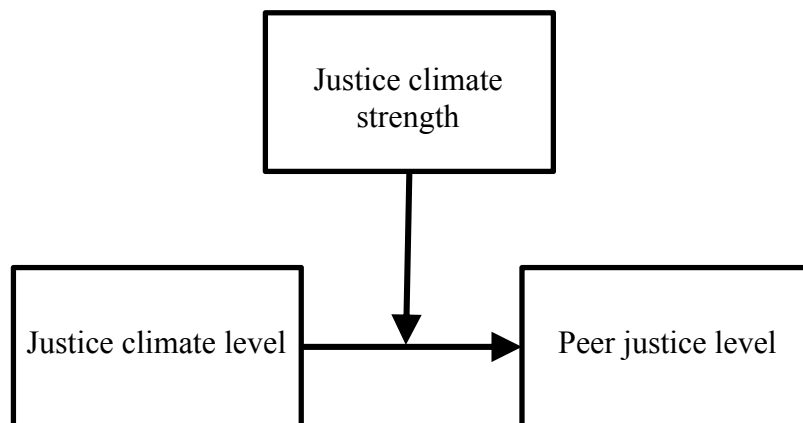


Figure 7. *Proposed model.*

In order to examine the moderating role of justice climate strength we use two distinct operationalizations of justice climate and peer justice conceptualized as overall constructs, each one from a different sample of Spanish health care organizations. Thus, in addition to replicating the positive path observed by Cropanzano et al. (2013) in a sample of U.S. organizations with data from Spanish organizations, this study aims to provide consistent results of justice climate strength as a moderator of the effect of justice climate on peer justice. In the following sections we provide the theoretical framework that guided this study.

The Justice Climate-Peer Justice Relationship

Numerous studies argue that moral behavior at one level trickles down to lower levels of the hierarchy. For instance, Mayer et al. (2009) found a negative relationship between both top management and supervisory ethical leadership and unit-level deviance, and a positive relationship with unit-level organizational citizenship behaviors. A similar study conducted by Mayer, Aquino, Greenbaum, and Kuenzi (2012) showed that ethical leadership mediated leader moral identity and work-unit unethical behavior and work-unit relationship conflict. Schaubroeck et al. (2013) not only found support for trickle-down mechanisms of ethical leadership but also found support for a multilevel model that took into account how leaders embed shared understandings through their influence on the ethical culture of units at various levels, which in turn influence subordinates' ethical cognitions and behavior.

Although the abovementioned studies focus on management hierarchy, Cropanzano et al. (2013) proposed, using social learning theory (Bandura, 1977, 1986) as a framework, to extend trickle-down models of ethical behavior to include the ethical behavior of work-unit employees. Besides from learning from reward and punishment, social learning theory suggests that people also learn from modeling or copying the

behavior of legitimate role models. Similarly to how a supervisor models the ethical behavior he or she receives from the upper hierarchy, social learning theory suggests that employees may also model the treatment their work unit receives from authority figures (i.e., justice climate). That is, employees should treat one another (peer justice) in a similar fashion to the way they perceive they are treated by those in power (justice climate). Cropanzano et al. (2013) tested this hypothesis within a more complex model considering different styles of leadership and observed that employees did actually modeled the behavior that the leader exhibited toward their work unit as a whole. Cropanzano and colleagues tested the path from justice climate to peer justice with a sample of U.S. banking employees. The first objective of the current study is to replicate Cropanzano et al.'s findings. Hence, we derive the following hypothesis:

Hypothesis 1: Justice climate is positively related to peer justice.

Moderating the Justice Climate-Peer Justice Relationship. Overall, research on trickle-down fairness suggests that “trickle-down influences related to justice perceptions create a multiplier effect on attitudes and behavior in organizations, as an individual’s fairness perceptions influence how fairly he or she treats others, who are in turn influenced in their fair treatment of still others” (Ambrose et al., 2013, p. 8). The question that rises from this line of research is: which factors facilitate or inhibit trickle-down effects? To answer this question we explore the literature on justice climate strength.

Work units can be characterized not only by the level or amount of fairness perceived by a group of employees but also by the strength with which a phenomenon has emerged as a significant unit characteristic. This degree of agreement among members of the same work unit on whether the unit has been treated fairly has been typically refereed as justice climate strength (Moliner, Martínez-Tur, Peiró, Ramos, &

Cropanzano, 2005; Naumann & Bennett, 2000). This phenomenon represents an important attribute for unit-level fairness since two work units can show equal levels of justice but, at the same time, show different degrees of agreement (strong versus weak justice climate strength). Moreover, two work units showing equal degree of agreement of justice perceptions can also show different levels of justice perceptions (high versus low justice climate level). As depicted by Whitman et al.'s (2012) meta-analysis, several studies have considered this phenomenon and tested the interaction between the level of justice perception and the degree of agreement regarding that perception. For instance, Colquitt et al. (2002) observed that procedural justice climate level and procedural justice climate strength interacted with each other to predict team performance and absenteeism. Specifically, the relationships between justice climate level and outcomes were higher when there was a high degree of agreement on justice climate within the work unit. Similarly, Moliner, Martínez-Tur, Peiró, and Ramos (2005) observed that interactional justice climate and interactional justice climate strength interacted to predict burnout. Specifically, the relationship between the level of interactional justice and the level of burnout was stronger for strong interactional justice strength than for weak interactional justice strength.

Taken as a whole, Colquitt et al.'s (2002) and Moliner et al.'s (2005) results suggest that justice climate level has a greater effect when it is accompanied by a high level of agreement by all members within the same unit (i.e., strong climate). These effects can be interpreted through the lens of Mischel's (1973) concept of *situational strength*. This concept refers to the degree of ambiguity that exists in a given context (see González-Romá, Peiró, & Tordera, 2002; Ostroff & Bowen, 2000). According to this framework, a strong situation—a unit characterized by the agreement of their members—, will lead employees to perceive justice events similarly. More important,

strong situations will inform employees which is the behavior that is expected. In contrast, in a weak situation—where units are characterized by the disagreement of their members—, the amount of ambiguity will preclude employees from perceiving events in the same way. In weak situations then, the expectations about the most appropriate behavior will not be clear among unit members due to the variability in peoples' perceptions. It is comprehensible then that the diminished variability promoted by strong situations will translate into more predictable outcomes. In addition to justice research (see Whitman et al., 2012), this framework has been proven useful for testing the moderating effects of climate strength within several other organizational domains, such as team climate (González-Romá, Fortes-Ferreira, & Peiró, 2009) and service climate (Schneider, Salvaggio, & Subirats, 2002).

Based on Mischel's (1973) concept of situational strength we argue that strong situations—as signaled by strong justice climate strength; that is, high within-unit agreement—will inform employees about which is the behavior that is expected by an authority in the organization. In other words, if unit members agree that the authorities treat them (un)fairly, they will believe that providing (un)fair treatment is a well-received behavior and, thus, will be more inclined to behave in such a way. As previously explained, we argue that the (un)fair behavior provided by authorities will extend to other spheres of the organization, such as the treatment coworkers provide to each other—peer justice. Nonetheless, we now argue that the extension of that treatment to within the unit will be more evident when unit members agree upon the way their authorities behave and, thus, upon the behaviors that are well-received by those authorities. In contrast, we argue that if unit members do not agree upon the fairness of the treatment they receive from authorities—weak situation—, the ambiguity regarding the expected behavior will lead

employees to show less uniform behavior which, in turn, will hinder the justice climate-peer relationship. On the basis of this rationale, we hypothesize the following:

Hypothesis 2: Justice climate strength moderates the justice climate-peer justice relationship such that strong justice climate strength strengthens the positive relationship between justice climate level and peer justice level.

8.3. Method

Participants and procedures

Samples 1 and 2 were collected from health care organizations specialized in attending persons with intellectual disability. These organizations were affiliated with the Confederation of Organizations for Persons with Intellectual Disability (FEAPS, Spain). Each organization is considered as a work unit of FEAPS. Although both samples were collected in the same industry, Sample 1 and Sample 2 were collected five years apart. More important, the organizations that compose Sample 1 are different from the organizations that compose Sample 2. Participation was confidential and voluntary. Since some of the study variables were based on aggregated measures, we used data only when there were three or more individuals per work unit.

Sample 1. For Sample 1 we collected data from 770 employees working in 98 work units. After deleting cases with missing data the final sample was 532 employees nested in 79 work units. Work units ranged from 3 to 12 employees (mean = 6.73, $SD = 2.20$). The average age of employees was 35.24 years ($SD = 8.76$), their average organizational tenure was 6.91 years ($SD = 6.58$), 71.06% were women and 55.73% had earned a university degree.

Sample 2. For Sample 2 we collected data from 937 employees working in 118 work units. After deleting cases with missing data the final sample was 692 employees

nested in 111 work units. Work units ranged from 3 to 12 employees (mean = 6.23, $SD = 2.65$). The average age of employees was 37.23 years ($SD = 9.20$), their average organizational tenure was 8.54 years ($SD = 7.01$), 73.99% were women and 52.11% had earned a university degree.

Measures

We assessed justice climate and peer justice using two different strategies to operationalizing these constructs. The first strategy (Sample 1) operationalizes justice climate and peer justice as two hierarchical—second-order—constructs (Li et al., 2013). In other words, justice climate would be indicated by the facets of justice climate (e.g., procedural and interpersonal justice climate), whereas peer justice would be indicated by the facets of peer justice (e.g., procedural and interpersonal peer justice). The second strategy (Sample 2) operationalizes justice climate and peer justice through two single-overall—first-order—dimensions (Priesemuth, Arnaud, & Schminke, 2013).

Measures used in Sample 1. *Justice climate.* We assessed *justice climate* with the scale developed by Colquitt (2001) and validated in Study 1 of this doctoral thesis, using a 7-point Likert scale (ranging from 1, *strongly disagree* to 7, *strongly agree*). Seven items referred to procedural justice, 4 items to interpersonal justice, and 5 items to informational justice. The alpha coefficient of justice climate was .97.

Peer justice. In Sample 1, we assessed *peer justice* based on the scale developed by Li and Cropanzano (2009) and validated in Study 1, of this doctoral thesis, using a 5-point Likert scale (ranging from 1, *strongly disagree* to 5, *strongly agree*). Four items referred to procedural peer justice, 4 items to interpersonal peer justice, and 4 items to informational peer justice. The alpha coefficient of peer justice in Sample 1 was .97.

Justice climate strength. We operationalized justice climate strength as the degree of within-unit agreement in justice climate perceptions. Within-unit agreement was

measured by means of the $AD_{M(J)}$ index (Dunlap, Burke, & Smith-Crowe, 2003). This index presents some advantages over the interrater agreement index (rwg; James, Demaree, & Wolf, 1984). The $AD_{M(J)}$ only requires a priori specification of a null response range of interrater agreement since it does not require the modeling of the random or null response distribution. Additionally, the estimates provided by the $AD_{M(J)}$ are in the metric of the original response scale (González-Romá et al., 2002). Since this index is a direct measure of within-unit variability, we followed previous research that suggested multiplying the values provided by the $AD_{M(J)}$ index by -1, so that higher scores represented higher within-unit agreement—stronger justice climate strength (e.g., González-Romá et al., 2002; Moliner et al., 2005).

Measures used in Sample 2. *Justice climate.* We assessed justice climate with the 3-item scale developed and validated by Cropanzano et al. (2013), which was based on the Perceived Overall Justice (POJ) previously developed by Ambrose and Schminke (2009). Items were reported using a 5-point Likert scale (ranging from 1, *strongly disagree* to 5, *strongly agree*). An example item is “In general, this organization treats its workers in a fairly manner”. The alpha coefficient of justice climate was .80. This scale was validated in Study 4 of the present doctoral thesis.

Peer justice. We assessed peer justice with the 3-item scale also developed and validated by Cropanzano et al. (2013) based on the POJ scale developed by Ambrose and Schminke (2009). Items were reported using a 5-point Likert scale (ranging from 1, *strongly disagree* to 5, *strongly agree*). An example item is “Most of the people who work in this work unit would say they are often treated unfairly by other group members”. The alpha coefficient of justice climate was .85. This scale was also validated in Study 4 of the present doctoral thesis.

Justice climate strength. To operationalize justice climate strength in Sample 2 we followed the same procedure based on the $AD_{M(J)}$ index (Dunlap et al., 2003) described for Sample 1.

Control variable measured in Sample 1 and 2. Based on previous research that suggests a negative relationship between justice climate and work-unit size, we controlled the effect of work-unit size (Colquitt et al., 2002).

Data Analyses

To examine the appropriateness of aggregating justice climate and peer justice to the work-unit level, we followed a consensus-based approach (calculation of the average deviation index, $AD_{M(J)}$; Dunlap et al., 2003) complemented by a consistency-based approach (calculation of the intraclass correlation coefficient, $ICC(1)$, Lebreton & Senter, 2008) (see Kozlowski & Klein, 2000). In order to determine whether there was between-unit discrimination among the studied variables (see Chan, 1998), we also we computed one-way analysis of variance (ANOVA).

To test our hypotheses we used hierarchical linear multiple regression. We used Haye's (2012) PROCESS macro (Model 1) for SPSS to estimate the equations of the model and obtain bias-corrected bootstrapped confidence intervals based on 5,000 bootstrap samples for the conditional effect of justice climate level on peer justice level at ± 1 SD of justice climate strength. Predictors were mean centered (Aiken & West, 1991).

8.4. Results

Data aggregation

The within-unit agreement indexes for the studied work units were: for justice climate_(sample 1) the mean $AD_{M(J)}$ was .78 (SD = .25) and the $ICC(1)$ was .27; for justice

climate_(sample 2) the mean $AD_{M(J)}$ was .55 (SD = .24) and the ICC(1) was .25; for peer justice_(sample 1) the mean $AD_{M(J)}$ was .51 (SD = .16) and the ICC(1) was .34; and for peer justice_(sample 2) the mean $AD_{M(J)}$ was .49 (SD = .21) and the ICC(1) was .28. The results obtained by the ANOVAs showed a significant degree of between-units discrimination: justice climate_(sample 1): $F(78, 453) = 3.55, p < .01$; justice climate_(sample 2): $F(110, 581) = 3.12, p < .01$; peer justice_(sample 1): $F(78, 453) = 4.52, p < .01$; and peer justice_(sample 2): $F(110, 581) = 3.42, p < .01$. Altogether, the variables of the present study showed sufficient levels of within-unit agreement and between-unit differentiation.

Hierarchical Multiple Regression

Means, standard deviations, and scale correlations are presented in Table 12.

Hypothesis 1 postulated a positive relationship between justice climate level and peer justice level. As depicted on Table 2, in both samples justice climate level was positively and significantly related to peer justice level, even after controlling for work-unit size (for Sample 1, $\beta = .41, p < .01$; for Sample 2, $\beta = -.44, p < .01$). These results provide support for Hypothesis 1.

More important, as indicated by the interaction terms on Table 13, the relationship between justice climate level and peer justice level was significantly moderated by the degree of agreement among members of the same work unit on whether the unit has been treated fairly by authority figures (i.e., justice climate strength) (for Sample 1, $\beta = .21, p < .05$; for Sample 2, $\beta = .10, p < .10$). It is important to note that in Sample 2 the parameter estimate of the interaction term was marginally significant. However, because of the difficulty in detecting significant interactions, such p value (.10) becomes normative when testing moderator effects (Frazier, Tix, & Barron, 2004; Shieh, 2009). These interactions added a significant 2% of explained variance for Sample 1 and 4% for Sample

2 to the independent explanatory power of the predictors, providing preliminary support for Hypothesis 2.

To explore the nature of the interaction we calculated simple slopes at ± 1 standard deviation of justice climate strength using the bootstrapping method (Hayes, 2009; Preacher & Hayes, 2008). For each data set we computed a 95% bias-corrected bootstrap confidence interval based on 5000 bootstrap samples.

As shown in Table 14, in Sample 1 the conditional effect of justice climate at -1 SD of the moderator—i.e., weak justice climate strength—included zero between the lower and upper bound of the confidence interval generated. Thus, it is not possible to infer that this slope was significant. However, the conditional effect of justice climate at +1 SD of the moderator—i.e., strong justice climate strength—did not include zero between the lower and upper bound of the confidence interval generated and, thus, it is possible to infer that this slope was significant. In Sample 2, none of the conditional effects of justice climate level at either value of the moderator (± 1 SD) included zero between the lower and upper bound of the confidence interval generated. Hence, it is possible to infer that both slopes for both samples were significant. It is important to note though that the relationship between justice climate level and peer justice level was stronger when there was a strong justice climate strength than when there was a weak justice climate strength. Altogether, these results provide support for Hypothesis 2 as in both samples a strong justice climate strength amplified the positive effect of justice climate level on peer justice level, whereas a weak climate strength buffered the relationship between these constructs (see Figure 8 and 9).

Table 12. Means, standard deviations, and correlations

	<i>Mean</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
Sample 1 (work units <i>n</i> = 79)						
1. Work-unit size	6.73	2.20	-			
2. Justice climate level	5.53	.61	.01	-		
3. Justice climate strength	-.78	.25	-.29**	.68**	-	
4. Peer justice level	3.88	.45	-.10	.41**	.49**	-
Sample 2 (work units <i>n</i> = 111)						
1. Work-unit size	6.77	2.38	-			
2. Justice climate level	3.76	.51	-.20*	-		
3. Justice climate strength	-.55	.24	-.30**	.50**	-	
4. Peer justice level	4.06	.49	-.27**	.52**	.34**	-

* *p* < .05. ** *p* < .01.

Table 13. *Hierarchical multiple regression results for peer justice level*

	Step 1		Step 2		Step 3		Step 4	
	B	SE	B	SE	B	SE	B	SE
Sample 1 (work units $n = 79$)								
Work-unit size	-.10	.10	.01	.11	.01	.11	.01	.11
Justice climate level			.41**	.10	.15	.14	.17*	.13
Justice climate strength					.39*	.15	.31*	.15
Justice climate level x justice climate strength							.21*	.09
R^2			.01		.25		.29	
ΔR^2			.17**		.07*		.04*	
Sample 2 (work units $n = 111$)								
Work-unit size	-.27**	.09	-.17*	.08	-.16	.08	-.13	.11
Justice climate level			.44**	.08	.44**	.09	.40**	.12
Justice climate strength					.08	.10	.07	.10
Justice climate level x justice climate strength							.10†	.06
R^2	.07**		.29		.29		.31	
ΔR^2			.22**		.00		.02†	

† $p < .10$ * $p < .05$. ** $p < .01$.

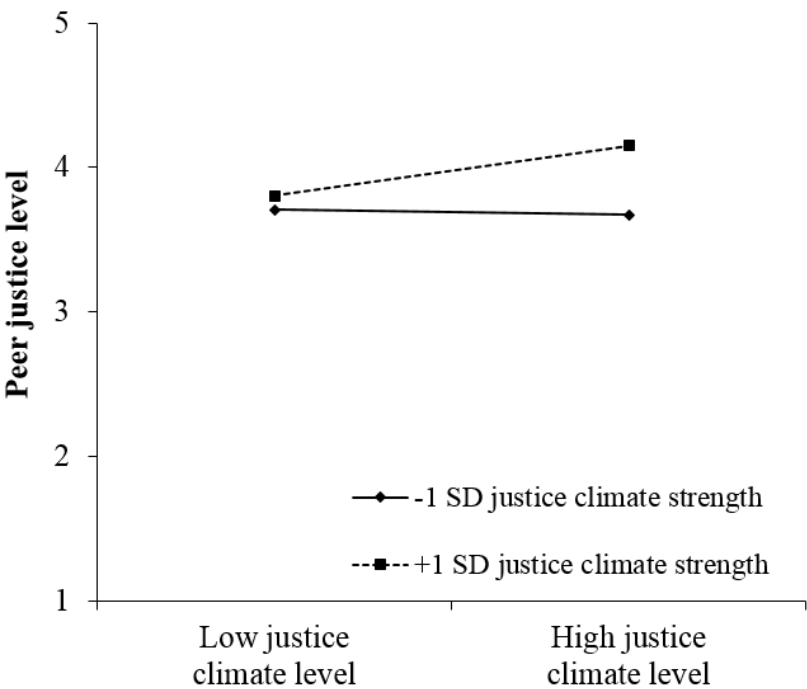


Figure 8. Interaction between justice climate level and justice climate strength predicting peer justice level in Sample 1.

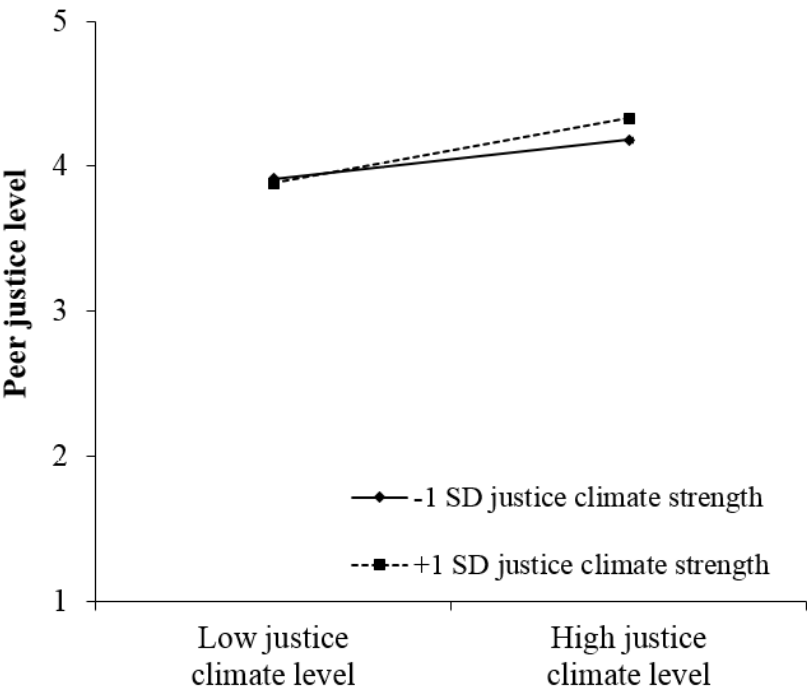


Figure 9. Interaction between justice climate level and justice climate strength predicting peer justice level in Sample 2.

Table 14. *Estimates and Bias-Corrected Bootstrapped 95% Confidence Intervals for the Conditional Effect of Justice Climate Level at ± 1 Standard Deviation of Justice Climate Strength on Peer Justice*

Level of Justice Climate Strength	Peer justice level	
	Estimate (SE) ^a	CI
Sample 1 (work units $n = 79$)		
- 1 SD	-.04 (.14)	[-.319, .241]
+ 1 SD	.37 (.17)	[.033, .712]
Sample 2 (work units $n = 111$)		
- 1 SD	.30 (.14)	[.013, .580]
+ 1 SD	.50 (.12)	[.250, .741]
CI = confidence interval. ^a Bootstrapped estimates for the standard error (SE) are presented.		

8.5. Discussion

Due to the increased importance attributed to justice trickle-down models, the aim of this study was to extend our understanding of the way justice propagates within organizations. To this end, we examined the degree of agreement among members of the same work unit on whether the unit has been treated fairly by those in power (the organization as a whole and their supervisors) as a moderator of the effect of justice climate on peer justice observed by Cropanzano et al. (2013). Using two different samples, each with a different overall strategy to measure justice climate and peer justice, our findings replicated the effect of justice climate on peer justice reported by Cropanzano et al. (2013). More important, our results showed that justice climate strength is an important boundary condition that may amplify or buffer the trickle-down effect of justice perceptions within the workplace.

Following a situational strength framework (Mischel, 1973), we expected that the strength of a situation would influence the trickle-down effect of justice climate on peer justice. Specifically, we hypothesized that in a strong justice climate—or strong situation as suggested by the situational strength framework—, the little ambiguity about the

treatment promoted by those in power would translate into more predictable outcomes, which in this case is peer justice. In contrast, in a weak justice climate—weak situation—, the ambiguity of the context would preclude unit members from knowing which are the justice standards expected by those in power. Thus, the increased variability of unit members' justice perceptions would reduce the predictability of peer justice. Our results supported these hypotheses. In both samples a strong justice climate amplified the positive relationship between justice climate level and peer justice level, while a weak climate buffered the effect of justice climate on peer justice.

Fairness heuristic theory (Lind, 2001) provides an additional lens through which to interpret the amplifying effects of strong justice climate. This theory suggests that the formation of justice judgments is a two-stage process. First, individuals form justice judgments; this has been referred as the “judgment phase”. This phase relies on an examination of justice-relevant information (e.g., process control) of a target (e.g., a supervisor). Afterwards comes the “use phase”. During this second phase the judgment is used as a heuristic for guiding between responses indicative of cooperation versus self-interest. According to fairness heuristic theory, the more rapid an individual moves from the judgment phase to the use phase, the stronger the relation between a justice perception and an outcome. In contrast, if the individual is not certain about the justice judgment and thus he or she takes more time to move to a use phase, the relation of the justice perception and the outcome will be hindered. Similar to our situational strength approach, Colquitt et al. (2002) claimed that a strong justice climate may allow individuals to transition relatively quickly from the judgment phase to the use phase, thereby enhancing the relationship between climate level and outcome variables. This is an important observation as it provides fairness heuristic theorists with a complementary framework—

situational strength—useful to understand justice trickle-down mechanisms involving groups—or units—rather than only individuals.

Research on trickle-down models that have explored moderators of the downward effect of justice perceptions is still scarce. To our knowledge, this line of research has explored two individual characteristics, which are authoritarian leadership style (Aryee, Chen, Sun, & Debrah, 2007) and supervisors mentoring role (Tepper & Taylor, 2003), and one contextual variable which is work-group structure (Ambrose et al., 2013). Our findings complement these previous research by proposing justice climate strength as an additional moderator of justice trickle-down models. Rather than focusing on individual characteristics or in the formal context of the organization, this informal contextual variable—justice climate strength—captures the social nature of the interactions taking place between unit members. This is particularly important as research becomes more and more interested in shared perceptions of justice.

Limitations and Strengths

Despite the cross-sectional nature of our design—which precludes from making any causal inference—, our findings were replicated using data from two different samples. Also noteworthy, each of these samples used a different strategy to operationalizing justice climate and peer justice.

Another limitation is the explanatory power of the interaction terms (justice climate x justice climate strength) observed in Sample 1 and 2. Our results showed that these interactions added a significant 2% of explained variance for Sample 1 and 4% for Sample 2 to the independent explanatory power of the predictors. According to Cohen (1988), these percentages represent small to medium effects. McClelland and Judd (1993), however, indicated that considering the difficulty of finding moderator effects in psychology, even interactions accounting for 1% of variance should be considered

relevant. Nonetheless, it is important that future researchers further test these findings by using experimental or longitudinal designs. In this regard, social network analysis provides a key tool for assessing the degree to which individuals present shared perceptions about justice. This technique not only allows observing individuals' patterns of interaction but also allows to deepen those observations by differentiating emotional connections from instrumental connections (Umpress, Labianca, Brass, Kass, & Scholten, 2003).

By showing the consistency of our findings in two different samples, each of which used a different strategy to operationalize justice climate and peer justice—hierarchical approach versus single-overall approach—, this study makes important contributions to the fairness literature. This study—conducted with data from Spanish employees—replicated Cropanzano et al.'s (2013) path from justice climate to peer justice—conducted with data from US employees—and, thus, highlights the key role played by organizational leaders in promoting high-quality interpersonal relationships. More important, this study provides insights for understanding ways in which we can stimulate the propagation of unit-level fairness along the organization confines, as justice climate strength showed to be an important boundary condition for regulating the trickle-down model of justice perceptions. This represents a valuable contribution as it suggests that by facilitating coworkers' interactions we can help to maximize the positive effect leaders have over their work-units' ethical behaviors.

BLOQUE III: DISCUSIÓN GENERAL Y CONCLUSIONES

En el bloque anterior se presentaron y discutieron los cinco estudios que componen esta tesis doctoral de forma detallada e independiente. En este bloque, por tanto, se pretende ofrecer una síntesis global donde se destaquen los resultados más relevantes.

El objetivo fundamental de esta tesis es examinar el impacto que posee el clima de justicia entre compañeros en las organizaciones de servicios. Para responder a este objetivo se examinó el impacto del clima de justicia entre los compañeros a partir de las valoraciones de tres puntos de vista que son claves para las organizaciones de servicios: a) los supervisores, responsables del desempeño de estas organizaciones, b) los clientes que asisten a estas organizaciones en búsqueda de servicios específicos y c) los empleados responsables de prestar estos servicios. Tal como se mencionó en la introducción de este trabajo, el abordaje de múltiples informantes pretende ofrecer una valoración fiable del impacto que poseen las percepciones compartidas acerca del trato justo o injusto que se otorgan entre sí los compañeros de trabajo en las organizaciones de servicio. Con el propósito de maximizar la fiabilidad de estos resultados, la presente investigación no sólo examinó el rol del clima de justicia entre compañeros, sino también el rol del clima de justicia propiciado por las figuras de autoridad, ya que éste representa el clima de justicia que ha sido tradicionalmente investigado por los estudiosos de la temática (Li y Cropanzano, 2009).

Antes de proceder a examinar el impacto del clima de justicia entre compañeros, el primer paso que se llevó a cabo fue la validación de esta medida y su contraparte, el clima de justicia propiciado por las figuras de autoridad (Estudio 1). El siguiente paso consistió en examinar el impacto del clima de justicia entre los compañeros desde el punto de vista del supervisor. Para ello, se configuró un modelo compuesto por las variables clima de servicio y desempeño de la unidad de trabajo (Estudio 2). Posteriormente, se

examinó el impacto desde el punto de vista de los clientes. Este modelo se configuró con las variables calidad de servicio y calidad de vida (Estudio 3). El siguiente paso examinó el impacto desde el punto de vista de los empleados. Para ello, se puso a prueba un modelo considerando el síndrome del quemado en el trabajo (Estudio 4). Una vez examinado el impacto del clima de justicia entre compañeros, se decidió realizar un paso adicional que permitiera responder a la pregunta, ¿cuáles son los factores que llevan a que los compañeros de trabajo se traten de uno u otro modo? Para ello, se diseñó un modelo que permitiera determinar el rol que posee la fuerza del clima de justicia en la relación entre el clima de justicia propiciado por las figuras de autoridad y el clima de justicia entre compañeros (Estudio 5). A continuación se describen las principales conclusiones y contribuciones que se han derivado de cada uno de estos estudios.

1. VALIDACIÓN DEL CLIMA DE JUSTICIA ENTRE COMPAÑEROS Y CLIMA DE JUSTICIA PROPICIADO POR LAS FIGURAS DE AUTORIDAD COMO CONSTRUCTOS JERÁRQUICOS

A pesar de la distinción conceptual entre justicia distributiva, procedimental, interpersonal e informacional (p.e., Cohen-Charash y Spector, 2001; Colquitt et al., 2001), diversas investigaciones han cuestionado la relevancia de estas dimensiones por no capturar fehacientemente el impacto global de las experiencias de justicia en la organización (p.e., Ambrose y Arnaud, 2005; Lind, 2001) y por no mostrar suficiente independencia unas de otras (p.e., Ambrose y Schminke, 2009; Colquitt, 2001; Greenberg, 2001). En respuesta a estos cuestionamientos diferentes estudios han demostrado la idoneidad de modelar la justicia organizacional como un constructo jerárquico o de segundo orden en el cual las dimensiones distributiva, procedimental, interpersonal e informacional saturan en un factor latente (p.e., Choi, 2008; Hauenstein

et al., 2001; Holtz y Harold, 2009; Jones y Martens, 2009; Kim y Leung, 2007). En un estudio de validación, Li et al. (2013) aplicaron este modelo jerárquico a los constructos clima de justicia entre compañeros y clima de justicia propiciado por las figuras de autoridad y observaron que éste ajustaba mejor a los datos que un modelo que respetara la independencia de las dimensiones de justicia. Su estudio, no obstante, fue realizado con una muestra de estudiantes universitarios, limitando la validez de los resultados (Guzzo y Shea, 1992; Peterson, 2001). Por tanto, antes de proceder a examinar el impacto que posee el clima de justicia entre compañeros se procedió a realizar una validación de esta medida y su contraparte, clima de justicia propiciado por las figuras de autoridad, como constructos jerárquicos en un contexto real de trabajo (Estudio 1). Para ello se utilizaron datos provistos por empleados que trabajan en el sector servicios. El proceso de validación se realizó siguiendo los cuatro pasos que se describen a continuación.

En primer lugar, dado que el clima de justicia entre compañeros y el clima de justicia propiciado por las figuras de autoridad se han definido y operacionalizado a escala de unidad de trabajo (Li y Cropanzano, 2009), se examinó el grado en que cada una de las dimensiones que componen estos constructos emerge a escala de unidad de trabajo. Nuestros resultados confirmaron la existencia de tres climas de justicia entre compañeros a escala de unidad de trabajo: clima procedimental, interpersonal e informacional. Los mismos resultados se observaron para el clima de justicia propiciado por las figuras de autoridad. No se observó que la justicia distributiva emergiera como una percepción compartida en referencia a ninguna de las fuentes de justicia. Aquí resulta importante recordar que todos los ítems de justicia se redactaron de acuerdo al modelo de cambio de referente (Chan, 1998). Es decir, en vez de referir al trato de justicia que recibe cada individuo, refirieron al trato que recibe la unidad de trabajo en su conjunto. Se utilizó esta estrategia ya que ofrece mejores resultados psicométricos que el método de consenso

directo, que se centra en el trato de cada individuo en particular (Bashshur, Rupp y Christopher, 2004). Ahora bien, a pesar de haber utilizado la estrategia de cambio de referente, no se observó que las dimensiones de justicia distributiva emergieran a escala de la unidad de trabajo. Por tanto, considerando que los ítems utilizados para medir el clima de justicia distributiva entre compañeros y el clima de justicia distributiva propiciado por las figuras de autoridad no referían al individuo sino que referían explícitamente a la unidad de trabajo—donde no se observó la emergencia de estos climas—, se procedió a descartar estas dimensiones de los siguientes pasos.

