Entrepreneurial perception of new venture creation among nascent entrepreneurs in the developing country context

Abstract. This study investigates the complex relationships between market need urgency (MNU), entrepreneurial push and pull insights driven by supply (SDI) and demand (DDI), and opportunity confidence (OC), resulting in new venture creation (NVC) from the perspective of nascent entrepreneur's perceptions in the developing country context. Departing from the discovery and creation views of the entrepreneurial process, it builds on the seminal works of Sarasvathy et al. (2003) and Dimov (2007a) to examine how demand- and supply-driven insights and opportunity confidence are related, especially when nascent entrepreneurs think there is urgency for a specific need in a developing country marketplace. Using binary logistic regressions, we test the research hypotheses on a dataset of nascent entrepreneurs who were traced for four years. We find that the MNU is a subtle predictor of NVC, both directly and indirectly through OC. We also find that OC is a crucial element in accelerating entrepreneurial activity, either when there is a market need urgency or the entrepreneur has a firm opinion about the markets and technologies related to a specific product/service. The results suggest that nascent entrepreneurs operate by their perceptions of markets and technologies, yet their confidence levels play a major role in moving onto the stage of new venture creation. Furthermore, results suggest that nascent entrepreneurs' market and technology-related entrepreneurial insights, opportunity confidence, and their co-existence in distinct settings such as isolated third world countries are relatively new phenomena that require deeper investigation. Finally, this research provides implications that give entrepreneurship educators, practitioners, and policymakers informed choices to encourage entrepreneurial learning and experiencing processes specifically in higher education settings in developing countries.

Keywords: Entrepreneurial Perception, Opportunity Confidence, Entrepreneurial Insight, Entrepreneurial Behavior, Entrepreneurial Opportunity, New Venture Creation, Isolated Third World.

1. Introduction

'What factors facilitate new venture creation?' is probably one of the major and most frequently asked questions in the field of entrepreneurship. Different factors that influence new venture creation have been studied extensively in the extant literature, including entrepreneurial intentions (Kautonen et al., 2015; Gielnik *et al*., 2014; McMullen and Shepherd, 2006; Meoli *et al*., 2020), entrepreneurial intentions in terms of perceived opportunities and capabilities (Beynon et al., 2016; 2020), perceived uncertainty (Jiang *et al*., 2019), entrepreneurial intention via personality traits (Laouiti et al., 2022), entrepreneurial imaginativeness and empathy (Kier and McMullen, 2018; 2020; Packard and Burnham, 2021), entrepreneurial passion (Gielnik *et al*., 2015), the role of business incubators (Bruneel *et al*. 2012; Grimaldi and Grandi 2005), the entrepreneurial environment (Chen *et al*., 2020), the entrepreneurial ecosystem (Mason and Brown, 2014; Wurth *et al*., 2021) and digitalisation (von Briel *et al*., 2018), among others. New venture creation is also

closely linked to successful identification, exploitation (Shane and Venkataraman, 2000; Eckhardt and Shane, 2003), and actualisation of entrepreneurial opportunities (Ramoglou and Tsang, 2016).

It is widely acknowledged that the cognitive functions of an entrepreneur, i.e., acquiring knowledge, living through experiences, and developing perceptions and senses, are essential in entrepreneurial action (Foss et al., 2008; Dimov, 2010) and context is an important factor in understanding entrepreneurship (Acs et al., 2014). Entrepreneurial perception and behaviour can vary between developed and developing countries due to several contextual factors, such as the availability of resources, the level of economic development, cultural and societal norms, an individual's or organization's prior experiences, level of education and awareness (Mason and Brown, 2014; Wurth et al., 2021, Yoruk et al., 2022). While exhaustive literature exists which tries to evaluate the impact of the abovementioned factors on entrepreneurial performance in developed countries, one major shortcoming of the existing literature is the lack of such research in developing countries and especially countries that are isolated from global connections. Although entrepreneurs grapple with many obstacles in their entrepreneurial journey, the critical issue is that the adverse effect of such obstacles based on the circumstances is much stronger in the isolated third world in shaping perceptions of entrepreneurship (Acs and Virgill, 2010).

Extant entrepreneurship literature proposes two distinct approaches to studying complex issues in entrepreneurship that ultimately influence new venture creation, i.e., the opportunity discovery and the opportunity creation views. The entrepreneur's alertness characterises the discovery approach to new existing opportunities (Kirzner, 1973), whereas the creation approach is characterised by the entrepreneur's perceptions, intuitions, evaluation, and judgement (Knight, 1921; Von Mises, 1966). Within these contexts, entrepreneurial perceptions are usually associated with the opportunity creation school of thought (Krueger, 2000) or subjectivist discovery theories of entrepreneurship (Kor et al., 2007; Korsgaard et al., 2016[1]). Although some scholars see these two routes as distinct from each other, some other scholars contemplate that an integrated framework may exist for these two distinct approaches under certain circumstances (Sarasvathy et al., 2003). Yet, there is a need for more conceptual and empirical studies that integrate both approaches that shape entrepreneurial insights and perceptions leading to entrepreneurial action.

[1] See Korsgaard et al. (2015) for a pertinent discussion on Kirzner Mark I and Mark II for how objectivity and subjectivity may overlap.

Building on these ideas, this paper approaches new venture creation from an entrepreneurial perception and behaviour perspective, which integrates the discovery and creation views. We approach this query from a product technology-market context of individual entrepreneurship specifically in a developing country context. Building on the work of Sarasvathy et al. (2003), we provide empirical testing by operationalising the supply (push) and demand (pull) sources by entrepreneur's insight (Dimov, 2007a), and we further extend the framework to include opportunity confidence (Dimov, 2010; Davidsson, 2015) and market need urgency, and bring these insights to the ground level in a third world context. Amalgamating the two distinct approaches of discovery and creation is very suitable for our quest since we purely deal with the individual nascent entrepreneur's perceptions and behaviour that eventually lead to entrepreneurial action.

One of the significant shortcomings of entrepreneurial research is the lack of comprehensive research on the behavioural processes by which entrepreneurs understand supply and demand and use that understanding to create new combination/match (Alvarez and Barney, 2020). Moreover, since the new product creation process is shaped by the surrounding conditions, the way that it materializes is different in developed and developing countries (Rezaei et al., 2019). Studies which represent such examples from developing countries are scarce. It is only logical to think that an entrepreneurial mindset involves both creation and discovery views of opportunity. Yet, we are interested in the developing country entrepreneur's mindset during the conception phase of entrepreneurship and our data comes from a developing country with limited high-level innovative activity. For instance, Bogatyreva et al. (2019) contend that national culture is one important factor in the relationship between entrepreneurial intentions and entrepreneurial activity. That is why we presume a nascent entrepreneur in this kind of environment will initially evaluate their product's market environment, hence our approach is bounded by entrepreneurship as a market process (Kirzner, 1973, 1997). However, we do not ignore the supply-side and technological aspects of products and services that will influence entrepreneurial proactivity. To complement our approach with a focus on entrepreneurship as a market process, we do not ignore one of the fundamental prerequisites of new venture creation, i.e., the perception of the entrepreneur about the emerging or unmet market need. Market orientation as an entrepreneurial phenomenon has been an established concept (Webb et al., 2011). In already existing markets, entrepreneurs demonstrate market-driven behaviour by responding rapidly to customers' needs (discovery); in instances where markets need to be radically redefined or created, entrepreneurs exhibit market-driving

behaviour by shaping the structure of markets and the preferences of customers (creation) (Schindehutte *et al*., 2008). The entrepreneur's perception of the need in the market forms the basis for any of these two types of market-related behaviours. The ability to sense buyers' emerging or unmet needs becomes a crucial issue in generating and exploiting opportunities (Emami et al., 2020). Moreover, Packard and Burnham (2021) demonstrate that entrepreneur's vicarious learning and empathising with the customers' needs is crucial in finding solutions for unmet needs.

Framed by the above, this study contributes to opportunity ideation and evaluation (Dimov, 2010; Davidsson, 2015; Packard and Burnham, 2021; Pidduck et al., 2021) and entrepreneurial action (Alvarez and Barney, 2007; Kautonen et al., 2015; Packard, 2017; Bogatyreva et al., 2019) theories by highlighting the role of market need urgency (MNU) and opportunity confidence (OC) of entrepreneurs in tandem with supply- and demand-driven perceptions in the entrepreneurial process of new venture creation. Notably, we approach this query from the context of a developing country and individual entrepreneurship. With this aim, we build on Sarasvathy et al. (2003) and Dimov (2007a) from a lens of discovery and creation theories of entrepreneurship. We aim to contribute to the extant literature by unfolding the concept of nascent entrepreneurial perceptions in the developing country context using an integrative framework of discovery and creation perspectives and exploring the complex relationships between elements of entrepreneurial perceptions and new venture creation.

The empirical data of this research is based on data collected from students of entrepreneurship and business administration (MBA) from state-funded universities in Iran. Entrepreneurship is considered the driving engine of the economy in Iran (Faghih, 2017). MBA and Entrepreneurship programs were established in prominent universities in the late 1990s and early 2000s. They were later developed increasingly throughout the country by diverse private and state-funded higher education institutes. However, these efforts lost impetus during the last few years. Iran is one of the countries that regularly takes part in the Global Entrepreneurship Monitor (GEM) surveys (Bosma et al., 2021). Among the GEM Level C category of countries (with less than $20,000 per capita) Iran has the highest rate of necessity-driven entrepreneurial activity, i.e., 64% of adults engaged in entrepreneurial activity state that their motive is 'to earn a living because jobs are scarce'. It also has very unfavourable framework conditions for entrepreneurial activity apart from relatively strong market support (GEM, 2022). The dynamics of the entrepreneurial process in

isolated developing countries are important to study since existing entrepreneurial intentions and perceptions are prone to quite different circumstances (e.g., resources and capabilities) compared to those of advanced countries (Ramadani and Gerguri-Rashiti, 2017), and it is important to explore what factors are at play to generate entrepreneurship with socio-economic impact (Acs et al., 2014; Kor et al., 2007).

