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The Relationship between Prior Business Ownership Experience and Opportunity Identification: The Role of Cognitive Styles

Abstract

Purpose: This study uses the human capital approach and the entrepreneurial cognitive approach to investigate the relationship between business ownership experience and opportunity identification. Additionally, it considers the mediating role of cognitive styles.

Study design/methodology/approach: The hypotheses were tested using path analysis, which included the examination of mediation.

Sample and data: A questionnaire was used to collect data from 294 Egyptian entrepreneurs.

Results: The findings suggest an association between business ownership experience and, analytical style and opportunity identification. The paper also found an association between the analytical style and the number of opportunities. Both intuitive and analytical styles are associated with the innovativeness of opportunities. Furthermore, this study revealed that analytical thinking only partially explains the relationship between business ownership experience and opportunity identification.

Originality/value: This study's value lies in testing the relationship between business ownership experience and opportunity identification in a new context, using a sample of Egyptian entrepreneurs. It also offers a relatively unexplored perspective on the relationship between business ownership experience and opportunity identification. Additionally, the findings challenge the common assumption that prior experience is a source of intuition. The study revealed that experienced entrepreneurs prefer analysis to enhance their ability to identify opportunities.

Research limitations/implications: This research's insights are somewhat limited due to using a non-probability sample. The paper examined entrepreneurs' cognitive styles without exploring their actual use of intuition and analysis. Despite these limitations, this paper has implications for entrepreneurship research and policy development.

***Keywords*:** Entrepreneurs, Business Ownership Experience, Opportunity Identification, Cognitive Styles.

JEL classification: M10

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الملخص

العلاقة بين الخبرة السابقة في ملكية الأعمال وتحديد الفرص: الدور الوسيط للأساليب المعرفية

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هدف الدراسة: تستخدم الدراسة مدخل رأس المال البشري والمدخل المعرفي الريادي؛ لاستكشاف تأثير الخبرة في ملكية الأعمال على تحديد الفرص، مع الأخذ في الاعتبار الدور الوسيط للأساليب المعرفية.

تصميم/منهجية/طريقة الدراسة: اسْتخدِم تحليل المسار لاختبار الفروض، المباشرة وغير مباشرة، بما في ذلك اختبار الوساطة.

عينة الدراسة وبياناتها: اسْتخدِمت عينة تضم 294 من رواد الأعمال المصريين، وجمعت البيانات من خلال قائمة استقصاء.

نتائج الدراسة: تشير النتائج إلى أن الخبرة في ملكية الأعمال لها تأثير إيجابي على الأسلوب التحليلي وتحديد الفرص. كما تشير إلى أن الأسلوب التحليلي له تأثير إيجابي على عدد الفرص المحددة، وأن لكل من الأسلوبين الحدسي والتحليلي تأثيراً إيجابياً على ابتكار آخر الفرص المستثمرة. فضلاً عن ذلك، وجدت الدراسة أن التفكير التحليلي فقط يُفسر جزئيًا العلاقة بين الخبرة في ملكية الأعمال وتحديد الفرص.

أصالة الدراسة: تكمن قيمة الدراسة في اختبار العلاقة بين الخبرة في ملكية الأعمال وتحديد الفرص في بيئة جديدة باستخدام عينة من رواد الأعمال المصريين. كما أنها توفر منظورًا جديدًا نسبيًّا للعلاقة بين الخبرة في ملكية الأعمال وتحديد الفرص من خلال فحص الأساليب المعرفية. فضلاً عن ذلك، تتحدى هذه النتائج الافتراض الشائع بأن الخبرة السابقة هي مصدر للحدس من خلال الكشف عن أن رواد الأعمال ذوي الخبرة يفضلون الأسلوب التحليلي الذي يسهم بدوره في تعزيز قدرتهم على تحديد الفرص.

حدود الدراسة وتطبيقاتها: الرؤى المستمدة من الدراسة مقيدة إلى حدٍّ ما؛ نظرًا لاستخدام عينة غير احتمالية، كما تناولت الدراسة الأساليب المعرفية لدى رواد الأعمال دون استكشاف استخدامهم الفعلي للحدس والتحليل. وعلى الرغم من هذه القيود، فإن لهذه الدراسة آثارًا في الأبحاث الريادية وتطوير السياسات.

الكلمات المفتاحية: رواد الأعمال، الخبرة في ملكية الأعمال، تحديد الفرص، الأساليب المعرفية.

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Introduction

Do novice and habitual entrepreneurs differ in their ability to identify opportunities? To answer this question, the literature has focused on the direct relationship between prior business ownership experience (PBOE) and opportunity identification (OI). Their goal was to shed light on the differences between habitual and novice entrepreneurs in their ability to identify opportunities (Westhead et al., 2005a). In this regard, previous research has found that business ownership experience plays a key role in the opportunity identification process (e.g., Alsos et al., 2006; Gruber et al., 2012; Ucbasaran et al., 2009). Most research has mainly focused on the quantity of opportunities, with little attention given to examining both the quantity and quality of opportunities. (e.g., Ucbasaran et al., 2009). Much research has been dedicated to studying the direct association between business ownership experience and opportunity identification. However, there is still much to be done to enhance the researchers' understanding of why business ownership experience can lead to identifying more innovative opportunities.

According to Baldacchino et al. (2022), there is a lack of understanding of the cognitive mechanisms and processes that link business ownership experience with opportunity identification. To address this gap, this paper adopts an entrepreneurial cognitive approach that views entrepreneurship through the lens of cognitive psychology (Mitchell et al., 2002). From this perspective, the author argues that Egyptian entrepreneurs' cognitive styles can explain the relationship between business ownership experience and opportunity identification behavior.

Blume and Covin (2011) highlighted the importance of studying the potential role of business ownership experience in developing intuition by exploring the disparity in intuition levels between habitual entrepreneurs and those with less experience. Long et al. (2022) reviewed prior research on entrepreneurs' cognitive styles and highlighted the need to further explore the relationship between business ownership experience and cognitive style. These claims arise because previous research has emphasized the importance of occupational experience as a key determinant of intuition (e.g., Kahneman, 2011; Sadler-Smith, 2010). However, there has been limited research on the relationship between business ownership experience and cognitive styles, and this research used various methods to operationalize intuition. The research has shown conflicting results. One study found that habitual entrepreneurs tend to have more intuitive (less rational) thinking styles compared to novice entrepreneurs (e.g., Brigham & Sorenson,

2008). However, a study by Gustafsson (2006) showed that the cognitive styles of habitual entrepreneurs vary depending on the level of uncertainty. The research by Baldacchino et al. (2022) found no differences in cognitive styles between habitual and novice entrepreneurs.

On the relationship between intuitive style and opportunity identification, the literature called for the need to investigate the association between an intuitive style and an entrepreneur's ability to identify opportunities (Brigham & Sorenson, 2008; Dutta & Crossan, 2005; Sadler-Smith, 2016). However, current research focuses on the association between intuition and opportunity identification from the perspective of self-efficacy (Barbosa et al., 2007; Kickul et al., 2009). This perspective only provides an initial indication of the potential role that intuition can play in the opportunity identification process. Even the few researchers who have examined the relationship between intuition and opportunity identification as behavior have discovered different results (Baldacchino et al., 2022; Gustafsson, 2006).

The researcher tests our hypotheses in a new context, using a sample of Egyptian entrepreneurs. The Egyptian business context has unique characteristics that can influence the mindset and behavior of entrepreneurs. Cognitive styles represent individual differences that are sensitive to the environment and can be affected by various social and cultural practices and beliefs (Kozhevnikov et al., 2014). This paper makes significant academic contributions. First, it provided a relatively unexplored perspective on the relationship between business ownership experience and opportunity in a new context. The literature on why experienced entrepreneurs can improve their ability to identify innovative opportunities is limited and contradictory. Second, the results challenge the assumption that prior experience is a source of intuition. Experienced entrepreneurs prefer analysis to enhance their ability to identify opportunities. Third, this paper aimed to address the methodological gap in the assessment of cognitive styles. Entrepreneurial research commonly uses the Cognitive Style Index (CSI), which is derived from a unitary perspective. However, the literature strongly supports the dual-process perspective, especially cognitive-experiential self-theory (Baldacchino et al., 2015), on which Epstein et al. (1996) relied on developing the Rational-Experiential Inventory (REI).

In addition, this paper has practical contributions. First, it enhanced the understanding of experienced entrepreneurs of their cognitive styles. This

understanding can help them better identify opportunities. Second, the paper's findings provide education and training institutions with insight into cognitive styles that can enhance entrepreneurs' ability to identify opportunities. These insights can be considered when designing their courses and study programs. Finally, the findings highlight the importance of supporting experienced entrepreneurs by developing policies and introducing initiatives to provide the resources needed to transform innovative opportunities into profitable realities.

