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## **Does Practice Make Perfect? Assessing the Formation of Expertise among New Venture Founders**

### **ABSTRACT**

**Purpose:** Prior research has theorised that entrepreneurs use deliberate practice (DP) in the start-up process to improve their competences and achieve new venture success. However, does DP truly lead to an increase in entrepreneurial expertise? This article advances the understanding of DP for entrepreneurship scholars by answering the following question: *to what extent does DP influence the formation of entrepreneurial expertise among business founders?*

**Design/Methodology/Approach:** The study employs a sample of founders of limited-liability firms. Data were collected mainly through a web-based survey designed specifically for this research. Regression analysis was used to investigate the relationship between DP and entrepreneurial expertise among business founders.

**Findings:** The results show that DP is positively associated with entrepreneurial expertise, which provides us with an improved understanding of DP and expertise in the entrepreneurship context.

**Originality:** The article offers empirical evidence linking DP to the achievement of entrepreneurial expertise. Further, the article emphasises DP as key to experiential learning, representing a predominant mode by which entrepreneurs' experiences are transformed into expertise. Finally, it highlights the important role of learning through DP in opportunity development.

**Keywords:** entrepreneurial expertise, deliberate practice, new venture founders, new venture opportunities, entrepreneurship.

## **1. Introduction**

The topic of entrepreneurial expertise has received increased attention from scholars (e.g. Arend et al., 2015; Dew et al., 2018; Ranabahu and Barret, 2020; Sarasvathy, 2009). Today the development of entrepreneurial expertise is ever more crucial as worldwide exogenous shocks curtail entrepreneurs' ability to innovate and grow while simultaneously requiring them to proactively engage in working with others to solve the consequences of a worldwide pandemic and develop opportunities that may arise in its aftermath (Kuckertz et al., 2020).

To date, however, entrepreneurship scholarship has largely equated expertise with founders' prior experiences (e.g. Cassar, 2014; Martin et al., 2013; Marvel et al., 2016; Paik, 2014; Unger et al., 2011; Westhead et al., 2005). However, stocks of accumulated experiences from past events and achievements are not the same as expertise. Neither are accumulated experiences the only source of expertise for entrepreneurs. Founders also engage in learning in the process of developing a new venture, and the role of this learning in shaping expertise has received limited attention.

Despite the extant literature informing us that entrepreneurs learn by transforming experiences into knowledge (i.e. learning as an experiential process) (e.g. Corbett, 2005, 2007; Politis, 2005), there is still a need to pinpoint which learning processes enable the transformation of experiences into what kinds of expertise. In this respect, this article takes one step forward by examining the relationship between entrepreneurs' engagement in deliberate practice (DP) (i.e. practice aimed at increased performance) and entrepreneurial expertise (defined in this article as the ability of entrepreneurs to identify and develop an opportunity in a new venture). This is important because identifying and developing a business opportunity is at the core of what new venture founders do, often repeatedly (Politis, 2005). Hence, entrepreneurs' skills in developing an opportunity in a new venture can be practiced and improved upon (Corbett, 2005).

Several studies point to the importance of understanding entrepreneurship as a process of learning (Clausen, 2019; Corbett, 2005; Haneberg and Aaboen, 2021; Minniti and Bygrave, 2001; Morris et al., 2012; Nogueira, 2019; Politis, 2005; Ravasi and Turati, 2005; Reuber and Fischer, 1999; Van Gelderen et al., 2005). However, we have scarce knowledge of how business founders attain entrepreneurial expertise through DP (Teague and Gartner, 2020). Indeed, foundational psychology research on expertise shows that the

mere accumulation of experiences is insufficient for the attainment of expertise and that learning through DP is a necessary component (Ericsson, 2006). Without the realisation of this subtle but important distinction and without a more complete understanding of DP among new venture founders, the entrepreneurship field may be led astray. A foggy and uncertain global economy caused by COVID-19 and potential future crises (Kuckertz et al., 2020) only exacerbates the need to consider the relationship between DP and entrepreneurial expertise. Thus, the following research question is posed – *to what extent does DP influence the formation of entrepreneurial expertise among business founders?*

This study offers a series of interconnected contributions to the entrepreneurship literature. It contributes by providing empirical evidence linking DP to the achievement of entrepreneurial expertise and an improved understanding of DP and expertise in the entrepreneurship context. It does so by suggesting that entrepreneurial expertise requires DP and is more than just accumulated experience. As such, the study responds to calls for more research on the specific types of learning that entrepreneurs engage with and on the results of this learning (Wang and Chugh, 2014). Relatedly, the article extends the literature on the role of learning in opportunity development (e.g. Corbett, 2005; Snihur et al., 2017) by showing that DP facilitates the attainment of expertise within the domain of opportunity development. This adds an important nuance to extant conceptualisations of the process of opportunity development (e.g. McCann and Vroom, 2015) as this study distinguishes between experiences and expertise and argues for DP as a core component in the achievement of entrepreneurial expertise.

## **2. Theory and Hypothesis Development**

Entrepreneurs strive to perform successfully at entrepreneurial tasks that are related to the success of a new venture. This article seeks to examine the role of DP in the attainment of entrepreneurial expertise by new venture founders. Whereas the general literature on expertise has demonstrated that DP is an important factor in the formation of expertise (Ericsson, 2006), the entrepreneurship field lacks empirical examinations of whether/the extent to which DP promotes entrepreneurial expertise.

A stream of research concerns the cognition of expert entrepreneurs (e.g. Lim et al., 2010; Mitchell et al., 2000; Mitchell et al., 2002; Mitchell et al., 2008; Smith et al., 2009; Stambaugh and Mitchell, 2018). Taken together, these studies suggest that the possession

of expert cognitive systems by entrepreneurs (e.g. expert heuristics that facilitate the interpretation of challenging situations) promotes the development of an entrepreneurial mindset (e.g. pro-action, openness to challenges, and other characteristics that are conducive to entrepreneurship). Saras Sarasvathy and colleagues have also explored the topic of entrepreneurial expertise; a key insight from their work in this regard is that expert entrepreneurs rely on a set of heuristics (i.e. effectuation) that involve the proactive co-creation of the future instead of an over-reliance on planning and prediction (e.g. Dew et al., 2018). Complementing the body of research focusing on the cognitions of expert entrepreneurs, this article examines entrepreneurs' expertise with regard to their ability to identify and develop a business opportunity. This is important because opportunity identification and development are inherent to new business venturing.

