



UNIVERSIDAD DE SEVILLA

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**LA PROPENSIÓN EFECTUAL Y LA  
PROPENSIÓN CAUSAL COMO  
FACTORES DETERMINANTES DE LAS  
INTENCIONES EMPRENDEDORAS:  
UNA APLICACIÓN EN EL SECTOR  
TURÍSTICO**

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Seis años después presento mi segunda tesis doctoral. Al igual que en aquel momento, ha sido un camino laborioso pero lleno de satisfacciones, junto a compañeros y amigos que han participado en el desarrollo de los tres artículos y en el arduo camino de su publicación.

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# RESUMEN

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En la actualidad, el impulso económico encuentra su motor en el espíritu emprendedor, convirtiéndose en una herramienta esencial para la creación de empleo y la generación de riqueza. En este escenario, el turismo se destaca como una industria con amplias posibilidades para el desarrollo empresarial. Por ello, los países desarrollados reconocen la importancia de fomentar el emprendimiento, especialmente entre los estudiantes universitarios, ya que la educación superior proporciona una plataforma única para cultivar la capacidad de llevar a cabo proyectos empresariales.

La teoría *effectuation* ha analizado el comportamiento emprendedor en términos de lógica causal y lógica efectual. Sin embargo, la literatura aún no ha explorado este comportamiento en individuos que no han iniciado sus propios negocios. Resulta intrigante estudiar la propensión efectual o causal en aquellos individuos que nunca han emprendido. Ante este vacío en la literatura, este trabajo busca analizar el impacto de la propensión efectual y causal en las intenciones emprendedoras, centrándose en una muestra de 242 estudiantes del grado de turismo de las universidades de Cádiz y Sevilla.

Los resultados revelaron que ambas variables son determinantes en las intenciones emprendedoras, contribuyendo así con dos nuevos factores a la academia: la propensión causal y la propensión efectual. Además, estos hallazgos tienen implicaciones prácticas al proporcionar a los agentes públicos y privados herramientas para la evaluación previa de emprendedores potenciales y orientarlos hacia una mejor adaptación a las lógicas efectuales y causales en el entorno empresarial.

**Palabras clave:** Sector turístico, estudiantes universitarios, *effectuation*, propensión efectual, propensión causal, análisis factorial, PLS-SEM

# ABSTRACT

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Today, economic impulse finds its driving force in the entrepreneurial spirit, becoming an essential tool for job creation and wealth generation. In this scenario, tourism stands out as an industry with many possibilities for business development. For this reason, developed countries recognise the importance of encouraging entrepreneurship, especially among university students, as higher education provides a unique platform for cultivating the ability to carry out entrepreneurial projects.

Effectuation theory has analysed entrepreneurial behaviour in terms of causal logic and effectual logic. However, the literature has not yet explored this behaviour in individuals who have not started their businesses. Studying the effectual or causal propensity in individuals who have never been involved in entrepreneurship is intriguing. Given this gap in the literature, this paper seeks to analyse the impact of effectual and causal propensity on entrepreneurial intentions, focusing on a sample of 242 undergraduate students of tourism from the universities of Cadiz and Seville.

The results revealed that both variables are determinants of entrepreneurial intentions, thus contributing two new factors to the academy: causal propensity and effectual propensity. Moreover, these findings have practical implications by providing public and private agents with tools for pre-assessing potential entrepreneurs and guiding them towards better adapting to the effectual and causal logics in the business environment.

**Keywords:** Tourism sector, university students, effectuation, effectual propensity, causal propensity, factor analysis, PLS-SEM.

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# **CAPÍTULO 1**

## **Introducción y objetivos**

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## **Introducción**

En la era contemporánea, el tejido económico global ha experimentado una notable transformación impulsada por el fenómeno del emprendimiento. Este concepto, se posiciona como el motor que impulsa la innovación y el crecimiento en las estructuras económicas. A medida que las economías evolucionan y se adaptan a un entorno que cambia constantemente, comprender el papel que desempeña el emprendimiento se convierte en algo fundamental. De esta manera, la actividad económica está impulsada por el espíritu emprendedor y lo convierte en una herramienta esencial para la creación de empleo y la generación de riqueza (Oosterbeek et al., 2010).

En un contexto de transformación en que surge la necesidad de superar numerosos desafíos económicos, ha surgido la convicción de que los autónomos deben asumir un papel más activo. Además, deben mostrarse como agentes capaces de desarrollar una transformación. Más allá de la mera respuesta a crisis económicas, el autoempleo se presenta como un camino hacia la innovación, la empleabilidad y el desarrollo económico y social. Por un lado, los autónomos, motivados por encontrar soluciones creativas para mantener sus empresas, se convierten en agentes de innovación. Este impulso innovador se traduce en la mejora de productos y servicios, al igual que de la estructura misma de la actividad empresarial para la adaptación y el progreso (Montañés-Del-Río & Medina-Garrido, 2020). Por otro lado, la flexibilidad del autoempleo se adapta tanto a las necesidades del mercado, como empodera a los autónomos para cultivar sus propias habilidades. En definitiva, el autoempleo aparece como un motor fundamental para el desarrollo económico y social. Igualmente es necesario destacar que la capacidad de los autónomos para generar oportunidades económicas impulsa el crecimiento local, cohesiona a la sociedad al fomentar la participación en la creación de valor. Y, este proceso trasciende la supervivencia económica para convertirse en una fuerza propulsora que fortalece las comunidades y las economías en un mundo en constante cambio (Sánchez García et al., 2017).

A medida que la investigación avanza, se consolida una conexión beneficiosa entre el espíritu emprendedor, el crecimiento económico y la mitigación de la pobreza. Los estudios emergentes revelan la complejidad del impacto de esta relación. Los investigadores, al profundizar en este campo, destacan cómo el espíritu emprendedor puede impulsar el crecimiento económico, y participa en la eliminación de las barreras



que perpetúan la pobreza. La creatividad y la iniciativa inherentes al espíritu emprendedor generan nuevas oportunidades económicas, a la vez que desafían las estructuras de desigualdad (Sabirov, 2022; Vargas-Hernández et al., 2021). En este sentido, se destaca la importancia del fomento del espíritu emprendedor en todos los países. Al cultivar el emprendimiento, las naciones impulsan la vitalidad de sus economías y desencadenan efectos beneficiosos en los disitintos sectores. La contribución del espíritu emprendedor se manifiesta de diversas maneras, comenzando por su capacidad para aumentar la productividad. Los emprendedores, introducen eficiencias y soluciones creativas que elevan competitividad en los sectores económicos. Este impulso en la productividad crea un terreno adecuado para la generación de empleo y la expansión de oportunidades laborales. Además, el fomento del espíritu emprendedor también revitaliza los mercados mediante el desarrollo continuo de nuevos productos y servicios. Es por ello, que la capacidad de los emprendedores para identificar nichos de mercado, anticiparse a las demandas y materializar ideas innovadoras inyecta dinamismo y diversidad en la oferta económica (Esfandiar et al., 2019).

En virtud de todo lo anterior, los países desarrollados reconocen la necesidad de fomentar el emprendimiento dentro de su población. Este reconocimiento se manifiesta de manera destacada en sus esfuerzos para promover el emprendimiento, con un enfoque particular en las generaciones más jóvenes y, de manera específica, entre los estudiantes universitarios. Al dirigirse específicamente a los jóvenes, los países desarrollados buscan sembrar el emprendimiento en etapas tempranas, desarrollando así individuos que valoran la creatividad, la innovación y sean capaces de correr riesgos (Syahmi et al., 2019). El enfoque hacia los estudiantes universitarios se fundamenta en la idea de que la educación superior proporciona una plataforma única para nutrir el pensamiento crítico y la capacidad de llevar a cabo proyectos visionarios. Al integrar el emprendimiento en los programas académicos y proporcionar recursos específicos, estos países no solo preparan a los estudiantes para enfrentar el mercado laboral con una mentalidad empresarial, sino que también establecen un puente entre el conocimiento teórico y su aplicación práctica en el mundo real (Breznitz & Zhang, 2022; Kitagawa et al., 2022).

La literatura académica resalta la importancia de la intención emprendedora como el paso inicial hacia el emprendimiento. Este concepto va más allá de ser simplemente un punto de partida; la intención emprendedora actúa como la fuerza motriz que impulsa la

exploración de oportunidades y la transformación de la visión emprendedora en acciones concretas. Así, se erige como un elemento crucial en la trayectoria del emprendimiento, dotando de intencionalidad y propósito cada paso en el camino empresarial (Maheshwari, 2021). En las etapas iniciales del proceso emprendedor, la toma de la decisión de establecer una nueva empresa se configura como un fenómeno dinámico y estratégico. Este paso crucial no es el resultado de una ocurrencia fortuita; más bien, surge de la detección de oportunidades (Ramos-Rodríguez et al., 2010) y la intención de crear una nueva empresa (Liñán, 2008). Así, en estas fases iniciales, este enfoque no solo establece las bases para la viabilidad del emprendimiento, sino que también resalta la importancia de la intencionalidad en el camino hacia la creación y el desarrollo empresarial.

En la actualidad, el sector turístico se presenta como un terreno de oportunidades para emprendimientos emergentes y para el desarrollo empresarial. La amplitud y diversidad del sector turístico ofrecen un espacio atractivo para aquellos que buscan dar vida a nuevos proyectos empresariales. En este sentido, las oportunidades para el emprendimiento en la industria turística son tan diversas como los destinos que abarca. En España, el sector turístico destaca como uno de los pilares fundamentales de la economía, desempeñando un papel crucial en la contribución al Producto Interior Bruto (PIB) y evidenciando un crecimiento sostenido a lo largo de las últimas décadas. La capacidad del turismo para atraer visitantes nacionales e internacionales crea un flujo constante de ingresos a través de diversas industrias relacionadas, desde la hostelería hasta el comercio local (Lechuga Sancho et al., 2020).

En 2019, España fue considerado el segundo destino turístico más visitado del mundo. Principalmente por el turismo de sol y playa, ochenta y dos millones de turistas decidieron visitar el país, generando un beneficio económico de más de 92 mil millones de euros. Esta tendencia creciente se detuvo drásticamente a partir de marzo de 2020 debido al cierre de fronteras por la pandemia del COVID-19. Esta situación hizo que el turismo fuera fundamentalmente nacional en el verano de 2020 y 2021. Sin embargo, aunque este sector aún no ha alcanzado las tasas anteriores a la pandemia, está recuperando paulatinamente el número de turistas extranjeros que visitan el país (Cava Jimenez et al., 2022). Después de Cataluña, Canarias y Baleares, la cuarta región española con más turistas es Andalucía, en el sur del país. En Andalucía, la actividad turística representa un motor económico. El turismo aportó aproximadamente el 13% del PIB de la región y dio

empleo a más de 385.000 personas en 2019. Estos datos indican que la industria turística española, y en particular la andaluza es un factor clave en el desarrollo económico del territorio (García-Machado et al., 2020). Varios factores justifican el éxito de nuestro país en la industria turística. España es el tercer destino del mundo en número de lugares declarados Patrimonio de la Humanidad por la UNESCO, con cuarenta y ocho lugares. También es el primer país del mundo en Patrimonio Natural de la Humanidad. Del mismo modo, es el primer país del mundo en Áreas Naturales declarados Reserva de la Biosfera por la UNESCO (49 espacios). Más de 300 días de sol al año y casi 8.000 km de costa, así como estaciones de esquí, turismo rural y actividades de bienestar, ofrecen al visitante numerosas posibilidades. La alta calidad y variedad de la gastronomía son internacionalmente reconocidas. Es uno de los países más seguros del mundo y cuenta con un sistema sanitario de alto nivel. En referencia a infraestructuras tiene un alto nivel de conectividad terrestre, ferroviaria y aérea. Además, es el segundo país del mundo, después de Corea, en cuanto a infraestructura digital. Todo ello hace que la industria turística en España ofrezca excelentes oportunidades de inversión, según el informe “España para Turismo y Ocio del Instituto de Comercio Exterior” (ICEX) del Ministerio de Industria, Comercio y Turismo ([www.investinspain.org](http://www.investinspain.org)).

Considerando todo lo expuesto, el turismo emerge como un horizonte lleno de oportunidades para aquellos que desean emprender proyectos empresariales, e invita a la materialización de ideas innovadoras. Desde la creación de experiencias turísticas únicas hasta la implementación de servicios y tecnologías vanguardistas, el turismo se configura como un terreno propicio para el emprendimiento y el desarrollo empresarial, contribuyendo a la transformación y mejora continua de la industria (Montañés-Del-Río & Medina-Garrido, 2020). Igualmente, la industria turística propulsa el desarrollo económico en su área geográfica de influencia, actuando como un motor que impulsa a otros sectores económicos. En este contexto, la figura del emprendedor es esencial para la creación de destinos innovadores, la generación de empleo y la elevación de la productividad laboral, contribuyendo de manera significativa al incremento de los ingresos de la población local. En sí, su papel trasciende la mera gestión empresarial; se convierte en un agente clave que no solo crea oportunidades económicas, sino que también modela la identidad y el atractivo de la región, dejando un impacto perdurable en el tejido económico y social (Tleuberdinova et al., 2021).

Desde hace décadas, el entorno universitario ha abrazado el fomento del espíritu emprendedor y la incubación de nuevas empresas. Más allá de ser meros centros de educación, las instituciones académicas se han convertido en lugares que orientan el desarrollo de la creatividad empresarial, proporcionando no solo conocimientos teóricos sino también un entorno propicio para la gestación de ideas innovadoras con miras a la creación de nuevos proyectos empresariales. Es por ello, que la investigación académica en emprendimiento valida y subraya el papel de la universidad como una cantera de individuos con potencial emprendedor (Lechuga Sancho et al., 2020). Por otro lado, la indagación sobre las razones que motivan o inhiben a los estudiantes para emprender su propia empresa ha captado la atención destacada dentro de la literatura en emprendimiento. El análisis detallado de estos factores revela una gran variedad de estímulos y barreras que influyen en la intención emprendedora universitaria. De esta manera, se ha obtenido una comprensión más profunda de lo que influye en la decisión de los estudiantes de aventurarse o no en el ámbito empresarial, contribuyendo significativamente al desarrollo del campo del emprendimiento (Trang & Doanh, 2019). Dada la gran cantidad de oportunidades que ofrece el sector turístico para el desarrollo empresarial, los estudiantes universitarios de turismo constituyen un capital humano valioso, portador de un gran potencial para liderar iniciativas emprendedoras en este ámbito. Fomentar la intención emprendedora entre estos estudiantes no solo incidirá positivamente en sus acciones empresariales, sino que también repercutirá en la creación de empleo y en un impulso sustancial para la economía. De este modo, su participación activa fortalecerá el tejido emprendedor del sector turístico, y también contribuirá al dinamismo y la prosperidad económica de los territorios. Así pues, promover la intención emprendedora de estos estudiantes influirá positivamente en su comportamiento emprendedor y, por tanto, creará empleo e impulsará la economía (Zhang et al., 2020).

## **Intenciones emprendedoras**

Como ya se ha hecho referencia, el fomento del emprendimiento es determinante en la actividad económica de un territorio, convirtiéndose en una herramienta básica para la creación de empleo y la generación de riqueza. La conexión entre el desarrollo económico y la actividad emprendedora subraya la importancia de fomentar y respaldar a aquellos que optan por iniciar sus propios proyectos. Al propiciar un entorno favorable para el

emprendimiento se allana el camino para la generación de oportunidades laborales. Del mismo modo, se sientan las bases para un progreso económico sostenido, destacando el papel central que juega la actividad emprendedora en la configuración y fortalecimiento de la realidad económica de un territorio (Oosterbeek et al., 2010). Los emprendedores, continuamente, se encuentran inmersos en el proceso de toma de decisiones. Abordan aspectos cruciales como la depuración constante de la idea de negocio, la identificación o creación de nuevos nichos de mercado, la resolución de desafíos técnicos y la selección y reclutamiento de personal clave para la empresa, entre otras acciones determinantes. Este flujo constante de decisiones refleja no solo la agilidad requerida en el ámbito emprendedor, sino también la complejidad y diversidad de los aspectos que los emprendedores deben abordar para llevar adelante sus proyectos con éxito (Davidsson & Klofsten, 2003). El espíritu emprendedor se ha consolidado en el entorno empresarial y ha dado lugar a la aparición de nuevas innovaciones y mejores formas de hacer las cosas. Del mismo modo, ha generado una mejor manera de competir en el mundo de los negocios. Por lo tanto, el espíritu emprendedor desempeña un papel decisivo en la economía, especialmente en los países en desarrollo. De este modo, la creación de nuevas empresas aumenta el nivel de empleo y el crecimiento social (Farrukh et al., 2017).

En el camino hacia la iniciativa empresarial, el primer paso implica que una persona despierte la intención de emprender, marcando así el inicio de su transformación en empresario. Este proceso no solo involucra el reconocimiento de oportunidades y la formulación de ideas, sino que también requiere una visión de crear y liderar una empresa. En este sentido, son muchos los investigadores que han estudiado la intención emprendedora considerada como la etapa que inicia el proceso emprendedor, anterior a un comportamiento hacia la creación de nuevas empresas (Anjum et al., 2018). En la literatura académica ha sido ampliamente estudiada la intención emprendedora, así como sus determinantes (Bouichou et al., 2021; Maheshwari, 2021; Shahzad et al., 2021; Shi et al., 2020; Zhang et al., 2020). En este sentido, la intención emprendedora se ha convertido en un campo muy emocionante en la investigación sobre emprendimiento. Se convierte en una manera de averiguar el deseo y el compromiso de las personas a crear nuevas empresas. La investigación en emprendimiento arroja luz sobre una serie de factores, tanto personales como contextuales, que actúan como motores para impulsar a un individuo a iniciar un proyecto empresarial. La investigación revela la complejidad de los disitintos determinantes, explorando desde las características individuales del

emprendedor hasta las influencias del entorno. Al entender estos elementos, se logra una comprensión más profunda de los impulsores que inspiran la toma de decisiones emprendedoras y, por ende, se establecen fundamentos más sólidos para la promoción y el respaldo del espíritu emprendedor (Shahzad et al., 2021). En virtud de esta importancia, los investigadores se centran en analizar las intenciones emprendedoras, a menudo concentrándose en la población estudiantil universitaria. Este enfoque específico se fundamenta en el reconocimiento de que el periodo universitario es una fase crucial en la vida, en la que las aspiraciones y la disposición hacia el emprendimiento pueden consolidarse. Al comprender las intenciones emprendedoras en este contexto, se obtiene una perspectiva valiosa que muestra las motivaciones y aspiraciones de una futura generación de emprendedores, lo que permite diseñar estrategias y programas educativos que fomenten de manera efectiva el espíritu emprendedor desde sus raíces (Laguía et al., 2019; Dewi & Sutisna, 2019; Anjum et al., 2018; Hu et al., 2018). Incentivar la intención emprendedora entre los estudiantes no solo contribuye a generar un cambio en la conciencia emprendedora de estos individuos, sino que también desencadena una transición hacia el comportamiento emprendedor. Este proceso implica cultivar la mentalidad y el deseo de emprender, además de proporcionar los recursos y el apoyo necesario para traducir esas intenciones en acciones concretas y proyectos empresariales tangibles. Así, la promoción activa de la intención emprendedora se convierte en un estímulo clave para la transformación de la motivación inicial en resultados emprendedores. Por lo tanto, explorar cómo mejorar la intención emprendedora en los estudiantes es crucial para el desarrollo de cualquier industria, ahora y en el futuro (Zhang et al., 2020).

En la década de los 80, varios autores propusieron diferentes modelos de intenciones emprendedoras basados en factores exógenos, medioambientales y sociales, para explicar las intenciones emprendedoras. Entre los pioneros, destacan el modelo de acontecimiento empresarial (EEM) (Shapero, 1984) y el modelo de Bird (Bird, 1988). El primero propone que las intenciones emprendedoras dependen de la deseabilidad percibida, la viabilidad percibida y la propensión a actuar. El segundo modelo se basa en la intencionalidad, en el pensamiento racional e intuitivo del individuo. Unos años más tarde, Krueger et al (2000) mostraron uno de los modelos más influyentes: el "Modelo Shapero-Krueger". Este modelo añade dos variables al EEM: las deseabilidades específicas como

antecedente de la deseabilidad percibida y la autoeficacia percibida como antecedente de la viabilidad percibida.

A pesar de la diversidad de enfoques, la teoría de referencia en la investigación de las intenciones emprendedoras es, sin duda, la Teoría del Comportamiento Planificado (TPB) de Ajzen (1991), consolidándose como una piedra angular en este campo. Esta teoría, que ha destacado no solo en el ámbito del emprendimiento sino también en la psicología social en general, se erige como un marco conceptual robusto y ampliamente empleado. Su influencia marca un estándar en la comprensión de los determinantes psicológicos y sociales que subyacen a las intenciones emprendedoras. La consolidación del modelo TPB en la investigación refleja su utilidad para conocer las complejidades del proceso de formación de intenciones emprendedoras (Liñán & Fayolle, 2015). La Teoría del Comportamiento Planificado representa un modelo aceptado para el análisis de la propensión de los individuos a desarrollar un determinado comportamiento. Este sólido marco teórico proporciona una herramienta para examinar la intención emprendedora al desentrañar los factores que influyen en la decisión de emprender (Krueger et al., 2000).

De acuerdo con la estructura propuesta por el modelo TPB, las intenciones emprendedoras se configuran como el desenlace de tres factores fundamentales. Este enfoque conceptual destaca que las intenciones no son simplemente el resultado de una única influencia, sino que se gestan a partir de la interacción dinámica de tres elementos esenciales: (1) la actitud personal (PA) hacia un determinado comportamiento; (2) las normas subjetivas o normas sociales (SN) que rodean esta elección y están determinadas por la presión social; y (3) el control del comportamiento percibido (CBP), entendido como la capacidad de llevar a cabo un comportamiento específico (Ajzen, 1991). Esta teoría ha encontrado una amplia aplicación en el ámbito del emprendimiento y ha sido utilizada por numerosos investigadores. Su popularidad y relevancia se reflejan en la diversidad de estudios que han buscado validar y enriquecer sus premisas a través de evidencia empírica (Farhat & Moncada, 2020; Shahidi, 2020; Urban & Ratsimanetrimanana, 2019; Soomro et al., 2018; Liñán, 2004). En este sentido, en la literatura sobre emprendimiento, se observa una adaptación específica de los componentes generales del TPB para explicar las intenciones emprendedoras. De esta manera, la actitud hacia el comportamiento emprendedor se refiere a la evaluación que los individuos realizan sobre la idea de ser emprendedores, manifestando una postura

positiva o negativa hacia esta perspectiva. La atracción hacia el deseo de establecer una empresa propia juega un papel crucial en la formación de la intención emprendedora (Ajzen, 1991). Las normas subjetivas reflejan la presión que los individuos reciben de su entorno social para realizar determinados comportamientos. En un entorno empresarial, las SN se refieren a la importancia que los individuos conceden a la aprobación de su círculo más cercano (familia, amigos u otras personas de referencia) respecto a su decisión de emprender un negocio (Liñán, 2008). Y, por último, el control del comportamiento percibido alude a la percepción que tiene el individuo sobre la facilidad o dificultad de emprender, así como a su creencia en la capacidad de ejercer control sobre su propio comportamiento emprendedor. Esta dimensión aborda además de la percepción de las barreras y obstáculos, la confianza en la propia habilidad para superarlos. De esta manera, desempeña un papel fundamental en la formación de la intención emprendedora al influir en la percepción de viabilidad y control del individuo sobre la iniciativa empresarial (Ajzen, 2002). Además, haciendo referencia al sector turístico también existen precedentes de investigaciones que han utilizado el modelo TPB para medir las intenciones emprendedoras en dicho sector. En este sentido, Kusumawardani et al. (2020) emplearon el marco conceptual proporcionado por el TPB como herramienta para evaluar las intenciones emprendedoras específicas de las mujeres dentro del sector turístico de Bali. Del mismo modo, Mei et al. (2016) evaluaron la intención emprendedora de los estudiantes de turismo chinos a través del modelo TPB. Y, también, el trabajo de Phuc et al. (2020) investigó los factores que influyen en las intenciones emprendedoras de los estudiantes universitarios de turismo en Vietnam utilizando el modelo TPB.

Por otro lado, tal y como se ha hecho alusión más arriba, existen otras muchas variables que pretenden explicar las intenciones emprendedoras. En este sentido, la literatura ha estudiado la intención emprendedora y sus determinantes en profundidad. Entre ellos, encontramos que la proactividad, la creatividad y los programas de aprendizaje que destacan entre los diversos determinantes examinados. La proactividad y la creatividad, en particular, emergen como dos capacidades fundamentales que ejercen una influencia especialmente significativa en la formación de la intención emprendedora. Estos factores se revelan como impulsores clave y se posicionan como elementos que juegan un papel crucial en el proceso de desarrollo de las intenciones emprendedoras. Su impacto resalta la importancia de cultivar la proactividad y la creatividad como estrategias efectivas para fomentar la disposición emprendedora entre los individuos. Es por ello, que se genera la



necesidad de programas educativos y de desarrollo que potencien estas capacidades clave en el contexto del emprendimiento (Hansen et al., 2011). Por un lado, los individuos proactivos se distinguen por su disposición a buscar y efectuar cambios, así como a anticiparse a las transformaciones en su entorno antes de que estas ocurran. La proactividad se manifiesta en la toma de la iniciativa, y estas personas no esperan pasivamente a que las circunstancias evolucionen, sino que, más bien, se adelantan a ellas. Su capacidad para provocar cambios se traduce en una influencia activa en su entorno. Este comportamiento proactivo es un elemento clave en el fomento de la intención emprendedora, dado que implica una predisposición a liderar y generar cambios positivos en el entorno empresarial y social (Bateman & Crant, 1993). Por otro lado, la creatividad, entendida como la capacidad de concebir y materializar ideas originales, emerge como un atributo esencial para los emprendedores. Esta habilidad desempeña un papel vital en la identificación de oportunidades y en la generación de ideas novedosas e innovadoras (Schumpeter, 1934). Las personas creativas tienen más probabilidades de convertirse en empresarios. De esta manera, los empresarios creativos son capaces de visualizar soluciones únicas ante desafíos, concebir productos o servicios innovadores y explorar enfoques fuera de lo convencional. Asimismo, un empresario tiene la capacidad de fomentar la creatividad de sus empleados al otorgarles mayor libertad e independencia para innovar y generar ideas originales. Proporcionar a los empleados esta autonomía no solo potencia la creatividad individual, sino que también contribuye al desarrollo de un entorno laboral dinámico y estimulante. Esta práctica puede impulsar la innovación y la competitividad de la empresa en su conjunto, generando un círculo de creatividad y progreso (Kumar & Shukla, 2022).

