

Motives in sustainable entrepreneurship: an international comparison

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While sustainable entrepreneurship has been broadly defined as preservation of the natural environment and communities in the pursuit of bringing perceived opportunities into existence for economic and non-economic gain, the connection between sustainable orientation and sustainable venture development remains under-researched. By investigating the complex relationship between sustainability orientation and sustainable entrepreneurship, this paper aims to add to our understanding of the process of sustainable entrepreneurship. We use data for 214 business and economic students from two middle-sized universities in Germany and Turkey, two countries with different cultural and institutional characteristics, in order to estimate the individual effect of sustainability orientation on sustainable entrepreneurship. We find that country-specific characteristics play an important role in explaining cross-country differences with respect to the relationship between sustainability orientation and sustainable entrepreneurship. Our study suggests that increasing individuals' sustainability orientation is not sufficient to foster sustainable entrepreneurship, but it requires to be activated by country-specific determinants. This work contributes to specific (i.e. sustainable entrepreneurship) as well as general entrepreneurship literatures, and it offers policy implications about how to foster sustainable entrepreneurs.

Keywords: sustainable entrepreneurship, theory of planned behavior, sustainable orientation, international entrepreneurship.

JEL Classifications: M10, L22, O32.

Introduction

Sustainable development is one of the most prominent topics of our time as reports of climate change, biodiversity loss, and its related effects on many, especially poorer communities around the globe are regrettably becoming commonplace (e.g., IPCC, 2007; Röckström et al., 2009; Whiteman et al., 2013). However, scholars have claimed that entrepreneurial action can preserve ecosystems, reduce environmental degradation, preserve life support, enhance welfare-sharing, and reinforce community development (e.g., Cohen & Winn, 2007; Dean & McMullen, 2007; Hall et al., 2010; Lumpkin et al., 2013; Shepherd & Patzelt, 2011). While this literature is supported by empirical studies that explain how sustainable entrepreneurship can be fostered by sustainability orientation on entrepreneurial intention (e.g., Kuckertz & Wagner, 2010), the connection between sustainable orientation and sustainable entrepreneurship venture development remains under-researched. .

The contributions of this study are twofold: first, we disentangle the effects of sustainability orientation on entrepreneurial intention by breaking intention into two categories: sustainability venture intention and commercial venture intention. Second, we investigate if and under which conditions cultural determinants can moderate the effect between sustainability orientation and sustainability venture intentions. By drawing on the Theory of Planned Behavior (TPB) (Ajzen, 1991) and applying the Sustainable Development Values (SDV) subscales (Shepherd et al., 2009), we find that country-specific determinants play an important role in explaining cross-country differences with respect to the relationship between sustainability orientation and sustainable entrepreneurship. Our study suggests that increasing individuals' sustainability orientation is not sufficient to foster sustainable entrepreneurship but it requires to be moderated by country-specific determinants.

Sustainable entrepreneurship is particularly suited to foster sustainable development. However, individual and cross-country determinants have received relatively little attention in the sustainable and general entrepreneurship literatures (exceptional studies include Pathak & Muralidharan, 2016; Vuorio et al., 2018). The present empirical article contributes to this research gap by analyzing

business and economic students' sustainability orientation and entrepreneurial intention from two middle-sized universities in Germany and Turkey, two countries with differences regarding its country-specific characteristics. We estimate the effect of changes in individual effect of sustainability orientation on the intention to become self-employed in a sustainability related field using data for 114 German and 100 Turkish students. The individual sustainability orientation on sustainable entrepreneurship appears to be influenced by country-specific characteristics.

Next to sustainable entrepreneurship, we also use another dependent variable, namely commercial entrepreneurship. This allows us to compare the impact of individual sustainability orientation as well as the influence of country-specific characteristics with respect to both types of entrepreneurship, thus, drawing comparisons between two different entrepreneurial intentions. To achieve this, we develop in the following sections a model to derive hypotheses using the frequently used TPB.