This paper is structured as follows. The first section presents a literature review and research hypotheses. The next section discusses the data and research methodology. Afterward, the results were reported. Finally, contributions, limitations, and future research directions are discussed.

Literature Review and Research Hypotheses

Literature Review

Prior business ownership experience is one of the most important sources of prior knowledge for entrepreneurs (e.g., Baldacchino et al., 2022; Gustafsson, 2006; Westhead et al., 2009) and has received particular attention as a crucial aspect of human capital for the entrepreneur (Westhead & Wright, 2011). Researchers examined this in terms of the number of businesses they own (one or more businesses) and classified entrepreneurs into two types: either novice or habitual (e.g., Robson et al., 2012; Westhead & Wright, 2016). Novice entrepreneurs are individuals who have a majority or minority ownership stake in one business. These may include business founders, inheritors, or those who purchased the business without any prior ownership experience. On the other hand, habitual entrepreneurs are individuals who have majority and/or minority ownership stakes in two or more businesses. These may include business founders, inheritors, or those who purchased businesses. (Westhead et al., 2005b). Entrepreneurial researchers have been focusing on business ownership experience since the 1970s (Ucbasaran et al., 2008). They studied the prevalence of habitual entrepreneurs in different settings (e.g., Robson et al., 2013; Ucbasaran et al., 2006), as well as the potential differences between novice entrepreneurs, portfolio entrepreneurs, and serial entrepreneurs (e.g., Westhead et al., 2005a). They also examined the relationship between business ownership experience and other variables, such as entrepreneurial behavior, individual, and organizational performance (e.g., Alsos et al., 2006; Baldacchino et al., 2022).

Opportunity identification is a critical research topic in entrepreneurship, due to the fact that it is a unique cognitive ability of entrepreneurs (O'Regan, 2016). It is the initial stage of launching a business venture (Ozgen & Baron, 2007). This stage is highlighted in the definitions of entrepreneurship (e.g., Eckhardt & Shane, 2003; Hitt et al., 2001; Rogelberg, 2007) and in the definitions of the entrepreneur (e.g., Bolton & Thompson, 2004; Carton et al., 1998). Opportunity identification involves the discovery or creation of opportunities (Alvarez & Barney, 2007). Entrepreneurs may discover existing opportunities or create new ones (Short et al., 2010). Thus, entrepreneurship researchers have shown a keen interest in studying the stage of opportunity identification from various perspectives. Their primary focus has been discovering the reasons why some individuals can recognize opportunities while others cannot (e.g., Shane & Venkataraman, 2000), and the interest in determining factors that can enhance this ability (e.g., Baldacchino et al., 2022). Several studies have explained this variance through prior knowledge, social capital, entrepreneurial alertness, cognitive/personality traits, environmental factors, and systematic research (George et al., 2016).

Cognitive styles refer to "the way individuals prefer to perceive, collect, analyze, and process information" (Long et al., 2022, p. 72). Psychologists propose two distinct information processing styles. The intuitive style is holistic, more outcome-oriented, with rapid processing, and more resistant to change. The analytical style is rational, more process-oriented, with slower processing, and easily changeable (Epstein, 1991). The intuitive style is also closely related to feelings, while the analytical style is not, as it involves a struggle between the heart and mind (Epstein, 1994). Moreover, the intuitive style operates at the preconscious level, demands low effort and cognitive resources, while the analytical style operates at the conscious level, and demands more effort and cognitive resources (Epstein, 2000). Different theories explain the relationship between intuition and analysis (Allinson & Hayes, 2012; Hodgkinson et al., 2009). Dual-process theories suggest that there are two independent information processing systems, which enable individuals to have different degrees of preference for intuition and analysis simultaneously (Baldacchino et al., 2022; Hodgkinson et al., 2009; Hodgkinson & Sadler-Smith, 2014). Conversely, the unitary theory proposes a continuum from intuition to analysis, indicating that a preference for analysis decreases a preference for intuition, and vice versa (Allinson & Hayes,

2012). Several researchers have supported the dual processing perspective (e.g., Akinci & Sadler-Smith, 2013; Chaiken & Trope, 1999; Hodgkinson & Sadler-Smith, 2003; Hodgkinson et al., 2009). Various discussions by researchers about the unitary versus dual perspective have favored the dual processing perspective (Hodgkinson & Sadler-Smith, 2014). This is confirmed and supported by evidence, such as the meta-analysis by Wang et al. (2017), which confirms the independence of intuition and analysis, indicating that there is no statistical relationship between them.

This paper draws on human capital theory, which provides an appropriate framework for examining the role of prior business ownership experience as a component of human capital (Ucbasaran, 2004). The human capital approach suggests that prior business ownership experience can help develop the essential entrepreneurial, technical, and management skills that an entrepreneur requires (Westhead & Wright, 2011). The paper depends on the entrepreneurial cognitive approach, which provides an appropriate framework for studying opportunity identification behavior. Opportunity identification has become viewed from a cognitive perspective (Baron, 2004). The goal of this perspective is to provide new insights into entrepreneurial phenomena and answer the essential question of how entrepreneurs think, thus enabling them to identify opportunities (Mitchell et al., 2007).

In summary, the paper aims to investigate the relationship between business ownership experience, cognitive styles, and opportunity identification. Several research gaps need to be addressed, including gaps in knowledge, contradictions, and methodologies. Table 1 highlights that more research has focused on the relationship between business ownership experience, cognitive styles, and opportunity identification using the CSI measure based on unitary theory, despite evidence supporting dual processing theories. Moreover, there are contradictory results and limited research that will be discussed in the hypothesis development section. Furthermore, there is a knowledge gap about mediator variables that needs to be addressed.

Table 1
Summary of Literature Review and Existing Research Gaps

Authors	Methodological Gap				Contradictory Evidence Gap	Knowledge Gap
	Survey measures		Protocol Analysis	Interviews		
	CSI	REI				
(Doyle et al., 2002)	√				√	√
(Alsos et al., 2006)						√
(Gustafsson, 2006)		√			√	
(Barbosa et al., 2007)	√				√	√
(Brigham & Sorenson, 2008)	√				√	
(Kickul et al., 2009)	√				√	√
(Ucbasaran et al., 2009)						√
(Westhead et al., 2009)						√
(Gruber et al., 2012)						√
(Scheiner, 2014)				√	√	√
(Vaillant & Lafuente, 2019)						√
(Baldacchino et al., 2022)		√	√		√	

Note: The knowledge gap refers to the absence of mediator variables between OBOE and OI.

Business Ownership Experience and Opportunity Identification

Understanding the factors that contribute to enhancing an individual's ability to identify opportunities can provide valuable insights into how this process occurs and how it can be improved (Baron, 2007). According to Shane and Venkataraman (2000), differences variations in the stock of prior knowledge can impact an individual's ability to recognize opportunities. Several researchers have tested this proposition, and their review found that prior knowledge is one of the

five most important factors contributing to opportunity identification (Gamero & Ostos, 2020). Entrepreneurs need specific knowledge to recognize opportunities, and increasing knowledge is associated with an increase in the number of recognized opportunities (Gaglio & Winter, 2017).

Considering that knowledge can be acquired through education and experience (Bird & Schjoedt, 2017), entrepreneurs' experiences are expected to enhance their ability to identify opportunities (Gruber et al., 2008). One of the most important of these experiences is the "business ownership experience." The paper supports the belief of Gruber et al. (2008) that entrepreneurs acquire specific insights into identifying subsequent opportunities through their accumulated knowledge from their business ownership experience. This could be explained from the perspective of pattern recognition. Habitual entrepreneurs have developed cognitive frameworks that differ from those of novice entrepreneurs, enabling them to recognize the connections between events and trends such as changes in government policies, technological advancements, and other factors. They can then detect patterns emerging from these connections, even if they appear unrelated. These patterns serve as the basis for opportunities (Baron & Ensley, 2006).

In light of this, several studies have investigated the differences in opportunity identification exhibited by habitual and novice entrepreneurs. The findings show that habitual entrepreneurs have a higher ability to identify opportunities than novice entrepreneurs (e.g., Alsos et al., 2006; Gruber et al., 2012). According to Alsos et al. (2006) who analyzed longitudinal data from a representative sample of new business start-ups in Norway, the research discovered that habitual entrepreneurs benefit from the information and knowledge gained from their previous businesses, giving them an advantage in recognizing opportunities. Focusing on the founding team, Gruber et al. (2012) conducted a quantitative study to analyze representative data from German VC-backed ventures. The study found that entrepreneurs with business ownership experience can access more market opportunities compared to a team without such experience. Additionally, a group of studies classified habitual entrepreneurs into two groups: portfolio and serial entrepreneurs. According to a quantitative study of independent private firms in Great Britain, portfolio entrepreneurs are better at identifying opportunities than novice or serial entrepreneurs (Westhead et al., 2009).