En el contexto del proceso empresarial, la obtención de conocimientos y los enfoques de aprendizaje desempeñan un papel crucial al influir de manera significativa en la capacidad de identificar y aprovechar nuevas oportunidades (Corbett, 2005). La adquisición constante de conocimientos proporciona a los emprendedores una base sólida que les permite comprender el mercado, evaluar tendencias emergentes y reconocer posibles oportunidades sin explotar (Baron, 2006). Además, los métodos de aprendizaje, ya sean formales o informales, afectan la adaptabilidad y la agilidad del emprendedor para enfrentar los desafíos del entorno empresarial. Así, el compromiso continuo con la adquisición de conocimientos y prácticas de aprendizaje se convierte en un factor clave que potencia la capacidad del empresario para innovar y capitalizar oportunidades

emergentes en el dinámico mundo empresarial (Ramos-Rodríguez et al., 2010; Corbett, 2005). De esta manera, la formación en emprendimiento puede potenciar la capacidad de los estudiantes para identificar oportunidades al estimular una mayor atención. Al recibir una formación empresarial, los estudiantes se equipan con las herramientas y el conocimiento necesarios para estar alerta ante nuevas informaciones y tendencias emergentes. Esta sensibilización les permite detectar oportunidades más rápidamente y evaluar mejor su potencial. En esencia, la formación emprendedora contribuye al desarrollo de habilidades técnicas y nutre la mentalidad emprendedora al cultivar la capacidad de estar constantemente en sintonía con el entorno empresarial en evolución (Baron, 2006). De este modo, la formación en emprendimiento es vital, ya que vincula el conocimiento práctico con las habilidades y la confianza necesarias para tener éxito en los negocios (Wilson et al., 2007).

La creación e implementación de programas de aprendizaje en emprendimiento pueden resultar costosas. Además, la inversión puede extenderse a la incorporación de expertos especializados, la adquisición de tecnologías educativas avanzadas y la actualización constante de los contenidos para mantener la relevancia y la calidad del programa. Aunque la creación de estos programas puede representar una inversión inicial considerable, los beneficios a largo plazo en términos de fomento del espíritu emprendedor y generación de habilidades empresariales pueden justificar plenamente este gasto. Es por esta razón que, en numerosas ocasiones, se establece una colaboración entre empresas y universidades para cultivar un entorno propicio para el fomento del espíritu emprendedor entre los estudiantes universitarios. Esta asociación busca fusionar la experiencia práctica y los recursos empresariales de las compañías con el entorno académico de las universidades, con el fin de ofrecer programas de aprendizaje en emprendimiento más enriquecedores y alineados con las demandas del mundo empresarial. La sinergia resultante no solo proporciona a los estudiantes acceso a experiencias prácticas del mundo empresarial, sino que también permite a las empresas participar activamente en la formación y desarrollo de futuros emprendedores, contribuyendo así al fortalecimiento de la conexión entre la educación superior y el ámbito empresarial (Nabi & Liñán, 2011).

## Propensión efectual y causal

Durante las últimas décadas, la literatura académica sobre la organización de empresas ha ido cambiando su perspectiva desde el análisis de las funciones organizativas hacia el análisis de los distintos comportamientos organizativos, los valores, culturas y las llamadas orientaciones estratégicas (Werhahn et al., 2015). Según Werhahn et al. (2015), las orientaciones estratégicas, alineadas con los objetivos y metas de una organización, tienen el poder de no solo fomentar, sino también de implantar y modelar determinados comportamientos dentro de la estructura organizativa. Siguiendo a Gatignon & Xuereb (1997), se podría indicar que la orientación estratégica se fundamenta en una filosofía o cultura empresarial que se construye y arraiga en el tejido de las compañías, siendo interiorizado por los empleados. En esencia, la orientación estratégica se convierte en un componente vital que influye en la mentalidad y el comportamiento de los empleados, contribuyendo así a la cohesión y alineación entre la visión estratégica de la empresa y las acciones individuales de los miembros del equipo.

Desde una perspectiva más enfocada a la creación de nuevas empresas, el estudio del comportamiento de los emprendedores explicaría cómo desarrollan el proceso emprendedor. De esta manera, se podría comprender cómo crean y hacen crecer nuevas empresas y cómo generan crecimientos económicos (Fisher, 2012). En el estudio del fenómeno emprendedor, destacan las explicaciones que la teoría efectual ofrece sobre el comportamiento del emprendedor (Sarasvathy, 2001). Esta teoría es utilizada cada vez más como una base conceptual para la investigación en el campo del emprendimiento.

En la teoría efectual de Sarasvathy (2001), los conceptos de *effectuation* y *causation* proveen un marco para estudiar los procesos de emprendimiento en entornos con distintos niveles de incertidumbre. La lógica efectual hace referencia a procesos que se realizan gracias a los posibles resultados que se pueden obtener a partir de los recursos que están al alcance del emprendedor. Sin embargo, el concepto de *causation* o lógica causal se basa en la predicción. En este caso, emprender implica seleccionar los medios necesarios para crear el resultado deseado. En definitiva, la gran diferencia consiste en que para la lógica causal, las oportunidades son creadas; mientras que para la lógica efectual, las oportunidades son descubiertas (Vaghely & Julien, 2010).

Las decisiones relativas a cómo desarrollar una idea de negocio, adquirir los recursos necesarios y aplicar una toma de decisiones eficaz tienen lugar en condiciones de

incertidumbre (Villani et al., 2018). Durante mucho tiempo, los investigadores en emprendimiento han asumido que los individuos que persiguen oportunidades empresariales se guían únicamente por un comportamiento racional y orientado a objetivos (Perry et al., 2012). Este pensamiento se encuadra en un modelo de comportamiento causal del emprendedor (Sarasvathy, 2001). En contraposición, la teoría del comportamiento efectual sobre emprendimiento propone un enfoque diferente para explicar cómo toman decisiones algunos emprendedores (Sarasvathy, 2001). Así, *causation* y *effectuation* representan dos marcos distintos, aplicables a la creación de nuevas empresas. El primero se caracteriza por una planificación cuidadosa, mientras que el segundo se basa en una estrategia más flexible, adaptativa y experimental (Read & Sarasvathy, 2005).

Teniendo en cuenta el marco anterior, la lógica efectual consiste en que los emprendedores utilizan un conjunto de medios que les vienen ya dados y se enfocan en decidir qué pueden crear con ellos (Sarasvathy, 2001). Durante la creación de nuevas empresas, los emprendedores que siguen un enfoque efectual, a medida que toman decisiones y observan los resultados de esas decisiones, utilizan esta nueva información para cambiar el rumbo. De esta manera, los emprendedores que siguen una lógica efectual son menos propensos a tratar de planificar el futuro y prefieren cambiar los objetivos y la visión inicial que tenían para su nueva empresa. Así pues, en lugar de predecir el futuro, es más probable que trabajen con los medios que tienen bajo su control y que hagan los ajustes necesarios (Dew et al., 2009).

Para Sarasvathy (2001), el enfoque efectual provee cinco principios a la toma de decisiones (los medios, las asociaciones, las pérdidas asumibles, los imprevistos y el control): (1) comienza con tus medios (habilidades, conocimientos y relaciones sociales del emprendedor), donde en el proceso de creación de una nueva empresa, los objetivos van surgiendo basándose en los medios disponibles del emprendedor; (2) crea asociaciones para buscar juntos oportunidades de negocio, compartir recursos y trabajar juntos, con menor incertidumbre y mayor control del negocio; (3) céntrate en minimizar el riesgo, y preocúpate más por pérdidas asumibles que por los beneficios que se podrían conseguir; (4) no pienses en los imprevistos como obstáculos, sino como nuevas oportunidades a explotar y, (5) controla el futuro, que es incierto pero controlable porque

los emprendedores pueden influir en las tendencias, crear nuevos mercados y afrontar nuevos retos.

Por otro lado y siguiendo la teoría de Sarasvathy (2001), la lógica causal busca la predicción y el emprendedor pretende alcanzar su objetivo a partir de la planificación. Desde esta perspectiva, el individuo hace uso de la información a su alcance y va comprobando que su estrategia se cumpla. En el caso en que no sea así, el individuo estudia las posibles causas de las desviaciones que se produzcan en su plan. La lógica causal es valiosa en aquellas situaciones en las que el mercado en el que opera el emprendedor es definible y medible (Gabrielsson & Politis, 2011). De esta manera, la lógica causal define un modelo para la toma de decisiones y la resolución de problemas basado en la lógica de la predicción. Así, el conocimiento de los empresarios de los medios disponibles y el resultado que desean obtener impulsan la selección de recursos. En este sentido, se supone que el mercado existe independientemente de los empresarios y que su principal tarea es captar la mayor cuota posible de ese mercado. Por este motivo, los empresarios intentan alcanzar este objetivo planificando y recopilando la información necesaria para ver cómo se materializan las estrategias según el plan y también identificando las posibles causas de que el resultado marque desviaciones con respecto a dicho plan (Sarasvathy & Dew, 2005; Sarasvathy, 2001).

Para comprender el comportamiento de los individuos debemos determinar su orientación hacia los principios de *effectuation* o *causation*. La teoría de Sarasvathy (2001) ha sido ampliamente estudiada por la comunidad académica aplicada a emprendedores que comienzan nuevas empresas (Smolka et al., 2018; Matalamäki et al., 2017; Guo, Cai, & Zhang, 2016; Schmidt & Heidenreich, 2014; Brettel, Mauer, Engelen, & Küpper, 2012; Chandler et al., 2011;). Es decir, a partir de los resultados de las actuaciones del emprendedor. Sin embargo, los estudios no profundizan en la propensión del individuo hacia una lógica u otra cuando el emprendedor potencial aún no ha actuado. En este sentido, la propensión efectual sería aquella que manifiesta un individuo hacia una lógica efectual antes de comenzar una empresa. Y del mismo modo, la propensión causal se definiría como la tendencia del individuo a tomar decisiones o resolver problemas siguiendo una lógica causal.

## Objetivos de investigación

En la revisión previa, se ha identificado una brecha sustancial en la literatura relacionada con la falta de investigación centrada en la propensión efectual y causal. Este vacío se manifiesta en la escasez de estudios dedicados a comprender el comportamiento hacia una lógica efectual o causal antes de iniciar un negocio. Hasta el momento, la literatura existente no ha abordado de manera exhaustiva cómo los emprendedores se inclinan hacia estas distintas lógicas antes de emprender. Explorar a fondo la propensión hacia un comportamiento efectual o causal no solo subsanaría este *gap* en la literatura académica, sino que también añadiría un valor significativo al ámbito de la investigación en emprendimiento. Este enfoque permitirá captar matices esenciales en las intenciones emprendedoras y en la concepción de nuevos negocios, enriqueciendo la comprensión general del proceso emprendedor y proporcionando perspectivas valiosas para investigaciones futuras. Así, el estudio detallado de la propensión a estas lógicas se erige como una contribución distintiva y esencial para avanzar en el entendimiento de la dinámica emprendedora. En relación a este aspecto, es relevante destacar que el único antecedente parcialmente similar encontrado en la literatura es el trabajo de Werhahn et al. (2015). Estos autores investigaron la orientación efectual de directivos y trabajadores en el contexto corporativo. Para ellos, la orientación estratégica de la empresa hacia una lógica efectual o causal propicia una cultura organizativa que incide en la propensión del comportamiento de los trabajadores hacia alguna de estas lógicas.

Por otro lado, y dada la destacada importancia del sector turístico en la economía de Andalucía, la exploración de las intenciones emprendedoras entre los estudiantes de turismo adquiere una relevancia estratégica. En este contexto, centrarnos en los estudiantes de turismo de la Universidad de Cádiz y de la Universidad de Sevilla se presenta como un enfoque clave para comprender cómo las aspiraciones emprendedoras de esta población pueden contribuir al dinamismo y la evolución sostenible del sector turístico andaluz. Explorar las intenciones emprendedoras de este tipo de estudiantes es crucial para el desarrollo actual y futuro de la industria y hostelería (Tsai et al., 2016) en Andalucía.

Con la finalidad de cubrir el *gap* existente en la literatura respecto a la comprensión de la propensión efectual y causal, se plantean los siguientes objetivos de investigación:

## OBJETIVO GENERAL

- Analizar la propensión efectual y causal y su relación con las intenciones emprendedoras

## OBJETIVOS ESPECÍFICOS

- Elaborar y validar un instrumento de medida de la propensión efectual y causal
- Determinar el impacto de la propensión efectual de los estudiantes de turismo en sus intenciones emprendedoras
- Determinar el impacto de la propensión causal de los estudiantes de turismo en sus intenciones emprendedoras

## **Estructura de la tesis**

El trabajo de investigación que constituye esta tesis doctoral se ha desarrollado por compendio de publicaciones regulado por la normativa correspondiente de la Universidad de Sevilla (Resolución General del 17 de febrero del 2020). De esta manera, se aportan tres aportaciones publicadas con posterioridad a la primera matrícula de tutela académica de la tesis doctoral, y en las que la doctoranda aparece como primera autora. Además, el número de firmantes de los tres artículos, en ningún caso supera los cuatro. Este documento consiste en un reagrupamiento de trabajos de investigación publicados por la doctoranda en una memoria que les ha dado unidad y que se estructura como se muestra más adelante. Del mismo modo, con la presente tesis doctoral se pretende obtener el título de “Mención Internacional”. Para ello, la doctoranda ha realizado una estancia de tres meses en el año 2022, en NECE- UBI, Universidade da Beira Interior, Covilhã, Portugal. Por dicho motivo, el presente documento recoge el resumen y las conclusiones en inglés, como lengua habitual para la comunicación científica en el campo de Organización de Empresas, distinta a cualquiera de las lenguas oficiales en España. Y, además, esta tesis cumple con el resto de requisitos para dicha mención internacional.

La estructura de esta tesis se ha organizado en seis capítulos que albergan los tres artículos que la componen. Se inicia con un capítulo introductorio, donde se establece el marco que delimita el ámbito de la investigación y se marcan los objetivos de investigación. A continuación, se presentan los tres artículos en capítulos separados. Así pues, el capítulo número dos corresponde al artículo denominado “How effectual will you be?

Development and validation of a scale in higher education” que fue publicado en *The International Journal of Management Education* en el año 2021. El capítulo tres alberga un artículo publicado en 2023 en *Journal of Business Research*, titulado “Impact of effectual propensity on entrepreneurial intention”. Y, el tercer artículo conforma el capítulo cuatro de esta tesis. Se denomina “Causal propensity as an antecedent of entrepreneurial intentions” y está publicado en 2023, en la revista *International Entrepreneurship and Management Journal*.

El capítulo número cinco corresponde a los resultados y discusión. Y, finalmente, el trabajo concluye con un capítulo de conclusiones, contribuciones, limitaciones y futuras líneas de investigación, que resume los hallazgos clave y cierra de manera integral la investigación. Este diseño estructural ha sido concebido para ofrecer una progresión natural a través de los elementos esenciales de la tesis, facilitando la comprensión y la asimilación de la información presentada.



## **CAPÍTULO 2**

### **How effectual will you be? Development and validation of a scale in higher education**

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## Referencia bibliográfica

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# How effectual will you be? Development and validation of a scale in higher education

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## ABSTRACT

The literature on effectual theory offers validated scales to measure effectual or causal logic in entrepreneurs' decision-making. However, there are no adequate scales to assess in advance the effectual or causal propensity of people with an entrepreneurial intention before the creation of their companies. We aim to determine the validity and reliability of an instrument to measure that propensity by first analysing those works that provide recognised validated scales with which to measure the effectual or causal logic in people who have already started up companies. Then, considering these scales, we designed a scale to evaluate the effectual or causal propensity in people who had not yet started up companies using a sample of 230 final-year business administration students to verify its reliability and validity. The validated scale has theoretical implications for the literature on potential entrepreneurship and entrepreneurial intention and practical implications for promoters of entrepreneurship who need to orient the behaviour of entrepreneurs, entrepreneurs of established businesses who want to implement a specific strategic orientation, entrepreneurs who want to evaluate the effectual propensity of their potential partners and workers, and academic institutions interested in orienting the entrepreneurial potential of their students.

**Keywords:** Effectuation theory Effectual Propensity Causal Propensity Entrepreneurship Measurement Scales Higher education

### 1. Introduction

Economic activity is driven by entrepreneurship, making it an essential tool for the creation of jobs and the generation of wealth (Oosterbeek, van Praag, & Ijsselstein, 2010). The need to overcome the economic problems of the last decade has stimulated the idea that the self-employed should take a more active role, not only out of necessity,

but because self employment can lead to innovation, employment, and economic and social development (Montañes-Del-Río & Medina-Garrido, 2020; Sánchez García, Ward, Hernández, & Florez, 2017).

Studying the behaviour of the self-employed can explain how they further develop the entrepreneurial process, making it possible to understand how they create and make new companies grow and how they generate economic growth (Fisher, 2012). In studies of the entrepreneurial phenomenon, the explanations for the behaviour of entrepreneurs that effectuation theory offers stand out (Sarasvathy, 2001), and research in the field of entrepreneurship increasingly uses this theory as a conceptual basis. Despite effectuation is still a new line in entrepreneurship research, this theory has developed rapidly in the last years (Matalamäki, 2017). In Sarasvathy's (2001) effectuation theory, the concepts of effectuation and causation provide a framework for studying entrepreneurial processes in environments with different levels of uncertainty. Effectuation refers to processes that are carried out thanks to the possible results that entrepreneurs can obtain from the available resources. However, the concept of causation has a predictive basis. In this case, starting a business involves selecting the means necessary to create the desired result. In short, the difference concerning the entrepreneurial process is that for causal logic, opportunities are created, whereas for effectual logic, opportunities are discovered (Vaghely & Julien, 2010).

The effectual versus causal logic of entrepreneurs has been studied in the academic literature primarily by examining the behaviour of those people who have started businesses (Brettel, Mauer, Engelen, & ; Guo, Cai, & Zhang, 2016; Schmidt & Heidenreich, 2014); that is, from the evidence of the entrepreneurs' actions, which are often guided by the entrepreneur's prior social identity (Alsos, Clausen, Hytti, & Solvoll, 2016). However, few studies have delved into the individual's propensity towards these logics when the potential entrepreneur has not yet acted. Given this gap, the study of the propensity towards an effectual or causal behaviour gives added value to the literature on entrepreneurship. The only partially similar framework found in the literature is the work of Werhahn, Mauer, Flatten, and Brettel (2015). These authors analyse the effectual orientation of managers and workers in the corporate context finding that the strategic orientation of the company towards an effectual or causal logic favours an organisational culture that affects workers' behaviour.

The detected gap presents a dilemma in terms of whether it is possible to measure the

causal or effectual propensity of a person before they start a business. This research aims to elaborate and validate a measurement tool that estimates an individual's propensity towards an effectual or causal behaviour when they have not yet started a business.

This scale would have important implications for the literature on potential entrepreneurship and entrepreneurial intention. It would also be useful for promoters of entrepreneurship, entrepreneurs who wish to implement a specific strategic orientation, entrepreneurs who wish to measure the effectual propensity of their potential partners and workers, and academic institutions interested in developing and orienting the entrepreneurial potential of their students.

To achieve this objective, we first analysed the scales accepted in the literature to measure the effectual or causal logic of entrepreneurs. Then we designed a questionnaire to measure the propensity towards these two logics of people who had not yet started a business, using a sample of university students in their final year of studying for a business administration degree at the University of Cadiz and the University of Seville (Spain). Subsequently, we verified the reliability and validity of the scale. The discussion section analyses the results and presents the theoretical and practical implications of the validated scale for measuring the effectual or causal propensity of potential entrepreneurs.

## **2. Background**

Entrepreneurs continually make decisions regarding business idea improvements, the creation or identification of new market niches, the resolution of technical problems, and the recruitment and selection of key personnel in the company, among others (Davidsson & Klofsten, 2003). Effectuation theory (Sarasvathy, 2001) differentiates between effectual logic and causal logic in the decisions that entrepreneurs make under situations of uncertainty and risk. Under a logic oriented to causality, entrepreneurs recognise, develop, and evaluate opportunities. Then they identify the resources needed to exploit them and evaluate their feasibility. By contrast, the effectual vision of the entrepreneurial process begins with the resources available to entrepreneurs and the opportunities they create with them (Perry, Chandler, & Markova, 2012). The causal logic assumes that markets and opportunities are objective and pre-existing, the business process is linear and unidirectional, and the known outcome is the desired goal. On the other hand, the effectual logic presumes that markets and opportunities are subjective

and limited only by the imagination of the entrepreneur, that the entrepreneurial process is dynamic, interactive, and non-linear, and it considers a set of resources that is already available (Dutta & Thornhill, 2014). For this reason, expert entrepreneurs use effectual logic to create new markets (Dew, Read, Sarasvathy, & Wiltbank, 2011).

Either approach, effectuation or causation, may be required at different times in the evolution of the company. An entrepreneur can use both logics indistinctly, depending on the uncertainty of the circumstances (Gabrielsson & Politis, 2011). In other words, the processes of effectuation and causation can coexist and are shaped in a specific way in the different phases of the life cycle of the company (Matalama`ki, Vuorinen, ). Therefore, it is common for experienced decision-makers to possess an accumulated knowledge of trial-and-error decision-making, while new entrepreneurs prefer to take the approach of developing a business plan for the business they wish to create (Dew, Read, Sarasvathy, & Wiltbank, 2009), which they learned from the entrepreneurship programmes they attended in educational settings.

### *2.1. Causation*

The specific environment in which entrepreneurs operate is critical, as it will influence their perception of what is preferable and most effective. Causal logic is valuable in situations where the existing market is definable and measurable (Gabrielsson & Politis, 2011). Causation is a model for decision-making and problem-solving based on the logic of prediction. The entrepreneurs' knowledge of the available means and the output they wish to obtain drive the selection of resources. It is assumed that the market exists independently of entrepreneurs and that their main task is to capture the largest possible share of that market. Entrepreneurs try to achieve this objective by planning for and gathering the necessary information to see how the strategies materialise according to the plan and also by identifying the possible causes for the result differing from the plan (Sarasvathy, 2001; Sarasvathy & Dew, 2005).

### *2.2. Effectuation*

In the creation of new companies, entrepreneurs who follow an effectual approach often start the process with the sole aspiration of creating a company. The experience of starting and running new businesses makes successful entrepreneurs more inclined towards effectual logic in their decision-making (Baron, 2009). Since they make decisions and observe the results of those decisions, they use the new information to

change course. As the future is unpredictable for them, their effectual logic makes them address the market from different perspectives before deciding on a business model (Sarasvathy, 2001). According to Sarasvathy (2001, 2008), the effectual logic considers five dimensions, namely means, partnership, affordable loss, contingency, and control. Although other authors have considered only four of the five dimensions, which have not always been the same four dimensions (Brettel et al., 2012; Chandler, DeTienne, McKelvie, & Mumford, 2011; Perry et al., 2012), this work will consider the original five dimensions proposed by Sarasvathy.

### *2.3. Means orientation*

Sarasvathy (2001) argues that in the effectual process, entrepreneurs use the resources (means) they already have and select a possible output that they can create with those resources. The resources fall into three different categories: (1) who the person is — that is, the entrepreneur's traits, preferences, and skills; (2) what the person knows — that is, the entrepreneur's knowledge; and (3) who the person knows, which results from the entrepreneur's social relationships. Means orientation implies that the entrepreneur uses all available means to create a business. Thus, effectual entrepreneurs bring their knowledge, social networks, experience, and skills to their project (Werhahn et al., 2015).

### *2.4. Partnership orientation*

Social networks contribute significantly to innovation (Granovetter, 1973) and uncertainty management (Krackhardt, 1992). Building alliances can help to control certain situations (Wiltbank, Dew, Read, & Sarasvathy, 2006). Social interaction plays an important role in the effectuation process (Fischer & Reuber, 2011). The effectual entrepreneur seeks out and identifies partners with whom to start a business and commit in order to achieve a mutual benefit (Read, Song, & Smit, 2009; Rese, 2006). This type of entrepreneur seeks the joint creation of new products or services or any other type of cooperation to take advantage of new business opportunities. Effectual entrepreneurs looking for these opportunities are aware that they depend mainly on engagements with others to share knowledge, ideas, networks, money, or time. (Werhahn et al., 2015). In this way, when partners commit and work together, they better control the future of their business and reduce their uncertainty (Sarasvathy, 2001).

### *2.5. Affordable loss orientation*

According to Sarasvathy (2001), entrepreneurs who have an effectual orientation consider affordable losses to be more important than expected returns. This type of entrepreneur determines how much loss can be assumed and focuses on experimenting with as many strategies as possible to achieve success. Affordable loss becomes an important criterion on which entrepreneurs base their decisions. This way, entrepreneurs reject projects that cost more than they can afford to lose in favour of more affordable projects. Therefore, following this approach, each new venture would be seen as a project where the losses are under control. Additional resources would be incorporated only if the results justified it.

#### *2.6. Contingency orientation*

Companies have to deal every day with unexpected situations that are challenging to predict, particularly when they operate in uncertain environments (Hitt, Keats, & DeMarie, 1998). These surprises, whether positive or negative, give rise to setbacks. Effectual logic embraces these setbacks to pursue new business or market opportunities (Sarasvathy, 2008). The effectual entrepreneur does not see setbacks as obstacles to overcome, but as new resources and opportunities to exploit (Harmeling, 2011). This type of entrepreneur excels at pivoting to take advantage of unanticipated events (Sarasvathy, 2001). The individual must be willing to adapt in order to capitalise on these contingencies when faced with new information, means, or surprises (Read et al., 2009). Thus, a contingency orientation relates to the ability to make fast, creative, proactive, and effective changes. In other words, the effectual entrepreneur tries to take advantage of unforeseen events continuously and as advantageously as possible. The contingency orientation addresses the question of what the entrepreneur will decide to do about the environment and not how the entrepreneur will adapt to that environment (Werhahn et al., 2015).