Related Literature and Hypothesis Development

Based on the seminal framework of Shane and Venkataraman (2000), entrepreneurship can be defined as the 'discovery, evaluation and exploitation of an opportunity to introduce new goods and services, ways of organizing, markets, processes, and raw materials through organizing efforts that previously had not existed' (p. 4). Entrepreneurial intentions are defined as the commitment to start a new business (Krueger, 1993) by recognizing opportunities, and they serve as the key antecedent leading to entrepreneurial behaviour (Ajzen, 1991). Analogously, sustainable entrepreneurial intention is the commitment to start a new business by recognizing sustainability related opportunities. An entrepreneurial behaviour such as starting a new business is comprised of a range of actions made by individuals in conjunction with personal characteristics and external conditions. Not all entrepreneurs behave and act the same way. An individual's action depends on external conditions related to economic, cultural, and social contexts in which they act (Thornton, 1999; Mirabella & Young, 2012). Sustainability is defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987: 54). Sustainable behaviour is the basis

for achieving sustainable development by recognizing opportunities that aim at solving environmental and societal problems.

From the perspective of entrepreneurship research, contributions to the field focus on the societal or environmental aspects of sustainable entrepreneurship or simultaneously on both aspects. Social entrepreneurs differ from commercial entrepreneurs in their creation of social value which usually comes along with a long-term vision (Sastre-Castillo et al., 2015) and results in giving up profits (Haugh, 2007), usually with greater concern for the creation of social welfare than for making profits (Austin et al., 2006; Thompson et al., 2000). A similar picture evolves as regards environmental entrepreneurship. As compared to commercial entrepreneurial undertakings, environmentally related ones require relatively long payback time (Tilley, 1999; Martin-Tapia et al., 2008). However, both personal traits such as external values as well as making profit are shown to be important for environmental entrepreneurs (Dixon & Clifford, 2007; Kirkwood & Walton, 2010). Hence, sustainable entrepreneurs aiming at reducing environmental burdens and social entrepreneurs aiming at creating social welfare have in common that they accept limited profitability and concentrate more on non-monetary benefits in favor of achieving sustainability goals (Kuckertz & Wagner, 2010). This could either be motivated extrinsically, e.g. due to work experience or education (Gimeno et al., 1997) and/or intrinsically, e.g. by personal values such as altruism and trust with regard to acting in favor of the community (Spear, 2006). Hence, sustainability orientation is expected to more strongly foster the recognition of sustainable than commercial entrepreneurial opportunities, which leads to the following hypotheses:

Hypothesis 1a: Sustainability orientation is positively associated with commercial entrepreneurial intent and sustainable entrepreneurial intent.

Hypothesis 1b: Sustainability orientation is less strongly associated with commercial than with sustainable entrepreneurial intent.

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Although personality traits are important in an individual's entrepreneurial behavior, other higher-order variables might affect business start-up activities. In addition to personality traits, external factors impact the entrepreneurial intentions of individuals and subsequent behaviour (Sesen, 2013). Kuckertz and Wagner (2010) have empirically shown that sustainability orientation has an effect on sustainable entrepreneurial intentions, but that the effect disappears with business experience, indicating that the relationship between personality traits and entrepreneurial decisions is not straightforward and that under certain circumstances entrepreneurial decisions can be made in contradiction of personal traits. In the literature, different reasons are offered that explain why entrepreneurial decisions may violate own values such as the individual's sustainability orientation. The reasons for such a (at first place) counter-intuitive behavior can be explained using various theories. A tradeoff between pecuniary (i.e. financial) and non-pecuniary (e.g. sustainability oriented) motives has been proposed by Batson (2011, p. 80). Only if the value of non-pecuniary motive exceeds that of the pecuniary motives, the entrepreneur decides in line with his personal non-pecuniary values. By using the moral self-regulation theory of Bandura (1981), Shepherd et al. (2013) additionally propose and empirically test the impact of entrepreneurial self-efficacy explaining an entrepreneurial behavior not being consistent with his personal value of saving the environment.