En segundo lugar, se examinó la validez de constructo de cada fuente de justicia por separado (ver Figura 2, Estudio 1). Las saturaciones de los ítems y las fiabilidades mostraron la existencia de una adecuada validez convergente. Esto fue así para ambos constructos. El examen de la validez discriminante, en cambio, fue distinto para cada fuente de justicia. Los resultados indicaron que es posible diferenciar las dimensiones del clima de justicia propiciado por las figuras de autoridad pero no las dimensiones del clima de justicia entre compañeros. Estos resultados proporcionaron apoyo preliminar, por tanto, para modelar el clima de justicia entre compañeros como un constructo jerárquico.

En tercer lugar, se examinó la estructura jerárquica—de segundo orden—de ambas fuentes de justicia (ver Figura 3, Estudio 1). Consistente con lo observado en el paso anterior, los resultados indicaron no sólo que es posible modelar el clima de justicia entre compañeros como un constructo de segundo orden en donde saturan las dimensiones procedimental, interpersonal e informacional que refieren a esta fuente de justicia, sino también que esta estructura jerárquica representa mejor los datos que la estructura que respeta la independencia de las dimensiones de primer orden. Tomando en consideración los resultados del paso anterior, los resultados que refieren al clima de justicia propiciado por las figuras de autoridad, en cambio, mostraron que este clima puede ser modelado no

sólo por sus dimensiones de primer orden, sino también a través de un constructo de segundo orden. Los resultados de este paso demostraron la validez convergente y discriminante de ambos constructos jerárquicos.

En cuarto y último lugar, se examinó la validez predictiva del clima de justicia entre compañeros y del clima de justicia propiciado por las figuras de autoridad como constructos jerárquicos. Para ello, se examinó su comportamiento en una red nomológica compuesta por dos tipos de reciprocidad. Las relaciones transnivel significativas entre clima de justicia entre compañeros y reciprocidad con los compañeros de trabajo, y entre clima de justicia propiciado por las figuras de autoridad y reciprocidad con el supervisor, junto a la ausencia de efectos cruzados entre estas variables, indicaron que ambos climas de justicia se comportan de forma diferente.

La primera contribución de esta tesis doctoral es, por tanto, la validación del clima de justicia entre compañeros y el clima de justicia propiciado por las figuras de autoridad como constructos jerárquicos en un contexto real de trabajo. Esta contribución resulta de particular interés para la puesta a prueba de hipótesis de investigación donde el interés central se encuentra en las fuentes de justicia y no en las dimensiones de justicia.

2. IMPACTO DESDE EL PUNTO DE VISTA DEL SUPERVISOR

Uno de los objetivos clave de todo supervisor es que los empleados que supervisa muestren un alto nivel de desempeño (Kramer, 1996). Ahora bien, para favorecer altos niveles de desempeño, las organizaciones de servicios y sus representantes (p.e., supervisores) promueven climas de servicio que tienen la función de guiar los valores y comportamientos que los trabajadores deben tener presentes cuando interactúan con clientes (Schneider et al., 1998). Por tanto, para examinar el impacto del clima de justicia entre compañeros y el clima de justicia propiciado por las figuras de autoridad desde el

punto de vista del supervisor, se configuró un modelo que pusiera a prueba las relaciones de ambos climas de justicia con el desempeño de la unidad de trabajo—tal como lo indicara el supervisor—, a través del rol mediador del clima de servicio (ver Figura 4, Estudio 2). Se valoró el desempeño de la unidad de trabajo y no el desempeño individual ya que la prestación de servicios requiere normalmente del trabajo colaborativo de los empleados de la unidad (p.e., Boshoff y Allen, 2000).

Los resultados de este modelo indicaron que ambos climas de justicia se relacionan con el desempeño de la unidad de trabajo, a través del rol mediador del clima de servicio. De especial interés para esta tesis doctoral fue observar que el trato que reciben las unidades de trabajo por parte de sus propios miembros influye en el nivel de clima de servicio percibido por la unidad, el cual, a su vez, guía el comportamiento de la unidad hacia altos niveles de desempeño. Estas relaciones fueron significativas aun cuando se controló el trato que recibe la unidad a partir de sus figuras de autoridad.

Por tanto, la segunda contribución de esta tesis doctoral es que el clima de justicia entre compañeros posee un importante impacto sobre las organizaciones de servicios, si se tienen en cuenta variables claves desde la perspectiva del supervisor. Es importante señalar que los dos estudios previos que habían puesto a prueba el vínculo entre clima de justicia entre compañeros y variables de desempeño, lo hicieron con datos provenientes de estudiantes universitarios y, además, reportaron resultados contradictorios (Cropanzano et al., 2011; Li et al., 2013). Esta contribución no sólo provee sólida evidencia empírica de esta relación, al controlar el efecto del clima de justicia propiciado por las figuras de autoridad, sino que además lo hace a partir de datos provenientes de un contexto real de trabajo.

Si bien los fundamentos de este modelo se basaron en la teoría del desequilibrio esfuerzo-recompensa (Siegrist, 1996, 2002), los mecanismos específicos que guiaron las

hipótesis fueron distintos según se tratara de uno u otro clima de justicia. El trato justo por parte de las figuras de autoridad llevaría a la unidad de trabajo a dirigir sus esfuerzos a atender el clima de servicio, ya que éste transmite los valores y comportamientos que tienen que tenerse presentes cuando se interacciona con clientes. El trato justo entre los compañeros, en cambio, llevaría a la unidad, primero, a dirigir sus esfuerzos hacia el interior del grupo lo que, posteriormente, facilitaría la atención a los valores y conductas que la organización desea promover—clima de servicio. Así pues, estos argumentos sugieren que cada clima de justicia puede influenciar variables resultado a través de mecanismos distintos, uno dirigido a comportamientos que benefician a la organización y otro dirigido a comportamientos que benefician a la unidad de trabajo. Los efectos indirectos significativos mostrados por ambos climas de justicia sobre el desempeño de la unidad apoyan esta hipótesis. Es decir, estos efectos resaltan la relevancia de los compañeros de trabajo como fuente de justicia, aun cuando estos compiten con otras fuentes, como los supervisores, a los cuales se les ha otorgado tradicionalmente mayor importancia (Cropanzano et al., 2007).

La hipótesis que sugiere el vínculo entre clima de justicia propiciado por las figuras de autoridad y los comportamientos que benefician a la organización, así como la que apoya el vínculo del clima de justicia entre compañeros y los comportamientos que benefician a la unidad de trabajo, también encuentra apoyo en los resultados observados durante la validación de estas medidas como constructos de segundo orden. Tal como se comentó en el apartado previo, los resultados que pusieron a prueba la validez predictiva del clima de justicia propiciado por las figuras de autoridad y del clima de justicia entre compañeros mostraron que mientras el primero se relaciona con la reciprocidad con el supervisor—representante de la organización—, el segundo se relaciona con la reciprocidad con estos mismos compañeros. Estos resultados previos apoyan la hipótesis

que sugiere la existencia de consecuencias distintas según se considere uno u otro clima de justicia.

3. IMPACTO DESDE EL PUNTO DE VISTA DEL CLIENTE

Diversos estudios han mostrado que el trato que reciben los empleados dentro de las organizaciones se transfiere al trato que reciben los clientes (p.e., Masterson, 2001; Maxham et al., 2008; Simons y Roberson, 2003). Las investigaciones que han buscado capturar este fenómeno se han concentrado en una variable resultado en particular, la calidad de servicio percibida por el cliente, entendida ésta como “un juicio global o actitud que se refiere a la superioridad de un servicio” (Parasuraman et al., 1988, p. 3). Enfoques recientes como el sugerido desde la triple cuenta de resultados sugieren, sin embargo, que las organizaciones de servicios no sólo deben concentrarse en monitorear su desempeño económico a través de indicadores como la calidad de servicio, sino que también deben esforzarse en valorar indicadores relacionados a su desempeño social e, inclusive, medioambiental (p.e., Clarke, 2001; Gilkison, 2003). Siguiendo esta lógica, para examinar el impacto del clima de justicia entre compañeros y del clima de justicia propiciado por las figuras de autoridad desde el punto de vista de los clientes, se configuró un modelo que pusiera a prueba las relaciones de ambos climas de justicia no sólo con calidad de servicio, sino también con la calidad de vida de los clientes. Específicamente, se puso a prueba un modelo donde ambos climas de justicia se relacionarían a la calidad de servicio que prestan las unidades de trabajo, lo cual se traduciría en la calidad de servicio que reciben los cliente, la cual, finalmente, afectaría la calidad de vida de estos últimos (ver Figura 5, Estudio 3).

Los resultados de este modelo multinivel indicaron que ambos climas de justicia se relacionan con la calidad de servicio que prestan las unidades de trabajo pero

influyendo sobre aspectos distintos de la calidad. El clima de justicia propiciado por las figuras de autoridad se relacionó con los aspectos instrumentales de la calidad, los cuales se focalizan en el resultado, “lo que el cliente recibe”—calidad de servicio funcional. El clima de justicia entre compañeros, en cambio, se relacionó con los aspectos expresivos y emocionales de la calidad, los cuales se focalizan en el proceso, “cómo se presta el servicio”—calidad de servicio relacional. A su vez, los altos niveles de calidad funcional y relacional que prestan las unidades de trabajo se tradujeron en altos niveles de calidad funcional y relacional que reciben los clientes. Asimismo, los altos niveles de calidad de servicio funcional y relacional percibidos por los clientes se tradujeron en un alto nivel de calidad de vida de estos mismos clientes. Según el modelo teórico planteado, el trato justo que reciben las unidades de trabajo por parte de sus figuras de autoridad y los mismos miembros que las componen se traduce en esfuerzos dirigidos a mejorar la calidad de servicio de sus clientes, lo cual, a su vez, favorece el aumento de su calidad de vida.

La tercera contribución de esta tesis doctoral es, por tanto, que el clima de justicia entre compañeros posee un importante impacto sobre las organizaciones de servicios, no sólo a partir de la consideración de variables que resultan claves para los supervisores, sino también a partir de la perspectiva de los clientes. Esto representa un importante avance en el estudio de la justicia organizacional. Por una parte, extiende la premisa que señala que el trato que reciben los empleados dentro de las organizaciones se transfiere al trato que reciben los clientes pero, por otra parte, también proporciona evidencia de que ese trato no sólo proviene de las figuras de autoridad, sino también desde los mismos compañeros de trabajo.

Lo observado en este modelo apoya, además, la hipótesis que surgió a partir de los resultados del Estudio 2 de la presente tesis doctoral. Los resultados del Estudio 2

sugirieron que ambos clima de justicia afectan variables criterio a partir de mecanismos distintos. Ahora bien, estos nuevos resultados parecen confirmar que el clima de justicia propiciado por las figuras de autoridad genera respuestas dirigidas a comportamientos que benefician a la organización, tal como la prestación instrumental de los servicios—calidad funcional. Respecto al clima de justicia entre compañeros, estos nuevos resultados parecen confirmar que este clima genera respuestas dirigidas a comportamientos que benefician a la unidad de trabajo, como el hecho de ser más atentos a los aspectos expresivos y emocionales durante el quehacer de sus trabajos—calidad relacional. Si bien ambos mecanismos se basan en la noción de reciprocidad, el primero de estos mecanismos parece generar conductas de carácter intra-rol, es decir, conductas que son requeridas o esperadas por la organización y que representan la base del desempeño (Katz, 1964). Por su parte, el segundo mecanismo parece generar, en términos generales, lo que se ha denominado como conductas de carácter extra-rol (Van Dyne y LePine, 1998). Estas conductas hacen referencia a comportamientos que no se encuentran necesariamente en la descripción del rol de trabajo, que no cuentan con un sistema de recompensa que reconozca su valor y que no representan una fuente de sanción si no se realizan, pero son una importante parte del desempeño de los trabajadores. Si bien existe una similitud entre calidad relacional y comportamientos extra-rol, es importante recordar que calidad relacional se centra en el modo en el que se realizan las tareas—el cómo—, las cuales pueden incluir tareas intra-rol.

En relación con el punto anterior, diversos estudios centrados en la perspectiva multifoco han evidenciado que la intensidad de las relaciones entre percepciones de justicia y variables criterio aumenta a medida que se incrementa la proximidad entre la fuente de justicia y la fuente de la variable criterio (Lavelle et al., 2007; Lavelle et al., 2009; Rupp et al., 2014). Este fenómeno, denominado como efecto similitud del objetivo

(en inglés, *target-similarity effect*), apoya, por tanto, la existencia del vínculo entre clima de justicia propiciado por las figuras de autoridad y conductas intra-rol, y del vínculo entre clima de justicia entre compañeros y conductas extra-rol. Esto destaca nuevamente la relevancia de los compañeros de trabajo como fuente de justicia en la predicción de comportamientos clave, como pueden resultar, por ejemplo, los comportamientos de ciudadanía, los cuales normalmente no se encuentran determinados en las descripciones de rol de trabajo.

4. IMPACTO DESDE EL PUNTO DE VISTA DE LOS EMPLEADOS

El bienestar de los empleados representa un aspecto crítico para toda organización. Sin embargo, cuando se deteriora el bienestar de un empleado, el primer perjudicado no es la organización sino el mismo trabajador. En este sentido, el bienestar de los empleados es un importante indicador de la responsabilidad social de las organizaciones (Clarke, 2001).

El constructo más popular vinculado a la salud de los empleados es el síndrome del quemado en el trabajo (Maslach et al., 2001). Por tanto, para examinar el impacto del clima de justicia entre compañeros y el clima de justicia propiciado por las figuras de autoridad desde el punto de vista de los empleados, se configuró un modelo que pusiera a prueba las relaciones de ambos climas de justicia con los principales indicadores del síndrome del quemado—agotamiento emocional y cinismo (ver Figura 6, Estudio 4).

Este factor de riesgo cardiovascular (Cursoux et al., 2012) ha sido particularmente relacionado con la presencia de estresores interpersonales en el ambiente de trabajo (p.e., Borgogni et al., 2012). Los resultados de esta tesis doctoral confirman esto. La incertidumbre en la unidad de trabajo ocasionada por la falta de justicia en el trato provisto por quienes tienen autoridad sobre el grupo, es un importante desencadenante del

síndrome del quemado tanto en la forma de agotamiento emocional como cinismo. Ahora bien, resulta interesante observar que el clima injusto entre los compañeros de trabajo también se relacionó negativamente con el síndrome del quemado, aunque sólo a través de un incremento en los niveles de cinismo. Este efecto sobre el cinismo, sin embargo, resulta muy significativo ya que tuvo lugar tras controlar el efecto del clima de justicia propiciado por las figuras de autoridad y en dos muestras diferentes.

La cuarta contribución de esta tesis doctoral es, por tanto, que el clima de justicia entre compañeros posee un importante impacto sobre las organizaciones de servicio, no sólo a partir de la consideración de variables que resultan claves para los supervisores y los clientes, sino también para los empleados, tal como evidencia su relación con un indicador del síndrome del quemado—cinismo. Tal como se ha comentado a lo largo de la presente discusión, el hecho de que este clima de justicia mostrara una relación con el cinismo aún luego de controlar el efecto del clima de justicia propiciado por las figuras de autoridad, vuelve a confirmar la hipótesis de que ambos climas de justicia afectan a las variables resultado a través de vías distintas.

Los argumentos que sugieren que el trato injusto deteriora el bienestar de los trabajadores normalmente implican alguna diferencia jerárquica entre quien comete la injusticia y la víctima de ese acto (p.e., Elovainio, Leino-Arjas, Vahtera y Kivimäki, 2006). Por tanto, la pregunta que surge es, ¿por qué los niveles de bienestar se pueden ver afectados por un clima de injusticia entre compañeros entre los cuales no existen diferencias de nivel jerárquico? Una posible respuesta es que, tal como señala la teoría de la auto-determinación (en inglés, *self-determination theory*), las personas tienen la necesidad de relacionarse, de interactuar y conectarse con los demás (Ryan y Deci, 2002). ¿Por qué es esto relevante para la comprensión de los efectos del clima de justicia entre compañeros? La respuesta es sencilla: porque los compañeros de trabajo representan uno

de los grupos de interacción social de mayor relevancia para las personas (Dutton y Ragins, 2007) y, por tanto, ofrecen un espacio idóneo donde satisfacer sus necesidades de interactuar y relacionarse con los demás.

La necesidad de relacionarse con los demás, asimismo, provee nuevos argumentos para justificar por qué el clima de justicia entre compañeros parece vincularse con comportamientos de naturaleza extra-rol. Retomando lo dicho en el apartado anterior de esta discusión, es posible que el trato justo desde dentro de la unidad de trabajo motive a los miembros del grupo a realizar esfuerzos de naturaleza extra-rol justamente por su necesidad de relacionarse con los demás—los comportamientos intra-rol no ofrecen esta posibilidad. Tal como sugiere la teoría del intercambio social (en inglés, *social exchange theory*; Blau, 1964), la reciprocidad implícita de estos intercambios podría aumentar los niveles de confianza y compromiso entre los compañeros de trabajo facilitando, por tanto, el buen funcionamiento de la unidad. Esta tesis doctoral, no obstante, no ha puesto a prueba este proceso.

5. ROL DE LA FUERZA DEL CLIMA DE JUSTICIA PROPICIADO POR LAS FIGURAS DE AUTORIDAD

La teoría del aprendizaje social sugiere que las personas no necesitan experimentar una acción en primera persona para aprender de ella; éstas pueden aprender vicariamente a partir de observar el comportamiento de otros a quienes consideran como modelos dignos de crédito (Bandura, 1977). Una de las ventajas de esta forma de aprendizaje es que las personas evitan incurrir en errores innecesarios durante el proceso de aprendizaje. Diversos estudios han aplicado este modelo al estudio de fenómenos organizacionales y han observado, por ejemplo, que los comportamientos éticos de las personas que ocupan puestos de alta jerarquía tienden a ser aprendidos y, posteriormente,

reproducidos por sus subordinados (Ambrose et al., 2013; Schaubroeck et al., 2012). Este fenómeno es conocido como efecto cascada o de filtración (en inglés, *trickle-down effect*).

Cropanzano et al. (2013) aplicó este modelo de cascada al estudio de las percepciones compartidas de justicia organizacional y observó que el modo en el que las figuras de autoridad tratan a sus empleados tiene una influencia sobre el modo en que los compañeros de trabajo se tratan unos a otros. Si bien esta es la primera vez que se hace referencia al efecto cascada en esta discusión, es importante señalar que el efecto observado por Cropanzano fue tenido en cuenta y confirmado en los Estudios 2, 3 y 5 que componen esta tesis. Estos resultados, por tanto, replican lo observado por Cropanzano: el trato justo que se otorgan los compañeros de trabajo entre sí es, en parte, resultado del trato que recibe la unidad por parte de las figuras de autoridad. Ahora bien, en el último estudio de la presente tesis doctoral también se intentó determinar el rol que posee la fuerza del clima de justicia en esta relación (ver Figura 7, Estudio 5). El propósito de esto era responder a la pregunta, ¿las unidades replican el trato que reciben de sus autoridades aun cuando sus miembros no están de acuerdo respecto al nivel de justicia que reciben por parte de las mismas?

Los resultados indicaron que un clima de justicia propiciado por las figuras de autoridad débil—bajo acuerdo—reduce la relación positiva entre el nivel de clima de justicia propiciado por las figuras de autoridad y el nivel de clima de justicia entre compañeros. Al contrario, un clima de justicia propiciado por las figuras de autoridad fuerte—alto acuerdo—amplifica la relación positiva entre ambos climas.

La quinta contribución de esta tesis doctoral es doble. Por una parte, refiere a la replicación de los resultados observados por Cropanzano et al. (2013) que indicaban que el impacto que posee el clima de justicia entre compañeros sobre variables resultado depende, en parte, de la influencia que recibe éste del clima de justicia propiciado por las

figuras de autoridad. Por otra parte, refiere a la extensión de este modelo al haber observado que la fuerza del clima de justicia modula la relación entre ambos climas. Estos resultados refuerzan dos aspectos claves, los cuales se mencionan a continuación.

En primer lugar, estos resultados refuerzan la importancia de las figuras de autoridad. Esta observación resulta muy importante, si se consideran los resultados discutidos en los apartados anteriores. Tal como se ha mencionado previamente, el trato justo que reciben las unidades de trabajo por parte de sus figuras de autoridad se relaciona a los esfuerzos intra-rol del grupo, mientras que el trato justo entre los compañeros de trabajo se relaciona con los esfuerzos extra-rol. Ahora bien, si se considera el efecto cascada entre ambos climas de justicia, es posible argumentar que las figuras de autoridad poseen una importante influencia sobre sendos tipos de conductas. Por una parte, pueden influenciar las conductas intra-rol del grupo de modo directo y, por otra parte, pueden influenciar las conductas extra-rol de modo indirecto, a través de su influencia sobre el trato justo que se otorgan unos a otros los compañeros de trabajo—trato que aprenden de las figuras de autoridad.

En segundo lugar, estos resultados también refuerzan la relevancia de los compañeros de trabajo. Esto es así ya que las interacciones sociales entre los compañeros de trabajo que fortalecen el clima de justicia propiciado por las figuras de autoridad—es decir, aumentan el acuerdo respecto a este clima—facilitan el aprendizaje de conductas que pueden resultar positivas para la organización, tal como el hecho de tratar de forma justa a los demás. Estos resultados, por tanto, matizan la importancia que poseen las figuras de autoridad al demostrar que lo que sucede dentro de la unidad de trabajo puede regular la efectividad de las conductas promovidas por esas mismas figuras.

En resumen, si bien las figuras de autoridad representan una fuente de justicia importante para las unidades de trabajo, los resultados de los cinco estudios discutidos

aquí indican que esta fuente no es suficiente para explicar la variabilidad de algunas variables resultado claves para el funcionamiento adecuado de las organizaciones de servicio. Las nuevas estructuras de organización que promueven el trabajo colaborativo parecen haber hecho de los compañeros de trabajo una fuente crucial de justicia que posee impacto sobre importantes variables resultado, tal como se ha valorado desde el punto de vista de los supervisores, clientes y empleados.

6. LIMITACIONES

A lo largo de esta tesis doctoral se han considerado, de forma específica, las limitaciones asociadas a cada uno de los cinco estudios que la componen. En este apartado se indican brevemente las limitaciones más relevantes para que el lector pueda valorar el alcance de la evidencia empírica aportada. Estas limitaciones se detallan a continuación.

- El diseño transversal de investigación utilizado en los cinco estudios no permite confirmar la causalidad de las relaciones entre las variables estudiadas. Para contrarrestar esta limitación se utilizaron dos estrategias. La primera estrategia fue utilizar medidas de distintos informantes—el Estudio 2 utilizó medidas de empleados y supervisores, y el Estudio 3 de empleados y clientes—, ya que se ha sugerido que esta alternativa permite incrementar la inferencia de causalidad (p.e., Rindfleisch et al., 2008). La segunda estrategia, utilizada en los Estudios 4 y 5, fue poner a prueba las hipótesis de investigación utilizando dos muestras diferentes. Ambas estrategias ofrecieron resultados que apoyaron las hipótesis de investigación de estos estudios.
- La utilización de medidas de auto-informe puede haber incrementado artificialmente las relaciones entre las variables de estudio (Podsakoff et al., 2003). Además de utilizar diferentes informantes, se intentó contrarrestar esta

limitación mediante la comparación de diferentes modelos de medida utilizando análisis factoriales confirmatorios. Al igual que en el apartado anterior, los resultados obtenidos apoyaron las hipótesis de investigación.

Resulta importante destacar aquí un esfuerzo adicional que se realizó para aportar mayor evidencia acerca de la validez de las medidas centrales de esta tesis—clima de justicia entre compañeros y clima de justicia propiciado por las figuras de autoridad—y su comportamiento respecto a otras variables. Los Estudios 4 y 5 pusieron a prueba sus hipótesis de investigación utilizando la misma muestra y mismas medidas de estos climas de justicia utilizadas en los demás estudios (Estudio 1, 2 y 3). No obstante, tal como se comentó en el punto previo, los Estudios 4 y 5 también pusieron a prueba sus hipótesis utilizando una muestra adicional. En esta muestra adicional, sin embargo, se midieron las variables centrales de esta tesis utilizando una estrategia diferente a la utilizada en la primera muestra. En vez de utilizar la medida correspondiente a la estrategia jerárquica utilizada en la primera muestra—clima de justicia entre compañeros es un constructo de segundo orden donde saturan el clima de justicia procedimental entre compañeros, el clima de justicia interpersonal entre compañeros y el clima de justicia informacional entre compañeros—, en la segunda muestra se utilizó una medida que responde a una estrategia unidimensional—clima de justicia entre compañeros es un constructo compuesto por tres ítems. Ambas estrategias ofrecen una valoración del clima de justicia global entre compañeros. Tal como se ha mencionado a lo largo de esta tesis doctoral, la medición de percepciones globales facilita el estudio de hipótesis de investigación donde el interés central se encuentra en las fuentes de justicia y no en las dimensiones de justicia (p.e., Li et al., 2013). Los resultados de los Estudios 4 y 5 mostraron los mismos patrones

independientemente de la estrategia de medida utilizada, otorgando mayor apoyo a las conclusiones derivadas de este trabajo.

- Las dos muestras utilizadas en esta tesis doctoral se restringen a organizaciones que prestan servicios a personas con discapacidad intelectual. No obstante, es importante destacar que estas muestras fueron seleccionadas por poseer todas las características diferenciales de las organizaciones de servicio, tal como la presencia del cliente durante la prestación del servicio o la alta heterogeneidad de los servicios prestados (Schneider y White, 2004).
- Las teorías que guiaron esta tesis doctoral sugieren mecanismos que implican algunos constructos que no fueron medidos en este trabajo. Un ejemplo de ello lo ofrece la teoría de la gestión de la incertidumbre (Lind y van den Bos, 2002) que sugiere la consideración de variables, como el nivel de incertidumbre percibido o el nivel de control sobre el puesto de trabajo, las cuales no fueron medidas en esta tesis. Es importante señalar, sin embargo, que todas las hipótesis de investigación no sólo se basaron en argumentos teóricos, sino también en evidencia empírica de estudios previos.

7. IMPLICACIONES PRÁCTICAS

A continuación se detallan algunas implicaciones prácticas que se derivan de los resultados obtenidos en esta tesis doctoral.

- Se proveen dos instrumentos de medida que han sido validados con datos provenientes de trabajadores en contextos reales de trabajo. Estos instrumentos pueden utilizarse a efectos de investigación pero también para realizar diagnósticos de organizaciones o unidades de trabajo que deseen mejorar sus procesos de trabajo. Estos instrumentos pueden ser utilizados en cualquier

organización que estructure su trabajo a través de la colaboración de sus miembros. A partir de los resultados observados en esta tesis, se sugiere, además, que cuando exista interés en valorar el trato justo que recibe una unidad de trabajo o una organización se consideren ambos instrumentos, es decir, no sólo el trato que recibe la unidad por parte de sus figuras de autoridad, sino también el trato que recibe de sus propios miembros.

- El impacto que posee el clima de justicia entre compañeros también sugiere que el entrenamiento en justicia organizacional no sólo puede producir beneficios cuando se dirige a personas que ocupan mandos de gestión, sino también cuando se dirige a mandos inferiores. En este sentido, es importante tener presente que diversos estudios han demostrado que el entrenamiento en justicia organizacional protege a los empleados de los efectos negativos de la injusticia, al mismo tiempo que incrementa la frecuencia de conductas positivas como, por ejemplo, los comportamientos de ciudadanía (p.e., Gilliland y Gilliland, 2001).
- Tal como se ha observado en esta tesis doctoral, el clima de justicia entre compañeros se encuentra relacionado con el nivel de cinismo evidenciado por los empleados de las organizaciones estudiadas. Por tanto, otro ámbito de aplicación surgido de este clima pueden ser las intervenciones que tienen como objetivo mejorar los niveles de bienestar de los empleados. Leiter, Laschinger, Day y Oore (2011) observaron que el respeto y el trato civilizado entre trabajadores de un mismo nivel jerárquico representan importantes factores cuando se realizan intervenciones para disminuir el síndrome del quemado. Estos resultados aportan apoyo adicional para considerar el clima de justicia entre compañeros como un importante recurso para este tipo de intervenciones.

- También es importante destacar la influencia que poseen las figuras de autoridad sobre el clima de justicia entre los compañeros de trabajo y el rol que posee la fuerza del clima en esta relación. En este sentido, intervenciones dirigidas, por ejemplo, a reducir la frecuencia de conductas contraproducentes, deberían prestar particular atención a dos cuestiones: a) los comportamientos justos o injustos que realiza el responsable de la unidad de trabajo intervenida, y b) el grado de consenso—fuerza—que existe en la unidad respecto a esos comportamientos observados. Tal como se sugiere a partir de los resultados mostrados en esta tesis doctoral, tener conocimiento acerca de estas cuestiones puede facilitar la implementación de medidas para maximizar los beneficios de la intervención.
- Finalmente, es importante señalar que la monitorización del clima de justicia entre compañeros puede resultar particularmente ventajosa para equipos de trabajo auto-gestionados, en los cuales la relevancia de los compañeros de trabajo es aún mayor que para otras configuraciones de equipo. Diversas variables que han sido asociadas a la justicia organizacional, como la confianza y la cohesión grupal, resultan claves para el adecuado desempeño de estos equipos (Gupta, Huang y Yayla, 2011).

8. INVESTIGACIÓN FUTURA

En este apartado se mencionan las principales propuestas de investigación que han surgido a partir de la explotación de datos de la presente tesis doctoral.

- La primera línea de investigación futura corresponde a la necesidad de confirmar los resultados observados en este trabajo. Para ello, se propone utilizar un diseño longitudinal que permita un examen de las relaciones de causalidad. Otra alternativa que se propone es la realización de un experimento. Esta propuesta

ofrece la ventaja de asignar aleatoriamente a los participantes a los grupos (control versus experimental) y manipular el nivel de clima de justicia entre compañeros.

- También sería recomendable poner a prueba las relaciones observadas en este trabajo en otros sectores. Siguiendo esta misma línea, también sería recomendable determinar si los efectos del clima de justicia entre compañeros y del clima de justicia propiciado por las figuras de autoridad son estables o varían según el tipo de actividad específica de la organización. Para ello, sería necesaria la consideración de tres niveles de análisis: a) el nivel que corresponde al tipo de actividad específica de la organización (p.e., prestación de servicios a personas con discapacidad intelectual versus prestación de servicios bancarios versus prestación de servicios de restauración), b) el nivel de la organización o unidad de trabajo, y c) el nivel del individuo.
- Otra línea de investigación que se propone es la evaluación de factores estructurales que permitan amplificar las relaciones positivas entre el clima de justicia entre compañeros y variables criterio, tales como las observadas respecto al clima de servicio (Estudios 2) o la calidad de servicio (Estudio 3). El nivel de interdependencia de los objetivos de la unidad de trabajo representa un ejemplo de estos factores. Este constructo refiere al grado en que los miembros de la unidad reciben objetivos y retroalimentación que refieren al grupo en su conjunto (van der Vegt y Janssen, 2003). Lo importante de este factor estructural es que no sólo dirige los esfuerzos de los miembros de la unidad a un objetivo común, sino que, además, puede mejorar la calidad de las relaciones interpersonales a partir de incrementar la identificación con los miembros de la unidad (p.e., Gundlach, Zivnuska y Stoner, 2006). Esta evidencia sugiere que la relación positiva entre clima de justicia entre compañeros y variables resultado será más fuerte cuando

exista un alto nivel de interdependencia de objetivos en la unidad que cuando el nivel de interdependencia sea bajo.

- Además, se propone examinar el rol de mediadores que permitan explicar por qué el clima de justicia entre compañeros puede influir sobre determinadas variables criterio. Tal como se sugiere a partir del Estudio 3, este clima parece tener una especial influencia sobre variables relacionadas a los comportamientos extra-rol de las unidades de trabajo. Gracias a la evidencia derivada de investigaciones basadas en la teoría de las relaciones de intercambio social (Blau, 1964), existe una gran variedad de constructos que, combinados con la fuente de interés, pueden resultar de gran utilidad para este fin. Ejemplos de estos constructos son el apoyo percibido por los compañeros de trabajo, confianza entre los compañeros de trabajo y relaciones de intercambio entre compañeros de trabajo-equipo (en inglés, *team-member exchange relationships*) (Lavelle et al., 2007).
- Una línea adicional de investigación que se propone corresponde a extender los resultados que sugieren que el clima de justicia entre compañeros depende, en parte, del clima de justicia propiciado por las figuras de autoridad. Para ello, se recomienda explorar el efecto de constructos provenientes de la investigación centrada en comportamientos éticos. Un ejemplo lo proporciona la atención moral (en inglés, *moral attentiveness*). Este constructo refiere a la disposición de una persona a percibir y considerar elementos morales durante las experiencias cotidianas (Reynolds, 2008). Otro ejemplo es el constructo denominado desentendimiento moral (en inglés, *moral disengagement*). Este constructo refiere a los procesos cognitivos que llevan a las personas a desentenderse de los aspectos éticos de las situaciones a las que se enfrentan (Moore, Detert, Klebe Treviño, Baker y Mayer, 2012). La operacionalización a nivel de unidad de estos

constructos puede ofrecer una importante oportunidad para comprender mejor por qué los compañeros de trabajo se tratan justa o injustamente.

- Finalmente, se recomienda explorar una línea de investigación propuesta por Rupp et al. (2007b) que se centra en el estudio del alineamiento en el trato justo o injusto que la unidad recibe por parte de diferentes fuentes de justicia. Según estos investigadores, el trato justo o injusto por parte de una fuente de justicia genera expectativas sobre el trato de otras fuentes de justicia. Siguiendo esta lógica, estos autores sugieren que cuando la unidad es trata injustamente por todas las fuentes, este trato se vuelve esperado y, por tanto, se tolera. Ahora bien, cuando una fuente otorga un trato justo y otra un trato injusto se puede producir lo que estos autores denominaron como un shock causado por falta de alineamiento (en inglés, *misalignment shock*). Los resultados obtenidos en esta tesis doctoral aportan instrumentos que pueden ser utilizados para poner a prueba estas hipótesis, de las cuales aún no existe evidencia.