#### *2.7. Control orientation*

Like organisations, individuals want to ensure favourable results (Wiltbank, Read, Dew, & Sarasvathy, 2009). The concept of control has particular relevance when the future is uncertain, as it seeks to exert some kind of influence on that future. This control implies believing that actors can proactively create or co-create their environment (Sarasvathy, 2001). From this perspective, the behaviour of companies and markets depends on individuals who do not conceive the future as an inevitable result of economic or



technological forces. Thus, effectual entrepreneurs rarely see an opportunity as being out of their control, and what they do is work to discover and create opportunities (Dew, Read, Sarasvathy, & Wiltbank, 2008). Control orientation implies that individuals perceive the environment as endogenous and therefore controllable. In this way, the individual is motivated to influence socio-economic trends and to create new markets. The control-oriented individual can face new challenges successfully, especially in uncertain situations (Werhahn et al., 2015).

### **3. Effectual propensity**

The existing literature has widely validated the measurement of effectual versus causal behaviour for the case of the entrepreneur who has already demonstrated such a behaviour (Brettel et al., 2012; Chandler et al., 2011). However, there is a gap in the literature if the aim is to measure the propensity of individuals to develop effectual or causal behaviours before these behaviours effectively take place. Being able to measure this propensity could have important practical implications. It would allow public, economic, and educational decision-makers to guide and refine these behaviours before they manifest. In this way, the potential entrepreneur will have the capacity to choose to develop an effectual or causal behaviour (or take a mixed position between the two behaviours) depending on the environmental circumstances (Futterer, Schmidt, & Heidenreich, 2018). Adequately training potential entrepreneurs will allow them to consciously consider each of the attributes of both orientations as they develop their entrepreneurial behaviour.

As noted above, the literature does not provide a validated scale to measure this effectual or causal propensity. In the methodology section, we adapted Werhahn et al.'s (2015) effectual orientation scale, which they validated in a corporate context. It was useful for this paper because it captures how an effectual strategic orientation at the corporate level can influence the effectual propensity of employees. Moreover, we validated a scale to measure the "causal propensity" of individuals that was adapted from the work of Chandler et al. (2011) and Gabrielsson and Politis (2011).

### **4. Methodology**

#### *4.1. Questionnaire*

The questionnaire is one of the methods most widely used by researchers in the field of entrepreneurship (Brettel et al., 2012; Dutta, Gwebu, & Wang, 2015; Estrada, Cruz,

Jover, & Gras, 2018; Guo et al., 2016). We adapted a questionnaire from the work of Werhahn et al. (2015), Chandler et al. (2011), and Gabrielsson and Politis (2011) to measure effectual and causal propensity in individuals who had not yet effectively developed such types of behaviour. On the one hand, the Werhahn et al. (2015) scale provided a measure of potential effectual behaviour adjusted to the original principles conceptualised by Sarasvathy and her colleagues (Dew et al., 2009; Sarasvathy, 2001). On the other hand, the scales of Chandler et al. (2011), and Gabrielsson and Politis (2011) completed the measurement of individuals' effectual orientation with the measurement of their causal orientation. When the questionnaire used is an adaptation of one developed by other authors, given that the proposed new instrument will not fully reflect the consistency of the original works, it is essential to re-establish its validity (Mendoza & Garza, 2009).

After finalising the initial design, a panel of entrepreneurship experts reviewed the questionnaire. Six researchers, six entrepreneurs and six entrepreneurship promoters participated in this panel. We contacted these experts by telephone or videoconference. Subsequently, a group of 34 students who met the expected profile reviewed the questionnaire. As a result, we produced a well-designed questionnaire that ensured that respondents fully understood the questions.

Once the refinement process was complete, we structured the definitive questionnaire into two differentiated sections (Lee, Tsao, & Chang, 2015). The first section included five demographic items: gender, age, nationality, employment status, and whether the student came from an entrepreneurial family. The second section included six categories that added up to a total of 25 questions to determine the effectual or causal propensity of the respondent.

#### *4.2. Sample and data collection*

To validate the new scale of measurement, we selected a sample of university students in their final year of studying for a business administration degree at the University of Cadiz and the University of Seville (Spain). Although they had not yet demonstrated effectual or causal behaviour, they could show a propensity towards the type of behaviour they would embody if they created a business. It was essential to study this propensity before they received specific training in entrepreneurship since this training would condition them. Therefore, the responses to the questionnaire were gathered in the first semester of the academic year before the students took a course on "business

creation” in which they would acquire the knowledge and necessary skills to carry out a business plan. Data collection took place in October and November 2018. We created an online questionnaire using Google’s Forms application (Hariguna, Lai, & Chen, 2016; Jiang & Wu, 2016; Lian, 2017), which allows the user to access the survey through a web link. This tool funnels the data directly into a spreadsheet, which facilitates subsequent statistical processing.

We obtained a sample of 230 completed questionnaires from a total of 463 students enrolled, obtaining a response rate of 49.67 %. Of those surveyed, 58.3 % were women. Furthermore, 86.1 % of those surveyed were between 18 and 24 years old, 11.7 % were between 25 and 30 years old, and the rest were more than 30 years old. Students from the University of Seville accounted for 58.3 % of the respondents, while the remaining 41.7 % were from the University of Cadiz. Moreover, 67.4 % of those surveyed were pursuing a business administration degree, while 32.6 % were pursuing a double degree in business administration and law. Of those surveyed, 36.1 % had parents who had owned or currently owned a business, 43.5 % had worked or were working as employees (as compared with 48.3 % who had never worked), and the rest either had been or were self-employed or were both self-employed and employed. Table 1 shows the descriptive information on the sample.

#### *4.3. Measures*

Following Sarasvathy (2001) and Gabrielsson and Politis (2011), we did not consider effectual propensity and causal propensity to be two extremes on the same scale. Instead, we divided the logic of the respondents’ decision-making into two different variables. Thus, the construct for effectual propensity was different and separate from the construct for causal propensity, making it possible to detect any combination of the two approaches.

On the one hand, we adapted the items for the construct “effectual propensity” from the work of Werhahn et al. (2015), which contemplates five dimensions: (1) Means Orientation; (2) Partnership Orientation; (3) Affordable Loss Orientation; (4) Contingency Orientation; and (5) Control Orientation. Means Orientation is the tendency of individuals to use the resources they already have and select a possible outcome that can be achieved with those resources. We measured this variable using three items. Partnership Orientation is the propensity of individuals to seek out partners to develop their projects, committing themselves to achieve mutual benefit. Four items

measured this variable. Affordable Loss Orientation implies the tendency of individuals to make decisions by limiting their losses rather than focusing on expected returns. This variable was measured using three items. Contingency Orientation is the tendency of individuals to accept setbacks generated in uncertain environments as opportunities to be exploited. Four items measured this variable. Control Orientation is the tendency of individuals to proactively create their environment, especially in situations of uncertainty, by working to discover and create new opportunities. We measured this variable using four items.

On the other hand, the Causal Propensity of individuals is the tendency to make decisions and solve problems based on the selection of the necessary resources according to the available means and the desired outcome. Seven items measured Causal Propensity. Items one, three, and six were adapted from the work of Chandler et al. (2011). Items two, four, five, and seven were adapted from the work of Gabrielsson and Politis (2011). Following Dittrich, Francis, Hatzinger, and Katzenbeisser (2005), the above items were measured on a seven-point Likert scale, with one corresponding to “strongly disagree” and seven to “strongly agree”. Table 2 shows all the items.

## 5. Results

We used SmartPLS software to carry out the analysis of the measurement model. It allows for analysing the relationships between latent variables and their indicators. This analysis shows whether all the indicators represent their corresponding construct or whether some of them need to be removed. SmartPLS evaluates the measurement of variables based on individual reliability, construct reliability, discriminant validity, and convergent validity. This analysis ensures that the indicators are good at representing their corresponding variable. Reliability ensures that the measurement produces consistent results, and validity ensures that the indicators of a construct measure only their construct and not another.

First, the individual reliability of each item was analysed by simple correlations of the indicators with their respective construct. According to Carmines and Zeller (1979), loads must be  $\lambda \geq 0.707$  to accept an indicator. However, some researchers consider that this rule of thumb ( $\lambda > 0.707$ ) should not be so rigid in the initial stages of scale development (Hair Jr, Black, Babin, & Anderson, 2014).

Hair, Black, Babin, and Anderson (2014) establish that indicators with loads between  $-0.4$  and  $0.7$  could be removed from a scale if their suppression leads to an increase in the

mean extracted variance (AVE) or composite reliability (CR) above the suggested threshold value (AVE 0.5; CR 0.7). In any case, researchers should eliminate indicators with very low loads (i.e., 0.4) (Hair Jr, Ringle, & Sarstedt, 2011). In this study, there were no indicators with loads below 0.4, although there were indicators with loads between 0.4 and 0.7 (see Table 2) that could be eliminated at a later stage.

Second we analysed the reliability of the construct to see how rigorously the indicators measured the same latent variable. For this purpose, the measures corresponding to the composite reliability (Werts, Linn, & Joˆreskog, 1974) should be greater than 0.8 (Nunnally & Bernstein, 1995). Dijkstra–Henseler’s rho ( $\rho_A$ ) is another indicator to determine the reliability of the construct. Its value must be above 0.7 (Dijkstra & Henseler, 2015). In this study, all indicators met this requirement except for the Dijkstra–Henseler indicator in the construct “affordable losses”, since its result was 0.691, which did not exceed the established value of 0.7. However, we did not remove the indicator since the value was very close to 0.7, it met the composite reliability threshold (which is a measure of greater acceptance than the indicator  $\rho_A$ ), and the loads of the indicators that make up this variable were quite high (see Table 2).

Subsequently, convergent validity was studied to verify that the indicators represent a single underlying construct. The average extracted variance (AVE) was used as a measure of this validity, requiring values greater than 0.5 (Fornell & Larcker, 1981). The latent variable “Causation” explained less than 50 % of the variance of the indicators that comprised it (Table 2).

**Table 1.** Descriptive information on the sample.

Sample	230 (Response rate: 49.67 %)	
Gender	Female: 58.3 %;	
	Male 41.7 %	
Age	18-24: 86.1 %	
	25-30: 11.7 %	
	30-: 2.2 %	
Parents who own/had owned a business		36.1 %
Working experience	As employees: 43.5 %	
	As self-employed: 8.2%	
	Never worked: 48.3 %	

**Table 2.** Convergent reliability and validity before eliminating indicators

<b>Constructs/Indicators</b>	<b>Loads</b>	<b>Composite Reliability</b>	<b><math>\rho_A</math></b>	<b>AVE</b>
<b>Means</b>		0.868	0.773	0.686
I use my personal knowledge and experience in the best possible way.	0.825			
I pursue those initiatives for which I have great motivation and interest.	0.814			
I pursue those initiatives for which I personally have the relevant competencies.	0.845			
<b>Partnership</b>		0.812	0.708	0.524
When I work with others, I aim to ensure that gains and risks are shared fairly.	0.608			
I approach potential partners very early on in order to jointly co-create new things.	0.811			
I enter into relationships with partners who are willing to commit (e.g. invest time) from the onset.	0.816			
When new actors appear in my environment, I perceive them as potential partners.	0.634			
<b>Affordable Loss</b>		0.819	0.691	0.601
I would only invest in a business what I can afford to lose.	0.823			
In a business, I would try to limit the potential loss of initiatives to an acceptable degree, although it could be that by investing more, I would finally obtain benefits.	0.726			
I would only invest in my business if the loss of the investment would not ruin the company, although it could be that by investing more, I would finally obtain benefits.	0.775			
<b>Contingency</b>		0.880	0.826	0.649
I regard surprises to be new opportunities that I could take advantage of.	0.784			
I exploit contingencies as effectively as possible.	0.888			
When I have new information, I try to take advantage of it.	0.737			
I use setbacks as new opportunities to take advantage of.	0.805			
<b>Control</b>		0.835	0.744	0.561
I attempt to shape the environment I operate in.	0.810			
I attempt to proactively design my environment with others.	0.816			
In a business, we must attempt to create with others new needs for the market.	0.603			
I attempt to influence trends.	0.748			
<b>Causation</b>		0.835	0.786	0.424

I usually design a long-term plan to organise myself in my tasks.	0.689
I prefer to have predetermined goals and to strive to achieve the results of these goals.	0.748
I analyse long-run opportunities and select what I think would provide the best returns.	0.732
I try to avoid uncertain situations to the greatest possible extent.	0.488
When I set goals to achieve, I analyse my competitors in depth.	0.624
I usually implement control processes to make sure I meet the objectives.	0.640
I think my relationships with those who can influence my future should be long term and goal oriented.	0.600

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Note:  $\rho_A$ : Dijkstra–Henseler; AVE: Average extracted variance.

We removed the following two items to solve this problem: “I try to avoid uncertain situations to the greatest possible extent” and “When I set goals to achieve, I analyse my competitors in depth”. As a result, the AVE reached an acceptable score above the recommended 0.5.

Finally, we analysed the discriminatory validity before removing the previous items. The discriminatory validity is the extent to which a given construct is different from other constructs. Following Henseler, Ringle, and Sarstedt (2016), there is discriminant validity when the heterotrait-monotrait ratio of correlations (HTMT) has values below 0.85 (Gold, Malhotra, & Segars, 2001). Table 3 shows that all values were below this threshold, so we did not need to remove any other indicators.

After the removal of the two items, we recalculated all previous indicators (see Tables 4 and 5). Individual reliability was met as the loads were within the thresholds defined above. The reliability of the construct was also met as the values of the composite reliability exceeded the limit of 0.8 and the  $\rho_A$  results were also higher than 0.7. Concerning convergent validity, we observed that all AVE values exceeded 0.5, so each item adequately represented a single construct.

Finally, after the elimination of the two items, it was verified that discriminant validity still existed since the values of the HTMT ratio between the different variables were less than 0.85 (see Table 5).

As indicated above, this research aims to develop and validate a measurement instrument

that assesses the propensity of individuals towards effectual or causal behaviour when they have not yet created a company but could potentially do so. We designed a 25-item questionnaire, adapted from the work of Werhahn et al. (2015), Chandler et al. (2011), and Gabrielsson and Politis (2011), that measured six variables — five related to the effectual propensity of the individual (means, partnership, affordable losses, contingency, and control) and one related to causal propensity.

**Table 3.** Discriminant validity before eliminating indicators

	<b>Means</b>	<b>Partnership</b>	<b>Affordable Loss</b>	<b>Contingency</b>	<b>Control</b>	<b>Causation</b>
<b>Means</b>						
<b>Partnership</b>	0.713					
<b>Affordable Loss</b>	0.170	0.308				
<b>Contingency</b>	0.540	0.590	0.314			
<b>Control</b>	0.445	0.771	0.244	0.660		
<b>Causation</b>	0.512	0.667	0.489	0.562	0.668	

**Table 4.** Convergent reliability and validity after eliminating items

<b>Constructs/Indicators</b>	<b>Loads</b>	<b>Composite Reliability</b>	<b><math>\rho_A</math></b>	<b>AVE</b>
<b>Means</b>		0.868	0.773	0.686
I use my personal knowledge and experience in the best possible way.	0.829			
I pursue those initiatives for which I have great motivation and interest.	0.812			
I pursue those initiatives for which I personally have the relevant competencies.	0.843			
<b>Partnership</b>		0.812	0.705	0.524
When I work with others, I aim to ensure that gains and risks are shared fairly.	0.610			
I approach potential partners very early on in order to jointly co-create new things.	0.808			
I enter into relationships with partners who are willing to	0.812			



commit (e.g. invest time) from the onset.

When new actors appear in my environment, I perceive them as potential partners.	0.641			
<b>Affordable Loss</b>		0.819	0.683	0.602
I would only invest in a business what I can afford to lose.	0.814			
In a business, I would try to limit the potential loss of initiatives to an acceptable degree, although it could be that by investing more, I would finally obtain benefits.	0.748			
I would only invest in my business if the loss of the investment would not ruin the company, although it could be that by investing more, I would finally obtain benefits.	0.764			
<b>Contingency</b>		0.880	0.828	0.648
I regard surprises to be new opportunities that I could take advantage of.	0.780			
I exploit contingencies as effectively as possible.	0.888			
When I have new information, I try to take advantage of it.	0.743			
I use setbacks as new opportunities to take advantage of.	0.802			
<b>Control</b>		0.835	0.744	0.561
I attempt to shape the environment I operate in.	0.810			
I attempt to proactively design my environment with others.	0.816			
In a business, we must attempt to create with others new needs for the market.	0.603			
I attempt to influence trends.	0.748			
<b>Causation</b>		0.834	0.763	0.504
I usually design a long-term plan to organise myself in my tasks.	0.743			
I prefer to have predetermined goals and to strive to achieve the results of these goals.	0.785			
I analyse long-run opportunities and select what I think would provide the best returns.	0.757			
I usually implement control processes to make sure I meet the objectives.	0.637			
I think my relationships with those who can influence my future should be long term and goal oriented.	0.612			

Note:  $\rho_A$ : Dijkstra–Henseler; AVE: Average extracted variance

**Table 5.** Discriminant validity after elimination of items

	<b>Means</b>	<b>Partnership</b>	<b>Affordable Loss</b>	<b>Contingency</b>	<b>Control</b>	<b>Causation</b>
<b>Means</b>						
<b>Partnership</b>	0.713					
<b>Affordable Loss</b>	0.170	0.308				
<b>Contingency</b>	0.540	0.590	0.314			
<b>Control</b>	0.445	0.771	0.244	0.660		
<b>Causation</b>	0.500	0.665	0.406	0.571	0.637	

After analysing the individual reliability, reliability of the construct, discriminant validity, and convergent validity of these constructs, we obtained a scale with 23 reliable and valid items (see Table 4). From the initial scale of 25 items, we eliminated only two items from the causal propensity construct to increase the explained variance and improve convergent validity. The items eliminated were: “I try to avoid uncertain situations to the greatest possible extent” and “When I set goals to achieve, I analyse my competitors in depth”.

## 6. Discussion

The results obtained show how an adequate adaptation of the scales proposed by Werhahn et al. (2015), Chandler et al. (2011), and Gabrielsson and Politis (2011) can be useful to measure the effectual and causal propensity of individuals who have not yet created a business.

This new scale has practical implications for management and the literature on entrepreneurial intention. Regarding the theoretical implications, this scale provides added value for entrepreneurship research interested in analysing the previous and initial stages of the entrepreneurial process. In this regard, the scale developed can contribute to the literature on entrepreneurial intention (Lechuga Sancho, Martín-Navarro, & Ramos-Rodríguez, 2019) and opportunity recognition (Ramos-Rodríguez, Medina-Garrido, Lorenzo-Go´mez, & Ruiz-Navarro, 2010), given the different behaviours that entrepreneurs might adopt at

these stages of the entrepreneurial process depending on their effectual or causal orientation. This work offers a measurement instrument that fills a gap in the academic literature, as we have not found any scale that measures the propensity of individuals towards effectual or causal behaviour before starting a business. The results we have obtained fill this gap and represent an advance over previous analyses in the literature. This scale will allow other researchers to assess the effectual orientation of individuals who have not yet started a business in different contexts and populations, as its reliability and validity provide confidence for any future academic research design. In this way, this scale can contribute to the construction of more robust theories of entrepreneurial intention with effectual versus causal orientation.

In terms of practical implications, the measurement of effectual propensity will also be of practical use for those public and private agents with the function of promoting entrepreneurship since they will be able to pre-evaluate potential entrepreneurs and orient them towards a better use and fit to the environment of effectual and causal logics (Futterer et al., 2018). This scale will also be useful for the entrepreneurs and managers of already consolidated companies, who will be able to evaluate themselves and the members of their companies in order to implement the strategic orientation they consider most appropriate (Werhahn et al., 2015). Furthermore, effectual entrepreneurs who wish to assess the effectual propensity of their potential partners and workers may also use this scale of measurement before deciding to rely on them.

This tool will be particularly useful for the education system. Those academic institutions interested in developing the entrepreneurial potential of their students (Nowin´ski, Haddoud, ; Padilla-Angulo, 2019; Ramos-Rodríguez et al., 2019) will have a validated measurement instrument with which to evaluate the initial propensity of their students towards an effectual or causal behaviour. This starting point will be useful when establishing the content of the training offered, allowing for the development of the logic (effectual versus causal) that is most innate to the students. Once academic institutions have detected and developed the dominant logic of each student, it is also advisable to train them in their non-dominant logic so that they can discern, apply, and combine both logics in order to improve their chances of success according to their entrepreneurial context (Futterer et al., 2018).

## **7. Conclusions**

Effectual and causal logics suggest that entrepreneurs demonstrate different types of

behaviour when they create and manage their companies and in their interactions with the environment (Sarasvathy, 2001). The literature on entrepreneurship has extensively studied these two types of behaviours (Brettel et al., 2012; Guo et al., 2016; Schmidt & Heidenreich, 2014). However, we have not found any studies that measure the individual's propensity towards these logics for the potential entrepreneur. Given the gap detected, the study of the propensity towards an effectual or causal behaviour supposes high added value to the literature on entrepreneurship. In this sense, this research aims to develop and validate a measurement instrument that assesses an individual's propensity towards effectual or causal behaviour before they have started a company. To achieve this objective, we designed a questionnaire adapted from the works of Werhahn et al. (2015), Chandler et al. (2011), and Gabrielsson and Politis (2011). To check the reliability and validity of the items included in the questionnaire, a sample of final-year university students in the business administration programmes at the University of Cadiz and the University of Seville (Spain) was analysed, obtaining 230 valid responses. After analysing the individual reliability, construct reliability, discriminant validity, and convergent validity, we obtained a scale with 23 valid and reliable items (see Table 4).

This scale has important implications for the literature on potential entrepreneurship and entrepreneurial intention that is interested in the stages prior to the creation of a company. This work offers a measurement instrument that fills a gap in the literature regarding the measurement of individuals' propensity towards effectual or causal behaviour before starting a business. Likewise, the measurement of effectual propensity will be of practical use for: (1) entrepreneurship promoters who must guide the behaviour of entrepreneurs in a manner consistent with the environmental context (Futterer et al., 2018); (2) entrepreneurs and managers of consolidated companies who wish to implement a specific strategic orientation in their companies (Werhahn et al., 2015); (3) entrepreneurs who wish to measure the effectual propensity of their potential partners and workers; and (4) academic institutions interested in developing and orienting the entrepreneurial potential of their students.

However, some limitations must be kept in mind when interpreting these results. More empirical work is needed to increase the validity and generalisation of the established measures. Another limitation to consider is that we have used a sample with students from two universities in the same country. Future research should contrast this scale in

different segments of the population in other countries and cultures. Another future line of research that would also fill a gap in the literature on entrepreneurship is the study of the moderating role of “effectual propensity” and “causal propensity” in entrepreneurial intentions (Arranz, Arroyabe, & Fdez. de Arroyabe, 2019; Dutta et al., 2015; Jeger, Sušanj, & Mijoć, 2014; Nowin’ski et al., 2019; Padilla-Angulo, 2019; Valliere, 2014, 2015).

### **CRedit authorship contribution statement**

**Alicia Martín-Navarro:** Conceptualization, Methodology, Validation, Formal analysis, Investigation, Resources, Data curation, Writing – original draft, Supervision, Funding acquisition. **José Aurelio Medina-Garrido:** Conceptualization, Methodology, Validation, Formal analysis, Writing – review & editing, Visualization, Supervision. **Félix Velicia-Martín:** Methodology, Validation, Formal analysis, Investigation, Resources, Data curation, Writing – original draft.

### **Declaration of competing interest**

The authors have no relevant financial or non-financial interests to disclose.

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# **CAPÍTULO 3**

## **Impact of Effectual Propensity on Entrepreneurial Intention**

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# IMPACT OF EFFECTUAL PROPENSITY ON ENTREPRENEURIAL INTENTION

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## Abstract

For decades, entrepreneurship has been promoted in academia and the tourism sector and seen as an opportunity for new business ventures. In entrepreneurial behaviour, effectual logic shows how individuals use their resources to create new opportunities. This paper aims to determine effectual propensity as an antecedent of entrepreneurial intentions. For this purpose, and based on the TPB model, we conducted our research with tourism students from Cadiz and Seville (Spain) universities with Smart PLS 3. The results show that effectual propensity influences entrepreneurial intentions and that attitude and perceived behavioural control mediate between subjective norms and intentions. Our research has a great added value since effectual propensity is studied for the first time as an antecedent of intentions in people who have never been entrepreneurs.

**Keywords:** TPB, entrepreneurial intentions, effectual propensity, tourism students, SEM.

## Introduction

Tourism is one of Spain's most important economic sectors due to its contribution to GDP and its constant growth in recent decades (Lechuga Sancho et al., 2020). In 2019, Spain was considered the world's second most visited tourist destination. Mainly for sun and beach tourism, eighty-two million tourists decided to visit the country, generating an

economic benefit of more than 92 billion euros. This growing trend halted drastically from March 2020 due to the closure of borders because of the COVID-19 pandemic. This situation meant that tourism was primarily domestic in the summer of 2020 and 2021. However, although this sector has not yet reached pre-pandemic rates, it is now gradually recovering the number of foreign tourists visiting the country (Cava Jimenez et al., 2022). After Catalonia, the Canary Islands, and the Balearic Islands, the fourth Spanish region with the most tourists is Andalusia, in the country's south. In Andalusia, tourism activity represents an economic engine. Tourism contributed approximately 13% of the region's GDP and employed more than 385,000 people in 2019. This data indicates that the Spanish tourism industry, particularly in Andalusia, is a key factor in the economic development of the territory (García-Machado et al., 2020).

Several factors justify Spain's success in the tourism industry. Spain is the third destination in the world in terms of UNESCO World Heritage Sites, with 48 sites. It is also the first country in the world in Natural Areas and Spaces declared Biosphere Reserves by UNESCO (49 sites). More than 300 days of sunshine a year and almost 8,000 km of coastline, as well as ski resorts, rural tourism, and wellness activities, offer the visitor numerous possibilities. The high quality and variety of Spanish gastronomy are internationally renowned. It is one of the world's safest countries and has a high-standard health system. In terms of infrastructure, it has a high level of land, rail, and air connectivity. It is also the second country in the world, after Korea, regarding digital infrastructure. All of the above means that the tourism industry in Spain offers excellent opportunities for investment, according to the *Spain for Tourism and Leisure Industry* report from the Instituto de Comercio Exterior (ICEX) from "Ministerio de Industria, Comercio y Turismo" ([www.investinspain.org](http://www.investinspain.org)).

Within the Spanish tourism sector, the hospitality sector is highly competitive. These industries contribute to regional development by including a wide range of tourism-related activities that bring synergistic value to the industry due to the "coopetition" they experience (Fong et al., 2018). In this regard, tourism offers many entrepreneurship and business development opportunities (Montañés-Del-Río & Medina-Garrido, 2020; Ramos-Rodríguez et al., 2012). This industry promotes economic development in its geographical area of influence, by acting as an engine for other economic sectors. In this context, the tourism entrepreneur is key to developing attractive destinations, creating

employment, and increasing labour productivity and income of the local population (Tleuberdinova et al., 2021).