Although the literature has compared novice and habitual entrepreneurs in terms of the number of opportunities identified, few have examined both the quantity and quality of these opportunities. In a quantitative study conducted by Ucbasaran et al. (2009) habitual entrepreneurs who have owned up to four businesses showed more ability to identify opportunities, considering the number of opportunities and the level of innovation of the last invested opportunity, compared to novice entrepreneurs. Another quantitative research study found that the positive or negative experiences of serial entrepreneurs lead to the pursuit of more innovative businesses compared to novice entrepreneurs (Vaillant & Lafuente, 2019). Innovation is a crucial element in the entrepreneurial process and is a fundamental concept in Schumpeter's approach to entrepreneurship (Zidan, 2023). Therefore, this paper includes both aspects in its analysis.

Based on the literature concerning the relationship between business ownership experience and opportunity identification (e.g., Gruber et al., 2012; Ucbasaran et al., 2009), it is expected that there is a relationship between business ownership experience and the number of opportunities identified. Therefore, the following hypothesis was formulated:

> ***H1(a)***: *Prior business ownership experience among Egyptian entrepreneurs is positively associated with the number of opportunities identified in a given period.*

Based on the literature regarding the relationship between business ownership experience and opportunity identification (e.g., Ucbasaran et al., 2009; Vaillant & Lafuente, 2019), it is expected that there is a relationship between business ownership experience and the innovativeness of the latest exploited opportunity. Therefore, the following hypothesis was formulated:

> ***H1(b):*** *Prior business ownership experience among Egyptian entrepreneurs is positively associated with the innovativeness of the latest exploited opportunity.*

Business Ownership Experience and Cognitive Styles

The study of cognitive styles in entrepreneurship has continued for nearly three decades (Long et al., 2022). Initially, there was a belief that there were individual differences in cognitive styles between entrepreneurs and non-entrepreneurs. This belief is driven by the unique ability of entrepreneurs to deal with the complex,

uncertain, and unpredictable environment that accompanies entrepreneurial activity (e.g., Allinson et al., 2000; Baron, 1998). According to Allinson et al. (2000), entrepreneurs prefer intuition more than middle and supervisory managers, and their cognitive style is not different from that of top managers. Armstrong and Hird (2009) found that entrepreneurs are more intuitive than employees in processing and organizing information. On the other hand, some research has found no differences in cognitive styles between entrepreneurs and managers in large organizations (e.g., Brigham & Sorenson, 2008).

In contrast, other researchers have focused on intuition from the perspective of experience. Past experience is a major component of intuition, as seen in definitions of the construct (e.g., Baron, 2006; Burke & Miller, 1999; Klein, 2004). "Intuition is largely seen to be based on experience. It comes from making mistakes, learning from it, and developing experience from it" (Barnard & Herbst, 2018, p. 143). In addition, the literature review shows that professional experience plays a fundamental role in developing intuition (e.g., Kahneman, 2011; Sadler-Smith, 2010). In the well-known book "Sources of Power: How People Make Decisions" Klein (1999) found that decision makers like firefighters and military leaders, rely on intuition to deal with situations that are uncertain, high-risk, and time-constrained. They rely on their professional experiences to make decisions. In 1983, antiquities experts discovered that the statue purchased by the J. Paul Getty Museum was a fake statue, despite the museum team's 14-month examination, through their quick intuition (Gladwell, 2006). Simon (1992) explained it as follows: "The situation has provided a cue; this cue has given the expert access to information stored in memory, and the information provides the answer."

Few studies have investigated the potential differences in cognitive styles between habitual and novice entrepreneurs. Doyle et al. (2002) found no significant differences between the two groups using CSI, with a sample size of 117 owners/managers in Nova Scotia. Baldacchino et al. (2022) found no significant differences between the two groups using the REI. However, they found that business ownership experience is associated with intuition when using think-aloud protocols. Conversely, a quantitative analysis by Brigham and Sorenson (2008) suggested that cognitive style could be a significant factor in distinguishing between different categories of entrepreneurs. They found that habitual entrepreneurs exhibit more intuitive (less rational) cognitive styles compared to novice entrepreneurs using the REI.

Based on this review, the paper examines the relationship between business ownership experience and intuitive cognitive style. Many psychology scholars believe that experience is the foundation for intuitive thinking, despite conflicting results from entrepreneurial research (e.g., Kahneman, 2011; Klein, 1999). Therefore, the hypothesis can be formulated as follows:

> ***H2(a):*** *Prior business ownership experience among Egyptian entrepreneurs is positively associated with the intuitive cognitive style.*

Based on the literature, Business ownership experience is expected to have a negative relationship with analytical cognitive style (Brigham & Sorenson, 2008). Therefore, the following hypothesis was formulated:

> ***H2(b):*** *Prior business ownership experience among Egyptian entrepreneurs is negatively associated with the analytical cognitive style.*

Cognitive Styles and Opportunity Identification

The study of entrepreneurship has overlooked a crucial question: "Where do opportunities to create goods and services in the future come from?" Cognitive differences among individuals can contribute to some people having access to business opportunities while others cannot (Venkataraman, 1997). Cognitive styles, a type of cognitive difference, may be associated with an entrepreneur's ability to identify opportunities. Understanding people's thinking can help us understand their behavior (Shepherd & Patzelt, 2018). Thus, the cognitive styles of entrepreneurs can provide valuable insights into their entrepreneurial behavior. Some studies have emphasized this (e.g., Groves et al., 2011; Kickul et al., 2009). Intuition is believed to have played a role in information processing during this phase (Blume & Covin, 2011; Vaghely & Julien, 2010).

The quantitative study by Barbosa et al. (2007) was one of the first to explore the relationship between cognitive styles and perceived self-efficacy regarding the ability to identify opportunities. The study involved a sample of 528 students across three countries enrolled in entrepreneurship programs. It was found that individuals who prefer intuitive thinking and have high-risk preferences have higher levels of perceived self-efficacy in identifying opportunities. Similarly, a quantitative study by Kickul et al. (2009) suggests that identifying opportunities requires a specific cognitive process. The study analyzed 138 MBA students and found that individuals who prefer the intuitive style are more confident in

their ability to identify opportunities. However, those who prefer the analytical cognitive style have less confidence in their ability to identify opportunities.

For how our minds innovate ideas, intuition is a key factor in demonstrating creativity and innovation. Intuition gives us a sense or feeling of an idea or solution to a problem, making it a powerful tool for generating new ideas (Barnard & Herbst, 2018). A quantitative study by Baldacchino et al. (2022) found that a greater use of intuition is associated with identifying the most innovative opportunities, but analysis may also play a role in identifying "very innovative" opportunities.

Based on the above, it appears that the variation in the number of opportunities identified may be attributed to cognitive differences among entrepreneurs in their cognitive styles (Barbosa et al., 2007; Kickul et al., 2009). So, it is expected that cognitive styles and the number of opportunities identified are related. Therefore, the following hypotheses were formulated:

> ***H3(a):*** *Intuitive cognitive style is positively associated with the number of opportunities identified in a given period.*
>
> ***H3(b):*** *Analytical cognitive style is negatively associated with the number of opportunities identified in a given period.*

Based on the above, it seems that the variation in the level of innovativeness of opportunities may be attributed to cognitive differences among entrepreneurs in their cognitive styles (Baldacchino et al., 2022; Barnard & Herbst, 2018). So, cognitive styles are expected to relate to the innovativeness of the latest exploited opportunity. Therefore, the following hypotheses were formulated:

> ***H3(c***): *Intuitive cognitive style is positively associated with the innovativeness of the latest exploited opportunity.*
>
> ***H3(d):*** *Analytical cognitive style is negatively associated with the innovativeness of the latest exploited opportunity.*

The Mediating Role of Cognitive Styles

To what extent can the association between business ownership experience and opportunity identification be explained through the cognitive styles of entrepreneurs? Based on protocols analysis, Gustafsson (2006) studied the impact of the level of uncertainty (high/moderate/low) related to the type of opportunity (creation/discovery/recognition), and differences in the level of

entrepreneurial experience (number of businesses and years of experience), on the cognitive processes of entrepreneurs by stimulating (intuition/quasi-rationality/ analysis) when identifying opportunities, respectively. The study found that novice entrepreneurs use analysis when identifying opportunities, regardless of uncertainty. Experienced entrepreneurs rely on intuition to identify opportunities in high levels of uncertainty, such as creating new opportunities. While experienced entrepreneurs rely on analysis when confronted with low levels of uncertainty, such as opportunity recognition. For moderate to highly uncertain levels (such as opportunity discovery), quasi-rationality is used.

