

1 **Entrepreneurs' Human Capital Resources and Tourism Firm Sales Growth:**
2 **Fuzzy-Set Qualitative Comparative Analysis**

3
4
5 **Abstract**

6 New private tourism firms play a key role in promoting local and national wealth creation.
7 Building upon insights from entrepreneurial motivation and human capital theories, in
8 this study fuzzy-set qualitative comparative analysis of longitudinal data was employed
9 to identify the human capital pathways of 1182 entrepreneurs in Portugal engaged in
10 tourism reporting high firm sales growth between 2008 and 2015. Two dimensions of
11 entrepreneur human capital at firm start-up were found to be sufficient for high sales
12 growth: a) Necessity- and opportunity-based entrepreneurs with specific human capital
13 industry experience relating to tourism, and b) Opportunity-based entrepreneurs with
14 managerial experience.

15
16 **Keywords**

17 Entrepreneurial motivation; tourism; human capital; necessity; opportunity, fsQCA

18

19 **1. Introduction**

20 Tourism and hospitality firms generate wealth, employment and social benefits
21 (Kokkranikal & Morrison, 2002). They promote self-reliant economic development
22 (Kallmuenzer, 2018; Komppula, 2014) and improve the competitive power of existing
23 firms in tourism destination regions (Jones & Haven, 2005). Entrepreneurial behavior in
24 the tourism sector is vital for new firm formation and economic development (Hallak et
25 al., 2014; Koh & Hatten, 2002; Peters & Kallmuenzer, 2018). Entrepreneurs engaged in
26 tourism are often propelled by vision and creativity (Carmichael & Morrison, 2011) as
27 well as innovativeness and social responsibility (Kallmuenzer et al., 2018).

28 Consequently, increasing the number of new private tourism firms is a key policy
29 goal (Andersson et al., 2002; Hall & Williams, 2008). Policy-makers have introduced
30 initiatives that address the attitudinal, resource and operational barriers to firm formation
31 (Lerner & Haber, 2001). However, between 20% and 40% of new firms cease to trade
32 within two years (Bartelsman et al., 2005). Rather than solely encouraging new firm
33 formation, some policy-makers and practitioners are considering enterprise sustainability
34 and development policies (Lane & Kastenholz, 2015). To guide their potentially
35 substantial resource allocation decisions to support tourism firms, they require an
36 evidence base surrounding the resource profiles of entrepreneurs that own high sales
37 growth firms.

38 The entrepreneur (or entrepreneurial team) is the key resource of a new firm
39 (Schjoedt & Kraus, 2009). Entrepreneurs are not a homogeneous entity (Westhead &
40 Wright, 1998; Lazear, 2004, 2005; Amaral & Baptista, 2007; Poschke, 2013).
41 Entrepreneur diversity relates to their motivations. A distinction has been made between
42 necessity-based entrepreneurs that are ‘pushed’ into business ownership owing to
43 dissatisfaction with their current situation (Amit & Muller, 1995) relating to

44 unemployment, or the threat of redundancy (Evans & Leighton, 1990), compared with
45 opportunity-based entrepreneurs that are ‘pulled’ into business ownership to exploit
46 created or discovered business opportunities (Baptista et al., 2014). Entrepreneur
47 diversity is also apparent with regard to the accumulated pools of human capital (Helfat
48 & Lieberman, 2002; Zhao et al., 2011), which can impact on firm performance
49 (Davidsson & Honig, 2003).

50 Studies have focused on firm formation and performance across all industries
51 (Brüderl et al., 1992; Geroski et al., 2010; Dobson et al., 2013). Several studies have
52 explored the factors associated with tourism firm formation (Alsos & Clausen, 2014;
53 Sánchez-Medina et al., 2019). However, there is a dearth of evidence relating to tourism
54 firm performance. Recently, calls have been made for studies to specifically focus on
55 tourism firm performance (Kallmuenzer et al., 2019; Rodriguez-Sanchez et al., 2019).

56 We contribute to the literature by focusing upon the sales growth (Brush &
57 Vanderwerf, 1992; Wiklund & Shepherd, 2005) reported by new tourism firms. Further,
58 we respond to the call for tourism studies to consider the motivations and human capital
59 resource profiles of entrepreneurs and the performance of their firms (Sánchez-Medina et
60 al., 2019). Consequently, this study explores the following research question: What
61 configurations of general and specific human capital reported by necessity- and
62 opportunity-based entrepreneurs are associated with high sales growth new tourism
63 firms?

64 Guided by insights from motivation and human capital theories as well as
65 empirical evidence, we expect that an entrepreneur’s general (i.e., formal education) and
66 specific (i.e., work, industry, managerial and business ownership experience) human
67 capital at the firm start-up promote (or retard) superior firm sales growth. We make a
68 theoretical contribution by exploring the configurations (or combinations) of

69 entrepreneurial motivations and human capital resources at the firm start-up, and
70 subsequent firm performance.

71 Firm performance studies have generally employed multiple regression
72 techniques to explore the associations between entrepreneur human capital and firm
73 performance across all industries (Davidsson & Honig, 2003). Whilst the latter
74 quantitative studies provide useful insights relating to ‘average’ firm performance, they
75 do not provide more fine-grained understanding of the links between entrepreneur human
76 capital and firm performance (Douglas et al., 2020). Fuzzy-set qualitative comparative
77 analysis (fsQCA) (Ragin, 2008a, 2008b) is increasingly being employed to explore such
78 entrepreneurial behavior (Muñoz & Dimov, 2015; Kraus et al., 2016; Dimov, 2017;
79 Douglas et al., 2020; Covin et al., 2020). This qualitative configuration approach can
80 provide fresh insights relating to the firm performance debate (Mugler et al., 2003; Harms
81 et al., 2007; 2009). Few firm performance studies have employed this approach, and those
82 that have used it generally relate to small samples of firms (Samagaio & Rodrigues, 2016)
83 across all industries (Del Sarto et al., 2019). We make a methodological contribution by
84 utilizing the fsQCA (Kraus et al., 2017), which is not widely employed in tourism studies.
85 Also, we contribute by considering the conjunctural nature of entrepreneur human
86 capital investments, rather than a piecemeal approach that ignores the mutual interplay
87 between different types of human capital investments.

88 This study focuses upon longitudinal data from the travel and tourism industry in
89 Portugal. Since 2009, the industry has made substantial contributions to wealth creation
90 and job generation. In 2016, the industry generated 12.5% of GDP, which is the highest
91 percentage in OECD countries (OECD, 2020). Moreover, in 2017, tourism directly
92 generated 401,500 jobs (i.e. 8.5% of total employment). For example, in the Algarve,
93 Madeira and the Azores, tourism is the key driver of economic development (Soukiazis

94 & Proença, 2008). Between 2008 and 2015, 7% of all new firms in Portugal were engaged
95 in tourism, and 89% of these firms were micro businesses with less than 10 employees.¹
96 However, over this period 7% of all firm closures were engaged in tourism. Several
97 studies have focused on tourism in Portugal (Estevão & Ferreira, 2012; Oliveira et al.,
98 2013; Figueiredo & Brochado, 2015; Pacheco & Tavares, 2017), but they have not
99 specifically explored the pathways relating to entrepreneur motivations and human capital
100 with regard to subsequent firm sales growth. Utilizing a unique longitudinal database of
101 1,182 tourism firms in Portugal, we monitored firm sales growth between 2008 and 2015.
102 Thus, we contribute by providing longitudinal evidence that can guide policy-maker and
103 practitioner resource allocation decisions in Portugal, and similar contexts.