Findings imply that perceived market need urgency and opportunity confidence are two major enablers of new venture creation in the context of a developing economy that is under severe economic and political sanctions with a high degree of regulatory uncertainty. Moreover, our study implies that it is difficult for nascent entrepreneurs in a such context to have accurate insights on not-yet-created technological and market novelties rather they pay more attention to urgent needs (compared to new push and pull insights) in feeding their confidence in the opening venture.

The paper is structured as follows. We begin by elaborating on the concept of entrepreneurial perceptions as embedded in opportunity discovery and creation views of entrepreneurship studies. Since we focus on the views of the individual entrepreneur, opportunity discovery and creation process in markets and technologies are closely related to individual entrepreneurs' perceptions of existing and new supply and demand conditions, namely supply-driven insight (SDI) and demand-driven insight (DDI). We then introduce the elements of entrepreneurial perceptions as we intend to focus on in our study. For that, we review the literature on the role of market need urgency and supply and demand-driven perceptions of entrepreneurs leading to new venture creation process. We, then, highlight the crucial role of opportunity confidence in this process. Thereafter, we propose the hypotheses. Finally, after describing the methodology and results, we conclude with a discussion of our findings, implications, limitations, and suggestions for future research.

2. Theoretical Underpinnings

2.1. Entrepreneurial perceptions on supply and demand from an opportunity discovery and creation perspective

Markets and technologies are primary domains where opportunities are embedded and can be discovered or created. For Kirzner, alertness to opportunities is vital in entrepreneurial behaviour. He sees the entrepreneur as 'the discoverer of an available opportunity' (1979: 215). Kirzner

suggests these opportunities arise from the disequilibrium in the market. Further contributions explain this phenomenon from a discovery view of entrepreneurship and a 'means-ends' perspective (Shane and Venkataraman, 2000). However, Kirzner (1979) also draws attention to the 'hunches' of the entrepreneur in explaining alertness. In his famous example of Robinson Crusoe in *Perception, Opportunity, and Profit,* Kirzner (1979:161-2) hypothetically exemplifies the 'hunches' or beliefs of entrepreneurs, i.e., Crusoe makes the evaluation and judgment that building a boat and a net is a better use of his time than catching fish by bare hands. Decisions made by the judgments of entrepreneurs are also associated with the Knightian view of entrepreneurship (Knight, 1921; Casson, 1982; Foss, 1993; Foss and Klein, 2005). In the Knightian sense, evaluation, and judgment indicate the creation of new opportunities as perceived or believed to be achievable by the entrepreneur and introduce a subjective dimension to the entrepreneurship process (Foss et al., 2008). For instance, Beynon et al. (2016; 2020) examine the role of perceived opportunities and capabilities as forms of entrepreneurial attitudes on the role of entrepreneurial activity. At this point, we argue that entrepreneurial perception and action are a blend of both a discovery and a creation process. Successful entrepreneurs are not only able to act alertly on the existing opportunities but also can perceive and sense the pockets of imperfections or gaps for future market opportunities and judge them effectively. From a supply-driven perspective, entrepreneurial activity is a function of technology-related opportunities, which is a key requirement for the generation of entrepreneurial rents (Schumpeter, 1934). Inventions are tools for opportunity creation and where there is an unmet need in the market entrepreneurs may sense the need and act to create or discover the technological solution to meet the demand.

Sarasvathy et al. (2003) inform us regarding the possible conditions under which both discovery and creation effects of entrepreneurial activity can occur. Initially, the supply and demand for an opportunity (i.e., a product, a service) should match each other for the entrepreneurial action to be realized (i.e., venture creation or intrapreneurial activity through an existing firm). Sarasvathy (2001) describes the entrepreneur's involvement in this initial process as the entrepreneur improvising the match of perceived means with perceived ends. Dimov (2007a: 563) calls this stage in the entrepreneurial process which precedes opportunity exploitation, as 'intentionality that drives early stages of opportunity development'. Dimov's (2007a) *intuiting* and Kirzner's (1979) *hunches*, Dimov's (2007a) *interpreting,* and Knight's (1921) *evaluation* and *judgement* operate in

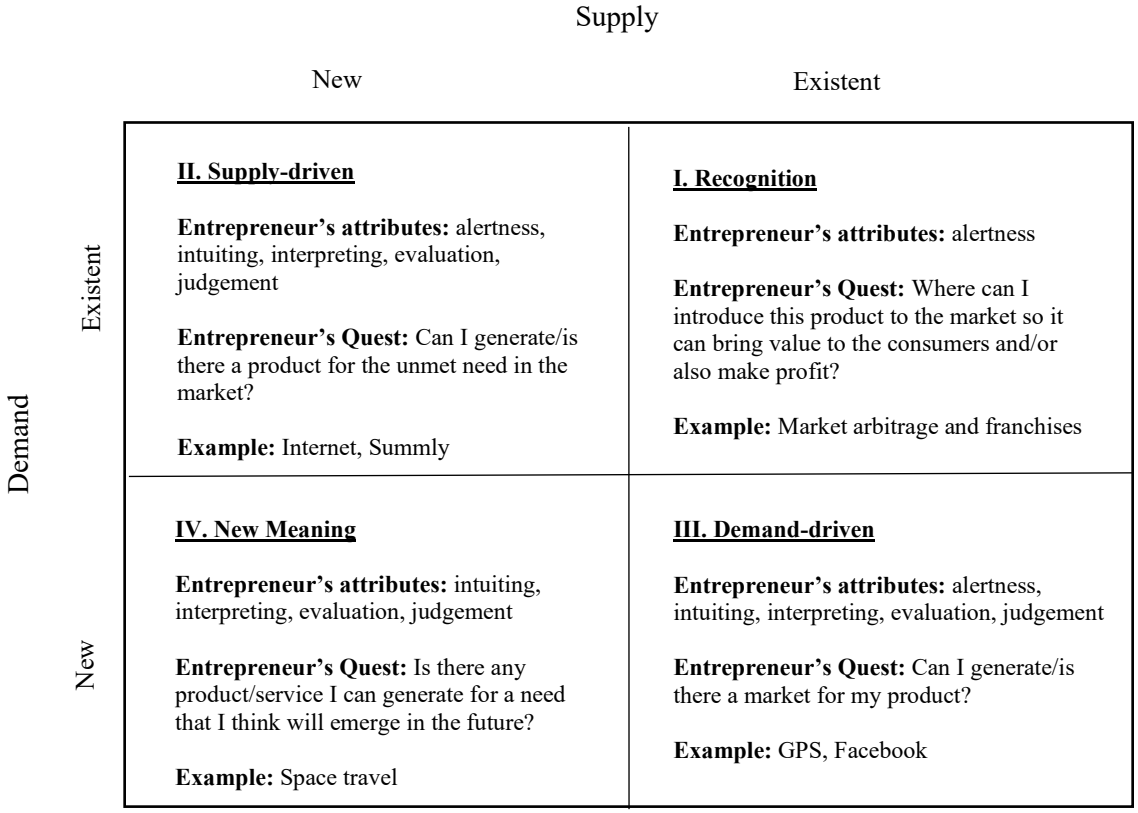
the same fashion. Furthermore, Dimov (2007a) operationalises the concepts of intuiting and interpreting by way of an entrepreneur's insights into supply and demand conditions in the market. Although Dimov (2007a) is merely concerned with the creation aspect of opportunities, his operationalisation of insights allows us to merge it with the ideas of Sarasvathy et al. (2003) that both discovery and creation take place under different conditions, but they can co-exist under some similar conditions.

In Figure 1, we illustrate their approach. Quadrant I in Figure 1 represents the condition when both demand and supply are known and available. Here, recognition of opportunities is paramount, with the alertness attribute of an entrepreneur playing the major role in making *recognition* of existing supply and demand. The role of the entrepreneur is only to valorise new value out of a combination (establishing a new equilibrium) that has not yet been commercialized. For example, importing a product or technical know-how from another country to address a locally unmet need is such an opportunity.

Another example is intermediary arbitrage, where the entrepreneur buys a product and then sells it at a higher price at a later time. Quadrants II and III are conditions when demand and supply do not match each other. Here, the entrepreneur must discover either the non-existent market or the non-existent product. Intuitions, interpretation, evaluation, judgments, and alertness play a role in this discovery process. II states that a need or demand is established and prominent, but the entrepreneur seeks to address that demand using a novel supply or mean i.e., offering a *new solution* to the existing need. Examples would include the development of digital imagers for photography, cellular telephony, and fiber-optic internet servicing. Quadrant III states that the opportunity arises from a means (e.g. technical knowledge) that is available, but the entrepreneur tries to reveal (from its latent form) or create a new market need i.e. offering a *new concept* among users on the demand side. The use of GPS in cars, mobile computers, LinkedIn, and Facebook can be categorized in this category; computer and GPS technologies had long existed before their combined usefulness was realized. After exposing such a need, the entrepreneur addresses it by commercializing a new product. According to Dimov (2007a: 566), under these conditions, an entrepreneur's insights can take a demand-driven or a supply-driven form: If '*demand-driven*, (it) pertains to situations in which one is cognizant of current or emerging customer needs but lacks awareness of possible products that can meet such needs'; and if '*supply-driven*, (it) pertains to

situations in which one is aware of existing or emerging products yet lacks an immediate sense of the possible customer needs that these products can satisfy'. Finally, quadrant IV exemplifies the condition when demand and supply are non-existent and need to be created by the entrepreneur. The entrepreneur must create *new meaning* out of new demand as well as new supply and commercialize the resulting combination. For example, Hollywood, Bell's telephone, and SpaceX each created radically new products that created new demand.

Figure 1. Supply and demand conditions as determinants of entrepreneurial perceptions and actions.