In the qualitative study by Scheiner (2014), intuition was examined as the second component of recognition intelligence. Most habitual entrepreneurs rely on intuition to recognize opportunities. However, only a few habitual entrepreneurs followed the analysis and its results.

Recently, Baldacchino et al. (2022) examined the association between business ownership experience within the same sector and the ability to identify opportunities using protocol analysis. The study used cognitive strategy (intuition/ analysis/intuition with analysis) as a mediator variable. The findings showed that habitual entrepreneurs rely on higher levels of intuition, complemented by analysis, that enables them to leverage their experience to identify more and better-quality opportunities. Interestingly, the study found no significant association between cognitive styles and opportunity identification, or between cognitive styles and cognitive strategies. This result contradicts previous research, such as Sinclair (2003), who discovered that the intuitive cognitive style enhances the use of intuition.

Based on the literature (Baldacchino et al., 2022), the paper suggests that cognitive styles serve as the connection between business ownership experience and the number of opportunities identified. Therefore, the following hypothesis was formulated:

> ***H4(a):*** *Intuitive cognitive style mediates the relationship between Egyptian entrepreneurs' prior business ownership experience and the number of opportunities identified in a given period.*
>
> ***H4(b):*** *Analytical cognitive style mediates the relationship between Egyptian entrepreneurs' prior business ownership experience and the number of opportunities identified in a given period.*

Based on the literature regarding the mediation of cognitive styles (Baldacchino et al., 2022), the paper suggests that cognitive styles serve as the connection between business ownership experience and the innovativeness of the latest exploited opportunity. Therefore, the following hypothesis was formulated:

> ***H4(c)***: *Intuitive cognitive style mediates the relationship between Egyptian entrepreneurs' prior business ownership experience and the innovativeness of the latest exploited opportunity.*
>
> ***H4(d):*** *Analytical cognitive style mediates the relationship between Egyptian entrepreneurs' prior business ownership experience and the innovativeness of the latest exploited opportunity.*

The theoretical model in Figure 1 summarizes the relationships among business ownership experience, opportunity identification, and cognitive styles based on the literature review.

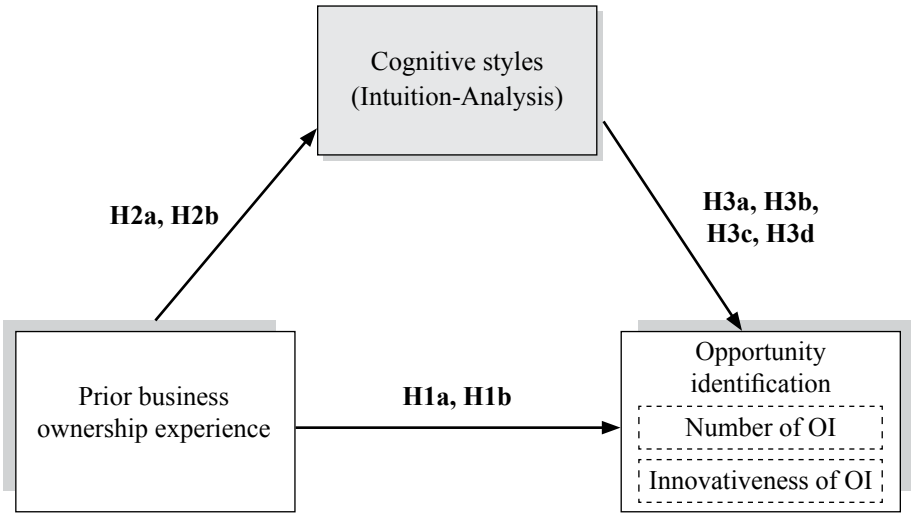


Figure 1: Theoretical Model

Research Methodology

Sampling and Data Collection

Social sciences are sensitive towards data, as the conclusions might differ according to the sample and research population. To ensure coherent and reliable

results, the target population of the study is Egyptian novice entrepreneurs and habitual entrepreneurs of Egyptian businesses. However, due to the unavailability of a framework for Egyptian entrepreneurs based on the number of owned businesses, or at least data that show the percentage of each category. A combination of convenience and judgmental sampling techniques was employed to effectively reach habitual entrepreneurs.

The researcher utilized a platform called "Survey Monkey" for those participants who wished to do so, and the researcher employed email to raise the response rate. These methods were chosen for their speed, cost-effectiveness, and suitability during the COVID-19 pandemic. Out of 600 entrepreneurs invited to participate, 294 responded within a nine-month period. The response rate was 49%. According to the G*Power software, a minimum sample size of 174 cases is needed. The analysis considered the following values: ($\alpha = 0.05$), an average effect size of 0.15, four predictors, and a statistical power level of 99%.

The sample consisted of novice entrepreneurs 25% and habitual entrepreneurs 75%. 96.3% of the population is male, while 3.7% is female. In terms of employment history, 87.4% of entrepreneurs had prior work experience before starting their own business, while 12.6% had none. Regarding the level of education, 70.7% of entrepreneurs held a university degree, 24.9% had qualifications higher than a university degree, and 4.4% had limited education in high school or equivalent.

Measures

This paper presents a model with three variables: prior business ownership experience as the independent variable, opportunity identification as the dependent variable, and cognitive styles as the mediating variable. There are also control variables, including formal education, past work experience, and gender.

Dependent Variable

Based on past research (e.g., Ucbasaran, 2004; Ucbasaran et al., 2009). The paper assesses opportunity identification by considering the number of identified opportunities and the innovativeness of the latest exploited opportunity. To measure the number of business opportunities, respondents were asked a closed question regarding the number of opportunities to create or purchase a business, which they identified within the past five years. The answer options ranged from 0, 1, 2, 3, 4, 5, 6 to 10, or more than 10 opportunities. To measure the innovativeness of the

latest exploited opportunity, a dichotomous scale (yes or no) is employed instead of a Likert scale because the first case measures innovative activity, while the second case measures the attitudinal responses. The first case is expected to reduce the social desirability bias of some respondents when answered (Ucbasaran et al., 2009). In addition, prior research indicates that key informants provide reliable information about the characteristics of their businesses, including assessments of innovativeness (Thornhill, 2006) (see Appendix A).

Independent Variable

Respondents were asked to indicate the total number of businesses they currently own or have previously owned with minority or majority ownership stakes, whether they established, inherited, and/or purchased based on previous research (e.g., Ucbasaran et al., 2009) (see Appendix A).

Mediator Variable

Blume and Covin (2011) identified three methods for assessing intuition: perceived use, actual use, and preference. The paper focused on the third method, which views intuition as a cognitive style. Based on the literature, researchers often use two main measures with conflicting theoretical foundations to assess cognitive styles: REI and CSI (Hodgkinson et al., 2009)**.** Several researchers support the REI (e.g., Hodgkinson & Sadler-Smith, 2014; Sadler-Smith, 2016; Witteman et al., 2009). The REI's theoretical foundation, dual-process theory, is more convincing and has better psychometric properties (Hodgkinson et al., 2009). The REI consists of two factors: Faith in Intuition (FI) measures the intuitive/ experiential style, while Need for Cognition (NFC) measures the analytical/ rational style (Epstein et al., 1996).

When using the REI, it is important to select either the original or revised version (Epstein et al., 1996; Pacini & Epstein, 1999). Several researchers have criticized the revised version's differentiation between ability and engagement. They argued that this distinction was unjustified and proposed that the revised version should only be used when ability and engagement are not distinguished (e.g., Akinci & Sadler-Smith, 2013; Hodgkinson & Sadler-Smith, 2014). Consequently, the paper will use the revised version of the REI to assess cognitive styles (Pacini & Epstein, 1999) without the distinction between ability and engagement. Each item is rated on a 5-point Likert scale, with 1 being definitely not true of myself and 5 being definitely true of myself (see Appendix A).

Control Variables

The researcher selected formal education, previous work experience, and gender as control variables based on previous research (Baldacchino et al., 2022; Ucbasaran et al., 2009)**.** According to Ucbasaran et al. (2006), the fundamental purpose of controlling the mentioned dimensions of human capital is that the business ownership experience variable is one of them. The formal education measure relates to the higher levels of education attained to assess quality rather than the number of years spent in education. Respondents with pre-university qualifications were given a value of 0, those with a university first degree or equivalent were given a value of 1, and those with a postgraduate degree or equivalent were given a value of 2.