Empirical evidence for Batson's proposal of trading off non-pecuniary and pecuniary motives in entrepreneurial decision making have been provided by Kuckertz & Wagner (2010). They show that sustainability orientation is a main driver of the decision to become self-employed in business when being a student but that it reduces and even disappears when having a long-term professional career. A potential explanation for this phenomenon is that in day-to-day business pecuniary motives are valued higher than non-pecuniary motives. Social psychology has dealt with this issue by arguing that various factors should be considered to comprehensively understand individual behavior, which (according to TPB theory) is the immediate descendant of intention (Bandura, 1986). These are (i) external factors (including the broad sociocultural- or macro-environment), (ii) individual factors,

and (iii) the interaction among them. If individuals living in a community do not believe to earn sufficient money from acting in favor of the community, even at high levels of sustainability orientation they will not recognize sustainable opportunities, and vice versa. Put differently, the effect of sustainability orientation on sustainable entrepreneurial intention will be stronger for countries believing in the sustainable opportunity's financial value. To name an example from daily life in food retail, the supply of fair trade products as well as the actions taken to protect the environment by avoiding to sell environment harming plastic bags is prevalent for many years in Germany, but not in Turkish food retail. Hence, individuals in Germany stronger associate sustainability related behaviour to be financially profitable than those in Turkey. From this hypothesis 3 follows:

Hypothesis 2: *The association of sustainability orientation with sustainable entrepreneurial intent is positively (negatively) moderated if individuals live in Germany (Turkey).*

Our conceptual model is presented in Figure 1.

[Insert Figure 1 here]

Methods

Sample

Since younger rather than older individuals intend to pursue an entrepreneurial career, student entrepreneurship is an important direction of entrepreneurship research, especially because at this stage of life the attitude towards entrepreneurial career is formed (Shirokova et al., 2016). In order to test our hypotheses, we surveyed students at mid-sized German and Turkish universities. We recruited 214 students, 100 of which live in Turkey, and 114 in Germany.

Measures

In the questionnaire, we gathered data on variables based on extant literature, such as gender, age, as well as binary variables indicating the self-employment of the students' parents. We also asked for items to determine contextual factors such as the student's perception of barriers and support factors

for entrepreneurial activities, personal attitudes towards entrepreneurial activities (Lüthje & Franke, 2003), and the student's propensity to innovative (Kirton, 1976). Finally, information on subjective factors such as the full set of Sustainable Development Values (SDV) subscales (Shepherd et al., 2009) as well as data to calculate our dependent variables were gathered.

The first dependent variable is the commercial entrepreneurial intent determined on a 7-point scale (ranging from "very improbable" (corresponding the lowest scale value) to "very probable") by asking students to indicate how likely it is that they become self-employed in the five years after graduation (Lüthje & Franke, 2003). This reflects the quantified likelihood of future self-employment, regardless of the latter's content.

To calculate the second dependent variable (sustainable entrepreneurial intent) the students were additionally asked to indicate five different types of business ideas. These were: "founding a service company to foster renewable energy services", "founding a company which sets up private child care centers", "founding a company which commercializes a new base technology that enables industry to heat up materials quick, efficient and without requiring much energy", "founding a web 2.0 startup", and "founding a company which develops software for the design of microchips". The entrepreneurial opportunity of renewable energy services and child care associate strongly to environmental and social entrepreneurship, respectively, whereas the base technology choice is a combination of for-profit and environmental entrepreneurship. A web 2.0 and a software venture are more commercial business ideas essentially aimed at generating mainly financial profits. As we have no mutually exclusive alternatives but outcomes (startup web 2.0; software venture; base technology; renewable energy service; child care) where the respondent may conceptually pursue different ventures at the same time, we have allowed for multiple answers. We used these binary variables to calculate an ordinal variable based on the sustainable content of chosen entrepreneurial opportunities. To this end we have identified combinations of the individual choices and identified equivalent choice sets by scoring the individual choices and aggregating the scores across all chosen options. By ordinality