### *2.1. Entrepreneurial Expertise*

The notion of expertise may seem to run against a general conception of entrepreneurship as a non-routine task that requires experimental approaches that are not determined by skill (Coad et al., 2014), partly caused by the uncertainty associated with entrepreneurial activity (McKelvie et al., 2011), exacerbated even further by the COVID-19 pandemic (Liñán and Jaén, 2020). However, this article calls attention to the presence of routine tasks in the overall uncertain process of new business venturing which involve skills that can be practiced and refined to expert levels. For instance, entrepreneurs repeatedly need to perform at the best of their abilities in interacting with investors and potential customers (Appelhoff et al., 2016), in developing ideas into products or services that address market opportunities in a timely manner (Capelleras et al., 2010), and in achieving milestones that allow for the continuity and growth of a new venture, such as first sales and profits (Clausen and Korneliussen, 2012). These and other entrepreneurial tasks are often repeated, both within and across new business venturing efforts. This suggests that the skills associated with such tasks can be practiced and refined to expert levels. Using the same examples as before, entrepreneurs would need, for instance, communication skills to interact with investors and customers, creative skills to develop value-adding products or services, and planning skills to achieve new venture viability and growth. This is important because entrepreneurs can increase their chances of success

by performing these and other entrepreneurial tasks at expert levels. In contrast, poor performance by entrepreneurs can result in business failure and missed opportunities.

However, and although the literature has already identified a wide range of skills that are relevant to entrepreneurs (such as the ones previously discussed; see Reis et al., 2021, for a recent review), there is scarce knowledge about which skills are associated with the identification and development of a business opportunity and the role of practice in this regard. A portion of the literature has emphasised entrepreneurial expertise as enhanced cognitive resources such as superior perception, intuition, and decision making (e.g. Baron and Henry, 2010; Markowska, 2018; Mitchell et al., 2000; Mitchell et al., 2008; Smith et al., 2009; Dew et al., 2015; Dew et al., 2018; Stambaugh and Mitchell, 2018). To a much lesser extent, however, the literature has examined entrepreneurial expertise as a set of skills associated with a new venture opportunity. This is important because identifying and developing opportunities are inherent to any new business venturing effort. This is implicit in models of entrepreneurial learning where developing a business opportunity is at the core of what new venture founders do, often repeatedly (e.g. Politis, 2005). Hence, entrepreneurs' skills in developing an opportunity in a new venture can be practiced and improved upon (Corbett, 2005). In this respect, this study speaks to the reproducibility of such skills within the same opportunity over time as well as across different opportunities. In the former case, entrepreneurs can develop an opportunity at increasingly higher levels of expertise and with an increasing likelihood of success. In the latter case, entrepreneurs can retrieve the skills learned from other instances and build upon them.

## *2.2. Deliberate Practice*

Originally introduced to explain why some individuals can reach and sustain high levels of performance above and beyond other factors such as experience (Ericsson et al., 1993), DP refers to practice aimed at increased performance in a given activity (Ericsson, 2006). A broad, accumulating body of evidence examining experiences versus expertise suggests that while experience allows individuals to perform satisfactorily in a state of 'arrested development', DP raises their performance to expert levels (Ericsson, 2006). Thus, this research challenges the notion of high performance as being primarily the result

of time spent on a given activity (stocks of experiences as the canon of entrepreneurship research has used). Rather, it proposes that higher levels of performance require DP.

Generally, for practice to be regarded as DP, it must involve the following: (1) activities must be amenable to repeated practice and target performance; (2) individuals must be motivated to improve their performance; (3) feedback on performance must be available (preferably from a trainer or teacher); (4) and the practice must gradually challenge the individual's current level of performance in a way that mastery can be achieved (Dew et al., 2018; Ericsson, 2006).

This article seeks to shed light on the extent to which entrepreneurs engage in DP in the identification and development of an opportunity. Theory implicitly tells us that entrepreneurs engage in DP to a lesser extent than professional athletes (Ford et al., 2009) or chess players (Hambrick et al., 2014) given the particularities of the context (Keith et al., 2016). Many of the tasks performed by entrepreneurs are idiosyncratic and thus are not amenable to repeated practice and target performance. Further, entrepreneurs may not always be able to prioritise the improvement of their knowledge and skills, particularly in the presence of urgent problems. It may also be difficult for entrepreneurs to seek feedback from others on their performance and to shape situations in a way that their knowledge and skills are honed towards mastery.

While acknowledging such particularities, this article argues that certain activities (such as identifying customer needs and developing value-adding solutions in the form of products and services) are inherent to the work of any entrepreneur and thus are amenable to DP. This is because all entrepreneurs need to consider the underlying needs and wants of their potential customers and how their products or services can add value in the marketplace, often multiple times within the same new business venturing effort. This has been captured in extant theoretical models where opportunity development is considered as an evolving, recursive process influenced by entrepreneurial action and learning (Clausen, 2020; Corbett, 2005; Dimov, 2020; Lynch and Corbett, in press).

While it may be comparatively more difficult for entrepreneurs to shape their work in a way that their skills are honed towards expertise, recent research shows that this is still possible and feasible (Dew et al., 2018; Keith et al., 2016; Ranabahu and Barrett, 2020; Stambaugh and Mitchell, 2018; Unger et al., 2009). However, an element missing from such studies is that they have not explicitly related DP to the ability of business

founders to identify and develop opportunities (defined here as entrepreneurial expertise). This study explicitly makes this connection and hypothesises that DP promotes entrepreneurial expertise among business founders. Following the argument that systematic differences in entrepreneurs' abilities are largely attributable to DP (Keith et al., 2016), a positive relationship between entrepreneurial expertise and DP is expected. Hence, the hypothesis of this study is as follows:

**H:** *Deliberate practice is positively associated with entrepreneurial expertise among business founders.*

### **3. Method**

#### *3.1. Sample and Data Sources*

The empirical context of this study consists of new venture founders working with their business ideas and seeking to transform them into successful opportunities. Data were collected through a survey designed specifically for this study. Prior to its final implementation, a pilot study was conducted to fine-tune the length and relevance of the questionnaire for entrepreneurs. After securing access to the entire population of new limited-liability firms incorporated in Norway in 2018 ( $n = 29,348$ ), a sample of 1,532 firms (those with email addresses) was drawn. An invitation was sent to these firms through the online survey software Questback, reaching 1,456 founders (76 did not receive the invitation because of, for instance, inactive email addresses). After three reminders, 147 completed surveys were received, which constitutes a response rate of 10.1%. Data cleaning reduced the sample to 135 completed surveys [1]. Potential non-response bias was analysed using register data over all firms in the population on initial financial capital and employment (firm size). This was done by comparing the sample of respondents to (i) other ventures in the population which did not receive the survey and (ii) ventures which received the survey but did not answer. No statistically significant differences between these groups on initial capital and employment were discovered.

The survey represents the primary source of data for this study. The reliance on self-reported data was necessary given that the constructs of interest to this article were not available through other means. The survey data were complemented with the management CVs of the entrepreneurs, obtained from the Norwegian National Business

Registry. Specifically, the gender of the entrepreneurs, the initial financial capital of the firm, and the firm size (employment) were obtained through the registry.