104 This article is structured as follows. Theoretical insights relating to
105 entrepreneurial motivation and human capital are summarized in the next section. In the
106 following sections, the data collected and research methodology are introduced. Results
107 are then presented and discussed. Finally, conclusions and implications are presented.

108

109 **2. Theoretical Background**

110 ***2.1. Motivations***

111 Context shapes entrepreneurial behavior (Morales-Gualdrón & Roig, 2005; Xavier-
112 Oliveira et al., 2015; Rocha et al., 2018). Necessity-based entrepreneurs are ‘pushed’ into
113 new firm formation because of unemployment, or the threat of redundancy. They
114 generally report a fear of failure and lower expectations (Van Stel et al., 2007). In contrast,
115 opportunity-based entrepreneurs voluntarily establish new firms (Hechavarria &
116 Reynolds, 2009; Fairlie & Fossen, 2019). These entrepreneurs ‘pulled’ into

¹ This evidence relates to all private tourism firms that had at least one wage-earner.

117 entrepreneurship seek to exploit profitable business opportunities (Fairlie & Fossen,
118 2019). Opportunity-based entrepreneurs are generally more risk-seeking (Baptista et al.,
119 2014). They are more likely to plan and accumulate financial resources and business
120 networks required to ensure firm success. Also, opportunity-based entrepreneurs are more
121 likely to pursue complex strategies (Block et al., 2015). The general and specific human
122 capital resource profiles of necessity- and opportunity-based entrepreneurs can differ
123 (Amit & Muller, 1995; Fossen & Büttner, 2013; van der Zwan et al., 2016). Necessity-
124 based entrepreneurs generally accumulate smaller and narrower resource pools with
125 regard to financial, technical and knowledge resources, which can lead to the formation
126 of under-capitalized firms (Baptista et al., 2014). Studies suggest under-capitalized firms
127 report higher closure rates, and lower levels of performance (Pfeiffer & Reize, 2000).

128

129 ***2.2. Human Capital***

130 *2.2.1. Context*

131 Human capital relates to the skills and knowledge that people acquire through investments
132 in education and on-the-job training (Unger et al., 2009). Becker (1975) made a
133 distinction between the investments made by people with regard to general and specific
134 human capital. General human capital relates to the skills, capabilities and knowledge
135 acquired through education and training that are useful in several settings. Specific human
136 capital relates to the skills, capabilities and knowledge acquired through work experience
137 in industry-specific and/or task-specific settings. It can be less transferable and useful
138 beyond the context in which it was acquired.

139 Entrepreneurial human capital has long been associated with superior business
140 performance (e.g., Brüderl et al., 1992; Cooper et al., 1994). Scholars have studied the

141 human capital of owners, managers, and employees. Across all these units of analysis,
142 studies have consistently found that owners and managers with greater human capital are
143 more likely to discover opportunities and succeed (e.g., Rauch et al., 2005; Bosma et al.,
144 2006; Marvel & Lumpkin, 2007; Baron & Henry, 2010; Rauch & Rijdsdijk, 2013). We,
145 therefore, assume that entrepreneurs' human capital, and the complementarities between
146 different types of entrepreneurs' general and specific human capital (Dimov, 2017;
147 Marvel et al., 2016) play a role in shaping the pathways linked with superior tourism firm
148 performance.

149 Human capital plays an important role in helping business owners deal with the
150 complexity and ambiguity of entrepreneurial decisions. Entrepreneurs face decisions
151 about opportunity assessment, entrepreneurial entry, exploiting opportunities, and
152 entrepreneurial exit. Often these decisions are made in extreme contexts characterized by
153 high uncertainty, time pressure, and intense emotions (Shepherd et al., 2015).

154 Human capital can influence decisions related to opportunity recognition and
155 assessment. Sarasvathy (2001) proposes that entrepreneurs shape decisions about
156 opportunities according to their own knowledge and resources. Thus, as entrepreneurs
157 learn and build up human capital, their opportunity-related decisions change. Haynie et
158 al. (2009) find that entrepreneurs assess opportunities as more attractive when the
159 opportunity is highly inimitable and when it is related to the entrepreneur's human capital.
160 Entrepreneurs with higher levels of human capital are likely to deal better with
161 uncertainty, being able to map alternatives and criteria for decision-making. Human
162 capital influences the entrepreneur's perception of firm performance and potential,
163 therefore shaping entry and exit decisions (Shepherd et al., 2015).

164 The complexity and ambiguity of entrepreneurial decisions result from both
165 environmental uncertainty and contexts where multiple agents interact and decisions

166 made about one subject (e.g., procurement) have repercussions on the circumstances in
167 which other decisions (e.g., finance) are made. Under such circumstances, it can be
168 argued that the impacts of factors such as human capital on decision-making (and,
169 consequently, on business success) is unlikely to be accurately explained by linear
170 models. The use of fuzzy sets to identify configurations of factors influencing decision-
171 making, as well as configurations of sets of decisions made by entrepreneurs seems
172 particularly appropriate to make sense of these processes. Fuzzy sets have been
173 successfully applied to business decision-making contexts (e.g., Kent & Argouslidis,
174 2005). In the case of the tourism sector, entrepreneurial decision-making in the extreme
175 context of the recent financial crisis in Greece has been addressed using fsQCA analysis
176 crisis by Pappas & Papatheodorou (2017), Pappas (2018), and Pappas & Brown (2020).
177 The present study resorts to the same method to examine configurations of entrepreneurial
178 human capital resources influencing entrepreneurial decision-making and, concomitantly,
179 entrepreneurial success in tourism.

180 *2.2.2. General Human Capital: Formal Education*

181 Formal education is a general human capital resource (Unger et al., 2009). This resource
182 encourages people to acquire skills, capabilities and knowledge (Davidsson & Honig,
183 2003). Education can foster imagination, creativity and innovation skills that can be
184 mobilized to create business opportunities. Moreover, education encourages the
185 collection and analysis of information to identify problems and solutions to problems,
186 which can be mobilized to discover business opportunities. Education encourages
187 students how to cope better with problems by utilizing external advice. Utilization of
188 advice from actors in the external environment can provide additional and diverse
189 resources required for firm development (Ucbasaran et al., 2008). More highly educated
190 people generally obtain employment positions with higher levels of remuneration, and

191 they are able to accumulate larger amounts of finance (and collateral), which can ensure
192 their firms are less likely to suffer from under-capitalization. A meta-analysis focusing
193 upon the returns of education found that higher educated entrepreneurs consistently
194 reported superior firm performance (Van der Sluis et al., 2005).

195 *2.2.3. Specific Human Capital: Work and Managerial Experience*

196 Entrepreneurs require experience that can be mobilized to create, discover and exploit
197 business opportunities (Agarwal et al., 2004; Klepper, 2009; Lazear, 2005). Work
198 experience enables individuals to acquire know-how relating to finance, procurement,
199 human resource management, production, marketing, and/or sales. This experience can
200 foster an appreciation of the entrepreneurial skills required to establish and develop new
201 ventures (Oberschachtsiek, 2012; Stuetzer et al., 2013).