Increasingly, researchers recognise the positive relationship between entrepreneurship, economic growth and poverty reduction (Gielnik, M. M., & Frese, 2013; Lateh et al., 2017; Sabirov, 2022; Vargas-Hernández et al., 2021). In this regard, fostering entrepreneurship is crucial in all countries, since it contributes to the development of the economy by increasing productivity, creating new employment opportunities, and revitalising markets through the development of new products (Esfandiar et al., 2019). For this reason, developed countries promote entrepreneurship among their population, especially among the younger generations (Ahmad et al., 2019) and especially among university students (Breznitz & Zhang, 2022; Kitagawa et al., 2022).

The academic literature highlights the importance of entrepreneurial intention as a precursor to entrepreneurial decision-making (Maheshwari, 2021). In the initial stages of the entrepreneurial process, the decision to start up a new enterprise is preceded by the detection of opportunities (Ramos-Rodríguez et al., 2010) and the intention of creating a new venture (Liñán, 2008). The Theory of Planned Behaviour (TPB) (Ajzen et al., 1991) proposes a helpful model for the analysis of entrepreneurial intention (Krueger et al., 2000; Liñán, 2004; Soomro et al., 2018; Urban & Ratsimanetrimanana, 2019). By applying TPB concepts, entrepreneurial intention depends on the personal attitude (PA), subjective norms (SN) and perceived behavioural control (PBC) of the potential entrepreneur. In another respect, and according to Sarasvathy (2001), entrepreneurs may apply a causal or effectual logic while creating their new business. To date, scholars have analysed effectual logic versus causal logic by studying the behaviour of individuals who have already created companies (Brettel et al., 2012; Guo et al., 2016; Schmidt & Heidenreich, 2014). However, effectual research fails to analyse entrepreneurial intention (Shahidi, 2020). The literature has not studied the individual propensity towards one or the other logic in the case of the potential entrepreneur who intends to become an entrepreneur for the first time. The theories of entrepreneurship concerning the study of entrepreneurial intention seem incompatible with the theories on the type of entrepreneurial behaviour to develop since they apply to two different moments of the entrepreneurial process. In this respect, there is a gap in the academic literature since



effectual logic as an antecedent of entrepreneurial intentions has never been investigated. Considering this gap, a study into the propensity for effectual behaviour before the firm's creation would add value to entrepreneurship research (Martín-Navarro et al., 2021). Based on the above, this paper aims to test the direct and indirect impact of the effectual propensity of potential entrepreneurs on their entrepreneurial intention.

The literature on entrepreneurship widely recognises the university's role as a pool of potential entrepreneurs (Lechuga Sancho et al., 2021). The reasons why students do or do not intend to run their own businesses have been the subject of interest in the entrepreneurship literature (Trang & Doanh, 2019). Since the tourism sector offers many opportunities for entrepreneurial development, university students of tourism constitute human capital with great potential for entrepreneurship in this sector. Promoting the entrepreneurial intention of these students will positively impact their entrepreneurial behaviour and, therefore, create jobs and boost the economy (Zhang et al., 2020). For this reason, our study was conducted with the University of Cadiz and the University of Seville tourism students. Exploring the entrepreneurial intentions of this type of student is crucial for the current and future development of the tourism and hospitality industry (Tsai et al., 2016) in Andalusia.

In order to achieve our research objective, we developed several research hypotheses based on the model of intentions from the work of Ajzen et al. (1991) and the effectuation theory of Sarasvathy (2001b). In the methodology section, a questionnaire is presented that was designed to collect data to validate our research model through PLS-SEM. The results showed, among other relationships, the positive effect of effectuation propensity on the entrepreneurial intentions of the sample. In this respect, this research fills the gap in the aforementioned literature, thereby adding value to the literature on entrepreneurial intentions.

## **Background**

Entrepreneurial intention has become a fascinating field in entrepreneurship research. It presents a way to discover people's desire and commitment to create new ventures. Entrepreneurship research shows those personal and contextual factors that motivate the individual to start an entrepreneurial project (Ramos-Rodríguez et al., 2015; Shahzad et al., 2021).

In the 1980s, several authors proposed different models of entrepreneurial intentions based on exogenous, environmental, and social factors to explain entrepreneurial intentions. Among the pioneers, the entrepreneurial event model (EEM) (Shapero, 1984) and Bird's Model (Bird, 1988) deserve mention. The first model proposes that entrepreneurial intentions depend on perceived desirability, perceived feasibility, and propensity to act. The second model bases intentionality on the individual's rational and intuitive thinking. A few years later, Krueger et al. (2000) showed one of the most influential models: the "Shapero-Krueger Model". This model adds two variables to the EEM: Specific Desirabilities as an antecedent to Perceived Desirability and Perceived Self-Efficacy as an antecedent to Perceived Feasibility.

However, the reference theory in the research of entrepreneurial intentions is, without a doubt, the Theory of Planned Behaviour (TPB) by Ajzen (1991), which has become one of the most widely used theories in social psychology in general (Liñán & Fayolle, 2015). The Theory of Planned Behaviour (TPB) is an accepted model for the analysis of the propensity of individuals to develop a particular behaviour. This framework helps in the study of entrepreneurial intention (Krueger et al., 2000). According to the TPB model, intentions are the result of three factors: (1) personal attitude (PA) towards a given behaviour; (2) subjective norms (SN) determined by social pressure; and (3) perceived behavioural control (PBC), understood as the ability to carry out a specific behaviour (Ajzen, 1991). This theory has been widely used in entrepreneurship and has been empirically tested by numerous scholars (Liñán, 2004; Soomro et al., 2018; Urban & Ratsimanetrimanana, 2019). In this respect, the literature on entrepreneurship adapts the general elements of the TPB to the explanation of entrepreneurial intention. Thus, PA towards behaviour refers to how individuals have a positive or negative personal appraisal of being an entrepreneur. Individuals' attraction towards the desire to start their own businesses affects their entrepreneurial intention (Ajzen, 1991). SN reflect the pressure individuals receive from their social environment to perform certain behaviours (Ajzen, 1991). In an entrepreneurial setting, SN refer to the importance that individuals attach to the approval of their closest circle (family, friends, or other people of reference) regarding their decision to start a business (Liñán, 2008). Finally, PBC refers to individuals' perception that entrepreneurship is easy or difficult and that they can control their behaviour (Ajzen, 2002). Moreover, there is precedent for research that has used the TPB to measure entrepreneurial intentions in the tourism sector. In this regard,

Kusumawardani et al. (2020) used the TPB framework to measure women's entrepreneurial intentions in the Balinese tourism industry. Similarly, Mei et al. (2016) measured the entrepreneurial intention of Chinese tourism students through the TPB Model. The work of Phuc et al. (2020), who investigated the factors influencing the entrepreneurial intentions of undergraduate tourism students in Vietnam, also deserves mention.

Decisions on how to develop a business idea, acquire the necessary resources, and implement effective decision-making all occur under conditions of uncertainty (Villani et al., 2018). Entrepreneurship researchers have assumed that individuals pursuing entrepreneurial opportunities are guided solely by rational, goal-directed behaviour (Perry et al., 2012). This thinking fits into a causal behavioural model of entrepreneurship (Sarasvathy, 2001). In contrast, the effectual behaviour theory of entrepreneurship proposes a different approach to explain how certain entrepreneurs make decisions (Sarasvathy, 2001). Thus, causation and effectuation represent two distinct frameworks applicable to the creation of new ventures. The first is characterised by careful planning, while the latter is based on a more flexible, adaptive, and experimental strategy (Read & Sarasvathy, 2005).

Given the above framework, the logic of effectuation is that entrepreneurs employ a set of attained means and focus on deciding what they can create with such means (Sarasvathy, 2001). When creating new ventures, entrepreneurs who follow an effectual approach, since they make decisions and observe the results of said decisions, use this new information to change course. Thus, entrepreneurs who follow an effectual logic are less likely to plan for the future and prefer to change their initial goals and vision for their new venture. Therefore, instead of predicting the future, they are more likely to work with the means they have under their control and make the necessary adjustments (Dew et al., 2009).

For Sarasvathy (2001a), this approach offers five decision-making principles (means, association, affordable loss, contingencies, and control): (1) start with the *means* (entrepreneur's skills, knowledge, and social relationships), for which, in the process of creating a new venture, goals emerge based on the entrepreneur's available *means*; (2) form partnerships to seek business opportunities together, share resources, and work together, with less uncertainty and more control of each partner's business; (3) focus on

downside risk, and worry more about the *affordable loss* than the profits to achieve; (4) take advantage of contingencies and without considering these contingencies as obstacles, but instead as new opportunities to exploit; and, (5) control the future, which is uncertain but controllable because entrepreneurs can influence trends, create new markets, and face new challenges.

To understand the behaviour of this type of individual, we must determine their orientation towards effectual principles. Sarasvathy's (2001a) theory has been widely studied by the academic community as applied to entrepreneurs starting new ventures (Chandler et al., 2011; Matalamäki et al., 2017; Smolka et al., 2018). However, few have been concerned with the effectual orientation of potential entrepreneurs. In this regard, Martín-Navarro et al. (2021) are the first to incur the concept of effectual propensity (EP). Effectual propensity determines the orientation of a person towards an effectual logic before starting a business.

This research aims to fill the gap in the literature regarding the impact of effectual propensity on entrepreneurial intentions (Martín-Navarro et al., 2021). The relationships between effectual propensity and the TPB variables (attitudes, subjective norms, and perceived behavioural control) provide a useful theoretical framework for the study of this impact. Nine hypotheses in this regard are developed below.

### **Hypothesis Development and Research model**

Attitudes are psychological traits that influence entrepreneurial intentions. Attitudes can change over time and be influenced by education and experience. Underlying attitudes are cognitive structures (Krueger, 2007). Cognitive structures are sets of ideas individuals have regarding a given area of knowledge and how they organise them in their minds. We can point to effectual logic among the cognitive structures, including decision-making and problem-solving methods (Sarasvathy & Dew, 2008). Thus, an individual's EP can be a precedent for PA and can be raised:

**H1:** EP is positively related to PA towards entrepreneurship.

According to Yoon and Cho (2021), an internal locus of control is positively related to effectual and causal behaviour. However, the central theme of the entrepreneur's effectual logic is control and not prediction, which is characteristic of causal behaviour (Sarasvathy, 2001). Effectual behaviour considers that individuals believe that they can

control their future. Even though the future is uncertain, effectual entrepreneurs perceive the creation of new markets and opportunities (Sarasvathy, 2001). This idea involves the perception of having the ability to control events. Therefore, control as an effectual principle is connected to the TPB concept of PBC, understood as the perception that one can carry out a particular behaviour (Ajzen, 1991). For this reason, it can be argued that:

**H2:** EP is positively related to PBC.

According to effectuation theory, effectual behaviour relies on five principles: means, partnership, affordable loss, contingencies, and control orientation. Traditionally, the entrepreneurship literature analyses effectual behaviour subsequent to the creation or development of a firm. Following Martín-Navarro et al. (2021), we will apply these same principles to the effectual propensity of individuals, that is, the tendency to develop effectual behaviour before creating the firm. A review of the previous literature enables the principles of effectual behaviour to be related and applied in the same way to the propensity for effectual behaviour and its impact on entrepreneurial intention (Martín-Navarro et al., 2023). The way in which potential entrepreneurs' means, knowledge, and skills positively affect entrepreneurial intention is also considered. Similarly, risk propensity, which we can relate to *affordable loss*, also influences entrepreneurial intention (Shahzad et al., 2021). Concerning the effectual principle of *partnership*, there is evidence of how collective entrepreneurship explains entrepreneurial intention among young members of rural agricultural cooperatives (Houssain Bouichou et al., 2021). Along the same lines, there is evidence that team cooperation moderates the positive relationship between entrepreneurial education and entrepreneurial intention (Li & Wu, 2019). Similar to the ability to recognise opportunities in difficult situations, contingency can also be related to intentions. Al Mamun et al. (2016) found that students who could identify opportunities increased entrepreneurial intentions. Finally, environmental *control* orientation is closely related to the internal locus of the control concept (Somi, 2015). This concept assumes that individuals control their destinies and think that what happens depends on their abilities and knowledge (Mueller & Thomas, 2001). Therefore, if entrepreneurs feel that they have strong control of their destinies, they will be more confident regarding their chances of success, thus increasing their entrepreneurial intentions. In this respect, many scholars have found the effect of internal locus of control on entrepreneurial intentions (Annisa et al., 2021; Erickson & Laing, 2016; Nasip et al.,

2017; Torres et al., 2017). Given that the principles that govern EP are the same as those that govern effectual behaviour after entrepreneurship (Martín-Navarro et al., 2021), it can be deduced that there must also be a relationship between EP and EI. There is empirical evidence for this relationship. A sample of graduates from a leading business school in Pakistan showed that training students in effectual entrepreneurial logic significantly increased their intentions to start a business (Qureshi & Mahdi, 2014). Based on the above, it can be argued that:

**H3:** EP is positively related to entrepreneurial intention.

On the other hand, SN involve a significant social influence on individuals. Individuals in a group feel they must have appropriate behaviour, usually conditioned by family, friends, or peers (Yasa et al., 2021). In this way, SN present a significant relationship with the individual's attitude (Kotler & Keller, 2015). Piroth et al. (2020) found empirical evidence for the positive effect of SN on PA in a study on online grocery shoppers. Similarly, Yasa et al. (2021) tested how SN positively influence PA towards wearing a face mask. These arguments allow the following hypothesis:

**H4:** SN are positively related to PA towards entrepreneurship.

The support of the most influential people who make up the SN of individuals and influence their PA also influences the behaviour of those individuals. Thus, an individual's behaviour is favourable to entrepreneurship when potential entrepreneurs have the emotional support of those important people in their lives (Ramos-Rodríguez et al., 2019). In this respect, a study of a sample of Italian university students found that the effect of SN on PBC was significant and more robust in the female group than in the male group (Scafarto et al., 2019). Eysel & Vatansever Durmaz (2019) also found a positive relationship between SN on TPB in undergraduates of social sciences and natural sciences studying at Bahçeşehir University. Moreover, although only partially, a relationship between SN and PBC was also found in a study of a sample of international students at universities throughout Turkey (Usman & Yennita, 2019). This previous evidence justifies the proposal of the following hypothesis:

**H5:** SN are positively related to PBC.

Regarding the influence of PA on PBC, Usman and Yennita (2019) found a strong effect of PA on PBC in college students. Similarly, in a sample of secondary-school

students in Portugal, the relationship between PA and PBC was significant (Do Paço et al., 2011). Furthermore, in a study among farmers that analysed the factors affecting the intention to continue with Conservation Agriculture during 2020, Tama et al. (2021) found scientific evidence of a relationship between PA and PBC. These arguments allow the formulation of the following research hypothesis:

**H7:** PA towards entrepreneurship is positively related to PBC.

As reflected in the entrepreneurship literature within the TPB framework, PA, SN, and PBC are determinants of entrepreneurial intention (Krueger et al., 2000; Liñan, 2004; Soomro et al., 2018; Urban & Ratsimanetrimanana, 2019). In this respect, PA is the determinant that motivates intentions in the greatest number of studies. However, the relationship between SN and intentions is the relationship most often left unsupported. Of the three factors, that which usually has the most significant relationship with intentions is PBC, while the SN factor usually has the weakest impact (Lortie & Castogiovanni, 2015). Nevertheless, sufficient empirical evidence has been found that PA, SN, and PBC are all antecedents of entrepreneurial intentions. Thus, Kautonen et al. (2013) revealed a positive relationship of the three factors on entrepreneurial intentions in their study of the working-age population in Finland. Similarly, in an investigation of a sample of students at a university in Yemen, the three predictors of TPB intention were all found to be significant (Al-Jubari, 2019). Moreover, in the analysis of data obtained through a questionnaire answered by Information Systems students, it was also found that the three variables that precede intentions in the TPB influence the students' intention to create a new business (Kaltenecker et al., 2015). Based on the arguments presented, we propose the following relationships:

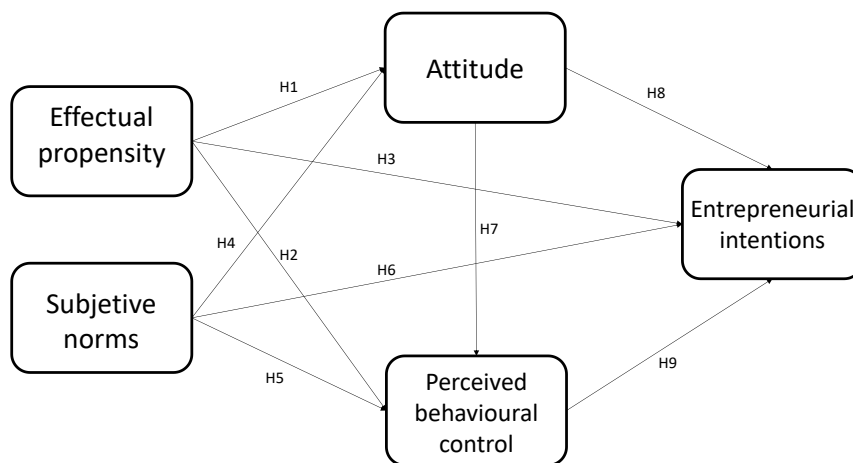
**H6:** SN are positively related to entrepreneurial intention.

**H8:** PA towards entrepreneurship is positively related to entrepreneurial intention.

**H9:** PBC is positively related to entrepreneurial intention.

Figure 1 shows the relationships considered in the hypotheses put forward.

**Figure 1. Research model**



## Methodology

### Data collection

The tourism degree students, who voluntarily participated in the research, were interviewed using a self-administered questionnaire using non-probabilistic sampling. Experts and researchers reviewed the questionnaire for content validity and included a pilot test on 30 students. After data collection, we obtained a sample of 464 correctly completed questionnaires.

Of the sample, 56.71% are students from the University of Seville, while 43.29% are from Cadiz. Concerning the sample, 71.02% of the respondents are women compared to 28.98% of men. Between 18 and 21 years old are 56.04% of the cases, 37.58% are between 22 and 25 years old, and the rest are older than 25; most are Spanish, only 2.6% are foreigners; 31.82% of those surveyed belong to a family whose parents have had or currently have their own business. Moreover, 46.84% of these students have never worked. The rest have worked, are currently working, are self-employed, or work both for themselves and others.



## Measurement scales

Five latent variables make up our research model. The questionnaire items were formulated using a 7-point Likert scale, where 1 means strongly disagree, and a score of 7 means strongly agree.

According to Sarasvathy (2001a) and Gabrielsson and Politis (2011), effectual orientation is measured independently of causal orientation. This research focuses on the EP construct's effectual orientation (see Table 1). Effectual propensity is the tendency of a potential entrepreneur towards effectual logic. Therefore, we determined the scale with the indicators or items necessary to measure this variable, which is not directly observable by the researcher. The indicators of the EP construct were adapted from the work of Martín-Navarro et al. (2021). Effectual propensity is a multidimensional construct composed of five subdimensions: (1) *means* orientation (measured through three items), relating to the means available to individuals, such as their knowledge, social networks, experience and skills for their new project; (2) *association* orientation (four items), which considers that entrepreneurs seek partners to start the business and thus achieve mutual benefits; (3) *affordable loss* orientation (three items), which limits the losses that entrepreneurs can afford beyond which they would stop the investment and would sacrifice expected profits; (4) *contingency* orientation (four items), where individuals consider setbacks as new opportunities to exploit and; (5) *control* orientation (four items), which measures the degree to which individuals believe that they can control and influence the environment (see Table 1).

In order to measure the constructs of the Theory of Planned Behaviour (PA, PBC, SN, and EI), we employed an adapted version of the Entrepreneurial Intention Questionnaire (EIQ) (Liñán et al., 2011). This scale measures the four variables belonging to the TPB: (1) PA (five items), which is the favourable or unfavourable predisposition towards entrepreneurship (Fishbein & Ajzen, 1977); (2) PBC (five items) refers to the individual's perception of how easy or difficult it is to develop entrepreneurial behaviour (Liñán & Chen, 2006); (3) SN (four items), which indicates the pressure that individuals are under from their immediate circle (family, friends or significant others) when deciding to undertake a project (Ajzen, 1991) and; (4) EI (six items), regarding the certainty of individuals that they will set up a business in the future (Thompson, 2009). The items

were randomly mixed and ordered in the questionnaire to avoid the problems of response set bias and the halo effect.

## **Data analysis**

Partial Least Squares (PLS) is an approach to Structural Equation Models (SEM) (Chin, 1998; Chin & Newsted, 1999; Chin & Todd, 1995). This technique, which combines factor analysis and linear regressions, allows theoretical relationships between latent variables to be analysed through observed data (Hair Jr, Sarstedt, et al., 2014).

PLS-SEM is a variance-based approach. Compared to other covariance-based models (CBM), such as Lisrel and Amos, PLS is a powerful analytical method (Lohmöller, 1989). Its advantages over CBM include fewer assumptions for the measurement scales, sample size, and data distribution (Chin, 1998).

PLS-SEM estimates complex models with many constructs, indicator variables, and structural trajectories without imposing distributional assumptions on the data (Roldán & Sánchez-Franco, 2012). PLS is a recommended method for studying latent construct models made up of composite (Rigdon, 2016). Another reason for using PLS involves component scores in a subsequent analysis for modelling multidimensional constructs by applying the embedded two-stage approach (Sarstedt et al., 2019).

For the model analysis, we have used the SmartPLS 3.2.7 (Ringle et al., 2015) software, which allows us to analyse the relationships between latent variables and their indicators, that is, how these constructs measure their respective indicators. A PLS model is defined by two steps: (1) a measurement model connecting the observable variables or items to their own latent variables; and (2) a structural model that determines the relationships between the latent variables (Ramírez-Correa et al., 2019).

## **RESULTS**

### **Analysis of the measurement model**

In this first step, we examine reliability and validity. Reliability ensures that the measurement produces consistent results, and validity ensures that the indicators of a

construct measure the construct they are intended to measure and not another construct. For the treatment of the multidimensional EP construct, we employed the embedded two-stage approach (Sarstedt et al., 2019).

In PLS, the individual item reliability is assessed by examining the loadings with their respective construct. The reliability of individual items demands that the loadings are higher than 0.707 (Carmines & Zeller, 1979). Items that fail to meet this criterion may be removed. Table 1 shows that only the means orientation (MO) in the EP has a lower loading and must therefore be eliminated from the analysis.

The reliability of a construct enables the internal consistency of the indicators in measuring the concept to be tested. Subsequently, the reliability of the construct is analysed through the Dijkstra-Henseler rho\_A in all cases with values higher than 0.7 (Dijkstra & Henseler, 2015). Another test to be carried out is that of internal consistency. In this regard, the composite reliability (Werts et al., 1974) should be higher than 0.8, as suggested by Nunnally and Bernstein (1995).

In order to complete this analysis, convergent validity is verified. Convergent validity tests whether various items measuring a construct measure the same thing (Henseler et al., 2009). If so, the fit of the items is significant, and they are therefore highly correlated. To assess convergent validity, we use the average variance extracted (AVE) (Fornell & Larcker, 1981). In this case, the values must be greater than 0.5 (Fornell & Larcker, 1981), which holds true, as shown in Table 1.

**Table 1. Reliability and convergent validity**

Construct/ Dimension/Indicator	Loads	rho_A	Composite Reliability	AVE
<b>Effectual Propensity (EP)*</b>		0.766	0.831	0.554
<b>Means orientation</b>	0.642			
I use my personal knowledge and experience in the best possible way	0.808			
I pursue those initiatives for which I have great motivation and interest	0.872			
I pursue those initiatives for which I personally have the relevant competencies	0.828			
<b>Partnership orientation</b>	0.742			
I approach potential partners very early on in order to jointly co-create new things	0.824			

I enter into relationships with partners who are willing to commit (e.g., invest time) from the onset	0.617		
When new actors appear in my environment, I perceive them as potential partners	0.783		
<b>Control orientation</b>	0.760		
I attempt to shape the environment I operate in	0.744		
I attempt to proactively design my environment with others	0.797		
In a business, we must attempt to create with others new needs for the market	0.526		
I attempt to influence trends	0.736		
<b>Contingency orientation</b>	0.821		
I regard surprises to be new opportunities that I could take advantage of	0.844		
I exploit contingencies as effectively as possible	0.872		
When I have new information, I try to take advantage of it	0.645		
I use setbacks as new opportunities to take advantage of	0.840		
<b>Attitude (AT)</b>	0.922	0.938	0.751
Being an entrepreneur implies more advantages than disadvantages to me	0.815		
A career as entrepreneur is attractive for me	0.906		
If I had the opportunity and resources, I'd like to start a firm	0.856		
Being an entrepreneur would entail great satisfactions for me	0.863		
Among various options, I would rather be an entrepreneur	0.891		
<b>Perceived Behavioral Control (PBC)</b>	0.912	0.935	0.741
To start a firm and keep it working would be easy for me	0.820		
I am prepared to start a viable firm	0.897		
I can control the creation process of a new firm	0.895		
I know how to develop an entrepreneurial Project	0.861		
If I tried to start a firm, I would have a high probability of succeeding	0.828		
<b>Subjective norms (SN)</b>	0.872	0.921	0.796
If you decided to create a company, would your close family approve of that decision?	0.879		
If you decided to create a company, would your friends approve of that decision?	0.918		
If you decided to create a company, would your colleagues approve of that decision?	0.879		
<b>Entrepreneurial intentions (EI)</b>	0.958	0.966	0.827
I am ready to do anything to be an entrepreneur	0.851		
My professional goal is to become an entrepreneur	0.931		
I will make every effort to start and run my own firm	0.918		
I am determined to create a firm in the future	0.936		
I have very seriously thought of starting a firm	0.903		
I have the strong intention to start a firm someday	0.913		

Note: \* Multidimensional construct.

Discriminant validity indicates the extent to which a construct is different from others. For this analysis, as suggested by Henseler et al. (Henseler et al., 2015), we use heterotrait-monotrait (HTMT) relationships. This relationship is based on the assumption that, for discriminant validity to exist, HTMT correlations (correlations between indicators measuring the same construct) must be higher than heterotrait-heteromethod correlations (correlations between indicators measuring different constructs) (Hair et al., 2019). Table 2 shows the discriminant validity analysis using the heterotrait-monotrait (HTMT) relationship (Henseler et al., 2016). This ratio must have values below 0.85 (Gold et al., 2001) to ensure that discriminant validity is satisfied, as can be verified.