Validity and Reliability

Validity was assessed in two stages. In the first stage, face validity was assessed by piloting a questionnaire on the number of novice and habitual entrepreneurs, as well as three academics in entrepreneurship. Based on their feedback, improvements were made to the questionnaire. In the second stage, confirmatory factor analysis (CFA) was conducted using STATA software to assess the construct validity of cognitive styles. Table 2 shows the recommended and actual indicators of the model fit, as suggested by Awang (2015) and Mw (1993). All indices were within the recommended values, so the model was acceptable.

Table 2
Indicators of Model Fit and their Acceptable Thresholds

Variables	P-value	$\chi 2$/DF	CFI	SRMR	RMSEA	PCLOSE
Intuition factor	< 0.001	2.193	0.971	0.041	0.062	0.175
Analysis factor	0.001	2.075	0.917	0.025	0.061	0.083
Level of Acceptance	> 0.05	< 3	> 0.90	< 0.08	< 0.08	> 0.05

Figures 2 and 3 show the results of the confirmatory factor analysis. Items with a loading of less than 0.4 were removed. Accordingly, the researcher kept nine items to measure intuitive style and 15 items to measure analytical style.

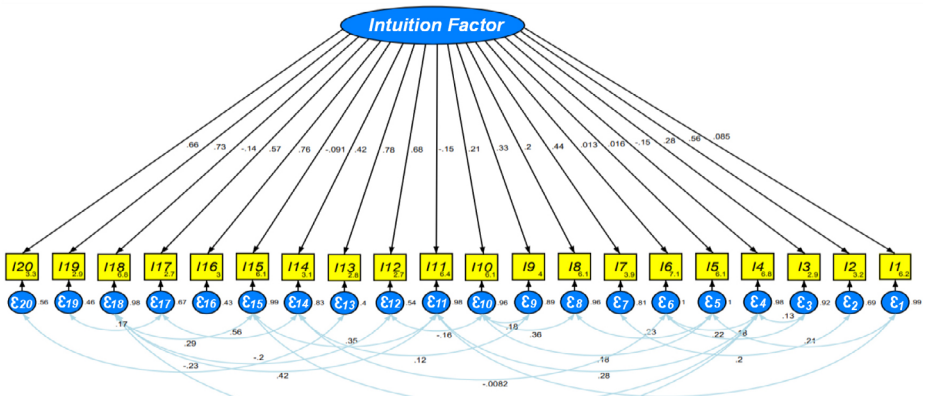


Figure 2: CFA of Intuition Factor Results

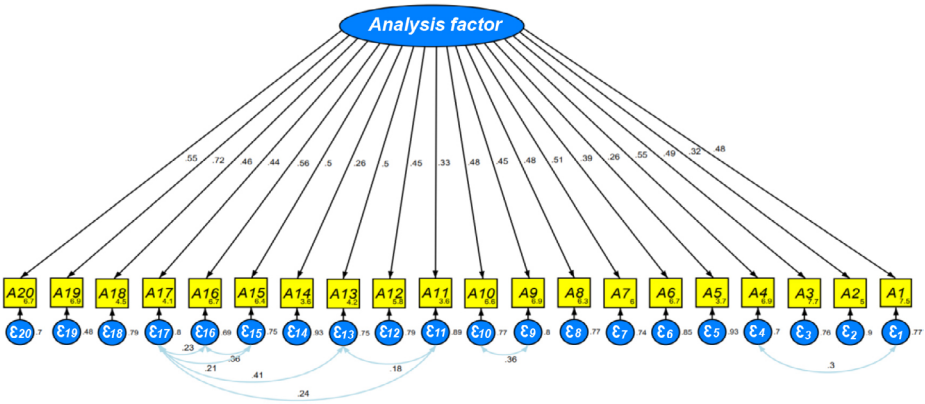


Figure 3: CFA for Analysis Factor Results

The reliability of the internal consistency of analytical style and intuitive style is evaluated with Cronbach's alpha coefficients (α) of 0.839 and 0.855, respectively. These results are considered satisfactory, as values above 0.70 are acceptable and those above 0.80 are preferred (e.g., Cortina, 1993).

Results

The analysis was performed using SPSS v. 26 and STATA v. 16 software packages. This allowed us to generate descriptive statistics, Harman one-factor post-test, Spearman correlations, Mann-Whitney U, and Kruskal-Wallis tests. In addition, the researcher performed path analysis and mediation to test our hypotheses.

Table 3 shows the descriptive statistics for the dependent, independent, and control variables. The table includes descriptive statistics such as frequency, percentage, mean (as a measure of central tendency), standard deviation (as a measure of dispersion), and relative importance index (RII). Interval and ordinal data were expressed as the mean ± standard deviation, while nominal data were presented as percentages.

Table 3
Descriptive Summary Statistics (n=294)

	Statistics	Min	Max	RII
Dependent Variables:				
Opportunities No.				
a .Nothing	(25.5) 75			
b. One Opportunity	(24.1) 71			
c. Two Opportunities	(18) 53			
d .Three Opportunities	(13.3) 39			
e .Four Opportunities	(5.1) 15			
f .Five Opportunities	(5.4) 16			
g .From 6 to10 Opportunities	(4.4) 13			
h .More than10 Opportunities	(4.1) 12			
Innovation	2.386 ± 6.06	0	10	
Mediator Variables:				
Intuitive cognitive style	0.710 ± 3.167	1.33	5	0.633
Analytical cognitive style	0.389 ± 4.159	3	5	0.832
Independent Variables:				
Firm No.	1.603 ± 2.46	1	12	

To avoid the issue of Common Method Bias (CMB) due to collecting self-report data from the same source (Podsakoff et al., 2003), a Harman one-factor post-test was utilized. If the percentage is less than 50%, it indicates no bias issue. In this paper, the percentage was 16.697%, confirming the absence of common method bias.

The paper's data analysis used the Mann-Whitney U test and the Kruskal-Wallis test, both of which are non-parametric. These tests were determined differences in respondents' perceptions of study variables based on gender, formal education level, and previous work experience. The test results are in table 4.

Table 4
Mann-Whitney U and kruskal-Wallis Tests for Study Variables

Respondent attribute		Intuition factor	Analysis factor	Opportunities No.	Innovation
Gender	Male	-0.014	-1.285	-0.170	-0.341
	Female				
Formal Education	High school or equivalent	2.729	0.031	4.579	6.654 *
	Bachelor's degree				
	Master's/PhD				
Previous Experience	Nothing	3.371	1.275	6.401+	0.309
	Less than 10 years				
	From 10 to 15 years				
	More than 15 years				

** $p < 0.01$, * $p < 0.05$, + $p < 0.10$

The paper used Spearman's correlation for data analysis. The correlation coefficients show that all relationships are significant, except for the relationships between intuitive style and number of opportunities, business ownership experience and analytical style, and business ownership experience and intuitive style. It is important to highlight that there is a positive correlation between an analytical style and both the number and level of innovation opportunities, rather than a negative correlation. The test results are in table 5.

Table 5
Spearman's Correlation Matrix

	1	2	3	4	5	6	7	8
1. Opportunities No.	1							
2. Innovation	0.207**	1						
3. Intuitive style	-0.026	0.175**	1					
4. Analytical style	0.138*	0.235**	-0.067	1				
5. Formal Education	0.025	0.111+	-0.091	-0.005	1			
6. Work Experience	0.032	0.031	-0.034	0.040	0.212**	1		
7. Gender	-0.010	0.020	-0.001	-0.075	0.174**	-0.079	1	
8 . Firm No.	0.272**	0.137*	0.058	0.031	0.032	-0.062	0.009	1

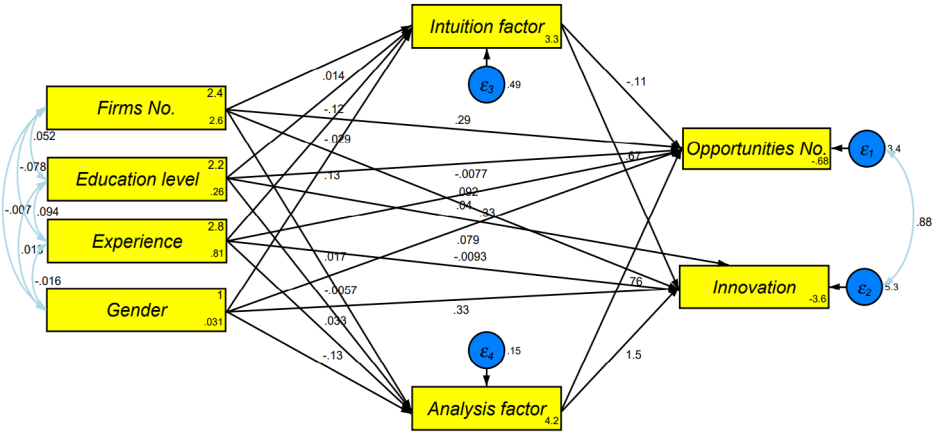
** $p < 0.01$, * $p < 0.05$, + $p < 0.10$

The researcher has moved from descriptive statistics to inferential statistics, in particular to the structural equation model (SEM). However, before estimating regression coefficients in the structural model, it is important to ensure the quality of the regressions and that they are not affected by measurement problems. To this end, diagnostic tests are performed. The results of these tests confirm that all regressions in the structural model are free of problems with serial correlation and heteroscedasticity. Additionally, the residuals of the regressions conform to a normal distribution. The omitted variables test also demonstrates that the independent variables in the study do not exhibit omitted variable bias.