202 Managerial experience in innovative firms encourages the acquisition of
203 imagination and creativity skills required to subsequently create new innovative business
204 opportunities. Further, managerial experience encourages managers to recognize the
205 importance of collecting and processing information to identify problems and solutions,
206 which can lead to the discovery of business opportunities. Managers are encouraged to
207 be reflective and strategic. This encourages the appreciation of the benefits associated
208 with networking, and the utilization of external support that can facilitate the
209 accumulation and mobilization of crucial resources to exploit a business opportunity
210 (Cooper et al., 1994). Notably, the need to obtain external finance from several sources
211 to ensure the business is not under-capitalized (Colombo et al., 2004). Managerial
212 experience encourages a focus on profit maximization, the constant need to manage
213 cashflow, and the importance of utilizing professional accounting practices. Moreover,
214 managerial experience promotes the accumulation and the importance of organizing,
215 monitoring and supervising skills (Shane, 2000; Baptista et al., 2012). Managers (Dahl &

216 Reichstein, 2007; Campbell et al., 2017) can acquire experience required for the
217 accumulation and integration of new knowledge (Cooper et al., 1994; Marchante &
218 Ortega, 2012; Li, 2014) to pursue proactive adaptation strategies that foster firm
219 development. The faster entrepreneurs (and firms) learn about the fit between their
220 resources and market conditions, the more able they will be to adapt to market
221 requirements, and more likely to report firm superior performance (Helfat & Lieberman,
222 2002; Eisenhardt & Martin, 2000).

223 Staniewski (2016) finds that knowledge associated with business experience – as
224 a manager and as a paid employee – contributes to entrepreneurial success. Those
225 entrepreneurs that have accumulated knowledge about technology, organization,
226 suppliers and clients are more likely to seize opportunities and be innovative, being
227 therefore more likely to succeed. Li et al., (2018) find that graduate entrepreneurs with
228 career experience are more likely to seek high entrepreneurial rewards, being more
229 innovative and achieving higher growth.

230 2.2.4. *Specific Human Capital: Industry Experience*

231 Employees working in tourism can acquire experience relating to the industry (Campbell
232 et al., 2017; Klepper & Sleeper, 2005). For example, the accumulation of specialized
233 product, market, customer, technological, supplier, competitor, regulatory and
234 networking knowledge (Helfat & Lieberman, 2002; Najda-Janoszka et al., 2017).
235 Employment in tourism can draw attention to the business opportunities in the industry
236 (Becton & Graetz, 2001; Suh et al., 2012). This experience can enhance employee
237 awareness of the market, changing customer tastes, technological and regulatory
238 uncertainty relating to the tourism industry.

239 Notably, employees can recognize the industry is associated with high levels of new firm
240 entry, intense competition relating to quality differentiation and/or a low price strategy,

241 and high closure rates (Nickson, 2007; Ladkin, 2011). However, employment in tourism
242 can enable employees to recognize the resources required to address barriers to firm
243 development. Tourism entrepreneurs can provide positive role models for their
244 employees. Working for a successful entrepreneur can draw employee attention to the
245 types of internal resources required to develop tourism firms, and the array of strategies
246 required to obtain resources in the external environment from actors such as financiers
247 and public and private agencies supporting tourism (Dahl & Sorenson, 2009; Dahl &
248 Sorenson, 2012).

249 Industry experience is closely associated with the phenomenon of ‘spinouts’ (often also
250 dubbed ‘spinoffs’) whereby an employee leaves his/her firm (termed the ‘parent’) to start
251 a new business in the same industry as the parent, potentially as a competitor (Agarwal et
252 al., 2004; Helfat & Lieberman, 2002; Klepper, 2009). Industry-specific experience
253 confers spinout founders an advantage that is reflected in greater chances of success
254 (Capone et al., 2019; Agarwal et al., 2016). Recent work seeks to explore the impact of
255 industry-specific human capital on the industry choice of new business founders.
256 Individuals with high human capital face a higher performance penalty if they start their
257 firm outside the parent industry, but they also face greater deterrence from large parents
258 if they stay in that industry. Sakakibara & Balasubramanian (2020) find that individuals
259 with higher human capital are less likely to form spinouts in distant industries than in the
260 parent's industry. Nikiforou et al. (2019) study the industry choices of necessity
261 entrepreneurs, coming into business ownership from unemployment. They find that new
262 business founders coming from unemployment are less likely to start firms in their parent
263 industry, and that longer spells of unemployment tend to erode the value of industry-
264 specific experience.

265 *2.2.5. Specific Human Capital: Business Ownership Experience*

266 Habitual entrepreneurs have business ownership experience in two or more firms, whilst
267 novice entrepreneurs have business ownership experience only in one firm (Westhead &
268 Wright, 2017). Prior business ownership experience generates assets such as managerial
269 and technical skills, industry experience and entrepreneurial knowledge. Habitual
270 entrepreneurs can mobilize this experience to engage in information search required to
271 detect new business opportunities (Ucbasaran et al., 2008). Moreover, this experience can
272 be employed to create new business opportunities (Shane, 2000; Davidsson, 2015), and
273 exploit business opportunities (Davidsson & Honig, 2003). Owing to successful track
274 records in prior business ownership habitual entrepreneurs accumulate legitimacy, and
275 this signal of quality is well received by external private and public sector resources
276 providers. Moreover, over their business ownership careers habitual entrepreneurs
277 accumulate a knowledge and understanding of the requirements of financial institution,
278 which can be mobilized to gain access to bank and/or venture capital finance required to
279 develop their firms (Ucbasaran et al., 2006; Mueller et al., 2012; Westhead & Wright,
280 2017). Habitual entrepreneurs can build strong and effective networks of contacts with a
281 diverse array of potential external resource providers (Westhead & Wright, 2017). Also,
282 prior business ownership experience can foster entrepreneur learning and the
283 accumulation of new capabilities.

284

285 **3. Data Collected and Research Methodology**

286 *3.1. Population and Data Collection*

287 To analyze the influence of these entrepreneurial motivations and human capital factors
288 on firm sales growth, quantitative data are collected. [The Portuguese Ministry of Social](#)
289 [Security and Employment conducts annual surveys relating to the population of all private](#)
290 [firms with at least one wage-earner \(including the firm owner\) and excluding public](#)

291 ~~administration, military and self-employed worker.~~~~The Portuguese Ministry of Social~~
292 ~~Security and Employment conducts annual surveys relating to the population of private~~
293 ~~firms with at least one wage-earner (i.e., firm owner).~~² Response to the survey is
294 mandatory, as firms are obliged to submit online responses to a detailed enquiry. This
295 means that the response rate is close to 100% barring input errors.

296 With reference to firm owners and workers, information is collected relating to their
297 gender, age, education level, employment status (i.e., varying from apprentice to skilled
298 worker, intermediate manager and top manager), and labor income.³ With regard to each
299 firm and establishment, information is collected relating to location, sector, ownership
300 form, employment size, and sales revenues. The *Quadros de Pessoal* (QP) database is
301 built from this annual information submitted by firms. The database contains longitudinal
302 information on workers, companies and establishments. Data on firms and individuals are
303 linked through unique reference numbers, so it is possible to follow the careers of
304 individuals as they start in the labor marker, change firms, are promoted, or become
305 business owners-. It is also possible to follow the performance of firms from the year of
306 startup to the year of closure.