9. CONCLUSIONS

This doctoral thesis examines the impact of peer justice in service organizations by using a series of key outcomes reported by three different informants—supervisors, customers, and employees—and data from two samples from the health care industry. The main contributions are as follows:

- Study 1 validated peer justice and justice climate as two hierarchical constructs that allow scholars and practitioners interested in the sources of justice to focus on the source accountable of (un)just behaviors rather than on the different facets of justice. The validation process followed a four-step approach that included: a) an examination of the appropriateness of aggregating the first-order facets of peer justice and justice climate to the work-unit-level of analysis, b) an examination of their construct validity, c) a joint examination of their hierarchical structure as two different second-order factors, and d) an examination of the predictive validity of these second-order factors—peer justice and justice climate—within a nomological network composed by reciprocity with the supervisor and reciprocity with coworkers,
- Study 2 showed that both peer justice and justice relate to service climate—a key variable within the service industry that communicates work units which are the practices, procedures, and behaviors that get rewarded, supported, and expected with regard to customer service. Service climate, in turn, relate to unit-level performance, as reported by the supervisor. The indirect effect of peer justice to unit-level performance, even after controlling the effect of justice climate, provides clarification to the previous mixed findings reported by Cropanzano et al. (2011) and Li et al. (2013), which was conducted with university students.

- Study 3 indicated that peer justice and justice climate behave distinctively. Peer justice relates to work-units' perceptions of the relational extra-role benefits they delivered to customers beyond the core service (relational service quality). Justice climate relates to work-units' reports of the in-role efficiency with which they provided the core service of the organization (functional service quality). Neither justice climate relates to relational service quality, nor peer justice to functional service quality. The remaining paths of this Justice-Quality model showed that work-units' perceptions of the service quality they deliver are connected to customers' perceptions of the service quality they receive, which, in turn, are linked to their quality of life. That is, not only does peer justice relates to economic indicators of performance—i.e., service quality—but also enables behaviors that relate to social indicators of performance—quality of life.
- Study 4 showed a cross-level effect from justice climate to both core burnout dimensions—emotional exhaustion and cynicism—and from peer justice to cynicism. Noteworthy, the relationship between peer justice and cynicism was significant above and beyond the effect of justice climate in two different samples. Thus, these results contribute to scholars and practitioners that aim to reduce employees' burnout as it provides them with relevant and accurate data that is consistent with how organizational justice is generally operationalized when designing and implementing burnout interventions.
- Study 5 replicated the trickle-down effect from justice climate to peer justice reported by Cropanzano et al. (2013). More important, the results of this study showed that justice climate strength—i.e., degree of agreement among members of the same work unit on whether the unit has been treated fairly by those in

power—is an important boundary condition that may facilitate or buffer the trickle-down effect from justice climate to peer justice.

- This doctoral thesis provides an important contribution to the literature on organizational justice as it helps scholars and practitioners to move beyond the traditional focus on authority figures. While these figures represent an important source of justice, the five studies presented in this doctoral thesis indicate that this source is not sufficient to explain the effects of shared justice perceptions. Consistent with the increased use of team-based structures, coworkers play now a key role in the workplace. The relationships between peer justice and several processes and outcomes, such as employees' perceptions of service climate, supervisors' ratings of unit-level performance, employees' and customers' perceptions of service quality, customers' quality of life, and employees' level of burnout, support the role of coworkers in everyday work events as an additional, and important, source of justice. Thus, all in all, the results from two samples and three different informants reported in this doctoral thesis support the positive impact of peer justice in service organizations.

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ANEXO I. INSTRUMENTOS DE MEDIDA

CLIMA DE JUSTICIA PROPICIADO POR LAS FIGURAS DE AUTORIDAD

Informante: empleados.

Por favor, conteste a las siguientes cuestiones utilizando esta escala:

Atención: debe contestar teniendo en cuenta al grupo entero de compañero/as

Totalmente en desacuerdo	Bastante en desacuerdo	Algo en desacuerdo	Ni de acuerdo ni en desacuerdo	Algo de acuerdo	Bastante de acuerdo	Totalmente de acuerdo
1	2	3	4	5	6	7

Los beneficios que usted y sus compañeros/as (p.e. sueldo, conciliación con vida familiar, etc.) obtienen de este centro y sus responsables a cambio de su trabajo:

- Reflejan el esfuerzo que ustedes ponen en el trabajo / The benefits we receive reflect the effort we put into our work
- Son apropiados para el trabajo que ustedes realizan / The benefits we receive are appropriate for the work we have completed as a work unit
- Son un fiel reflejo de las contribuciones que ustedes realizan al centro / The benefits we receive reflect what we have contributed to the organization
- Están justificados, si se tiene en cuenta el trabajo que ustedes realizan / The benefits we receive are justified, given our performance as a work unit

Para llegar a resultados, el centro y sus responsables usan una serie de procedimientos (p.e. decisiones para reparto de tareas). Piense en ellos, y en la manera en que se aplican a usted y a sus compañeros/as de trabajo, y exprese su nivel de acuerdo:

- En estos procedimientos expresamos nuestros puntos de vista / We express our views during the procedures used to arrive to our benefits
- Nosotros/as influimos sobre el resultado obtenido con estos procedimientos / We have influence over the benefits arrived by procedures
- Estos procedimientos se aplican a todos por igual, consistentemente / Procedures are applied consistently across all unit members
- Estos procedimientos son no discriminatorios / Procedures are free of bias
- Estos procedimientos se basan en información certera y precisa / Procedures have been based on accurate information
- Podemos quejarnos del resultado obtenido con estos procedimientos / We are able to appeal the outcomes arrived by procedures
- Estos procedimientos son éticos y morales / Procedures uphold ethical and moral standards

Piense en la manera en que su coordinador/a o jefe/a inmediato/a les trata a usted y a sus compañeros/as de trabajo:

- Les trata con amabilidad y cortesía / The supervisor treats work-unit members in a polite manner
- Les trata con respeto / The supervisor treats work-unit members with dignity
- Les ofrece un trato digno / The supervisor treats work-unit members with respect

- Los comentarios que el/la jefe/a hace de ustedes son impropios o injustos / The supervisor makes comments or remarks about work-unit members that are improper

Piense en la manera en que su coordinador/a o jefe/a inmediato/a se comunica con usted y sus compañero/as de trabajo:

- Es sincero/a en su comunicación con ustedes / The supervisor is candid when communicating with the work-unit members
- Les explica completamente los procedimientos a seguir en el trabajo / The supervisor explains the procedures thoroughly
- Les ofrece explicaciones razonables con respecto a los procedimientos a seguir / The explanations about procedures made by the supervisor are reasonable
- Les informa sobre detalles del trabajo de una manera oportuna / The supervisor communicates details in a timely manner
- Ofrece la información específica que necesita cada uno de ustedes / The supervisor tailors his/her communications based to the specific needs of each unit member

CLIMA DE JUSTICIA ENTRE COMPAÑEROS

Informante: empleados.

Por favor, conteste a las siguientes cuestiones utilizando esta escala:

Atención: debe contestar teniendo en cuenta al grupo entero de compañero/as

Totalmente en desacuerdo	Algo en desacuerdo	Ni de acuerdo ni en desacuerdo	Algo de acuerdo	Totalmente de acuerdo
1	2	3	4	5

Para cada una de las frases que aparecen a continuación, por favor, indique el número de la escala que mejor describa como se siente en su trabajo actual.

Nota: Esta pregunta es similar a la pregunta anterior, pero en este caso hace referencia a la manera en que ustedes, los compañeros/as de trabajo, se tratan unos a otros. No incluya, por tanto, en sus respuestas, la manera en que el centro y sus responsables les tratan.

La distribución de posibles beneficios relevantes (p.e., flexibilidad horaria, conciliación de la vida familiar, etc.) que se obtienen en este centro depende en parte de las decisiones que ustedes toman como grupo de compañeros/as. Teniendo en cuenta esto, exprese su nivel de acuerdo con las siguientes afirmaciones:

- Intentamos, como grupo de compañeros/as, que las personas que aportan más esfuerzo en su trabajo tengan mayor acceso a estos beneficios / We try, as a work unit, that the people that make more efforts in their job have more access to benefits
- Como grupo de compañeros/as, intentamos que los beneficios estén distribuidos en relación con la calidad del trabajo que realiza cada uno / As a work unit, we try

to distribute benefits based on the quality of work performed by each unit member

Aunque el centro tendrá establecidos procedimientos de trabajo (p.e., para el reparto de tareas), ustedes, como grupo de compañeros/as, podrán decidir en parte como se concretan estos procedimientos a la hora de trabajar. Teniendo en cuenta esto, exprese su nivel de acuerdo con las siguientes afirmaciones:

- Entre nosotros nos comunicamos nuestros puntos de vista y sentimientos sobre la manera en que las decisiones se toman en el grupo de compañeros/as / We express our views and feelings about the way decisions are made in the work unit
- Cuando tomamos una decisión dentro del grupo de compañeros/as lo hacemos evitando discriminaciones entre nosotros / The way we make decisions is free from personal bias
- No siempre tenemos en cuenta las opiniones de las distintas personas del grupo de compañeros/as a la hora de debatir sobre los procedimientos / When discussing procedures, we do not always take into account the views of the different people that constitute the work unit
- Entre nosotros, como compañeros/as, nos comunicamos con información certera y precisa / When discussing procedures, we use accurate and precise information
- Las decisiones que tomamos entre el grupo de compañeros/as son coherentes y siguen siempre los mismos criterios / The decisions we make as a work unit are coherent and always follow the same criteria

Teniendo en cuenta como se tratan ustedes como grupo de compañeros/as de trabajo, indique en que medida:

- Nos criticamos unos a otros, poniendo el acento en los aspectos negativos / We put each other down
- Los compañeros/as debatimos y participamos ante los temas que nos afectan / We debate the issues that affect us
- Como compañeros/as de trabajo nos ayudamos unos a otros / We help each other out
- El trato entre nosotros, como grupo de compañeros/as, es respetuoso / We treat each other with respect

Teniendo en cuenta la información que comparten entre ustedes como compañeros/as de trabajo:

- Dentro del grupo de compañeros/as, nos comunicamos de una forma respetuosa / Within the work unit we communicate with each other in a respectful manner
- Solemos explicarnos entre nosotros los procedimientos que utilizamos de una manera detallada / In general, we thoroughly explain to each other the work-unit procedures that we use
- Como grupo de compañeros/as, cuando necesitamos explicarnos algo entre nosotros, lo hacemos aportando razones y argumentos / When we need to explain something within the work unit, we do it by providing reasons and arguments
- Cuando tenemos que realizar un trabajo, como grupo de compañeros/as nos comunicamos los detalles del mismo en el momento oportuno y necesario / When we

need to explain something within the work unit, we do it in a timely manner and by providing details

- Como grupo de compañeros/as adaptamos la información que intercambiamos entre nosotros en función de las necesidades cada miembro del grupo / Within the work unit we tailor communications based on the specific needs of each unit member

RECIPROCIDAD CON EL SUPERVISOR Y CON LOS COMPAÑEROS DE TRABAJO

Informante: empleados.

Piense en su relación con su jefe/a inmediato o coordinador/a desde el punto de vista de lo que hace usted por ella/él (p.e. esfuerzo, cantidad y calidad de trabajo, etc.) y lo que obtiene a cambio (p.e. comprensión y apoyo, información, salario, desarrollo profesional, etc.). Marque con una cruz el número de la alternativa que mejor defina la relación que mantiene con ella/él:

Hago mucho más de lo que recibo	Hago algo más de lo que recibo	Lo que hago es igual a lo que recibo	Recibo algo más de lo que yo hago	Recibo mucho más de lo que yo hago
1	2	3	4	5

Piense en su relación con sus compañeros/as de trabajo desde el punto de vista de lo que hace usted por ellos/as (p.e. ayudar, cambios, etc.) y lo que obtiene a cambio (p.e. comprensión y apoyo, intercambio de tareas, etc.). Marque con una cruz el número de la alternativa que mejor defina la relación que mantiene con ellos/as:

Hago mucho más de lo que recibo	Hago algo más de lo que recibo	Lo que hago es igual a lo que recibo	Recibo algo más de lo que yo hago	Recibo mucho más de lo que yo hago
1	2	3	4	5

CLIMA DE SERVICIO

Informante: empleados.

Por favor, indique su grado de acuerdo con las siguientes afirmaciones, en relación con el servicio que prestan en este centro u organización

Totalmente en desacuerdo	Bastante en desacuerdo	Algo en desacuerdo	Ni de acuerdo ni en desacuerdo	Algo de acuerdo	Bastante de acuerdo	Totalmente de acuerdo
1	2	3	4	5	6	7

- Se reconoce y aprecia el trabajo bien hecho y la prestación de un servicio de excelente calidad
- El nivel de calidad de servicio que se ofrece es excelente
- Los/as trabajadores/as cuentan con los recursos para hacer un buen trabajo y ofrecer un servicio de excelente calidad

DESEMPEÑO DE LA UNIDAD DE TRABAJO

Informante: supervisor.

Por favor, valore el desempeño mostrado por las personas de su equipo y muestre su nivel de acuerdo con las siguientes afirmaciones:

Totalmente en desacuerdo	Bastante en desacuerdo	Algo en desacuerdo	Ni de acuerdo ni en desacuerdo	Algo de acuerdo	Bastante de acuerdo	Totalmente de acuerdo
1	2	3	4	5	6	7

- Cuando es necesario, resuelven rápida y eficazmente los problemas de las personas con discapacidad intelectual
- Saben cómo solucionar los problemas de las personas con discapacidad intelectual
- Hacen todo lo posible por resolver los problemas de las personas con discapacidad intelectual

CALIDAD DE SERVICIO PERCIBIDA POR LOS EMPLEADOS

Informante: empleados.

Por favor, valore la calidad del servicio ofrecida por usted y sus compañeros/as de trabajo en este centro u organización, y muestre su nivel de acuerdo con las siguientes afirmaciones:

Totalmente en Desacuerdo	Bastante en desacuerdo	Algo en desacuerdo	Ni de acuerdo ni en desacuerdo	Algo de acuerdo	Bastante de acuerdo	Totalmente de acuerdo
1	2	3	4	5	6	7

- Los trabajadores atienden con la rapidez necesaria a las personas con discapacidad intelectual
 - En este centro, las cosas funcionan bien
 - Los servicios satisfacen las necesidades de las personas con discapacidad intelectual
 - Los trabajadores cuentan con los recursos necesarios para hacer bien su trabajo
 - Los trabajadores son capaces de ponerse en el lugar de las personas con discapacidad intelectual
 - Los trabajadores hacen sentir a las personas con discapacidad intelectual especiales e importantes
 - Los trabajadores ofrecen un trato cordial y sincero a las personas con discapacidad intelectual
-
-

CALIDAD DE SERVICIO PERCIBIDA POR LOS CLIENTES

Informante: clientes.

Por favor, valore la calidad del servicio que ofrecen en este centro a su familiar con discapacidad intelectual y muestre su nivel de acuerdo:

Totalmente en desacuerdo	Bastante en desacuerdo	Algo en desacuerdo	Ni de acuerdo ni en desacuerdo	Algo de acuerdo	Bastante de Acuerdo	Totalmente de acuerdo
1	2	3	4	5	6	7

- Los trabajadores le atienden con la rapidez necesaria
- En este centro, las cosas funcionan bien
- Los servicios satisfacen las necesidades de mi familiar con discapacidad
- Los trabajadores cuentan con los recursos para hacer bien su trabajo
- Los trabajadores son capaces de ponerse en el lugar de mi familiar con discapacidad intelectual
- Los trabajadores han hecho sentir especial e importante a mi familiar con discapacidad intelectual
- Los trabajadores ofrecen un trato cordial y sincero a mi familiar con discapacidad intelectual

CALIDAD DE VIDA PERCIBIDA POR LOS CLIENTES

Informante: clientes.

A continuación se presentan una serie de afirmaciones relativas a este centro que usted conoce. Piense en cómo ha influido este centro en la calidad de vida de la persona con discapacidad intelectual de la que usted es tutor. Por favor, indique su grado de acuerdo con cada una de ellas:

Totalmente en Desacuerdo	Bastante en desacuerdo	Algo en desacuerdo	Ni de acuerdo ni en desacuerdo	Algo de acuerdo	Bastante de Acuerdo	Totalmente de acuerdo
1	2	3	4	5	6	7

- Desde este centro se nos proporciona información clara sobre los derechos de las personas con discapacidad intelectual
- En este centro se interesan por los derechos de las familias con personas con discapacidad intelectual
- Al utilizar este centro contamos con mayor influencia sobre los derechos de mi familiar con discapacidad intelectual
- Este centro ha establecido acuerdos con otras organizaciones para defender los derechos de las personas con discapacidad intelectual
- Desde este centro se nos ha consultado acerca de la calidad del servicio que ofrecen a mi familiar con discapacidad
- Los servicios de Apoyo a Familias con personas con discapacidad intelectual desarrollados en este centro han mejorado la calidad de vida de mi familiar con discapacidad

- La calidad de vida de mi familiar con discapacidad intelectual ha mejorado gracias a este centro
- Considero que la calidad de vida de mi familiar con discapacidad intelectual ha mejorado gracias a este centro
- En este centro se desarrollan acciones planificadas que mejoran la calidad de vida de la persona con discapacidad intelectual de la cual soy responsable
- Las acciones de este centro han incrementado la inclusión en distintos sectores (p. e. j.: educativo, servicios públicos, etc.) de mi familiar con discapacidad intelectual
- La valoración social de mi familiar con discapacidad intelectual ha mejorado, mejorando con ello su calidad de vida, gracias a las acciones desarrolladas por este centro
- Las actitudes de la sociedad hacia mi familiar con discapacidad intelectual son más positivas, gracias a las acciones desarrolladas por este centro
- La integración social de mi familiar con discapacidad ha mejorado, gracias a las acciones desarrolladas por este centro
- Este centro facilita formación en autodeterminación de mi familiar con discapacidad, mejorando su calidad de vida
- He observado un aumento en las posibilidades de autogestión e independencia de la persona con discapacidad intelectual de la que yo soy responsable, gracias a este centro
- Este centro ha incrementado mi sensibilidad hacia la necesidad de conseguir la autodeterminación de mi familiar con discapacidad intelectual
- Este centro estimula que la persona con discapacidad intelectual de la que yo soy responsable participe en la toma de decisiones relativas a su persona
- El desarrollo de la capacidad de autodeterminación para la persona con discapacidad intelectual de la que soy responsable es positivo, gracias a este centro
- Este centro debe seguir desarrollando acciones para fomentar la capacidad de la autodeterminación de la persona con discapacidad de la que soy responsable
- Favorecer la autodeterminación de las personas con discapacidad intelectual aumenta su calidad de vida
- Espero que este centro siga desarrollando la autodeterminación de las personas con discapacidad intelectual
- Es positivo el desarrollo de independencia en las personas con discapacidad intelectual

SÍNDROME DEL QUEMADO EN EL TRABAJO

Informante: empleados.

Indique la frecuencia con la que le ocurre lo siguiente en el trabajo que lleva a cabo en este centro. Utilice para ello la escala que se le presenta a continuación:

Nunca	Alguna vez al año o menos	Una vez al mes o menos	Algunas veces al mes	Una vez por semana	Algunas veces por semana	Todos los días
0	1	2	3	4	5	6

- Me siento emocionalmente agotado/a por mi trabajo
- Me siento agotado/a al final de un día de trabajo

- Me siento cansado/a cuando me levanto por las mañanas y tengo que enfrentarme a otro día en mi trabajo
- Trabajar todo el día es verdaderamente una tensión para mí
- Me siento "quemado/a" por el trabajo
- He ido perdiendo el interés por mi trabajo desde que empecé
- He ido perdiendo entusiasmo por mi trabajo
- Quiero simplemente hacer mi trabajo y no ser molestado
- Me he vuelto más cínico/a en mi trabajo
- Dudo de si mi trabajo tiene sentido

CLIMA DE JUSTICIA PROPICIADO POR LAS FIGURAS DE AUTORIDAD (APROXIMACIÓN GLOBAL)

Informante: empleados.

Por favor, indique su grado de acuerdo, teniendo en cuenta el trato que ofrece este centro u organización a sus trabajadores. Para ello, utilice la siguiente escala:

Totalmente en desacuerdo	Algo en desacuerdo	Ni de acuerdo ni en desacuerdo	Algo de acuerdo	Totalmente de acuerdo
1	2	3	4	5

- En general, las cosas no funcionan de modo justo en este centro
- En su mayor parte, este centro trata a sus trabajadores de manera justa
- La mayoría de las personas que trabajan en este centro dirían que a menudo son tratados injustamente

CLIMA DE JUSTICIA ENTRE COMPAÑEROS (APROXIMACIÓN GLOBAL)

Informante: empleados.

Por favor, indique su grado de acuerdo, teniendo en cuenta a sus compañeros de trabajo. Para ello, utilice la siguiente escala:

Totalmente en desacuerdo	Algo en desacuerdo	Ni de acuerdo ni en desacuerdo	Algo de acuerdo	Totalmente de acuerdo
1	2	3	4	5

- En general, entre nosotros, nos tratamos de forma justa
- En su mayor parte, como compañeros de trabajo, nos tratamos de manera justa
- La mayoría de las personas que trabajamos en este equipo decimos que a menudo nos tratamos, entre nosotros, injustamente

ANEXO II. RESULTADOS

1. ESTUDIO 1

Confirmatory factor analysis (CFA). Three-factor structure of justice climate (procedural justice climate, interpersonal justice climate, and informational justice climate) (20 items).

Goodness of Fit Statistics	
Degrees of Freedom = 101	
Minimum Fit Function Chi-Square = 212.859 (P = 0.00)	
Normal Theory Weighted Least Squares Chi-Square = 208.093 (P = 0.00)	
Satorra-Bentler Scaled Chi-Square = 165.346 (P = 0.000)	
Estimated Non-centrality Parameter (NCP) = 64.346	
90 Percent Confidence Interval for NCP = (32.986 ; 103.610)	
Minimum Fit Function Value = 2.729	
Population Discrepancy Function Value (F0) = 0.825	
90 Percent Confidence Interval for F0 = (0.423 ; 1.328)	
Root Mean Square Error of Approximation (RMSEA) = 0.0904	
90 Percent Confidence Interval for RMSEA = (0.0647 ; 0.115)	
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00731	
Expected Cross-Validation Index (ECVI) = 3.017	
90 Percent Confidence Interval for ECVI = (2.615 ; 3.521)	
ECVI for Saturated Model = 3.487	
ECVI for Independence Model = 51.284	
Chi-Square for Independence Model with 120 Degrees of Freedom = 3968.185	
Independence AIC = 4000.185	
Model AIC = 235.346	
Saturated AIC = 272.000	
Independence CAIC = 4054.097	
Model CAIC = 353.277	
Saturated CAIC = 730.245	
Normed Fit Index (NFI) = 0.958	
Non-Normed Fit Index (NNFI) = 0.980	
Parsimony Normed Fit Index (PNFI) = 0.807	
Comparative Fit Index (CFI) = 0.983	
Incremental Fit Index (IFI) = 0.983	
Relative Fit Index (RFI) = 0.950	
Critical N (CN) = 65.617	
Root Mean Square Residual (RMR) = 0.0366	
Standardized RMR = 0.0529	
Goodness of Fit Index (GFI) = 0.750	
Adjusted Goodness of Fit Index (AGFI) = 0.663	
Parsimony Goodness of Fit Index (PGFI) = 0.557	

CFA. Three-factor structure of justice climate (procedural justice climate, interpersonal justice climate, and informational justice climate) (19 items).

Goodness of Fit Statistics	
Degrees of Freedom = 87	
Minimum Fit Function Chi-Square = 205.327 (P = 0.00)	
Normal Theory Weighted Least Squares Chi-Square = 199.026 (P = 0.00)	
Satorra-Bentler Scaled Chi-Square = 156.211 (P = 0.000)	
Estimated Non-centrality Parameter (NCP) = 69.211	
90 Percent Confidence Interval for NCP = (38.147 ; 108.119)	
Minimum Fit Function Value = 2.632	
Population Discrepancy Function Value (F0) = 0.887	
90 Percent Confidence Interval for F0 = (0.489 ; 1.386)	
Root Mean Square Error of Approximation (RMSEA) = 0.101	
90 Percent Confidence Interval for RMSEA = (0.0750 ; 0.126)	
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00147	
Expected Cross-Validation Index (ECVI) = 2.849	
90 Percent Confidence Interval for ECVI = (2.451 ; 3.348)	
ECVI for Saturated Model = 3.077	
ECVI for Independence Model = 49.317	
Chi-Square for Independence Model with 105 Degrees of Freedom = 3816.727	
Independence AIC = 3846.727	
Model AIC = 222.211	
Saturated AIC = 240.000	
Independence CAIC = 3897.269	
Model CAIC = 333.403	
Saturated CAIC = 644.334	
Normed Fit Index (NFI) = 0.959	
Non-Normed Fit Index (NNFI) = 0.977	
Parsimony Normed Fit Index (PNFI) = 0.795	
Comparative Fit Index (CFI) = 0.981	
Incremental Fit Index (IFI) = 0.981	
Relative Fit Index (RFI) = 0.951	
Critical N (CN) = 61.216	
Root Mean Square Residual (RMR) = 0.0341	
Standardized RMR = 0.0510	
Goodness of Fit Index (GFI) = 0.746	
Adjusted Goodness of Fit Index (AGFI) = 0.650	
Parsimony Goodness of Fit Index (PGFI) = 0.541	

CFA. One-factor structure of justice climate (procedural justice climate + interpersonal justice climate + informational justice climate) (20 items).

Goodness of Fit Statistics	
Degrees of Freedom = 104	
Minimum Fit Function Chi-Square = 748.269 (P = 0.0)	
Normal Theory Weighted Least Squares Chi-Square = 1134.398 (P = 0.0)	
Satorra-Bentler Scaled Chi-Square = 850.300 (P = 0.0)	
Estimated Non-centrality Parameter (NCP) = 746.300	
90 Percent Confidence Interval for NCP = (657.043 ; 843.016)	
Minimum Fit Function Value = 9.593	
Population Discrepancy Function Value (F0) = 9.568	
90 Percent Confidence Interval for F0 = (8.424 ; 10.808)	
Root Mean Square Error of Approximation (RMSEA) = 0.303	
90 Percent Confidence Interval for RMSEA = (0.285 ; 0.322)	
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.000	
Expected Cross-Validation Index (ECVI) = 11.722	
90 Percent Confidence Interval for ECVI = (10.577 ; 12.962)	
ECVI for Saturated Model = 3.487	
ECVI for Independence Model = 51.284	
Chi-Square for Independence Model with 120 Degrees of Freedom = 3968.185	
Independence AIC = 4000.185	
Model AIC = 914.300	
Saturated AIC = 272.000	
Independence CAIC = 4054.097	
Model CAIC = 1022.122	
Saturated CAIC = 730.245	
Normed Fit Index (NFI) = 0.786	
Non-Normed Fit Index (NNFI) = 0.776	
Parsimony Normed Fit Index (PNFI) = 0.681	
Comparative Fit Index (CFI) = 0.806	
Incremental Fit Index (IFI) = 0.807	
Relative Fit Index (RFI) = 0.753	
Critical N (CN) = 13.885	
Root Mean Square Residual (RMR) = 0.104	
Standardized RMR = 0.136	
Goodness of Fit Index (GFI) = 0.355	
Adjusted Goodness of Fit Index (AGFI) = 0.156	
Parsimony Goodness of Fit Index (PGFI) = 0.271	

CFA). Three-factor structure of peer justice (procedural peer justice, interpersonal peer justice, and informational peer justice) (14 items).

Goodness of Fit Statistics	
Degrees of Freedom = 74	
Minimum Fit Function Chi-Square = 159.151 (P = 0.000)	
Normal Theory Weighted Least Squares Chi-Square = 166.854 (P = 0.00)	
Satorra-Bentler Scaled Chi-Square = 130.415 (P = 0.000)	
Chi-Square Corrected for Non-Normality = 3126.187 (P = 0.0)	
Estimated Non-centrality Parameter (NCP) = 56.415	
90 Percent Confidence Interval for NCP = (28.480 ; 92.203)	
Minimum Fit Function Value = 2.040	
Population Discrepancy Function Value (F0) = 0.723	
90 Percent Confidence Interval for F0 = (0.365 ; 1.182)	
Root Mean Square Error of Approximation (RMSEA) = 0.0989	
90 Percent Confidence Interval for RMSEA = (0.0702 ; 0.126)	
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00441	
Expected Cross-Validation Index (ECVI) = 2.467	
90 Percent Confidence Interval for ECVI = (2.109 ; 2.926)	
ECVI for Saturated Model = 2.692	
ECVI for Independence Model = 47.840	
Chi-Square for Independence Model with 91 Degrees of Freedom = 3703.522	
Independence AIC = 3731.522	
Model AIC = 192.415	
Saturated AIC = 210.000	
Independence CAIC = 3778.694	
Model CAIC = 296.867	
Saturated CAIC = 563.792	
Normed Fit Index (NFI) = 0.965	
Non-Normed Fit Index (NNFI) = 0.981	
Parsimony Normed Fit Index (PNFI) = 0.785	
Comparative Fit Index (CFI) = 0.984	
Incremental Fit Index (IFI) = 0.984	
Relative Fit Index (RFI) = 0.957	
Critical N (CN) = 63.922	
Root Mean Square Residual (RMR) = 0.0115	
Standardized RMR = 0.0392	
Goodness of Fit Index (GFI) = 0.766	
Adjusted Goodness of Fit Index (AGFI) = 0.668	
Parsimony Goodness of Fit Index (PGFI) = 0.540	

CFA. Three-factor structure of peer justice (procedural peer justice, interpersonal peer justice, and informational peer justice) (12 items).

Goodness of Fit Statistics	
Degrees of Freedom = 51	
Minimum Fit Function Chi-Square = 69.696 (P = 0.0420)	
Normal Theory Weighted Least Squares Chi-Square = 70.667 (P = 0.0355)	
Satorra-Bentler Scaled Chi-Square = 56.327 (P = 0.282)	
Chi-Square Corrected for Non-Normality = 184.147 (P = 0.00)	
Estimated Non-centrality Parameter (NCP) = 5.327	
90 Percent Confidence Interval for NCP = (0.0 ; 27.834)	
Minimum Fit Function Value = 0.894	
Population Discrepancy Function Value (F0) = 0.0683	
90 Percent Confidence Interval for F0 = (0.0 ; 0.357)	
Root Mean Square Error of Approximation (RMSEA) = 0.0366	
90 Percent Confidence Interval for RMSEA = (0.0 ; 0.0836)	
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.631	
Expected Cross-Validation Index (ECVI) = 1.414	
90 Percent Confidence Interval for ECVI = (1.346 ; 1.703)	
ECVI for Saturated Model = 2.000	
ECVI for Independence Model = 34.631	
Chi-Square for Independence Model with 66 Degrees of Freedom = 2677.243	
Independence AIC = 2701.243	
Model AIC = 110.327	
Saturated AIC = 156.000	
Independence CAIC = 2741.677	
Model CAIC = 201.303	
Saturated CAIC = 418.817	
Normed Fit Index (NFI) = 0.979	
Non-Normed Fit Index (NNFI) = 0.997	
Parsimony Normed Fit Index (PNFI) = 0.756	
Comparative Fit Index (CFI) = 0.998	
Incremental Fit Index (IFI) = 0.998	
Relative Fit Index (RFI) = 0.973	
Critical N (CN) = 108.168	
Root Mean Square Residual (RMR) = 0.00891	
Standardized RMR = 0.0291	
Goodness of Fit Index (GFI) = 0.869	
Adjusted Goodness of Fit Index (AGFI) = 0.799	
Parsimony Goodness of Fit Index (PGFI) = 0.568	

CFA. One-factor structure of peer justice (procedural peer justice + interpersonal peer justice + informational peer justice) (12 items).

Goodness of Fit Statistics	
Degrees of Freedom = 54	
Minimum Fit Function Chi-Square = 110.492 (P = 0.000)	
Normal Theory Weighted Least Squares Chi-Square = 115.188 (P = 0.000)	
Satorra-Bentler Scaled Chi-Square = 90.763 (P = 0.00129)	
Chi-Square Corrected for Non-Normality = 300.928 (P = 0.0)	
Estimated Non-centrality Parameter (NCP) = 36.763	
90 Percent Confidence Interval for NCP = (14.356 ; 67.052)	
Minimum Fit Function Value = 1.417	
Population Discrepancy Function Value (F0) = 0.471	
90 Percent Confidence Interval for F0 = (0.184 ; 0.860)	
Root Mean Square Error of Approximation (RMSEA) = 0.0934	
90 Percent Confidence Interval for RMSEA = (0.0584 ; 0.126)	
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.0245	
Expected Cross-Validation Index (ECVI) = 1.779	
90 Percent Confidence Interval for ECVI = (1.492 ; 2.167)	
ECVI for Saturated Model = 2.000	
ECVI for Independence Model = 34.631	
Chi-Square for Independence Model with 66 Degrees of Freedom = 2677.243	
Independence AIC = 2701.243	
Model AIC = 138.763	
Saturated AIC = 156.000	
Independence CAIC = 2741.677	
Model CAIC = 219.630	
Saturated CAIC = 418.817	
Normed Fit Index (NFI) = 0.966	
Non-Normed Fit Index (NNFI) = 0.983	
Parsimony Normed Fit Index (PNFI) = 0.790	
Comparative Fit Index (CFI) = 0.986	
Incremental Fit Index (IFI) = 0.986	
Relative Fit Index (RFI) = 0.959	
Critical N (CN) = 70.669	
Root Mean Square Residual (RMR) = 0.0114	
Standardized RMR = 0.0358	
Goodness of Fit Index (GFI) = 0.802	
Adjusted Goodness of Fit Index (AGFI) = 0.715	
Parsimony Goodness of Fit Index (PGFI) = 0.556	

CFA. Two second-order structures of unit-level fairness (justice climate and peer justice).

