

Chapter 3

An “Informed” Intent Model: Incorporating Human Capital, Social Capital, and Gender Variables into the Theoretical Model of Entrepreneurial Intentions

Kevin Hindle, Kim Klyver, and Daniel F. Jennings

Abstract This chapter was motivated by a belief, based on a substantial body of research, that prevailing theoretical models of entrepreneurial intentions are under-specified. Currently, such models as represented by the Shapero–Krueger intentions model (Krueger et al., 2000) are highly focused on cognition in its more limited sense of the thinking process that occurs within an individual’s head rather than the broader, contextually embedded process of *social cognition* as conceived by Bandura (1977, 1986) and subsequent scholars. In the chapter, we develop six propositions derived from the literatures of human capital, social capital, and gender as they relate to entrepreneurship. We argue, when it comes to start-up intentions, the entrepreneurial mind is indeed broader than current theoretical models indicate. Accordingly, an enhanced model of informed entrepreneurial intent was developed and discussed.

3.1 Introduction

3.1.1 Background and Overview

In this chapter, we present a model aimed at enhancing the basic entrepreneurial intentions model developed by Krueger and associated researchers (Krueger et al., 2000). We focus on how entrepreneurial intentions are informed by human and social capital and how levels of informed intent differ between genders. The presentation of inquiry begins by presenting the entrepreneurial intentions model as an established theoretical framework. The extant model argues that the concept of self-efficacy is an important influence on people who contemplate and then evaluate both the desirability and the feasibility of a new venture. If the evaluation results in a compelling combination of desirability and feasibility, the person will form the intention to start a new venture.

K. Hindle (✉)

Chair of Entrepreneurship Research Deakin University, Australia and Visiting Professor of Entrepreneurship, University of Southern Denmark
e-mail: khindle@swin.edu.au

All models of social attitudes and behavior involve substantial abstraction from the multi-faceted complexity of the real world. We argue, however, that the current model of entrepreneurial intentions is just too abstract because it fails to address aspects of social cognition that evidence indicates simply must be accounted for. At its present level of abstraction, the intentions model is a model of an aspect of what might be called “the entrepreneurial mind.” It has given rise to insightful and useful research. However, we will argue that this is in a sense too “narrow minded” a model: it could be improved, making it in a sense a more “broad-minded” model if it were possible to include the influence that *knowledge*, *information*, and *advice* undoubtedly play when a person formulates his or her intent to start a new venture. We will further argue that it is very important whether the person is a him or a her: gender is as likely to matter in the formation of entrepreneurial intention as it has been shown to matter in many other aspects of the entrepreneurial process. The argument and associated model to be presented in this chapter will use the term “informed intent” as an expression to capture the combined influence of knowledge, information, and advice embedded in the human and social capital a person possesses at the time of forming entrepreneurial intentions. Building on these foundations, a theoretical model was developed including six propositions. Support for the propositions would not only permit but also mandate a redesign of the basic entrepreneurial intentions model.

In summary, the chapter was motivated by a belief, based on a substantial body of research, that prevailing theoretical models of entrepreneurial intentions are under-specified. Currently, such models as represented by the Shapero–Krueger intentions model (Krueger et al., 2000) are highly focused on cognition in its more limited sense of the thinking process that occurs within an individual’s head rather than the broader, contextually embedded process of *social cognition* as conceived by Bandura (1977, 1986) and subsequent scholars.

3.2 Formal Statement of the Research Problem

3.2.1 *Entrepreneurial Intentions as a “Mind” Game in the Entrepreneurial Cognition Context*

One of the early pioneers of entrepreneurial intentions as a field was Barbera Bird (1988). Norris Krueger, in association with various colleagues, has presented the most prominent and sustained body of work in field. (Krueger, 2003; Krueger, 1993; Krueger and Dickson, 1994; Krueger, 2000; Krueger and Brazeal, 1994; Krueger and Carsrud, 1993; Krueger and Dickson, 1993; Krueger et al., 2000; Shepherd and Krueger, 2002.) His most direct antecedents were Shapero (1982) and Bird (1988). Other empirical workers in the sub-field include the Norwegian scholar, Lars Kolvereid (1996), and British researchers Jenkins and Johnson (1997). Forbes (1999) developed a model that positions entrepreneurial intentions – and its “canonical” works (Hindle 2004) – as an integral sub-set of the entrepreneurial cognition literature. Forbes’ diagrammatic synthesis is reproduced as Fig. 3.1.