Source: Authors' elaborations based on Sarasvathy et al. (2003) and Dimov (2007a).

Insights into supply and demand, SDI and DDI are not zero and one (not dichotomous) but are continuous (from low innovative to high innovative insights) and relative; hence they can be studied as continuous predictors (Emami, 2021). This stems from the fact that opportunities vary significantly even in similar markets or with similar products. For example, compare a new drug to treat anxiety with the vaccines to immunize against COVID-19. Both are established market problems in search of a new solution. Nevertheless, although similar in kind, these possible

opportunities are notably distinctive in the magnitude and urgency of market need. Alternatively, compare the first and pioneering ride-share company, Uber, with imitators in other parts of the world. They each address virtually the same opportunity using essentially the same business model, but the degree of newness in their respective SDI and DDI are not the same. Demand-driven insights (DDI) are rich sources of opportunity formation and innovation. They fill knowledge gaps in markets and, so, contribute to the establishment of new ventures. Again, this should be seen as a continuum, ranging from small, incremental insights to highly novel ones. Incremental insights address existing needs understood in a somewhat new and different way, thus leading to the recognition of new opportunities (e.g. a new situation for franchising or arbitrages) or incremental pivots. More radical DDIs can lead to the discovery or creation of more novel and uncertain opportunities (Emami, 2021). In connection to that, to avoid the ontological and epistemological dilemma concerning *objective* (Kirzner's view) vs. *subjective* opportunities (Schumpeter's view), consistent with Sarasvathy et al. (2003) and agreeing with Ramoglou's (2021) approach, we simply consider these four states as "opportunity ingredients", possibilities to make different imaginable world states (e.g., new ventures) in future by way of vicarious imagination and empathy (Packard and Burnham, 2021).[2] Therefore, the perceptions of DDI and SDI are valuable in proffering empirical ground to test how an entrepreneur's perceptions influence different kinds of new venture ideas as the process unfolds. The below section sets out how we operationalise entrepreneurial perceptions for markets and technologies, develop our conceptual framework, and formulate the hypotheses.

2.2. What kind of entrepreneurial perceptions matter for new venture creation and how are they related?

Davidsson (2015) recently broke down the individual - opportunity (I-O) nexus into three main components of *external enablers*, *new venture idea*, and *opportunity confidence*, emphasizing that these components together lead individuals to new venture creation. We argue that the key entrepreneurial perceptions that matter for a processual view of new venture creation can be classified into three: (i) perception of the entrepreneur about the urgency of the need for the

[2] We thank an anonymous reviewer to bring this issue to our attention.

product/service caused by external enabler/disablers such as the supply of new technology or crisis (Davidsson et al., 2021), (ii) perceptions about the supply-and demand insights that form the new venture idea (Dimov, 2007a), and (ii) perceptions of the entrepreneur's self that we proxy by the confidence of entrepreneur in themselves and the feasibility of conditions for entrepreneurial activity, opportunity confidence. In addition, we posit that these constructs are closely related to their direct and indirect effects on new venture creation.[3] We are interested in the interplay between these perception-related factors for their ultimate effect on new venture creation. The next sub-sections focus on these factors and their interdependencies to form our conceptual framework in Figure 2.

2.2.1. Perceptions on the market need urgency

Understanding market needs is a key part of opportunity perception and evaluation (Schindehutte *et al.,* 2008; McMullen, 2011; Davidsson, 2015). Generally, business opportunities are found by investigating or sensing customers' pressing needs and what might be a suitable solution for fulfilling them. One of the important components in the opportunity evaluation process is the urgency, necessity, and importance of addressing the market need underlying the opportunity, which can vary across places and times. Ramoglou and McMullen (2022) clarify that opportunity is essentially a concept that is used "when one believes that there exist the necessary conditions for an imagined state of the world to be genuinely possible" (p. 17). Although, an urgency from the demand side signals a strong market need out there, however, it is not the need *per se,* and therefore it is different from an opportunity. For the latter, conditions that create favourable habitat for the creation of new or novel is at the centre of the definition (McMullen et al., 2007). Similarly, Casson (1982) sees opportunities as situations in which new goods, services, raw materials, and organizing methods that can be introduced and sold at greater than their cost of production, whilst Shane (2012: 15) stresses the 'situations in which it is possible to recombine resources in a way that generates a profit". In view of Alvarez and Barney (2007; 2020), opportunities are defined as

[3] We confine this study to the individual entrepreneur's perceptions. One important aspect of creation view of entrepreneurship is its emphasis on the role of social interactions when the cognitive process of entrepreneurial action takes place. Entrepreneurship inherently involves social interactions (Dimov and Pistrui, 2020; Cajaiba-Santana, 2014). For instance, the discovery perspective is criticized for its intensive focus on the individual-opportunity (I-O) nexus (Korsgaard, 2011). Whilst we agree that the social dimension and social interactions of the entrepreneur are very important in understanding the entrepreneurship process, in this paper, we limit our boundaries to focusing solely on the individual entrepreneur's perceptions since we are primarily interested in the interplay among the perceptions related to product novelty, markets, and confidence levels.

competitive imperfections in product or factor markets such as mismatches between supply and demand. Therefore, a *novel* or *distinct* element that can bring about profit is at the core of the opportunity concept. A market need, by contrast, does not necessarily have to be novel in order to be considered urgent or serious and this is an important distinction with demand-driven insight specifically in the context of developing countries and the isolated third world with limited innovative activity, low opportunity entrepreneurship but high necessity entrepreneurship (GEM, 2020) based on necessary demands. In addition, while novelty in demand is often considered a niche, it is the recognition of the pertinent urgency that brings an advantage. Therefore, in two different markets one with an unsatisfied market need or a latent need and another with a similar condition but with an urgency of the need, the market pull is stronger in the latter than the former.

Most of the research in entrepreneurship considers timing for grasping an opportunity as an internal element, e.g., how an entrepreneur's doubt terminates the window of opportunity (Choi and Shepherd, 2004; Choi *et al*., 2008), the timing of the product launch (Schoonhoven *et al*., 1990; Cooper and Mills, 2005; Suomala and Jokioinen, 2003), the impact of time in firm's survival and growth (Bamford *et al*., 2004), or the conditioning effect of time on firm survival (Agarwal *et al*., 2002). To date, little is known about timing as an external factor in venture emergence - i.e., how the market dictates the urgency of a need and how an entrepreneur perceives this need. From this viewpoint, an urgent need as perceived by the entrepreneur can either be discovered or created. It deals explicitly with to what extent an opportunity to satisfy a need, problem, or pain is important and urgent at a given time. Therefore, there is variability in urgency in different markets (even within the same industry). An opportunity idea can be novel but not necessary for a specific context, e.g., space-traveling for poor economies. In addition, urgency can increase the feasibility of an opportunity idea for exploitation (De Smedt et al., 2013; Lieberman and Montgomery, 1998; Robbinson et al., 1992).

The urgency that is driven by the market is different from the entrepreneur's *endogenous* concerns over the timing of a new product entry service. Instead, it references whether the market will find the new value as necessary or urgent – i.e., an *exogenous* urgency. In this paper, we call this Market Need Urgency (MNU) construct and operationalise by the nascent entrepreneur's perception of this urgency. We argue that MNU is part of *individual-opportunity evaluation* driven and augmented by external conditions in the market (e.g., technology disruption and crisis that cause

shifts in demand). Aforementioned above, a stiffer MNU makes the market pull stronger. When MNU is severe but no supply of product has applied, the demand tension in the market will increase especially when the supply of product relates to basic needs (such as those of the first level of Maslow's hierarchy of needs). This would make the window of opportunity wider in the given time and opening space for more rivals to enter. MNU has important implications for entrepreneurs to know when to enter the market as well as when to exit it under the condition of uncertainty.[4]

2.2.2. Entrepreneurial insights driven by supply and demand conditions

We build on the previous research as discussed in section 2.2. which sets the scene for our query and provides us with the tools to operationalise entrepreneurial perceptions and beliefs. Following Dimov (2007a), we use entrepreneurial insights into supply and demand conditions to proxy entrepreneurial alertness, intuition, interpretation, evaluation, and judgement as predictors of new venture creation. In the language of entrepreneurial opportunity, supply- and demand-driven insights are directly related to means and ends factors, respectively (Dimov, 2007a). Insight references the process by which a person changes from a state of ignorance to a state of knowing (Finke, 1990; Meyer, 1992). 'Lack of insight' in the problem-solving literature refers to a state of not knowing how to solve a problem'. Therefore, insight is a state of knowing what the problem is and how to solve it. Having a mental image of a particular group of customers benefiting from using a particular product or service is key (Sarasvathy et al., 2003). The insights associated with new entrepreneurial opportunities can be conceived as the mental image for solving problems for a particular group of customers (Dimov, 2007b).

The key to understanding perceived opportunities is understanding how entrepreneurial push and pull insights, and supply- and demand-driven insights of entrepreneurs, interact (Alvarez and Barney, 2020). Demand-driven insight (DDI) refers to information regarding needs, problems, or pains that the entrepreneur perceives from the demand side (ends) where no clear and definite solution already exists to meet them. DDI opens new room for discovering or creating a new solution for a specific customer segment. Contrastingly, supply-driven insight (SDI) refers to technical and technological knowledge (means) that an entrepreneur has or may obtain from

[4] We thank an anonymous reviewer to guide us elaborate on such a role of MNU.

research and development centres, collaborators, the market, and competitors (Frenkel *et al.*, 2015). The source of SDI is insight realized by the entrepreneur. Therefore, SDIs can enable the discovery or creation of new solutions to already-known market problems.

DDI are rich sources of opportunity formation and innovation. They fill knowledge gaps in markets and, so, contribute to the establishment of new ventures. This should be seen as a continuum, ranging from small, incremental insights to highly novel ones. Incremental insights address existing needs understood in a somewhat new and different way, thus leading to the recognition of new opportunities (e.g. a new situation for franchising or arbitrages) or incremental pivots. More radical DDIs can lead to the discovery or creation of more novel and uncertain opportunities (see Figure 1).