**Table 2. Discriminant validity (HTMT)**

	EN	PC	EO	EN	SN
<b>EN</b>					
<b>PBC</b>	0.560				
<b>EP</b>	0.448	0.407			
<b>EI</b>	0.805	0.641	0.441		
<b>SN</b>	0.415	0.332	0.444	0.370	

In the multidimensional construct, the EP, in the first step, eliminated the dimension "affordable loss orientation" because the loads are lower than 0.707. In this second step, the dimension "means orientation" is eliminated for the same reason. Once the measurement model has been refined, and it has been verified that the measurements are reliable and valid, we continue with the second step, the analysis of the theoretical structural model proposed.

### **Structural model**

After analysing the reliability and validity, the structural model should be evaluated to identify the relationships between the constructs of the proposed research model (Velicia Martín et al., 2020). The structural model or internal model serves to analyse the relationships of dependence between the independent (exogenous) variables and the dependent (endogenous) variables (Sanchez Franco et al., 2007). This analysis tests whether the hypotheses and the relationships of the constructs of the theoretical model are supported (Henseler et al., 2015).

The evaluation of the structural model is carried out through the following aspects: collinearity (VIF); the significance of path coefficients ( $\beta$ );  $R^2$  values (variance explained); and predictive relevance  $Q^2$  (Reyes-Menendez et al., 2018). Furthermore, we employed the global fit measure developed by Henseler et al. (2015): the standardised root mean square residual (SRMR). For this purpose, a bootstrapping technique with 5,000 re-samples is applied in order to test the proposed hypotheses. It is a non-parametric re-sampling technique repeated after randomly replacing the original sample to create many samples for the bootstrap test (Hair et al., 2011).

Firstly, to check for collinearity problems, we examined the values of VIF of all the predictor constructions. Hair et al. (2019) set the most restrictive criterion: VIF values should be lower than 3. As can be observed in Table 3, all construct values are lower than the reference value. Therefore, our model presents no collinearity problems.

**Table 3. Collinearity (VIF values)**

	AT	PC	EP	IN	SN
AT		1.258		1.524	
PBC				1.439	
EP	1.141	1.24		1.276	
IN					
SN	1.141	1.234		1.244	

Secondly, we analysed the path coefficients ( $\beta$ ). These indicate the strength of the relationships between the explanatory variables and the variables to be explained (Ramírez-Correa et al., 2019). The results of the path coefficients are shown in Table 4. In this respect, it is revealed that out of the nine relationships proposed in the theoretical model, seven are significant. The hypotheses from H1 to H4 and from H7 to H9 were supported. As shown in Table 4, hypotheses H1, H2, H4, H7, H8, and H9 have the highest p-values (and hence the observed differences are significant at the 0.001 level). The unsupported hypotheses are H5 and H6. Therefore, the relationship between SN and PBC is not significant, nor is that between SN and EI.

**Table 4. Results of significance tests of the coefficients of the structural model.**

Hypothesis	$\beta$ (Standard Path Coeff.)	T Statistics	P Values	CI	Sig	
H1: EP→AT	0.279	6.489	0.000	(0.198;0.365)	Yes	***
H2: EP→PBC	0.175	3.90	0.000	(0.085;0.262)	Yes	***
H3: EP→IN	0.077	2.407	0.016	(0.015;0.138)	Yes	**
H4: SN→AT	0.277	5.297	0.000	(0.171;0.379)	Yes	***
H5: SN →PBC	0.084	1.861	0.063	(-0.006;0.171)	No	n.s.
H6: SN →EI	0.016	0.534	0.593	(-0.043;0.075)	No	n.s.
H7: AT→PBC	0.425	10.345	0.000	(0.344;0.504)	Yes	***
H8: AT→EI	0.587	18.552	0.000	(0.523;0.647)	Yes	***
H9: PBC→EI	0.264	7.382	0.000	(0.193;0.333)	Yes	***

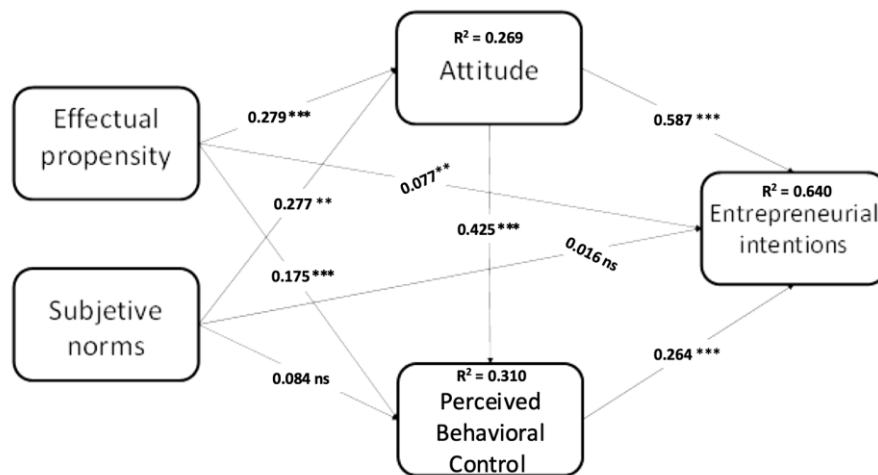
Note: Significant at p\*\*\*=<0.001, p\*\*<0.05

Thirdly, we use the coefficient of determination  $R^2$  to analyse the structural model.  $R^2$  values measure the predictive power of structural models. Interpreted as multiple regression results, the  $R^2$  indicates the variance explained by the exogenous variables (Ramírez-Correa et al., 2019).  $R^2$  values are shown in Table 5. According to Hair et al. (2014),  $R^2$  values above 0.67 are considered high, between 0.67 and 0.33 these are considered moderate, between 0.33 and 0.19 weak, and values below 0.19 are unacceptable. In our case, Entrepreneurial Intention presents a moderate  $R^2$ , while the values for PA and PBC are weak. The results show (see Figure 2) that the model explains 64.0% of the total variance of Entrepreneurial Intentions.

**Table 5.  $R^2$ -values**

	$R^2$	$R^2$ adjusted
Personal Attitude	0.206	0.202
Perceived behavioral control	0.310	0.305
Entrepreneurial intention	0.640	0.637

**Figure 2. Final Structural Model**



Note: \*p<0.05; \*\*p<0.01; \*\*\*p<0.001; ns not supported.

Finally, the model's predictive power is analysed, which enables the model's generalisability to other populations to be tested. This generalisation is especially interesting in social science research (Hair, 2021). In this way, PLS-SEM explains the analysis of the structural model already developed. Moreover, it also performs model prediction (Joreskog & Wold, 1982). Evaluating the predictive power of a model implies measuring its performance on other samples (Cepeda et al., 2017). We analyse the model's predictive power through the Q2 indicator (Geisser, 1974).

We apply a PLSpredict, an out-of-sample approach developed (Shmueli et al., 2016). Following Roldan and Cepeda (2017) with the PLSpredictive technique, we obtained results expressed through the variables RMSE (R Mean Square Error), MAE (Mean Absolute Error), and Q<sub>predict</sub><sup>2</sup>. For the model to have predictive power, the value of Q<sup>2</sup> must be greater than zero. In our case, all the values in the last column are positive (see Table 6). Similarly, we obtained positive values for RMSE and MAE, showing good predictability (Woodside, 2013). Therefore, this research demonstrated the predictive validity of the proposed model, or its out-of-sample predictability, to predict the values of new cases.



**Table 6. Evaluation of PLS predictions**

	RMSE	MAE	Q_prediction <sup>2</sup>
Attitude	0.901	0.710	0.196
Perceived behavioral control	0.922	0.757	0.156
Entrepreneurial intention	0.901	0.749	0.195

The global model fit is performed using the values of the standardised root mean square residual (SRMR). A value of 0 would represent a perfect fit, although values below 0.08 present a good fit (Henseler et al., 2014). In our model, SRMR presents a value of 0.052, lower than the reference value, and hence our model presents a good fit.

As for indirect effects, there are some significant ones among the model constructs (see Table 7). In addition to showing a direct and positive relationship with EI, EP shows significant indirect effects through PA and PBC. Despite not showing a significant direct relationship with EI or PBC, the SN variable shows a significant indirect relationship through PA with EI and PBC variables.

**Table 7. Indirect effects**

Specific indirect effects	Route ( $\beta$ )	Statistics T	p-value	CI
EP -> AT -> IN	0.164	6.204	0.000	(0.110;0.216)
EP -> PBC -> IN	0.046	3.342	0.001	(0.022;0.077)
EP -> AT -> PBC -> IN	0.031	4.506	0.000	(0.019;0.046)
EP -> AT -> PBC	0.118	6.051	0.000	(0.081;0.157)
AT -> PBC -> IN	0.112	5.817	0.000	(0.077;0.152)
SN -> AT -> IN	0.162	4.973	0.000	(0.100;0.228)
SN -> PBC -> IN	0.022	1.846	0.065	(0.000;0.048)
SN -> AT -> PBC -> IN	0.031	3.759	0.000	(0.017;0.050)
SN -> AT -> PBC	0.118	4.475	0.000	(0.071;0.174)

Importance-performance matrix analysis (IPMA) is carried out (see Table 8 and Figure 3). The IPMA assists the PLS-SEM results through a four-quadrant diagram depicted in Figure 3. The vertical axis represents attribute performance, ranging from poor performance to good performance. The horizontal axis represents the perceived

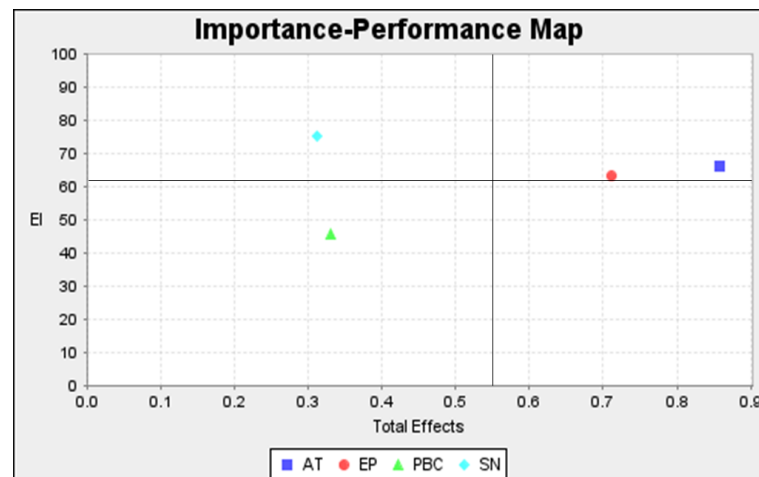
importance of the attributes, from unimportant to very important (García-Fernández et al., 2020).

**Table 8. IPMA (Business Intention)**

	Total effect (importance)	Index value (yield)
Effectual propensity	0.711	63.127
Personal Attitude	0.859	66.411
Perceived behavioral control	0.331	45.520
Social norm	0.312	75.353
Mean	0.553	62.603

The quadrants are delimited using the mean performance and mean importance listed in the PEI results table. As shown in Figure 2, the third quadrant is SN, the variable with the highest importance, but it contributes the least to the EI effect, as does PBC, which is in the fourth quadrant. The variable with the most significant contribution to the total effect is that of PA, followed by EP.

**Figure 3. IPMA (Business Intention)**



## DISCUSSION

The academic literature has studied effectuation logic during the entrepreneurial process. Effectuation theory has analysed the behaviour of entrepreneurs who have

already started their businesses. However, this behaviour has not been analysed in people who have yet to start a business and are in an early stage. This research integrates the entrepreneurial intention model with the effectual logic. To this end, an extended TPB model with the Effectual Propensity variable has been developed. The extended TPB model with EP can be considered valuable for the prediction of entrepreneurial intention in tourism. As shown, the theoretical model has satisfactory psychometric qualities. Moreover, the TPB model has increased its predictive power with the EP variable.

In this paper, in a sample of university students it was found that EP is a determinant of EI, both directly and indirectly, through PA and PBC. Similarly, it is confirmed that both PA and PBC present a direct and positive relationship with entrepreneurial intention in the sample analysed. These findings are in line with the results of other authors in the field of entrepreneurship (Krueger et al., 2000; Liñan, 2004; Soomro et al., 2018; Urban & Ratsimanetrimanana, 2019). Furthermore, the results are consistent with the findings of Ahamed and Limbu (2018) in their study on the intention for credit card usage. Effectual propensity presents a positive and direct relationship with EI and significant indirect effects with the variables PA and PBC that contribute towards explaining entrepreneurial intention. The direct relationship between SN and EI shows a non-significant relationship. The same occurs in other studies, such as that of Doanh and Bernat (2019), which did not find the effect of SN on EI among university students in Vietnam. However, it is in contrast to other studies that have found this relationship significant in students' entrepreneurial intentions (Al-Jubari, 2019; Ridha & Wahyu, 2017). On the other hand, the indirect effect of SN through PA is significant on both EI and PBC.

It should also be borne in mind that the IPMA analysis shows that attitude is the exogenous variable that contributes most to the total effect of the endogenous variable EI, followed by EP. In contrast, the variable that contributes least to the total effect is that of PBC. The theoretical model analysed with a sample of students from the degree in tourism presents suitable predictive power. The results obtained in our analysis can be generalised to other samples of the same population.

## **CONCLUSIONS**

There is major interest in understanding the antecedents of the intention to create new companies among academics who study entrepreneurship. The TPB model stands out as

one of the models most widely used by researchers to achieve this goal. In this respect, our research has carried out empirical work. The effectual propensity is proposed as an antecedent of entrepreneurial intentions, together with the rest of the TPB determinants (PA, SN, and PBC). Our study has great added value since, to the best of our knowledge, no other study exists in the literature that analyses EP on intentions in people who have yet to become entrepreneurs. The results of the hypothesis testing reveal two critical findings. First, and the most important finding, this study has shown that EP influences EI. Moreover, the second finding reveals that EP also affects EI indirectly through PA and PBC.

### **Social and practical implications**

Our work contributes towards investigating entrepreneurial intentions by providing a new determinant that has not been previously investigated. We have therefore shown that EP affects students' intentions towards creating a new venture. Moreover, our work has social implications. Our results differentiate between effectual and causal orientation of students in higher education. This differentiation enables the curricula to be adjusted in order to contain more personalised training in entrepreneurship and to strengthen the effectual orientation of students who require it. In this way, public policies must encourage entrepreneurs in the initial stages of the entrepreneurial process. Effectual logic usually appears emergent and innate in the entrepreneur when starting a business. In contrast, causal logic is the one that has traditionally been taught in the classroom through planning. However, students can improve their competences and skills in the business environment by mastering both logics, which will enable them to be flexible and adaptable in their behaviour. Students must be able to cope with constant changes from which they must seize emerging opportunities, build on available means, partner with others, and take the strictly necessary losses. Students must also learn how to develop a business plan and even how to abandon a business plan at any given moment. We recommend that the difference between effectual and causal logic be taught in the classroom, since knowledge of effectual logic will improve their effectual propensity. Furthermore, this training will enable students to develop either of these logics, or a mixture thereof, to adapt to the environment at any given time.

As the IPMA result indicates, tourism students need to improve their attitude towards entrepreneurship. Considering the specific case of Andalusian universities, we recommend that a specific subject on entrepreneurship be offered in the degree in tourism. This recommendation can be extended to other universities with tourism studies. Many universities understand that entrepreneurship is transversal to many other subjects and are therefore reluctant to cover it in great depth. Furthermore, one way of influencing attitudes towards entrepreneurship is to showcase success stories, for example, by bringing entrepreneurs into the classroom to talk about their own experiences. Another recommendation is for universities to support students who want to start up their own businesses by offering them free incubators and mentoring, which can also improve their attitude towards entrepreneurship. Moreover, in regions such as Andalusia, where tourism is a major activity, universities should offer facilitating conditions to those tourism students who are considering entrepreneurship. Firstly, they must make it visible that there is entrepreneurship and a critical tourism fabric in their social environment. Secondly, universities should facilitate work experience in tourism during the undergraduates' studies and prioritise work experience in the most innovative and entrepreneurial companies. All of these recommendations would improve not only the students' personal attitude towards entrepreneurship in this sector, but also their perceived behavioural control.

From a business perspective, our research allows entrepreneurs to assess the EP of their employees and business partners. Entrepreneurs could evaluate the EP of both those with whom they already have a relationship and those who require pre-assessment before entering into future engagements with them. In addition, universities should be aware that they disseminate knowledge in the market when companies hire their students. It is therefore interesting that universities, but also entrepreneurship promotion institutions and companies, know how to value and develop the effectual orientation of individuals.

### **Limitations and future agenda**

This research should be interpreted with certain limitations in mind. Since the findings are the results of a single study, and with students from two universities of close geographical proximity, they cannot be generalised. It would be advisable to repeat this study in various samples that cover a range of educational and cultural contexts and socio-

demographic profiles. These limitations therefore present opportunities for future lines of research. For example, it would be interesting to test these scales in other samples from other countries or cultures. Similarly, we invite the research community to extend our analysis to samples from sectors other than tourism to ascertain the difference between students' entrepreneurial intentions in other fields.

Another interesting future line of research would be to consider EP as a moderating variable in other models of entrepreneurial intentions. Although the scale employed herein to measure EI is widely accepted in the literature, most intention scales fail to clearly differentiate between individuals' beliefs and attitudes. In this regard, we propose testing Valliere's (2014) scale, which avoids this limitation, in models of entrepreneurial intentions in future research.

Another limitation to consider is the possible bias of our study since it has been carried out in a single country: Spain. The Spanish university education system is committed to university education in the tourism sector, which is not the case in other countries. To a large extent, this degree is developed in accordance with the Spanish scenario and current situation. However, given that Spain is a world power in terms of tourism since it is the second most visited destination in the world, the information obtained in our analysis is internationally relevant. Nevertheless, as a future line of research, it would be interesting to replicate our study in other countries in order to carry out international comparisons.

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# **CAPÍTULO 4**

## **Causal Propensity as an antecedent of Entrepreneurial Intentions**

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## Referencia bibliográfica

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# CAUSAL PROPENSITY AS AN ANTECEDENT OF ENTREPRENEURIAL INTENTIONS

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## **Abstract**

The tourism sector is a sector with many opportunities for business development. Entrepreneurship in this sector promotes economic growth and job creation. Knowing how entrepreneurial intention develops facilitates its transformation into entrepreneurial behaviour. Entrepreneurial behaviour can adopt a causal logic, an effectual logic or a combination of both. Considering the causal logic, decision-making is done through prediction. In this way, entrepreneurs try to increase their market share by planning strategies and analysing possible deviations from their plans. Previous literature studies causal entrepreneurial behaviour, as well as variables such as creative innovation, proactive decisions and entrepreneurship training when the entrepreneur has already created his or her firm. However, there is an obvious gap at a stage prior to the start of entrepreneurial activity when the entrepreneurial intention is formed. This paper analyses how creativity, proactivity, entrepreneurship education and the propensity for causal behaviour influence entrepreneurial intentions. To achieve the research objective, we analysed a sample of 464 undergraduate tourism students from two universities in southern Spain. We used SmartPLS 3 software to apply a structural equation methodology to the measurement model composed of nine hypotheses. The results show, among other relationships, that causal propensity, entrepreneurship learning programmes and proactivity are antecedents of entrepreneurial intentions. These findings have implications for theory, as they fill a gap in the field of entrepreneurial intentions. Considering propensity towards causal behaviour before setting up the firm is

unprecedented. Furthermore, the results of this study have practical implications for the design of public education policies and the promotion of business creation in the tourism sector. These policies should promote causal, proactive and creative behaviour in their entrepreneurship training. In this way, such policies would boost the entrepreneurial intention of individuals, which is an essential precursor to business creation.

**Keywords:** Tourism, Causal Propensity, PLS-SEM, Higher Education, Entrepreneurship, Entrepreneurial Intention

## **Introduction**

Tourism is a field with many opportunities for business development. Many governments have recognised the importance of this sector and its contribution to the economy of the nations (Al-Jubari et al., 2019). Tourism is one of the largest industries in many countries, providing economic growth, foreign exchange earnings and jobs (Rauch & Hulsink, 2015). For this reason, governments promote and support entrepreneurship in this sector. Moreover, creating new businesses is an essential source of innovation, competitiveness and wealth for the rest of the business (Al-Jubari et al., 2019).

Entrepreneurial intention is a precursor to the creation of a firm (Lechuga Sancho et al., 2020; Ramos-Rodríguez et al., 2019). The academic literature studies entrepreneurial intentions, often among university students (Dewi & Sutisna, 2019; Laguía et al., 2019; Anjum et al., 2018; Hu et al., 2018). Promoting entrepreneurial intention among tourism students can help transform their mental maps and orient them towards entrepreneurial behaviour. Therefore, exploring how to improve entrepreneurial intentions among tourism students is crucial for developing the industry now and in the future (Zhang et al., 2020).

When entrepreneurs start and manage their businesses they may develop different entrepreneurial behaviours, as suggested by effectual and causal logic (Sarasvathy, 2001). From a causal logic, decision-making is done through prediction. In this way, the entrepreneur tries to obtain the largest market share by planning strategies and controlling possible deviations from his plan. However, this paper focuses on the entrepreneurial intention of those individuals who have not yet created a company. For this reason, we will use the term causal propensity proposed by Martín-Navarro et al. (2021) to analyse



this type of logic. The propensity for causal entrepreneurial behaviour, creativity, proactivity and learning programmes in entrepreneurship can influence the formation of entrepreneurial intention (Zampetakis et al., 2011; Kumar & Shukla, 2022; Jun et al., 2022; Leiva et al., 2021). In this sense, this paper aims to analyse the determinant power of these factors in the formation of entrepreneurial intention in the case of individuals who have not yet created a business.

As mentioned, the literature traditionally studies causal entrepreneurial behaviour in individuals who have already created their businesses. This paper fills a gap in the literature and adds value by studying the impact of individuals' causal propensity on their entrepreneurial intentions for the first time. In this context, these individuals have not yet created their businesses. However, the formation of their entrepreneurial intention is vital as it is a precursor of the entrepreneurial behaviour that eventually leads them to create their businesses.

To achieve the research objective, our paper is organised as follows. A literature review is conducted to develop our hypotheses in the following section. The methodology section presents a structural equation model application using SmartPLS software on a sample of 464 cases. Next, we explain the results obtained and the discussion. Finally, the conclusions, contributions, limitations and future lines of research are presented.

## **Theoretical framework and hypothesis development**

Enterprise creation plays a decisive role in the economy, especially in developing countries, increasing the level of employment and social growth (Farrukh et al., 2017). Nevertheless, entrepreneurship does not only have an economic impact; it must also generate social benefits and be sustainable (Bacq & Alt, 2018). Social entrepreneurship generates social value, new employment opportunities, wealth, and quality of life for the local population (Celebi et al., 2020), benefiting the local community and the society in general (Naderi et al., 2019). Within this type of entrepreneurship, non-profit entrepreneurship stands out in particular, with the aim of eradicating social problems such as poverty, lack of education, poor public health, unemployment, and other social needs that are not satisfied by the public and private sectors (Aquino et al., 2018). The social impact of entrepreneurship is vital in less economically developed countries, which continuously face various social problems. Precisely, the potential of the tourism sector

to drive economic growth in these countries, makes entrepreneurship in this sector a tool for developing low-income and underserved local communities, and places communities at the centre of tourism development. Often, communities in need own the tourism assets that provide the experiences and sights that tourists demand (Dolezal & Burns, 2015). In this context, developing sustainable tourism destinations is vital and often favours poorer populations, by providing them with economic and social wealth, plus environmental and even regenerative benefits (Aquino et al., 2018).

Many researchers have studied entrepreneurial intention as the stage before creating new businesses. The intention is a good indicator of future entrepreneurial behaviour (Anjum et al., 2018). The literature has studied entrepreneurial intention and its determinants in depth. We find proactivity, creativity, program learning, and causal propensity among the multiple determinants analysed. The first two factors, proactivity and creativity, are two of the abilities that have the most significant influence on entrepreneurial intention (Hansen et al., 2011). On the one hand, proactive individuals seek to make changes or anticipate changes in the environment before they occur. Proactive people tend to take the initiative. These individuals bring about significant changes because they can influence the environment (Bateman & Crant, 1993).

On the other hand, creativity is the capacity to create, help entrepreneurs identify opportunities, and create new and innovative ideas (Schumpeter, 1934). Creative people are more likely to become entrepreneurs. Moreover, an entrepreneur can stimulate creativity among his or her employees by giving them more freedom and greater independence to innovate and generate original ideas (Kumar & Shukla, 2022).

In the entrepreneurial process, knowledge acquisition, as well as learning methods, have an impact on the identification and exploitation of new opportunities (Corbett, 2005). Entrepreneurship training can help students increase their alertness to opportunities by focusing on new trends and information (Baron, 2006). In this way, entrepreneurship training is vital as it links practical knowledge with the skills and confidence needed to succeed in business (Wilson et al., 2007). Setting up program learning in entrepreneurship can be costly. Therefore, in many cases, a link is established between companies and universities to support and create the right environment to grow the entrepreneurial spirit among university students (Nabi & Liñán, 2011).

Finally, the concept of causal propensity is based on the Effectuation Theory. This theory proposes that entrepreneurs can make decisions based on an effectual or causal logic. The effectual logic is based on creating opportunities from the individual's available resources. In contrast, the entrepreneur can also use causal logic. Causal logic is based on predicting the future and setting objectives to be achieved by that prediction. To achieve these objectives, entrepreneurs develop a process of planning, executing and controlling the planned activities. From this perspective, individuals use the information available to them and check that their strategy is being fulfilled. If this is not the case, the entrepreneurs study the possible causes of the deviations in their plan and take corrective measures (Sarasvathy, 2001). However, Effectuation Theory involves studying entrepreneurial behaviour when a company has already been created. It is not possible to analyse causal or effectual behaviours before when studying the determinants of entrepreneurial intention because these behaviours have not yet occurred and are not observable. In this sense, and following the work of Martín-Navarro et al. (2021), it would be possible to analyse individuals' propensity towards these behaviours. However, they have not yet developed these behaviours because they have not yet created their companies. For this reason, and in coherence with the objectives of this paper, we will use the term causal propensity. Causal propensity refers to the individual's tendency to make decisions and solve problems following causation logic.