ordering the choice sets we derive the degree to which sustainability-oriented opportunities are less or more preferred (with 1 meaning an individual does not like sustainability-oriented opportunities at all and 7 that an individual prefers sustainability-oriented opportunities very strongly). For example, the individual preference for sustainability-related opportunities takes the extreme values of 1 or 7 if the individual prefers only the mainly for-profit alternatives (web 2.0 and software venture) or the strongly sustainability related alternatives (renewable energy services and child care), respectively. As the individual's preference for sustainability-related opportunities and the likelihood of future self-employment are considered to be orthogonal dimensions we multiply them to arrive at our second dependent variable of sustainable entrepreneurial intent ('multiplicative EI' in tables 2 and 3) which takes values from 1 to 49.

The independent variable "sustainable orientation" has been derived from the SDV scale (Shepherd et al., 2009). This scale consists of six subscales for freedom, equality, solidarity, tolerance, respect for nature, and responsibility. Since our dependent variable focuses on environmental aspects, we use its 'respect for nature' subscale, which largely overlaps with the measures proposed by Stern et al. (1998) and Steg et al. (2014). Individuals' respect for nature is thus gauged on a bipolar 7-point scale (ranging from "not at all accurate" (corresponding the lowest scale value) to "very accurate"), measured as the mean of the following four items: "Sometimes some natural resources need to be sacrificed for important developments", "Current patterns of production only require minor adjustments to protect the welfare of the natural environment", "People only need to make minor changes to their current consumption out of respect for nature", and "It is the obligation of a society to vigorously protect the natural environment for the benefit of future generations".

We measured the "propensity to innovate" variable by means of the originality component of the Kirton-Adoption-Innovation (KAI) inventory (Kirton, 1976) by using the 13-item of the KAI index, with all items being measured on a 5-point scale ranging from 1 (strong disagreement) to 5 (strong agreement). The questions of the 5 items determining our factor propensity to innovate are "I am a

person who...” (a) “... has fresh perspectives on old problems”, (b) “... copes with several new ideas at the same time”, (c) “... is stimulating”, (d) “... has original ideas” and (e) “... proliferates ideas”.

In line with the underlying Theory of Planned Behavior, Iakovleva et al. (2011) demonstrated that entrepreneurial intentions of students and, as a consequence, their entrepreneurial behaviour, are shaped by a country's development stage of national economies. Because in developed economies such as Germany individuals have a broader outside option (in terms of more employment possibilities, a more lucrative paid wage employment under better working conditions) than in countries with economies in transition such as Turkey, individuals in Turkey more likely intent to start an own business as compared to Germany. Moreover economic growth can also motivate people to start a business because if a country's economy is expanding, it is easier to obtain goods and services to develop a new business (Kobia & Sikalieh, 2010), which holds true for Turkey in the period of observation.

Finally, another antecedent of entrepreneurial intent, the attitude towards entrepreneurship (Lüthje & Franke, 2003) was measured using a 5-point rating scale (ranging from “disagree strongly” (corresponding the lowest scale value) to “agree strongly”) by means of three items, namely (i) “I'd rather be my own boss than have a secure job”, (ii) “You can only make big money if you are self-employed”, and (iii) “I'd rather found a new company than be the manager of an existing one”. This measure determines the degree to which the individual evaluates self-employment favorably. Given our dependent variables, we employ ordered probit model, and for robustness reasons an ordinary least squares (OLS) model to test our hypotheses.

Results

The two student groups being surveyed (114 German and 100 Turkish students) are similar with respect to the control variables, in that they do not differ at the 10% level with respect to the distribution of gender and the number of semesters studied. Regarding the independent variables, we observed two different groups which strongly differ in both their sustainability orientation as well as

their intention to become self-employed. Turkish students are more likely to become self-employed and are on average more sustainability oriented.