Goodness of Fit Statistics	
Degrees of Freedom = 343	
Minimum Fit Function Chi-Square = 598.083 (P = 0.00)	
Normal Theory Weighted Least Squares Chi-Square = 585.047 (P = 0.00)	
Satorra-Bentler Scaled Chi-Square = 494.305 (P = 0.000)	
Estimated Non-centrality Parameter (NCP) = 151.305	
90 Percent Confidence Interval for NCP = (96.171 ; 214.448)	
Minimum Fit Function Value = 7.668	
Population Discrepancy Function Value (F0) = 1.940	
90 Percent Confidence Interval for F0 = (1.233 ; 2.749)	
Root Mean Square Error of Approximation (RMSEA) = 0.0752	
90 Percent Confidence Interval for RMSEA = (0.0600 ; 0.0895)	
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00475	
Expected Cross-Validation Index (ECVI) = 7.953	
90 Percent Confidence Interval for ECVI = (7.246 ; 8.762)	
ECVI for Saturated Model = 10.410	
ECVI for Independence Model = 104.516	
Chi-Square for Independence Model with 378 Degrees of Freedom = 8096.233	
Independence AIC = 8152.233	
Model AIC = 620.305	
Saturated AIC = 812.000	
Independence CAIC = 8246.578	
Model CAIC = 832.580	
Saturated CAIC = 2179.996	
Normed Fit Index (NFI) = 0.939	
Non-Normed Fit Index (NNFI) = 0.978	
Parsimony Normed Fit Index (PNFI) = 0.852	
Comparative Fit Index (CFI) = 0.980	
Incremental Fit Index (IFI) = 0.980	
Relative Fit Index (RFI) = 0.933	
Critical N (CN) = 65.201	
Root Mean Square Residual (RMR) = 0.0541	
Standardized RMR = 0.105	
Goodness of Fit Index (GFI) = 0.651	
Adjusted Goodness of Fit Index (AGFI) = 0.587	
Parsimony Goodness of Fit Index (PGFI) = 0.550	

CFA. One second-order structure of unit-level fairness (justice climate + peer justice).

Goodness of Fit Statistics	
Degrees of Freedom = 344	
Minimum Fit Function Chi-Square = 693.153 (P = 0.0)	
Normal Theory Weighted Least Squares Chi-Square = 634.855 (P = 0.0)	
Satorra-Bentler Scaled Chi-Square = 509.700 (P = 0.000)	
Estimated Non-centrality Parameter (NCP) = 165.700	
90 Percent Confidence Interval for NCP = (109.205 ; 230.179)	
Minimum Fit Function Value = 8.887	
Population Discrepancy Function Value (F0) = 2.124	
90 Percent Confidence Interval for F0 = (1.400 ; 2.951)	
Root Mean Square Error of Approximation (RMSEA) = 0.0786	
90 Percent Confidence Interval for RMSEA = (0.0638 ; 0.0926)	
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00138	
Expected Cross-Validation Index (ECVI) = 8.124	
90 Percent Confidence Interval for ECVI = (7.400 ; 8.951)	
ECVI for Saturated Model = 10.410	
ECVI for Independence Model = 104.516	
Chi-Square for Independence Model with 378 Degrees of Freedom = 8096.233	
Independence AIC = 8152.233	
Model AIC = 633.700	
Saturated AIC = 812.000	
Independence CAIC = 8246.578	
Model CAIC = 842.606	
Saturated CAIC = 2179.996	
Normed Fit Index (NFI) = 0.937	
Non-Normed Fit Index (NNFI) = 0.976	
Parsimony Normed Fit Index (PNFI) = 0.853	
Comparative Fit Index (CFI) = 0.979	
Incremental Fit Index (IFI) = 0.979	
Relative Fit Index (RFI) = 0.931	
Critical N (CN) = 63.428	
Root Mean Square Residual (RMR) = 0.137	
Standardized RMR = 0.217	
Goodness of Fit Index (GFI) = 0.632	
Adjusted Goodness of Fit Index (AGFI) = 0.566	
Parsimony Goodness of Fit Index (PGFI) = 0.536	

Hierarchical linear modeling (HLM). Dependent variable: reciprocity with the supervisor.

Null model.

+-----+				

COEFFICIENTS	BETA-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	2.46323	0.03653	67.42473	0.00000
+-----+				
-2 LOG-LIKELIHOOD				
+-----+				
DEVIANCE= -2*LOG(LIKELIHOOD) = 1417.062203882717				
NUMBER OF FREE PARAMETERS = 3				
+-----+				
RANDOM PART OF MODEL				
+-----+				

LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.11824	0.18540	0.63774	0.52365

LEVEL 1	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.58835	0.06643	8.85690	0.00000

LEVEL 2 COVARIANCE MATRIX				
intcept				
intcept	0.11824			

LEVEL 2 CORRELATION MATRIX				
intcept				
intcept	1.0000			

+-----+									
DATA SUMMARY									
+-----+									
NUMBER OF LEVEL 2 UNITS : 79									
NUMBER OF LEVEL 1 UNITS : 532									
N2 : 1	2	3	4	5	6	7	8		
N1 : 9	10	8	6	9	9	9	9		
N2 : 9	10	11	12	13	14	15	16		
N1 : 5	9	9	8	10	10	4	6		
N2 : 17	18	19	20	21	22	23	24		
N1 : 8	10	7	5	9	6	7	8		
N2 : 25	26	27	28	29	30	31	32		
N1 : 8	5	4	9	6	6	7	6		
N2 : 33	34	35	36	37	38	39	40		
N1 : 9	7	8	6	6	6	3	8		
N2 : 41	42	43	44	45	46	47	48		
N1 : 5	7	4	3	7	6	5	4		
N2 : 49	50	51	52	53	54	55	56		
N1 : 12	4	12	7	5	3	8	9		
N2 : 57	58	59	60	61	62	63	64		
N1 : 6	5	5	8	3	8	8	7		
N2 : 65	66	67	68	69	70	71	72		
N1 : 7	3	3	9	5	3	4	6		
N2 : 73	74	75	76	77	78	79			
N1 : 5	8	5	5	8	6	10			
=====									

ITERATION NUMBER	1
+-----+	
FIXED PART OF MODEL	

```

LEVEL 1 CORRELATION MATRIX
      intcept      1.0000
-----
CONVERGENCE REACHED IN   3 ITERATIONS
-----

LEVEL 1 COVARIANCE MATRIX
      intcept      0.58799
-----

LEVEL 1 CORRELATION MATRIX
      intcept      1.0000
-----

LEVEL 2 CORRELATION MATRIX
      intcept      0.11938
-----

LEVEL 2 COVARIANCE MATRIX
      intcept      1.0000
-----

LEVEL 1 COVARIANCE MATRIX
      intcept      0.58799
-----

LEVEL 1 CORRELATION MATRIX
      intcept      1.0000
-----

+-----+
| CPU TIME (SECONDS) :      0.055 |
+-----+

|=====|
| END OF ANALYSIS |
|=====|

Model 1.

+-----+
| DATA SUMMARY |
+-----+

NUMBER OF LEVEL 2 UNITS :      79
NUMBER OF LEVEL 1 UNITS :     532

N2 :      1      2      3      4      5      6      7      8
N1 :      9     10      8      6      9      9      9      9

N2 :      9     10     11     12     13     14     15     16
N1 :      5      9      9      8     10     10     4      6
```

```

LEVEL 1 CORRELATION MATRIX
      intcept      1.0000
-----
CONVERGENCE REACHED IN   3 ITERATIONS
-----

ITERATION NUMBER      3

+-----+
| FIXED PART OF MODEL |
+-----+

COEFFICIENTS      BETA-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept      2.46152      0.05187      47.45706      0.00000

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANCE= -2*LOG(LIKELIHOOD) =  1293.880321508216
NUMBER OF FREE PARAMETERS =      3

+-----+
| RANDOM PART OF MODEL |
+-----+

LEVEL 2      TAU-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept /intcept      0.11938      0.03393      3.51818      0.00043

LEVEL 1      TAU-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept /intcept      0.58799      0.03899      15.08043      0.00000
```

```
N2 : 17 18 19 20 21 22 23 24
N1 : 8 10 7 5 9 6 7 8

N2 : 25 26 27 28 29 30 31 32
N1 : 8 5 4 9 6 6 7 6

N2 : 33 34 35 36 37 38 39 40
N1 : 9 7 8 6 6 6 3 8

N2 : 41 42 43 44 45 46 47 48
N1 : 5 7 4 3 7 6 5 4

N2 : 49 50 51 52 53 54 55 56
N1 : 12 4 12 7 5 3 8 9

N2 : 57 58 59 60 61 62 63 64
N1 : 6 5 5 8 3 8 8 7

N2 : 65 66 67 68 69 70 71 72
N1 : 7 3 3 9 5 3 4 6

N2 : 73 74 75 76 77 78 79
N1 : 5 8 5 5 8 6 10

=====

ITERATION NUMBER      1

+-----+-----+
| FIXED PART OF MODEL |
+-----+-----+

-----+-----+-----+-----+-----+-----+
| COEFFICIENTS      | BETA-HAT | STD.ERR. | Z-VALUE | PR > |Z| |
-----+-----+-----+-----+-----+-----+
| intcept           | 2.46234  | 0.04338  | 56.76746 | 0.0000 |
| gender            | 0.00307  | 0.08221  | 0.03730  | 0.97025 |
| tenure            | -0.01918 | 0.00605  | -3.17289 | 0.00151 |
| wu_size            | 0.02189  | 0.01747  | 1.25278  | 0.21028 |

+-----+-----+-----+-----+-----+-----+
| -2 LOG-LIKELIHOOD |
+-----+-----+-----+-----+-----+-----+

DEVIANCE= -2*LOG(LIKELIHOOD) = 1764.292490134814
NUMBER OF FREE PARAMETERS = 11
```

```
+-----+-----+
| RANDOM PART OF MODEL |
+-----+-----+

-----+-----+-----+-----+-----+-----+
| LEVEL 2           | TAU-HAT | STD.ERR. | Z-VALUE | PR > |Z| |
-----+-----+-----+-----+-----+-----+
| intcept /intcept  | 0.12566  | 0.22497  | 0.55855  | 0.57647 |
| gender /intcept    | -0.08874 | 0.21508  | -0.41259 | 0.67991 |
| gender /gender     | 0.09391  | 0.35646  | 0.26344  | 0.79221 |
| tenure /intcept    | -0.00181 | 0.13647  | -0.01328 | 0.98940 |
| tenure /gender     | -0.00805 | 0.18044  | -0.04459 | 0.96443 |
| tenure /tenure     | -0.00133 | 0.16256  | -0.00816 | 0.99349 |

-----+-----+-----+-----+-----+-----+
| LEVEL 1           | TAU-HAT | STD.ERR. | Z-VALUE | PR > |Z| |
-----+-----+-----+-----+-----+-----+
| intcept /intcept  | 0.57557  | 0.07864  | 7.31924  | 0.00000 |

LEVEL 2 COVARIANCE MATRIX

      intcept  gender  tenure
intcept  0.12577          0.09412
gender   -0.08858      -0.00719  0.00204
tenure   -0.00118      -0.00719  0.00204
```

```
LEVEL 2 CORRELATION MATRIX

      intcept  gender  tenure
intcept  1.0000
gender   -0.8141      1.0000
tenure   -0.0737     -0.5190      1.0000

LEVEL 1 COVARIANCE MATRIX

      intcept
intcept  0.57557

LEVEL 1 CORRELATION MATRIX

      intcept
intcept  1.0000
```

```
-----
CONVERGENCE REACHED IN 10 ITERATIONS
-----

ITERATION NUMBER      10

+-----+
| FIXED PART OF MODEL |
+-----+

COEFFICIENTS      BETA-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept           2.45646      0.05964      41.18524      0.00000
gender            -0.00109      0.09600      -0.01139      0.99091
tenure            -0.01945      0.00666      -2.91977      0.00350
wu_size           0.01702      0.02291      0.74303      0.45746

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANC= -2*LOG(LIKELIHOOD) = 1279.184197071840
NUMBER OF FREE PARAMETERS = 11

+-----+
| RANDOM PART OF MODEL |
+-----+

LEVEL 2
-----
LEVEL 2      TAU-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept /intcept      0.13930      0.04353      3.20047      0.00137
gender /intcept       -0.10766      0.05789      -1.85993      0.06290
gender /gender         0.21099      0.10922      1.93186      0.05338
tenure /intcept       -0.00225      0.00320      -0.70197      0.48270
tenure /gender        -0.00596      0.00500      -1.19166      0.23340
tenure /tenure         0.00003      0.00044      0.06632      0.94713

LEVEL 1
-----
LEVEL 1      TAU-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept /intcept      0.55570      0.04036      13.76845      0.00000
```

Model 2.

```
LEVEL 2 COVARIANCE MATRIX

intcept      intcept      gender      tenure
gender      -0.10766      0.21099
tenure      -0.00222      -0.00594      0.00049

LEVEL 2 CORRELATION MATRIX

intcept      intcept      gender      tenure
gender      1.0000
tenure      -0.6280      1.0000
tenure      -0.2677      -0.5816      1.0000

LEVEL 1 COVARIANCE MATRIX

intcept      intcept
gender      1.0000
tenure      -0.6280      1.0000
tenure      -0.2677      -0.5816      1.0000

LEVEL 1 CORRELATION MATRIX

intcept      intcept
intcept      1.0000

+-----+
| CPU TIME (SECONDS) :      0.084 |
+-----+

=====
| END OF ANALYSIS |
|=====

+-----+
| DATA SUMMARY |
+-----+

NUMBER OF LEVEL 2 UNITS :      79
NUMBER OF LEVEL 1 UNITS :      532

N2 :      1      2      3      4      5      6      7      8
N1 :      9     10     8      6      9      9      9      9
```

```

N2 : 9 10 11 12 13 14 15 16
N1 : 5 9 9 10 10 4 4 6

DEVIANCE= -2*LOG(LIKELIHOOD) = 1757.276900665478
NUMBER OF FREE PARAMETERS = 13

+-----+
| FIXED PART OF MODEL |
+-----+

N2 : 17 18 19 20 21 22 23 24
N1 : 8 10 7 5 9 6 7 8

N2 : 25 26 27 28 29 30 31 32
N1 : 8 5 4 9 6 7 6

N2 : 33 34 35 36 37 38 39 40
N1 : 9 7 8 6 6 3 8

N2 : 41 42 43 44 45 46 47 48
N1 : 5 7 4 3 7 6 5 4

N2 : 49 50 51 52 53 54 55 56
N1 : 12 4 12 7 5 3 8 9

N2 : 57 58 59 60 61 62 63 64
N1 : 6 5 5 8 3 8 8 7

N2 : 65 66 67 68 69 70 71 72
N1 : 7 3 3 9 5 3 4 6

N2 : 73 74 75 76 77 78 79
N1 : 5 8 5 5 8 6 10

=====
ITERATION NUMBER 1

+-----+
| FIXED PART OF MODEL |
+-----+

COEFFICIENTS BETA-HAT STD.ERR. Z-VALUE PR > |Z|
-----
intcept 2.45868 0.04030 61.00756 0.00000
gender 0.01573 0.07640 0.20594 0.83684
tenure -0.01167 0.00569 -2.04911 0.04045
wu_size 0.01142 0.01628 0.70178 0.48282
JC 0.49691 0.06212 7.99982 0.00000
PJ 0.05385 0.08507 0.63298 0.52675

LEVEL 1 COVARIANCE MATRIX
intcept 1.0000
gender -1.0000 1.0000
tenure 0.6100 -0.6162 1.0000

LEVEL 2 COVARIANCE MATRIX
intcept intcept gender tenure
0.03078
-0.05036 0.08240
0.00224 -0.00370 0.00044

LEVEL 2 CORRELATION MATRIX
intcept intcept gender tenure
1.0000
-1.0000 1.0000
0.6100 -0.6162 1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
0.57766

LEVEL 1 CORRELATION MATRIX
intcept 0.57766

LEVEL 2 COVARIANCE MATRIX
intcept intcept gender tenure
0.03078
-0.05036 0.08240
0.00224 -0.00370 0.00044

LEVEL 2 CORRELATION MATRIX
intcept intcept gender tenure
1.0000
-1.0000 1.0000
0.6100 -0.6162 1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
0.57766

LEVEL 1 CORRELATION MATRIX
intcept 0.57766

LEVEL 2 COVARIANCE MATRIX
intcept intcept gender tenure
0.03078
-0.05036 0.08240
0.00224 -0.00370 0.00044

LEVEL 2 CORRELATION MATRIX
intcept intcept gender tenure
1.0000
-1.0000 1.0000
0.6100 -0.6162 1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
0.57766

LEVEL 1 CORRELATION MATRIX
intcept 0.57766

LEVEL 2 COVARIANCE MATRIX
intcept intcept gender tenure
0.03078
-0.05036 0.08240
0.00224 -0.00370 0.00044

LEVEL 2 CORRELATION MATRIX
intcept intcept gender tenure
1.0000
-1.0000 1.0000
0.6100 -0.6162 1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
0.57766

LEVEL 1 CORRELATION MATRIX
intcept 0.57766

LEVEL 2 COVARIANCE MATRIX
intcept intcept gender tenure
0.03078
-0.05036 0.08240
0.00224 -0.00370 0.00044

LEVEL 2 CORRELATION MATRIX
intcept intcept gender tenure
1.0000
-1.0000 1.0000
0.6100 -0.6162 1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
0.57766

LEVEL 1 CORRELATION MATRIX
intcept 0.57766

LEVEL 2 COVARIANCE MATRIX
intcept intcept gender tenure
0.03078
-0.05036 0.08240
0.00224 -0.00370 0.00044

LEVEL 2 CORRELATION MATRIX
intcept intcept gender tenure
1.0000
-1.0000 1.0000
0.6100 -0.6162 1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
0.57766

LEVEL 1 CORRELATION MATRIX
intcept 0.57766

LEVEL 2 COVARIANCE MATRIX
intcept intcept gender tenure
0.03078
-0.05036 0.08240
0.00224 -0.00370 0.00044

LEVEL 2 CORRELATION MATRIX
intcept intcept gender tenure
1.0000
-1.0000 1.0000
0.6100 -0.6162 1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
0.57766

LEVEL 1 CORRELATION MATRIX
intcept 0.57766

LEVEL 2 COVARIANCE MATRIX
intcept intcept gender tenure
0.03078
-0.05036 0.08240
0.00224 -0.00370 0.00044

LEVEL 2 CORRELATION MATRIX
intcept intcept gender tenure
1.0000
-1.0000 1.0000
0.6100 -0.6162 1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
0.57766

LEVEL 1 CORRELATION MATRIX
intcept 0.57766

LEVEL 2 COVARIANCE MATRIX
intcept intcept gender tenure
0.03078
-0.05036 0.08240
0.00224 -0.00370 0.00044

LEVEL 2 CORRELATION MATRIX
intcept intcept gender tenure
1.0000
-1.0000 1.0000
0.6100 -0.6162 1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
0.57766

LEVEL 1 CORRELATION MATRIX
intcept 0.57766

LEVEL 2 COVARIANCE MATRIX
intcept intcept gender tenure
0.03078
-0.05036 0.08240
0.00224 -0.00370 0.00044

LEVEL 2 CORRELATION MATRIX
intcept intcept gender tenure
1.0000
-1.0000 1.0000
0.6100 -0.6162 1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
0.57766

LEVEL 1 CORRELATION MATRIX
intcept 0.57766

LEVEL 2 COVARIANCE MATRIX
intcept intcept gender tenure
0.03078
-0.05036 0.08240
0.00224 -0.00370 0.00044

LEVEL 2 CORRELATION MATRIX
intcept intcept gender tenure
1.0000
-1.0000 1.0000
0.6100 -0.6162 1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
0.57766

LEVEL 1 CORRELATION MATRIX
intcept 0.57766

LEVEL 2 COVARIANCE MATRIX
intcept intcept gender tenure
0.03078
-0.05036 0.08240
0.00224 -0.00370 0.00044

LEVEL 2 CORRELATION MATRIX
intcept intcept gender tenure
1.0000
-1.0000 1.0000
0.6100 -0.6162 1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
0.57766

LEVEL 1 CORRELATION MATRIX
intcept 0.57766

LEVEL 2 COVARIANCE MATRIX
intcept intcept gender tenure
0.03078
-0.05036 0.08240
0.00224 -0.00370 0.00044

LEVEL 2 CORRELATION MATRIX
intcept intcept gender tenure
1.0000
-1.0000 1.0000
0.6100 -0.6162 1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
0.57766

LEVEL 1 CORRELATION MATRIX
intcept 0.57766

LEVEL 2 COVARIANCE MATRIX
intcept intcept gender tenure
0.03078
-0.05036 0.08240
0.00224 -0.00370 0.00044

LEVEL 2 CORRELATION MATRIX
intcept intcept gender tenure
1.0000
-1.0000 1.0000
0.6100 -0.6162 1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
0.57766

LEVEL 1 CORRELATION MATRIX
intcept 0.57766

LEVEL 2 COVARIANCE MATRIX
intcept intcept gender tenure
0.03078
-0.05036 0.08240
0.00224 -0.00370 0.00044

LEVEL 2 CORRELATION MATRIX
intcept intcept gender tenure
1.0000
-1.0000 1.0000
0.6100 -0.6162 1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
0.57766

LEVEL 1 CORRELATION MATRIX
intcept 0.57766

LEVEL 2 COVARIANCE MATRIX
intcept intcept gender tenure
0.03078
-0.05036 0.08240
0.00224 -0.00370 0.00044

LEVEL 2 CORRELATION MATRIX
intcept intcept gender tenure
1.0000
-1.0000 1.0000
0.6100 -0.6162 1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
0.57766

LEVEL 1 CORRELATION MATRIX
intcept 0.57766

LEVEL 2 COVARIANCE MATRIX
intcept intcept gender tenure
0.03078
-0.05036 0.08240
0.00224 -0.00370 0.00044

LEVEL 2 CORRELATION MATRIX
intcept intcept gender tenure
1.0000
-1.0000 1.0000
0.6100 -0.6162 1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
0.57766

LEVEL 1 CORRELATION MATRIX
intcept 0.57766

LEVEL 2 COVARIANCE MATRIX
intcept intcept gender tenure
0.03078
-0.05036 0.08240
0.00224 -0.00370 0.00044

LEVEL 2 CORRELATION MATRIX
intcept intcept gender tenure
1.0000
-1.0000 1.0000
0.6100 -0.6162 1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
0.57766

LEVEL 1 CORRELATION MATRIX
intcept 0.57766

LEVEL 2 COVARIANCE MATRIX
intcept intcept gender tenure
0.03078
-0.05036 0.08240
0.00224 -0.00370 0.00044

LEVEL 2 CORRELATION MATRIX
intcept intcept gender tenure
1.0000
-1.0000 1.0000
0.6100 -0.6162 1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
0.57766

LEVEL 1 CORRELATION MATRIX
intcept 0.57766

LEVEL 2 COVARIANCE MATRIX
intcept intcept gender tenure
0.03078
-0.05036 0.08240
0.00224 -0.00370 0.00044

LEVEL 2 CORRELATION MATRIX
intcept intcept gender tenure
1.0000
-1.0000 1.0000
0.6100 -0.6162 1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
0.57766

LEVEL 1 CORRELATION MATRIX
intcept 0.57766

LEVEL 2 COVARIANCE MATRIX
intcept intcept gender tenure
0.03078
-
```

intcept		tenure	/tenure	0.00050	0.00057	0.88209	0.37773

LEVEL 1		TAU-HAT		STD.ERR.		Z-VALUE	
intcept /intcept		0.55250		0.04011		13.77464	
intcept /intcept						0.00000	

LEVEL 2 COVARIANCE MATRIX							
		intcept	gender	tenure			
intcept		0.04647					
gender		-0.09048	0.17635				
tenure		0.00108	-0.00252	0.00102			

LEVEL 2 CORRELATION MATRIX							
		intcept	gender	tenure			
intcept		1.0000					
gender		-0.9995	1.0000				
tenure		0.1566	-0.1876	1.0000			

LEVEL 1 COVARIANCE MATRIX							
		intcept					
intcept		0.55250					

LEVEL 1 CORRELATION MATRIX							
		intcept					
intcept		1.0000					

		CPU TIME (SECONDS) :		0.106			

=====							
END OF ANALYSIS							
=====							

+-----+
| FIXED PART OF MODEL |
+-----+

COEFFICIENTS	BETA-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	2.45071	0.04802	51.03463	0.00000
gender	0.01840	0.09037	0.20365	0.83863
tenure	-0.01705	0.00746	-2.28402	0.02237
wu_size	0.01545	0.01690	0.91459	0.36041
JC	0.50398	0.06587	7.65101	0.00000
PJ	0.04027	0.09041	0.44542	0.65602

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANCE= -2*LOG(LIKELIHOOD) = 1230.837585947134
NUMBER OF FREE PARAMETERS = 13

+-----+
| RANDOM PART OF MODEL |
+-----+

LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.03550	0.02867	1.23796	0.21573
gender /intcept	-0.09614	0.04640	-2.07182	0.03828
gender /gender	0.17343	0.09828	1.76469	0.07762
tenure /intcept	-0.00130	0.00286	-0.45484	0.64923
tenure /gender	-0.00374	0.00538	-0.69631	0.48624

Hierarchical linear modeling (HLM). Dependent variable: reciprocity with coworkers.

Null model.

+-----+				

COEFFICIENTS	BETA-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	2.94901	0.03257	90.55067	0.00000

+-----+				
-2 LOG-LIKELIHOOD				
+-----+				
DEVIANCE= -2*LOG(LIKELIHOOD) = 1364.591997075825				
NUMBER OF FREE PARAMETERS = 3				
+-----+				
RANDOM PART OF MODEL				
+-----+				

LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.08814	0.18540	0.47539	0.63451

LEVEL 1	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.47971	0.06643	7.22147	0.00000

LEVEL 2 COVARIANCE MATRIX				
intcept				
intcept	0.08814			

LEVEL 2 CORRELATION MATRIX				
intcept				
intcept	1.0000			

+-----+									
DATA SUMMARY									
+-----+									
NUMBER OF LEVEL 2 UNITS : 79									
NUMBER OF LEVEL 1 UNITS : 532									
N2 : 1	2	3	4	5	6	7	8		
N1 : 9	10	8	6	9	9	9	9		
N2 : 9	10	11	12	13	14	15	16		
N1 : 5	9	9	8	10	10	4	6		
N2 : 17	18	19	20	21	22	23	24		
N1 : 8	10	7	5	9	6	7	8		
N2 : 25	26	27	28	29	30	31	32		
N1 : 8	5	4	9	6	6	7	6		
N2 : 33	34	35	36	37	38	39	40		
N1 : 9	7	8	6	6	6	3	8		
N2 : 41	42	43	44	45	46	47	48		
N1 : 5	7	4	3	7	6	5	4		
N2 : 49	50	51	52	53	54	55	56		
N1 : 12	4	12	7	5	3	8	9		
N2 : 57	58	59	60	61	62	63	64		
N1 : 6	5	5	8	3	8	8	7		
N2 : 65	66	67	68	69	70	71	72		
N1 : 7	3	3	9	5	3	4	6		
N2 : 73	74	75	76	77	78	79			
N1 : 5	8	5	5	8	6	10			
=====									

ITERATION NUMBER	1
+-----+	
FIXED PART OF MODEL	
+-----+	

```

LEVEL 1 CORRELATION MATRIX
      intcept
      1.0000
-----
CONVERGENCE REACHED IN   3 ITERATIONS
-----

LEVEL 2 COVARIANCE MATRIX
      intcept
      0.08457
-----
LEVEL 2 CORRELATION MATRIX
      intcept
      1.0000
-----
LEVEL 1 COVARIANCE MATRIX
      intcept
      0.48092
-----
LEVEL 1 CORRELATION MATRIX
      intcept
      1.0000
-----
+-----+
| CPU TIME (SECONDS) :      0.078 |
+-----+

|=====|
| END OF ANALYSIS |
|=====|

DEVIANCE= -2*LOG(LIKELIHOOD) =  1180.762856670307
NUMBER OF FREE PARAMETERS =      3

+-----+
| RANDOM PART OF MODEL |
+-----+

LEVEL 2
      TAU-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept /intcept
      0.08457      0.02565      3.29694      0.00098
-----
LEVEL 1
      TAU-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept /intcept
      0.48092      0.03188      15.08684      0.00000
-----
```

Model 1.

```

+-----+
| DATA SUMMARY |
+-----+

NUMBER OF LEVEL 2 UNITS :      79
NUMBER OF LEVEL 1 UNITS :     532

N2 :      1      2      3      4      5      6      7      8
N1 :      9     10      8      6      9      9      9      9

N2 :      9     10     11     12     13     14     15     16
N1 :      5      9      9      8     10     10     4      6
```

```
N2 : 17 18 19 20 21 22 23 24
N1 : 8 10 7 5 9 6 7 8

N2 : 25 26 27 28 29 30 31 32
N1 : 8 5 4 9 6 6 7 6

N2 : 33 34 35 36 37 38 39 40
N1 : 9 7 8 6 6 6 3 8

N2 : 41 42 43 44 45 46 47 48
N1 : 5 7 4 3 7 6 5 4

N2 : 49 50 51 52 53 54 55 56
N1 : 12 4 12 7 5 3 8 9

N2 : 57 58 59 60 61 62 63 64
N1 : 6 5 5 8 3 8 8 7

N2 : 65 66 67 68 69 70 71 72
N1 : 7 3 3 9 5 3 4 6

N2 : 73 74 75 76 77 78 79
N1 : 5 8 5 5 8 6 10

=====

ITERATION NUMBER      1

+-----+-----+
| FIXED PART OF MODEL |
+-----+-----+

-----+-----+-----+-----+
| COEFFICIENTS      | BETA-HAT | STD.ERR. | Z-VALUE | PR > |Z| |
-----+-----+-----+-----+
| intcept           | 2.92943 | 0.03861 | 75.87919 | 0.0000 |
| gender            | 0.06766 | 0.07317 | 0.92472 | 0.35511 |
| tenure            | -0.01689 | 0.00538 | -3.13975 | 0.00169 |
| wu_size            | 0.02835 | 0.01555 | 1.82289 | 0.06832 |
-----+-----+-----+-----+

+-----+-----+-----+
| -2 LOG-LIKELIHOOD |
+-----+-----+

DEVIANC= -2*LOG(LIKELIHOOD) = 1709.105520894345
NUMBER OF FREE PARAMETERS = 11
```

```
+-----+-----+
| RANDOM PART OF MODEL |
+-----+-----+

-----+-----+-----+-----+
| LEVEL 2           | TAU-HAT | STD.ERR. | Z-VALUE | PR > |Z| |
-----+-----+-----+-----+
| intcept /intcept  | 0.13090 | 0.22497 | 0.58185 | 0.56067 |
| gender /intcept    | -0.08556 | 0.21508 | -0.39781 | 0.69077 |
| gender /gender     | 0.13791 | 0.35646 | 0.38688 | 0.69885 |
| tenure /intcept    | -0.00066 | 0.13647 | -0.00484 | 0.99613 |
| tenure /gender     | 0.00400 | 0.18044 | 0.02216 | 0.98232 |
| tenure /tenure     | 0.00168 | 0.16256 | 0.01031 | 0.99177 |
-----+-----+-----+-----+

| LEVEL 1           | TAU-HAT | STD.ERR. | Z-VALUE | PR > |Z| |
-----+-----+-----+-----+
| intcept /intcept  | 0.41938 | 0.07864 | 5.33311 | 0.00000 |
-----+-----+-----+-----+

LEVEL 2 COVARIANCE MATRIX

      intcept  gender  tenure
intcept  0.13090          0.13791
gender   -0.08556      0.35646
tenure   -0.00066      0.00400      0.00168
```

```
LEVEL 2 CORRELATION MATRIX

      intcept  gender  tenure
intcept  1.0000
gender   -0.6368      1.0000
tenure   -0.0446      0.2630      1.0000

LEVEL 1 COVARIANCE MATRIX

      intcept
intcept  0.41938

LEVEL 1 CORRELATION MATRIX

      intcept
intcept  1.0000
```

```
-----
CONVERGENCE REACHED IN      6 ITERATIONS
-----

ITERATION NUMBER      6

+-----+
| FIXED PART OF MODEL |
+-----+

COEFFICIENTS      BETA-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept      2.93445      0.05573      52.65408      0.0000
gender      0.06268      0.08040      0.77968      0.43558
tenure     -0.01506      0.00640      -2.35444      0.01855
wu_size      0.02924      0.02001      1.46104      0.14400

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANC= -2*LOG(LIKELIHOOD) = 1160.157170072051
NUMBER OF FREE PARAMETERS = 11

+-----+
| RANDOM PART OF MODEL |
+-----+

LEVEL 2
-----
      TAU-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept /intcept      0.12784      0.03796      3.36799      0.00076
gender /intcept      -0.10370      0.04652      -2.22929      0.02579
gender /gender      0.12000      0.07728      1.55284      0.12046
tenure /intcept      -0.00163      0.00290      -0.56349      0.57310
tenure /gender      -0.00359      0.00403      -0.89128      0.37278
tenure /tenure      0.00035      0.00041      0.83602      0.40314

LEVEL 1
-----
      TAU-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept /intcept      0.44218      0.03213      13.76385      0.00000
```

```
LEVEL 2 COVARIANCE MATRIX

      intcept      gender      tenure
intcept      0.12785
gender      -0.10369      0.12001
tenure      -0.00159      -0.00355      0.00067

LEVEL 2 CORRELATION MATRIX

      intcept      gender      tenure
intcept      1.0000
gender      -0.8371      1.0000
tenure      -0.1719      -0.3950      1.0000

LEVEL 1 COVARIANCE MATRIX

      intcept
intcept      0.44218

LEVEL 1 CORRELATION MATRIX

      intcept
intcept      1.0000

+-----+
| CPU TIME (SECONDS) :      0.107 |
+-----+

|=====|
| END OF ANALYSIS |
|=====|

+-----+
| DATA SUMMARY |
+-----+

NUMBER OF LEVEL 2 UNITS :      79
NUMBER OF LEVEL 1 UNITS :      532

N2 :      1      2      3      4      5      6      7      8
N1 :      9     10      8      6      9      9      9      9
```

Model 2.