### 3.2. Measures

The variables of interest for this study were adapted from the extant entrepreneurship literature. Currently, no established measures perfectly capture the two key constructs being examined in the study (i.e. entrepreneurial expertise and DP). This is because the notions of DP and entrepreneurial expertise are under-explored in entrepreneurship research. The primary variables employed in the study showed convergent validity and a Cronbach's alpha above the recommended threshold of 0.70 (Hair et al., 2014). The only exception to this was social desirability, one of the control variables, but when the data analyses were run without this variable, the main finding of the study was unchanged. Information on how the constructs were articulated can be found in **Table 1**.

--- [Insert Table 1 here] ---

**Entrepreneurial expertise.** The scale for the dependent variable was adapted from Chandler and Hanks (1994), reflecting the expertise of business founders with respect to their ability to identify and develop an opportunity. The self-reported five items were measured on a seven-point Likert scale ranging from 'very low extent' to 'very high extent'. Example items include '*I can accurately perceive unmet consumer needs*' and '*I can develop products or services that provide real benefits for customers*'. Exploratory factor analysis showed that the items loaded on a single factor with an eigenvalue of 2.76 and variance explained of 55.1%. Cronbach's alpha is 0.78, above the recommended threshold of 0.70.

**Deliberate practice.** The scales from Keith et al. (2016) and Noe et al. (2013) were adapted to measure the independent variable of this study. The scale taps into entrepreneurs' DP with regard to their current venture and consists of five items (self-reported) on a seven-point Likert scale ranging from 'very little extent' to 'very high extent'. First, the respondents were primed to reflect on three activities that were key to the new venture. The reported activities revolved around the following: analysing customers and/or markets; developing the product(s) and/or service(s); and obtaining

resources for the new firm. Then the DP items were introduced, and the respondents were asked to rate the extent to which these were representative of their work. An example item is *'In order to deliberately improve myself as an entrepreneur, I have allocated time to develop my knowledge and/or skills'*. The items loaded on a single factor in exploratory factor analysis, with an eigenvalue of 3.03 and variance explained of 60.6%. Cronbach's alpha is 0.84.

**Control variables.** This study controls for several characteristics of the entrepreneur that may influence their expertise level: gender, educational level, prior start-up experience, and social desirability bias (SDB). The extant literature suggests that there may be gender differences with regard to venture performance (e.g. Fairlie and Robb, 2009) and that human capital (e.g. education and prior start-up experience) is a driver of entrepreneurship (e.g. Ramos-Rodríguez et al., 2010; Unger et al., 2011). Thus, the study controls for gender (registry data), educational level (survey question), and start-up experience (captured by the number of firms previously founded by the entrepreneur; survey question).

Further, to control for the likelihood of respondents portraying themselves in a socially desirable way, an adapted version of the Marlowe–Crowne SDB scale was employed (Rudmin, 1999). Readers should note that Cronbach's alpha for SDB is 0.65, which is slightly below the recommended threshold of 0.70 (Hair et al., 2014). Despite this, the variable was maintained in the correlation and regression analyses to account for SDB. These analyses were also run without the SDB variable, and the main finding of this study was unchanged.

Additionally, this study controls for market uncertainty, business similarity, and the amount of time the entrepreneur engaged in DP within the opportunity development process. The extant literature suggests that expertise is more easily attainable when there is stability around a given activity (e.g. Ericsson, 2006). Thus, an adapted version of the scale by Luca and Atuahene-Gima (2007) (four items; alpha = 0.78) was employed to measure market uncertainty. Example items include *'Customer's preferences are very uncertain'* and *'The competitive environment is very unpredictable'*. By the same token, an adapted version of the scale by Chandler and Jansen (1992) (seven items; alpha = 0.92) was employed to measure the similarity between the current venture and entrepreneurs' previous jobs and/or previous businesses. Lastly, the study captured the number of

months since the entrepreneur started working with the new venture idea (survey question) as this may be positively associated with the achievement of expertise.

In examining discriminant validity, factor analysis was run with the items from the following variables: entrepreneurial expertise, DP, market uncertainty, business similarity, and SDB. No problematic cross-loadings were observed.

#### 4. Results

The descriptive statistics and correlations are reported in **Table 2**. The average age of the respondents is 45 years; 63% percent of the respondents are male and 37% female. The most common educational degree of the respondents is bachelor ( $n = 51$ ), followed by master ( $n = 41$ ), secondary school ( $n = 33$ ), PhD ( $n = 7$ ), and primary school ( $n = 3$ ). Further, 40% of the respondents are novice entrepreneurs (those who had not started a firm prior to their current ventures), whereas 60% are serial entrepreneurs. The latter group had previously started, on average, 2.6 firms. Lastly, 44.6% of the respondents are solo entrepreneurs, and 55.4% are part of an entrepreneurial team. The size of the teams is, on average, 2.7 people.

--- [Insert Table 2 here] ---

Regression analysis was used to investigate the relationship between DP and entrepreneurial expertise among business founders. The results reported in **Table 3** show that DP is a significant predictor of expertise. Thus, the **hypothesis** of this study (i.e. *DP is positively associated with entrepreneurial expertise among business founders*) is supported. The standardised regression coefficient between DP and entrepreneurial expertise is 0.311 ( $p < 0.01$ ), with the other variables held constant.

--- [Insert Table 3 here] ---

This study found empirical support for the relationship between DP and entrepreneurial expertise beyond several control variables: gender, education, prior start-up experience, SDB, market uncertainty, business similarity, and the time the entrepreneur engaged in DP. For the control variables, the study found that gender ( $r =$

-0.017;  $p > 0.10$ ) and educational level ( $r = -0.037$ ;  $p > 0.10$ ) are not significantly related to expertise. Additionally, market uncertainty ( $r = -0.133$ ;  $p > 0.10$ ) and business similarity ( $r = -0.003$ ;  $p > 0.10$ ) are not significantly associated with entrepreneurial expertise; neither is the amount of time the entrepreneur engaged in DP ( $r = 0.090$ ;  $p > 0.10$ ). On the other hand, the study found that prior start-up experience is positively and significantly associated with entrepreneurial expertise ( $r = 0.199$ ;  $p < 0.05$ ). Lastly, SDB ( $r = 0.325$ ;  $p < 0.01$ ) is strongly related to expertise. Readers should again note the reliability and convergent validity issues of the SDB variable. Despite these issues, such a result points to the importance of controlling for the likelihood of respondents portraying themselves in a positive light. This is an important insight to consider in other survey-based studies in the entrepreneurship field.

The regression model explains 28.6% of the variance in the dependent variable entrepreneurial expertise, and the F-test is statistically significant ( $p < 0.01$ ). Potential issues with multicollinearity were analysed using the variance inflation factor (VIF). Multicollinearity can be a problem when the VIF statistics are higher than 10 or when the tolerance levels are below 0.2 (Bowerman and O'Connell, 1990). The VIF statistics are all close to 1 and their tolerance levels substantially above 0.2, which indicates that multicollinearity is not a problem in this study. Further, we confirmed that the observed residuals were approximately normally distributed, and we also verified that our sample has sufficient power using the procedures described by Field (2012, p. 313–314).