DDI provides useful information about the problem and the need to develop an entrepreneurial perception of a particular opportunity (Frenkel *et al*., 2015). The more an entrepreneur realizes that a need is urgent, the more he or she tries to gain more precise information about the underlying opportunity, which becomes a potent stimulus for seeing the need in terms of an opportunity. In addition, DDI contains invaluable and practical information that increases the intention to take advantage of market opportunities (Emami and Klein, 2020). This mechanism is not only active in the entrepreneur's mind but also explains how the process of raising capital and starting a business can yield the information needed by the investor and provide the nascent entrepreneur with strong outside *approval* (Gielnik et al., 2012). Based on these, we hypothesize the below relationships between MNU, DDI, and NVC:

H1a: Perceived market need urgency positively affects demand-driven insight.

H1b: Demand-driven insight positively affects new venture creation.

H1: Demand-driven insight mediates the relationship between market need urgency and new venture creation.

Perception of a need's urgency indicates which technological means (e.g., operational knowledge, technical tools, technological feasibility, etc.) should be focused on. In addition, knowledge of MNU can help the entrepreneur create a better arrangement and allocation of available technological means, potentially resulting in significant financial and psychological savings. This

helps entrepreneurs focus on and strengthen only the tools they need (Frenkel et al., 2015). Not all of the supply resources are created or flourished by entrepreneurs, but they can be already existing in the environment. The new technological insights offer a continuous supply of new information about different ways to use resources to form an entrepreneurial opportunity. However, the urgency of a need signals to focus on which aspect or kind of technology (both qualities and quantities), and makes it possible to transform resources into a more valuable form. The new insights alter the value of resources and, therefore, MNU not only can intrigue new supply insight but also it can enlighten it.

Recognizing SDI in that sense plays a pivotal role in forming a new venture idea and thus increases the likelihood of NVC. Moreover, because SDI is a key part of value proposition feasibility, pivots can be done more effectively in the opportunity actualisation process (Ramoglou et al., 2023). Furthermore, when entrepreneurs make more effective pivots, they are more likely to start a successful business (Hills and Shrader, 1998; Dimov, 2007b). Hence, this takes us to our second set of hypotheses, which posits the relationships between MNU, SDI, and NVC:

H2a: Perceived market need urgency positively affects supply-driven insight.

H2b: Supply-driven insight positively affects new venture creation.

H2: Supply-driven insight mediates the relationship between the market need urgency and new venture creation.

2.2.3. Opportunity confidence

Opportunity confidence (OC) is one of the key factors in the individual-actor nexus framework (Davidsson, 2015). The construct emerged within the context of nascent entrepreneurship, where studies found that an increase in opportunity confidence increased the likelihood of entrepreneurial intention and action (Dimov, 2010; Emami and Dimov, 2017; Emami and Khajeheian, 2019). Whilst low confidence undermines the startup process, high confidence stimulates the nascent entrepreneur toward development and growth (Dimov, 2010). The opportunity confidence construct refers to the combination of prospective entrepreneurs' perceptions about the feasibility and the desirability of the imagined opportunity idea, a judgement of their own readiness to take

advantage of the idea as well as a belief that they will be able to establish the venture and intend to exploit the opportunity (Shapero, 1975; Shapero and Sokol, 1982; Krueger and Brazeal, 1994; Dimov, 2010:1125; Emami and Dimov, 2017). Shapero and Sokol (1982) highlight the role of entrepreneurial perceptions on the idea's credibility measured by the entrepreneurial opportunity's desirability and feasibility on the individual entrepreneur's intention to create a new venture.[5] Davidsson (2015: 683) describes it as "the result of an actor's subjective evaluation of a stimulus (*External Enabler* or *New Venture Idea*) as a basis for the creation of new economic activity". Opportunity confidence is thus different from self-efficacy (Bandura, 1997), which is more narrowly focused on individual abilities and competencies (Cardon and Kirk, 2015; Walsh *et al.,* 2020). Opportunity confidence entails not only self-efficacy but also an assessment of external capabilities (such as physical resources) and the desirability of the pertinent opportunity (Emami and Khajeheian, 2019).

Perceived necessity affects our perceptual beliefs toward the realisation of entrepreneurial activity (Stokes, 2000; Morris *et al*., 2015). When an entrepreneur believes that the opportunity he or she is about to seize is very necessary and urgent, the opportunity in question appears more feasible because it seems highly likely that a successful result will be achieved. By contrast, supposing there to be a low market need for and attractiveness of a product or service would reduce the entrepreneur's OC, engendering a recognition of possible failure. Moreover, the more satisfying a need or responding to a problem is urgent, the more the underlying opportunity is perceived to be desirable because it activates the affective association's mechanism i.e., people tend to sympathize more with others in urgent need or problem (Packard and Burnham, 2021; Emami et al., 2021), especially when they share a similar problem or need (Chapman and Johnson, 1994). Therefore, because the increase in MNU will increase both the perception of feasibility and desirability of new venture creation, it can raise the level of OC in return.

Increasing OC increases the likelihood of NVC intention since OC increases entrepreneurs' confidence in attracting customers to buy their products/services (Dimov, 2010), enhancing the

[3] Shapero (1975) and Shapero and Sokol (1982) have been the pioneer studies to introduce the credibility of the idea and the desirability and feasibility perceptions to embark on the opportunity and their 'Entrepreneurial Event' Model proposes a holistic perspective which includes social, situational and individual circumstances to shape the entrepreneurial intentions and activities. Shapero and Sokol's development of the concept of credibility forms the basis for an entrepreneur's evaluation of the situation and forms the basis for the formation of the opportunity confidence construct.

performance of their businesses (Davidsson *et al*., 2019). Hence, we posit the relationships between MNU, OC, and NVC in the below hypotheses:

H3a: Perceived market need urgency positively affects opportunity confidence.

H3b: Opportunity confidence positively affects new venture creation.

H3: Opportunity confidence mediates the relationship between market need urgency and new venture creation.

In our search for an enhanced understanding of the relationships between constructs of entrepreneurial perceptions, we also want to understand how OC affects the relationship between DDI, SDI, and NVC. Dimov (2010) states that entrepreneurs' perception of the feasibility of the demand and supply conditions (DDI and SDI) is a prerequisite to the new venture creation process through their confidence in themselves. Emami and Klein (2020) explain that insights into the market's needs and technical opportunities/problems play a role in entrepreneurs' propensity to perform pertinent actions. That is, perceived market insights challenge entrepreneurs to consider whether they are willing to do something about them or not. Similarly, insights into the technical feasibility of products/services and the belief that entrepreneurs can take on that challenge are related. Logically, if they determine that their knowledge about filling a gap in the market is good, it will motivate them to move ahead and test their confidence. However, an increase in the market gap may increase the challenge for entrepreneurs and, at the same time, cause them to recognize more uncertainty and ambiguity (Taghvaee and Talebi, 2022). Therefore, the perception of a market or technology need is expected to be an enabling factor of the entrepreneurial journey, but the level of opportunity confidence the entrepreneur holds may be influential in this relationship. These arguments bring us to our fourth and fifth set of hypotheses:

H4a: Demand-driven insight positively affects opportunity confidence.

H4: Opportunity confidence mediates the relationship between demand-driven insight and new venture creation.

H5a: Supply-driven insight positively affects opportunity confidence.

H5: Opportunity confidence mediates the relationship between supply-driven insight and new venture creation.

Collectively our hypotheses generate the conceptual framework shown in Figure 2.

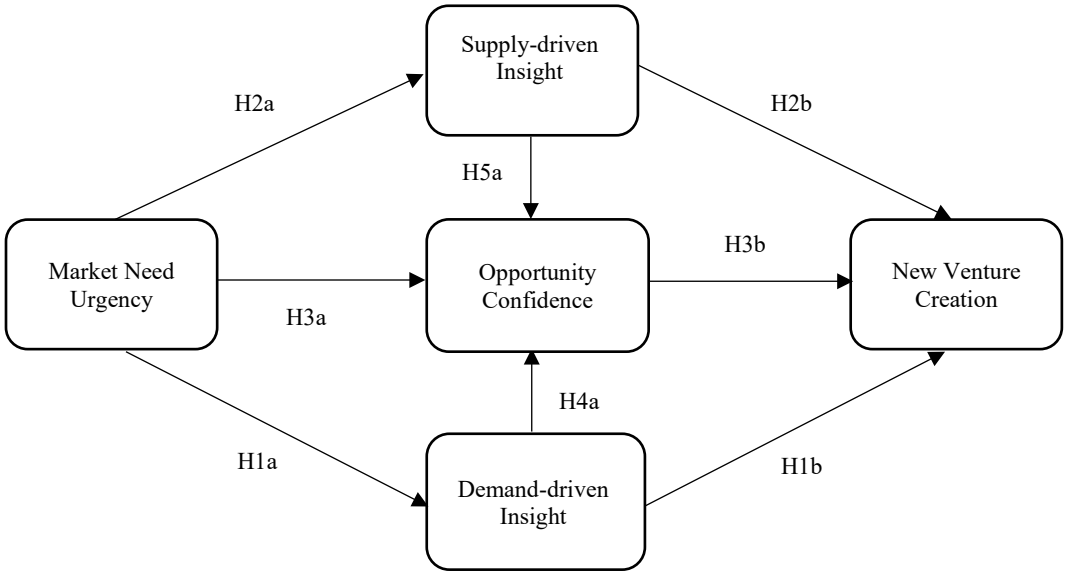


Figure 2. The Conceptual Framework

3. Data and Methods

3.1. Sampling and data collection

We focus on nascent entrepreneurs who are at a critical stage of their careers to resume entrepreneurial activity. They are vulnerable, and any barrier or opening may discourage or encourage them to continue activities. However, young age and weak identification with a current job place them as an appropriate focus group for entrepreneurial intentions (Hatak et al., 2015). The sample population for this research comprises students of entrepreneurship (both undergraduates and postgraduates) and business administration (MBA) from governmental universities in Iran who attended either "new venture creation", "entrepreneurial opportunity recognition", or "strategic entrepreneurship" course modules. Student entrepreneurship and

entrepreneurship education are a cornerstone of innovation and entrepreneurial ecosystems (Solesvik *et al*., 2012; Rocha *et al*., 2021).