N2 :	9	10	11	12	13	14	15	16
N1 :	5	9	9	8	10	10	4	6
N2 :	17	18	19	20	21	22	23	24
N1 :	8	10	7	5	9	6	7	8
N2 :	25	26	27	28	29	30	31	32
N1 :	8	5	4	9	6	6	7	6
N2 :	33	34	35	36	37	38	39	40
N1 :	9	7	8	6	6	6	3	8
N2 :	41	42	43	44	45	46	47	48
N1 :	5	7	4	3	7	6	5	4
N2 :	49	50	51	52	53	54	55	56
N1 :	12	4	12	7	5	3	8	9
N2 :	57	58	59	60	61	62	63	64
N1 :	6	5	5	8	3	8	8	7
N2 :	65	66	67	68	69	70	71	72
N1 :	7	3	3	9	5	3	4	6
N2 :	73	74	75	76	77	78	79	
N1 :	5	8	5	5	8	6	10	
=====								
+-----+ FIXED PART OF MODEL +-----+								
ITERATION NUMBER	1							
+-----+ FIXED PART OF MODEL +-----+								
COEFFICIENTS	BETA-HAT	STD.ERR.	Z-VALUE	PR > Z				
intcept	2.93049	0.03617	81.02996	0.00000				
gender	0.06398	0.06856	0.93314	0.35075				
tenure	-0.01088	0.00511	-2.12934	0.03323				
wu_size	0.02689	0.01461	1.84092	0.06563				
JC	-0.05414	0.05574	-0.97124	0.33143				
PJ	0.62481	0.07634	8.18449	0.00000				
+-----+ -2 LOG-LIKELIHOOD +-----+								
+-----+ RANDOM PART OF MODEL +-----+								
DEVIANCE=-2*LOG(LIKELIHOOD) =	1703.644638118466							
NUMBER OF FREE PARAMETERS =	13							
+-----+ RANDOM PART OF MODEL +-----+								
LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z				
intcept /intcept	0.01866	0.22497	0.08296	0.93388				
gender /intcept	-0.04192	0.21508	-0.19492	0.84545				
gender /gender	0.13345	0.35646	0.37438	0.70812				
tenure /intcept	-0.00273	0.13647	-0.02003	0.98402				
tenure /gender	0.00440	0.18044	0.02439	0.98054				
tenure /tenure	0.00215	0.16256	0.01323	0.98944				
LEVEL 1	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z				
intcept /intcept	0.42020	0.07864	5.34351	0.00000				
LEVEL 2 COVARIANCE MATRIX								
	intcept	gender	tenure					
intcept	0.01866							
gender	-0.04192	0.13345						
tenure	-0.00273	0.00440	0.00215					
LEVEL 2 CORRELATION MATRIX								
	intcept	gender	tenure					
intcept	1.0000							
gender	-0.8401	1.0000						
tenure	-0.4314	0.2597	1.0000					
LEVEL 1 COVARIANCE MATRIX								
	intcept							
intcept	0.42020							
LEVEL 1 CORRELATION MATRIX								
	intcept	gender	tenure					
intcept	1.0000							
gender	-0.8401	1.0000						
tenure	-0.4314	0.2597	1.0000					

intcept 1.0000

CONVERGENCE REACHED IN 6 ITERATIONS

ITERATION NUMBER 6

+-----+
| FIXED PART OF MODEL |
+-----+

COEFFICIENTS	BETA-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	2.92772	0.04337	67.49841	0.00000
gender	0.07663	0.07587	1.00999	0.31250
tenure	-0.01194	0.00691	-1.72884	0.08384
wu_size	0.02627	0.01548	1.69733	0.08963
JC	-0.03985	0.06034	-0.66037	0.50901
PJ	0.61458	0.08262	7.43868	0.00000

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANCE= -2*LOG(LIKELIHOOD) = 1115.88177766994
NUMBER OF FREE PARAMETERS = 13

+-----+
| RANDOM PART OF MODEL |
+-----+

LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.03466	0.02331	1.48654	0.13714
gender /intcept	-0.06168	0.03504	-1.76031	0.07836

gender /gender	0.08767	0.06920	1.26680	0.20523
tenure /intcept	-0.00148	0.00238	-0.62125	0.53444
gender /gender	-0.00092	0.00415	-0.22061	0.82540
tenure /tenure	0.00064	0.00050	1.28617	0.19838

LEVEL 1	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.43818	0.03181	13.77285	0.00000

LEVEL 2 COVARIANCE MATRIX

	intcept	gender	tenure
intcept	0.03887		
gender	-0.03891	0.08949	
tenure	-0.00024	-0.00010	0.00101

LEVEL 2 CORRELATION MATRIX

	intcept	gender	tenure
intcept	1.0000		
gender	-0.9989	1.0000	
tenure	-0.0376	-0.0101	1.0000

LEVEL 1 COVARIANCE MATRIX

intcept	
intcept	0.43818

LEVEL 1 CORRELATION MATRIX

intcept	
intcept	1.0000

+-----+
| CPU TIME (SECONDS) : 0.070 |
+-----+

|=====|
| END OF ANALYSIS |
|=====|

2. ESTUDIO 2

CFA. Four-factor structure (justice climate, peer justice, service climate, and performance).

Model Fit Summary

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	30	92,546	48	,000	1,928
Saturated model	78	,000	0		
Independence model	12	685,843	66	,000	10,392

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	,039	,839	,738	,516
Saturated model	,000	1,000		
Independence model	,192	,346	,227	,293

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
Default model	,865	,814	,930	,901	,928
Saturated model	1,000	1,000	1,000	1,000	1,000
Independence model	,000	,000	,000	,000	,000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	,727	,629	,675
Saturated model	,000	,000	,000
Independence model	1,000	,000	,000

NCP

Model	NCP	LO 90	HI 90
Default model	44,546	21,129	75,762
Saturated model	,000	,000	,000
Independence model	619,843	539,474	707,661

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1,186	,571	,271	,971
Saturated model	,000	,000	,000	,000
Independence model	8,793	7,947	6,916	9,073

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	,109	,075	,142	,004
Independence model	,347	,324	,371	,000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	152,546	164,546	223,629	253,629

Model	AIC	BCC	BIC	CAIC
Saturated model	156,000	187,200	340,817	418,817
Independence model	709,843	714,643	738,276	750,276

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1,956	1,656	2,356	2,110
Saturated model	2,000	2,000		2,400
Independence model	9,101	8,070	10,226	9,162

HOELTER

Model	HOELTER	HOELTER
Default model	,05	,01
Independence model	55	63
Independence model	10	11

Standardized RMR = ,0722

CFA. Four-factor structure (justice climate, peer justice, service climate, and performance) with an error covariance between two indicators of justice climate.

Model Fit Summary

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	31	64,781	47	,044	1,378
Saturated model	78	,000	0		
Independence model	12	685,843	66	,000	10,392

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	,036	,872	,787	,525
Saturated model	,000	1,000		
Independence model	,192	,346	,227	,293

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
Default model	,906	,867	,972	,960	,971
Saturated model	1,000	1,000	1,000	1,000	1,000
Independence model	,000	,000	,000	,000	,000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	,712	,645	,692
Saturated model	,000	,000	,000
Independence model	1,000	,000	,000

NCP

Model	NCP	LO 90	HI 90
Default model	17,781	,574	43,025
Saturated model	,000	,000	,000
Independence model	619,843	539,474	707,661

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	,831	,228	,007	,552
Saturated model	,000	,000	,000	,000
Independence model	8,793	7,947	6,916	9,073

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	,070	,013	,108	,216
Independence model	,347	,324	,371	,000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	126,781	139,181	200,234	231,234
Saturated model	156,000	187,200	340,817	418,817
Independence model	709,843	714,643	738,276	750,276

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1,625	1,405	1,949	1,784
Saturated model	2,000	2,000	2,000	2,400
Independence model	9,101	8,070	10,226	9,162

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Independence model	78	88
Independence model	10	11

Standardized RMR = .0608

CFA. Two-factor structure (justice climate + peer justice + service climate and performance) with an error covariance between two indicators of justice climate.

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	26	181.134	52	.000	3.483
Saturated model	78	,000	0		
Independence model	12	685.843	66	.000	10.392

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.088	.691	.537	.461
Saturated model	.000	1.000		

Model	RMR	GFI	AGFI	PGFI
Independence model	.192	.346	.227	.293

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
Default model	.736	.665	.796	.736	.792
Saturated model	1.000	1.000	1.000	1.000	1.000
Independence model	.000	.000	.000	.000	.000

Parimony-Adjusted Measures

Model	PRA TIO	PNFI	PCFI
Default model	.788	.580	.624
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	129.134	91.897	173.967
Saturated model	.000	.000	.000
Independence model	619.843	539.474	707.661

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.322	1.656	1.178	2.230
Saturated model	.000	.000	.000	.000
Independence model	8.793	7.947	6.916	9.073

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.178	.151	.207	.000
Independence model	.347	.324	.371	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	233.134	243.534	294.740	320.740
Saturated model	156.000	187.200	340.817	418.817
Independence model	709.843	714.643	738.276	750.276

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.989	2.512	3.564	3.122
Saturated model	2.000	2.000	2.000	2.400
Independence model	9.101	8.070	10.226	9.162

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	31	34
Independence model	10	11

Standardized RMR = .1427

CFA. One-factor structure (justice climate + peer justice + service climate + performance) with an error covariance between two indicators of justice climate.

Model Fit Summary									
CMIN									
Model		NPAR	CMIN	DF	P				CMIN/DF
Default model		25	291,407	53	.000				5,498
Saturated model		78	.000	0					
Independence model		12	685,843	66	.000				10,392
RMR, GFI									
Model		RMR	GFI	AGFI	PGFI				
Default model		.115	.590	.397	.401				
Saturated model		.000	1,000						
Independence model		.192	.346	.227	.293				
Baseline Comparisons									
Model		NFI	RFI	IFI	TLI				CFI
Default model		Delta1	rho1	Delta2	rho2				
Default model		.575	.471	.623	.521				.615
Saturated model		1,000	1,000	1,000	1,000				1,000
Independence model		.000	.000	.000	.000				.000
Parsimony-Adjusted Measures									
Model		PRATIO	PNFI	PCFI					
Default model		.803	.462	.494					
Saturated model		.000	.000	.000					
Independence model		1,000	.000	.000					
NCP									
Model		NCP	LO 90	HI 90					
Default model		238,407	188,573	295,759					
Saturated model		.000	.000	.000					
Independence model		619,843	539,474	707,661					
FMIN									
Model		FMIN	F0	LO 90	HI 90				
Default model		3,736	3,056	2,418	3,792				
Saturated model		.000	.000	.000	.000				
Independence model		8,793	7,947	6,916	9,073				
RMSEA									
Model		RMSEA	LO 90	HI 90	PCLOSE				
Default model		.240	.214	.267	.000				
Independence model		.347	.324	.371	.000				
AIC									
Model		AIC	BCC	BIC	CAIC				
Default model		341,407	351,407	400,643	425,643				
Saturated model		156,000	187,200	340,817	418,817				

Model		AIC	BCC	BIC	CAIC
Independence model		709,843	714,643	738,276	750,276
ECVI					
Model		ECVI	LO 90	HI 90	MECVI
Default model		4,377	3,738	5,112	4,505
Saturated model		2,000	2,000	2,000	2,400
Independence model		9,101	8,070	10,226	9,162
HOELTER					
Model		HOELTER	HOELTER		
Default model		.05	.01		
Independence model		20	22		
Standardized RMR = .1898					
Model Fit Summary					
CMIN					
Model		NPAR	CMIN	DF	P
Default model		29	65,358	49	.059
Saturated model		78	.000	0	
Independence model		12	685,843	66	.000
RMR, GFI					
Model		RMR	GFI	AGFI	PGFI
Default model		.037	.870	.793	.546
Saturated model		.000	1,000		
Independence model		.192	.346	.227	.293
Baseline Comparisons					
Model		NFI	RFI	IFI	TLI
Default model		Delta1	rho1	Delta2	rho2
Default model		.905	.872	.974	.964
Saturated model		1,000	1,000	1,000	1,000
Independence model		.000	.000	.000	.000
Parsimony-Adjusted Measures					
Model		PRATIO	PNFI	PCFI	
Default model		.742	.672	.723	
Saturated model		.000	.000	.000	
Independence model		1,000	.000	.000	
NCP					
Model		NCP	LO 90	HI 90	
Default model		16,358	.000	41,508	
Saturated model		.000	.000	.000	
Independence model		619,843	539,474	707,661	
FMIN					

Structural equation model (SEM). Hypothesized model.

Model	FMIN	F0	LO 90	HI 90
Default model	.838	.210	.000	.532
Saturated model	.000	.000	.000	.000
Independence model	8.793	7.947	6.916	9.073

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.065	.000	.104	.265
Independence model	.347	.324	.371	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	123.358	134.958	192.072	221.072
Saturated model	156.000	187.200	340.817	418.817
Independence model	709.843	714.643	738.276	750.276

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.582	1.372	1.904	1.730
Saturated model	2.000	2.000	2.000	2.400
Independence model	9.101	8.070	10.226	9.162

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Independence model	80	90
Independence model	10	11

Standardized RMR = .0626

Structural equation model (SEM). Hypothesized model.

Model Fit Summary

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	31	64.781	47	.044	1.378
Saturated model	78	.000	0		
Independence model	12	685.843	66	.000	10.392

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.036	.872	.787	.525
Saturated model	.000	1.000		
Independence model	.192	.346	.227	.293

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
Default model	.906	.867	.972	.960	.971

Model	NFI	RFI	IFI	TLI	CFI
Saturated model	1.000	Delta1	Delta2	rho2	1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.712	.645	.692
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	17.781	.574	43.025
Saturated model	.000	.000	.000
Independence model	619.843	539.474	707.661

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.831	.228	.007	.552
Saturated model	.000	.000	.000	.000
Independence model	8.793	7.947	6.916	9.073

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.070	.013	.108	.216
Independence model	.347	.324	.371	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	126.781	139.181	200.234	231.234
Saturated model	156.000	187.200	340.817	418.817
Independence model	709.843	714.643	738.276	750.276

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.625	1.405	1.949	1.784
Saturated model	2.000	2.000	2.000	2.400
Independence model	9.101	8.070	10.226	9.162

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Independence model	78	88
Independence model	10	11

Standardized RMR = .0608

3. ESTUDIO 3

CFA. Two-factor structure of employees' perceptions of service quality (functional service quality and relational service quality).

Goodness of Fit Statistics

Degrees of Freedom = 13
Minimum Fit Function Chi-Square = 152.859 (P = 0.0)
Normal Theory Weighted Least Squares Chi-Square = 153.016 (P = 0.0)
Satorra-Bentler Scaled Chi-Square = 82.956 (P = 0.00)
Chi-Square Corrected for Non-Normality = 66.861 (P = 0.00)
Estimated Non-centrality Parameter (NCP) = 69.956
90 Percent Confidence Interval for NCP = (44.851 ; 102.560)

Minimum Fit Function Value = 0.288
Population Discrepancy Function Value (F0) = 0.132
90 Percent Confidence Interval for F0 = (0.065 ; 0.193)
Root Mean Square Error of Approximation (RMSEA) = 0.082
90 Percent Confidence Interval for RMSEA = (0.062 ; 0.102)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.000

Expected Cross-Validation Index (ECVI) = 0.213
90 Percent Confidence Interval for ECVI = (0.165 ; 0.274)
ECVI for Saturated Model = 0.105
ECVI for Independence Model = 5.259

Chi-Square for Independence Model with 21 Degrees of Freedom = 2778.493
Independence AIC = 2792.493
Model AIC = 112.956
Saturated AIC = 56.000
Independence CAIC = 2829.429
Model CAIC = 192.105
Saturated CAIC = 203.746

Normed Fit Index (NFI) = 0.970
Non-Normed Fit Index (NNFI) = 0.959
Parsimony Normed Fit Index (PNFI) = 0.601
Comparative Fit Index (CFI) = 0.975
Incremental Fit Index (IFI) = 0.975
Relative Fit Index (RFI) = 0.952

Critical N (CN) = 178.238

Root Mean Square Residual (RMR) = 0.369
Standardized RMR = 0.0715
Goodness of Fit Index (GFI) = 0.924
Adjusted Goodness of Fit Index (AGFI) = 0.836
Parsimony Goodness of Fit Index (PGFI) = 0.429

CFA. One-factor structure of employees' perceptions of service quality (functional service quality + relational service quality).

Goodness of Fit Statistics

Degrees of Freedom = 14
Minimum Fit Function Chi-Square = 398.405 (P = 0.0)
Normal Theory Weighted Least Squares Chi-Square = 504.090 (P = 0.0)
Satorra-Bentler Scaled Chi-Square = 260.844 (P = 0.0)
Chi-Square Corrected for Non-Normality = 118.576 (P = 0.0)
Estimated Non-centrality Parameter (NCP) = 246.844
90 Percent Confidence Interval for NCP = (198.096 ; 303.028)

Minimum Fit Function Value = 0.750
Population Discrepancy Function Value (F0) = 0.465
90 Percent Confidence Interval for F0 = (0.373 ; 0.571)
Root Mean Square Error of Approximation (RMSEA) = 0.182
90 Percent Confidence Interval for RMSEA = (0.163 ; 0.202)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.000

Expected Cross-Validation Index (ECVI) = 0.544
90 Percent Confidence Interval for ECVI = (0.452 ; 0.650)
ECVI for Saturated Model = 0.105
ECVI for Independence Model = 5.259

Chi-Square for Independence Model with 21 Degrees of Freedom = 2778.493
Independence AIC = 2792.493
Model AIC = 288.844
Saturated AIC = 56.000
Independence CAIC = 2829.429
Model CAIC = 362.717
Saturated CAIC = 203.746

Normed Fit Index (NFI) = 0.906
Non-Normed Fit Index (NNFI) = 0.866
Parsimony Normed Fit Index (PNFI) = 0.604
Comparative Fit Index (CFI) = 0.910
Incremental Fit Index (IFI) = 0.911
Relative Fit Index (RFI) = 0.859

Critical N (CN) = 60.328

Root Mean Square Residual (RMR) = 0.440
Standardized RMR = 0.112
Goodness of Fit Index (GFI) = 0.787
Adjusted Goodness of Fit Index (AGFI) = 0.573
Parsimony Goodness of Fit Index (PGFI) = 0.393

CFA. Three-factor structure of customers’ variables (functional service quality, relational service quality, and quality of life).

Goodness of Fit Statistics

Degrees of Freedom = 249
Minimum Fit Function Chi-Square = 4321.975 (P = 0.0)
Normal Theory Weighted Least Squares Chi-Square = 4551.340 (P = 0.0)
Satorra-Bentler Scaled Chi-Square = 1799.188 (P = 0.0)
Chi-Square Corrected for Non-Normality = 632.710 (P = 0.0)
Estimated Non-centrality Parameter (NCP) = 1550.188
90 Percent Confidence Interval for NCP = (1419.240 ; 1688.576)

Minimum Fit Function Value = 5.786
Population Discrepancy Function Value (F0) = 2.075
90 Percent Confidence Interval for F0 = (1.900 ; 2.260)
Root Mean Square Error of Approximation (RMSEA) = 0.0913
90 Percent Confidence Interval for RMSEA = (0.0874 ; 0.0953)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.000

Expected Cross-Validation Index (ECVI) = 2.545
90 Percent Confidence Interval for ECVI = (2.370 ; 2.730)
ECVI for Saturated Model = 0.803
ECVI for Independence Model = 90.576

Chi-Square for Independence Model with 276 Degrees of Freedom = 67612.021

Independence AIC = 67660.021
Model AIC = 1901.188
Saturated AIC = 600.000
Independence CAIC = 67794.839
Model CAIC = 2187.676
Saturated CAIC = 2285.221

Normed Fit Index (NFI) = 0.973
Non-Normed Fit Index (NNFI) = 0.974
Parsimony Normed Fit Index (PNFI) = 0.878
Comparative Fit Index (CFI) = 0.977
Incremental Fit Index (IFI) = 0.977
Relative Fit Index (RFI) = 0.971

Critical N (CN) = 127.149

Root Mean Square Residual (RMR) = 0.0590
Standardized RMR = 0.0590
Goodness of Fit Index (GFI) = 0.663
Adjusted Goodness of Fit Index (AGFI) = 0.594
Parsimony Goodness of Fit Index (PGFI) = 0.550

CFA. One-factor structure of customers’ variables (functional service quality + relational service quality +quality of life).

Goodness of Fit Statistics

Degrees of Freedom = 252
Minimum Fit Function Chi-Square = 4943.414 (P = 0.0)
Normal Theory Weighted Least Squares Chi-Square = 5535.034 (P = 0.0)
Satorra-Bentler Scaled Chi-Square = 2226.852 (P = 0.0)
Chi-Square Corrected for Non-Normality = 705.754 (P = 0.0)
Estimated Non-centrality Parameter (NCP) = 1974.852
90 Percent Confidence Interval for NCP = (1827.723 ; 2129.388)

Minimum Fit Function Value = 6.618
Population Discrepancy Function Value (F0) = 2.644
90 Percent Confidence Interval for F0 = (2.447 ; 2.851)
Root Mean Square Error of Approximation (RMSEA) = 0.102
90 Percent Confidence Interval for RMSEA = (0.0985 ; 0.106)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.000

Expected Cross-Validation Index (ECVI) = 3.110
90 Percent Confidence Interval for ECVI = (2.913 ; 3.316)
ECVI for Saturated Model = 0.803
ECVI for Independence Model = 90.576

Chi-Square for Independence Model with 276 Degrees of Freedom = 67612.021

Independence AIC = 67660.021
Model AIC = 2322.852
Saturated AIC = 600.000
Independence CAIC = 67794.839
Model CAIC = 2592.487
Saturated CAIC = 2285.221

Normed Fit Index (NFI) = 0.967
Non-Normed Fit Index (NNFI) = 0.968
Parsimony Normed Fit Index (PNFI) = 0.883
Comparative Fit Index (CFI) = 0.971
Incremental Fit Index (IFI) = 0.971
Relative Fit Index (RFI) = 0.964

Critical N (CN) = 104.033

Root Mean Square Residual (RMR) = 0.0649
Standardized RMR = 0.0649
Goodness of Fit Index (GFI) = 0.618
Adjusted Goodness of Fit Index (AGFI) = 0.546
Parsimony Goodness of Fit Index (PGFI) = 0.519

Ordinary least squares regression (OLS). Dependent variable: peer justice.

Resumen del modelo ^b							
Modelo	R	R cuadrado	R cuadrado corregida	Error tip. de la estimación	Estadísticos de cambio		Durbin-Watson
					Cambio en R cuadrado	Cambio en F	Sig. Cambio en F
1	.409 ^a	.168	.157	.42981	.168	15,494	1 77 .000

a. Variables predictoras: (Constante), JC

b. Variable dependiente: PJ

ANOVA ^a					
Modelo		Suma de cuadrados	Gl	Media cuadrática	Sig.
1	Regresión	2,862	1	2,862	15,494
	Residual	14,225	77	.185	
	Total	17,087	78		

a. Variable dependiente: PJ

b. Variables predictoras: (Constante), JC

Modelo	Coeficientes ^a			
	Coeficientes no estandarizados		Coeficientes tipificados	t
	B	Error tip.	Beta	
1	(Constante)	2,281	.413	5,516
	JC	.292	.074	3,936

a. Variable dependiente: PJ

OLS. Dependent variable: functional service quality.

Resumen del modelo ^c							
Modelo	R	R cuadrado	R cuadrado corregida	Error tip. de la estimación	Estadísticos de cambio		Durbin-Watson
					Cambio en R cuadrado	Cambio en F	Sig. Cambio en F
1	.521 ^a	.271	.262	.51491	.271	28,660	1 77 .000
2	.638 ^b	.407	.383	.47061	.136	8,589	2 75 .000

a. Variables predictoras: (Constante), eRSQ

b. Variables predictoras: (Constante), eRSQ , JC , PJ

c. Variable dependiente: eFSQ

ANOVA ^a					
Modelo		Suma de cuadrados	Gl	Media cuadrática	Sig.
1	Regresión	7,599	1	7,599	28,660
	Residual	20,415	77	.265	
	Total	28,014	78		
2	Regresión	11,403	3	3,801	17,163
	Residual	16,611	75	.221	
	Total	28,014	78		

a. Variable dependiente: eFSQ

b. Variables predictoras: (Constante), eRSQ

c. Variables predictoras: (Constante), eRSQ , JC , PJ

Modelo		Coeficientes ^a				t	Sig.
		Coeficientes no estandarizados		Coeficientes tipificados			
		B	Error tip.	Beta			
1	(Constante)	1,377	,719			1,915	,059
	eRSQ	,649	,121	,521		5,354	,000
2	(Constante)	,085	,727			,117	,907
	eRSQ	,532	,129	,427		4,127	,000
	JC	,339	,089	,371		3,804	,000
	PJ	,028	,141	,022		,201	,842

a. Variable dependiente: eFSQ

OLS. Dependent variable: employees’ perceptions of relational service quality.

Modelo	R	R cuadrado	R cuadrado corregida	Error tip. de la estimación	Resumen del modelo ^c					Durbin-Watson
					Cambio en R cuadrado	Cambio en F	Estadísticos de cambio		Sig. Cambio en F	
							gl1	gl2		
1	,521 ^a	,271	,262	,41306	,271	28,660	1	77	,000	
2	,630 ^b	,397	,373	,38068	,126	7,829	2	75	,001	2,017

a. Variables predictoras: (Constante), eFSQ

b. Variables predictoras: (Constante), eFSQ , PJ , JC

c. Variable dependiente: eRSQ

ANOVA ^a						
Modelo	Suma de cuadrados	gl	Media cuadrática	F	Sig.	
1	Regresión Residual Total	4,890 13,138 18,028	1 77 78	4,890 ,171	28,660	,000 ^b
2	Regresión Residual Total	7,159 10,869 18,028	3 75 78	2,386 ,145	16,467	,000 ^c

a. Variable dependiente: eRSQ

b. Variables predictoras: (Constante), eFSQ

c. Variables predictoras: (Constante), eFSQ , PJ , JC

Modelo		Coeficientes ^a					t	Sig.
		Coeficientes no estandarizados		Coeficientes tipificados				
		B	Error tip.	Beta				
1	(Constante)	3,731	,410			9,111	,000	
	eFSQ	,418	,078	,521		5,354	,000	
	(Constante)	3,088	,468			6,597	,000	
	eFSQ	,348	,084	,434		4,127	,000	
2	JC	-,107	,078	-,146		-1,379	,172	
	PJ	,411	,104	,400		3,945	,000	

a. Variable dependiente: eRSQ

HLM. Dependent variable: customers’ perceptions of functional service quality.
Null model.

+-----+ DATA SUMMARY +-----+									
NUMBER OF LEVEL 2 UNITS :		79							
NUMBER OF LEVEL 1 UNITS :		748							
N2 :	1	2	3	4	5	6	7	8	
N1 :	10	8	13	10	10	8	11	12	
N2 :	9	10	11	12	13	14	15	16	
N1 :	9	8	9	9	13	11	11	16	
N2 :	17	18	19	20	21	22	23	24	
N1 :	15	11	6	9	16	12	12	17	
N2 :	25	26	27	28	29	30	31	32	
N1 :	9	12	5	10	9	3	13	10	
N2 :	33	34	35	36	37	38	39	40	
N1 :	11	10	10	10	6	11	7	5	
N2 :	41	42	43	44	45	46	47	48	
N1 :	13	6	7	8	4	7	9	5	
N2 :	49	50	51	52	53	54	55	56	
N1 :	13	10	12	9	10	22	12	12	
N2 :	57	58	59	60	61	62	63	64	
N1 :	6	15	8	7	10	10	9	5	
N2 :	65	66	67	68	69	70	71	72	
N1 :	9	11	4	11	13	5	4	8	
N2 :	73	74	75	76	77	78	79		
N1 :	6	7	9	6	5	8	6		
=====									
ITERATION NUMBER	1								
+-----+ FIXED PART OF MODEL +-----+									

+-----+ 				
COEFFICIENTS	BETA-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	6.03743	0.03038	198.73030	0.00000
+-----+ -2 LOG-LIKELIHOOD +-----+				
DEVIANCE= -2*LOG(LIKELIHOOD) = 1976.553456173146				
NUMBER OF FREE PARAMETERS = 3				
+-----+ RANDOM PART OF MODEL +-----+				

LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.06973	0.17804	0.39166	0.69531

LEVEL 1	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.61340	0.05467	11.21983	0.00000

LEVEL 2 COVARIANCE MATRIX				
intcept				
intcept	0.06973			

LEVEL 2 CORRELATION MATRIX				
intcept				
intcept	1.0000			

LEVEL 1 COVARIANCE MATRIX				
intcept				
intcept	0.61340			

```

LEVEL 1 CORRELATION MATRIX
      intcept
      1.0000
-----
CONVERGENCE REACHED IN   3 ITERATIONS
-----

LEVEL 2 COVARIANCE MATRIX
      intcept
      0.07622
-----
LEVEL 2 CORRELATION MATRIX
      intcept
      1.0000
-----
LEVEL 1 COVARIANCE MATRIX
      intcept
      0.61131
-----
LEVEL 1 CORRELATION MATRIX
      intcept
      1.0000
-----
+-----+
| CPU TIME (SECONDS) :      0.212 |
+-----+

|=====|
| END OF ANALYSIS |
|=====|

Model with predictors.
```

```

+-----+
| RANDOM PART OF MODEL |
+-----+

-----
LEVEL 2      TAU-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept /intcept      0.07622      0.02311      3.29790      0.00097
-----
LEVEL 1      TAU-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept /intcept      0.61131      0.03336      18.32603      0.00000
-----

NUMBER OF LEVEL 2 UNITS :      79
NUMBER OF LEVEL 1 UNITS :      748

N2 :      1      2      3      4      5      6      7      8
N1 :      10     8      13     10     10     8      11     12
N2 :      9      10     11     12     13     14     15     16
N1 :      9      8      9      9      13     11     11     16
```

N2 :	17	18	19	20	21	22	23	24
N1 :	15	11	6	9	16	12	12	17
N2 :	25	26	27	28	29	30	31	32
N1 :	9	12	5	10	9	3	13	10
N2 :	33	34	35	36	37	38	39	40
N1 :	11	10	10	10	6	11	7	5
N2 :	41	42	43	44	45	46	47	48
N1 :	13	6	7	8	4	7	9	5
N2 :	49	50	51	52	53	54	55	56
N1 :	13	10	12	9	10	22	12	12
N2 :	57	58	59	60	61	62	63	64
N1 :	6	15	8	7	10	10	9	5
N2 :	65	66	67	68	69	70	71	72
N1 :	9	11	4	11	13	5	4	8
N2 :	73	74	75	76	77	78	79	
N1 :	6	7	9	6	5	8	6	
=====								
+-----+ FIXED PART OF MODEL +-----+								
1								
+-----+ RANDOM PART OF MODEL +-----+								
=====								
COEFFICIENTS								
BETA-HAT								
STD.ERR.								
Z-VALUE								
PR > Z								

intcept	6.03743				0.02298		262.71827	
JC	-0.13276				0.04533		-2.92837	
PJ	0.11531				0.06231		1.85057	
eFSQ	0.31040				0.05225		5.94097	
erSQ	-0.22863				0.06402		-3.57099	
crSQ	0.64311				0.02891		22.24692	

+-----+ -2 LOG-LIKELIHOOD +-----+								
DEVIANCE= -2*LOG(LIKELIHOOD) = 1909.669882874025								
NUMBER OF FREE PARAMETERS = 10								

+-----+ RANDOM PART OF MODEL +-----+				
LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.02015	0.18205	0.11070	0.91185
crSQ /intcept	-0.00549	0.13599	-0.04039	0.96778
crSQ /crSQ	0.02792	0.20367	0.13706	0.89098
LEVEL 1	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.35554	0.05799	6.13065	0.00000
LEVEL 2 COVARIANCE MATRIX				
	intcept	crSQ		
intcept	0.02015			
crSQ	-0.00549	0.02792		
LEVEL 2 CORRELATION MATRIX				
	intcept	crSQ		
intcept	1.0000			
crSQ	-0.2316	1.0000		
LEVEL 1 COVARIANCE MATRIX				
	intcept			
intcept	0.35554			
LEVEL 1 CORRELATION MATRIX				
	intcept			
intcept	1.0000			
+-----+ CONVERGENCE REACHED IN 5 ITERATIONS +-----+				

```
intcept      0.01559
crSQ         -0.01078      0.02882
```

LEVEL 2 CORRELATION MATRIX

```
intcept      crSQ
intcept      1.0000
crSQ         -0.5085      1.0000
```

LEVEL 1 COVARIANCE MATRIX

```
intcept
intcept      0.35820

LEVEL 1 CORRELATION MATRIX
intcept
intcept      1.0000
```

```
DEVIANCE= -2*LOG(LIKELIHOOD) = 1407.481196173024
NUMBER OF FREE PARAMETERS = 10
```

```
+-----+
| CPU TIME (SECONDS) :      0.194 |
+-----+
```

```
|=====|
| END OF ANALYSIS |
|=====|
```

HL.M. Dependent variable: customers’ perceptions of relational service quality.