In analysing potential issues with common-method variance, Harman's (1967) single-factor test with unrotated principal axis factoring was employed. The results showed that one factor accounted for 19.9% of the variance. Further, common-method variance was controlled for at the scale level through the inclusion of SDB as a covariate (Hulland et al., 2018). These results, in combination, indicate that it is unlikely for common-method bias to be a problem in the study.

## **5. Discussion**

This study has found a positive relationship between DP and entrepreneurial expertise among business founders. A series of interconnected discussion points and contributions follow from this research.

The article contributes an improved understanding of DP and expertise in the entrepreneurship context, as explained next. The results allow for the connection of two key insights from the extant literature: the understanding of entrepreneurs' learning as an experiential process (e.g. Corbett, 2005, 2007; Politis, 2005) and the importance of DP in the achievement of expertise (e.g. Ericsson, 2006; Unger et al., 2009; Keith et al., 2016). The article highlights DP as a particularly salient learning mode which enhances entrepreneurs' expertise. Supported by empirical evidence, the article suggests that the more entrepreneurs engage in DP in a new venture, the more they achieve entrepreneurial expertise. This corroborates the prior theorising of Teague and Gartner, who argue, 'Deliberate practice is the ideal form of practice for achieving expert performance' (in press). Additionally, our results are aligned with foundational psychology research in that entrepreneurial expertise requires DP and is more than just accumulated experience. This is important because engagement in DP can promote opportunity development at increasingly higher levels of expertise, which has implications for new venture success. As such, this article responds to calls for more research on the specific types of learning that entrepreneurs engage with and on the outcomes of their learning (Wang and Chugh, 2014). In this respect, the article emphasises DP as a predominant learning mode for entrepreneurs and as a driver of expertise. Consequently, the study complements existing conceptual models of entrepreneurial learning, in particular that of Politis (2005). Further, the article has argued for the existence of structurally common features to all efforts of opportunity identification and development, namely the specification of customer needs and the development of solutions in the form of products or services. Such features have been proposed as the object of expertise and practice for entrepreneurs. The results also allow for the interpretation that DP and expertise can be beneficial for the development of a new venture. While entrepreneurship inherently involves uncertainty (Campbell, 2021), luck (Coad et al., 2014), and other characteristics under little or no control by business founders, the results suggest the presence of skills that can be practiced upon, refined to expert levels, and applied within and across new venture efforts.

Relatedly, the article extends the literature on the role of learning in opportunity development (e.g. Corbett, 2005; Snihur et al., 2017). This literature shows that entrepreneurs have important learning experiences when they, for instance, discuss and 'pitch' their ideas with family, friends, customers, etc. (Wood and McKinley, 2010).

These learning experiences act as an input to subsequent opportunity development, which illustrates the recursive nature of the opportunity development process (Clausen, 2020; Dimov, 2020). This study adds an important nuance to this literature as it shows that entrepreneurs not only learn through experiences (McCann and Vroom, 2015) but also acquire entrepreneurial expertise by engaging in DP. Thus, this study suggests that engagement in DP potentially leads to divergent paths of opportunity development. Whereas engagement in DP promotes opportunity development at increasingly higher levels of expertise, entrepreneurs not engaging in it may find it increasingly hard to push their opportunity forward. Thus, the extent to which entrepreneurs can mould their experiences into expertise represents different starting points for subsequent opportunity development. An implication is that the willingness of entrepreneurs to engage in DP will lead to divergent paths of opportunity development, which has important consequences for how much entrepreneurs can develop an opportunity into a profitable venture offering.

Entrepreneurs engaging in DP may not only develop an opportunity at increasingly higher levels of expertise but also improve their likelihood of success. In addition, while the risk of failure is always present in entrepreneurship, founders who perform the tasks associated with a new venture opportunity proficiently are at an advantageous position. Although skill may not be the most important determinant of new venture success, entrepreneurs striving for proficiency in opportunity development can tip the chances of success in their favour.

## **6. Conclusion**

### *6.1. Theoretical Implications*

This article has posed the following question: *to what extent does DP influence the formation of entrepreneurial expertise among business founders?* The results show that DP is a positive and significant predictor of entrepreneurial expertise. This study is one of the first to examine entrepreneurial expertise as a set of skills associated with the development of an opportunity. Consequently, this study sheds light on how DP and expertise can contribute to the development of a new venture opportunity. This is important because opportunity development represents a key activity in new business venturing.

In addition, this study has implications for the entrepreneurial learning literature by engaging with the notion that entrepreneurs learn by transforming experiences into knowledge (i.e. experiential learning). Politis (2005) rightfully asserted that the mere accumulation of experiences by the entrepreneur is not sufficient for the development of knowledge and that something must be done with the experience for it to be transformed into knowledge. Further, Politis claimed that learning represents the link between entrepreneurs' experiences and knowledge. This study – having found empirical support for the contributing role of DP in the development of entrepreneurial expertise while controlling for entrepreneurs' start-up experience – suggests that DP is important for entrepreneurs' experiential learning.

New venture founders strive to perform successfully in entrepreneurial tasks. The significance of DP for entrepreneurs' performance has received limited attention. In addressing this issue, this study has found a positive association between DP and entrepreneurial expertise among new venture founders.

## *6.2. Practical Implications*

This research has practical implications for both practicing entrepreneurs and educators. The findings can motivate entrepreneurs and aspiring entrepreneurs to augment their skills and abilities with a need to take deliberate action to assist them in building their nascent ventures. For educators, whether they are traditional faculty or those working in accelerators or incubators, this article highlights a need to build the concept of DP into their programs.

Entrepreneurs need to understand the importance of DP and its links to expertise development and the start-up success. DP not only adds to an entrepreneur's knowledge and skills but also changes how one thinks about the domain in which one works (Ericsson, 2006). Baron and Henry (2010) noted that excelling as an entrepreneur does not come from only those who might be uniquely suited to starting a business or those who might be especially talented. Their research tells us that

*“... innate talents or aptitudes are far less crucial in attaining unusually high levels of performance than diligent and persistent application of the basic principles of DP. This suggests that high levels of performance on many tasks can be attained by anyone willing to apply these principles to*

*their own efforts to break free of performance plateaus.* (Baron and Henry, 2010, p. 63)

This article should buoy nascent entrepreneurs with the knowledge that a level of expertise in finding and developing entrepreneurial opportunities can come through DP. Talent will only get aspiring entrepreneurs so far, but combining these assets with DP can lead them to a higher level of entrepreneurial expertise.

For too long, entrepreneurship education has suffered from courses and programs that focus on short-term, subjective impact measures such as entrepreneurial intentions as opposed to action that leads to actual business start-ups (Henry et al., 2005; Nabi, 2017; Pittaway and Cope, 2007). This research on the important link between DP and the development of entrepreneurial expertise provides part of a blueprint for educators by answering the call for more studies that can inform how educators can make the transition from ‘intention to behavior’ in their classroom (Nabi et al., 2017). The findings should help educators move from ‘old school’ approaches to entrepreneurship education (Neck and Corbett, 2017) to more action-based instructional approaches that can move students toward actually starting and developing businesses.