While the participants are on average 22 year old, approximately 59% are male (see Table 1). The correlation coefficients between the independent variables visualized in Table 1 are all significantly lower than 0.7, indicating that there exists no potential bias due to multicollinearity. Since bivariate correlations are only an indicator but not proof for the absence of multicollinearity, we additionally computed variance inflation factors (VIF) which turned out to be clearly lower than 10, in turn confirming the intuition from the correlations (Kennedy, 1992, p. 183).

[Insert Table 1 here]

The dependent variables described above enable analyzing the data using ordered probit models. In presenting our research findings, after discussing the base models (1) to (3) in Table 2 which reproduce stylized facts and address our first hypothesis, we will extend the base model by introducing the moderating effect (see models 4 to 6) to address hypotheses 2. The models' overall fit is very good, which is testified by the highly significant results and the respective χ^2 -statistic tests in the tables.

[Table 2 about here]

In line with existing literature the estimation results indicate that attitude towards entrepreneurship has a significant association with entrepreneurial intention (e.g. Lüthje & Franke, 2003). Also, as discussed above, students in the developing country Turkey are found to be more willing to recognize entrepreneurial opportunities, independent of the type of entrepreneurial intent.

With respect to hypotheses 1a and 1b we find that sustainability orientation seems to play a role when recognizing sustainable entrepreneurial opportunities, but not commercial ones. In our base models sustainability orientation is only significant at the 10%-level for only one of the two sustainable entrepreneurial intent measures (see model 3 in Table 2), while it is not at all significant in the base

as well as extended models (see models 1 and 4 in Table 2, respectively). Therefore we can only partly confirm hypotheses 1a, but hypothesis 1b is supported.

In the models 4 to 6 we incorporate the interaction of the country and the sustainability orientation into our analysis. The results confirm hypothesis 2. The interaction variable in model (3) has a significant association with sustainable entrepreneurial intent at the 1% level.

Finally, for robustness reasons we performed an OLS regression analysis. The results remain qualitatively identical (see Table 3).

[Insert Table 3 here]

Discussion and Conclusion

As stated in the introduction, this paper provides insights into the factors fostering sustainable entrepreneurship. We demonstrate that sustainability orientation plays a critical role in entrepreneurial activity. However, the effect of sustainability orientation on the recognition of opportunities is contingent on external factors such as the ecosystem in which they operate. Hence, we focus on country-specific factors, positing that these peculiarities moderate the relationship between sustainability orientation and entrepreneurial intentions. We find that, although Turkish students are more likely to become self-employed and are on average more sustainability oriented, given both Turkish and German students having same sustainability orientation, Turkish students are less likely intending to become self-employed in a sustainable field as compared to their German counterparts. Findings from social psychology explain the finding of identically sustainability oriented individuals who decide differently regarding identical sustainability related entrepreneurial decisions. This finding is ascribed to external factors such as the different valuation of entrepreneurial decision's outcome. Hence, our findings extend the existing research by showing that personal traits such as sustainability orientation are not the only driver of sustainable behavior but that financial motives moderate the sustainability orientation and thus drive entrepreneurial behavior.

Our study is rooted in the view that entrepreneurial behavior is driven by cognitive mechanisms (Kautonen et al., 2013) and explained by the Theory of Planned Behavior. In line with this, the starting point of entrepreneurial actions is the formation of entrepreneurial intentions (Krueger et al., 2000). Our aim was to use concepts of general entrepreneurship theory to explain entrepreneurial intentions, differentiating commercial and sustainability-oriented enterprises as well as cultural/contextual determinants.