307 The QP database surveys gather consistent evidence surrounding firm founder key
308 informants (i.e., entrepreneurs) (Kumar et al., 1993). While a firm may have several
309 owners/founders, only one of them is identified in the database as the top manager (based
310 on the firm's response). For the purposes of our study, we consider that the firm
311 owner/founder is the individual who owns (or partially owns) the firm and is the top

² This database has been increasingly used in recent research (e.g., Distel et al., 2019; Rocha et al., 2018)

³ QP micro-data discriminates the hierarchy in the firm according to the International Standard Classification of Occupations (ISCO) of the International Labor Union (see: <https://www.ilo.org/public/english/bureau/stat/isco/>). ISCO provides a description of the job levels and the corresponding tasks and skills required by each level. All firms are required to use these levels when answering the survey. The objective of the Ministry of Labor and Social Security is to have a common and comparable hierarchical structure across with no direct or prior connection with any type of wage setting process.

312 manager in the firm. We collect data on entrepreneurial human capital and labor market
313 status prior to founding for these individuals that are qualified both as owners and top
314 managers, as we believe their human capital is more likely to play a key role in
315 determining the firm's performance.

316 From the QP database we can identify that 1,182 tourism firms were established
317 in the year 2008, including firms providing accommodation, food and drink services, and
318 also tour operators and travel agents. Profiles of firm founders and their firms were
319 collected in 2008, including measures of human capital resources of the founders and
320 their labor market status prior to founding (i.e., employed vs. unemployed), as well as
321 sales and sales growth. Firm performance was monitored between 2008 and 2015. A
322 seven year period is widely monitored in firm performance studies (Agarwal &
323 Audretsch, 2001; Brouder & Eriksson, 2013). Starting with 1,182 firms in 2008, we
324 identify 255 firms that operated throughout the whole period and are still active in 2015,
325 while the remaining 927 firms stop operating (i.e., stop reporting to the database)
326 sometime during the period. Since reporting is mandatory, we can state that 255 out of
327 1,182 firms survived (i.e., a~~By 2015, 255 out of the 1,182 firms had survived (i.e., a~~ 21.6%
328 survival rate).

329

330 *3.2. Measures*

331 *3.2.1. Dependent Variable*

332 For the 255 surviving firms, the percentage sales growth between 2008 and 2015 was
333 collected. Firms that had closed by 2015 (i.e., non-survivors) were assigned a growth rate
334 of -100%. By measuring entrepreneur human capital resources and labor market status

335 in the year of founding (2008) and assigning a growth rate of -100% to non-survivors we
336 generate a balanced panel for all the 1,182 tourism firms started in 2007.

337 3.2.2. Entrepreneur Motivation Variable

338 Information from the QP database collected prior to 2008 was used to classify necessity-
339 and opportunity- based firm founders with reference to a widely utilized definition
340 (Baptista et al., 2014; Block & Wagner, 2010; Caliendo & Kritikos, 2019; Rocha et al.,
341 2018). New firm founders that had been unemployed for at least three years prior to the
342 monitored firm startup were classified as necessity-based entrepreneurs. Conversely, new
343 firm founders who were wage/salary workers prior to the monitored firm startup were
344 classified as opportunity-based entrepreneurs. Information was gathered from 434
345 necessity-based entrepreneurs with a predicted error of 4.758% and 748 opportunity-
346 based entrepreneurs with a predicted error of 3.795% (following Akis et al., 1996).

347 3.2.3. Entrepreneur Human Capital Variables

348 The QP database, collecting data since 1986, gathers information relating to firm founder
349 human capital resource profiles over time. Five firm founder human capital variables
350 measured when the firm was established were operationalized. Formal education
351 (EDUA), comprising eight levels.⁴ Number of years of work experience as a wage
352 employee in tourism prior to establishing the firm (WORK). Number of years of
353 managerial experience in tourism prior to establishing the firm (MANA). Number of
354 years of tourism industry experience prior to establishing the firm (INDU). Number of
355 years of prior business ownership experience (i.e., both owner and top manager of a
356 business) prior to establishing the firm (ENTR). Table 1 provides means and standard

⁴ 1 – did not attend school; 2 – primary (4-year) education; 3 – basic high school (6-year); 4- intermediate high school (9-year); 5 – completed high school (12-year); 6 – college degree (3-year Bachelor); 7 – advanced college degree (5-year Master); 8 – doctorate.

357 deviations relating to the total sample and samples of necessity- and opportunity-based
358 entrepreneurs.

359 **Table 1: Variable definition and descriptive statistics**

Variable	Description	Total sample				Necessity-based entrepreneurs				Opportunity-based entrepreneurs			
		Mean	Standard Deviation	Min	Max	Mean	Standard Deviation	Min	Max	Mean	Standard Deviation	Min	Max
EDUA	Education level: 1 – did not attend school; 2 – primary (4-year) education; 3 – basic high school (6-year); 4- intermediate high school (9-year); 5 – completed high school (12-year); 6 – college degree (3-year Bachelor); 7 – advanced college degree (5-year Master); 8 – doctorate.	4.06	1.42	1	8	4.08	1.47	1	8	4.04	1.33	1	8
WORK	Number of years of work experience as a work employee in tourism prior to establishing the firm	4.92	4.53	0	25	5.05	3.56	1	15	4.85	5.01	0	25
MANA	Number of years of managerial experience in tourism prior to establishing the firm	1.18	1.37	0	13	1.16	1.18	0	8	1.20	1.47	0	13
INDU	Number of years of tourism industry experience prior to establishing the firm	1.82	3.03	0	24	1.47	2.15	0	11	2.03	3.42	0	24
ENTR	Number of years of prior business ownership experience (i.e. both owner and top manager of a business) prior to establishing the firm	1.94	2.58	0	26	1.79	1.98	0	14	2.02	2.88	0	26
Number of firms		1,182				434				748			

360

361 **3.3. Methodology and Data Analysis**

362 Set-theoretic-based data analyses are employed to test and/or retest theories (Bouncken
363 et al., 2020; Hughes et al., 2019; Martí-Parreño et al., 2018; Kraus et al., 2017). Fuzzy
364 sets qualitative-comparative analysis (fsQCA) is a set-theoretic approach based on
365 Boolean algebra that assesses causal complexity (Ragin, 2000; Hughes et al., 2019). The
366 fsQCA methodology is employed to identify a set of causal factors (i.e., configurations
367 of human capital investments by necessity- and opportunity-based entrepreneurs) relating
368 to an outcome (high sales growth).

369 The fsQCA methodology addresses several limitations associated with regression
370 and traditional symmetric quantitative approaches (Kallmuenzer et al., 2019). It combines
371 antecedents (i.e., in this study, human capital resources) into various causal configurations
372 (i.e., in this study, human capital profiles) to explore which configurations are associated
373 with high outcome (i.e., in this study, firm sales growth) scores. Unlike regression
374 analysis, which assumes a fixed structure for causality (usually a linear relationship),
375 fsQCA implies causal asymmetry (Bouncken et al., 2020). Thus, the absence of a certain
376 level of a human capital variable is not necessarily compensated by a greater amount of
377 another human capital variable. What matters are the combinations (or configurations) of
378 human capital variables (on gradated scales) associated with the monitored outcome.
379 **Table 2 shows that most of correlation coefficient values are less than 0.6, and these**
380 **values implies that the respective relationships between variables are generally**
381 **asymmetric (Skarmeas et al., 2014).**