Null model.

```
+-----+
| DATA SUMMARY |
+-----+
```

```
NUMBER OF LEVEL 2 UNITS :      79
NUMBER OF LEVEL 1 UNITS :     748
```

```
N2 :      1      2      3      4      5      6      7      8
N1 :     10      8     13     10     10      8     11     12
N2 :      9      9     10     11     12     13     14     15     16
```

ITERATION NUMBER 5

```
+-----+
| FIXED PART OF MODEL |
+-----+
```

COEFFICIENTS	BETA-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	6.04414	0.02683	225.26516	0.00000
JC	-0.13689	0.05067	-2.70146	0.00690
PJ	0.10008	0.06991	1.43151	0.15228
efSQ	0.27674	0.05913	4.68002	0.00000
ersQ	-0.18685	0.07243	-2.57995	0.00988
crSQ	0.63990	0.03599	17.77772	0.00000

```
+-----+
| -2 LOG-LIKELIHOOD |
+-----+
```

```
+-----+
| RANDOM PART OF MODEL |
+-----+
```

LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.01559	0.00899	1.73377	0.08296
crSQ /intcept	-0.01078	0.00812	-1.32724	0.18443
crSQ /crSQ	0.02882	0.01486	1.93977	0.05241

LEVEL 1	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.35820	0.02039	17.56961	0.00000

LEVEL 2 COVARIANCE MATRIX

```
intcept      crSQ
```

N1	:	9	8	9	9	13	11	11	11	16
N2	:	17	18	19	20	21	22	23	24	
N1	:	15	11	6	9	16	12	12	17	
N2	:	25	26	27	28	29	30	31	32	
N1	:	9	12	5	10	9	3	13	10	
N2	:	33	34	35	36	37	38	39	40	
N1	:	11	10	10	10	6	11	7	5	
N2	:	41	42	43	44	45	46	47	48	
N1	:	13	6	7	8	4	7	9	5	
N2	:	49	50	51	52	53	54	55	56	
N1	:	13	10	12	9	10	22	12	12	
N2	:	57	58	59	60	61	62	63	64	
N1	:	6	15	8	7	10	10	9	5	
N2	:	65	66	67	68	69	70	71	72	
N1	:	9	11	4	11	13	5	4	8	
N2	:	73	74	75	76	77	78	79		
N1	:	6	7	9	6	5	8	6		
=====										
+-----+ FIXED PART OF MODEL +-----+										
ITERATION NUMBER		1								
+-----+ RANDOM PART OF MODEL +-----+										

COEFFICIENTS		BETA-HAT	STD.ERR.	Z-VALUE	PR > Z					
intcept		6.17380	0.02942	209.84925	0.00000					

+-----+ -2 LOG-LIKELIHOOD +-----+										
DEVIANCE= -2*LOG(LIKELIHOOD) = 1976.847822732009										
NUMBER OF FREE PARAMETERS = 3										
+-----+										

CONVERGENCE REACHED IN		3	ITERATIONS							

+-----+ RANDOM PART OF MODEL +-----+										

LEVEL 2		TAU-HAT	STD.ERR.	Z-VALUE	PR > Z					
intcept /intcept		0.02578	0.17804	0.14480	0.88487					

LEVEL 1		TAU-HAT	STD.ERR.	Z-VALUE	PR > Z					
intcept /intcept		0.61841	0.05467	11.31154	0.00000					

LEVEL 2 COVARIANCE MATRIX										
intcept		intcept								
intcept		0.02578								

LEVEL 2 CORRELATION MATRIX										
intcept		intcept								
intcept		1.0000								

LEVEL 1 COVARIANCE MATRIX										
intcept		intcept								
intcept		0.61841								

LEVEL 1 CORRELATION MATRIX										
intcept		intcept								
intcept		1.0000								

CONVERGENCE REACHED IN 3 ITERATIONS										

+-----+										
ITERATION NUMBER		3								

```
+-----+
| FIXED PART OF MODEL |
+-----+

-----
COEFFICIENTS      BETA-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept           6.17868        0.03510      176.05313      0.00000

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANCE= -2*LOG(LIKELIHOOD) = 1790.351629091988
NUMBER OF FREE PARAMETERS = 3

+-----+
| RANDOM PART OF MODEL |
+-----+

-----
LEVEL 2      TAU-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept /intcept      0.02946      0.01541      1.91097      0.05601

-----
LEVEL 1      TAU-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept /intcept      0.61685      0.03361      18.35416      0.00000

LEVEL 2 COVARIANCE MATRIX
intcept
intcept      0.02946

LEVEL 2 CORRELATION MATRIX
intcept
intcept      1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
```

```
intcept      0.61685

LEVEL 1 CORRELATION MATRIX
intcept
intcept      1.0000

+-----+
| CPU TIME (SECONDS) :      0.203 |
+-----+

|=====|
| END OF ANALYSIS |
|=====|

+-----+
| DATA SUMMARY |
+-----+

NUMBER OF LEVEL 2 UNITS :      79
NUMBER OF LEVEL 1 UNITS :      748

N2 :      1      2      3      4      5      6      7      8
N1 :      10     8      13     10     10     8      11     12

N2 :      9      10     11     12     13     14     15     16
N1 :      9      8      9      9      13     11     11     16

N2 :      17     18     19     20     21     22     23     24
N1 :      15     11     6      9      16     12     12     17

N2 :      25     26     27     28     29     30     31     32
N1 :      9      12     5      10     9      3      13     10

N2 :      33     34     35     36     37     38     39     40
N1 :      11     10     10     10     6      11     7      5

N2 :      41     42     43     44     45     46     47     48
N1 :      13     6      7      8      4      7      9      5

N2 :      49     50     51     52     53     54     55     56
N1 :      13     10     12     9      10     22     12     12

N2 :      57     58     59     60     61     62     63     64
N1 :      6      15     8      7      10     10     9      5
```

Model with predictors.

```
N2 :      65      66      67      68      69      70      71      72
N1 :      9      11      4      11      13      5      4      8

N2 :      73      74      75      76      77      78      79
N1 :      6      7      9      6      5      8      6

=====
```

```

=====
ITERATION NUMBER      1

+-----+
| FIXED PART OF MODEL |
+-----+
```

COEFFICIENTS	BETA-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	6.17380	0.02260	273.13483	0.00000
JC	0.08454	0.04474	1.88964	0.05881
PJ	-0.06235	0.06139	-1.01567	0.30979
eFSQ	-0.12010	0.05241	-2.29138	0.02194
erSQ	0.22446	0.06297	3.56426	0.00036
cFSQ	0.62217	0.02797	22.24692	0.00000

```

+-----+
| -2 LOG-LIKELIHOOD |
+-----+
```

DEVIANCE= -2*LOG(LIKELIHOOD) = 1898.093598640263
NUMBER OF FREE PARAMETERS = 10

```

+-----+
| RANDOM PART OF MODEL |
+-----+
```

LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.01088	0.18369	0.05925	0.95276
cFSQ /intcept	-0.04027	0.13726	-0.29339	0.76922
cFSQ /cFSQ	0.07905	0.20635	0.38309	0.70165

LEVEL 1	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.33620	0.05792	5.80468	0.00000

LEVEL 2 COVARIANCE MATRIX

	intcept	cFSQ
intcept	0.01730	
cFSQ	-0.03730	0.08043

LEVEL 2 CORRELATION MATRIX

	intcept	cFSQ
intcept	1.0000	
cFSQ	-1.0000	1.0000

LEVEL 1 COVARIANCE MATRIX

	intcept
intcept	0.33620

LEVEL 1 CORRELATION MATRIX

	intcept
intcept	1.0000

CONVERGENCE REACHED IN 4 ITERATIONS

ITERATION NUMBER 4

```

+-----+
| FIXED PART OF MODEL |
+-----+
```

COEFFICIENTS	BETA-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	6.15767	0.02691	228.82710	0.00000
JC	0.05052	0.04648	1.08692	0.27707
PJ	-0.02130	0.06322	-0.33690	0.73619

```
efsQ      -0.10683      0.05472      -1.95224      0.05091
ersQ      0.21287      0.06622      3.21454      0.00131
cfsQ      0.66680      0.04267      15.62535      0.00000

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANC= -2*LOG(LIKELIHOOD) = 1362.105188666611
NUMBER OF FREE PARAMETERS = 10

+-----+
| RANDOM PART OF MODEL |
+-----+
```

LEVEL 2		TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept		0.00974	0.00887	1.09842	0.27202
cfsQ /intcept		-0.03435	0.01039	-3.30737	0.00094
cfsQ /cfsQ		0.06390	0.02122	3.01116	0.00260
LEVEL 1		TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept		0.33717	0.01919	17.56822	0.00000
LEVEL 2 COVARIANCE MATRIX					
intcept cfsQ					
intcept	0.01534				
cfsQ	-0.03163	0.06521			
LEVEL 2 CORRELATION MATRIX					
intcept cfsQ					
intcept	1.0000				
cfsQ	-1.0000	1.0000			
LEVEL 1 COVARIANCE MATRIX					
intcept					
intcept	0.33717				

```
LEVEL 1 CORRELATION MATRIX

intcept
intcept      1.0000

+-----+
| CPU TIME (SECONDS) :      0.527 |
+-----+

|=====|
| END OF ANALYSIS |
|=====|
```

HL.M. Dependent variable: customers’ perceptions of quality of life.

Null model.

```
+-----+
| DATA SUMMARY |
+-----+
```

NUMBER OF LEVEL 2 UNITS :		79						
NUMBER OF LEVEL 1 UNITS :		748						
N2 :	1	2	3	4	5	6	7	8
N1 :	10	8	13	10	10	8	11	12
N2 :	9	10	11	12	13	14	15	16
N1 :	9	8	9	9	13	11	11	16
N2 :	17	18	19	20	21	22	23	24
N1 :	15	11	6	9	16	12	12	17
N2 :	25	26	27	28	29	30	31	32
N1 :	9	12	5	10	9	3	13	10
N2 :	33	34	35	36	37	38	39	40
N1 :	11	10	10	10	6	11	7	5
N2 :	41	42	43	44	45	46	47	48
N1 :	13	6	7	8	4	7	9	5
N2 :	49	50	51	52	53	54	55	56
N1 :	13	10	12	9	10	22	12	12
N2 :	57	58	59	60	61	62	63	64
N1 :	6	15	8	7	10	10	9	5

```
N2 :      65      66      67      68      69      70      71      72
N1 :      9      11      4      11      13      5      4      8

N2 :      73      74      75      76      77      78      79
N1 :      6      7      9      6      5      8      6

=====
ITERATION NUMBER      1

+-----+
| FIXED PART OF MODEL |
+-----+

-----
COEFFICIENTS      BETA-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept      5.95889      0.03023      197.12313      0.00000

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANCE= -2*LOG(LIKELIHOOD) =  1988.524959328404
NUMBER OF FREE PARAMETERS =      3

+-----+
| RANDOM PART OF MODEL |
+-----+

-----
LEVEL 2
      TAU-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept /intcept      0.05060      0.17804      0.28421      0.77625

-----
LEVEL 1
      TAU-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept /intcept      0.63306      0.05467      11.57954      0.00000

LEVEL 2 COVARIANCE MATRIX
intcept
intcept      0.05060
```

```
LEVEL 2 CORRELATION MATRIX
intcept
intcept      1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
intcept      0.63306

LEVEL 1 CORRELATION MATRIX
intcept
intcept      1.0000

-----
CONVERGENCE REACHED IN      3 ITERATIONS
-----

ITERATION NUMBER      3

+-----+
| FIXED PART OF MODEL |
+-----+

-----
COEFFICIENTS      BETA-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept      5.96260      0.03893      153.17473      0.00000

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANCE= -2*LOG(LIKELIHOOD) =  1823.814818918341
NUMBER OF FREE PARAMETERS =      3

+-----+
```

```

+-----+
| RANDOM PART OF MODEL |
+-----+

-----
LEVEL 2          TAU-HAT   STD.ERR.   Z-VALUE   PR > |Z|
-----
intcept /intcept    0.04925    0.01898    2.59503    0.00946
-----

LEVEL 1          TAU-HAT   STD.ERR.   Z-VALUE   PR > |Z|
-----
intcept /intcept    0.63334    0.03454    18.33469    0.00000
-----

LEVEL 2 COVARIANCE MATRIX
intcept
0.04925

LEVEL 2 CORRELATION MATRIX
intcept
1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
0.63334

LEVEL 1 CORRELATION MATRIX
intcept
1.0000

+-----+
| CPU TIME (SECONDS) :    0.137 |
+-----+

=====
| END OF ANALYSIS |
|=====
```

Model with predictors.

```

+-----+
| DATA SUMMARY |
+-----+

NUMBER OF LEVEL 2 UNITS :    79
NUMBER OF LEVEL 1 UNITS :    748

N2 :    1    2    3    4    5    6    7    8
N1 :   10    8   13   10   10    8   11   12

N2 :    9   10   11   12   13
N1 :    9    8    9   13   11   15   16

N2 :   17   18   19   20   21   22   23   24
N1 :   15   11    6    9   16   12   12   17

N2 :   25   26   27   28   29   30   31   32
N1 :    9   12    5   10    9    3   13   10

N2 :   33   34   35   36   37   38   39   40
N1 :   11   10   10   10   10   11    7    5

N2 :   41   42   43   44   45   46   47   48
N1 :   13    6    7    8    4    7    9    5

N2 :   49   50   51   52   53   54   55   56
N1 :   13   10   12    9   10   22   12   12

N2 :   57   58   59   60   61   62   63   64
N1 :    6   15    8    7   10   10    9    5

N2 :   65   66   67   68   69   70   71   72
N1 :    9   11    4   11   13    5    4    8

N2 :   73   74   75   76   77   78   79
N1 :    6    7    9    6    5    8    6

=====

ITERATION NUMBER      1

+-----+
| FIXED PART OF MODEL |
+-----+

-----
COEFFICIENTS          BETA-HAT   STD.ERR.   Z-VALUE   PR > |Z|
-----
intcept                5.95889    0.01978    301.21398    0.00000
-----
```

JC	0.05772	0.03925	1.47047	0.14144
PJ	0.08245	0.05376	1.53348	0.12516
efSQ	-0.02744	0.04603	-0.59614	0.55108
erSQ	-0.17414	0.05559	-3.13270	0.00173
cFSQ	0.33594	0.03160	10.62998	0.00000
crSQ	0.51359	0.03213	15.98457	0.00000

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANCE= -2*LOG(LIKELIHOOD) = 1935.075538240187
NUMBER OF FREE PARAMETERS = 14

+-----+
| RANDOM PART OF MODEL |
+-----+

LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.02507	0.18685	0.13416	0.89328
cFSQ /intcept	-0.02224	0.15183	-0.14649	0.88354
cFSQ /cFSQ	0.03565	0.24360	0.14634	0.88365
crSQ /intcept	-0.00513	0.14995	-0.03421	0.97271
crSQ /cFSQ	-0.01349	0.17373	-0.07765	0.93811
crSQ /crSQ	0.02911	0.23907	0.12178	0.90307

LEVEL 1	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.25457	0.06139	4.14706	0.00003

LEVEL 2 COVARIANCE MATRIX

intcept	intcept	cFSQ	crSQ
intcept	0.02507		
cFSQ	-0.02224	0.03565	
crSQ	-0.00513	-0.01349	0.02911

LEVEL 2 CORRELATION MATRIX

intcept	intcept	cFSQ	crSQ
intcept	1.0000		
cFSQ	-0.7440	1.0000	
crSQ	-0.1899	-0.4187	1.0000

LEVEL 1 COVARIANCE MATRIX

intcept	intcept
intcept	0.25457

LEVEL 1 CORRELATION MATRIX

intcept	intcept
intcept	1.0000

CONVERGENCE REACHED IN 6 ITERATIONS

ITERATION NUMBER 6

+-----+
| FIXED PART OF MODEL |
+-----+

COEFFICIENTS	BETA-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	5.95505	0.02423	245.80444	0.00000
JC	0.04124	0.04444	0.92807	0.35337
PJ	0.09423	0.06123	1.53895	0.12382
efSQ	-0.02429	0.05218	-0.46548	0.64159
erSQ	-0.15544	0.06386	-2.43411	0.01493
cFSQ	0.33683	0.03667	9.18519	0.00000
crSQ	0.51229	0.03961	12.93384	0.00000

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANCE= -2*LOG(LIKELIHOOD) = 1180.882857098953
NUMBER OF FREE PARAMETERS = 14

+-----+
| RANDOM PART OF MODEL |
+-----+

LEVEL 2		TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	/intcept	0.01466	0.00732	2.00170	0.04532
cFSQ	/intcept	-0.00363	0.00719	-0.50472	0.61376
cFSQ	/cFSQ	0.01455	0.01365	1.06562	0.28660
cRSQ	/intcept	-0.01092	0.00811	-1.34740	0.17785
cRSQ	/cFSQ	-0.01764	0.01319	-1.33762	0.18102
cRSQ	/cRSQ	0.02954	0.01744	1.69383	0.09030

LEVEL 1		TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	/intcept	0.26353	0.01544	17.07305	0.00000

LEVEL 2 COVARIANCE MATRIX			
	intcept	cFSQ	cRSQ
intcept	0.01522		
cFSQ	-0.00285	0.01560	
cRSQ	-0.01030	-0.01679	0.03023

LEVEL 2 CORRELATION MATRIX			
	intcept	cFSQ	cRSQ
intcept	1.00000		
cFSQ	-0.18625	1.00000	
cRSQ	-0.11030	0.10879	1.00000

```

intcept      cfsq      crsq
intcept      1.0000
cfsq         -0.1852      1.0000
crsq         -0.4803      -0.7730      1.0000

LEVEL 1 COVARIANCE MATRIX

intcept      0.26353

LEVEL 1 CORRELATION MATRIX

intcept      1.0000

+-----+
| CPU TIME (SECONDS) : |
+-----+

=====
| END OF ANALYSIS |
=====
```

4. ESTUDIO 4

CFA. Two-factor structure of burnout (emotional exhaustion and cynicism) (Sample 1).

Goodness of Fit Statistics	
Degrees of Freedom = 34	
Minimum Fit Function Chi-Square = 281.325 (P = 0.0)	
Normal Theory Weighted Least Squares Chi-Square = 284.198 (P = 0.0)	
Satorra-Bentler Scaled Chi-Square = 161.942 (P = 0.0)	
Chi-Square Corrected for Non-Normality = 156.306 (P = 0.0)	
Estimated Non-centrality Parameter (NCP) = 127.942	
90 Percent Confidence Interval for NCP = (92.041 ; 171.381)	
Minimum Fit Function Value = 0.541	
Population Discrepancy Function Value (F0) = 0.246	
90 Percent Confidence Interval for F0 = (0.177 ; 0.330)	
Root Mean Square Error of Approximation (RMSEA) = 0.0851	
90 Percent Confidence Interval for RMSEA = (0.0722 ; 0.0985)	
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.000	
Expected Cross-Validation Index (ECVI) = 0.392	
90 Percent Confidence Interval for ECVI = (0.323 ; 0.476)	
ECVI for Saturated Model = 0.212	
ECVI for Independence Model = 11.610	
Chi-Square for Independence Model with 45 Degrees of Freedom = 6017.280	
Independence AIC = 6037.280	
Model AIC = 203.942	
Saturated AIC = 110.000	
Independence CAIC = 6089.837	
Model CAIC = 314.313	
Saturated CAIC = 399.066	
Normed Fit Index (NFI) = 0.973	
Non-Normed Fit Index (NNFI) = 0.972	
Parsimony Normed Fit Index (PNFI) = 0.735	
Comparative Fit Index (CFI) = 0.979	
Incremental Fit Index (IFI) = 0.979	
Relative Fit Index (RFI) = 0.964	
Critical N (CN) = 181.014	
Root Mean Square Residual (RMR) = 0.217	
Standardized RMR = 0.0747	
Goodness of Fit Index (GFI) = 0.901	
Adjusted Goodness of Fit Index (AGFI) = 0.841	
Parsimony Goodness of Fit Index (PGFI) = 0.557	

CFA. One-factor structure of burnout (emotional exhaustion + cynicism) (Sample 1).

Goodness of Fit Statistics	
Degrees of Freedom = 35	
Minimum Fit Function Chi-Square = 879.527 (P = 0.0)	
Normal Theory Weighted Least Squares Chi-Square = 1289.017 (P = 0.0)	
Satorra-Bentler Scaled Chi-Square = 671.999 (P = 0.0)	
Chi-Square Corrected for Non-Normality = 250.617 (P = 0.0)	
Estimated Non-centrality Parameter (NCP) = 636.999	
90 Percent Confidence Interval for NCP = (556.509 ; 724.911)	
Minimum Fit Function Value = 1.691	
Population Discrepancy Function Value (F0) = 1.225	
90 Percent Confidence Interval for F0 = (1.070 ; 1.394)	
Root Mean Square Error of Approximation (RMSEA) = 0.187	
90 Percent Confidence Interval for RMSEA = (0.175 ; 0.200)	
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.000	
Expected Cross-Validation Index (ECVI) = 1.369	
90 Percent Confidence Interval for ECVI = (1.214 ; 1.538)	
ECVI for Saturated Model = 0.212	
ECVI for Independence Model = 11.610	
Chi-Square for Independence Model with 45 Degrees of Freedom = 6017.280	
Independence AIC = 6037.280	
Model AIC = 711.999	
Saturated AIC = 110.000	
Independence CAIC = 6089.837	
Model CAIC = 817.114	
Saturated CAIC = 399.066	
Normed Fit Index (NFI) = 0.888	
Non-Normed Fit Index (NNFI) = 0.863	
Parsimony Normed Fit Index (PNFI) = 0.691	
Comparative Fit Index (CFI) = 0.893	
Incremental Fit Index (IFI) = 0.894	
Relative Fit Index (RFI) = 0.856	
Critical N (CN) = 45.372	
Root Mean Square Residual (RMR) = 0.267	
Standardized RMR = 0.124	
Goodness of Fit Index (GFI) = 0.669	
Adjusted Goodness of Fit Index (AGFI) = 0.479	
Parsimony Goodness of Fit Index (PGFI) = 0.425	

CFA. Two-factor structure of unit-level fairness (justice climate and peer justice) (Sample 2).

Goodness of Fit Statistics	
Degrees of Freedom = 8	
Minimum Fit Function Chi-Square = 80.357 (P = 0.00)	
Normal Theory Weighted Least Squares Chi-Square = 78.705 (P = 0.00)	
Satorra-Bentler Scaled Chi-Square = 32.527 (P = 0.000)	
Chi-Square Corrected for Non-Normality = 27.699 (P = 0.000535)	
Estimated Non-centrality Parameter (NCP) = 24.527	
90 Percent Confidence Interval for NCP = (10.589 ; 46.016)	
Minimum Fit Function Value = 0.116	
Population Discrepancy Function Value (F0) = 0.0355	
90 Percent Confidence Interval for F0 = (0.0153 ; 0.0666)	
Root Mean Square Error of Approximation (RMSEA) = 0.0666	
90 Percent Confidence Interval for RMSEA = (0.0438 ; 0.0912)	
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.110	
Expected Cross-Validation Index (ECVI) = 0.0847	
90 Percent Confidence Interval for ECVI = (0.0645 ; 0.116)	
ECVI for Saturated Model = 0.0608	
ECVI for Independence Model = 4.432	

Chi-Square for Independence Model with 15 Degrees of Freedom = 3050.581

Independence AIC = 3062.581	
Model AIC = 58.527	
Saturated AIC = 42.000	
Independence CAIC = 3095.818	
Model CAIC = 130.542	
Saturated CAIC = 158.331	
Normed Fit Index (NFI) = 0.989	
Non-Normed Fit Index (NNFI) = 0.985	
Parsimony Normed Fit Index (PNFI) = 0.528	
Comparative Fit Index (CFI) = 0.992	
Incremental Fit Index (IFI) = 0.992	
Relative Fit Index (RFI) = 0.980	
Critical N (CN) = 427.823	
Root Mean Square Residual (RMR) = 0.0813	
Standardized RMR = 0.0510	
Goodness of Fit Index (GFI) = 0.963	
Adjusted Goodness of Fit Index (AGFI) = 0.904	
Parsimony Goodness of Fit Index (PGFI) = 0.367	

CFA. One-factor structure of burnout (justice climate + peer justice) (Sample 2).

Goodness of Fit Statistics	
Degrees of Freedom = 9	
Minimum Fit Function Chi-Square = 642.313 (P = 0.0)	
Normal Theory Weighted Least Squares Chi-Square = 758.749 (P = 0.0)	
Satorra-Bentler Scaled Chi-Square = 224.885 (P = 0.0)	
Chi-Square Corrected for Non-Normality = 138.512 (P = 0.0)	
Estimated Non-centrality Parameter (NCP) = 215.885	
90 Percent Confidence Interval for NCP = (170.706 ; 288.492)	
Minimum Fit Function Value = 0.930	
Population Discrepancy Function Value (F0) = 0.312	
90 Percent Confidence Interval for F0 = (0.247 ; 0.389)	
Root Mean Square Error of Approximation (RMSEA) = 0.186	
90 Percent Confidence Interval for RMSEA = (0.166 ; 0.208)	
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.000	
Expected Cross-Validation Index (ECVI) = 0.360	
90 Percent Confidence Interval for ECVI = (0.295 ; 0.436)	
ECVI for Saturated Model = 0.0608	
ECVI for Independence Model = 4.432	
Chi-Square for Independence Model with 15 Degrees of Freedom = 3050.581	
Independence AIC = 3062.581	
Model AIC = 248.885	
Saturated AIC = 42.000	
Independence CAIC = 3095.818	
Model CAIC = 315.360	
Saturated CAIC = 158.331	
Normed Fit Index (NFI) = 0.926	
Non-Normed Fit Index (NNFI) = 0.881	
Parsimony Normed Fit Index (PNFI) = 0.556	
Comparative Fit Index (CFI) = 0.929	
Incremental Fit Index (IFI) = 0.929	
Relative Fit Index (RFI) = 0.877	
Critical N (CN) = 67.574	
Root Mean Square Residual (RMR) = 0.227	
Standardized RMR = 0.148	
Goodness of Fit Index (GFI) = 0.732	
Adjusted Goodness of Fit Index (AGFI) = 0.375	
Parsimony Goodness of Fit Index (PGFI) = 0.314	

CFA. Two-factor structure of burnout (emotional exhaustion and cynicism) (Sample 2).

Goodness of Fit Statistics	
Degrees of Freedom = 34	
Minimum Fit Function Chi-Square = 412.490 (P = 0.0)	
Normal Theory Weighted Least Squares Chi-Square = 420.658 (P = 0.0)	
Satorra-Bentler Scaled Chi-Square = 197.661 (P = 0.0)	
Chi-Square Corrected for Non-Normality = 167.234 (P = 0.0)	
Estimated Non-centrality Parameter (NCP) = 163.661	
90 Percent Confidence Interval for NCP = (123.141 ; 211.693)	
Minimum Fit Function Value = 0.597	
Population Discrepancy Function Value (F0) = 0.237	
90 Percent Confidence Interval for F0 = (0.178 ; 0.306)	
Root Mean Square Error of Approximation (RMSEA) = 0.0835	
90 Percent Confidence Interval for RMSEA = (0.0724 ; 0.0949)	
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.000	
Expected Cross-Validation Index (ECVI) = 0.347	
90 Percent Confidence Interval for ECVI = (0.288 ; 0.416)	
ECVI for Saturated Model = 0.159	
ECVI for Independence Model = 11.573	
Chi-Square for Independence Model with 45 Degrees of Freedom = 7976.929	
Independence AIC = 7996.929	
Model AIC = 239.661	
Saturated AIC = 110.000	
Independence CAIC = 8052.325	
Model CAIC = 355.992	
Saturated CAIC = 414.677	
Normed Fit Index (NFI) = 0.975	
Non-Normed Fit Index (NNFI) = 0.973	
Parsimony Normed Fit Index (PNFI) = 0.737	
Comparative Fit Index (CFI) = 0.979	
Incremental Fit Index (IFI) = 0.979	
Relative Fit Index (RFI) = 0.967	
Critical N (CN) = 196.984	
Root Mean Square Residual (RMR) = 0.175	
Standardized RMR = 0.0630	
Goodness of Fit Index (GFI) = 0.891	
Adjusted Goodness of Fit Index (AGFI) = 0.824	
Parsimony Goodness of Fit Index (PGFI) = 0.551	

CFA. One-factor structure of burnout (emotional exhaustion + cynicism) (Sample 2).

Goodness of Fit Statistics	
Degrees of Freedom = 35	
Minimum Fit Function Chi-Square = 1150.847 (P = 0.0)	
Normal Theory Weighted Least Squares Chi-Square = 1520.121 (P = 0.0)	
Satorra-Bentler Scaled Chi-Square = 734.380 (P = 0.0)	
Chi-Square Corrected for Non-Normality = 258.765 (P = 0.0)	
Estimated Non-centrality Parameter (NCP) = 699.380	
90 Percent Confidence Interval for NCP = (614.970 ; 791.209)	
Minimum Fit Function Value = 1.665	
Population Discrepancy Function Value (F0) = 1.012	
90 Percent Confidence Interval for F0 = (0.890 ; 1.145)	
Root Mean Square Error of Approximation (RMSEA) = 0.170	
90 Percent Confidence Interval for RMSEA = (0.159 ; 0.181)	
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.000	
Expected Cross-Validation Index (ECVI) = 1.121	
90 Percent Confidence Interval for ECVI = (0.999 ; 1.254)	
ECVI for Saturated Model = 0.159	
ECVI for Independence Model = 11.573	
Chi-Square for Independence Model with 45 Degrees of Freedom = 7976.929	
Independence AIC = 7996.929	
Model AIC = 774.380	
Saturated AIC = 110.000	
Independence CAIC = 8052.325	
Model CAIC = 885.172	
Saturated CAIC = 414.677	
Normed Fit Index (NFI) = 0.908	
Non-Normed Fit Index (NNFI) = 0.887	
Parsimony Normed Fit Index (PNFI) = 0.706	
Comparative Fit Index (CFI) = 0.912	
Incremental Fit Index (IFI) = 0.912	
Relative Fit Index (RFI) = 0.882	
Critical N (CN) = 54.955	
Root Mean Square Residual (RMR) = 0.245	
Standardized RMR = 0.0912	
Goodness of Fit Index (GFI) = 0.694	
Adjusted Goodness of Fit Index (AGFI) = 0.520	
Parsimony Goodness of Fit Index (PGFI) = 0.442	

HLM. Dependent variable: emotional exhaustion (Sample 1).

Null model.