By using the TPB and extending it with social-psychological findings, we show how traditional theories can be used to examine and advance our understanding of sustainability-oriented entrepreneurial intentions. Considering the individual entrepreneurial actions through the intentionality lens allows us to analyze the complex structure behind entrepreneurial beliefs and intentions of individuals, as suggested by Shirokova et al. (2016). By providing a refined explanation about the complex structure of individual's entrepreneurial decision-making, we contribute to sustainable entrepreneurship literature explanations for empirical findings that appear to be add odds with theoretical arguments. It also responds to calls in the literature to account more strongly for the interplay between indirect and direct effects of identified determinants of entrepreneurial activity (e.g. Carsrud & Brännback, 2011). Moreover, we contribute to further clarifying similarities and differences of the new research field of sustainable entrepreneurship versus the entrepreneurship discipline at large.

Our findings therefore hold some important implications for future research, policy and practice. The reported theoretical arguments and empirical findings open a promising set of new research directions. Further studies should test additional theoretically justified moderators of sustainability orientation and perceived entrepreneurial desirability on entrepreneurial intentions. These future results would allow setting more rigorous boundary conditions of the TPB predictions in sustainable entrepreneurship. Disentangling the results for the two angles of sustainability, namely social and environmental sustainability could add additional insights. Another area of future research is the

extension of our approach beyond student samples and individual institutions. This could for example result in a more coordinated effort or in considering linkages to broader studies such as the Global Entrepreneurship Monitor (Kelley et al., 2011).

Since sustainability-oriented entrepreneurial decisions (such as the foundation of sustainable ventures) are inevitable for economies not only because of their necessity due to environmental degradation but also because of their large economic potential (in terms of nascent and fast growing industries), only by shedding light into the interrelation between non-pecuniary motives such as sustainability orientation and pecuniary motives with respect to sustainable behaviour, policy makers are able to efficiently adjust their policies. Policy makers are encouraged to foster sustainable projects that promote a positive association of sustainable ventures with financial motives. Considering Hofstede (1980; 2019)'s cultural dimensions Germans (67 out of 100) are found to be more individualistic than Turks (37). As low values of individualism describe the extent of collectivism in society, the we-feeling -including the looking after each other- is expected to be larger in Turkey than in Germany, thus resulting in individuals being stronger sustainability orientated in Turkey as compared to Germany. Having this in mind, our findings suggest that especially countries such as Turkey miss to use the full potential of their cultural advantage of being strongly sustainability oriented by not supporting the association of sustainable ventures with financial value.

To conclude, our paper addresses a question of high practical relevance, namely how to foster sustainable entrepreneurship. In doing so it contributes important insights and gives direction to policy initiatives and decision makers tasked with addressing sustainability challenges. Our conceptual framework and the findings of this research will therefore hopefully as well inspire future work in this important area of research.