382

383 **Table 2: Correlation matrix**

384

Group	Correlations	EDUA	INDU	WORK	MANA	ENTR	SALG
1 Opportunity- based entrepreneurs (N ₁ =6527 cases from 748 firms)	EDUA	1.00					
	INDU	-0.11	1.00				
	WORK	-0.08	0.67	1.00			
	MANA	0.27	0.31	0.26	1.00		
	ENTR	-0.06	0.43	0.47	0.17	1.00	
	SALG	0.02	0.02	0.02	0.02	-0.01	1.00
2 Necessity- based entrepreneurs (N ₂ =3791 cases from 434 firms)	EDUA	1.00					
	INDU	-0.07	1.00				
	WORK	-0.03	0.50	1.00			
	MANA	0.27	0.45	0.32	1.00		
	ENTR	-0.10	0.23	0.24	0.19	1.00	
	SALG	0.03	0.01	0.04	0.04	-0.00	1.00

385

386 The fsQCA software package v.3.0 was used. The analysis relates to the following
 387 three steps: data calibration; constructing the truth table; and simplifying the analysis
 388 before interpretation (Ragin, 2008b). Calibration consists of assigning each case (i.e., in
 389 this case, each firm) scores that represent its membership in each causal condition set (i.e.,
 390 in this study, education, work experience, managerial experience, industry experience,
 391 and prior business ownership experience human capital) and the outcome set (i.e., in this
 392 study, firm sales growth). Fuzzy scores range from 0 to 1, where 0.95 denotes ‘full
 393 membership’, 0.50 denotes ‘cross-over point’, 0.05 denotes ‘full non-membership’, and
 394 ranges between 0 and 1 denote ‘degrees of membership in a set’ (Ragin, 2008a, 2008b),
 395 and this study set the values of 95th, 50th, and 5th percentile from ordinary data to
 396 correspond to these memberships, respectively. For instance, 95th, 50th, and 5th percentile
 397 of sales growth are -1.00, 0.00, and 0.36. In other words, when the firm's sales growth
 398 exceeds 0.00, it can be defined as a firm with high sales growth.

399 Once cases have been calibrated, a ‘truth table’ is created to represent all the possible
400 combinations of causal conditions leading to the outcome. The table is completed by
401 distributing the observed cases to each unique possible configuration (e.g., in this study,
402 how many firms possess high levels of education and work, managerial, industry and
403 prior business ownership experience; how many firms possess high levels of education
404 and work, managerial and industry experience but low levels of prior business ownership
405 experience, etc.), and then assessing how consistently each configuration is associated
406 with the outcome.

407 Finally, Boolean logic is used to simplify the configurations that lead to the outcome.
408 For instance, with reference to the hypothetical case of two configurations from this study
409 consistently related to high levels of sales growth: i) high levels of education and work,
410 managerial, industry and prior business ownership experience; and ii) high levels of
411 education, work, managerial and industry experience, but a low level of prior business
412 ownership. In this case, the conditions for high sales growth could be simplified to a more
413 parsimonious configuration: high levels of education and work, managerial and industry
414 experience. As long as the levels of these human capital resources are high, the presence
415 (or absence) of prior business ownership experience is irrelevant.

416 The goal of fsQCA is to identify the necessity and sufficiency of individual causal
417 conditions, and how these causal conditions combine to lead to the outcome (Ragin,
418 2008a, 2008b). A necessary causal condition is one that must be present for a given
419 outcome to occur, meaning the outcome does not occur in the absence of the causal
420 condition. A causal condition is sufficient if it can produce a given outcome by itself,
421 meaning that if the causal condition is present, the outcome is, in addition, present.
422 However, the presence of the outcome does not necessitate the presence of a sufficient

423 causal condition. Hence, a causal condition is sufficient for the result if all cases
424 exhibiting the condition also exhibit the result, but there are, in addition, cases that exhibit
425 the result but not the condition (Schneider & Wagemann, 2012).

426 The truth table algorithm then produces a ‘consistency score’. This score indicates
427 how consistently a particular configuration produces an outcome. Here, we differentiate
428 the configurations of antecedents (i.e., in this study, entrepreneur human capital
429 resources) that are sufficient for the outcome (i.e., in this study, high sales growth) to
430 occur from those that are not by specifying a consistency cutoff value of 0.80, and by
431 setting the number-of-cases threshold to at least 1 case per configuration, following Ragin
432 (2008b), Kallmuenzer et al. (2019), and Moschouli et al. (2019).

433

434 **4. Results**

435 Table 2 reports the intermediate solutions relating to high sales growth by necessity- and
436 opportunity-based entrepreneurs, following common structures of how to display fsQCA
437 results (e.g., Crilly et al., 2012). Black circles ‘ ● ’ indicate the presence of causal
438 conditions (i.e., human capital antecedents). White circles ‘ ○ ’ indicate the absence or
439 negation of causal conditions. The blank cells represent ‘do not care’ conditions. A black
440 circle, therefore, suggests that a specific human capital resource is part of a condition (i.e.,
441 configuration of human capital resources) that causes the desired output (i.e., high sales
442 growth).

443 Table 3 presents all configurations of antecedents (i.e., human capital resources)
444 that are sufficient conditions (i.e., they score a consistency index equal or above 0.80) for

445 the output (i.e., high sales growth). The analysis shows that none of the conditions alone
 446 is necessary to determine the output.

447 **Table 3: Intermediate solutions relating to high sales growth**

Group	Path	Antecedent					Coverage		Consistency	Solution	
		EDUA	INDU	WORK	MANA	ENTR	Raw	Unique		Coverage	Consistency
1 Opportunity- based entrepreneurs (N ₁ =6527 cases from 748 firms)	1A		●	○	○		0.34	0.04	0.89		
	2A	○		○	●		0.35	0.04	0.91		
	3A	●		●	○		0.36	0.05	0.88	0.75	0.87
	4A	●	○	○		●	0.46	0.13	0.91		
	5A		○	●	○	●	0.33	0.03	0.92		
2 Necessity- based entrepreneurs (N ₂ =3791 cases from 434 firms)	1B	○	●	○	○		0.36	0.08	0.91		
	2B	●		●	○	○	0.39	0.08	0.92	0.63	0.90
	3B	●	○	○	○	●	0.43	0.12	0.92		

448 Notes: Entrepreneur education level (EDUA), industry experience (INDU), work experience (WORK), managerial
 449 experience (MANA), and prior business ownership experience (ENTR). Black circles ‘ ● ’ indicate the presence of
 450 causal conditions (i.e., human capital antecedents). White circles ‘ ○ ’ indicate the absence or negation of causal
 451 conditions. The blank cells represent ‘do not care’ conditions.
 452

453

454 For necessity-based entrepreneurs, three configurations of antecedents (i.e.,
 455 human capital resources) are sufficient conditions for high sales growth to occur, whilst
 456 for opportunity-based entrepreneurs there are five configurations. The coverage index
 457 measures the extent to which the configurations account for the sales growth outcome.
 458 This is to say how much of this outcome is covered (or explained) by the solution as a
 459 whole (Ragin, 2008a, 2008b). The configurations of human capital resources that are
 460 sufficient conditions account for 63% of high sales growth cases with regard to necessity-
 461 based entrepreneurs, and 75% of high sales growth cases relating to opportunity-based

462 entrepreneurs. Coverage indexes above 0.60 are usually associated with a robust
463 understanding of the causes of a specific outcome (Ragin, 2008a, 2008b). The human
464 capital combinations (or configurations) that are sufficient conditions causing high sales
465 growth can be deemed to explain a high proportion of the sales growth outcome.