### *6.3. Limitations and Future Research Directions*

As with any empirical research, this study has limitations. An issue of importance not captured in this study is whether and how entrepreneurial teams coordinate their learning. Although the lead entrepreneur plays a central role in a new venture, firms are often started by teams. In this respect, we should improve our understanding of how learning is distributed among team members and how entrepreneurial team cognition (West, 2007) can lead to a ‘shared’ expertise in a new venture. Related research suggests that team-level learning can facilitate the building of organisational routines in a new venture (El-Awad et al., 2017), the effectiveness of new venture teams (Steira and Steinmo, 2021), and new product development performance (Wang et al., 2021). Additionally, studies that clarify how new ventures access external expertise (Viljamaa, 2011), complementing their internally available expertise, would be an interesting addition to this research.

Moreover, while this study has focused on the ability of business founders to identify and develop an opportunity, other competences may be important for entrepreneurs: awareness of when it is necessary to supplement deficiencies in one’s knowledge

(Johanna and Van der Heijden, 2000); the ability to perceive, use, understand, and regulate emotions (Pathak and Goltz, 2021); and entrepreneurial meta-competences such as leadership and communication (Reis et al., 2021). A key challenge for future research is, therefore, to sort out the significance of different kinds of expertise for the development and success of a new venture.

Further, the authors acknowledge that a cross-sectional research design is not optimal for the investigation of the DP–expertise relationship. To mitigate the issue, the hypothesis of this study has been grounded in theory, and the results have been analysed accordingly. Future studies using longitudinal designs would be an interesting complement to this article. These would help clarify the extent, duration, and timing of entrepreneurs' DP and help determine its effect on entrepreneurial expertise. Also, the self-reported measures of DP and entrepreneurial expertise may not be a perfect representation of the learning and ability of entrepreneurs with regard to opportunity identification and development. Still, they are appropriate given the nature of this study and the nascent stage of development of this line of inquiry in the entrepreneurship context. Future efforts in refining the measures and in developing new scales are timely.

Lastly, this study has used a sample of founders of limited-liability firms incorporated in Norway in 2018, and as such, the results may not hold in all contexts. However, in support of the generalisability of this work, previous related research has found that entrepreneurs use similar expert scripts regardless of their country of origin (Mitchell et al., 2002).

To conclude, this article has provided empirical evidence linking DP to the achievement of entrepreneurial expertise. Thus, it has contributed with an improved understanding of DP and expertise in the entrepreneurship context, a topic lacking conceptual development and empirical examination.

## Notes

[1] This study defines entrepreneurs as business (co-)founders and/or owners. When it was not possible to confirm whether the respondent was, in fact, the (co-)founder and/or owner of the new venture, the case was excluded. Twelve cases were excluded from the dataset for this reason.

## References

- Appelhoff, D., Mauer, R., Collewaert, V. and Brettel, M. (2016), "The conflict potential of the entrepreneur's decision-making style in the entrepreneur-investor relationship", *International Entrepreneurship and Management Journal*, Vol. 12 No. 2, pp. 601-623. <https://doi.org/10.1007/s11365-015-0357-4>
- Arend, R.J., Sarooghi, H. and Burkemper, A. (2015), "Effectuation as ineffectual? Applying the 3E theory-assessment framework to a proposed new theory of entrepreneurship", *Academy of Management Review*, Vol. 40 No. 4, pp. 630-651. <https://doi.org/10.5465/amr.2014.0455>.
- Baron, R.A. and Henry, R.A. (2010), "How entrepreneurs acquire the capacity to excel: Insights from research on expert performance", *Strategic Management Journal*, Vol. 4 No. 1, pp. 49-65. <https://doi.org/10.1002/sej.82>.
- Bowerman, B.L., and O'Connell, R.T. (1990), "*Linear statistical models: An applied approach*", Duxbury Press, Belmont, CA.
- Campbell, B. (2021), "Entrepreneurial uncertainty in context: an ethnomethodological perspective", *International Journal of Entrepreneurial Behavior & Research*, Vol. 27 No. 3, pp. 648-667. <https://doi.org/10.1108/IJEER-10-2018-0627>.
- Capelleras, J.L., Greene, F.J., Kantis, H. and Rabetino, R. (2010), "Venture creation speed and subsequent growth: Evidence from South America", *Journal of Small Business Management.*, Vol. 48 No. 3, pp. 302-324. <https://doi.org/10.1111/j.1540-627X.2010.00296.x>
- Cassar, G. (2014), "Industry and startup experience on entrepreneur forecast performance in new firms", *Journal of Business Venturing*, Vol. 29 No. 1, pp. 137-151. <https://doi.org/10.1016/j.jbusvent.2012.10.002>.
- Coad, A., Frankish, J.S., Nightingale, P. and Roberts, R.G. (2014), "Business experience and start-up size: Buying more lottery tickets next time around?", *Small Business Economics*, Vol. 43 No. 3, pp. 529-547. <https://doi.org/10.1007/s11187-014-9568-2>.
- Chandler, G.N. and Hanks, S.H. (1994), "Founder competence, the environment, and venture performance", *Entrepreneurship Theory and Practice*, Vol. 18 No. 3, pp. 77-89. <https://doi.org/10.1177/104225879401800306>.

- Chandler, G.N. and Jansen, E. (1992), "The founder's self-assessed competence and venture performance", *Journal of Business Venturing*, Vol. 7 No. 3, pp. 223-236. [https://doi.org/10.1016/0883-9026\(92\)90028-P](https://doi.org/10.1016/0883-9026(92)90028-P).
- Clausen, T.H. (2019), "Guest editorial", *The Learning Organization*, Vol. 26 No. 6, pp. 553-559. <https://doi.org/10.1108/TLO-09-2019-239>.
- Clausen, T.H. (2020), "Entrepreneurial thinking and action in opportunity development: A conceptual process model", *International Small Business Journal*, Vol. 38 No. 1, pp. 21-40. <https://doi.org/10.1177/0266242619872883>.
- Clausen, T.H. and Korneliussen, T. (2012), "The relationship between entrepreneurial orientation and speed to the market: The case of incubator firms in Norway", *Technovation*, Vol. 32 No. 9/10, pp. 560-567. <https://doi.org/10.1016/j.technovation.2012.05.004>
- Corbett, A.C. (2005), "Experiential learning within the process of opportunity identification and exploitation", *Entrepreneurship Theory and Practice*, Vol. 29 No. 4, pp. 473-491. <https://doi.org/10.1111/j.1540-6520.2005.00094.x>.
- Corbett, A.C. (2007), "Learning asymmetries and the discovery of entrepreneurial opportunities", *Journal of Business Venturing*, Vol. 22 No. 1, pp. 97-118. <https://doi.org/10.1016/j.jbusvent.2005.10.001>.
- Dew, N., Ramesh, A., Read, S., Sarasvathy, S.D. and Virginia, V. (2018), "Toward Deliberate Practice in the Development of Entrepreneurial Expertise: The Anatomy of the Effectual Ask", Ericsson, K.A., Hoffman, R.R. and Kozbelt, A. (Eds.), *The Cambridge Handbook of Expertise and Expert Performance*, Cambridge University Press, Cambridge, UK, pp. 389-412.
- Dew, N., Read, S., Sarasvathy, S.D. and Wiltbank, R. (2015), "Entrepreneurial expertise and the use of control", *Journal of Business Venturing Insights*, Vol. 4, pp. 30-37. <https://doi.org/10.1016/j.jbvi.2015.09.001>
- Dimov, D. (2020), "Opportunities, language, and time", *Academy of Management Perspectives*, Vol. 34 No. 3, pp. 333-351. <https://doi.org/10.5465/amp.2017.0135>.
- El-Awad, Z., Gabrielsson, J. and Politis, D. (2017), "Entrepreneurial learning and innovation: The critical role of team-level learning for the evolution of innovation capabilities in technology-based ventures", *International Journal of Entrepreneurial*