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Figure 1
Conceptual Model

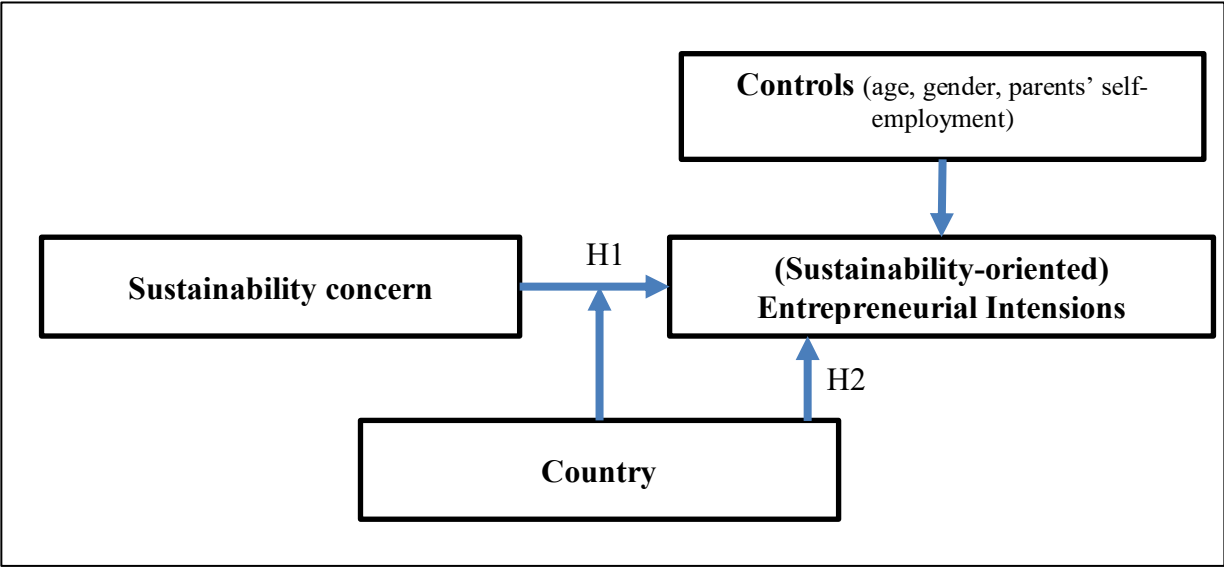


Table 1*Descriptive statistics and correlations (N=214).*

Variables		Mean	Std. dev.	Min.	Max.	1	2	3	4	5	6	7	8	9	VIF
1	Gender (1 = female, 0 = male)	0.411	0.493	0	1										1.23
2	Age	22.477	1.691	19	28	-0.309									1.40
3	Parents self-employed (1 = yes, 0 = no)	0.411	0.493	0	1	-0.023	0.209								1.13
4	Attitude entrepreneurs.	3.182	0.955	1	5	-0.192	0.280	0.218							2.05
5	Perceived barriers	4.727	0.966	1.33	7	-0.020	0.124	0.049	0.387						1.43
6	Perceived support	4.257	1.079	1.33	7	-0.135	0.135	0.039	0.493	0.404					1.71
7	Propensity to innovate	3.578	0.599	1	5	-0.184	0.176	0.035	0.449	0.239	0.433				1.60
8	Entrepr. self-efficacy	2.921	0.506	1	5	-0.081	0.035	0.109	0.316	0.135	0.251	0.444			1.39
9	Country (1 = Turkey, 0 = Germany)	0.477	0.501	0	1	-0.151	0.418	0.248	0.534	0.089	0.381	0.316	0.041		1.88
10	Sustainability concern	4.984	0.977	2	7	0.121	0.139	0.013	0.326	0.410	0.389	0.276	0.280	0.065	1.49

Note: Correlations with an absolute value greater than 0.12 are significant at $p < 0.1$.

Table 2

Dependent var. Explanatory var.	Base Model			Extended Model		
	(1) Conventional EI	(2) Sustainable EI (Multiplicative)	(3) Sustainable EI (Euclidean)	(4) Conventional EI	(5) Sustainable EI (Multiplicative)	(6) Sustainable EI (Euclidean)
Gender (1 = female, 0 = male)	-0.090 (0.169)	0.149 (0.152)	0.134 (0.155)	-0.108 (0.171)	0.083 (0.153)	0.076 (0.158)
Age	0.059 (0.056)	0.013 (0.056)	0.004 (0.051)	0.053 (0.055)	-0.008 (0.054)	-0.015 (0.051)
Parents self-employed (1 = yes, 0 = no)	0.207 (0.163)	0.224 (0.160)	0.106 (0.154)	0.199 (0.163)	0.203 (0.160)	0.087 (0.154)
Attitude entrepreneurs.	0.702*** (0.144)	0.429*** (0.116)	0.232** (0.112)	0.705*** (0.144)	0.440*** (0.118)	0.238** (0.111)
Perceived barriers	-0.065 (0.105)	-0.109 (0.089)	-0.018 (0.092)	-0.053 (0.109)	-0.067 (0.089)	0.020 (0.093)
Perceived support	0.284*** (0.098)	0.043 (0.087)	0.051 (0.088)	0.292*** (0.098)	0.073 (0.085)	0.077 (0.087)
Propensity to innovate	-0.053 (0.158)	0.073 (0.163)	0.227 (0.169)	-0.046 (0.159)	0.088 (0.159)	0.241 (0.163)
Entrepr. self-efficacy	0.259* (0.156)	0.309** (0.134)	0.297** (0.138)	0.269* (0.153)	0.355*** (0.136)	0.337** (0.139)
Country (1 = Turkey, 0 = Germany)	0.625*** (0.223)	0.470** (0.199)	0.445** (0.192)	0.622*** (0.223)	0.463** (0.197)	0.437** (0.188)
Sustainability concern	0.036 (0.095)	0.091 (0.075)	0.148* (0.082)	0.114 (0.144)	0.357*** (0.135)	0.380*** (0.142)
Country x Sustainability concern				-0.126 (0.191)	-0.437*** (0.166)	-0.382** (0.173)
F / Wald Chi ² (joint)	177.44**	89.55**	72.73**	176.28**	96.70**	81.12**
R ² / Log likelihood (joint)	-316.75	-574.31	-623.33	-316.51	-570.87	-620.67