The sampling and data collection process comprised several stages, which spanned four years, i.e., January 2017 to February 2021. Table 1 elaborates on the timeline and aspects of the data collection procedure. First, we collected data on nascent student entrepreneurs who have been involved in at least three of the following activities (McGee *et al*., 2009): (a) attending seminars or conferences to start their own business (b) developing a business plan or participating in events that are focused on business plan writing (c) organizing a team of people to start a business (d) looking for physical space or equipment for their new business (e) saving money to invest in the company and (f) developing a product or service (Zhao and Smallbone, 2019; Bergmann and Stephan, 2013). Complying with at least three of the above criteria ensured that it is not only the actual training/education but also other factors that might affect the results. We controlled the experience during the screening phase (respondents had not been involved in any business, either as a founder or co-founder). Those with previous venturing or business creation were not considered our target population as founders, co-founders, or business partners. This is because prior experience significantly affects opportunity confidence and new venture creation (Emami and Dimov, 2017).

In January 2017, students were given a questionnaire containing the abovementioned criteria and asked to fill it out voluntarily. Those who responded positively to at least three criteria were added to the first wave of the data collection list and asked to answer questions regarding independent and mediator variables.

Of the 1885 volunteer students, 219 qualified for the screening process, and the rest were excluded from the study. During September-October 2017, the qualified subjects were trained on *how to do market research* and given the main questionnaire regarding the questions on the market need urgency, entrepreneurial insights, and opportunity confidence (see Table 1 and Table 2). Following the main questionnaire, respondents were persistently contacted by e-mail and telephone and traced through February 2021 for whether they received an initial order from customers or sold their first products/services (Newbert, 2005; Dimov, 2010; Reynolds, 2009), which constituted data for our dependent variable *new venture creation*. During this period, 68 participants stopped

collaboration, became unresponsive to our contacts, or sold their ideas. The final list of participants, who informed us fully about their new venture creation process, consists of 151 nascent cases.

Table 1. Timeline and aspects of the data collection procedure.

Phase	Time of implementation	Aim	Number of respondents	What action/question was implemented/asked?	Result
Screening phase	January - February 2017	Establish a dataset for nascent entrepreneurs using robust criteria	1885	Have you: (a) attended seminars or conferences to start their own business (b) developed a business plan or participated in events that are focused on business plan writing (c) organized a team of people to start a business (d) looking for physical space or equipment for their new business (e) saving money to invest in the company, and (f) developing a product or service?	219 respondents who responded positively to at least three of the criteria were added to the list for the next phase
Questionnaire phase	September 2017- End of October 2017	questionnaire implementation	219 qualified individuals from the screening phase	(1) Training market research (2) Asking to express your average evaluation of your business idea as an approximate percentage (example: % 35, % 80%, 0, % 100, etc.) for each of the constructs given below: (a) Opportunity confidence (b) Supply-driven insight (c) Demand-driven insight (d) Market need urgency	219 respondents answered the first wave of the questionnaire
Tracing phase	May 2018- February 2021	Establish whether the respondents ventured into nascent entrepreneur position or have given up the process	219 respondents who answered the questionnaire	Have you (a) received an initial order from customers, or (b) sold your first products/services? or (c) have you stopped pursuing your business idea?	151 respondents either nascent or given up individuals and 68 stopped collaboration, becoming unresponsive to our questions, questions, sold their ideas

3.2. Measures

This study aims to bring to attention the crucial role of market need urgency in the process of new venture creation (NVC) and investigates the mediating effects of opportunity confidence, demand-driven insight, and supply-driven insight in the relationship between market need urgency and new venture creation. For this aim, we designed the measures of the research constructs as follows:

Independent and Mediator variables.

Market need urgency (MNU). Respondents were introduced to the concept of *Market Need Urgency* (MNU) with some popular examples of entrepreneurial ventures (see Table 2). Then, they were trained on how to do market research by providing them with a short video and pamphlet (sent to respondents separately). After that, they were asked to indicate to what extent they believe their opportunity idea is needed or urgent as a percentage. Therefore, MNU is a subjective indicator that measures nascent entrepreneurs' perceptions of the 'urgency of market need'.

Demand-driven insight (DDI). Respondents were introduced to the concept of DDI with some popular examples (see Table 2) and were asked to indicate the extent to which they believe they had taken their opportunity insight from the customer (demand side) to reach their novel and new business idea, estimated as a percentage. Therefore, DDI measures nascent entrepreneurs' perceptions of 'novelty in the market domain'.

Supply-driven insight (SDI). Respondents were introduced to the concept of SDI with some popular examples (see Table 2) and were asked to indicate the extent to which they believed their opportunity insight was affected by their own technical knowledge of the field and infrastructure, to reach their novel and new business idea, estimated as a percentage. Therefore, SDI measures nascent entrepreneurs' perceptions of 'novelty in the technology domain'.

Opportunity confidence (OC). We operationalized this construct according to Dimov's (2010) and Emami and Dimov's (2017) definitions of OC. First, the respondents were provided with information about the construct. Then, they were asked to indicate the percentage of opportunity confidence they felt regarding exploiting their perceived opportunities based on their own resources, expertise, and perceived favourability. Previously used items in extant research were not applied to measure this construct because the questions related to these four variables had to

be responded to together. Moreover, MNU, DDI, and SDI all were single items (having a description following a question); therefore, questioning OC in this way could help to create unity of procedure and form with the rest of the questions, which reduces considerably the risk of the individual question being misunderstood (Roopa and Rani, 2012). Therefore, OC measures one's own perceptions of desirability and expertise possessed by the nascent entrepreneurs.

Dependent variable.

New venture creation (NVC). All the business students were traced for a period of 4 years (after the initial screening and questioning of new venture ideas). In each inquiry period, if they had achieved their first sale, we placed them in the business creation category (successful). If they had given up on their idea, we placed them in the non-business creation category (failed). Therefore, we created a separate dummy variable for nascent entrepreneurs not being listed in the successful NVC category.

Table 2. The questionnaire implemented in the surveys.

Regarding your prospective venture, please, express your average evaluation as an approximate percentage (example: % 35,% 80%, 0, % 100, etc.) for each of the questions given below:			
Constructs	Questions	Examples	from 0%-100%
Supply-driven insight	To what extent is your entrepreneurial idea novel or new from the technical knowledge or technological perspective to offer your product/service?	For example, consider Facebook. The platform/network technology behind FB[6] was not novel (let us say 20% newness from the supply side). However, it brought a lot of new insights to the social media market which was also very new to its users (let us say 90% newness from demand-side). However, at the same time it was not a needy service for people at that time (let says it was 40% urgent or needful).	……
Demand-driven insight	Based on your market research, to what extent your product/ service is novel or new to the demand/customers?		……
Market need urgency	Based on your market research, to what extent your product/service is		……

[6] Due to space limitations, only one of the examples is mentioned here.

	needful or urgent for your prospective market/customer?	Other examples, …	
Opportunity confidence	How confident are you in implementing your business idea based on the feasibility (i.e. resources, expertise, and capabilities) and the perceived desirability of your business idea?	–	……

Descriptive statistics for indicators used in the analysis are provided in Appendix Table.

3.3. Common method bias

Since our data were collected using a questionnaire that collated self-reported data from a single source, we know that this may cause common-method bias (Podsakoff et al., 2003). To minimise the risk of common-method variance, we implemented the procedural remedies recommended by Podsakoff et al. (2012). First, utilizing such measurement questions[7] per construct helps (i) eliminate the ambiguity of wording to get accurate answers from respondents to the questions (Podsakoff et al., 2003) and (ii) prioritize the respondents' uniformity and simplicity in what is already a complex query for nascent student entrepreneurs. Second, gathering data for the dependent variable at a later time than those of independent variables allows for eliminating subjectivity and bias in responses to questions. Third, we conducted Harman's one-factor test. The result showed that the sum of the squared percent of the variance equals 40.6 %, which is less than 50%. Therefore, we conclude that the results we get are not contaminated by the 'noise' stemming from the biased instruments, and the common-method bias is unlikely to be a serious concern (Podsakoff et al., 2003).

[7] Note that these are not constructs operationalised with a single question but are more lingual and in-depth. Before the related questions are raised, we first provided a sufficient description of the pertinent construct based on recognised references. Second, we provide the respondents training to effectively engage with the concepts (i.e. MNU). Third, we provide several examples to ensure that respondents have the necessary understanding to answer questions about their business. This method is an emerging approach in management and business studies and is highly recommended to achieve minimally biased, accurate, and unambiguous results from the respondent (Rooney et al., 2016; Chautard and Collin-Lachaud, 2019).

4. Results

In this section, we report results for the investigation of direct and indirect relationships between market need urgency, supply and demand insights, and opportunity confidence for their effects on new venture creation. We first ran a one-way ANOVA to check whether the scores' mean of market need urgency differed from that of demand-driven and supply-driven insights. Results (F=6.7; df=2) show that the mean square between the three groups is significantly different (p< .001). In addition, the result of *the Post-Hoc Test* shows that MNU differs significantly from DDI (p< .004) and SDI (p< .005).

4.1. The interplay between MNU, SDI, DDI, OC, and NVC

The odd ratio analysis shows that if the perceived market need urgency (MNU) increases by one unit, the probability that entrepreneurs create a new venture increases by 10.45 % (probability = .51). In addition, a Hosmer and Lemeshow test (χ^2= 4.1; DF=7; p> 0.05) shows that the involved predictors fit very well with the null model. Table 3 shows that there is a statistically significant and positive relationship between the market need urgency and the likelihood of new value creation (B=0.44; p<0.000), and because the odd ratio range (1.029-1.062) does not include 1, the direct effect between the perceived market need urgency and new venture creation is positive and significant.