466 There are multiple combinations of causal conditions that lead to high sales
467 growth reported by both necessity- and opportunity-based entrepreneurs. For necessity-
468 based entrepreneurs, no single human capital resource is indispensable for high sales
469 growth. Configurations leading to high sales growth reported by necessity-based
470 entrepreneurs require the presence of higher levels of general human capital relating to
471 formal education, or specific human capital with regard to work experience in tourism.
472 Opportunity-based entrepreneurs report high growth with a greater variety of human
473 capital resource combinations than necessity-based entrepreneurs. For opportunity-based
474 entrepreneurs, there are five different configurations associated with high sales growth.
475 This suggests that different elements of general and specific human capital lead to high
476 sales growth firms. There is no specific human capital resource that is indispensable (i.e.,
477 no single human capital resource appears in all configurations). Opportunity-based
478 entrepreneurs do not require complex combinations relating to several human capital
479 resources to report high sales growth.

480

481 **5. Discussion**

482 This study adds to understanding the configurations of general and specific human capital
483 reported by necessity- and opportunity-based entrepreneurs causally linked with new
484 tourism firms' high sales growth. With reference to a large representative sample of 1,182

485 new tourism firms, fsQCA was used to explore a unique database that combines
486 entrepreneur and firm variables. Notably, the fsQCA detected multiple human capital
487 pathways of entrepreneurs reporting high sales growth.

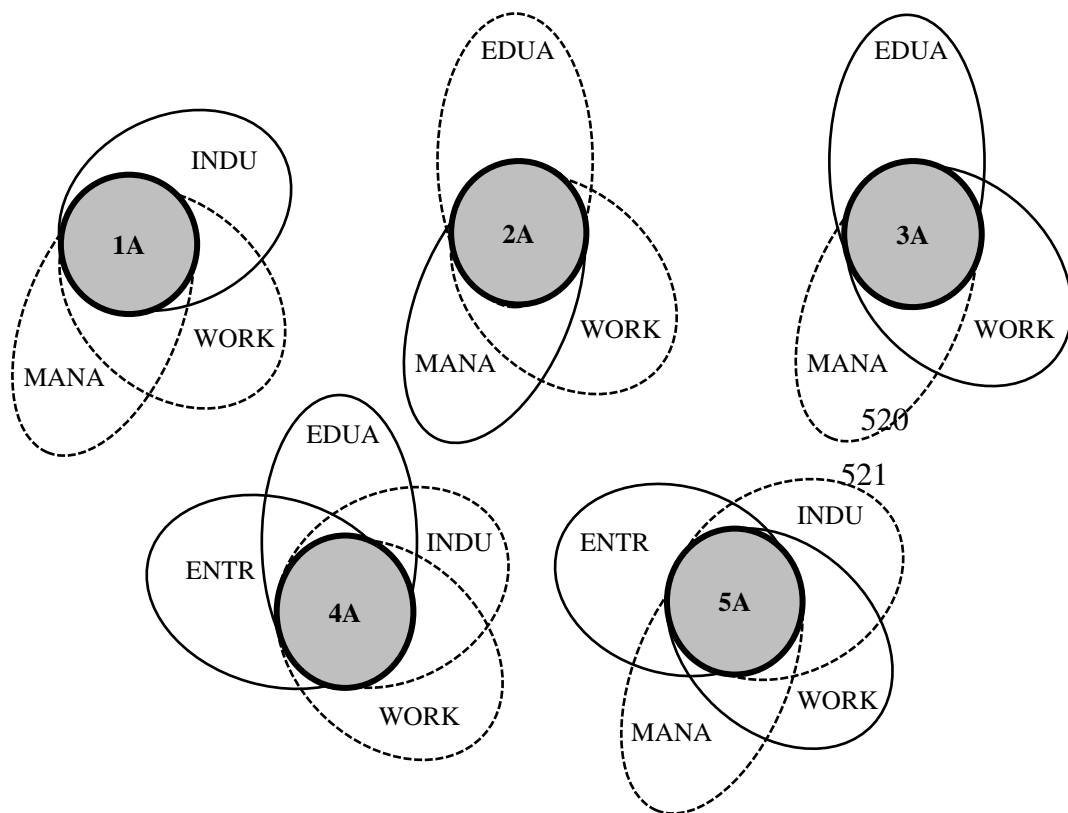
488 Many previous studies have simplistically assumed that ‘individual’ entrepreneur human
489 capital variables promote superior sales firm performance. Fuzzy-set analysis has
490 confirmed that this simplistic firm is flawed. ‘Configurations’ rather than ‘individual’
491 entrepreneur human capital resources explain superior firm performance. In addition,
492 many prior studies have assumed that the ‘individual’ entrepreneur human capital
493 variables associated with superior firm sales growth are the same, irrespective of
494 necessity- or opportunity-based background. Fuzzy-set analysis challenges this simplistic
495 assumption. The ‘combinations’ of general and specific human capital resources
496 associated with superior firm sales growth reported by necessity-based entrepreneurs are
497 not the same as those reported by opportunity-based entrepreneurs. With regard to both
498 types of entrepreneurs we detected that no entrepreneur specific human capital resource
499 is indispensable (i.e., no single human capital resource appears in all configurations).

500 Opportunity-based entrepreneurs with high sales growth firms reported more
501 configurations of human capital resources than necessity-based entrepreneurs. However,
502 both necessity- and opportunity-based entrepreneurs required only one or two forms of
503 human capital at startup to report high sales growth over the monitored seven years
504 period. This suggests that entrepreneurs facing human capital constraints at startup can
505 operate firms that subsequently report high sales growth.⁵

⁵ Mallon et al. (2017) detected this finding with regard to human, social and financial capital endowments in family firms.

506 Causal configurations relating to high sales growth by opportunity-based
 507 entrepreneurs are presented in Figure 1. This figure displays the causal configurations
 508 related to high sales growth for those founders who were gainfully employed in the three
 509 years prior to startup. To enhance interpretation, an ellipse with a black-line border
 510 represents the presence of a causal condition (i.e., a human capital resource included in
 511 the configuration), whereas an ellipse with a dotted-line border indicates the absence or
 512 negation of a condition (i.e., the resource is not included in the configuration).

513
 514 **Figure 1: Causal configurations relating to high sales growth by opportunity-based**
 515 **entrepreneurs**



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 529 Note:
 530 An ellipse with a black-line border represents the presence of the condition, whereas an ellipse with a dotted-line border
 531 represents the absence of the condition. If a condition is irrelevant to the configuration, no ellipse is displayed.
 532

533 Configuration 1A indicates that high sales growth is reported by opportunity-
534 based entrepreneurs with relatively high levels of tourism industry experience, but
535 relatively low levels of managerial and work experience. In configuration 2A, high levels
536 of managerial experience are required to achieve high sales growth, whilst high levels of
537 formal education and work experience are absent. Moreover, in configurations 3A and
538 4A, high levels of formal education combine with high levels of work experience (and
539 low levels of managerial experience), or high levels of prior business ownership
540 experience (and low levels of both industry and work experience). In configuration 5A,
541 high levels of prior business ownership and work experience combine with low levels of
542 industry and managerial experience.