As mentioned above, the academic literature has extensively studied entrepreneurial intentions and multiple determinants that influence entrepreneurial intentions. In our research, we propose four determinants as antecedents of entrepreneurial intentions. Among them program learning. The courses and training provided in educational institutions generate knowledge in students. The path commonly used to start a new project is developed from a causal logic. Thus, causal logic predominates as it is taught today in most business schools. According to the results obtained by Arvidsson et al. (2020), the vast majority of entrepreneurs, in their initial stage, tend to use causal logic as they need to set objectives within a framework of action that they have previously defined. As the entrepreneur gains experience, in a gradual process, he or she changes from a causal logic to an effectual one. Thus, from a causation approach, the organisation focuses on the most predictable aspects of an uncertain future and prediction is closely related to knowledge. The goal is clearly defined with a causal logic, and the available means are organised efficiently to reach that goal. In this way, the individual has a high

level of technical knowledge that he or she has previously acquired in his or her formative stage (Héraud & Muller, 2016). Therefore, university education in entrepreneurship is linked to the causal propensity of the entrepreneur. All of the above makes it possible to state the following.

**H1:** Program Learning is positively related to Causal Propensity.

The learning environment is essential to support creativity. Researchers have found that learning environments in which ideas are valued and mistakes are seen as a fundamental part of the learning process support creativity (Chan & Yuen, 2014). When teaching is in a group, its values influence the behaviours of its members, who influence each other to foster or constrain creativity (Pepler & Solomou, 2011). Individual learning does not foster creativity. However, the outcome is different in learning courses where students interact with the lecturer and with each other. Thus, with the lecturer's presence, a learning model is created in which university students considerably improve their creative ability. Thus, in a program learning model in which the lecturer acts as a facilitator of learning, the students become the main learning actors. Creativity becomes the main output of the learning process if a dynamic and interactive environment is used, together with the knowledge acquired by the students (Hardika et al., 2018). In this sense, Machali et al. (2021) found a strong correlation between entrepreneurship education and students' creativity. Valaei et al. (2017) found that learning was positively related to creativity within the context of companies within a sample of top managers. Thus, appropriate program learning facilitates the creativity of individuals.

Entrepreneurship training should not only focus on theoretical or methodological aspects, such as business plans. Increasingly, universities are striving to offer programmes to train future entrepreneurs in personal and managerial skills and in those personal traits that will help them to succeed. Because creativity is crucial in the entrepreneurial process, it is essential to cultivate it as a fundamental personality trait in individuals intending to become entrepreneurs (Hu et al., 2018). Concerning the proactive behaviours of individuals, some researchers have argued that proactivity is influenced by behaviours learned through training initiatives (Fay & Frese, 2001; Kabanoff & Bottger, 1991). Thus, proactivity as a set of action-directed behaviours is influenced by personality traits such as creativity (Van Veldhoven & Dorenbosch, 2008). The relationship between the

creativity of individuals and their proactive capacity allows us to indicate. The above arguments establish the following relationships.

**H2:** Program Learning is positively related to creativity.

**H3:** Creativity is positively related to proactivity.

As discussed above, proactive entrepreneurs can exhibit two distinct, non-exclusive behaviours. One behaviour is related to deliberately generating environmental changes to generate opportunities that did not previously exist. Nevertheless, also proactive are those entrepreneurs who foresee the changes that the environment has in store for them and are prepared even before this change takes place. These proactive individuals detect good opportunities much earlier than others, develop better strategies (Seibert et al., 2001), and develop better strategic vigilance (Yeşilkaya & Yildiz, 2022).

Strategic monitoring is a tool for predicting the future that involves the ability to acutely evaluate information regarding competitors and customers (Yeşilkaya, 2015). Thanks to this ability, entrepreneurs can anticipate and plan what they will offer to their customers (Mahmoud & Mahdi, 2019), anticipate the steps to take in the face of competition, convert threats in the environment into opportunities and establish strategies to adapt to change (Alshaer, 2020; Yeşilkaya, 2015). Furthermore, establish strategies to adapt to change (Yeşilkaya & Yildiz, 2022).

Therefore, strategic vigilance and the ability to detect opportunities enable proactive individuals to rationally plan to take advantage of these opportunities and set goals to be achieved within a causal logic. Similarly, proactivity will support individuals' causal propensity because the more significant the ability to spot opportunities before others, the easier it is to plan how to take advantage of them. Therefore, as indicated below, individuals' proactivity can be connected to a potential causal behaviour, i.e. causal propensity.

**H4:** Proactivity is positively related to Causal Propensity.

The uncertainty that entrepreneurs face when creating new ventures involves factors that cannot be predicted and unknown variables. Causal logic understands that the future can be predicted if sufficient information is obtained, for example, through market research. In the causal process, a lot of time and resources are invested in developing a plan to

succeed in an existing market (Sarasvathy, 2008; 2001). When individuals set up a new enterprise, they pursue performance and plan how to reach that goal. From a causal approach, both issues are fundamental to forming entrepreneurial intentions (Dutta et al., 2015). The causation approach assists the entrepreneur in developing a new business (Sarasvathy, 2001b) and gathering resources efficiently, working under the entrepreneur's strategy (Delmar & Shane, 2004). In this regard, Li et al. (2020) found that causal logic positively affects entrepreneurial behaviour in a sample of managers in Pakistan. By analogy, if the individual is not yet entrepreneurial, causal propensity should positively impact entrepreneurial intentions, as hypothesised below.

**H5:** Causal Propensity is positively related to Entrepreneurial Intention.

Proactive individuals can propose constructive changes that can lead to more appropriate systems. On the other hand, passive and inactive individuals are left to the circumstances as they occur (Kumar & Shukla, 2022). A proactive personality is a key driver for achieving an advantageous outcome in challenging situations (Gupta & Bhawe, 2007). Proactivity is a crucial element of foresight. It is linked to the management and entrepreneurial behaviour. It allows exploring uncertainty while simultaneously executing actions that can influence the future (Djuricic & Bootz, 2019). It is precisely proactivity that helps the entrepreneur to survive in a turbulent environment full of uncertainties (Godet, 1993). Sidratulmunthah et al. (2018) found empirical evidence of the relationship between proactivity and entrepreneurial intentions in a sample of 306 female students from business universities in Pakistan.

Similarly, Huston (2018) found that proactivity and innovativeness were antecedents of entrepreneurial intention in a sample of Doctor of Pharmacy students in a pharmacy practise management course at the University of Georgia. Castillo & Fischer (2019) also found that proactivity influenced the desire to be entrepreneurial in a sample of individuals with disabilities. In summary, proactive individuals will be more likely to have entrepreneurial intentions than others, as expressed below.

**H6:** Proactivity is positively related to Entrepreneurial Intention.

A growing body of research links creativity with the generation of new and valuable ideas (Amabile, 1996) with entrepreneurship (Mahmood et al., 2018). Creativity enables entrepreneurs to innovate, generate ideas and identify opportunities (Montañés-Del-Río

& Medina-Garrido, 2020). In this way, creativity is consolidated as a critical component of entrepreneurship (Schumpeter, 1934). Thus, the more creative individuals are, the more likely they are to be entrepreneurs (Hamidi et al., 2008). Mahmood et al. (2018) showed that the creativity of MBA graduates with experience in the labour market was an antecedent of entrepreneurial intention.

Similarly, Zampetakis et al. (2011) also found a positive relationship between creativity and entrepreneurial intentions in a sample of 180 undergraduate students in England. This relationship was also supported in a sample of 484 undergraduate students in the work of Kumar & Shukla (2022). With these results, we can posit that creativity is positively related to entrepreneurial intentions.

**H7:** Creativity is positively related to Entrepreneurial Intention.

Program learning refers to the learner's knowledge during training courses (Souitaris et al., 2007). Numerous studies have found a positive relationship between program learning and entrepreneurial intentions. Rauch & Hulsink (2015) One study found that the entrepreneurship training program for undergraduate students at a university in the Netherlands positively influenced their entrepreneurial intentions. Similarly, empirical evidence that entrepreneurship education positively affects entrepreneurial intentions was found in a sample of university students from several Latin American countries (Leiva et al., 2021). The relationship between entrepreneurship education and entrepreneurial intentions was also positive in a sample of fourth-year undergraduate business administration students at the University of Granada in Spain (González-López et al., 2019). The above sources of evidence allow the following research hypothesis to be put forward.

**H8:** Program Learning is positively related to Entrepreneurial Intention.

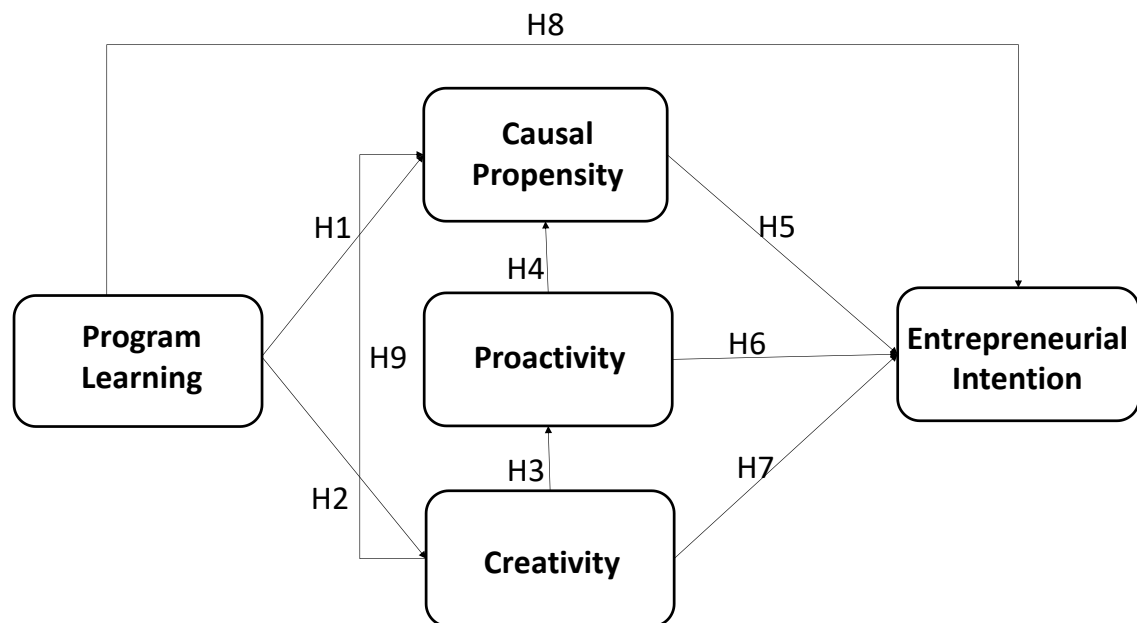
In environments of uncertainty, entrepreneurs adopt more causal logic to take advantage of opportunities that arise the more information and knowledge they acquire about the evolving environment (Yao et al., 2013). The causal orientation involves the creative exploitation of opportunities and the development of business plans (Chandler et al., 2011; Sarasvathy & Dew, 2008). In addition, creativity is a helpful resource for recognising when it is necessary to make established plans more flexible (de Vasconcellos et al., 2019), planning being the basis of causal logic. Creativity also impacts the

propensity towards causal logic in decision-making at an early stage where the individual is not yet entrepreneurial. The creativity that makes it possible for entrepreneurs to seize business opportunities fuels their potential ability to generate better business plans to take advantage of them. Based on the above arguments, the following hypothesis captures the relationship between creativity and causal propensity.

**H9:** Creativity is positively related to Causal Propensity.

Based on the above arguments and the connections discovered above, we establish the research model shown in Figure 1.

**Figure 2. Research model**



## Methodology

### *Data collection*

The sample size was n=464 respondents. The sample was obtained with the voluntary collaboration of the students of the degree course in Tourism of the universities of southern Spain. They were interviewed employing a self-administered questionnaire using non-probabilistic sampling. The questionnaire was distributed between April and



July 2021. The questionnaire items were measured with a seven-point Likert scale: one strongly disagreed, and seven strongly agreed.

The main socio-demographic characteristics of the sample are: in relation to gender, 71.02% of the respondents are female compared to 28.98% male. Concerning age, 56.04% of the respondents are between 18 and 21 years old, 37.58% are between 22 and 25 years old, and the rest are over 25 years old. The 97.4% are Spanish nationals, and only 2.6% are foreigners. Regarding entrepreneurial tradition, 31.82% of those surveyed belong to a family whose parents have had or have had their own business. Regarding their employment situation, 34.20% have worked or are currently working as employees, compared to 46.84% who have never worked; 18.96% have worked or are currently working as self-employed.

### ***Measurement scales***

The constructs of our model explain indicators that are highly correlated and interchangeable. It is, therefore, a composite model with reflective indicators.

Causal propensity is an individual's tendency towards predictive logic based on his or her knowledge in making decisions before undertaking a business venture (Martín-Navarro et al., 2021). We used seven indicators from Martín-Navarro et al. (2021) to measure it. According to Amabile (1996), creativity is the ability to create new and valuable ideas. Creativity was adapted from Zampetakis (2008) and consisted of four items. Program Learning provides the context for learners to acquire skills and behaviours to create value in enterprises (Gundry et al., 2014). This construct was adapted from GUESSS questionnaire (Lechuga Sancho et al., 2020) and consists of five items. The individual's certainty to plan and create a new enterprise in the future (Thompson, 2009) defines Entrepreneurial Intentions. It comprises six items adapted from Liñán & Chen (2009). Moreover, proactivity, as the individual's active efforts to effect changes in his or her environment (Zampetakis, 2008), is measured with ten items from Seibert et al. (2001). All indicators are listed in Appendix 1.

### ***Data analytics***

In order to test the hypotheses, we used a structural equation model (Hair et al., 2014). The first objective of PLS-SEM is to determine the amount of variance explained in the endogenous variables of a structural model and explain the relationships posited in the

model (Hwang et al., 2020). We use the Smart PLS 3.0 software to carry out the data analysis, following the indications in Ringle et al. (2015). The evaluation of the research model was carried out in two distinct stages. In order to determine the validity and reliability of the constructs, firstly, we carried out an analysis of the measurement model. Secondly, in order to conclude the relationships, we carried out an analysis of the structural model.

## Results

### *Analysis of the Measurement Model*

Common method bias (CMB), in the context of research using PLS-SEM, is a phenomenon that could be caused by the measurement method, typically Likert-type questionnaires (Kock, 2015). CMB is a serious threat because bias can affect the findings due to systematic errors (Schwarz et al., 2017). In this research, we have tried to avoid CMB in the research development and applied the statistical procedure suggested by Kock (2015) to detect it. When VIF coefficients are higher than 3.3, it indicates collinearity so that CMB may contaminate the model. Table 1 shows the VIF coefficients that are clearly below the 3.3 limit.

**Table 1. Full collinearity VIFs**

Variables	Program Learning	Causal Propensity	Creativity	Proactivity
VIF	1.37	1.30	1.62	1.80

The PLS-SEM method was used for the analysis. PLS is a recommended method for studying latent construct models made up of composite (Rigdon, 2016). Individual reliability, construct reliability, discriminant validity and convergent validity were assessed. Reliability ensures that the measurement produces consistent results, and validity ensures that the indicators of a construct measure the construct they are intended to measure and not another one (Hair et al., 2011).

The individual reliability of each item was analysed, and items with loadings below 0.707 were eliminated (Carmines & Zeller, 1979). Subsequently, construct reliability is

analysed through Dijkstra-Henseler rho\_A in all cases with values above 0.7 (Dijkstra & Henseler, 2015). Composite reliability should be above 0.8 (Nunnally & Bernstein, 1995). Convergent validity is tested through the Average Variance Extracted (AVE). The values must be greater than 0.5 (Fornell & Larcker, 1981). Table 2 shows that the established requirements are satisfied.

**Table 2. Reliability and convergent validity**

<b>Construct/Indicator</b>	<b>Loads</b>	<b>rho_A</b>	<b>Compound reliability</b>	<b>AVE</b>
<b>Program Learning (PL)</b>		0.913	0.935	0.742
Learn01	0.859			
Learn02	0.875			
Learn03	0.872			
Learn04	0.845			
Learn05	0.856			
<b>Causal Propensity (CP)</b>		0.739	0.846	0.648
Caus05	0.850			
Caus06	0.816			
Caus07	0.745			
<b>Creativity (CREA)</b>		0.838	0.891	0.672
Crea01	0.834			
Crea02	0.746			
Crea03	0.863			
Crea04	0.831			
<b>Proactivity (PROA)</b>		0.852	0.889	0.615
Proact05	0.706			
Proact07	0.813			
Proact08	0.795			
Proact09	0.807			
Proact10	0.809			
<b>Entrepreneurial Intention</b>		0.898	0.934	0.825
EI01	0.904			
EI03	0.935			
EI05	0.884			

Discriminant validity determines whether a particular construct is different from others. In our study, discriminant validity was found (Table 3). For this purpose, the criteria of Fornell-Larcker and the Heterotrait-Momonotrait Ratio (HTMT) (Henseler et al., 2016) were applied. There is discriminant validity given that the HTMT values are below 0.9 (Gold et al., 2001). The results confirm that the measurement model is valid and reliable.

**Table 3. Discriminant validity**

	Fornell-Larcker					HTMT			
	PL	CP	CREA	PROA	EI	PL	CP	CREA	PROA
<b>PL</b>	<b>0.861</b>								
<b>CP</b>	0.344	<b>0.805</b>				0.423			
<b>CREA</b>	0.408	0.365	<b>0.82</b>			0.464	0.466		
<b>PROA</b>	0.405	0.422	0.581	<b>0.784</b>		0.454	0.528	0.686	
<b>EI</b>	0.379	0.292	0.315	0.435	<b>0.908</b>	0.418	0.358	0.362	0.495

### *Analysis of the Structural Model*

After verifying reliability and validity, the structural model is evaluated to test the hypotheses and relationships between the constructs proposed in the research model (Saura et al., 2020). To evaluate the structural model (estimation of path loadings and  $R^2$ ), bootstrapping with 5,000 resamples is used to test the proposed hypotheses (Hair et al., 2011).

Standardised path coefficients ( $\beta$ ) explain the size of the predictor variables' contribution to the endogenous variables' variance (Palos-Sanchez et al., 2021). The results of the path loadings coefficient are shown in Table 4. These results show that eight of the nine relationships proposed in the theoretical model are significant. Hypothesis H7 was not supported. That is, the relationship between creativity and entrepreneurial intentions is not significant.

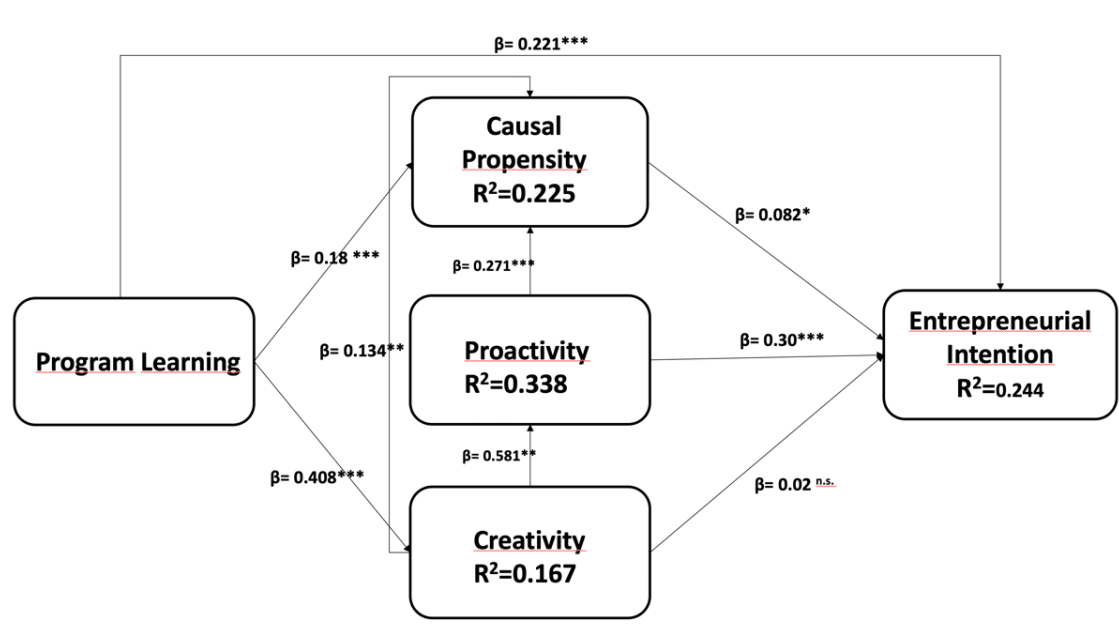
**Table 4. Results of significance tests of the coefficients of the structural model**

Hypothesis	$\beta$ (Standard Path Coeff.)	T-Statistics	P-Values	CI	Sig	
H1: PL $\square$ CP	0.18	3.466	0.000	(0.094;0.264)	Yes	***
H2: PL $\square$ CREA	0.408	9.285	0.000	(0.336;0.481)	Yes	***
H3: CREA $\square$ PROA	0.581	16.411	0.000	(0.522;0.636)	Yes	**
H4: PROA $\square$ CP	0.271	4.882	0.000	(0.178;0.362)	Yes	***
H5: CP $\square$ EI	0.082	1.676	0.047	(0.002;0.161)	Yes	*
H6: PROA $\square$ EI	0.3	5.21	0.000	(0.206;0.394)	Yes	***
H7: CREA $\square$ EI	0.02	0.377	0.353	(-0.071;0.104)	No	n.s.
H8: PL $\square$ EI	0.221	4.233	0.000	(0.135;0.308)	Yes	***
H9: CREA $\square$ CP	0.134	2.419	0.008	(0.043;0.226)	Yes	**

Note: Significant at  $p^* < 0.05$ ;  $p^{**} < 0.01$  and  $p^{***} < 0.001$

The model's explanatory power can be measured by studying the  $R^2$  value of the dependent variable EI. The  $R^2$  indicates the variance explained by the exogenous variables (Ramírez-Correa et al., 2019). Figure 2 shows the explanatory power of the other constructs.  $R^2$  values above 0.67 are considered high, between 0.67, and 0.33 moderate, between 0.33 and 0.19 weak and values below 0.19 are unacceptable (Hair et al., 2014). In this case, Entrepreneurial Intention and Causal Propensity present a weak  $R^2$ , while the values for proactivity are moderate.

**Figure 2. Quality of the measurement model and the structural model**



The global model fit is performed using the values of the standardised root mean square residual (SRMR). A value of 0 would represent a perfect fit, although values below 0.08 present a good fit (Henseler et al., 2014). In our model, SRMR presents a value of 0.055 lower than the reference value, so our model presents a good fit.

### ***Predictive Model***

Assessing the predictive power of a model is fundamental in social science research (Hair, 2021). In this respect, PLS-SEM facilitates two critical types of analysis. First, it explains

the research model. Something we have already developed in the previous stages. Moreover, secondly, it performs the prediction of the model (Joreskog & Wold, 1982).

In the past, researchers have interpreted the coefficient of determination ( $R^2$ ) to predict the values of individual cases in a sample. Nevertheless, the  $R$ -value<sup>2</sup> only assesses the explanatory power of a model and not the out-of-sample predictive power concerning new cases (Shmueli, 2010). Assessing the predictive power of a model in a given sample involves measuring its performance for data other than those in the original sample (Cepeda et al., 2017). In this sense, we analyse the predictive power of our model with  $Q^2$  (Geisser, 1974; Stone, 1974).  $Q^2$  is a metric provided by PLSpredict that is frequently used in this context and is obtained through the blindfolding procedure (Chin, 1998).

The model's predictive power is analysed with the PLSpredict technique, which tests the model's generalizability to other populations. We obtained results from the variables RMSE (R Mean Square Error), MAE (Mean Absolute Error), and  $Q\_predict^2$ . The first two are composite score-based prediction errors. Moreover, concerning the third one, for the model to have predictive power, the value of  $Q^2$  must be greater than zero (Shmueli et al., 2019). In our case, all the values in the last column are positive (see Table 5). Similarly, we obtained positive values for RMSE and MAE, showing good predictability (Woodside, 2013). Therefore, this research demonstrated the proposed model's predictive validity, or out-of-sample predictability, to predict the values of new cases.

**Table 5. Evaluation of PLS predictions**

	RMSE	MAE	$Q^2$
Causal Propensity	0.949	0.754	0.11
Creativity	0.922	0.719	0.161
Proactivity	0.936	0.741	0.133
Entrepreneurial intention	0.932	0.764	0.137

## Discussion

In our paper, we have analysed four antecedents of the entrepreneurial intention of Tourism students at the University of Cadiz and the University of Seville (Spain): program learning, creativity, proactivity and causal propensity. We have also analysed

different relationships between these variables. These relationships allow us to configure a theoretical model from which nine research hypotheses are derived. The results of the empirical study have confirmed eight of the nine hypotheses put forward in the research model.

Thus, we have found empirical evidence for the effect of program learning on causal propensity, so H1 is supported. Our results are consistent with those of Arvidsson et al. (2020). In this sense, individuals who have never started a business may develop causal propensity due to the entrepreneurship training they have received. The results of the study also support H2. Therefore, we can state that program learning positively affects student creativity. This result is in line with the findings of Machali et al. (2021) y Valaei et al. (2017), who also demonstrated this relationship in their research.

On the other hand, there are few empirical studies on the effect of creativity on proactivity in the academic literature (Zampetakis, 2008). In our work, we see that the results confirm that creativity affects proactive behaviour (H3 is supported). Similarly, although they did not directly study the effect of creativity on proactivity, Bourmistrov and Åmo (2022) found that creativity was related to some components of individuals' foresight. Similar to our results, Zampetakis (2008) found that creativity is an important variable that affects individuals' proactivity towards their entrepreneurial intentions.

About H4, in most of the works reviewed, the literature considers that proactive behaviour is typical of an effectual decision-making logic (Chen et al., 2021). Considering this gap, our research proposed that proactivity could also be a determinant of causal logic and, more specifically, of the propensity towards causal behaviour. The results obtained confirm the relationship between individuals' proactivity and causal propensity. Therefore, H4 is supported. These results are consistent with Yeşilkaya and Yildiz (2022), for whom proactive individuals detect good opportunities much earlier than others and develop better strategic vigilance. This strategic vigilance gives proactive individuals the ability to rationally plan how to seize these opportunities (Alshaer, 2020; Yeşilkaya, 2015) and set goals to achieve within a causal logic, anticipating and planning what they will offer to their customers (Mahmoud & Mahdi, 2019) and how they will adapt to changes in the environment (Yeşilkaya & Yildiz, 2022).