$N = 214$; * significant at 10%; ** significant at 5%; *** significant at 1%

Heteroscedasticity robust standard errors in parentheses for ordered probit estimation

Table 3

Dependent var. Explanatory var.	Base Model			Extended Model		
	(1) Conventional EI	(2) Sustainable EI (Multiplicative)	(3) Sustainable EI (Euclidean)	(4) Conventional EI	(5) Sustainable EI (Multiplicative)	(6) Sustainable EI (Euclidean)
Gender (1 = female, 0 = male)	-0.126 (0.210)	0.736 (1.234)	0.225 (0.226)	-0.132 (0.213)	0.381 (1.236)	0.147 (0.229)
Age	0.073 (0.071)	0.171 (0.452)	0.000 (0.076)	0.072 (0.070)	0.061 (0.440)	-0.024 (0.075)
Parents self-employed (1 = yes, 0 = no)	0.217 (0.211)	2.344* (1.284)	0.126 (0.223)	0.215 (0.211)	2.236* (1.268)	0.102 (0.220)
Attitude entrepreneurs.	0.800*** (0.163)	2.899*** (0.884)	0.292* (0.164)	0.800*** (0.163)	2.911*** (0.883)	0.294* (0.161)
Perceived barriers	-0.034 (0.133)	-0.305 (0.786)	-0.019 (0.130)	-0.031 (0.139)	-0.064 (0.781)	0.033 (0.131)
Perceived support	0.353*** (0.121)	0.274 (0.774)	0.070 (0.128)	0.356*** (0.123)	0.434 (0.759)	0.105 (0.125)
Propensity to innovate	-0.045 (0.204)	0.204 (1.371)	0.335 (0.240)	-0.044 (0.205)	0.261 (1.335)	0.348 (0.229)
Entrepr. self-efficacy	0.331 (0.206)	2.644** (1.247)	0.421** (0.199)	0.334 (0.205)	2.873** (1.267)	0.471** (0.200)
Country (1 = Turkey, 0 = Germany)	0.828*** (0.301)	3.550** (1.681)	0.675** (0.275)	0.827*** (0.302)	3.480** (1.656)	0.660** (0.270)
Sustainability concern	0.061 (0.117)	0.876 (0.625)	0.174 (0.118)	0.084 (0.150)	2.275** (0.962)	0.480** (0.202)
Country x Sustainability concern				-0.038 (0.213)	-2.327* (1.214)	-0.509** (0.248)
Constant	-3.694** (1.783)	-15.112 (11.248)	0.791 (1.899)	-3.808** (1.907)	-22.016* (11.333)	-0.721 (1.842)
F	42.51	8.97	7.88	38.44	9.06	7.87
R2	0.553	0.313	0.259	0.553	0.323	0.276

N = 214; * significant at 10%; ** significant at 5%; *** significant at 1%

Heteroscedasticity robust standard errors in parentheses for ordinary least squares estimation