543 High levels of industry experience thus can be a sufficient condition for high sales
544 growth. Industry experience provides opportunity-based entrepreneurs with knowledge
545 of incumbents' routines and strategies (Agarwal et al., 2004; Helfat & Lieberman, 2002;
546 Klepper, 2009). This result supports previous studies focusing on entrepreneurial
547 spinouts, which have found that startups by founders that were working in the same
548 industry as the startup are more likely to be successful (e.g., Baptista et al., 2014; Agarwal
549 et al., 2016, and Capone et al., 2019). Our results suggest that industry experience and
550 knowledge represent a distinct advantage which is sufficient to generate high sales growth
551 regardless of other dimensions of human capital. One interpretation of this result is that
552 industry experience provides entrepreneurs with knowledge of technology, operational
553 issues, buyers and suppliers. A second interpretation is that this result reflects differences
554 in the abilities of individuals to evaluate entrepreneurial opportunities. People with
555 experience working in an industry may have a better sense of which entrepreneurial

556 opportunities are most attractive; they may also be exposed to more valuable
557 opportunities.

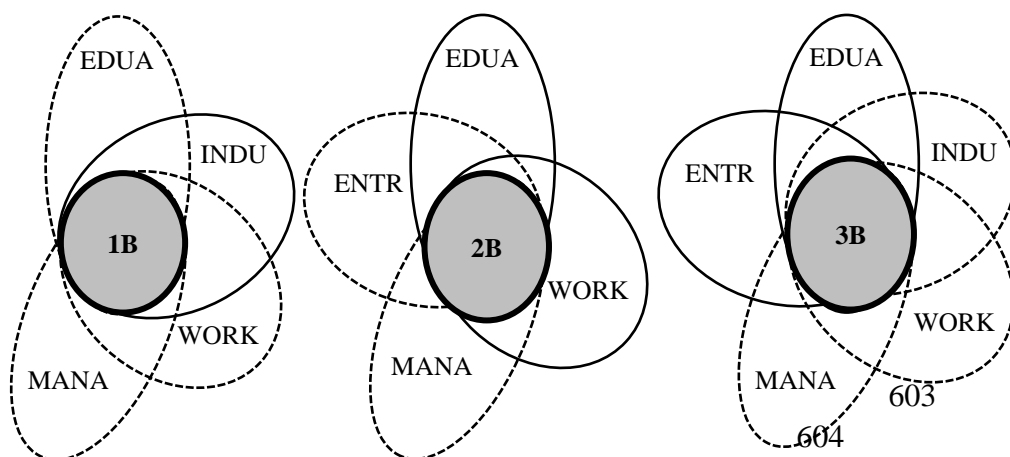
558 High levels of managerial experience represent another sufficient condition for
559 high sales growth reported by opportunity-based entrepreneurs. Managerial experience
560 enhances creativity and the ability to collect and process information. This experience
561 enables opportunity-based entrepreneurs to build valuable social capital and acquire
562 external support and financial resources. Moreover, managerial experience promotes the
563 accumulation of organizing, monitoring and supervising skills. The evidence presented
564 here suggests that managerial experience is sufficient to facilitate high sales growth,
565 irrespective of other dimensions of human capital. Beckman & Burton (2008) and
566 Baptista et al., (2014) also find a positive effect of managerial experience on new venture
567 performance for opportunity-based entrepreneurs but other studies, such as Bosma et al.,
568 (2006) report ambiguous effects for this form of human capital.

569 In the absence of the benefits associated with high levels of industry or managerial
570 experience, high levels of both work and prior business ownership experience reported
571 by opportunity-based entrepreneurs are sufficient to facilitate high sales growth.
572 Opportunity-based entrepreneurs that acquire high levels of the latter experience can build
573 valuable social capital and financial resources. The evidence presented here suggests that
574 work and prior business ownership experience are sufficient to facilitate high levels of
575 sales growth and offset low levels of industry and managerial experience. A high level of
576 education is a sufficient condition for high sales growth reported by opportunity-based
577 entrepreneurs when combined with work or prior business ownership experience. Thus,
578 a high level of general human capital (formal education) compensates for low levels of
579 managerial and industry experience if work or prior business ownership experience is

580 accumulated. This configuration lends support to the results of Baptista et al. (2014) who
 581 find that both formal education and entrepreneurial experience contribute significantly to
 582 the survival of new ventures created by opportunity-based entrepreneurs. Beckman and
 583 Burton (2008) reach similar findings for top management teams of new technology-based
 584 ventures when examining the likelihood of going public.

585 For the group of necessity-based entrepreneurs, Figure 2 reports causal
 586 configurations relating to high sales growth. In configuration 1B high levels of industry
 587 experience combine with low levels of education as well as work and managerial
 588 experience. In configuration 2B high levels of formal education combine with high levels
 589 of work experience, but low levels of managerial and prior business ownership experience
 590 to facilitate high sales growth. In configuration 3B, high levels of education combine with
 591 high levels of prior business ownership experience in the absence of high levels of other
 592 dimensions of specific human capital.

593 **Figure 2: Causal configurations relating to high sales growth by necessity-based**
 594 **entrepreneurs**



605 Note:
 606 An ellipse with a black-line border represents the presence of the condition, whereas an ellipse with a dotted-line border
 607 represents the absence of the condition. If a condition is irrelevant to the configuration, no ellipse is displayed.
 608

609

610 For necessity-based entrepreneurs, high levels of industry experience can be a
611 sufficient condition for high sales growth. Industry experience can compensate for low
612 levels of education, and low levels of managerial and industry experience. This result
613 suggests that industry-specific experience remains valuable for new firm founders even
614 after a spell in unemployment, contradicting the finding by Nikiforou (2019) that longer
615 spells of unemployment tend to erode the value of industry-specific experience.
616 Managerial experience is not associated with high sales growth probably because
617 necessity-based entrepreneurs drawn from unemployment background are less likely to
618 accumulate managerial experience.

619 Human capital resource configurations 2B and 3B for necessity-based entrepreneurs
620 indicate that a high level of formal education is a sufficient condition for high sales growth
621 when combined with either work experience or prior business ownership experience. For
622 both necessity- and opportunity-based entrepreneurs, a high level of education can
623 facilitate the acquisition of relevant knowledge, networks and financial capital required
624 for high sales growth. Previous results generally suggest that ventures founded by people
625 with prior business ownership experience have superior performance (e.g., Bosma et al.,
626 2006, Baptista et al., 2014). The results presented here suggest that, for necessity-based
627 entrepreneurs, high levels of business ownership experience are associated with high
628 venture growth only when combined with high levels of formal education.

629 Baptista et al. (2014) use Logit regression models to examine the impact of the
630 different forms of entrepreneurial human capital separately for necessity-based and
631 opportunity-based entrepreneurs. In the case of necessity-based entrepreneurs, only
632 entrepreneurial/business ownership experience is found to have a significant positive

633 effect. By employing fuzzy set analysis rather than Logit regression the present study
634 sheds additional light on necessity-based entrepreneurs by identifying configurations of
635 human capital resources leading to high growth where industry experience, work
636 experience and business experience play important roles.