Hypotheses H5, H6 AND H7 of the model posited in this study propose that causal propensity, proactivity and creativity are antecedents of entrepreneurial intentions. The first two of these relationships are supported (H5 and H6). However, the third, H7, is not satisfied as the relationship between creativity and intentions is not significant. Our results are in line with those of Li et al. (2020), who also found that causal behaviour affected intentions to start a business. Similarly, our findings support the results of Sidratulmunthah et al. (2018), Huston (2018), and Castillo & Fischer (2019), who found that proactivity affects intentions. However, in our study, creativity is not a determinant of entrepreneurial intentions. This result is contrary to those of Kumar & Shukla (2022) y Zampetakis et al. (2011). The previous authors did find empirical evidence for the relationship between creativity and entrepreneurial intentions. Similarly, Zampetakis (2008) demonstrated that proactivity and creativity affect intentions among the Greek students who participated in their research, mediated by the desire to be entrepreneurial.

Many researchers have found the positive effect of program learning on entrepreneurial intentions (González-López et al., 2019; Leiva et al., 2021; Rauch & Hulsink, 2015). Our results confirm these findings as H8 is supported. Therefore, our sample finds that program learning is an antecedent of entrepreneurial intentions. Finally, we can affirm that creativity determines causal propensity since H9 is also satisfied. These results are consistent with the arguments of Chandler et al. (2011) and Sarasvathy and Dew (2008). These researchers claimed that creative ideas were part of the causal logic. By analogy, our results show that they are also antecedents and part of causal propensity.

## **Conclusions**

There are many studies on students' entrepreneurial intentions (Barba-Sánchez et al., 2022; Leiva et al., 2021; Wang et al., 2022). Nevertheless, this type of study in the tourism sector is especially relevant due to the opportunities this industry offers for business development and generating wealth and employment. Our study analysed a sample of undergraduate tourism students at universities in southern Spain. This work proposed a research model with four variables as antecedents of entrepreneurial intentions (program learning, creativity, proactivity and causal propensity). The inclusion of causal propensity in this model is innovative as it is the first time it has been studied as an antecedent of entrepreneurial intentions. This variable refers to the tendency towards the causal logic of people who have not yet started their business.



The proposed theoretical model established nine research hypotheses. The results support eight of these hypotheses, and only one was rejected. Thus, three of the four determinants proposed in the research influence entrepreneurial intentions. These determinants are program learning, proactivity and causal propensity. However, according to the results of this study, there is no evidence that creativity directly influences entrepreneurial intention.

The predictive capacity of the theoretical model established in this work is also remarkable. We have evaluated our model with PLSpredict, and the result shows that it has a high predictive ability, which indicates that similar results will be obtained in other samples with new cases.

### ***Contributions***

Given the results obtained, our work has important implications for academic research and practice. First, this study adds value to the literature on entrepreneurial intention as it is the first time that the impact of the causal propensity of individuals who have not yet started their business on their entrepreneurial intentions has been tested. Secondly, the sequential mediating effect of creativity, proactivity and causal propensity on the relationship between program learning and entrepreneurial intention has been tested.

Our results also have implications for the educational community, policymakers, and other agents working to promote self-employment. The results of this study show that to promote entrepreneurial intentions, it is necessary to offer training in entrepreneurship that develops students' creativity and proactivity. In addition, students need to learn how to make business plans in which they plan the opportunities to be seized and the objectives to be achieved. By analogy, employers who wish to support intrapreneurship among their employees should also consider the importance of training that fosters creativity, proactivity and causal propensity to generate entrepreneurial intentions that encourage the development of projects within the organisation or in spin-offs.

### ***Limitations and future agenda***

This work has some limitations that also present opportunities for future research. First, the sample used in this study comprises tourism students from two universities that are very close geographically, so their responses do not differ too much. In this sense, we propose that the researchers carry out this study with students from other university

degrees and in different cultural contexts and countries. We find it particularly interesting to test our model on students undertaking an undergraduate degree in Social Work, in order to compare the results between traditional entrepreneurial intentions and those with a social entrepreneurship character. In addition, we invite other researchers to analyse the proposed model in non-university population samples. We also propose to study the moderating role of gender to determine whether there are differences in entrepreneurial intentions between men and women.

Second, this paper only studies entrepreneurial intentions prior to the creation of the company. The theoretical model proposed in this paper could be completed by including the next stage of the entrepreneurial process, that is, the launch of the start-up company. To this end, we propose to study the conversion rate of potential entrepreneurs with entrepreneurial intentions into entrepreneurs who eventually create companies. It would also be interesting to test whether the initial causal propensity translates into a causal logic during the process of business creation.

Third, the proposed theoretical model could be extended with other personal factors such as effectual propensity, passion, optimism, or risk aversion, among other variables. We could also include in the model the antecedents of entrepreneurial intentions from the theory of planned behaviour (Ajzen, 1991), namely subjective norms, personal attitude, and perceived behavioural control.

Moreover, fourth another limitation is that the causal propensity construct lost several items in the factor analysis that were present in the original measurement scale proposed by Martín-Navarro et al. (2021). For that, additional effort is required to confirm the construct's consistency. It would be interesting to test the consistency of the construct in other samples in future research.

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## *APPENDIX: Questions used in the survey*

<p>CAUSAL PROPENSITY (Martín-Navarro et al., 2021)</p>	<ol style="list-style-type: none"> <li>1. I usually design a long-term plan to organise myself in my tasks.</li> <li>2. I prefer to have predetermined goals and to strive to achieve the results of these goals.</li> <li>3. I analyse long-run opportunities and select what I think would provide the best returns.</li> <li>4. I try to avoid uncertain situations to the greatest possible extent.</li> <li>5. When I set goals to achieve, I analyse my competitors in depth.</li> <li>6. I usually implement control processes to make sure I meet the objectives.</li> <li>7. I think my relationships with those who can influence my future should be long term and goal oriented.</li> </ol>
<p>CREATIVITY (Zampetakis, 2008)</p>	<ol style="list-style-type: none"> <li>1. I exhibit creativity onmy assignments when given the opportunity to</li> <li>2. I develop adequate plans and schedules for the implementation ofnew ideas</li> <li>3. I come up with creative solutions to problems</li> <li>4. I am a good source of creative ideas</li> </ol>
<p>PROGRAM LEARNING (Lechuga Sancho et al., 2020)</p>	<p>Please indicate the extent to which you agree with the following statements about your studies (1 = not at all, 7 = very much).</p> <p>The courses and offerings I attended...</p> <ol style="list-style-type: none"> <li>1. ...increased my understanding of the actions someone has to take to start a business.</li> <li>2. ...enhanced my practical management skills in order to start a business.</li> <li>3. ...enhanced my ability to identify an opportunity.</li> <li>4. ...enhanced my ability to develop networks.</li> <li>5. ...increased my understanding of the attitudes, values and motivations of entrepreneurs.</li> </ol>
<p>ENTREPRENEURIAL INTENTIONS</p>	<ol style="list-style-type: none"> <li>1. I am ready to do anything to be an entrepreneur</li> <li>2. My professional goal is to become an entrepreneur</li> </ol>

(Liñán & Chen, 2009)	<ol style="list-style-type: none"> <li>3. I will make every effort to start and run my own firm</li> <li>4. I am determined to create a firm in the future</li> <li>5. I have very seriously thought of starting a firm</li> <li>6. I have the firm intention to start a firm some day</li> </ol>
<p>PROACTIVITY (Seibert &amp; Kraimer, 2001)</p>	<ol style="list-style-type: none"> <li>1. I am constantly on the lookout for new ways to improve my life.</li> <li>2. Wherever I have been, I have been a powerful force for constructive change.</li> <li>3. Nothing is more exciting than seeing my ideas turn into reality.</li> <li>4. If I see something I don't like, I fix it.</li> <li>5. No matter what the odds, if I believe in something I will make it happen.</li> <li>6. I love being a champion for my ideas, even against others' opposition.</li> <li>7. I excel at identifying opportunities.</li> <li>8. I am always looking for better ways to do things.</li> <li>9. If I believe in an idea, no obstacle will prevent me from making it happen.</li> <li>10. I can spot a good opportunity long before others can.</li> </ol>

# **CAPÍTULO 5**

## **Resultados y Discusión**

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Esta investigación se basó en el estudio de los determinantes que influyen en la intención emprendedora, destacando especialmente la propensión efectual y causal. A lo largo de este trabajo, se ha llevado a cabo un análisis que abordó dos etapas diferenciadas. En primer lugar, una validación de la escala de medida utilizada para las dimensiones “propensión efectual” y “propensión causal”. En segundo lugar, pusimos a prueba las hipótesis formuladas en dos modelos de investigación mediante la aplicación de una técnica estadística multivariante. Esta técnica permite contrastar aquellos modelos que proponen relaciones causales entre las distintas variables. Son los modelos de ecuaciones estructurales o SEM (*Structural Equation Modeling*) (Ruiz et al., 2010). El uso de los SEM en el campo de ciencias sociales ha ido creciendo debido a que se trata de una herramienta muy útil que puede identificar relaciones entre las distintas variables de un modelo (Leyva & Olague, 2014).

En este capítulo, presentamos los resultados obtenidos, que además de responder a nuestras preguntas de investigación, también han sido capaces de revelar perspectivas novedosas que contribuyen significativamente al cuerpo de conocimientos en este campo. Estos resultados no solo son la culminación de los esfuerzos realizados, sino también la apertura de nuevas líneas para futuras investigaciones y aplicaciones prácticas.

## **Resultados de la validación de la escala de medida**

En la literatura académica se ha estudiado la lógica efectual durante el proceso emprendedor. Esto es, la teoría *effectuation* ha analizado el comportamiento de los emprendedores que ya han puesto en marcha su negocio. Sin embargo, no se ha analizado esta conducta en personas que aún no lo han hecho y se encuentran en una fase previa. En este sentido, esta investigación pretende desarrollar y validar un instrumento de medida que evalúe la propensión de los individuos hacia un comportamiento efectual o causal cuando aún no han creado una empresa, pero potencialmente podrían hacerlo. Para ello, se diseñó un cuestionario de 25 ítems, adaptado del trabajo de Werhahn et al. (2015), Chandler et al. (2011), y Gabrielsson et al. (2011), que mide dos variables: propensión efectual y propensión causal. La propensión efectual se compone de cinco dimensiones con sus respectivos indicadores: (1) Orientación a los Medios con tres indicadores; (2) Orientación a la Asociación con cuatro; (3) Orientación a la Pérdida Asumible compuesta por tres ítems; (4) Orientación a la Contingencia medida a través de cuatro indicadores;

y (5) Orientación al control compuesta también por cuatro. Por otro lado, la variable propensión causal se mide con siete indicadores. Los indicadores uno, tres y seis se adaptaron del trabajo de Chandler et al. (2011), mientras que el resto de indicadores que se han utilizado fueron adaptados de la investigación de Gabrielsson & Politis (2011), que diseñaron esos indicadores a partir de las recomendaciones de Sarasvathy (2001). Siguiendo a Dittrich, Francis, Hatzinger, & Katzenbeisser (2005) los anteriores ítems se midieron en una escala Likert de siete puntos, donde uno corresponde a “totalmente en desacuerdo” y siete a “totalmente de acuerdo”. Esta nueva escala puede contribuir a la construcción de teorías más sólidas de la intención emprendedora a través de la propensión efectual y la propensión causal.

Para validar la nueva escala de medida, se utilizó una muestra de estudiantes universitarios de último curso de Administración y Dirección de Empresas de la Universidad de Cádiz y de la Universidad de Sevilla que, si bien aún no habían mostrado el comportamiento efectual o causal, sí podían presentar cierta propensión hacia el tipo de comportamiento que manifestarían si crearan una empresa. Para validar una escala que pueda medir si el estudiante tiene propensión efectual o causal, es importante estudiar esta propensión antes de que estos reciban formación específica en emprendimiento, ya que esa formación les pondría condicionar. Es por ello que el cuestionario se contestó en el primer semestre del curso académico, antes de que comenzara la asignatura “Creación de empresas”, gracias a la cual adquieren conocimientos y competencias para realizar un plan de negocios.

La recogida de datos se llevó a cabo durante octubre y noviembre de 2018. Para dicha recopilación se creó un cuestionario online a través de la herramienta de formularios de Google (Hariguna et al., 2016; Jiang & Wu, 2016; Lian, 2017), que permite al usuario acceder a la encuesta a través de un enlace web. Esta herramienta vuelca los datos directamente en una hoja de cálculo, lo cual facilita su posterior tratamiento estadístico.

Se obtuvo una muestra de 230 cuestionarios cumplimentados sobre un total de 463 estudiantes matriculados, obteniendo una ratio de respuesta del 49,67%. El 58,3% de los encuestados eran mujeres. El 86,1% de los encuestados tenía entre 18 y 24 años de edad, el 11,7% entre 25 y 30 años; y el resto era mayor de 30 años. El 58,3% eran estudiantes de la Universidad de Sevilla, mientras que el 41,7% estaban matriculados en la Universidad de Cádiz. El 67,4% pertenecían a la titulación de Administración y Dirección

de Empresas, mientras que el 32,6% al doble grado de Administración y Dirección de Empresas y Derecho. El 36,1% de los encuestados pertenecían a una familia cuyos padres han poseído o poseen un negocio. El 43,5% había trabajado o estaba trabajando por cuenta ajena, frente al 48,3% que nunca había trabajado; el resto había trabajado o estaba trabajando por cuenta propia o bien, por cuenta propia y ajena.

Con el fin de validar el instrumento de medida se utilizó el *software* SmartPLS en su versión 3.2.7., que permite analizar las relaciones entre variables latentes y sus indicadores. Este análisis muestra si todos los indicadores representan su constructo correspondiente o si es necesario eliminar algunos de ellos. SmartPLS evalúa la medición de las variables en función de la fiabilidad individual, la fiabilidad de constructo, la validez discriminante y la validez convergente. Este análisis garantiza que los indicadores representan bien su variable correspondiente. Concretamente, la fiabilidad garantiza que la medición produce resultados coherentes, y la validez garantiza que los indicadores de un constructo miden sólo su constructo y no otro.

En primer lugar, se analizó la fiabilidad individual de cada ítem mediante correlaciones simples de los indicadores con su respectivo constructo. Los resultados mostraron que no había indicadores con cargas inferiores a 0,4, límite establecido por Hair et al. (2011). Y, aunque se encontraron indicadores con cargas entre 0,4 y 0,7 que podrían eliminarse en una fase posterior, en esta primera etapa no se procedió a eliminar ningún ítem. En segundo lugar, analizamos la fiabilidad del constructo. Para ello, las medidas correspondientes a la fiabilidad compuesta deben ser superiores a 0,7 (Dijkstra & Henseler, 2015). En este estudio, todos los indicadores cumplieron este requisito excepto el indicador de Dijkstra-Henseler ( $\rho_A$ ) en la dimensión "pérdidas asumibles", ya que su resultado fue de 0,691, que no superó el valor establecido de 0,7. Sin embargo, no se procedió a eliminar el indicador ya que el valor era muy próximo a 0,7 y cumplía el umbral de fiabilidad compuesto (que es una medida de mayor aceptación que el indicador  $\rho_A$ ). Además, el resto de las cargas de los indicadores que componen esta dimensión eran bastante elevadas.

Posteriormente, se estudió la validez convergente a través de la varianza media extraída (AVE), requiriéndose valores superiores a 0,5 (Fornell & Larcker, 1981). En este caso, la variable latente "*Causation*" explicaba menos del 50 % de la varianza de los indicadores que la componían. Por este motivo, se procedió a eliminar los dos ítems con menos carga

y como resultado, AVE alcanzó una puntuación aceptable por encima del 0,5 recomendado. Por último, analizamos la validez discriminante antes de eliminar los ítems anteriores. Siguiendo a Henseler et al., 2016, existe validez discriminante cuando la relación heterotrait-monotrait de correlaciones (HTMT) tiene valores inferiores a 0,85 (Gold et al., 2001). Todos los valores estaban por debajo de este umbral, por lo que no fue necesario eliminar ningún otro indicador.

Tras la eliminación de los dos ítems de la variable propensión causal, volvimos a calcular todos los indicadores anteriores. Se cumplió la fiabilidad individual, ya que las cargas estaban dentro de los umbrales definidos anteriormente. También se cumplió la fiabilidad del constructo, ya que los valores de la fiabilidad compuesta superaron el límite de 0,8 y los resultados de  $\rho_A$  también fueron superiores a 0,7. En cuanto a la validez convergente, observamos que todos los valores de AVE superaban 0,5, por lo que cada ítem representaba adecuadamente un único constructo. Por último, tras la eliminación de los dos ítems, se comprobó que seguía existiendo validez discriminante, ya que los valores del cociente HTMT entre las distintas variables eran inferiores a 0,85.

En definitiva, y tras analizar la fiabilidad individual, la fiabilidad del constructo, la validez discriminante y la validez convergente de estos constructos, obtuvimos una escala con 23 ítems fiables y válidos. De la escala de 25 ítems, eliminamos sólo dos del constructo propensión causal para aumentar la varianza explicada y mejorar la validez convergente. Los ítems eliminados fueron: "Trato de evitar situaciones inciertas en la mayor medida posible" y "Cuando me planteo objetivos a alcanzar analizo a mis competidores en profundidad".

## **Impacto de la Propensión Efectual en las Intenciones Emprendedoras**

El segundo trabajo integra el modelo de intención emprendedora con la lógica efectual. Para ello se ha desarrollado un modelo TPB extendido con la variable Propensión Efectual (EP). El modelo TPB extendido con EP puede considerarse como un modelo útil para predecir la intención emprendedora en el ámbito del turismo. El modelo de investigación se compone de nueve hipótesis.

Para este segundo trabajo se diseñó un cuestionario revisado por expertos y sobre el que se realizó una prueba piloto. El primer bloque recoge las variables demográficas y el resto se compone de 37 preguntas articuladas sobre una escala Likert de 7 puntos. A partir de la variable “propensión efectual” se procede a determinar la escala, con los indicadores o ítems necesarios para medir dicha variable no observable directamente por el investigador. Los indicadores del constructo “propensión efectual” fueron adaptados del trabajo de (Martín-Navarro et al., 2021) y se integran en cinco subdimensiones: (1) orientación a los medios que se mide a través de tres ítems, (2) orientación a la asociación se midió a través de cuatro (3) orientación hacia pérdidas asumibles se compone de tres indicadores (4) orientación a contratiempos de cuatro y, (5) orientación al control se ha medido con cuatro indicadores. Por otro lado, las cuatro variables restantes pertenecientes al TPB se midieron con el siguiente número de ítems: (1) actitud con cinco indicadores, (2) control del comportamiento percibido igualmente con 5 ítems, (3) las normas subjetivas se midieron con cuatro indicadores y, (4) la intención emprendedora con seis. Todos los indicadores fueron adaptados de la escala de Liñán & Chen (2009).

Se consiguió una muestra de 464 cuestionarios correctamente cumplimentados entre estudiante del grado de turismo de la universidad de Cádiz y de la universidad de Sevilla. En relación con la muestra, el 71,02% de los encuestados son mujeres frente al 28,98% de hombres. Entre 18 y 21 años se encuentra el 56,04% de los casos, el 37,58% tienen entre 22 y 25; y el resto es mayor de 25 años; la mayoría son españoles, sólo el 2,6% son extranjeros. El 56,71% son estudiantes de la Universidad de Sevilla, mientras que el 43,29% están matriculados en la Universidad de Cádiz. El 31,82% de los encuestados pertenecen a una familia cuyos padres han poseído o poseen algún tipo de negocio. Y finalmente, de 34,20% ha trabajado o está trabajando por cuenta ajena frente al 46,84% que nunca ha trabajado; el resto ha trabajado o está trabajando por cuenta propia o bien, por cuenta propia y ajena.

Para el análisis del modelo de investigación se ha utilizado el software SmartPLS 3 (Ringle et al, 2015). Este análisis se realizó en dos fases: el análisis del modelo de medida y el análisis del modelo estructural. En la primera fase se estudia las relaciones de las variables latentes con sus indicadores. En la segunda fase y tras analizar la fiabilidad y validez debe evaluarse el modelo estructural para identificar las relaciones entre los constructos del modelo de investigación propuesto (Velicia Martín et al., 2020).

### **Análisis del Modelo de Medida**

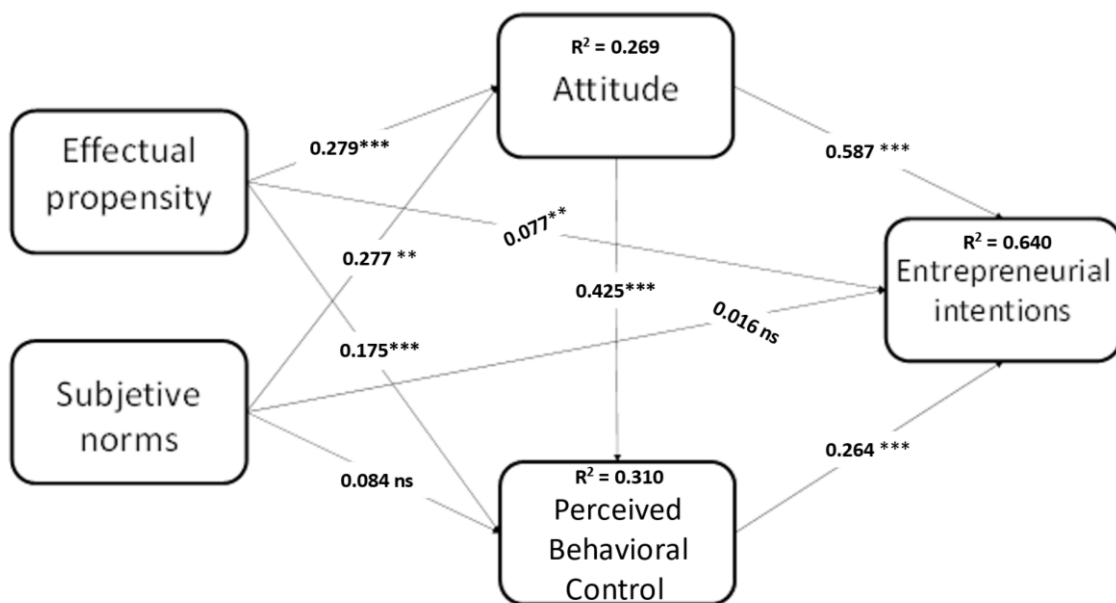
En relación con la fiabilidad individual de los ítems, debe comprobarse que las cargas son superiores a 0,707 (Carmines & Zeller, 1979). En nuestro estudio, “orientación hacia los medios” y “orientación hacia las pérdidas asumibles”, subdimensiones del constructo EP, tienen una carga inferior y, por lo tanto, se eliminarán del análisis. Posteriormente, se analiza la fiabilidad del constructo a través de Dijkstra-Henseler rho\_A en todos los casos con valores superiores a 0,7 (Dijkstra & Henseler, 2015). La fiabilidad compuesta (Werts et al., 1974) debe ser superior a 0,8 como sugieren Nunnally & Bernstein (1995). Para completar este análisis, se comprueba la validez convergente mediante la Varianza Media Extraída (AVE). En este caso, los valores deben ser superiores a 0,5 (Fornell & Larcker, 1981) y todos lo cumplen. El análisis de validez discriminante se realiza mediante el Ratio Heterotrait-Monotrait (HTMT) (Henseler et al., 2016). Esta ratio debe tener valores inferiores a 0,85 (Gold et al., 2001) para garantizar que se satisface la validez discriminante, lo cual muestran los resultados. En el constructo de segundo orden, EP, se elimina la dimensión "orientación a las pérdidas asumibles" porque las cargas son inferiores a 0,707 y la dimensión "orientación a los medios" por el mismo motivo. Una vez depurado el modelo de medida, continuamos con el análisis del modelo estructural. Una vez depurado el modelo de medida, y comprobado que las medidas son fiables y válidas, se continúa con la segunda fase, el análisis del modelo estructural teórico propuesto.

### **Análisis del Modelo Estructural**

El análisis del modelo estructural permitirá identificar las relaciones entre los constructos del modelo de investigación propuesto (Velicia Martín et al., 2020). Este análisis pone a prueba si las hipótesis y las relaciones de los constructos del modelo teórico son respaldadas (Henseler et al., 2015). La evaluación del modelo estructural implica la estimación de las cargas de los caminos o *path loadings* y los valores de  $R^2$ . Para ello, se utiliza en SmartPLS una técnica de bootstrapping con 5.000 remuestreos con el objeto de contrastar las hipótesis planteadas. Los *path loadings* indican la fuerza de las relaciones entre las variables explicativas y las variables a explicar (Ramírez-Correa et al., 2019).

Los resultados demuestran que de las nueve relaciones propuestas en el modelo teórico son significativas siete de ellas. Se comprueba que no es significativa la hipótesis H5 que muestra la relación de SN (“normas subjetivas”) en PBC (“control del comportamiento percibido”), ni tampoco H6 por lo que SN no es determinante de EI (“intenciones emprendedoras”). Los valores de  $R^2$  indican la cantidad de varianza explicada por las variables exógenas (Ramírez-Correa et al., 2019). En nuestro caso, el constructo Intenciones Emprendedoras presenta un  $R^2$  moderado ya que se encuentra entre los valores 0,67 y 0.33 (Hair et al., 2014) (ver figura 1).

Figura 3. Modelo estructural final



Note: \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ ; ns not supported.

El ajuste del modelo global se realiza mediante los valores del residuo cuadrático medio estandarizado (SRMR), y nuestro modelo presenta un valor de 0,052 inferior al valor de referencia, por lo que presenta un buen ajuste (Henseler et al., 2014). Por último, se analiza el poder predictivo del modelo que permite comprobar la generalizabilidad del modelo a otras poblaciones. Se aplica un PLSpredict, un enfoque basado en muestras fuera de la nuestra, desarrollado por Shmueli et al. (2016). Siguiendo a Roldan & Cepeda (2017) con la técnica PLSpredictive, se obtuvieron resultados expresados a través de las variables RMSE (R Mean Square Error) y MAE (Mean Absolute Error) y  $Q^2_{predict}$ . Para que el modelo presente poder predictivo el valor de  $Q^2$  debe ser mayor que cero y en nuestro caso, se comprueba que todos los valores son positivos. Del mismo modo,

obtuvimos valores positivos de RMSE y MAE, lo que también muestra una buena predictibilidad (Woodside, 2013). Por lo tanto, esta investigación demostró la validez predictiva, o predicción fuera de la muestra, del modelo propuesto para predecir los valores de los nuevos casos.