+-----+ DATA SUMMARY +-----+									
NUMBER OF LEVEL 2 UNITS :		79							
NUMBER OF LEVEL 1 UNITS :		532							
N2 :	1	2	3	4	5	6	7	8	
N1 :	9	10	8	6	9	9	9	9	
N2 :	9	10	11	12	13	14	15	16	
N1 :	5	9	9	8	10	10	4	6	
N2 :	17	18	19	20	21	22	23	24	
N1 :	8	10	7	5	9	6	7	8	
N2 :	25	26	27	28	29	30	31	32	
N1 :	8	5	4	9	6	6	7	6	
N2 :	33	34	35	36	37	38	39	40	
N1 :	9	7	8	6	6	6	3	8	
N2 :	41	42	43	44	45	46	47	48	
N1 :	5	7	4	3	7	6	5	4	
N2 :	49	50	51	52	53	54	55	56	
N1 :	12	4	12	7	5	3	8	9	
N2 :	57	58	59	60	61	62	63	64	
N1 :	6	5	5	8	3	8	8	7	
N2 :	65	66	67	68	69	70	71	72	
N1 :	7	3	3	9	5	3	4	6	
N2 :	73	74	75	76	77	78	79		
N1 :	5	8	5	5	8	6	10		
=====									
+-----+ FIXED PART OF MODEL +-----+									

ITERATION NUMBER 1

COEFFICIENTS	BETA-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	2.28966	0.05438	42.10101	0.00000
+-----+ -2 LOG-LIKELIHOOD +-----+				
DEVIANCE= -2*LOG(LIKELIHOOD) = 1802.292258977086				
NUMBER OF FREE PARAMETERS = 3				
+-----+ RANDOM PART OF MODEL +-----+				

LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.16196	0.18540	0.87357	0.38236
LEVEL 1	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	1.41187	0.06643	21.25387	0.00000

LEVEL 2 COVARIANCE MATRIX

intcept	
intcept	0.16196

LEVEL 2 CORRELATION MATRIX

intcept	
intcept	1.0000

LEVEL 1 COVARIANCE MATRIX

intcept	
intcept	1.41187

LEVEL 1 CORRELATION MATRIX

```

intcept      1.0000
-----
CONVERGENCE REACHED IN 3 ITERATIONS
-----

ITERATION NUMBER      3

+-----+
| FIXED PART OF MODEL |
+-----+

-----
COEFFICIENTS      BETA-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept      2.28389      0.06882      33.18527      0.00000

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANC= -2*LOG(LIKELIHOOD) = 1736.754785216351
NUMBER OF FREE PARAMETERS = 3

+-----+
| RANDOM PART OF MODEL |
+-----+

-----
LEVEL 2      TAU-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept /intcept      0.15442      0.05994      2.57640      0.00998

-----
LEVEL 1      TAU-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept /intcept      1.41376      0.09363      15.09989      0.00000

LEVEL 2 COVARIANCE MATRIX

intcept      1.0000
0.15442

LEVEL 2 CORRELATION MATRIX

intcept      1.0000

LEVEL 1 COVARIANCE MATRIX

intcept      1.41376

LEVEL 1 CORRELATION MATRIX

intcept      1.0000

+-----+
| CPU TIME (SECONDS) :      0.057 |
+-----+

=====
|      END OF ANALYSIS      |
|=====|

+-----+
| DATA SUMMARY |
+-----+

NUMBER OF LEVEL 2 UNITS :      79
NUMBER OF LEVEL 1 UNITS :      532

N2 :      1      2      3      4      5      6      7      8
N1 :      9      10      8      6      9      9      9      9

N2 :      9      10      11      12      13      14      15      16
N1 :      5      9      9      8      10      10      4      6

N2 :      17      18      19      20      21      22      23      24
N1 :      8      10      7      5      9      6      7      8
```

Model 1.

```
N2 : 25 26 27 28 29 30 31 32
N1 : 8 5 4 9 6 6 7 6

N2 : 33 34 35 36 37 38 39 40
N1 : 9 7 8 6 6 6 3 8

N2 : 41 42 43 44 45 46 47 48
N1 : 5 7 4 3 7 6 5 4

N2 : 49 50 51 52 53 54 55 56
N1 : 12 4 12 7 5 3 8 9

N2 : 57 58 59 60 61 62 63 64
N1 : 6 5 5 8 3 8 8 7

N2 : 65 66 67 68 69 70 71 72
N1 : 7 3 3 9 5 3 4 6

N2 : 73 74 75 76 77 78 79
N1 : 5 8 5 5 8 6 10

=====
ITERATION NUMBER 1

+-----+
| FIXED PART OF MODEL |
+-----+

-----
COEFFICIENTS      BETA-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept           2.18828         0.08851         24.72263         0.00000
gender            -0.04656         0.12311         -0.37822         0.70527
tenure             0.01663         0.00905         1.83673         0.06625
wu_size           0.01925         0.02617         0.73587         0.46181

-----
+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANC= -2*LOG(LIKELIHOOD) = 2094.225080653417
NUMBER OF FREE PARAMETERS = 11

+-----+
| RANDOM PART OF MODEL |
+-----+
```

```
+-----+
-----
LEVEL 2
-----
intcept /intcept      0.36396      0.26713      1.36250      0.17304
gender /intcept      -0.03831      0.22708      -0.16871      0.86603
gender /gender        -0.05296      0.35264      -0.15018      0.88062
tenure /intcept      -0.01079      0.14937      -0.07223      0.94242
tenure /gender       -0.01381      0.17992      -0.07674      0.93883
tenure /tenure       -0.00192      0.16280      -0.01182      0.99057

-----
LEVEL 1
-----
TAU-HAT      Z-VALUE      PR > |Z|
-----
intcept /intcept      1.38142      0.07836      17.62864      0.00000

LEVEL 2 COVARIANCE MATRIX

intcept      gender      tenure
intcept      0.36449
gender       -0.03289      0.00306
tenure      -0.00941      0.00047      0.00172

LEVEL 2 CORRELATION MATRIX

intcept      gender      tenure
intcept      1.0000
gender       -0.9842      1.0000
tenure      -0.3761      0.2064      1.0000

LEVEL 1 COVARIANCE MATRIX

intcept
intcept      1.38142

LEVEL 1 CORRELATION MATRIX

intcept
intcept      1.0000

-----
CONVERGENCE REACHED IN 8 ITERATIONS
```

```
-----
ITERATION NUMBER      8

+-----+
| FIXED PART OF MODEL |
+-----+

COEFFICIENTS      BETA-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept           2.19294      0.10433      21.01967      0.00000
gender            -0.07953      0.12274      -0.64797      0.51700
tenure            0.01798      0.00932      1.92979      0.05363
wu_size           0.01498      0.03381      0.44302      0.65775

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANCE= -2*LOG(LIKELIHOOD) = 1730.826499254152
NUMBER OF FREE PARAMETERS = 11

+-----+
| RANDOM PART OF MODEL |
+-----+

+-----+
| TAU-HAT      STD.ERR.      Z-VALUE      PR > |Z|
+-----+
LEVEL 2
intcept /intcept      0.22406      0.12861      1.74207      0.08150
gender /intcept      -0.07758      0.11518      -0.67355      0.50060
gender /gender      -0.00736      0.117671      -0.04167      0.96676
tenure /intcept      -0.00056      0.00928      -0.06032      0.95190
tenure /gender      -0.00074      0.00851      -0.08670      0.93091
tenure /tenure      -0.00020      0.00080      -0.24632      0.80543

+-----+
| TAU-HAT      STD.ERR.      Z-VALUE      PR > |Z|
+-----+
LEVEL 1
intcept /intcept      1.40576      0.10076      13.95151      0.00000

LEVEL 2 COVARIANCE MATRIX

intcept      gender      tenure
0.22668      0.02098      0.00000
-0.06896      0.00009      0.00000
-0.00031      0.00009      0.00000

LEVEL 2 CORRELATION MATRIX

intcept      gender      tenure
1.0000
-1.0000      1.0000
-0.8775      0.8775      1.0000

LEVEL 1 COVARIANCE MATRIX

intcept
1.40576

LEVEL 1 CORRELATION MATRIX

intcept
1.0000

+-----+
| CPU TIME (SECONDS) :      0.067 |
+-----+

|=====|
| END OF ANALYSIS |
|=====|

+-----+
| DATA SUMMARY |
+-----+

NUMBER OF LEVEL 2 UNITS :      79
NUMBER OF LEVEL 1 UNITS :      532

N2 :      1      2      3      4      5      6      7      8
N1 :      9     10     8      6      9      9      9      9
N2 :      9      9     10     11     12     13     14     15     16
```

N1 :	5	9	9	8	10	10	4	6
N2 :	17	18	19	20	21	22	23	24
N1 :	8	10	7	5	9	6	7	8
N2 :	25	26	27	28	29	30	31	32
N1 :	8	5	4	9	6	6	7	6
N2 :	33	34	35	36	37	38	39	40
N1 :	9	7	8	6	6	6	3	8
N2 :	41	42	43	44	45	46	47	48
N1 :	5	7	4	3	7	6	5	4
N2 :	49	50	51	52	53	54	55	56
N1 :	12	4	12	7	5	3	8	9
N2 :	57	58	59	60	61	62	63	64
N1 :	6	5	5	8	3	8	8	7
N2 :	65	66	67	68	69	70	71	72
N1 :	7	3	3	9	5	3	4	6
N2 :	73	74	75	76	77	78	79	
N1 :	5	8	5	5	8	6	10	
=====								
ITERATION NUMBER 1								
+-----+ FIXED PART OF MODEL +-----+								

COEFFICIENTS								
BETA-HAT								
STD.ERR.								
Z-VALUE								
PR > Z								
intcept								
gender								
tenure								
wu_size								
JC								
+-----+ -2 LOG-LIKELIHOOD +-----+								
DEVIANCE= -2*LOG(LIKELIHOOD) = 2089.907180396078								

NUMBER OF FREE PARAMETERS = 12

+-----+
| RANDOM PART OF MODEL |
+-----+

LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.24481	0.26713	0.91645	0.35943
gender /intcept	-0.01157	0.22708	-0.05096	0.95936
gender /gender	-0.05506	0.35264	-0.15612	0.87594
tenure /intcept	-0.00573	0.14937	-0.03838	0.96938
tenure /gender	-0.01385	0.17992	-0.07696	0.93865
tenure /tenure	-0.00171	0.16280	-0.01048	0.99164

LEVEL 1	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	1.38403	0.07836	17.66190	0.00000

LEVEL 2 COVARIANCE MATRIX

	intcept	gender	tenure
intcept	0.24491		
gender	-0.00920	0.00044	
tenure	-0.00515	-0.00019	0.00166

LEVEL 2 CORRELATION MATRIX

	intcept	gender	tenure
intcept	1.0000		
gender	-0.8868	1.0000	
tenure	-0.2557	-0.2197	1.0000

LEVEL 1 COVARIANCE MATRIX

	intcept
intcept	1.38403

LEVEL 1 CORRELATION MATRIX

	intcept
--	---------

intcept 1.0000

CONVERGENCE REACHED IN 7 ITERATIONS

ITERATION NUMBER 7

FIXED PART OF MODEL

COEFFICIENTS	BETA-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	2.22039	0.09537	23.28153	0.00000
gender	-0.07001	0.12233	-0.57235	0.56708
tenure	0.01421	0.00947	1.50085	0.13339
wu_size	0.02623	0.03005	0.87281	0.38277
JC	-0.40114	0.10183	-3.93933	0.00008

-2 LOG-LIKELIHOOD

DEVIANCE= -2*LOG(LIKELIHOOD) = 1716.960004268224
NUMBER OF FREE PARAMETERS = 12

RANDOM PART OF MODEL

LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.08931	0.10746	0.83107	0.40593
gender /intcept	-0.08870	0.10626	-0.83475	0.40386
gender /gender	0.01578	0.117764	0.08885	0.92920
tenure /intcept	0.00501	0.00856	0.58557	0.55816
tenure /gender	0.00110	0.00871	0.12584	0.89986
tenure /tenure	-0.00047	0.00082	-0.56936	0.56911

LEVEL 1	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
---------	---------	----------	---------	---------

intcept /intcept 1.41581 0.10112 14.00187 0.00000

LEVEL 2 COVARIANCE MATRIX

	intcept	gender	tenure
intcept	0.10278		
gender	-0.06859	0.04578	
tenure	0.00295	-0.00197	0.00008

LEVEL 2 CORRELATION MATRIX

	intcept	gender	tenure
intcept	1.0000		
gender	-1.0000	1.0000	
tenure	0.9996	-0.9996	1.0000

LEVEL 1 COVARIANCE MATRIX

	intcept
intcept	1.41581

LEVEL 1 CORRELATION MATRIX

	intcept
intcept	1.0000

CPU TIME (SECONDS) : 0.071

END OF ANALYSIS

Model 3.

DATA SUMMARY

NUMBER OF LEVEL 2 UNITS : 79

NUMBER OF LEVEL 1 UNITS :										532
N2 :	1	2	3	4	5	6	7	8		
N1 :	9	10	8	6	9	9	9	9		
N2 :	9	10	11	12	13	14	15	16		
N1 :	5	9	9	8	10	10	4	6		
N2 :	17	18	19	20	21	22	23	24		
N1 :	8	10	7	5	9	6	7	8		
N2 :	25	26	27	28	29	30	31	32		
N1 :	8	5	4	9	6	6	7	6		
N2 :	33	34	35	36	37	38	39	40		
N1 :	9	7	8	6	6	6	3	8		
N2 :	41	42	43	44	45	46	47	48		
N1 :	5	7	4	3	7	6	5	4		
N2 :	49	50	51	52	53	54	55	56		
N1 :	12	4	12	7	5	3	8	9		
N2 :	57	58	59	60	61	62	63	64		
N1 :	6	5	5	8	3	8	8	7		
N2 :	65	66	67	68	69	70	71	72		
N1 :	7	3	3	9	5	3	4	6		
N2 :	73	74	75	76	77	78	79			
N1 :	5	8	5	5	8	6	10			
=====										
ITERATION NUMBER	1									
+-----+ FIXED PART OF MODEL +-----+										

COEFFICIENTS	BETA-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	2.23722	0.08740	25.59785	0.00000
gender	-0.05572	0.12069	-0.46171	0.64429
tenure	0.00993	0.00900	1.10336	0.26987
wu_size	0.02752	0.02571	1.07051	0.28439
JC	-0.37344	0.09813	-3.80575	0.00014
PJ	-0.13791	0.13439	-1.02619	0.30480

```
+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANCE= -2*LOG(LIKELIHOOD) = 2090.044007465816
NUMBER OF FREE PARAMETERS = 13

+-----+
| RANDOM PART OF MODEL |
+-----+
```

LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.24684	0.26713	0.92405	0.35546
gender /intcept	0.00191	0.22708	0.00840	0.99330
gender /gender	-0.05376	0.35264	-0.15244	0.87884
tenure /intcept	-0.00743	0.14937	-0.04975	0.96032
tenure /gender	-0.01402	0.17992	-0.07793	0.93788
tenure /tenure	-0.00152	0.16280	-0.00931	0.99257
LEVEL 1	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	1.38367	0.07836	17.65731	0.00000

LEVEL 2 COVARIANCE MATRIX

	intcept	gender	tenure
intcept	0.24684		
gender	0.00190	0.00012	
tenure	-0.00743	-0.00048	0.00189

LEVEL 2 CORRELATION MATRIX

	intcept	gender	tenure
intcept	1.0000		
gender	0.3492	1.0000	
tenure	-0.3442	-0.9994	1.0000

LEVEL 1 COVARIANCE MATRIX

intcept

Anexo II – Resultados

intcept 1.38367									
LEVEL 1 CORRELATION MATRIX									
intcept									
intcept 1.0000									

CONVERGENCE REACHED IN 9 ITERATIONS									

ITERATION NUMBER 9									
+-----+ FIXED PART OF MODEL +-----+									

COEFFICIENTS BETA-HAT STD.ERR. Z-VALUE PR > Z									
intcept 2.22445 0.09500 23.41562 0.00000									
gender -0.07010 0.12228 -0.57330 0.56644									
tenure 0.01374 0.00949 1.44761 0.14773									
wu_size 0.02622 0.02982 0.87930 0.37924									
JC -0.36545 0.11285 -3.23828 0.00120									
PJ -0.11404 0.15683 -0.72716 0.46713									
+-----+ -2 LOG-LIKELIHOOD +-----+									
DEVIANC=-2*LOG(LIKELIHOOD) = 1716.403151889116									
NUMBER OF FREE PARAMETERS = 13									
+-----+ RANDOM PART OF MODEL +-----+									
LEVEL 2									
LEVEL 2 TAU-HAT STD.ERR. Z-VALUE PR > Z									
LEVEL 1									
intcept /intcept -0.08505 0.10569 -0.80473 0.42098									
gender /gender 0.02853 0.17758 0.16064 0.87238									
tenure /intcept 0.00477 0.00852 0.55938 0.57590									
tenure /gender 0.00071 0.00872 0.08195 0.93469									
tenure /tenure -0.00047 0.00082 -0.57056 0.56830									

LEVEL 1 TAU-HAT STD.ERR. Z-VALUE PR > Z									
intcept /intcept 1.41397 0.10103 13.99557 0.00000									

LEVEL 2 COVARIANCE MATRIX									
intcept gender tenure									
intcept 0.09833									
gender -0.06991 0.04971									
tenure 0.00282 -0.00200 0.00008									

LEVEL 2 CORRELATION MATRIX									
intcept gender tenure									
intcept 1.0000									
gender -1.0000 1.0000									
tenure 0.9995 -0.9995 1.0000									

LEVEL 1 COVARIANCE MATRIX									
intcept									
intcept 1.41397									

LEVEL 1 CORRELATION MATRIX									
intcept									
intcept 1.0000									
+-----+ CPU TIME (SECONDS) : 0.073 +-----+									
+-----+ END OF ANALYSIS +-----+									

HLM. Dependent variable: cynicism (Sample 1).

Null model.

+-----+ DATA SUMMARY +-----+									
NUMBER OF LEVEL 2 UNITS :			79						
NUMBER OF LEVEL 1 UNITS :			532						
N2 :	1	2	3	4	5	6	7	8	
N1 :	9	10	8	6	9	9	9	9	
N2 :	9	10	11	12	13	14	15	16	
N1 :	5	9	9	8	10	10	4	6	
N2 :	17	18	19	20	21	22	23	24	
N1 :	8	10	7	5	9	6	7	8	
N2 :	25	26	27	28	29	30	31	32	
N1 :	8	5	4	9	6	6	7	6	
N2 :	33	34	35	36	37	38	39	40	
N1 :	9	7	8	6	6	6	3	8	
N2 :	41	42	43	44	45	46	47	48	
N1 :	5	7	4	3	7	6	5	4	
N2 :	49	50	51	52	53	54	55	56	
N1 :	12	4	12	7	5	3	8	9	
N2 :	57	58	59	60	61	62	63	64	
N1 :	6	5	5	8	3	8	8	7	
N2 :	65	66	67	68	69	70	71	72	
N1 :	7	3	3	9	5	3	4	6	
N2 :	73	74	75	76	77	78	79		
N1 :	5	8	5	5	8	6	10		
=====									
+-----+ FIXED PART OF MODEL +-----+									

-----					-----				
COEFFICIENTS		BETA-HAT	STD.ERR.	Z-VALUE	PR > Z				
intcept		1.27246	0.05371	23.69177	0.00000				
+-----+ -2 LOG-LIKELIHOOD +-----+									
DEVIANCE= -2*LOG(LIKELIHOOD) = 1778.835216073744									
NUMBER OF FREE PARAMETERS = 3									
+-----+ RANDOM PART OF MODEL +-----+									

-----					-----				
LEVEL 2		TAU-HAT	STD.ERR.	Z-VALUE	PR > Z				
intcept /intcept		0.17743	0.18540	0.95699	0.33857				
-----					-----				
LEVEL 1		TAU-HAT	STD.ERR.	Z-VALUE	PR > Z				
intcept /intcept		1.35908	0.06643	20.45914	0.00000				

LEVEL 2 COVARIANCE MATRIX

intcept	
intcept	0.17743

LEVEL 2 CORRELATION MATRIX

intcept	
intcept	1.0000

LEVEL 1 COVARIANCE MATRIX

intcept	
intcept	1.35908

LEVEL 1 CORRELATION MATRIX

```

intcept      1.0000
-----
CONVERGENCE REACHED IN 3 ITERATIONS
-----

ITERATION NUMBER      3
+-----+
| FIXED PART OF MODEL |
+-----+

-----
COEFFICIENTS      BETA-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept      1.26283      0.06983      18.08553      0.00000
-----

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANC= -2*LOG(LIKELIHOOD) = 1721.509000002052
NUMBER OF FREE PARAMETERS = 3

+-----+
| RANDOM PART OF MODEL |
+-----+

-----
LEVEL 2
      TAU-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept /intcept      0.17254      0.06164      2.79902      0.00513
-----

LEVEL 1
      TAU-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept /intcept      1.36080      0.09014      15.09600      0.00000
-----

LEVEL 2 COVARIANCE MATRIX
intcept      1.0000
-----
intcept      0.17254
-----

LEVEL 2 CORRELATION MATRIX
intcept      1.0000
-----
intcept      1.36080
-----

LEVEL 1 COVARIANCE MATRIX
intcept      1.0000
-----
intcept      1.36080
-----

LEVEL 1 CORRELATION MATRIX
intcept      1.0000
-----
intcept      1.0000
-----

+-----+
| CPU TIME (SECONDS) :      0.042 |
+-----+

=====
|      END OF ANALYSIS      |
|=====|

+-----+
| DATA SUMMARY |
+-----+

NUMBER OF LEVEL 2 UNITS :      79
NUMBER OF LEVEL 1 UNITS :      532

N2 :      1      2      3      4      5      6      7      8
N1 :      9     10      8      6      9      9      9      9

N2 :      9     10     11     12     13     14     15     16
N1 :      5      9      9      8     10     10      4      6

N2 :      17     18     19     20     21     22     23     24
N1 :      8      10      7      5      9      6      7      8
```

Model 1.

```
N2 : 25 26 27 28 29 30 31 32
N1 : 8 5 4 9 6 6 7 6

N2 : 33 34 35 36 37 38 39 40
N1 : 9 7 8 6 6 6 3 8

N2 : 41 42 43 44 45 46 47 48
N1 : 5 7 4 3 7 6 5 4

N2 : 49 50 51 52 53 54 55 56
N1 : 12 4 12 7 5 3 8 9

N2 : 57 58 59 60 61 62 63 64
N1 : 6 5 5 8 3 8 8 7

N2 : 65 66 67 68 69 70 71 72
N1 : 7 3 3 9 5 3 4 6

N2 : 73 74 75 76 77 78 79
N1 : 5 8 5 5 8 6 10

=====

ITERATION NUMBER 1

+-----+
| FIXED PART OF MODEL |
+-----+

-----
COEFFICIENTS      BETA-HAT  STD.ERR.  Z-VALUE  PR > |Z|
-----
intcept           1.02309    0.08658    11.81674    0.00000
gender            0.24126    0.12042     2.00355    0.04512
tenure            0.02599    0.00885     2.93562    0.00333
wu_size           0.01388    0.02559     0.54217    0.58770

-----

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANCE= -2*LOG(LIKELIHOOD) = 2037.359099494679
NUMBER OF FREE PARAMETERS = 11

+-----+
| RANDOM PART OF MODEL |
+-----+
```

```
+-----+
-----
LEVEL 2
-----
intcept /intcept      0.32524    0.26713    1.21755    0.22340
gender /intcept      -0.05663    0.22708   -0.24938    0.80306
gender /gender        0.20373    0.35264    0.57772    0.56345
tenure /intcept     -0.04156    0.14937   -0.27821    0.78085
tenure /gender       0.00592    0.17992    0.03292    0.97374
tenure /tenure       0.00992    0.16280    0.06092    0.95142

-----
LEVEL 1
-----
intcept /intcept      1.21176    0.07836    15.46356    0.00000

LEVEL 2 COVARIANCE MATRIX
intcept gender tenure
intcept 0.32524
gender -0.05663 0.20373
tenure -0.04156 0.00592 0.00992

LEVEL 2 CORRELATION MATRIX
intcept gender tenure
intcept 1.0000
gender -0.2200 1.0000
tenure -0.7317 0.1318 1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
intcept 1.21176

LEVEL 1 CORRELATION MATRIX
intcept
intcept 1.0000

-----
CONVERGENCE NOT REACHED AFTER SPECIFIED MAXIMUM OF 10 ITERATIONS
```

ITERATION NUMBER 10									
+-----+ FIXED PART OF MODEL +-----+									

COEFFICIENTS BETA-HAT STD.ERR. Z-VALUE PR > Z									

intcept 1.01848 0.10335 9.85476 0.00000									
gender 0.21106 0.12634 1.67062 0.09480									
tenure 0.02891 0.01026 2.81808 0.00483									
wu_size 0.01221 0.03181 0.38386 0.70108									

+-----+ -2 LOG-LIKELIHOOD +-----+									
DEVIANC= -2*LOG(LIKELIHOOD) = 1705.639000092956									
NUMBER OF FREE PARAMETERS = 11									
+-----+ RANDOM PART OF MODEL +-----+									

LEVEL 2 TAU-HAT STD.ERR. Z-VALUE PR > Z									

intcept /intcept 0.24473 0.12665 1.93230 0.05332									
gender /intcept -0.05245 0.11611 -0.45175 0.65145									
gender /gender 0.13073 0.18762 0.69680 0.48593									
tenure /intcept -0.00892 0.01046 -0.85271 0.39382									
tenure /gender -0.00272 0.01007 -0.26973 0.78737									
tenure /tenure 0.00111 0.00104 1.07103 0.28416									

LEVEL 1 TAU-HAT STD.ERR. Z-VALUE PR > Z									

intcept /intcept 1.27963 0.09274 13.79770 0.00000									

LEVEL 2 COVARIANCE MATRIX									

N1 :	5	9	9	8	10	10	4	6
N2 :	17	18	19	20	21	22	23	24
N1 :	8	10	7	5	9	6	7	8
N2 :	25	26	27	28	29	30	31	32
N1 :	8	5	4	9	6	6	7	6
N2 :	33	34	35	36	37	38	39	40
N1 :	9	7	8	6	6	6	3	8
N2 :	41	42	43	44	45	46	47	48
N1 :	5	7	4	3	7	6	5	4
N2 :	49	50	51	52	53	54	55	56
N1 :	12	4	12	7	5	3	8	9
N2 :	57	58	59	60	61	62	63	64
N1 :	6	5	5	8	3	8	8	7
N2 :	65	66	67	68	69	70	71	72
N1 :	7	3	3	9	5	3	4	6
N2 :	73	74	75	76	77	78	79	
N1 :	5	8	5	5	8	6	10	
=====								
ITERATION NUMBER		1						
			+-----+ FIXED PART OF MODEL +-----+					
COEFFICIENTS			BETA-HAT	STD.ERR.	Z-VALUE	PR > Z		
intcept			1.07214	0.08472	12.65583	0.00000		
gender			0.22903	0.11720	1.95421	0.05068		
tenure			0.01940	0.00870	2.23095	0.02568		
wu_size			0.02362	0.02497	0.94606	0.34412		
JC			-0.47256	0.08542	-5.53225	0.00000		
			+-----+ -2 LOG-LIKELIHOOD +-----+					

DEVIANCE= -2*LOG(LIKELIHOOD) = 2033.548503982114

NUMBER OF FREE PARAMETERS = 12

+-----+
| RANDOM PART OF MODEL |
+-----+

LEVEL 2		TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	/intcept	0.19425	0.26713	0.72718	0.46711
gender	/intcept	-0.05817	0.22708	-0.25616	0.79782
gender	/gender	0.19173	0.35264	0.54370	0.58665
tenure	/intcept	-0.03457	0.14937	-0.23141	0.81700
tenure	/gender	0.00469	0.17992	0.02609	0.97918
tenure	/tenure	0.00929	0.16280	0.05704	0.95451
LEVEL 1		TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	/intcept	1.21893	0.07836	15.55499	0.00000
LEVEL 2 COVARIANCE MATRIX					
	intcept	gender	tenure		
intcept	0.19425				
gender	-0.05817	0.19173			
tenure	-0.03457	0.00469	0.00929		
LEVEL 2 CORRELATION MATRIX					
	intcept	gender	tenure		
intcept	1.0000				
gender	-0.3014	1.0000			
tenure	-0.8139	0.1113	1.0000		
LEVEL 1 COVARIANCE MATRIX					
	intcept				
intcept	1.21893				
LEVEL 1 CORRELATION MATRIX					
	intcept				

NUMBER OF LEVEL 1 UNITS :										532
N2 :	1	2	3	4	5	6	7	8		
N1 :	9	10	8	6	9	9	9	9		
N2 :	9	10	11	12	13	14	15	16		
N1 :	5	9	9	8	10	10	4	6		
N2 :	17	18	19	20	21	22	23	24		
N1 :	8	10	7	5	9	6	7	8		
N2 :	25	26	27	28	29	30	31	32		
N1 :	8	5	4	9	6	6	7	6		
N2 :	33	34	35	36	37	38	39	40		
N1 :	9	7	8	6	6	6	3	8		
N2 :	41	42	43	44	45	46	47	48		
N1 :	5	7	4	3	7	6	5	4		
N2 :	49	50	51	52	53	54	55	56		
N1 :	12	4	12	7	5	3	8	9		
N2 :	57	58	59	60	61	62	63	64		
N1 :	6	5	5	8	3	8	8	7		
N2 :	65	66	67	68	69	70	71	72		
N1 :	7	3	3	9	5	3	4	6		
N2 :	73	74	75	76	77	78	79			
N1 :	5	8	5	5	8	6	10			
=====										
ITERATION NUMBER										1
										+-----+
										FIXED PART OF MODEL
										+-----+

COEFFICIENTS	BETA-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	1.08274	0.08463	12.79425	0.00000
gender	0.23221	0.11686	1.98701	0.04692
tenure	0.01774	0.00871	2.03613	0.04174
wu_size	0.02295	0.02490	0.92175	0.35666
JC	-0.38709	0.09501	-4.07397	0.00005
PJ	-0.26404	0.13013	-2.02904	0.04245

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANCE= -2*LOG(LIKELIHOOD) = 2033.120922244047
NUMBER OF FREE PARAMETERS = 13

+-----+
| RANDOM PART OF MODEL |
+-----+

LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.18766	0.26713	0.70252	0.48236
gender /intcept	-0.04175	0.22708	-0.18387	0.85412
gender /gender	0.19463	0.35264	0.55193	0.58100
tenure /intcept	-0.03754	0.14937	-0.25130	0.80158
tenure /gender	0.00419	0.17992	0.02327	0.98144
tenure /tenure	0.00974	0.16280	0.05981	0.95231
LEVEL 1	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	1.21790	0.07836	15.54186	0.00000

LEVEL 2 COVARIANCE MATRIX			
	intcept	gender	tenure
intcept	0.18766		
gender	-0.04175	0.19463	
tenure	-0.03754	0.00419	0.00974

LEVEL 2 CORRELATION MATRIX			
	intcept	gender	tenure
intcept	1.0000		
gender	-0.2185	1.0000	
tenure	-0.8781	0.0962	1.0000

LEVEL 1 COVARIANCE MATRIX

intcept

intcept 1.21790

LEVEL 1 CORRELATION MATRIX

intcept

intcept 1.0000

CONVERGENCE NOT REACHED AFTER SPECIFIED MAXIMUM OF 10 ITERATIONS

ITERATION NUMBER 10

+-----+
| FIXED PART OF MODEL |
+-----+

COEFFICIENTS	BETA-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	1.05848	0.08513	12.43353	0.00000
gender	0.22816	0.12187	1.87217	0.06118
tenure	0.02372	0.01066	2.22506	0.02608
wu_size	0.02737	0.02612	1.04811	0.29459
JC	-0.40910	0.09828	-4.16279	0.00003
PJ	-0.30636	0.13812	-2.21804	0.02655

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANCE= -2*LOG(LIKELIHOOD) = 1679.390293939341
NUMBER OF FREE PARAMETERS = 13

+-----+
| RANDOM PART OF MODEL |
+-----+

LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.00811	0.08524	0.09511	0.92423

gender /intcept	-0.02211	0.09305	-0.23765	0.81215
gender /gender	0.09323	0.17531	0.53180	0.59486
tenure /intcept	-0.00066	0.00880	-0.07520	0.94005
tenure /gender	-0.00215	0.01022	-0.21078	0.83306
tenure /tenure	0.00128	0.00111	1.15106	0.24971

LEVEL 1	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	1.29182	0.09306	13.88096	0.00000

LEVEL 2 COVARIANCE MATRIX

	intcept	gender	tenure
intcept	0.00811		
gender	-0.02211	0.09323	
tenure	-0.00066	-0.00215	0.00128

LEVEL 2 CORRELATION MATRIX

	intcept	gender	tenure
intcept	1.0000		
gender	-0.8044	1.0000	
tenure	-0.2054	-0.1971	1.0000

LEVEL 1 COVARIANCE MATRIX

intcept	1.29182
---------	---------

LEVEL 1 CORRELATION MATRIX

intcept	1.0000
---------	--------

+-----+
| CPU TIME (SECONDS) : 0.091 |
+-----+

=====
| END OF ANALYSIS |
=====

HLM. Dependent variable: emotional exhaustion (Sample 2).

Null model.

+-----+ DATA SUMMARY +-----+												
NUMBER OF LEVEL 2 UNITS :			111									
NUMBER OF LEVEL 1 UNITS :			692									
N2 :	1	2	3	4	5	6	7	8				
N1 :	7	5	10	7	7	8	6	7				
N2 :	9	10	11	12	13	14	15	16				
N1 :	7	5	7	3	6	9	3	9				
N2 :	17	18	19	20	21	22	23	24				
N1 :	6	7	8	8	8	5	3	10				
N2 :	25	26	27	28	29	30	31	32				
N1 :	9	4	7	6	8	3	3	4				
N2 :	33	34	35	36	37	38	39	40				
N1 :	8	5	9	8	9	10	5	6				
N2 :	41	42	43	44	45	46	47	48				
N1 :	5	7	7	9	5	9	6	8				
N2 :	49	50	51	52	53	54	55	56				
N1 :	4	7	5	7	3	4	8	4				
N2 :	57	58	59	60	61	62	63	64				
N1 :	6	3	4	3	9	9	6	5				
N2 :	65	66	67	68	69	70	71	72				
N1 :	8	9	7	4	4	3	8	6				
N2 :	73	74	75	76	77	78	79	80				
N1 :	5	3	8	4	3	7	5	7				
N2 :	81	82	83	84	85	86	87	88				
N1 :	8	7	9	7	7	5	9	6				
N2 :	89	90	91	92	93	94	95	96				
N1 :	8	6	4	6	3	3	4	3				
N2 :	97	98	99	100	101	102	103	104				
N1 :	7	3	9	9	19	4	4	4				
N2 :	105	106	107	108	109	110	111					
N1 :	6	5	5	3	9	6						

=====

ITERATION NUMBER 1				
+-----+ FIXED PART OF MODEL +-----+				
COEFFICIENTS	BETA-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	2.04365	0.04482	45.60166	0.00000
+-----+ -2 LOG-LIKELIHOOD +-----+				
DEVIANCE= -2*LOG(LIKELIHOOD) = 2489.683037764057				
NUMBER OF FREE PARAMETERS = 3				
+-----+ RANDOM PART OF MODEL +-----+				
LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.22726	0.15582	1.45853	0.14469
+-----+ RANDOM PART OF MODEL +-----+				
LEVEL 1	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	1.29459	0.05571	23.23674	0.00000
LEVEL 2 COVARIANCE MATRIX				
intcept				
intcept	0.22726			
LEVEL 2 CORRELATION MATRIX				

```
intcept
intcept      1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
intcept      1.29459

LEVEL 1 CORRELATION MATRIX
intcept
intcept      1.0000

-----
CONVERGENCE REACHED IN 3 ITERATIONS
-----

ITERATION NUMBER      3

+-----+
| FIXED PART OF MODEL |
+-----+

-----
COEFFICIENTS      BETA-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept      2.02443      0.06180      32.75609      0.00000

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANCE= -2*LOG(LIKELIHOOD) = 2425.661598740825
NUMBER OF FREE PARAMETERS = 3

+-----+
| RANDOM PART OF MODEL |
+-----+

-----
intcept
intcept      0.22297      0.05735      3.88784      0.00010

LEVEL 2 COVARIANCE MATRIX
intcept
intcept      0.22297

LEVEL 2 CORRELATION MATRIX
intcept
intcept      1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
intcept      1.29564

LEVEL 1 CORRELATION MATRIX
intcept
intcept      1.0000

+-----+
| CPU TIME (SECONDS) :      0.026 |
+-----+

+-----+
| END OF ANALYSIS |
+-----+

+-----+
| DATA SUMMARY |
+-----+
```

Model 1.