The Variance Inflation Factor (VIF) test also showed that there was no issue with multicollinearity, as the (VIF < 10) for all independent variables. The Chow test also showed that there were no breaks in the data that affected the regression in the structural model. In testing whether the model is linear or nonlinear, the researcher performed the Auxiliary Regression and Functional Form tests for all regressions. The results showed that all regressions were completely linear. Overall, the diagnostic tests showed that the regressions used were free of various measurement issues, allowing us to proceed with testing the study hypotheses.

In Figure 4, the researcher illustrates the SEM that tests the relationship between business ownership experience and both the number of opportunities

identified and the innovativeness of the latest exploited opportunity, either directly or indirectly through the mediator variable of cognitive styles (intuition vs. analysis). The study utilized Maximum Likelihood (ML) with the Observed Information Matrix (OIM) as the method, while also considering the use of Weighted Least Squares (WLS) to analyze the impact of business ownership experience, weighted by previous work experience.



Chi-square (model vs. saturated) = 0.795, Prob.= 0.373
Chi-square (baseline vs. saturated) = 196.991, Prob.= 0.000
CFI= 1.000, TLI= 1.026, SRMR= 0.006, RMSEA= 0.000, PCLOSE= 0.526

Figure 4: SEM Results

Following the completion of our structural model estimation, the researcher ensured its quality and fit to the data by examining the statistics displayed at the bottom of figure 4. The researcher then analyzed the path coefficients, which are shown in table 6.

Table 6
SEM Results

Paths	Coefficients	OIM Std. Err.	Z	P>|z|
▪ **Intuition factor equation**:				
Firm No. → Intuition factor	0.01428	0.0161	0.89	0.376

Cont. Table 6
SEM Results

Paths	Coefficients	OIM Std. Err.	Z	P>|z|
Educational level → Intuition factor	-0.11653	0.0529	-2.20	0.028*
Experience → Intuition factor	-0.02905	0.0297	-0.98	0.327
Gender → Intuition factor	0.13122	0.1512	0.87	0.386
▪ **Analysis factor equation:**				
Firm No.→ Analysis factor	0.01717	0.0088	1.94	0.052+
Educational level → Analysis factor	-0.00573	0.0291	-0.20	0.844
Experience → Analysis factor	0.03268	0.0163	2.01	0.045*
Gender → Analysis factor	-0.12548	0.0831	-1.51	0.131
▪ **Opportunities No. Equation**:				
Intuition factor → Opportunities No.	-0.10722	0.0984	-1.09	0.276
Analysis factor → Opportunities No.	0.76333	0.1790	4.26	< 0.001**
Firm No.→ Opportunities No.	0.29069	0.0429	6.77	< 0.001**
Educational level → Opportunities No.	-0.00765	0.1411	-0.05	0.957
Experience → Opportunities No.	0.04001	0.0790	0.51	0.613
Gender → Opportunities No.	0.07892	0.4024	0.20	0.845
▪ **Innovation equation**:				
Intuition factor → Innovation	0.66548	0.1219	5.46	< 0.001**
Analysis factor → Innovation	1.51780	0.2220	6.84	< 0.001**
Firm No.→ Innovation	0.09228	0.0532	1.73	0.088+
Educational level → Innovation	0.32853	0.1749	1.88	0.060+
Experience → Innovation	-0.00935	0.0979	-0.10	0.924
Gender → Innovation	0.32563	0.4991	0.65	0.514
Log likelihood = -6841.5986		*Number of Obs.* = 294		

** $p < 0.01$, * $p < 0.05$, + $p < 0.10$

The results are moderately consistent with our hypotheses. In Hypothesis H1a, the researcher proposed that business ownership experience is positively associated with the number of opportunities identified. By using SEM, the researcher found strong support for the hypothesis, showing that the entrepreneur's prior business ownership experience (Firm No.) was positively and significantly associated with the number of identified business opportunities (Opportunities No.) at the ($p < 0.01$) level. In Hypothesis H1b, the researcher proposed that business ownership experience is positively associated with the innovativeness of the latest exploited opportunity. By using SEM, the researcher found strong support for the hypothesis, showing that the entrepreneur's prior business ownership experience (Firm No.) was positively and significantly associated with the innovativeness of the latest exploited opportunity (Innovation) at the ($p < 0.10$) level[1].

In Hypothesis H2a, the researcher proposed that business ownership experience is positively associated with the intuitive cognitive style. By using SEM, the researcher did not find support for the hypothesis, showing that the entrepreneur's prior business ownership experience (Firm No.) was not associated with intuitive cognitive style (Intuition factor). In Hypothesis H2b, the researcher proposed that business ownership experience is negatively associated with the analytical cognitive style. By using SEM, the researcher did not find support for the hypothesis. In contrast, the researcher showed that the entrepreneur's prior business ownership experience (Firm No.) was positively and significantly associated with analytical cognitive style (Analysis factor) at the ($p < 0.10$) level.

In Hypothesis H3a, the researcher suggested that intuitive cognitive style is positively associated with the number of opportunities identified. The researcher did not find support for the hypothesis, showing that intuitive cognitive style (Intuition factor) was not positively associated with the number of opportunities identified (Opportunities No.). In Hypothesis H3b, the researcher suggested that an analytical cognitive style is negatively associated with the number of opportunities identified. By using SEM, the researcher did not find support for the hypothesis. In contrast, the researcher showed that an analytical cognitive style (Analysis factor) was positively and significantly associated with the number of business opportunities identified (Opportunities No.) at the level ($p < 0.01$).

1 Based on previous studies (e.g., Baldacchino et al., 2022), the paper justifies the use of a significance level of ($p < 0.10$) instead of the commonly used ($p < 0.05$) in management studies. The exploratory nature of the study and the complexity of the mediator and dependent variables support this decision.

In Hypothesis H3c, the researcher proposed that intuitive cognitive style is positively associated with the innovativeness of the latest exploited opportunity. By using SEM, the researcher found strong support for the hypothesis, showing that intuitive cognitive style (Intuition factor) was positively associated with the innovativeness of the latest exploited opportunity (Innovation) at the ($p < 0.01$) level. In Hypothesis H3d, the researcher proposed that an analytical cognitive style is negatively associated with the innovativeness of the latest exploited opportunity. By using SEM, the researcher did not find support for the hypothesis. In contrast, the researcher showed that analytical cognitive style (Analysis factor) was positively associated with the innovativeness of the latest exploited opportunity (Innovation) at the ($p < 0.01$) level. Overall, both the analytical style and the intuitive style were positively and significantly associated with the innovativeness of the latest exploited opportunity. However, the impact of analytical style (coefficient = 1.518) is more than twice the impact of intuitive style (coefficient = 0.665). These results suggest that the impact of "analytical style" on innovativeness is greater than that of "intuitive style".

Based on Tables 7 and 8, the results of both the Baron and Kenny (1986) three-step test and Sobel test suggest that only the analytical partially mediates the relationship between prior business ownership experience and the number of opportunities identified, as well as the innovativeness of the latest opportunity exploited. In Hypothesis H4a, the researcher proposed that the intuitive cognitive style mediates the relationship between business ownership experience and the number of opportunities identified. By using both the three-step test and Sobel test, the researcher did not find support for the hypothesis. In Hypothesis H4b, we proposed that the analytical cognitive style mediates the relationship between business ownership experience and the number of opportunities identified. By using both the three-step test and Sobel test, the researcher found support for the hypothesis, showing that analytical cognitive style (Analysis factor) mediates the relationship between business ownership experience (Firm No.) and the number of opportunities identified (Opportunities No.).