637 Furthermore, it's worth confirming that this study does meet the six principles (Olya
638 & Altinay, 2016; Pappas, 2018). First tenet (T1): "A simple antecedent condition may be
639 necessary but a simple antecedent condition is rarely sufficient for predicting a high or
640 low score in an outcome condition" (Olya & Altinay, 2016). Table 3 and Table 4 indicate
641 that five simple conditions (i.e., Entrepreneur education level (EDUA), industry
642 experience (INDU), work experience (WORK), managerial experience (MANA), and
643 prior business ownership experience (ENTR)) appear in at least one sufficient
644 configuration, and a simple antecedent condition is not sufficient to achieve high or low
645 sales growth. Accordingly, this study confirms the T1. Second tenet (T2): "Recipe
646 principle: When two or more simple conditions create a complex configuration, an
647 outcome condition can have a consistently high score" (Pappas, 2018). Table 3 shows
648 that each sufficient condition contains at least three antecedents, and then it leads to the
649 confirmation of the T2. Third tenet (T3): "Complex interactions/configurations can affect
650 the decision making of managers/owners" (Pappas, 2018). The results of fsQCA support
651 this tenet by showing that each sufficient configuration should provide a different
652 pathway for decision making. Fourth tenet (T4): "Within different combinations the
653 simple conditions of interactions/configurations can positively or negatively affect the
654 decision making of managers/owners" (Pappas, 2018). Comparing results of fsQCA (i.e.,
655 Table 3 and Table 4) provides evidence of support for this tenet. Fifth tenet (T5):
656 "Equifinality principle: A sufficient decision-making for accommodation

657 managers/owners is not always the result of a high outcome score” (Pappas, 2018). The
 658 results of fsQCA support this tenet by showing a minimum of three generated solutions
 659 for high sales growth. Sixth tenet (T6): “When the Y scores are high, a given recipe for
 660 the decision-making of managers/owners is not relevant for all cases” (Pappas, 2018).
 661 Results of fsQCA also support this tenet by showing that raw coverage of the sufficient
 662 configurations varies from 0.33 to 0.46 relating to high sales growth and 0.45 to 0.65
 663 relating to low sales growth.

664

665 **Table 4: Intermediate solutions relating to low sales growth**

Group	Path	Antecedent					Coverage		Consistency	Solution	
		EDUA	INDU	WORK	MANA	ENTR	Raw	Unique		Coverage	Consistency
1 Opportunity- based entrepreneurs (N ₁ =6527 cases from 748 firms)	1C	○	○	○			0.47	0.01	0.86		
	2C	●	○		○		0.49	0.02	0.88		
	3C		○		○	●	0.58	0.02	0.97	0.71	0.84
	4C		○	○		●	0.56	0.01	0.96		
	5C	○		○	○	●	0.45	0.04	0.97		
2 Necessity- based entrepreneurs (N ₂ =3791 cases from 434 firms)	1D		○		○		0.65	0.10	0.80		
	2D		○	○			0.62	0.07	0.81	0.77	0.77
	3D	●		○	○	○	0.45	0.01	0.96		
	4D	○		○	○	●	0.48	0.02	0.96		

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Notes: Entrepreneur education level (EDUA), industry experience (INDU), work experience (WORK), managerial experience (MANA), and prior business ownership experience (ENTR). Black circles ‘●’ indicate the presence of causal conditions (i.e., human capital antecedents). White circles ‘○’ indicate the absence or negation of causal conditions. The blank cells represent ‘do not care’ conditions.

672

6. Conclusions and Implications

673 Building upon insights from motivation and human capital theories, this study used
674 fsQCA to identify the profiles of necessity- and opportunity-based entrepreneurs that
675 facilitate high sales growth. The analysis highlighted that both necessity- and opportunity-
676 based entrepreneurs can facilitate high sales growth even when they have not accumulated
677 diverse dimensions of human capital prior to firm startup. This is an important finding
678 because it suggests that new tourism firms can grow when their entrepreneurs prior to
679 firm start-up report deficiencies in human capital.

680 Necessity-based entrepreneurs reported fewer configurations of human capital
681 resources required to facilitate high sales growth when compared with opportunity-based
682 entrepreneurs. Prior tourism industry experience is required by both necessity- and
683 opportunity-based entrepreneurs to facilitate growth when no or low levels of other
684 dimensions of human capital have been accumulated prior to firm start-up.

685 Necessity- and opportunity-based entrepreneurs with high levels of education and
686 high levels of work or prior business ownership experience reported high sales growth.
687 This evidence supports prior evidence that highly educated entrepreneurs report superior
688 firm performance (Unger et al., 2009; Van der Sluis et al., 2005), we contribute to the
689 firm growth debate by highlighting that the benefits of the education resource can be
690 increased when the education general human capital resource is combined with two
691 dimensions of specific human capital.

692 Necessity- and opportunity-based entrepreneurs differ with regard to the human
693 capital resources that facilitate high sales growth. Accumulation of managerial experience
694 facilitated high sales growth in opportunity-based entrepreneur firms. In contrast, the
695 accumulation of managerial experience was not crucial to facilitate high sales growth in
696 necessity-based entrepreneur firms.

697 Tourism firm growth is attracting policy-maker and practitioner attention. Policy-
698 makers and practitioners recognize that many new firms are born to die young, those that
699 survive are generally born small and stay small, and relatively few new firms report high
700 growth (Westhead & Wright, 2013). Presented findings suggest that entrepreneurs need
701 to invest in human capital prior to establishing their new firms (García-Villaverde et al.,
702 2017). Entrepreneurs, particularly necessity-based entrepreneurs, may not recognize the
703 importance of accumulating human capital prior to firm start-up. Further, some
704 entrepreneurs exhibit attitudinal barriers to external advice, and/or they may not have the
705 financial resources required to obtain external support that can increase their human
706 capital. Assuming an interventionist stance to promote the formation and development of
707 new tourism firms, there is a potential case for policy-makers and practitioners to
708 intervene to address the attitudinal and resource barriers relating to combinations of
709 human capital resources required to facilitate high firm sales growth, which can generate
710 wealth creation benefits for tourism entrepreneurs and employees, as well as providing
711 wider economic and social beneficial outcomes.

712 Our results suggest it is crucial for novice tourism entrepreneurs to accumulate
713 tourism industry skills and knowledge prior to establishing their firms. Further, our results
714 suggests that policy-makers and practitioners can have a role in encouraging novice
715 tourism entrepreneurs to accumulate managerial experience and knowledge before
716 establishing their firms. For example, there is a case for initiatives to link novice
717 entrepreneurs with successful portfolio tourism entrepreneurs that can facilitate the
718 accumulation of resources required for firm development.

719 Additional studies are warranted to develop the insights presented in this study. The
720 external validity of presented causal findings should be explored beyond the Portuguese

721 context, and a recession context. Also, the generalizability of presented causal findings
722 should be explored in a COVID-19 context. Results can be sensitive to the growth
723 measure monitored. Future longitudinal studies should monitor the human capital
724 resource configurations with regard to an array of firm (and entrepreneur) performance
725 measures. This additional analysis would ascertain whether the entrepreneur human
726 capital resource combinations causally linked to high sales growth are the same as those
727 relating to other dimensions of firm performance, such as employment growth (Westhead
728 & Wright, 2013). In addition, future studies should consider a broader array of general
729 and specific human capital variables, as well as variables relating to firm resource profiles
730 and strategies (Koh & Hatten, 2002; Kallmuenzer et al., 2019). Results can be sensitive
731 to the methodology employed. Consequently, a diverse array of qualitative as well as
732 quantitative approaches need to be employed. This study focused upon necessity- and
733 opportunity-based entrepreneurs. Future studies should focus on several contexts for
734 enterprise, for example, relating to entrepreneur gender, ethnicity, and experience (i.e.,
735 novice, serial and portfolio entrepreneurs), as well as firm innovativeness (Martínez-
736 Román et al., 2015; Kallmuenzer, 2018) and the propensity to have used external support.

737

738 *Number of words exclusive of abstract and references: 6305 words*

739

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