*Behavior & Research*, Vol. 23 No. 3, pp. 381-405. <https://doi.org/10.1108/IJEBR-06-2016-0177>.

Ericsson, K.A. (2006), *The Cambridge Handbook of Expertise and Expert Performance*, Cambridge University Press, Cambridge, UK.

Ericsson, K.A., Krampe, R.T. and Tesch-Römer, C. (1993), “The role of deliberate practice in the acquisition of expert performance”, *Psychological review*, Vol. 100 No. 3, pp. 363-406. <https://psycnet.apa.org/doi/10.1037/0033-295X.100.3.363>.

Fairlie, R.W. and Robb, A.M. (2009), “Gender differences in business performance: Evidence from the Characteristics of Business Owners survey”, *Small Business Economics*, Vol. 33 No. 4, pp. 375–395. <https://doi.org/10.1007/s11187-009-9207-5>.

Field, A. (2012), *Discovering statistics using IBM SPSS statistics*. Sage Publications, London, UK.

Ford, P.R., Ward, P., Hodges, N.J. and Williams, A.M. (2009), “The role of deliberate practice and play in career progression in sport: the early engagement hypothesis”, *High Ability Studies*, Vol. 20 No. 1, pp. 65-75. <https://doi.org/10.1080/13598130902860721>.

Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2014), *Multivariate Data Analysis: Pearson New International Edition*, Pearson Higher Education, Upper Saddle River, NJ.

Hambrick, D.Z., Oswald, F.L., Altmann, E.M., Meinz, E.J., Gobet, F. and Campitelli, G. (2014), “Deliberate practice: Is that all it takes to become an expert?”, *Intelligence*, Vol. 45, pp. 34-45. <https://doi.org/10.1016/j.intell.2013.04.001>.

Haneberg, D.H. and Aaboen, L. (2021), "Entrepreneurial learning behaviour of community insiders", *International Journal of Entrepreneurial Behavior & Research*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/IJEBR-04-2020-0255>.

Harman, H.H. (1967), *Modern factor analysis*, University of Chicago Press, Chicago, IL.

Henry, C., Hill, F.M. and Leitch, C.M. (2005), “Entrepreneurship education and training: Can entrepreneurship be taught?”, *Education + Training*, Vol. 47 No. 2, pp. 98–111. <https://doi.org/10.1108/00400910510586524>.

- Hulland, J., Baumgartner, H. and Smith, K.M. (2018), "Marketing survey research best practices: evidence and recommendations from a review of JAMS articles", *Journal of the Academy of Marketing Science*, Vol. 46 No. 1, pp. 92-108. <https://doi.org/10.1007/s11747-017-0532-y>.
- Johanna, B.I. and Van der Heijden, M. (2000), "The development and psychometric evaluation of a multidimensional measurement instrument of professional expertise", *High Ability Studies*, Vol. 11 No. 1, pp. 9-39. <https://doi.org/10.1080/713669175>.
- Keith, N., Unger, J.M., Rauch, A. and Frese, M. (2016), "Informal learning and entrepreneurial success: a longitudinal study of deliberate practice among small business owners", *Journal of Applied Psychology*, Vol. 65 No. 3, pp. 515-540. <https://doi.org/10.1111/apps.12054>.
- Kuckertz, A., Brändle, L., Gaudig, A., Hinderer, S., Reyes, C.A.M., Prochotta, A., Steinbrink, K.M. and Berger, E.S.C. (2020), "Startups in times of crisis—A rapid response to the COVID-19 pandemic", *Journal of Business Venturing Insights*, Vol. 13, e00169, <https://doi.org/10.1016/j.jbvi.2020.e00169>.
- Lim, D.S., Morse, E.A., Mitchell, R.K. and Seawright, K.K. (2010), "Institutional environment and entrepreneurial cognitions: A comparative business systems perspective", *Entrepreneurship Theory and Practice*, Vol. 34 No. 3, pp. 491-516. <https://doi.org/10.1111/j.1540-6520.2010.00384.x>
- Liñán, F. and Jaén, I. (2020), "The Covid-19 pandemic and entrepreneurship: some reflections", *International Journal of Emerging Markets*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/IJOEM-05-2020-0491>.
- Luca, L.M.D. and Atuahene-Gima, K. (2007), "Market knowledge dimensions and crossfunctional collaboration: Examining the different routes to product innovation performance", *Journal of Marketing*, Vol. 71 No. 1, pp. 95-112. <https://doi.org/10.1509/jmkg.71.1.095>.
- Lynch, M.P. and Corbett, A.C. (in press), "Entrepreneurial mindset shift and the role of cycles of learning", *Journal of Small Business Management*. <https://doi.org/10.1080/00472778.2021.1924381>.
- Markowska, M. (2018), "The role of action-control beliefs in developing entrepreneurial expertise", *Journal of Small Business and Enterprise Development*, Vol. 25 No. 2, pp. 222-240. <https://doi.org/10.1108/JSBED-05-2017-0180>.