In Hypothesis H4c, the researcher proposed that the intuitive cognitive style mediates the relationship between business ownership experience and the innovativeness of the latest exploited opportunity. By using both the three-step test and Sobel test, the researcher did not find support for the hypothesis. In Hypothesis H4d, the researcher proposed that the analytical cognitive style

mediates the relationship between business ownership experience and the innovativeness of the latest exploited opportunity. By using both the three-step test and Sobel test, the researcher found support for the hypothesis, showing that analytical cognitive style (Analysis factor) mediates the relationship between business ownership experience (Firm No.). and the innovativeness of the latest exploited opportunity (Innovation).

Table 7
B coefficients using Baron and Kenny approach

Paths	STEP 1	STEP 2	STEP 3	Type of Mediation
	X → M	M → Y	X → Y	
Firm No.→ Intuition factor → Opportunities No.	0.014*	-0.107		None
Firm No.→ Analysis factor → Opportunities No.	0.017+	0.763**	0.291**	Partial
Firm No.→ Intuition factor → Innovation	0.014	0.665**		None
Firm No.→ Analysis factor → Innovation	0.017+	1.518**	0.092+	Partial

** $p < 0.01$, * $p < 0.05$, + $p < 0.10$

Table 8
Sobel Test Result

Paths	Sobel test	RIT	RID
Firm No.→ Intuition factor → Opportunities No.	-0.002 (-0.688)	0.005	0.005
Firm No.→ Analysis factor → Opportunities No.	0.013 (1.766)+	0.043	0.045
Firm No.→ Intuition factor → Innovation	0.010 (0.875)	0.093	0.103
Firm No.→ Analysis factor → Innovation	0.026 (1.866)+	0.220	0.282

+ $p < 0.10$

The overall statistics of the structural model, including the R-square statistic,

the Wald tests for equations, and the Eigenvalue stability condition, are reported in Table 9. The stability analysis results show that all the eigenvalues are within the acceptable range, and the stability index is 0, indicating that the structural equation model satisfies the stability condition. It also shows that the independent and control variables explain 1.11% and 1.46% of the changes in the intuitive and analytical cognitive styles, respectively. The rest is attributed to random error, which could be due to many other factors that were not controlled here in the structural model. In addition, the researcher found that the independent, control, and mediator variables together explain 8.75% and 10.5% of the changes in the number of opportunities identified and the innovativeness of the latest exploited opportunity, respectively. The R-square value for the whole structural model is 8.96%, indicating a satisfactory level of fit.

Table 9
Equation Goodness of Fit Statistics

Depvars	**R-squared**	**Wald tests for equations**			**Eigenvalue stability condition**	
		chi2	**Df**	**Prob.**	**Eigenvalue**	**Modulus**
Observed:						
Intuition factor	1.11%	8.200	4	0.084+	0	**0**
Analysis factor	1.46%	10.78	4	0.029*	0	**0**
Opportunities No.	8.75%	70.28	6	< 0.001**	0	**0**
Innovation	10.5%	82.97	6	< 0.001**	0	**0**
Overall	8.96%				**Stability Index** 0	

** $p < 0.01$, * $p < 0.05$, + $p < 0.10$

Table 10 offers a comprehensive summary of the hypotheses, the expected relationships between variables, and the outcomes of hypothesis testing. It provides a clear understanding of which hypotheses were supported by the data and which were not.

Table 10
Summary of Hypotheses Testing Results

Hypotheses	Variables	Hypothesized relationship	Results	Supported
H1a	OBOE and number of OI	Positive	Positive	Yes
H1b	OBOE and innovativeness of OI	Positive	Positive	Yes
H2a	OBOE and intuitive style	Positive	Not significant	No
H2b	OBOE and analytical style	Negative	Positive	No
H3a	Intuitive style and number of OI	Positive	Not significant	No
H3b	analytical style and number of OI	Negative	Positive	No
H3c	Intuitive style and innovativeness of OI	Positive	Positive	Yes
H3d	analytical style and innovativeness of OI	Negative	Positive	No
H4a	OBOE, intuitive style and number of OI	Mediating	Not significant	No
H4b	OBOE, analytical style and number of OI	Mediating	Significant	Yes
H4c	OBOE, intuitive style and innovativeness of OI	Mediating	Not significant	No
H4d	OBOE, analytical style and innovativeness of OI	Mediating	Significant	Yes

Discussion

The findings suggest that owning multiple businesses enhances an entrepreneur's ability to identify a greater number of opportunities and increase their level of innovation. Experienced entrepreneurs are often better able to identify a wide range of opportunities and make informed decisions about which ones are the most innovative and worth investing in. Previous studies have also found similar conclusions (e.g., Baldacchino et al., 2022; Gruber et al., 2008; Ucbasaran

et al., 2008, 2009). The human capital perspective explains this relationship, as the acquisition of ownership experience plays an important role in developing the skills needed to identify high-value opportunities.

In relation to the impact of business ownership experience on cognitive styles, the common assumption that business ownership experience always leads to intuition appears to be incorrect. In contrast to the paper's hypotheses and limited previous research (Baldacchino et al., 2022; Brigham & Sorenson, 2008; La Pira, 2011), this paper found that business ownership experience is positively correlated with analytical thinking, rather than intuition. This provides new insights into the relationship between cognitive styles and business ownership experience. The paper supports researchers' views that cognitive styles are sensitive to environmental change (Kozhevnikov et al., 2014).

The paper also shows that cognitive styles have an impact on opportunity identification. It shows that while identifying more opportunities requires a particular cognitive process, namely the analytical style, a higher level of innovation can be performed by preferring to rely on both intuitive and analytical styles. Thus, cognitive styles play an important role in supporting entrepreneurs' ability to identify opportunities, with the analytical cognitive style being the most productive. These results differ from the hypotheses of the paper and previous research, which suggested that the analytical style is related to perceived self-efficacy in identifying opportunities (Barbosa et al., 2007; Kickul et al., 2009). This inconsistency in results could be attributed to the fact that these previous studies measured opportunity identification based on self-efficacy perception. As for the studies that showed intuitive thinking contributes to identifying more innovative opportunities, one study found that analysis may also play a role in identifying "very innovative" opportunities. This does not negate the fact that analysis is linked to identifying opportunities (Baldacchino et al., 2022). Another study by Gustafson (2006) did not negate the existence of a link between analysis and opportunity identification. It found that intuition helps to identify opportunities during highly uncertain situations (opportunity creation), while analysis is useful during situations of low uncertainty (opportunity recognition). Egyptian entrepreneurs may encounter a relatively low level of uncertainty, which is related to their ability to recognize opportunities more than their ability to discover or create them.

Overall, the paper highlights the role of cognitive styles, particularly the analytical cognitive style, in mediating the relationship between prior business ownership experience and opportunity identification. These findings support the entrepreneurial cognitive perspective by suggesting that cognitive styles act as a mechanism that enables entrepreneurs to utilize their experiences and improve their ability to identify opportunities.

Contributions

In response to recent calls (Blume & Covin, 2011; Brigham & Sorenson, 2008; Dutta & Crossan, 2005; Long et al., 2022; Sadler-Smith, 2016), this paper makes three theoretical, empirical, and practical contributions. Theoretically, the researcher argues that (1) the results contradict previous theoretical arguments that assume prior experience is a source of intuition. It shows that business ownership experience is positively related to analytical thinking, but not intuitive thinking. This provides new insights into the relationship between cognitive styles and the business ownership experience. The paper supports researchers' views that cognitive styles are sensitive to environmental change and that (2) the Dual Process perspective is valid over the Unitary perspective, because the results suggest that the intuitive style is independent from the analytical style. This is evident from the fact that experienced entrepreneurs show a high preference for the analytical style without showing a low preference for the intuitive style. So, the paper contributes to the debate about the theory that explains the relationship between intuitive and analytical styles.

Empirically, the paper shows that while identifying more opportunities requires a particular cognitive process, namely the analytical style, a higher level of innovation can be done by preferring to rely on both intuitive and analytical styles. These results partially differ from the hypotheses of the paper and most previous research, which suggested that only intuitive thinking contributes to identifying more innovative opportunities. In addition, the paper provided a relatively unexplored perspective on the relationship between business ownership experience and opportunity identification in a new context. The literature on how habitual entrepreneurs improve their ability to identify innovative opportunities is limited and contradictory. Previous studies did not investigate the association between business ownership experience, cognitive styles, and opportunity identification in the Egyptian context. The results confirmed the necessity of

studying these relationships in the Egyptian context. The paper found that analytical style (rather than intuitive style) serves as a mediator in the relationship between business ownership experience and opportunity identification.