In the Forbes model, a sense-making perspective permits articulation of the salient features of the emerging field of entrepreneurial cognition. The importance

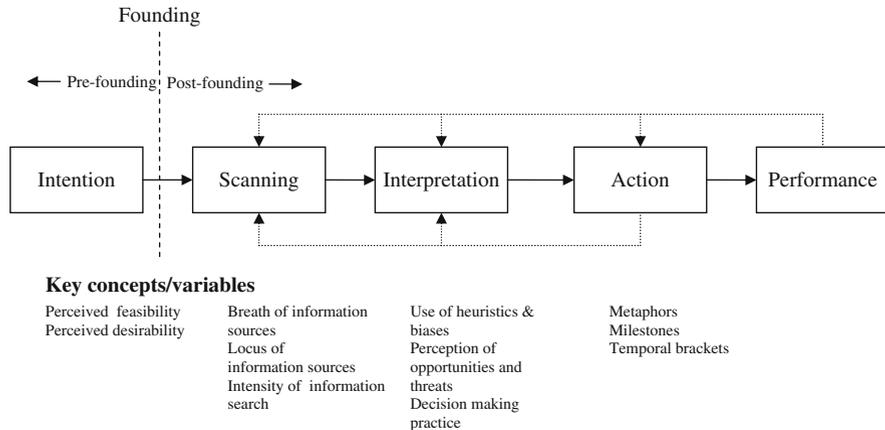


Fig. 3.1 The entrepreneurial cognition continuum

of temporality is represented by a “timeline dichotomy”: pre-founding and post-founding. In the pre-founding stage, the emphasis is on organizational *intentions* represented by two key concepts: perceived feasibility and perceived desirability. In the very early days of entrepreneurial intentions research, Barbara Bird (1988) defined the nature of the phenomenon.

Intentionality is a state of mind directing a person’s attention (and therefore experience and action) toward a specific object (goal) or a path in order to achieve something (means) . . . Research . . . shows that a person’s intentions sustain value or effort despite interruption. . . Entrepreneurial intentions are aimed at either creating a new venture or creating new values in existing ventures.

In Forbes’ synthesis of the post-founding stage, an organizational sense-making framework proceeds from *scanning* (where the conceptual emphasis is upon aspects of information sources), through *interpretation* (where the conceptual emphasis is upon the uses of heuristics and biases, perceptions of opportunities, and threats and decision-making practices) through to *action*. The action phase places conceptual emphasis upon metaphors, milestones, and temporal brackets. The final result is performance. Development of the field of entrepreneurial cognition has grown rapidly. Overview sources include the 2002 special issue of *Entrepreneurship Theory and Practice* edited by Ron Mitchell (see Mitchell et al., 2002); Norris Krueger’s overview (2003) in Acs and Audretsch’s *Handbook of Entrepreneurship Research* (2003); and Katz and Shepherd’s (2003) introduction to JAI Volume 6.

We might think of the emerging field of entrepreneurial cognition as a research “game.” It is steeped in psychological antecedents. Axiomatically and logically, the field is very much a “mind game”: so is its intentions sub-set: so they should be. J.R. Anderson’s *Cognitive Psychology and its Implication* (Anderson, 1990) provides a thorough overview of the “mother” discipline, in language accessible to the non-psychologist. However, we argue in this paper that the extant research and theoretical modeling of entrepreneurial intentions is, currently, *too* much of a mind

game. The intentions field, perhaps, has been rather too concerned with the narrower, cerebral, and self-perceptual aspects of the ways in which entrepreneurs think and too little concerned with the wider human and social contexts that influence the thinking. If this imbalance exists, it needs redressing because the very basis of entrepreneurial cognition – its parent field – is supposed to be *social* cognition.

The entrepreneurial cognition field seeks to reassert the importance of the individual, sentient human person as an object worthy of treatment as an empirical unit of analysis in entrepreneurship research. At the heart of this discipline is the core psychological trinity of person, process, and choice (Shaver and Scott, 1991). This heartland recognizes that *social* cognition is the key to understanding entrepreneurial thinking and action at the individual level. The locus of entrepreneurial thinking is not just between peoples' ears; we are bound to consider the complex interaction of mind and environment. The true parent of entrepreneurial cognition as a field is not "cognition" – unadorned – but "social cognition" whose seminal scholar is Albert Bandura. His long list of works find their apogee in his *Social Foundations of Thought and Action: A Social Cognitive Theory* (Bandura, 1986). Furthermore, if we return to the seminal definition of entrepreneurial intentions (Bird, 1988) cited above, she is very specific that intention is a mind game but one that involves experience (which can only be derived in a social context) and is directed toward action (which can only take place in a social context). Granovetter (1985) as argued that too many theories are "under-socialized" and we argue that entrepreneurial intentions models are a case in point.