Table 3. Result of Binary Logistic Regression for the effect of MNU on NVC.

Predictor Variable	B	S.E.	Wald	P-value	Exp(B)	Lower	Upper
Market Need Urgency	.044	.008	28.675	.000	1.045	1.029	1.062
Constant	-2.754	.513	28.786	.000	.064	-	-

a. Variable(s) entered on step 1= Market Need Urgency

Having established the positive and statistically significant relationship between MNU and NVC, we test the mediation effects of opportunity confidence (OC), demand-driven insight (DDI), and

supply-driven insight (SDI) on that relationship. Applying PROCESS from Andrew F. Hayes in SPSS version 3.5, we test the mediation effects using a bootstrap interval with confidence at a 95% level (the number of bootstrap samples is 5000).

Results in Table 4 show that the path (direct effect) from perceived market need urgency (MNU) to new venture creation (NVC) after involving mediators is still positive and significant (b= .050; s.e. = .01; p= .000), indicating that nascent entrepreneurs who rate MNU higher based on their perceptions of this need are more likely to create a new venture than those that rated MNU lower. Similarly, the direct effect of opportunity confidence on new venture creation is positive and statistically significant (b= .025; s.e. = .008; p= .001), indicating that nascent entrepreneurs scoring higher on opportunity confidence are more likely to create a new venture than those scoring lower on the measure. By contrast, the direct effects of DDI (b= -0.05; s.e. = 0.011; p= 0.671) and SDI (b= -0.01; s.e. = 0.011; p= 0.20) on new venture creation are not statistically significant, indicating the score on these insights in isolation are not related to new venture creation. According to the results, the indirect effect of MNU on NVC through opportunity confidence (i.e., .008) is statistically significant: 95% CI= (.003; .016), supporting H3. In contrast, although the influence of MNU on DDI (b= .59; s.e= 0.077; p<.000) and SDI (b= .51; s.e= 0.080; p<.000) are found to be statistically significant because the indirect effects through these variables are not statistically significant (see Table 4), H1 and H2 are not supported. From this analysis, we find that the perception of MNU is a crucial direct predictor of NVC as well as being highly influential on an entrepreneur's development of insights on demand and supply-related aspects of new products/services. However, when we investigate the mediating role of DDI, SDI, and OC on the relationship between MNU and NVC, we find that OC plays a significant role in this relationship, whereas DDI and SDI do not. In the next section, our query focuses on DDI and SDI's role on NVC via OC and its form.

Table 4. The direct effect of MNU on DDI, SDI, and OC and the mediating effects of OC, SDI, and DDI on the relationship between MNU and NVC.

Hypotheses	Outcome Variable/s	Model Summary	Coeff	S.E.	t (for mediator) z (for predictors)	p
H1a MNU→DDI	DDI	R= 0.533, R-sq= 0.284 MSE= 663, F= 59.2 df1= 1, df2= 149 P=0.000	.594 Constant= 10.5	.077 Constant=4.5	7.9 Constant=2.3	.000 Constant= 0.022
H2a MNU→SDI	SDI	R= .462, R-sq= .213 MSE= 715, F= 40.4 df1= 1, df2= 149 P=.000	.51 Constant= 15.1	.08 Constant=4.7	6.3 Constant=3.1	.000 Constant= .018
H3a MNU→OC	OC	R=.33, R-sq= .11 MSE= 699, F= 19.9 df1= 1, df2= 149 P=.000	.345 Constant= 19.6	.079 Constant=4.6	4.3 Constant=4.1	.000 Constant= 0.000
H1b: DDI→NVC H2b: SDI→NVC H3b: OC→NVC	NVC	-2LL= 151.4 Model LL= 54.35 df= 4, P=.000 McFadden= .264 CoxSnell=.302 Nagelkrk= .406	Constant= -3.27 DDI= -.0047 SDI=-.014 OC=.025	Constant= .603 DDI=.011 SDI= .011 OC=.008	Constant=-5.42 DDI= -.42 SDI= -1.25 OC=3.26	Constant= .000 DDI= .671 SDI= .20 OC=.001
H1 H2 H3	Indirect effect of MNU on NVC via OC, DDI, and SDI	Mediator / Effect / BootSE / BootLLCI / BootULCI OC / .008 / .004 / .003 / .017 DDI / - .003 / .008 / -.020 / .013 SDI / -.007 / .006 / -.021 / .004				

OC: Opportunity Confidence
DDI: Demand-driven Insight
SDI: Supply-driven Insight
NVC: New Venture Creation (dummy variable: 1=venture created/0=venture not created)
MNU: Market Need Urgency

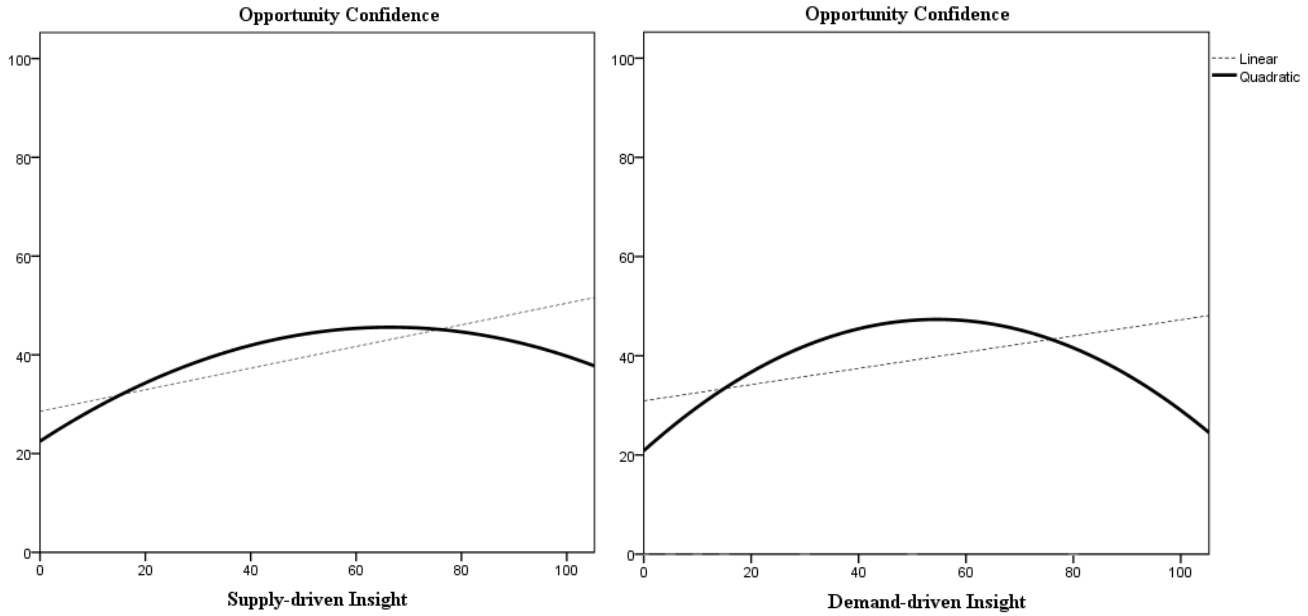
4.2. The mediating role of OC on the relationship between SDI, DDI, and NVC

Using hierarchical multiple regression, we test the effects of SDI and DDI on OC and the indirect effect of DDI and SDI on NVC through OC. Results in Table 5 exhibit a positive and statistically significant relationship between supply and demand-driven insights with opportunity confidence. Regarding the mediating effect of OC, the results are statistically significant: 95% CI (DDI→OC→NVC) = (.0003; .0105) and CI (SDI→OC→NVC) = (.019; .0133). Although we found in a prior analysis that direct effects from SDI → NVC and DDI → NVC are not statistically significant, we now find evidence for mediating effect of OC within the relationship between DDI and NVC and SDI and NVC, which suggests that OC mediates fully between them, supporting H4 and H5. As a result of this analysis, we find that the perception of urgency in the market need leads to NVC, but this is highly due to an entrepreneur's opportunity confidence. Contrastingly, the perception of urgency in the market need also shapes DDI and SDI, which can then influence NVC through OC. This then takes us to further explore the role DDI and SDI play in NVC through OC via a test of non-linearity.

Emami and Klein (2020) argue that perceived market needs and problems challenge entrepreneurs to consider to what extent they are willing to do something about them. If the entrepreneurs believe that their knowledge regarding meeting a market gap is sufficient this will motivate them to advance and increase their confidence to act. However, an increase in the market gap increases the challenge for entrepreneurs and, at the same time, causes them to recognize more uncertainty and ambiguity. Therefore recognizing a market gap is expected to be an enabling factor of entrepreneurial action, but only to some extent, not beyond a certain level of confidence. As such, it can be possible that a dramatic increase in the demand gap can decrease opportunity confidence. Hence, the relationship between demand-driven insight and opportunity confidence might be subjected to an inverted U-shape, such that opportunity confidence reaches its maximum level with moderate demand-driven insight. These arguments bring us to test the non-linear effects of SDI & DDI → OC.[8]

[8] We thank an anonymous reviewer to bring this critical point to our attention.

Figure 3. Quadratic relationship between opportunity insights and opportunity confidence.