Finally, the researcher makes four practical contributions. First, the results suggest that the most effective cognitive style for Egyptian entrepreneurs in the early stages of the entrepreneurial process is the analytical style. Consequently, entrepreneurs must understand the importance of relying more on analytical thinking to enhance their ability to identify opportunities both quantitatively and qualitatively. Second, public and private education and training institutions can benefit from the findings of this paper and other research that examine the cognitive factors and mechanisms that can enhance an individual's ability to identify opportunities, including cognitive styles. By integrating these factors into their courses and training programs, institutions can provide students with the cognitive skills required at this crucial stage. For potential entrepreneurs, learning how to discover and create innovative opportunities is a primary objective. Third, the results suggest a need to focus on experienced entrepreneurs by developing policies and presenting initiatives that provide the necessary support and resources to invest in these opportunities and move the economy forward. Fourth, the paper suggests that Egyptian institutions, such as the Central Agency for Public Mobilization and Statistics, should provide lists of names and addresses of serial, portfolio, and novice entrepreneurs. This will allow researchers to conduct more in-depth studies on these specific categories. This is necessary because there is currently no reference framework that categorizes Egyptian entrepreneurs according to their level of business ownership experience.

Limitations and Future Research Directions

The paper inevitably has some limitations that open up future research possibilities. The paper explored the impact of business ownership experience without distinguishing between experiences of failure and success to determine whether either or both were associated with the dependent variable. However, future studies could distinguish between these two types to obtain more accurate results. For serial entrepreneurs, there is uncertainty about their homogeneity and whether the experience of failure has a different effect than the experience of success. It is worth investigating whether there are differential effects of failure experience.

The paper was limited to examining the impact of business ownership experience without distinguishing between experience in the same industry and experience in multiple industries. However, future research could examine how diversity in business ownership experience affects opportunity identification behavior. Shane (2000) suggested that prior knowledge in the same sector in which the entrepreneur operates is critical for opportunity identification. In contrast, Ucbasaran et al. (2009) emphasized the importance of broadening habitual entrepreneurs' experiences in opportunity identification. In this context, Ucbasaran's (2004) measurement can be used to assess the similarity between the entrepreneur's current and previous main businesses.

Based on the findings, it appears that the independent, control, and mediating variables together explain less than 10% of the changes that occur in opportunity identification behavior. This suggests that there are additional variables that are important and need to be further investigated or at least controlled. It is evident that there are differences between the findings of most previous research and this study. This highlights the importance of using mixed research methods to explain these differences and to understand the origins of intuition due to its complex nature. Furthermore, researchers can use other measures that capture other aspects of intuition. In this paper, REI was used to assess intuition more from an emotional point of view.

The paper was based on the REI as a measure of cognitive styles. However, there are alternative measures available that could be used to validate these results that are also consistent with dual-processing theories (PID; Betsch, 2008). According to Hodgkinson et al. (2014), the PID and REI are the most reliable self-report scales for future use. Therefore, future research could benefit from using multiple measures of cognitive styles to strengthen the validity of the findings.

It should also be mentioned that the study is based on preferred styles of intuition and analysis rather than directly measuring the actual usage. The study conducted by Baldacchino (2022) showed that a preference for a particular style does not always translate into its actual use. Therefore, future studies could focus on measuring the actual use of intuitive and analytical thinking. In this regard, the study by Dane and Pratt (2009) is a valuable reference for the techniques used by researchers to measure actual use. Moreover, the study by Baldacchino et al. (2022) is a valuable reference for using think-aloud protocols to measure actual usage, rather than relying only on self-reporting.

Finally, it is essential to acknowledge the limitations of the sample selection process. In particular, no framework available for classifying Egyptian entrepreneurs based on the number of companies they own, and there is no guarantee of sufficient access to Egyptian habitual entrepreneurs. As a result, the researcher had to use a combination of convenience and control sampling techniques instead of probability sampling techniques. Therefore, the results of the study cannot be generalized. To address these limitations, the researcher suggests Egyptian institutions, such as the Central Agency for Public Mobilization and Statistics, should provide lists of names and addresses of habitual and novice entrepreneurs.

Conclusion

Understanding the behavior of opportunity identification enhances researchers' understanding of entrepreneurship. Therefore, it was essential to provide an explanation for this behavior. As Baron (2007) mentioned, "Crossing boundaries between disciplines is always difficult... But the rewards, too, may be great". Indeed, this promising joint field has already produced fruitful results in advancing our understanding of opportunity identification behavior. The paper found that business ownership experience enabled Egyptian entrepreneurs to identify more and better quality (i.e., innovative) opportunities. The paper also found that the analytical cognitive style is a mediator in this relationship. In conclusion, if this paper could contain only one message, the researcher would like it to enhance habitual entrepreneurs' understanding of their cognitive processes. This means that researchers should focus on studying these cognitive processes, as they play a significant role in improving entrepreneurial behavior. In particular, it can help serial and portfolio entrepreneurs improve their ability to identify quantitative and qualitative opportunities, thus opening the way for them to invest in these opportunities, create value and wealth, achieve greater success in their ventures, and ultimately stimulate the Egyptian economy.

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Appendix A: Questionnaire Items

A. Prior business ownership experience	
How many businesses have you currently or previously owned with minority or majority ownership stakes, whether you established, inherited, and/or purchased?	
B. Opportunity identification	
B1. Number of OI	How many opportunities for creating or purchasing a business have you identified within the last five years? The answer options ranged from 0, 1, 2, 3, 4, 5, 6 to 10, or more than 10 opportunities.
B2. Innovativeness of OI	I have introduced a new product or a new quality of an existing product. I have introduced a new method of production or modified an existing method. I have found a new market or employed a new marketing strategy in an existing market. I have found a new source of supply. I have found new ways of managing finance. I have developed new structures, systems, or procedures. I have introduced a new culture, especially through the introduction of innovative individuals. I have found new ways of managing and developing personnel. I have used new ways of managing quality control and R&D. I have found new ways of dealing with government and other external agencies. (yes, or no).

C. Cognitive styles	
C1. Intuitive cognitive style	Using my gut feelings usually works well for me in figuring out problems in my life.
	I believe in trusting my hunches.
	Intuition can be a very useful way to solve problems.
	I often go by my instincts when deciding on a course of action.
	I trust my initial feelings about people.
	When it comes to trusting people, I can usually rely on my gut feelings.
	I think there are times when one should rely on one›s intuition.
	I hardly ever go wrong when I listen to my deepest gut feelings to find an answer.
	I tend to use my heart as a guide for my actions.
	I can usually feel when a person is right or wrong, even if I can›t explain how I know.
	I like to rely on my intuitive impressions, I don›t have a very good sense of intuition, (-)
	If I were to rely on my gut feelings, I would often make mistakes, (-)
	I don›t like situations in which I have to rely on intuition, (-)
	I think it is foolish to make important decisions based on feelings, (-)
	I don›t think it is a good idea to rely on one›s intuition for important decisions, (-)
	I generally don›t depend on my feelings to help me make decisions, (-)
	I would not want to depend on anyone who described himself or herself as intuitive, (-)
	My snap judgments are probably not as good as most people›s, (-)
	I suspect my hunches are inaccurate as often as they are accurate, (-)

C. Cognitive styles	
C2. Analytical cognitive style	I enjoy intellectual challenges.
	I enjoy solving problems that require hard thinking.
	I prefer complex problems to simple problems.
	I am much better at figuring things out logically than most people.
	I have a logical mind.
	I enjoy thinking in abstract terms.
	I have no problem thinking things through carefully.
	I usually have clear, explainable reasons for my decisions.
	Learning new ways to think would be very appealing to me.
	I try to avoid situations that require thinking in depth about something, (-)
	I'm not that good at figuring out complicated problems, (-)
	I am not very good at solving problems that require careful logical analysis, (-)
	I don't like to have to do a lot of thinking, (-)
	Thinking is not my idea of an enjoyable activity, (-)
	I am not a very analytical thinker, (-)
	Reasoning things out carefully is not one of my strong points, (-)
	Thinking hard and for a long time about something gives me little satisfaction, (-)
	I don›t reason well under pressure, (-)
	Using logic usually works well for me in figuring out problems in my life,
	Knowing the answer without having to understand the reasoning behind it is good enough for me, (-)
	A minus sign (-) with a scale name denotes reverse scoring.

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