+-----+

NUMBER OF LEVEL 2 UNITS : 111
NUMBER OF LEVEL 1 UNITS : 692

N2 : 1 2 3 4 5 6 7 8
N1 : 7 5 10 7 7 8 6 7

N2 : 9 10 11 12 13 14 15 16
N1 : 7 5 7 3 6 9 3 9

N2 : 17 18 19 20 21 22 23 24
N1 : 6 7 8 8 8 5 3 10

N2 : 25 26 27 28 29 30 31 32
N1 : 9 4 7 6 8 3 3 4

N2 : 33 34 35 36 37 38 39 40
N1 : 8 5 9 8 9 10 5 6

N2 : 41 42 43 44 45 46 47 48
N1 : 5 7 7 9 5 9 6 8

N2 : 49 50 51 52 53 54 55 56
N1 : 4 7 5 7 3 4 8 4

N2 : 57 58 59 60 61 62 63 64
N1 : 6 3 4 3 9 9 6 5

N2 : 65 66 67 68 69 70 71 72
N1 : 8 9 7 4 4 3 8 6

N2 : 73 74 75 76 77 78 79 80
N1 : 5 3 8 4 3 7 5 7

N2 : 81 82 83 84 85 86 87 88
N1 : 8 7 9 7 7 5 9 6

N2 : 89 90 91 92 93 94 95 96
N1 : 8 6 4 6 3 3 4 3

N2 : 97 98 99 100 101 102 103 104
N1 : 7 3 9 9 19 4 4 4

N2 : 105 106 107 108 109 110 111
N1 : 6 5 5 3 9 6 5

=====

ITERATION NUMBER 1

+-----+
| FIXED PART OF MODEL |
+-----+

COEFFICIENTS	BETA-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	1.82422	0.13973	13.05550	0.00000
gender	0.05486	0.10497	0.52262	0.60124
tenure	-0.00030	0.00063	-0.47898	0.63195
wu_size	0.02682	0.01735	1.54603	0.12210

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANCE= -2*LOG(LIKELIHOOD) = 3174.014540070573
NUMBER OF FREE PARAMETERS = 11

+-----+
| RANDOM PART OF MODEL |
+-----+

LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.17327	0.18836	0.91990	0.35762
gender /intcept	0.05954	0.18028	0.33024	0.74122
gender /gender	-0.10546	0.31303	-0.33690	0.73619
tenure /intcept	-0.00136	0.11577	-0.01177	0.99061
tenure /gender	-0.00160	0.15620	-0.01027	0.99181
tenure /tenure	-0.00001	0.13427	-0.00010	0.99992

LEVEL 1	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	1.23177	0.06968	17.67852	0.00000

LEVEL 2 COVARIANCE MATRIX

	intcept	gender	tenure
intcept	0.17800		
gender	0.03643	0.00746	
tenure	-0.00162	-0.00033	0.00001

NUMBER OF FREE PARAMETERS = 11									
+-----+ RANDOM PART OF MODEL +-----+									
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000	intcept	gender	tenure					
gender	1.0000	gender	intcept	tenure					
tenure	-0.9969	tenure	intcept	gender					
LEVEL 1 COVARIANCE MATRIX									
intcept	1.23177								
LEVEL 1 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 2 COVARIANCE MATRIX									
intcept	0.22051								
gender	0.02221	gender	intcept	tenure					
tenure	0.00049	tenure	intcept	gender					
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 COVARIANCE MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 2 COVARIANCE MATRIX									
intcept	0.22051								
gender	0.02221	gender	intcept	tenure					
tenure	0.00049	tenure	intcept	gender					
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 COVARIANCE MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 2 COVARIANCE MATRIX									
intcept	0.22051								
gender	0.02221	gender	intcept	tenure					
tenure	0.00049	tenure	intcept	gender					
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 COVARIANCE MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 2 COVARIANCE MATRIX									
intcept	0.22051								
gender	0.02221	gender	intcept	tenure					
tenure	0.00049	tenure	intcept	gender					
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 COVARIANCE MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 2 COVARIANCE MATRIX									
intcept	0.22051								
gender	0.02221	gender	intcept	tenure					
tenure	0.00049	tenure	intcept	gender					
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 COVARIANCE MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 2 COVARIANCE MATRIX									
intcept	0.22051								
gender	0.02221	gender	intcept	tenure					
tenure	0.00049	tenure	intcept	gender					
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 COVARIANCE MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 2 COVARIANCE MATRIX									
intcept	0.22051								
gender	0.02221	gender	intcept	tenure					
tenure	0.00049	tenure	intcept	gender					
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 COVARIANCE MATRIX									
intcept	1.0000								
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tenure	0.3288	tenure	intcept	gender					
LEVEL 1 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 2 COVARIANCE MATRIX									
intcept	0.22051								
gender	0.02221	gender	intcept	tenure					
tenure	0.00049	tenure	intcept	gender					
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 COVARIANCE MATRIX									
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tenure	0.3288	tenure	intcept	gender					
LEVEL 1 CORRELATION MATRIX									
intcept	1.0000								
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tenure	0.3288	tenure	intcept	gender					
LEVEL 2 COVARIANCE MATRIX									
intcept	0.22051								
gender	0.02221	gender	intcept	tenure					
tenure	0.00049	tenure	intcept	gender					
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000								
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tenure	0.3288	tenure	intcept	gender					
LEVEL 1 COVARIANCE MATRIX									
intcept	1.0000								
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tenure	0.3288	tenure	intcept	gender					
LEVEL 1 CORRELATION MATRIX									
intcept	1.0000								
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tenure	0.3288	tenure	intcept	gender					
LEVEL 2 COVARIANCE MATRIX									
intcept	0.22051								
gender	0.02221	gender	intcept	tenure					
tenure	0.00049	tenure	intcept	gender					
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 COVARIANCE MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 2 COVARIANCE MATRIX									
intcept	0.22051								
gender	0.02221	gender	intcept	tenure					
tenure	0.00049	tenure	intcept	gender					
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 COVARIANCE MATRIX									
intcept	1.0000								
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tenure	0.3288	tenure	intcept	gender					
LEVEL 1 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 2 COVARIANCE MATRIX									
intcept	0.22051								
gender	0.02221	gender	intcept	tenure					
tenure	0.00049	tenure	intcept	gender					
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 COVARIANCE MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 2 COVARIANCE MATRIX									
intcept	0.22051								
gender	0.02221	gender	intcept	tenure					
tenure	0.00049	tenure	intcept	gender					
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 COVARIANCE MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 2 COVARIANCE MATRIX									
intcept	0.22051								
gender	0.02221	gender	intcept	tenure					
tenure	0.00049	tenure	intcept	gender					
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 COVARIANCE MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 2 COVARIANCE MATRIX									
intcept	0.22051								
gender	0.02221	gender	intcept	tenure					
tenure	0.00049	tenure	intcept	gender					
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 COVARIANCE MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 2 COVARIANCE MATRIX									
intcept	0.22051								
gender	0.02221	gender	intcept	tenure					
tenure	0.00049	tenure	intcept	gender					
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 COVARIANCE MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 2 COVARIANCE MATRIX									
intcept	0.22051								
gender	0.02221	gender	intcept	tenure					
tenure	0.00049	tenure	intcept	gender					
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 COVARIANCE MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 2 COVARIANCE MATRIX									
intcept	0.22051								
gender	0.02221	gender	intcept	tenure					
tenure	0.00049	tenure	intcept	gender					
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 COVARIANCE MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 2 COVARIANCE MATRIX									
intcept	0.22051								
gender	0.02221	gender	intcept	tenure					
tenure	0.00049	tenure	intcept	gender					
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 COVARIANCE MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 2 COVARIANCE MATRIX									
intcept	0.22051								
gender	0.02221	gender	intcept	tenure					
tenure	0.00049	tenure	intcept	gender					
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 COVARIANCE MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 1 CORRELATION MATRIX									
intcept	1.0000								
gender	1.0000	gender	intcept	tenure					
tenure	0.3288	tenure	intcept	gender					
LEVEL 2 COVARIANCE MATRIX									
intcept	0.22051								
gender	0.02221	gender	intcept	tenure					
tenure	0.00049	tenure	intcept	gender					
LEVEL 2 CORRELATION MATRIX									
intcept	1.0000</								

```
intcept      1.0000
+-----+
| CPU TIME (SECONDS) :      0.042 |
+-----+

|=====|
| END OF ANALYSIS |
|=====|

=====
```

Model 2.

```
+-----+
| DATA SUMMARY |
+-----+

NUMBER OF LEVEL 2 UNITS :      111
NUMBER OF LEVEL 1 UNITS :      692

N2 :      1      2      3      4      5      6      7      8
N1 :      7      5      10     11     12     13     14     15     16
N2 :      9      10     11     12     13     14     15     16
N1 :      7      5      7      3      6      9      3      9
N2 :      17     18     19     20     21     22     23     24
N1 :      6      7      8      8      8      5      3      10
N2 :      25     26     27     28     29     30     31     32
N1 :      9      4      7      6      8      3      3      4
N2 :      33     34     35     36     37     38     39     40
N1 :      8      5      9      8      9      10     5      6
N2 :      41     42     43     44     45     46     47     48
N1 :      5      7      7      9      5      9      6      8
N2 :      49     50     51     52     53     54     55     56
N1 :      4      7      5      7      3      4      8      4
N2 :      57     58     59     60     61     62     63     64
N1 :      6      3      4      3      9      9      6      5
N2 :      65     66     67     68     69     70     71     72
N1 :      8      9      7      4      4      3      8      6
N2 :      73     74     75     76     77     78     79     80
N1 :      5      3      8      4      3      7      5      7
N2 :      81     82     83     84     85     86     87     88
N1 :      8      7      9      7      7      5      9      6
```

```
ITERATION NUMBER      1
+-----+
| FIXED PART OF MODEL |
+-----+
```

```
-----
COEFFICIENTS      BETA-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept      1.89241      0.13785      13.72774      0.00000
gender      0.03787      0.10313      0.36716      0.71350
tenure     -0.00034      0.00061      -0.54621      0.58492
wu_size      0.01962      0.01709      1.14803      0.25095
JC      -0.45741      0.08895      -5.14247      0.00000

+-----+
| -2 LOG-LIKELIHOOD |
+-----+
```

DEVIANCE= -2*LOG(LIKELIHOOD) = 3169.365373414577
NUMBER OF FREE PARAMETERS = 12

```
-----
LEVEL 2      TAU-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept /intcept      0.11839      0.18836      0.62854      0.52965
gender /intcept      0.10731      0.18028      0.59526      0.55167
gender /gender     -0.09816      0.31303      -0.31358      0.75384
tenure /intcept     -0.00146      0.11577      -0.01261      0.98994
tenure /gender     -0.00156      0.15620      -0.00999      0.99203
```

tenure /tenure 0.00003 0.13427 0.00025 0.99980

LEVEL 1				
	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	1.22998	0.06968	17.65282	0.00000

LEVEL 2 COVARIANCE MATRIX

intcept gender tenure

intcept 0.13901
gender 0.05722 0.02355
tenure -0.00180 -0.00074 0.00004

LEVEL 2 CORRELATION MATRIX

intcept gender tenure

intcept 1.0000
gender 1.0000 1.0000
tenure -0.7724 -0.7725 1.0000

LEVEL 1 COVARIANCE MATRIX

intcept

intcept 1.22998

LEVEL 1 CORRELATION MATRIX

intcept

intcept 1.0000

CONVERGENCE REACHED IN 6 ITERATIONS

ITERATION NUMBER 6

+-----+
| FIXED PART OF MODEL |
+-----+

COEFFICIENTS				
	BETA-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	1.82911	0.18473	9.90175	0.00000
gender	0.09751	0.10382	0.93922	0.34762
tenure	0.00025	0.00068	0.36362	0.71614
wu_size	0.02837	0.02418	1.17311	0.24075
JC	-0.48358	0.11370	-4.25329	0.00002

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANCE= -2*LOG(LIKELIHOOD) = 2173.447239602227
NUMBER OF FREE PARAMETERS = 12

+-----+
| RANDOM PART OF MODEL |
+-----+

LEVEL 2				
	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.16607	0.05170	3.21198	0.00132
gender /intcept	0.07732	0.05982	1.29261	0.19614
gender /gender	0.01766	0.14352	0.12302	0.90209
tenure /intcept	0.00028	0.00039	0.70799	0.47895
tenure /gender	0.00011	0.00064	0.17912	0.85784
tenure /tenure	0.00000	0.00001	0.82462	0.40959

LEVEL 1				
	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	1.21162	0.07776	15.58229	0.00000

LEVEL 2 COVARIANCE MATRIX

intcept gender tenure

intcept 0.16843
gender 0.07180 0.03061
tenure 0.00028 0.00012 0.00000

LEVEL 2 CORRELATION MATRIX

intcept gender tenure

```
intcept      1.0000
gender       1.0000
tenure       0.3242    1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
1.21162

LEVEL 1 CORRELATION MATRIX
intcept
1.0000

+-----+
| CPU TIME (SECONDS) :      0.036 |
+-----+

=====|
| END OF ANALYSIS |
|=====|

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```

Model 3.

```
+-----+
| DATA SUMMARY |
+-----+

NUMBER OF LEVEL 2 UNITS :      111
NUMBER OF LEVEL 1 UNITS :      692

N2 :      1      2      3      4      5      6      7      8
N1 :      7      5      10     7      7      8      6      7

N2 :      9      10     11     12     13     14     15     16
N1 :      7      5      7      3      6      9      3      9

N2 :      17     18     19     20     21     22     23     24
N1 :      6      7      8      8      8      5      3     10

N2 :      25     26     27     28     29     30     31     32
N1 :      9      4      7      6      8      3      3      4

N2 :      33     34     35     36     37     38     39     40
N1 :      8      5      9      8      9     10     5      6

+-----+-----+-----+-----+-----+-----+
| FIXED PART OF MODEL |
+-----+-----+-----+-----+-----+-----+

COEFFICIENTS      BETA-HAT      STD.ERR.      Z-VALUE      PR > |Z|
-----
intcept           1.90706           0.13919          13.70072          0.00000
gender            0.04269           0.10335           0.41305          0.67957
tenure           -0.00034           0.00061          -0.54633          0.58484
wu_size           0.01760           0.01730           1.01719          0.30906
JC               -0.41664           0.10348          -4.02647          0.00006
PJ               -0.08384           0.10864          -0.77171          0.44029

+-----+-----+-----+-----+-----+-----+
| -2 LOG-LIKELIHOOD |
+-----+-----+-----+-----+-----+-----+
```

Anexo II – Resultados

```
intcept 1.0000
intcept
```

----- CONVERGENCE REACHED IN 6 ITERATIONS -----

ITERATION NUMBER 6

| FIXED PART OF MODEL |

COEFFICIENTS	BETA-HAT	STD.ERR.	Z-VALUE	PR > z
intcept	1.85160	0.18727	9.88714	0.00000
gender	0.10037	0.10394	0.96567	0.33421
tenure	0.00024	0.00068	0.35599	0.72185
wu_size	0.02526	0.02454	1.02917	0.30340
JC	-0.43766	0.13143	-3.32990	0.00087
PJ	-0.09830	0.13954	-0.70444	0.48116

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

```
DEVIANCE= -2*LOG(LIKELIHOOD) = 2172.954158751354
NUMBER OF FREE PARAMETERS = 13
```

+-----+
| RANDOM PART OF MODEL |
+-----+

LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intercept /intercept	0.16492	0.05164	3.19398	0.00140
gender /intercept	0.07907	0.05978	1.32269	0.18594
gender /gender	0.01318	0.14358	0.09179	0.92687
tenure /intercept	0.00025	0.00039	0.64110	0.52146
tenure /gender	0.00012	0.00064	0.19597	0.84463
tenure /tenure	0.00001	0.00001	0.78682	0.43139

```
DEVIANCE= -2*LOG(LIKELIHOOD) = 3169.607808168032
NUMBER OF FREE PARAMETERS = 13
```

	RANDOM PART OF MODEL
--	----------------------

LEVEL 2	TAU-RAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.12219	0.18836	0.64872	0.51652
gender /intcept	0.10356	0.18028	0.57445	0.56566
gender /gender	-0.10054	0.31303	-0.32119	0.74807
tenure /intcept	-0.00146	0.11577	-0.01264	0.98991
tenure /gender	-0.00157	0.15620	-0.01008	0.99196
tenure /tenure	0.00003	0.113427	0.00024	0.99981

LEVEL 1	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intercept /intercept	1.23010	0.06968	17.65451	0.00000

LEVEL 2 COVARIANCE MATRIX

	intcpt	gender	tenure
intcpt	0.14109		
gender	0.05547	0.02181	
tenure	-0.00180	-0.00071	0.00004

LEVEL 2 CORRELATION MATRIX

	intcpt	gender	tenure
intcpt	1.0000		
gender	1.0000	1.0000	
tenure	-0.7812	-0.7812	1.0000

LEVEL 1 COVARIANCE MATRIX

```
intcept
intcept 1.23010
```

LEVEL 1 CORRELATION MATRIX


```

ITERATION NUMBER      1
                                +-----+
                                | FIXED PART OF MODEL |
                                +-----+

-----
COEFFICIENTS          BETA-HAT   STD.ERR.   Z-VALUE   PR > |Z|
-----
intcept              1.14735     0.04345     26.40867     0.00000

                                +-----+
                                | -2 LOG-LIKELIHOOD |
                                +-----+

DEVIANCE= -2*LOG(LIKELIHOOD) =  2472.187964498013
NUMBER OF FREE PARAMETERS =    3

                                +-----+
                                | RANDOM PART OF MODEL |
                                +-----+

-----
LEVEL 2
                                TAU-HAT   STD.ERR.   Z-VALUE   PR > |Z|
-----
intcept /intcept      0.15727     0.15582     1.00932     0.31282

-----
LEVEL 1
                                TAU-HAT   STD.ERR.   Z-VALUE   PR > |Z|
-----
intcept /intcept      1.27827     0.05571     22.94379     0.00000

LEVEL 2 COVARIANCE MATRIX
intcept
intcept    0.15727

LEVEL 2 CORRELATION MATRIX
intcept
intcept    1.0000

LEVEL 1 COVARIANCE MATRIX
intcept
intcept    1.27827

LEVEL 1 CORRELATION MATRIX
intcept
intcept    1.0000

-----
CONVERGENCE REACHED IN    3 ITERATIONS
-----

ITERATION NUMBER      3
                                +-----+
                                | FIXED PART OF MODEL |
                                +-----+

-----
COEFFICIENTS          BETA-HAT   STD.ERR.   Z-VALUE   PR > |Z|
-----
intcept              1.13248     0.05566     20.34595     0.00000

                                +-----+
                                | -2 LOG-LIKELIHOOD |
                                +-----+

DEVIANCE= -2*LOG(LIKELIHOOD) =  2396.082748771611
NUMBER OF FREE PARAMETERS =    3

                                +-----+
                                | RANDOM PART OF MODEL |
                                +-----+

-----
LEVEL 2
                                TAU-HAT   STD.ERR.   Z-VALUE   PR > |Z|
-----
intcept /intcept      0.14645     0.04660     3.14247     0.00168

-----
```

LEVEL 1		TAU-HAT		STD.BRR.		Z-VALUE		PR > Z	
intcept /intcept		1.28214		0.07119		18.01020		0.00000	
LEVEL 2 COVARIANCE MATRIX									
intcept									
intcept		0.14645							
LEVEL 2 CORRELATION MATRIX									
intcept									
intcept		1.0000							
LEVEL 1 COVARIANCE MATRIX									
intcept									
intcept		1.28214							
LEVEL 1 CORRELATION MATRIX									
intcept									
intcept		1.0000							
+-----+ CPU TIME (SECONDS) : 0.027 +-----+									
===== END OF ANALYSIS =====									

Model 1.

+-----+ DATA SUMMARY +-----+									
ITERATION NUMBER 1									
+-----+ FIXED PART OF MODEL +-----+									
NUMBER OF LEVEL 2 UNITS : 111									
NUMBER OF LEVEL 1 UNITS : 692									
N2 : 1 2 3 4 5 6 7 8									
N1 : 7 5 10 7 8 6 7									

COEFFICIENTS					BETA-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept				0.89091	0.13501	6.59884	0.00000	
gender				0.21009	0.10142	2.07145	0.03832	
tenure				0.00092	0.00060	1.52013	0.12848	
wu_size				0.03180	0.01676	1.89721	0.05780	
+-----+ -2 LOG-LIKELIHOOD +-----+								
DEVIANCE= -2*LOG(LIKELIHOOD) = 3166.460354573320								
NUMBER OF FREE PARAMETERS = 11								
+-----+ RANDOM PART OF MODEL +-----+								
LEVEL 2								
intcept	intcept			0.16257	0.18836	0.86308	0.38809	
gender	intcept			0.09958	0.18028	0.55237	0.58070	
gender	gender			0.08894	0.31303	0.28413	0.77631	
tenure	intcept			0.00168	0.11577	0.01453	0.98841	
tenure	gender			0.00125	0.15620	0.00801	0.99361	
tenure	tenure			-0.00003	0.13427	-0.00025	0.99980	
LEVEL 1								
intcept	intcept			1.20019	0.06968	17.22524	0.00000	
LEVEL 2 COVARIANCE MATRIX								
	intcept	gender	tenure					
intcept				0.16257				
gender				0.09958	0.08894			
tenure				0.00168	0.00125	0.00002		
LEVEL 2 CORRELATION MATRIX								
	intcept	gender	tenure					
intcept				1.0000				
gender				0.8281	1.0000			

=====					END OF ANALYSIS					=====					
LEVEL 2					TAU-HAT	STD.ERR.	Z-VALUE	PR > Z							

intcept	/intcept	0.14406	0.04803	2.99949	0.00270										
gender	/intcept	0.06737	0.05787	1.16432	0.24430										
gender	/gender	0.06841	0.14720	0.46473	0.64212										
tenure	/intcept	0.00078	0.00039	2.00797	0.04465										
tenure	/gender	0.00050	0.00066	0.75352	0.45114										
tenure	/tenure	0.00000	0.00001	0.45830	0.64674										

LEVEL 1					TAU-HAT	STD.ERR.	Z-VALUE	PR > Z							

intcept	/intcept	1.19805	0.07681	15.59778	0.00000										

LEVEL 2 COVARIANCE MATRIX															
	intcept	gender	tenure												
intcept	0.14406														
gender	0.06737	0.06841													
tenure	0.00078	0.00050	0.00000												

LEVEL 2 CORRELATION MATRIX															
	intcept	gender	tenure												
intcept	1.0000														
gender	0.6787	1.0000													
tenure	0.9394	0.8680	1.0000												

LEVEL 1 COVARIANCE MATRIX															
	intcept														
intcept	1.19805														

LEVEL 1 CORRELATION MATRIX															
	intcept														
intcept	1.0000														

										</					

N2 :	105	106	107	108	109	110	111
N1 :	6	5	5	3	9	6	5
=====							
+-----+ FIXED PART OF MODEL +-----+							
=====							
ITERATION NUMBER 1							
=====							
COEFFICIENTS							
	BETA-HAT	STD.ERR.	Z-VALUE	PR > Z			
intcept	0.95546	0.13330	7.16770	0.00000			
gender	0.19400	0.09972	1.94540	0.05173			
tenure	0.00088	0.00059	1.48944	0.13637			
wu_size	0.02499	0.01653	1.51182	0.13058			
JC	-0.43301	0.08601	-5.03446	0.00000			
=====							
+-----+ -2 LOG-LIKELIHOOD +-----+							
=====							
DEVIANCE= -2*LOG(LIKELIHOOD) = 3161.278814066876							
NUMBER OF FREE PARAMETERS = 12							
+-----+ RANDOM PART OF MODEL +-----+							
=====							
LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z			
intcept /intcept	0.10131	0.18836	0.53787	0.59067			
gender /intcept	0.13185	0.18028	0.73139	0.46454			
gender /gender	0.09805	0.31303	0.31322	0.75411			
tenure /intcept	0.00125	0.11577	0.01078	0.99140			
tenure /gender	0.00092	0.15620	0.00589	0.99530			
tenure /tenure	-0.00005	0.13427	-0.00038	0.99970			
=====							
LEVEL 1	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z			
intcept /intcept	1.19812	0.06968	17.19547	0.00000			
=====							

```
gender      0.23527      0.10535      2.23325      0.02553
tenure      0.00153      0.00069      2.22373      0.02617
wu_size     0.02420      0.02062      1.17363      0.24054
JC          -0.49202      0.10174     -4.83617      0.00000
```

```
+-----+
| -2 LOG-LIKELIHOOD |
+-----+
```

```
DEVIANCE= -2*LOG(LIKELIHOOD) = 2133.200688200991
NUMBER OF FREE PARAMETERS = 12
```

```
+-----+
| RANDOM PART OF MODEL |
+-----+
```

LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.10030	0.04328	2.31743	0.02048
gender /intcept	0.10704	0.05527	1.93670	0.05278
gender /gender	0.06548	0.14836	0.44135	0.65896
tenure /intcept	0.00090	0.00036	2.47061	0.01349
tenure /gender	0.00041	0.00066	0.61559	0.53817
tenure /tenure	0.00000	0.00001	0.30531	0.76013

LEVEL 1	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	1.19734	0.07656	15.63979	0.00000

LEVEL 2 COVARIANCE MATRIX

	intcept	gender	tenure
intcept	0.11103		
gender	0.09443	0.08031	
tenure	0.00072	0.00061	0.00000

LEVEL 2 CORRELATION MATRIX

	intcept	gender	tenure
intcept	1.0000		
gender	1.0000	1.0000	
tenure	0.9899	0.9899	1.0000

LEVEL 1 COVARIANCE MATRIX

	intcept
intcept	1.19734

LEVEL 1 CORRELATION MATRIX

	intcept
intcept	1.0000

```
+-----+
| CPU TIME (SECONDS) :      0.035 |
+-----+
```

```
|=====|
| END OF ANALYSIS |
|=====|
```

Model 3.

```
+-----+
| DATA SUMMARY |
+-----+
```

```
NUMBER OF LEVEL 2 UNITS : 111
NUMBER OF LEVEL 1 UNITS : 692
```

N2 :	1	2	3	4	5	6	7	8
N1 :	7	5	10	7	7	8	6	7
N2 :	9	10	11	12	13	14	15	16
N1 :	7	5	7	3	6	9	3	9
N2 :	17	18	19	20	21	22	23	24
N1 :	6	7	8	8	8	5	3	10
N2 :	25	26	27	28	29	30	31	32
N1 :	9	4	7	6	8	3	3	4
N2 :	33	34	35	36	37	38	39	40
N1 :	8	5	9	8	9	10	5	6
N2 :	41	42	43	44	45	46	47	48
N1 :	5	7	7	9	5	9	6	8
N2 :	49	50	51	52	53	54	55	56
N1 :	4	7	5	7	3	4	8	4

```
N2 : 57 58 59 60 61 62 63 64
N1 : 6 3 4 3 9 9 6 5

N2 : 65 66 67 68 69 70 71 72
N1 : 8 9 7 4 4 3 8 6

N2 : 73 74 75 76 77 78 79 80
N1 : 5 3 8 4 3 7 5 7

N2 : 81 82 83 84 85 86 87 88
N1 : 8 7 9 7 7 5 9 6

N2 : 89 90 91 92 93 94 95 96
N1 : 8 6 4 6 3 3 4 3

N2 : 97 98 99 100 101 102 103 104
N1 : 7 3 9 9 19 4 4 4

N2 : 105 106 107 108 109 110 111
N1 : 6 5 5 3 9 6 5

=====
ITERATION NUMBER 1

+-----+
| FIXED PART OF MODEL |
+-----+

-----
COEFFICIENTS      BETA-HAT  STD.ERR.  Z-VALUE  PR > |Z|
-----
intcept           1.00115    0.13405    7.46867    0.00000
gender             0.20905    0.09953    2.10041    0.03569
tenure             0.00088    0.00059    1.49421    0.13512
wu_size            0.01866    0.01666    1.12039    0.26255
JC                 -0.30585    0.09965   -3.06928    0.00215
PJ                 -0.26150    0.10462   -2.49951    0.01244

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANC= -2*LOG(LIKELIHOOD) = 3161.456216906707
NUMBER OF FREE PARAMETERS = 13
```

```
+-----+
| RANDOM PART OF MODEL |
+-----+

-----
LEVEL 2      TAU-HAT  STD.ERR.  Z-VALUE  PR > |Z|
-----
intcept /intcept      0.10397    0.18836    0.55200    0.58095
gender /intcept       0.11789    0.18028    0.65392    0.51316
gender /gender         0.09040    0.31303    0.28879    0.77274
tenure /intcept        0.00127    0.11577    0.01099    0.99123
tenure /gender         0.00081    0.15620    0.00517    0.99587
tenure /tenure        -0.00005    0.13427   -0.00039    0.99969

-----
LEVEL 1      TAU-HAT  STD.ERR.  Z-VALUE  PR > |Z|
-----
intcept /intcept      1.19873    0.06968    17.20427    0.00000
```

LEVEL 2 COVARIANCE MATRIX

```
intcept  intcept  gender  tenure
gender    0.11382      0.10746    0.10145
tenure    0.00108      0.00102    0.00001
```

LEVEL 2 CORRELATION MATRIX

```
intcept  intcept  gender  tenure
gender    1.0000      1.0000      1.0000
tenure    0.9947      0.9947      1.0000
```

LEVEL 1 COVARIANCE MATRIX

```
intcept  intcept  gender  tenure
gender    1.0000      1.0000      1.0000
tenure    0.9947      0.9947      1.0000
```

LEVEL 1 CORRELATION MATRIX

```
intcept  intcept  gender  tenure
gender    1.0000      1.0000      1.0000
tenure    0.9947      0.9947      1.0000
```

CONVERGENCE REACHED IN 5 ITERATIONS

ITERATION NUMBER 5

+-----+
| FIXED PART OF MODEL |
+-----+

COEFFICIENTS	BETA-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept	1.02812	0.16120	6.37783	0.00000
gender	0.24284	0.10469	2.31961	0.02036
tenure	0.00156	0.00070	2.23569	0.02537
wu_size	0.01731	0.02069	0.83673	0.40274
JC	-0.36447	0.11696	-3.11614	0.00183
PJ	-0.25893	0.12313	-2.10283	0.03548

+-----+
| -2 LOG-LIKELIHOOD |
+-----+

DEVIANCE= -2*LOG(LIKELIHOOD) = 2128.886984827523
NUMBER OF FREE PARAMETERS = 13

+-----+
| RANDOM PART OF MODEL |
+-----+

LEVEL 2	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	0.08927	0.04265	2.09331	0.03632
gender /intcept	0.10410	0.05426	1.91843	0.05506
gender /gender	0.04278	0.14677	0.29149	0.77068
tenure /intcept	0.00090	0.00036	2.47187	0.01344
tenure /gender	0.00041	0.00067	0.61834	0.53635

tenure /tenure	0.00000	0.00001	0.17712	0.85942
LEVEL 1	TAU-HAT	STD.ERR.	Z-VALUE	PR > Z
intcept /intcept	1.20348	0.07696	15.63810	0.00000

LEVEL 2 COVARIANCE MATRIX

	intcept	gender	tenure
intcept	0.10517		
gender	0.08427	0.06753	
tenure	0.00075	0.00060	0.00001

LEVEL 2 CORRELATION MATRIX

	intcept	gender	tenure
intcept	1.0000		
gender	1.0000	1.0000	
tenure	0.9920	0.9920	1.0000

LEVEL 1 COVARIANCE MATRIX

intcept	
intcept	1.20348

LEVEL 1 CORRELATION MATRIX

intcept	
intcept	1.0000

+-----+
| CPU TIME (SECONDS) : 0.036 |
+-----+
|=====|
| END OF ANALYSIS |
|=====|

5. ESTUDIO 5

OLS, PROCESS macro for SPSS (Sample 1).

```
Run MATRIX procedure:
***** PROCESS Procedure for SPSS Beta Release 130612 *****
Written by Andrew F. Hayes, Ph.D.  http://www.afhayes.com
*****
Model = 1
Y = PJ
X = JC
M = JCstr

Statistical Controls:
CONTROL= wu_size

Sample size
79
*****
Outcome: PJ
*****
```

```
Model Summary
R          R-sq      F          df1      df2      p
.5400      .2916      11.7479      4.0000      74.0000      .0000
```

```
Model
      coeff      se      t      p      LLCI      ULCI
constant  -.1375    .1267   -1.0850   .2814   -.3900   .1150
JCstr      .3079    .1466    2.1006   .0391    .0158    .6000
JC         .1661    .1308    1.2694   .2083   -.0946    .4267
int_1      .2053    .0856    2.3975   .0190    .0347    .3760
wu_size     .0084    .1088    .0775   .9385   -.2084    .2252
```

Interactions:

```
int_1  JC      X      JCstr
*****
```

```
Conditional effect of X on Y at values of the moderator(s)
      JCstr      Effect      se      t      p      LLCI      ULCI
-1.0000      -.0393    .1404   -.2798   .7804   -.3191   .2405
.0000         .1661    .1308    1.2694   .2083   -.0946   .4267
1.0000         .3714    .1708    2.1741   .0329    .0310   .7118
```

Values for quantitative moderators are the mean and plus/minus one SD from mean

```
*****
```

Data for visualizing conditional effect of X of Y

JC	JCstr	Yhat
-1.0000	-1.0000	-.4061
.0000	-1.0000	-.4454
1.0000	-1.0000	-.4847
-1.0000	.0000	-.3036
.0000	.0000	-.1375
1.0000	.0000	.0286
-1.0000	1.0000	-.2010
.0000	1.0000	.1704
1.0000	1.0000	.5418

Estimates in this table are based on setting covariates to their sample means

```
***** ANALYSIS NOTES AND WARNINGS *****
```

Level of confidence for all confidence intervals in output:
95.00

NOTE: The following variables were mean centered prior to analysis:

JC
JCstr

NOTE: All standard errors for continuous outcome models are based on the HC3 estimator

----- END MATRIX -----

OLS, PROCESS macro for SPSS (Sample 2).

Run MATRIX procedure:

```
***** PROCESS Procedure for SPSS Beta Release 130612 *****
```

Written by Andrew F. Hayes, Ph.D. http://www.afhayes.com

```
*****
```

Model = 1

Y = PJ

X = JC

M = JCstr

Statistical Controls:

CONTROL= zcentro_

Sample size

110

```
*****
Outcome: PJ
Model Summary
  R      R-sq      F      df1      df2      p
.5533   .3061  18.3483   4.0000  105.0000   .0000

Model
  constant  JCstr  JC      int_1  Zcentro_
  coeff    se      t      p      LLCI      ULCI
-.0491    .0944   -.5198   .6043   -.2363   .1382
.0654    .1046    .6249   .5334   -.1420   .2727
.3960    .1194    3.3159   .0013   .1592   .6328
.0996    .0599    1.6641   .0991   -.0191   .2183
-.1290    .1057   -1.2202   .2251   -.3386   .0806

Interactions:
  int_1  JC      X      JCstr
*****
Conditional effect of X on Y at values of the moderator(s)
  JCstr  Effect      se      t      p      LLCI      ULCI
-1.0000   .2964    .1428    2.0756   .0404   .0132   .5795
.0000     .3960    .1194    3.3159   .0013   .1592   .6328
1.0000     .4956    .1237    4.0066   .0001   .2504   .7409

Values for quantitative moderators are the mean and plus/minus one SD from mean
*****
Data for visualizing conditional effect of X of Y
  JC      JCstr  yhat
-1.0000  -1.0000  -.4108
.0000    -1.0000  -.1144
1.0000    -1.0000   .1819
-1.0000   .0000  -.4451
.0000    .0000  -.0491
1.0000   .0000   .3469
-1.0000  1.0000  -.4794
.0000    1.0000   .0163
1.0000   1.0000   .5119

Estimates in this table are based on setting covariates to their sample means
*****
***** ANALYSIS NOTES AND WARNINGS *****
Level of confidence for all confidence intervals in output:
95.00

NOTE: The following variables were mean centered prior to analysis:
JC      JCstr

NOTE: All standard errors for continuous outcome models are based on the HC3
estimator

----- END MATRIX -----
```