## **Discusión**

Los resultados de esta investigación muestran que la Propensión Efectual es un determinante de las Intenciones Emprendedoras, tanto de forma directa como de forma indirecta a través de PA y el PBC. Del mismo modo, se confirma que tanto PA como PBC presentan una relación directa y positiva con la intención emprendedora en la muestra analizada. Estos hallazgos van en sintonía con los resultados de otros muchos autores en el área de emprendimiento (Krueger et al., 2000; Liñan, 2004; Soomro et al., 2018; Urban & Ratsimanetrimanana, 2019). E incluso con los de Ahamed & Limbu (2018) en su estudio de la intención de uso de tarjetas de crédito. EP no solo presenta una relación positiva y directa con EI, sino que además presenta efectos indirectos positivos y significativos con las variables PA y PBC que contribuyen a explicar la intención emprendedora. La relación directa entre SN y EI presenta una relación no significativa. Esto mismo ocurre en otros trabajos como el de Doanh & Bernat (2019) que no encontraron significativo el efecto de SN on EI entre estudiantes universitarios en Vietnam. Sin embargo, contrasta con otros estudios que si han encontrado esta relación significativa en las intenciones emprendedoras de los estudiantes (Al-Jubari, 2019; Ridha & Wahyu, 2017). Por otro lado, el efecto indirecto de la SN a través de la PA sí que es significativo tanto sobre EI como PBC.

También destacar que el análisis IPMA muestra como la actitud es la variable exógena que más contribuye al efecto total de la variable endógena EI, seguida de EP. En contraposición, la variable que menos contribuye al efecto total es PBC. Y, por último, se puede afirmar que el modelo teórico analizado con una muestra de estudiantes del Grado de Turismo presenta un adecuado poder predictivo, por lo que los resultados obtenidos en nuestro análisis pueden generalizarse a otras muestras. Como se comprueba el modelo teórico presenta unas satisfactorias cualidades psicométricas. Además, el modelo TPB ha incrementado su poder predictivo con la variable EP.



## **Impacto de la Propensión Causal en las Intenciones Emprendedoras**

En el tercer trabajo se han analizado cuatro antecedentes a la intención emprendedora de los estudiantes de Turismo: Propensión Causal (CP, casual propensity), Proactividad, Creatividad y Programa de Aprendizaje. Además, también se han analizado las relaciones entre las distintas variables planteando un modelo de investigación con nueve hipótesis. Para medir las variables, los indicadores del constructo Propensión Causal fueron adaptados del trabajo de Martín-Navarro et al. (2021) y está compuesto por siete ítems. La Creatividad está adaptado de Zampetakis (2008) y se compone de cuatro indicadores. El constructo Programa de Aprendizaje se adaptó del cuestionario GUESS y consiste en cinco indicadores. Intenciones Emprendedoras se adaptó de Liñán & Chen (2009) y se compone de seis ítems. Y Proactividad está medido con 10 ítems del trabajo de Seibert et al. (2001). Al igual que en el trabajo anterior, se utilizó el software SmartPLS para analizar tanto el modelo de medida como el modelo estructural.

### **Análisis del Modelo de Medida**

El sesgo de método común (CMB), en el contexto de la investigación que utiliza PLS-SEM, es un fenómeno que podría estar causado por el método de medición, normalmente los cuestionarios tipo Likert (Kock, 2015). El CMB es una amenaza grave porque el sesgo puede afectar a los hallazgos debido a errores sistemáticos (Schwarz et al., 2017). En el desarrollo de esta investigación hemos tratado de evitar el CMB y hemos aplicado el procedimiento estadístico sugerido por Kock (2015) para detectarlo. Cuando los coeficientes VIF son superiores a 3,3 es un indicio de colinealidad y, por tanto, el modelo puede estar contaminado por CMB. Los resultados muestran los coeficientes VIF que están claramente por debajo del límite de 3,3.

Para el análisis del modelo de medida se utilizó el método PLS-SEM. Se analizó la fiabilidad individual de cada ítem y se eliminaron los ítems con cargas inferiores a 0,707 (Carmines & Zeller, 1979). Posteriormente, se analiza la fiabilidad de constructo mediante Dijkstra-Henseler rho\_A en todos los casos los valores son superiores a 0,7 (Dijkstra & Henseler, 2015). La fiabilidad compuesta debe ser superior a 0,8 (Nunnally & Bernstein, 1995). La validez convergente se comprueba mediante la Varianza Media Extraída (AVE). Los valores deben ser superiores a 0,5 (Fornell & Larcker, 1981) (Fornell & Larcker, 1981). En este estudio todos estos requerimientos se cumplieron.

La validez discriminante determina si un determinado constructo es diferente a los demás. En este trabajo, Se encontró validez discriminante. Para este propósito se aplicó el criterio de Fornell-Larcker y Heterotrait-Momonotrait Ratio (HTMT) (Henseler et al., 2016). Se determina que existe validez discriminante cuando los valores de HTMT están por debajo de 0,9 (Gold et al., 2001) lo cual se cumple. A la vista de nuestros resultados, podemos confirmar que el modelo de medida es válido y fiable. Así pues, pasamos a la segunda etapa y procedemos a evaluar el modelo estructural.

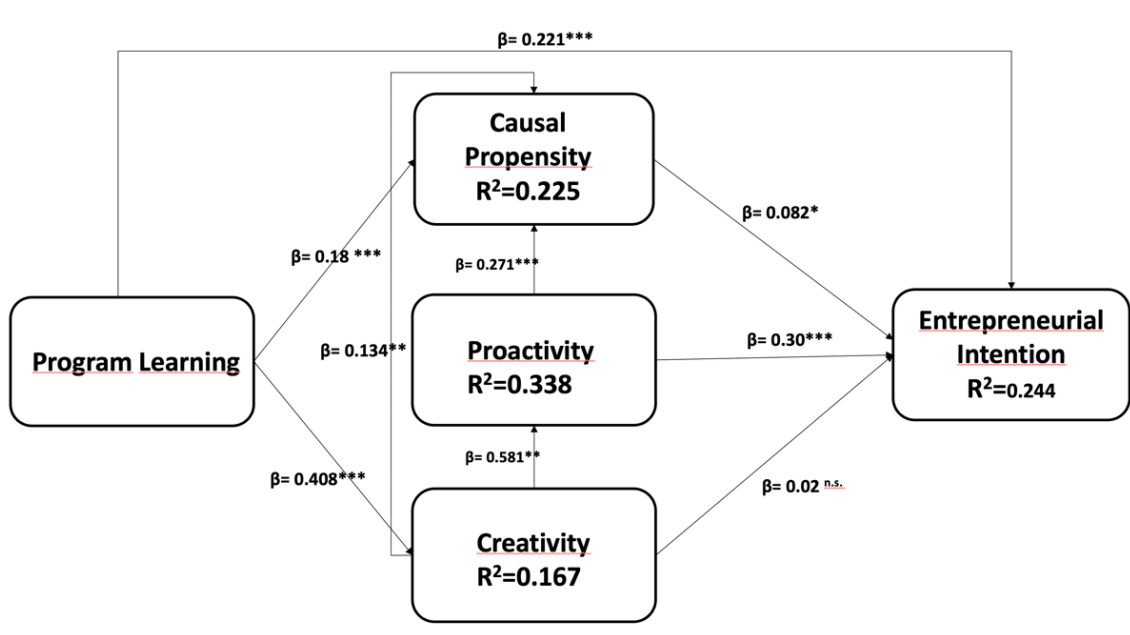
### **Análisis del Modelo Estructural**

Una vez verificadas la fiabilidad y la validez, se evalúa el modelo estructural para comprobar las hipótesis y las relaciones entre los constructos propuestos en el modelo de investigación (Saura et al., 2020). Para la evaluación del modelo estructural (estimación de los path loadings y  $R^2$ ), se utiliza el bootstrapping con 5.000 remuestreos para comprobar las hipótesis propuestas (Hair et al., 2011).

Los *path loadings* estandarizados ( $\beta$ ) explican el tamaño de la contribución de las variables predictoras a la varianza de las variables endógenas (Palos-Sanchez et al., 2021). Los resultados muestran que, de las nueve relaciones propuestas en el modelo teórico, ocho de ellas son significativas. La hipótesis H7 no fue apoyada, es decir, la relación entre creatividad e intenciones emprendedoras no es significativa.

El poder explicativo del modelo puede medirse estudiando el valor  $R^2$  de la variable dependiente EI.  $R^2$  indica la varianza explicada por las variables exógenas (Ramírez-Correa et al., 2019). La Figura 2 muestra el poder explicativo del resto de constructos. Valores de  $R^2$  superiores a 0,67 se consideran altos, entre 0,67 y 0,33 moderados, entre 0,33 y 0,19 débiles y valores inferiores a 0,19 son inaceptables (Hair et al., 2014). En este caso, la Intención Emprendedora y la Propensión Causal presentan un  $R^2$  débil, mientras que los valores para la Proactividad son moderados.

Figure 4. Resultados del modelo estructural



El ajuste global del modelo se realiza utilizando los valores del residuo cuadrático medio estandarizado (SRMR). Un valor de 0 representaría un ajuste perfecto, aunque valores inferiores a 0,08 presentan un buen ajuste (Henseler et al., 2014). En nuestro modelo, SRMR presenta un valor de 0,055 inferior al valor de referencia, por lo que nuestro modelo presenta un buen ajuste.

Evaluar el poder predictivo de un modelo es fundamental en la investigación en ciencias sociales (Hair, 2021). En este sentido, PLS-SEM facilita dos importantes tipos de análisis. En primer lugar, explica el modelo de investigación. Algo que ya hemos desarrollado anteriormente. Y en segundo lugar, realiza la predicción del modelo (Joreskog & Wold, 1982). La evaluación del poder predictivo de un modelo en una determinada muestra, implica medir su rendimiento para datos distintos a los de la muestra original (Cepeda Carrión et al., 2016). En este sentido, analizamos el poder predictivo de nuestro modelo con  $Q^2$  (Geisser, 1974; Stone, 1974).  $Q^2$  es una métrica proporcionada por PLSpredict que se utiliza frecuentemente en este contexto y se obtiene a través del procedimiento de *blindfolding* (Chin, 1998). En este tercer estudio, se cumple el poder predictivo de la muestra ya que obtuvimos valores positivos de los indicadores que RMSE y MAE y  $Q\_predict^2$ . De manera similar, obtuvimos valores positivos para RMSE y MAE, mostrando una buena predictibilidad (Woodside, 2013). Por lo tanto, esta investigación

demonstró la validez predictiva, o previsibilidad fuera de la muestra del modelo propuesto para predecir los valores de nuevos casos.

## **Discusión**

Los resultados del estudio empírico han confirmado ocho de las nueve hipótesis planteadas en el modelo de investigación. Así pues, hemos encontrado evidencia empírica del efecto de los programas de aprendizaje sobre la propensión causal, por lo que H1 es soportada. De esta manera, nuestros resultados se asemejan a los hallados por Arvidsson et al. (2020). Los anteriores autores afirmaron que el individuo utiliza la lógica causal en las primeras etapas de su proceso emprendor. Nuestros resultados confirman esta afirmación, pero desde la etapa más inicial del proceso que es la intención de emprender. De esta manera el individuo que nunca ha iniciado un negocio, tiene propensión causal por efecto de la formación en emprendimiento que ha recibido. H2 también se cumple. Ello confirma que los programas de aprendizaje tienen un efecto positivo sobre la creatividad del estudiante. Este resultado está en consonancia con los hallazgos de Machali et al. (2021) y Valaei et al. (2017), que también demostraron esta relación en sus investigaciones. En la literatura académica, existen escasos trabajos empíricos que estudien el efecto que la creatividad ejerce sobre la proactividad (Zampetakis, 2008). En nuestro trabajo vemos que los resultados confirman que la creatividad tiene efecto sobre un comportamiento proactivo (H3 se cumple). Y, al igual que nuestros resultados, Zampetakis (2008) determinó que la creatividad es una variable importante que actúa sobre la proactividad hacia las intenciones emprendedoras.

En la mayoría de los trabajos revisados, los investigadores relacionan proactividad con *effectuation*. Los investigadores consideran que el comportamiento proactivo es propio de una lógica efectual de toma de decisiones (Chen et al., 2021). Sin embargo, en nuestra investigación se planteó que la proactividad podría ser un determinante de la propensión causal. En este sentido, los resultados avalan nuestra propuesta ya que H4 es soportada. De esta manera, se demuestra que la proactividad tiene un efecto positivo sobre la propensión causal.

En nuestro modelo de investigación planteamos la propensión causal, la proactividad y la creatividad como antecedentes de las intenciones emprendedoras. Mientras que los dos primeros se cumplen (H5 y H6), la hipótesis 7 no se cumple ya que no encontramos

significativa la relación de la creatividad sobre las intenciones. Nuestros resultados están en consonancia con los de Li et al. (2020) que también encontraron que *causation* tenía efecto sobre las intenciones de comenzar una empresa. De igual manera, nuestros hallazgos avalan los resultados de Sidratulmunthah et al. (2018), Huston (2018) y Castillo & Fischer (2019) que encontraron que la proactividad tiene efecto sobre las intenciones. Sin embargo, en nuestro estudio la creatividad no se muestra como un determinante de las intenciones emprendedoras. Este resultado es contrario a los que obtuvieron Kumar & Shukla (2022) y Zampetakis et al. (2011). Los anteriores autores si que encontraron evidencia empírica de la relación de la proactividad sobre intenciones emprendedoras. Del mismo modo, Zampetakis (2008) demostró que la proactividad y la creatividad tienen efecto sobre intenciones entre los estudiantes griegos que participaron en su investigación, mediado por el deseo de ser emprendedor. Además, ambos determinantes explicaban el 16% de la varianza. Y en nuestro trabajo solo encontramos que la proactividad incide sobre las intenciones explicando el 9% de la varianza de las intenciones, pero no la creatividad.

Son muchos los investigadores que han encontrado el efecto positivo de los programas de aprendizaje sobre las intenciones emprendedoras (González-López et al., 2019; Leiva et al., 2021; Rauch & Hulsink, 2015). Nuestros resultados se unen a estos hallazgos ya que H8 se cumple. Por lo tanto, en nuestra muestra, encontramos que los programas de aprendizaje es un antecedente de las intenciones emprendedoras y además explica un 4,9% de su varianza. Y, por último, H9 también se cumple. En este sentido podemos afirmar que la creatividad es un determinante de la propensión causal. De esta manera podemos probar los argumentos de (Chandler et al., 2011) y de (Sarasvathy & Dew, 2008). Los anteriores investigadores afirmaban que las ideas creativas formaban parte de la lógica causal. Por analogía, nuestros resultados muestran que también son antecedentes y forman parte de la propensión causal.

# **CAPÍTULO 6**

## **Conclusions, implications, limitations and future agenda**

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## Conclusions

The causal and effectual logics suggest different types of behaviour of entrepreneurs when creating and running their businesses and interacting with the environment (Sarasvathy, 2001). These two types of behaviours have been extensively studied in the entrepreneurship literature (Brettel et al., 2012; Guo et al., 2016; Schmidt & Heidenreich, 2014). However, no studies have been found to measure an individual's propensity towards one logic or another regarding potential entrepreneurship. Given the gap detected, studying propensity towards effectual or causal behaviour greatly adds value to the entrepreneurship literature. In this sense, this research aims to analyse effectual and causal propensity and its relationship with entrepreneurial intentions. To achieve this general goal, three papers were published. Each of these papers aimed to address a specific goal.

Initially, it was decided to develop and validate a measurement instrument to assess individuals' propensity towards effectual or causal behaviour when they have yet to undertake entrepreneurship. For the reliability and validity of the items included in the questionnaire, a sample of final year undergraduate students in the degree of Business Administration and Management at the University of Cadiz and the University of Seville was analysed, obtaining 230 valid responses. After analysing the individual reliability, construct reliability, discriminant validity and convergent validity, a scale with 23 valid and reliable indicators was concluded. The results obtained show how an adequate adaptation of the scales proposed by Werhahn et al. (2015), designed to measure the effectiveness orientation of managers and employees in a corporate context and by Chandler et al. (2011) and Gabriellsson & Politis (2011), from which the construct measuring entrepreneurial causal orientation was designed, can be used to measure the effectual and causal propensity of individuals who have yet created a firm.

Once a validated questionnaire was obtained, the effect of effectual propensity on students' entrepreneurial intentions was investigated. It is well known that among academics studying entrepreneurship, there is a strong interest in understanding the antecedents of the intention to start new ventures (Annisa et al., 2021; Bouichou et al., 2021; Eyal & Vatansever Durmaz, 2019; Ribeiro et al., 2021; Scafarto et al., 2019). Among others, the TPB model is one of the most widely used by researchers to achieve that end. In this sense, our second research paper conducted an empirical study in which

effectual propensity is proposed as an antecedent of entrepreneurial intentions, together with the rest of the TPB determinants (PA, SN and PBC). Our work has significant added value since we have yet to find any study in the literature that analyses the effect of effectual propensity on the entrepreneurial intentions of people who have yet started a business. The results of the hypothesis testing showed two critical findings. Firstly, and as the most important finding, this study has shown that effectual propensity influences entrepreneurial intentions. Moreover, that effectual propensity indirectly affects entrepreneurial intentions through attitude and perceived behavioural control.

Finally, the third paper in this thesis aims to determine the impact of causal propensity on entrepreneurial intentions. To do so, once again, we frame the study in the university setting since many researchers study the entrepreneurial intentions of students throughout the world (Barba-Sánchez et al., 2022; Leiva et al., 2021; Wang et al., 2022). Moreover, in the tourism sector. Entrepreneurship is particularly relevant in this sector due to the opportunities that this industry offers for business development. Our research work is developed among tourism undergraduate students in universities in southern Spain. This study proposed a research model with four variables as antecedents of entrepreneurial intentions (Programme Learning, Creativity, Proactivity and Causal Propensity). Causal Propensity in this model is innovative since, to our knowledge, it is the first time it has been studied as an antecedent of entrepreneurial intentions. The proposed theoretical model established nine research hypotheses. The results support eight of these hypotheses, and only one was rejected. These results show that three of the four determinants proposed in the research influence entrepreneurial intentions. These determinants are learning programme, proactivity and causal propensity. In our proposal, causal propensity is established as a determinant of intentions and in turn, entrepreneurship education also affects causal propensity. This is because causal propensity determines the orientation of people who set goals and plan to reach them. This is precisely how entrepreneurship is currently taught to students at the universities in our study. They are trained in how to draw up business plans. In other words, they are taught more technical skills than personal skills. Likewise, causation is a logic that makes entrepreneurs more predictive and makes them achieve their goals by following the strategies set out. In this way, the student needs the programmes to develop the causal propensity. In this line, Proactivity and Creativity appear as Causal Propensity elements. Creativity allows for the generation of new strategies and plans. Furthermore, on the other



hand, proactivity responds to a behaviour that helps to execute planned tasks. Therefore, both ingredients are part of the Causal Propensity.

## **Theoretical implications**

The theoretical implications of a doctoral thesis not only answer the research questions but also reflect how the research extends, modifies or enriches existing knowledge in the specific discipline. This study contributes to the literature in three crucial respects.

First, the research has made significant progress in developing a specific scale to measure two new constructs in the literature: effectual and causal propensity. This scale is presented as a valuable and novel tool in the context of the literature on entrepreneurial intention. The relevance of this scale lies in its ability to address and analyse the initial stages of the entrepreneurial process. That is, it focuses on understanding and measuring the propensity of individuals towards entrepreneurial intention before a business is created. This is crucial, as it provides a deeper understanding of the motivations and decisions that drive individuals to embark on the path of entrepreneurship. This research contributes to the existing literature by developing a novel scale. It provides a valuable tool for researchers focusing on understanding and measuring entrepreneurial intention, especially in the early stages of the entrepreneurial process.

Secondly, this study represents a significant advance in research on entrepreneurial intentions by incorporating a previously unexplored factor: effectual propensity. The novelty of this approach is that effectual propensity emerges as a critical determinant in the formation of tourism students' intentions to start a new business. By identifying and demonstrating the direct influence of effectual propensity on entrepreneurial intentions, the research offers a more complete and nuanced perspective on the factors influencing the decision to become an entrepreneur. This new determinant is positioned as a relevant antecedent, complementing the other three determinants already established in the Theory of Planned Behaviour (TPB).

The results obtained reveal two fundamental findings. First, effectual propensity exerts a direct influence on students' entrepreneurial intentions. Second, it is found that effectual propensity also indirectly affects intentions through two essential components: attitude towards entrepreneurship and perceived behavioural control. This finding reflects the

complexity of the linkages within the entrepreneurial decision-making process. It underlines the importance of considering effector propensity as a critical element in future research on entrepreneurial intentions.

Finally, this study marks a milestone by introducing and demonstrating the importance of causal propensity as a precursor of entrepreneurial intentions in people who have yet to become entrepreneurs. A distinctive aspect of this research lies in its exploration of variables little studied in the literature on entrepreneurial intentions, such as proactivity and creativity, and how they relate. This more comprehensive approach contributes to filling existing knowledge gaps and highlights the complexity of the factors that influence entrepreneurial intentions. The academic contribution of this study is manifested in formulating a behavioural model that incorporates personal characteristics such as creativity, proactivity and causal propensity, clearly indicating their relevance in the formation of entrepreneurial intentions. Furthermore, the research reveals the mediating role of creativity, proactivity and causal propensity in the relationship between learning programmes and entrepreneurial intention. This finding expands our understanding of how educational programmes influence entrepreneurial intentions and underscores the importance of nurturing and fostering these personal characteristics in training future entrepreneurs.

## **Practical implications**

The results of this thesis also have several implications for the business environment. The new scale provides contributions to management and entrepreneurs. In this sense, the measurement of effectual and causal propensity, through a validated scale, will be of practical use for: (1) entrepreneurship promoters who need to guide entrepreneurs' behaviour in a way that is consistent with the environment (Futterer et al., 2017), (2) managers of established companies and entrepreneurs themselves as they can use it to self-assess and evaluate the members of their organisations to implement the most appropriate strategic orientation to influence organisational culture and employee behaviour (Werhahn et al., 2015), (3) entrepreneurs who want to measure the effectual propensity of their potential partners and employees, and (4) academic institutions interested in developing and guiding entrepreneurial potential.

On the other hand, the results of this research provide entrepreneurs with the ability to assess the effectual propensity of employees and business partners, enabling them to make decisions about those with whom they already have an established relationship, as well as those who require a prior assessment of their entrepreneurial orientation before entering into future commitments.

In addition, an interesting perspective is raised for employers seeking to stimulate entrepreneurship within their teams. It is not only essential to offer training that fosters creativity, proactivity and causal propensity, but the relevance of this training in internal projects within the organisation or even in creating spin-offs is also highlighted. This orientation towards developing entrepreneurial projects within the company can benefit both the organisation and the employee's professional growth.

Similarly, if an employer seeks to foster proactivity among its employees, it should train them with creativity programmes. In this way, cultivating creativity can significantly boost proactivity. It also underlines the importance of training in program learning for developing causal logic among employees. Combining this training with an orientation towards creativity and proactivity provides valuable guidance for employers seeking to cultivate a work environment conducive to innovation and entrepreneurship.

## **Social implications**

This work also has some implications for society. Of particular use is the validated scale for the educational system. Academic institutions interested in developing the entrepreneurial potential of their students will have a validated measurement instrument to assess the initial propensity of their students towards effectual or causal behaviour. This starting point will be helpful when establishing the training content for them, allowing them to develop the logic (effectual versus causal) most innate to them. However, once the dominant logic of each learner has been identified, it will be necessary to train them in both logics so that they can discern, implement and combine them and thus improve their chances of success depending on the context in which they find themselves (Futterer et al., 2017). Furthermore, it is vital that universities and entrepreneurship institutions value and develop the effectual or causal orientation of individuals, especially when students enter the labour market.

Measuring effectual propensity will also be of practical use for public and private actors promoting entrepreneurship, as they can pre-assess potential entrepreneurs and guide them towards better environmental use and adjustment (Futterer et al., 2017). Our results allow differentiating between effectual and causal orientation of higher education students. This will make it possible to adjust curricula to contain more personalised entrepreneurship training and to strengthen the efficacy orientation of students who require it. Also, promoting public policies to encourage entrepreneurs in the initial stages of the entrepreneurial process.

One of how the university emits knowledge to the market is by recruiting its students. For this reason, it is interesting to differentiate between the orientations of these individuals with entrepreneurship intentions. Thus, the labour market will be able to differentiate, according to its needs, the competencies, behaviours or orientations of the graduates it hires. It is interesting that universities, as well as institutions promoting entrepreneurship and companies, know how to value and develop the orientation of individuals.

In short, our results have implications for the educational community, policymakers, and any other agent working on self-employment. On the one hand, because training and proactivity affect entrepreneurship intentions, it would be interesting to design training programmes that prepare future entrepreneurs in technical aspects. Nevertheless, on the other hand, programmes that improve student behaviour and direct them towards entrepreneurship. In this way, because proactivity influences entrepreneurial intentions, students must be encouraged and supported to be proactive. Therefore, curricula need to be renewed and focused on teaching these behaviours. They should be motivated to be entrepreneurs and thus contribute to the economy and society. Students should be involved in projects in contact with the business world, bringing them into the reality of the industry around them.

## **Limitations and future lines of research**

The results obtained in this thesis must be interpreted with some limitations in mind. However, these limitations represent opportunities for future lines of research. Firstly, despite the predictive power of the models proposed, the validity of the findings of the three studies cannot be established based on this single study, so the results may not be

generalisable. Further empirical work would be necessary to refine the established measures. Another limitation is that the sample used consisted of students from two universities in the same country and from two geographically close universities, so their responses do not differ too much. Future research should contrast the effectual propensity and causal propensity scales and research models in different population segments and other countries and cultures, especially in different samples with different educational and cultural backgrounds and socio-demographic profiles.

Secondly, our work only studies the intentions of students who have yet to have entrepreneurial experience. Therefore, researchers are encouraged to work on the stage after intentions, that is, behaviour towards entrepreneurship. Moreover, to study what affects the step from intention to entrepreneurial behaviour.

Third, our research only studies the influence of some variables on entrepreneurial intentions. Future research should study other personal factors, such as passion, optimism or risk aversion, alongside effectual or causal propensity.

Fourthly, another limitation to consider is that the causal propensity construct, in the factor analysis of the third paper, lost several items present in the original measure proposed by Martín-Navarro et al. (2021). This required additional effort to confirm the consistency of the construct. It would be interesting for other authors to check the consistency of the construct in other samples.

Finally, as another possible future line of research, the study of the moderating role of the constructs of effectual propensity and causal propensity in entrepreneurial intentions is proposed to the scientific community.

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