Concerning the non-linear effects of DDI → OC, the combined R-value of 0.291 with ΔR^2 of 0.053, indicates that the addition of the non-linear effect accounts for about 5 % of the variability of opportunity confidence. Importantly, this delta is significantly ($p<.004$) associated with the F change value of the squared DDI (i.e., 8.58). Therefore, the non-linear addition to the regression model is statistically significant as well as the F value of R^2 in the ANOVA table for the non-linear model (i.e., 6.830, $p<.001$). Furthermore, the Beta value estimate is negatively significant (- .905, $p<.004$), which suggests that there is a downward slope from a certain point (see Figure 3). As a result, the quadratic effect may be due to a curvature relationship between DDI and opportunity confidence. These findings, together with the illustration in Figure 3, suggest an inverted U-shaped relationship between DDI and OC, providing evidence for H4a, albeit for an inverted U-shaped relationship rather than a direct linear relationship (see Table 5). Finally, although the standard error in the quadratic effect is increased (compared to the linear effect) (.074-->.285), because their Beta coefficients are statistically significant (.030 & .001) and the F-change value is also significant (.053; $p<.004$), the risk of multi-collinearity is very low in the regression model.

Table 5. The effect of SDI and DDI on OC and the mediating effect of OC on the relationships between DDI and NVC and SDI and NVC.

		Step 1	Step 2					Step 3				
Hypothesis	**Path**	**Model Summary**	**ANOVA**					**Coefficients**				
H4a DDI→ OC	DDI-->OC (Model 1=Linear Effect)	R= .177 R^2=.031 Std Error= 27.6 R^2 Change= .031 F Change= 4.82 df1=1 & df2= 149 Sig. F change= **.030**		Sum of Squares	Mean Square	F	Sig.		St.Beta	SE	t	Sig.
			Regression	3686.7	3686.7	4.828	.030	Constant		3.83	8.06	.000
			Residual	113774.1	763.5			DDI	.177	.074	2.19	**.030**
			Total	117460.9								
DDI ∩ OC	DDI-->OC (Model 2=Non-Linear Effect) DDI squared	R= .291 R^2=.085 Std Error= 26.9 R^2 Change= .053 F Change= 8.58 df1=1 & df2= 148 Sig. F change= **.004**	Regression	9925.5	4962.7	6.830	**.001**	Constant		5.079	4.1	.000
			Residual	107535.3	726.5			DDI	1.052	0.285	3.4	.001
			Total	117460.9				$(DDI)^2$	-.905	.003	-2.9	**.004**
H5a SDI→OC	SDI-->OC (Model 1=Linear Effect)	R= .235 R^2=.055 Std Error= 27.2 R^2 Change= .055 F Change= 8.70 df1=1 & df2= 149 Sig. F change= **.004**		Sum of Squares	Mean Square	F	Sig.		St. Beta	SE	t	Sig.
			Regression	6485.6	6485.6	8.7	.004	Constant		3.81	7.48	.000
			Residual	110975.3	744.8			SDI	0.235	.074	2.95	**.004**
			Total	117460.9								
SDI ∩ OC	SDI-->OC (Model 2=Non-Linear Effect) SDI squared	R= .270 R^2=.073 Std Error= 27.1 R^2 Change= .018 F Change= 2.84 df1=1 & df2= 148 Sig. F change= .094	Regression	8578.9	4289.4	5.8	**.004**	Constant		5.23	4.3	.000
			Residual	108881.9	735.6			SDI	0.746	0.292	2.38	.018
			Total	117460.9				$(SDI)^2$	-0.528	.003	-1.68	.094
H4	DDI→OC→NVC Indirect effect of DDI on NVC via OC		Mediator	Effect	BootSE	BootLLCI		BootULCI				
			OC	.0047	.0026	**.0003**		**.0105**				
H5	SDI→OC→NVC Indirect effect of SDI on NVC via OC		OC	.0064	.0029	**.0019**		**.0133**				

SDI: Supply-driven insight, DDI: Demand-driven insight, OC: Opportunity confidence, NVC: New venture creation

Regarding the non-linear effect of SDI → OC, the combined R-value of 0.270 with ΔR^2 of .073, indicates that the addition of the non-linear effect does not account for the variability of opportunity confidence. Importantly, the change in R^2 of .018 is not statistically significant ($p>0.05$), associated with the F change value of the squared DDI (i.e., 2.8). Therefore, the non-linear addition to the regression model for SDI→OC is not statistically significant. However, the linear effect of SDI on OC is also statistically significant, which supports H5a. We discuss the importance of our findings in the discussion section.

4.3. Differences between successful and failed attempts for new venture creation

Preceding the discussions, we include descriptive analysis and analysis of variance to investigate the differences between successful and failed venture creation processes. Results from this analysis further support our analyses concerning the hypotheses proposed. It is also less common to study the 'failed' venture creation process.[9] Table 6 provides a descriptive view of the share of responses to MNU, SDI, DDI, and OC-related questions posed in our questionnaire as differentiated by new ventures which started and not-started, in other words, which were successful in creating a new venture and failed in creating a new venture, respectively. Out of a total of 151, 64 nascent entrepreneurs moved to the stage of creating a new venture where 75% of successful entrepreneurs stated that their product/service was needful or urgent for their prospective market/customer at the level of more than 50% rating (i.e., medium to high level). This measure accounted for only 31% of the entrepreneurs who failed to create a new venture. When opportunity confidence is examined, we observe that 53% of the entrepreneurs who succeeded in creating a new venture said that their confidence levels were more than 50% (i.e., medium to high). In contrast, this figure was only 19% for entrepreneurs who failed to create a new venture. The differences in SDI and DDI measures are not strongly visible. However, the nascent entrepreneurs' success in NVC is related to more entrepreneurs reporting high levels of SDI and DDI than nascent entrepreneurs who failed to create a new venture. ANOVA statistics in Table 7 further confirm the differences between these two groups regarding MNU and OC, at a 10% statistical significance level for DDI, but no significance for SDI. These results further complement the regression results and highly suggest

[9] We thank an anonymous reviewer for encouraging us to investigate this issue.

that markets play a big role compared to technology-push supply-side effects in the context of a developing country.

Table 6. Percentage of responses to MNU, DDI, SDI, and OC by successful and failed NVC.

	All cases (N=151)		Successful venture creation (N=64)		Failed venture creation (N=87)	
	Low to medium	Medium to high	Low to medium	Medium to high	Low to medium	Medium to high
MNU	50	50	25	75	69	31
DDI	62	38	53	47	69	31
SDI	62	38	60	40	65	36
OC	67	33	47	53	71	19

Note: Responses for Low to medium: 0-50%, Medium to high: 51-100% (see Table 2 for guidance).

Table 7. ANOVA for testing differences between successful NVC and failed NVC.

		Sum of Squares	df	Mean Square	F	Sig.
SDI	**Between Groups**	1487.549	1	1487.549	1.653	.200
	Within Groups	134049.538	149	899.661		
	Total	135537.086	150			
DDI	**Between Groups**	2764.153	1	2764.153	3.043	.083
	Within Groups	135329.264	149	908.250		
	Total	138093.417	150			
MNU	**Between Groups**	25905.418	1	25905.418	**45.201**	**.000**
	Within Groups	85394.317	149	573.116		

	Total	111299.735	150			
OC	**Between Groups**	16862.189	1	16862.189	**24.975**	**.000**
	Within Groups	100598.739	149	675.159		
	Total	117460.927	150			

5. Discussion

Our results raise several important points for discussion. Overall, our results show that perceived market need urgency (MNU) is one major determinant of new venture creation (NVC). When a nascent entrepreneur senses an urgent market need, it is a crucial impetus for action toward creating a new venture. The role of the market and market-oriented entrepreneurial opportunities are widely acknowledged in the entrepreneurship literature for their effects on entrepreneurial activity (McKelvie and Wiklund, 2004; Yoruk and Jones, 2020); however, the concept of market need urgency, i.e., the entrepreneur's perception of the imminent market need that precedes the identification and exploitation of such need, is scarce. Our findings provide robust evidence for the crucial role of the perceived market need urgency as a factor in new venture creation.

Additionally, we show that this pretty linear and unexpected relationship between MNU and NVC is further complicated when nascent entrepreneurs' insights, beliefs, perceptions, and confidence levels are considered. Our complex conceptual framework reveals further intricacies in the relationship between MNU and NVC, mediated by these factors. Indeed, MNU is also positively and statistically significantly associated with the supply-driven insight (SDI), demand-driven insight (DDI), and opportunity confidence (OC) of nascent entrepreneurs. Our findings suggest that the better a nascent entrepreneur can sense the urgency in the market for a product, the more insightful they will be in terms of supply and demand-related dynamics, and they will also have more confidence in themselves in grasping the opportunity they sensed and identified. Prior findings based on opportunity identification by entrepreneurs corroborate our results (Ucbasaran *et al*., 2008). Alabduljader et al. (2020) found that the intuitive cognitive styles of an entrepreneurial mindset, compared to analytical cognitive styles, have been a strong determinant of entrepreneurial intentions. However, whilst opportunity identification and intentions have been

widely studied in the case of experienced entrepreneurs (Ucbasaran *et al*., 2009), their examination in the case of nascent entrepreneurs is very scarce (Dimov, 2010). Our findings highlight the increasing importance of entrepreneurial perceptions for MNU, DDI, SDI, and OC on NVC regarding nascent entrepreneurs at the start of their entrepreneurial journey.

Complementary to direct relationships between MNU and DDI, SDI, and OC, we also found that only opportunity confidence is a crucial mediator in the relationship between MNU and NVC, whereas SDI and DDI are not. Moreover, SDI and DDI, only in complementarities with OC and MNU, can result in NVC. Perceived MNU and perceived OC in themselves play a crucial role in strengthening the effects of DDI and SDI for the discovery and creation of opportunities for establishing a new venture. Therefore, opportunity confidence is one factor that enhances the relationship between MNU and NVC and results in the entrepreneurial activity of venture creation. As one aspect of entrepreneurial behaviour, we can deduce that opportunity confidence seems to be more influential on venture creation than demand- and supply-driven insights associated with product novelty or newness once a nascent entrepreneur senses an opportunity in the market. This finding suggests that it is difficult for nascent entrepreneurs in a developing country like Iran to have accurate insights on not-yet-created technological and market novelties since these expectations will be largely based on hunches, intuition, available accurate or inaccurate information, and can lead to incorrect outcomes (Sarasvathy *et al*., 2003).