- Martin, B.C., McNally, J.J. and Kay, M.J. (2013), "Examining the formation of human capital in entrepreneurship: A meta-analysis of entrepreneurship education outcomes", *Journal of Business Venturing*, Vol. 28 No. 2, pp. 211-224. <https://doi.org/10.1016/j.jbusvent.2012.03.002>.
- Marvel, M.R., Davis, J.L. and Sproul, C.R. (2016), "Human capital and entrepreneurship research: A critical review and future directions", *Entrepreneurship Theory and Practice*, Vol. 40 No. 3, pp. 599-626. <https://doi.org/10.1111/etap.12136>.
- McCann, B.T. and Vroom, G. (2015), "Opportunity evaluation and changing beliefs during the nascent entrepreneurial process", *International Small Business Journal*, Vol. 33 No. 6, pp. 612-637. <https://doi.org/10.1177/0266242614544198>.
- McKelvie, A., Haynie, J.M. and Gustavsson, V. (2011), "Unpacking the uncertainty construct: Implications for entrepreneurial action", *Journal of Business Venturing*, Vol. 26 No. 3, pp. 273-292. <https://doi.org/10.1016/j.jbusvent.2009.10.004>.
- Minniti, M. and Bygrave, W. (2001), "A dynamic model of entrepreneurial learning", *Entrepreneurship Theory and Practice*, Vol. 25 No. 3, pp. 5-16. <https://doi.org/10.1177/104225870102500301>
- Mitchell, R.K., Mitchell, J.R. and Smith, J.B. (2008), "Inside opportunity formation: Enterprise failure, cognition, and the creation of opportunities", *Strategic Entrepreneurship Journal*, Vol. 2 No. 3, pp. 225-242. <https://doi.org/10.1002/sej.51>.
- Mitchell, R.K., Smith, B., Seawright, K.W. and Morse, E.A. (2000), "Cross-cultural cognitions and the venture creation decision", *Academy of Management Journal*, Vol. 43 No. 5, pp. 974-993. <https://doi.org/10.5465/1556422>.
- Mitchell, R.K., Smith, J.B., Morse, E.A., Seawright, K.W., Peredo, A.M. and McKenzie, B. (2002), "Are entrepreneurial cognitions universal? Assessing entrepreneurial cognitions across cultures", *Entrepreneurship Theory and Practice*, Vol. 26 No. 4, pp. 9-32. <https://doi.org/10.1177/104225870202600402>.
- Morris, M.H., Kuratko, D.F., Schindehutte, M. and Spivack, A.J. (2012), "Framing the entrepreneurial experience", *Entrepreneurship Theory and Practice*, Vol. 36 No. 1, pp. 11-40. <https://doi.org/10.1111/j.1540-6520.2011.00471.x>.
- Nabi, G., Linan, F., Fayolle, A., Krueger, N. and Wamsley, A. (2017), "The impact of entrepreneurship education in higher education: A systematic review and research

- agenda”, *Academy of Management Learning & Education*, Vol. 16 No. 2, pp. 277-299. <https://doi.org/10.5465/amle.2015.0026>
- Neck, H.M. and Corbett A.C. (2017), “The scholarship of teaching and learning entrepreneurship”, *Entrepreneurship Education & Pedagogy*, Vol. 1 No. 1, pp. 8-41. <https://doi.org/10.1177/2515127417737286>.
- Noe, R.A., Tews, M.J. and Marand, A.D. (2013), “Individual differences and informal learning in the workplace”, *Journal of Vocational Behavior*, Vol. 83 No. 3, pp. 327-335. <https://doi.org/10.1016/j.jvb.2013.06.009>.
- Nogueira, T.F. (2019), “Entrepreneurial learning: what do we mean by it?”, *The Learning Organization*, Vol. 26 No. 6, pp. 560-573. <https://doi.org/10.1108/TLO-04-2018-0067>.
- Paik, Y. (2014), “Serial Entrepreneurs and Venture Survival: Evidence from U.S. Venture-Capital-Financed Semiconductor Firms”, *Strategic Entrepreneurship Journal*, Vol. 8 No. 3, pp. 254-268. <https://doi.org/10.1002/sej.1161>.
- Pathak, S. and Goltz, S. (2021), "An emotional intelligence model of entrepreneurial coping strategies", *International Journal of Entrepreneurial Behavior & Research*, Vol. 27 No. 4, pp. 911-943. <https://doi.org/10.1108/IJEBR-01-2020-0017>.
- Pittaway, L. and Cope, J. (2007), “Entrepreneurship education a systematic review of the evidence”, *International Small Business Journal*, Vol. 25 No. 5, pp. 479–510. <https://doi.org/10.1177/0266242607080656>.
- Politis, D. (2005), “The process of entrepreneurial learning: A conceptual framework”, *Entrepreneurship Theory and Practice*, Vol. 29 No. 4, pp. 399-424. <https://doi.org/10.1111/j.1540-6520.2005.00091.x>.
- Ramos-Rodríguez, A.R., Medina-Garrido, J.A., Lorenzo-Gómez, J.D. and Ruiz-Navarro, J. (2010), “What you know or who you know? The role of intellectual and social capital in opportunity recognition”, *International Small Business Journal*, Vol. 28 No. 6, pp. 566–582. <https://doi.org/10.1177/0266242610369753>.
- Ranabahu, N. and Barrett, M. (2020), “Does practice make micro-entrepreneurs perfect? An investigation of expertise acquisition using effectuation and causation”, *Small Business Economics*, Vol. 54, pp. 883–905. <https://doi.org/10.1007/s11187-019-00157-6>.

- Ravasi, D. and Turati, C. (2005), "Exploring entrepreneurial learning: a comparative study of technology development projects", *Journal of Business Venturing*, Vol. 20 No. 1, pp. 137-164. <https://doi.org/10.1016/j.jbusvent.2003.11.002>.
- Reis, D.A., Fleury, A.L. and Carvalho, M.M. (2021), "Consolidating core entrepreneurial competences: toward a meta-competence framework", *International Journal of Entrepreneurial Behavior & Research*, Vol. 27 No. 1, pp. 179-204. <https://doi.org/10.1108/IJEER-02-2020-0079>.
- Reuber, A.R. and Fischer, E. (1999), "Understanding the consequences of founders' experience", *Journal of Small Business Management*, Vol. 37 No. 2, pp. 30-45.
- Rudmin, F.W. (1999), "Norwegian short-form of the Marlowe-Crowne Social Desirability Scale", *Scandinavian Journal of Psychology*, Vol. 40 No. 3, pp. 229-233. <https://doi.org/10.1111/1467-9450.00121>.
- Sarasvathy, S.D. (2009), *Effectuation: Elements of entrepreneurial expertise*, Edward Elgar Publishing, Cheltenham, UK.
- Smith, J.B., Mitchell, J.R. and Mitchell, R.K. (2009), "Entrepreneurial scripts and the new transaction commitment mindset: Extending the expert information processing theory approach to entrepreneurial cognition research", *Entrepreneurship Theory and Practice*, Vol. 33 No. 4, pp. 815-844. <https://doi.org/10.1111/j.1540-6520.2009.00328.x>.
- Snihur, Y., Reiche, B.S. and Quintane, E. (2017), "Sustaining actor engagement during the opportunity development process", *Strategic Entrepreneurship Journal*, Vol. 11 No. 1, pp. 1–17. <https://doi.org/10.1002/sej.1233>.
- Stambaugh, J. and Mitchell, R. (2018), "The fight is the coach: creating expertise during the fight to avoid entrepreneurial failure", *International Journal of Entrepreneurial Behavior & Research*, Vol. 24 No. 5, pp. 994-1015. <https://doi.org/10.1108/IJEER-09-2016-0287>.
- Steira, I.M. and Steinmo, M. (2021), "The development of effective new venture teams in venture creation programmes", *International Journal of Entrepreneurial Behavior & Research*, Vol. 27 No. 5, pp. 1116-1141. <https://doi.org/10.1108/IJEER-09-2020-0664>.
- Teague, B.T. and Gartner, W.B. (in press), "An Expertise Approach to Entrepreneurship Education", Corbett, A.C., Marino, L.D. and Alsos, G.A. (Eds.), *Research on*

*Entrepreneurship Education: Evolution and Future*, Emerald Publishing, Bingley, UK.