Indeed, when we examine differences between successful and failed new venture creation processes, we find that MNU as an external factor and especially OC as an internal factor play critical roles. These results also suggest exciting avenues for further research to open up the box of opportunity confidence and investigate its facets of flexibility, desirability, and feasibility in more depth (Dheer and Lenartowicz, 2019) from an entrepreneurial opportunity discovery and creative perspective.

However, insights into markets and technologies can be a starting point for nascent entrepreneurs, although they exhibit different forms of relationships when resulting in new venture creation. In this respect, we also investigated the role of entrepreneurs' demand and supply-related insights for their influence on opportunity confidence. We found that, whereas SDI is linearly and directly influential on OC, DDI exhibits an inverted U-shaped relationship, suggesting that, after a

threshold of DDI, the entrepreneur's OC level may start to decrease. This finding indicates that OC levels first increase as the nascent entrepreneur's market knowledge about a product increases. However, OC levels tend to decrease after a certain level of market knowledge. We did not find this effect for the relationship between SDI and OC, which shows a linear and increasing trend. This result suggests that sensing consumer behaviour is more difficult for nascent entrepreneurs than tracing technical developments regarding products/services they want to launch in a developing country context. In other words, from a demand-side perspective, product novelty is a more relative issue, depending on consumers' fast-changing tastes and preferences, which naturally influences the nascent entrepreneur's insights into the matter.

Entrepreneurship in Iran, similar to other developing countries, faces significant problems and obstacles. Therefore, our findings make much sense in the context of a developing economy that is under severe economic and political sanctions with a high degree of regulatory uncertainty and where the country's political atmosphere largely impacts commerce and daily life and poses challenges to doing business within and across national boundaries (Emami and Khajeheian, 2019). These institutional voids make business planning difficult and hamper early-stage venturing (Emami et al., 2022). According to the most recent GEM (2023) statistics in 2021 perceived opportunities rate in Iran is well below the global average, i.e., 17.9% for the former and 54.8% for the latter, respectively. The entrepreneurial intentions rate, however, is higher than the global average, i.e., 26.4% as compared to 24.1% respectively; as well as the perceived capabilities rate, i.e., 66.4% in Iran compared to 57.9% globally. These national-level statistics complement our findings at the individual level and suggest that entrepreneurs in Iran have confidence in their entrepreneurial capabilities and have intentions to act however they do not see opportunities that can be fully grasped or exploited. Reasons for the latter are apparent in the entrepreneurial framework conditions for Iran as an isolated developing country in the current circumstances (GEM, 2023). Iran scores below the global average for almost all the framework conditions of GEM, i.e., entrepreneurial finance, government support, government entrepreneurship programmes, entrepreneurship education, R&D support, commercial and legal infrastructure, internal market burdens, physical infrastructure, and social and cultural norms. It only has a favourable condition in internal market dynamics driven by an internal market size of over 80 million population. Given the fact that many developing countries with large domestic market sizes

are confined to similar framework conditions, MNU being a substantial predictor of NVC, both directly and indirectly through OC, suggests that nascent entrepreneurs with such contextual features pay more attention to urgent needs (compared to new push and pull insights) in feeding their confidence in the opening venture. To facilitate the role of demand- and supply-driven insights of entrepreneurs in the entrepreneurial process, entrepreneurs in developing countries need more support from the governments in terms of the framework conditions to function better. In that way, the novelty of the technological idea and market idea can have a larger role in the entrepreneurial process paving the way for more innovation-driven and purpose-driven entrepreneurship styles with socio-economic and environmental impacts (Bosma et al., 2020; Yoruk, et al., 2022). This is especially important for isolated developing countries like Iran not to lag behind the advances in newly emerging technologies. For example, the level of IT penetration in the Persian Gulf countries is still low due to a lack of trust, insufficient knowledge of new means of doing business, and fear of their risks. Even though cryptocurrency and blockchain technologies provide many opportunities for under-sanction or isolated countries in developing contexts, still many nascent entrepreneurs are reluctant to use them (Bawazir, 2018). Therefore, the reluctance can impede the transition of DDI and SDI to new venture creation. The governments of developing countries have an important role to play in these contexts. One important policy tool is to invest in entrepreneurship education in these countries as we highlight in the next section, a major implication of our research for entrepreneurs and policymakers.

6. Conclusion

Despite their growing importance, nascent entrepreneurs' market and technology-related entrepreneurial insights, opportunity confidence, and their co-existence in distinct settings are relatively new phenomena that need deeper investigation. To this end, in this paper, we developed and tested a conceptual framework where such behavioural factors within the nascent entrepreneur affect the outcome of new venture creation in the developing country context specifically in an isolated third world country. We aim to shed light on recent debates in entrepreneurship literature by examining the complex interdependencies between a nascent entrepreneur's market need urgency perception and their entrepreneurial behaviour, measured as their insight into the demand and supply of the novel product and their confidence levels as well as how these relationships unfold in a developing country with strictly regulated markets and technologies.

We integrated several approaches in the extant entrepreneurship literature. We built on the seminal work of Sarasvathy *et al.* (2003), which contends that the exploitable opportunities result from the commercialization of entrepreneurial products and services that originate from the two primary sources of supply-driven insight (SDI) and demand-driven insight (DDI). We extended the work of Sarasvathy *et al.* (2003) by operationalising SDI and DDI constructs and explored their mediating role in the relationship between market need urgency and new venture creation. We also incorporated the effect of opportunity confidence (Dimov, 2010; Davidsson, 2015; Emami and Dimov, 2017) into our model for its role as a mediator between MNU and NVC relationship through its interaction with SDI and DDI.

Our conceptual framework and analyses establish that opportunity confidence is an important element of entrepreneurial behaviour that appears to be a crucial factor between market need urgency and new venture creation relationship. This process is further complicated by entrepreneurs' insights about how they view demand- and supply-related opportunities. Although recently, there have been significant contributions in entrepreneurial behaviour research (Kautonen *et al.,* 2013, 2015; Jones *et al*., 2018; Emami *et al*., 2020), behavioural issues related to supply and demand-related insights, as well as the confidence of entrepreneurs, warrant more investigation in nascent entrepreneurship research.

Despite all efforts, not all university students who study entrepreneurship move on to becoming entrepreneurs (Baron 2009; Krueger, 2009). However, it should be reiterated that in this study, we were able to study, to a large extent, the entrepreneurial journey of nascent entrepreneurs in Iran (starting with 1885 students who studied entrepreneurship courses, i.e., the beginning of opportunity formation, and concluding with 151 potential entrepreneurs, i.e., starting a business). In this study, except for a few cases where they avoided continuing to cooperate, we observed all the potential entrepreneurs, i.e., we received acknowledgment from all the cases whether the initial sale or order was received or not and whether they still wanted the current opportunity to be exploited. This research design helps to better understand the multiplicative actions within the process of developing entrepreneurial practices (Dimov, 2017).

This paper's conceptual and empirical contributions have important implications for entrepreneurship education in universities, especially in developing countries such as Iran where the central government primarily regulates the economy and market and confidence is the key trait for a nascent entrepreneur to take action based on identified urgent market needs. Since we show that confidence level plays a crucial role in the nascent entrepreneurial process, we recommend that entrepreneurship courses in developing country universities involve classes that aim to improve and enhance entrepreneurship students' confidence at different stages of the process in complementarities to theoretical and analytical approaches to studying entrepreneurship. According to Global Entrepreneurship Monitor (GEM), framework conditions entrepreneurial education at school age and post-school age are two very weak areas in Iran compared to the global average and low-income countries' average. Moreover, from 2020 to 2021 there has been a significant decrease in these areas in Iran (GEM, 2023). In that sense, our results have implications that give entrepreneurship educators, practitioners, and policymakers in developing countries informed choices to encourage entrepreneurial learning and experiencing processes.

Finally, this research is not without limitations. First, in exploring the relationships among entrepreneurial perceptions and activities, we set our boundaries within the mindset of the individual entrepreneur and his/her perceptions. However, social interactions also play an important role in the propensity to act entrepreneurially (Dimov and Pistrui, 2020; Guerro et al., 2008; Shapero and Sokol, 1982). Future research can integrate social interactions into the framework we propose. Second, this study focused on business students who have the potential as nascent entrepreneurs. Future studies can test our conceptual framework on opportunity versus necessity entrepreneurs as well as experienced and serial entrepreneurs to understand the differences between heterogeneous groups of individual-based entrepreneurial activity. A comparison of necessity vs opportunity entrepreneurs in the developed and developing country contexts can shed light on how the MNU construct differs from the opportunity construct in different settings where technology-push and market-pull effects can play significantly different roles. Third, as a future extension to our model, because cognitive flexibility positively impacts entrepreneurs' efficacy (Dheer and Lenartowicz, 2019), and that opportunity confidence is found to be the key mediator in our model, it is essential to scrutinize how cognitive flexibility contributes to OC function and the success of the pertinent entrepreneurial venture. Fourth, by way of

operationalising measures of vicarious imagination of entrepreneurs our model can be enhanced for how intentional and knowledge-based empathy (Packard and Burnham, 2021) contributes to new venture success in tandem with the indicators we studied.

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Appendix Table. Descriptive statistics for indicators used in this research.

					Correlation matrix			
Indicator	**Min**	**Max**	**Mean**	**sd**	**MNU**	**DDI**	**SDI**	**OC**
New venture creation - NVC	0	1	.42	.49				
Market need urgency - MNU	0	100	52.5	27.2	1			
Demand-driven insight - DDI	0	100	41.7	30.3	.533**	1		
Supply-driven insight - SDI	0	100	41.8	30	.462**	.800**	1	
Opportunity confidence - OC	0	100	37.7	27.9	.336**	.177*	.235**	1

*p< 0.01***

*p< 0.05**