- Teague, B.T. and Gartner, W.B. (2020), "Expert skills: implications for studying the behavior of entrepreneurs", Gartner, W.B. and Teague, B.T. (Eds.), *Research Handbook on Entrepreneurial Behavior, Practice, and Process*, Edward Elgar Publishing Limited, Cheltenham, UK.
- Unger, J.M., Keith, N., Hilling, C., Gielnik, M.M. and Frese, M. (2009), "Deliberate practice among South African small business owners: Relationships with education, cognitive ability, knowledge, and success", *Journal of Occupational and Organizational Psychology*, Vol. 82 No. 1, pp. 21-44. <https://doi.org/10.1348/096317908X304361>.
- Unger, J.M., Rauch, A., Frese, M. and Rosenbusch, N. (2011), "Human capital and entrepreneurial success: A meta-analytical review", *Journal of Business Venturing*, Vol. 26 No. 3, pp. 341-358. <https://doi.org/10.1016/j.jbusvent.2009.09.004>.
- Van Gelderen, M., Van de Sluis, L. and Jansen, P. (2005), "Learning opportunities and learning behaviours of small business starters: relations with goal achievement, skill development and satisfaction", *Small Business Economics*, Vol. 25 No. 1, pp. 97-108. <https://doi.org/10.1007/s11187-005-4260-1>.
- Viljamaa, A. (2011), "Exploring small manufacturing firms' process of accessing external expertise", *International Small Business Journal*, Vol. 29 No. 5, pp. 472-488. <https://doi.org/10.1177/0266242610390595>.
- Wang, C.L. and Chugh, H. (2014), "Entrepreneurial learning: past research and future challenges", *International Journal of Management Reviews*, Vol. 16 No. 1, pp. 24-61. <https://doi.org/10.1111/ijmr.12007>.
- Wang, X., Yu, X. and Meng, X. (2021), "Entrepreneurial Bricolage and New Product Development Performance in New Ventures: The Contingent Effects of Founding Team Involvement", *Entrepreneurship Research Journal*, Vol. ahead-of-print No. ahead-of-print, pp. 1-27. <https://doi.org/10.1515/erj-2020-0485>.
- West, G.P. (2007), "Collective cognition: When entrepreneurial teams, not individuals make decisions", *Entrepreneurship Theory and Practice*, Vol. 31 No. 1, pp. 77-102. <https://doi.org/10.1111/j.1540-6520.2007.00164.x>.

Westhead, P., Ucbasaran, D. and Wright, M. (2005), “Decisions, actions, and performance: do novice, serial, and portfolio entrepreneurs differ?”, *Journal of Small Business Management*, Vol. 43 No. 4, pp. 393-417. <https://doi.org/10.1111/j.1540-627X.2005.00144.x>.

Wood, M.S., McKinley, W. (2018), “The entrepreneurial opportunity construct: Dislodge or leverage?”, *Academy of Management Perspectives*, Vol. 34 No. 3, pp. 352-365. <https://doi.org/10.5465/amp.2017.0162>.

**Table 1. Measures**

<b>Construct</b>	<b>Item</b>		<b>Cronbach's alpha</b>
Social Desirability Bias (Rudmin, 1999)	1	No matter who I'm talking to, I'm always a good listener.	0.65
	2	When I don't know something, I don't at all mind admitting it.	
	3	I never resent being asked to return a favor.	
	4	I have never felt the urge to tell someone off.	
	5	I have never deliberately said something that hurt someone's feelings.	
Market Uncertainty (Luca and Atuahene-Gima, 2007)	1	Customers' needs change quite rapidly.	0.78
	2	Customers' preferences are highly uncertain.	
	3	It is difficult to predict changes in customers' needs and preferences.	
	4	Market competitive conditions are highly unpredictable.	
Business Similarity (Chandler and Jansen, 1992)		How similar is this company compared to your previous jobs and/or previous companies?	0.92
	1	Product or service	
	2	Customers	
	3	Suppliers	
	4	Competitors	
	5	Technology	
	6	Knowledge and skills	
7	Tasks performed		
Deliberate Practice (Keith et al., 2016; Noe et al., 2013)		In order to deliberately improve myself as an entrepreneur...	0.84
	1	...I have reflected about how I can increase my performance level.	
	2	...I have experimented with new ways of performing my work.	
	3	...I have allocated time to develop my knowledge and/or skills.	
	4	...I have identified and worked on my shortcomings.	
5	...I have searched for activities that are challenging.		
Entrepreneurial Expertise (Chandler and Hanks, 1994)	1	I can accurately perceive unmet consumer needs.	0.78
	2	I can develop products or services that provide real benefits for customers.	
	3	One of my greatest strengths is identifying goods and services that people want.	
	4	I am very competent in seizing high-quality business opportunities.	
	5	One of my greatest strengths is my ability to develop products or services that are technically superior.	

**Table 2. Descriptive statistics and correlation matrix**

	Mean	SD	1	2	3	4	5	6	7	8	9
1. Gender (0=female; 1=male)	.63	.49	1								
2. Education	3.12	.92	.016	1							
3. Start-up Experience	1.55	2.03	.202*	.076	1						
4. Social Desirability Bias	5.20	1.04	.003	-.070	-.027	1					
5. Market Uncertainty	3.84	1.28	.047	.026	.150	-.175*	1				
6. Business Similarity	4.47	1.77	.025	-.050	-.035	-.074	.036	1			
7. Months since business idea	19.38	12.24	.031	.009	.232**	.067	.151	.069	1		
8. Deliberate Practice	5.20	1.19	-.061	.004	-.090	.138	.084	-.286**	-.074	1	
9. Entrepreneurial Expertise	4.99	.92	-.011	-.047	.150	.403**	-.135	-.108	.098	.329**	1

\* $p < 0.05$ ; \*\* $p < 0.01$ .

**Table 3. Antecedents of entrepreneurial expertise**

	Std. beta
Gender	-.017
Education	-.037
Start-up experience	.199*
Social desirability bias	.325**
Market uncertainty	-.133
Business similarity	-.003
Months since business idea	.090
Deliberate Practice	.311**
R2	28.6%
F	6.052**

\* $p < 0.05$ ; \*\* $p < 0.01$ .