So, intentionality is indeed "a state of mind," but it is a socially contextualized state of mind and, if existing models of entrepreneurial intentions underplay the social context, it is time the models were improved to include more overt attention to a wider range of human and especially social factors that inform a person's intentions. We need models not just of intent but of informed intent.

3.2.2 Extant Theoretical Framework: Current Status of the Entrepreneurial Intentions Model

The entrepreneurial intention approach emerged in the 1980s drawing heavily on Bandura's (1977) social learning theory. A great deal of previous entrepreneurship literature focused on how psychological traits, demographic, and situational factors distinguished entrepreneurial individuals from non-entrepreneurial individuals. However, the results were disappointing with respect to both explanatory power and predictive validity (Krueger et al., 2000). As a reaction, different entrepreneurial intention models developed. These models offered another way of predicting and understanding entrepreneurship. As previously indicated, Bird (1988) argue that "Entrepreneurs' intentions guide their goal setting, communications, commitment, organization, and other kinds of work" (Bird, 1988: 442). Krueger et al. (2000) indicate that intentions are "... the single best predictor of any planned behavior, including entrepreneurship" (Krueger et al., 2000: 412).

Two entrepreneurial intention models have received predominate attention: the theory of entrepreneurial event (Shapero, 1982) and the theory of planned behavior (Ajzen, 1991). Representing the theory of entrepreneurial event, Shapero (1982) argued that entrepreneurial intentions depend on individuals’ perception of the desirability, feasibility, and propensity of the entrepreneurial to act. Individuals’ behavior is assumed to continue in same path until something (e.g., job insecurity, job loss, receiving an inheritance, etc.) interrupts the inertia. This interruption makes individuals consider and evaluate other opportunities, including starting a business. The model was developed in order to explain entrepreneurial behavior specifically.

The theory of planned behavior was, in contrast, developed to explain planned behavior in general. Here it is argued that (entrepreneurial) intention depends on individuals’ attitudes, subjective norms, and the perceived feasibility (Ajzen, 1991). The planned behavior model has received empirical support (Kolvereid, 1996; Krueger et al., 2000; Shook et al., 2003) and the entrepreneurial event model even stronger support (e.g., Krueger, 1993; Krueger et al., 2000; Shook et al., 2003). Krueger (1993), for instance, found in his study of 126 business students that desirability, feasibility, and propensity to act explained more than half of the variance in the intentions toward entrepreneurship.

So, though models of entrepreneurial intention come in many variations and range in detail and emphasis, the variants have more similarities than differences. An important and influential entrepreneurial intentions model was and remains the one developed and tested by Krueger et al. (2000). Labeled “The Shapero–Krueger Model,” it was presented on page 418 of their study and is reproduced here as Fig. 3.2.

This is, as argued, very much a “mind game” or “between the ears” model of entrepreneurial intent. There are no social capital variables. The only component of the model that may be regarded in some senses as a human capital construct is “self-efficacy” (some scholars regard it as such and some do not). Even if we permit “self-efficacy” to be classified as a component of human capital, it is certainly the most cerebral, subjective, and abstract of all human capital components.

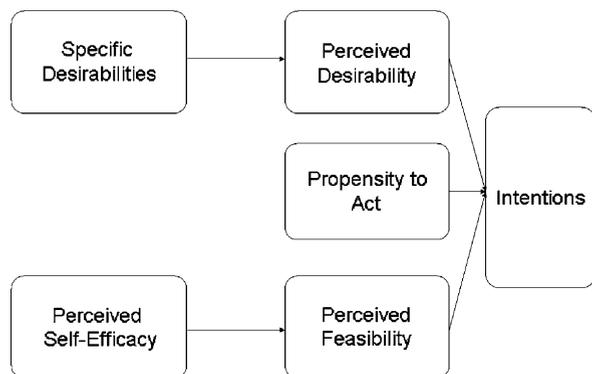


Fig. 3.2 The Shapero–Krueger model of entrepreneurial intent

Education and experience are human capital variables – objective measures of them can be directly obtained. Measures of self-efficacy have to be constructed indirectly. The model developed in this chapter seeks to strengthen the prevailing model by introducing the notion of informed intent. The supposition underlying the attempt to strengthen the model is that the process of developing entrepreneurial intentions is not just contained “between the ears” of an individual – an abstract mechanistic thinking process – it is a process informed by the human capital and social capital that an individual possesses. In this conception, the word “informed” retains two distinct but related meanings. First, “to inform” means “to direct.” The combination of human capital and social capital an individual possesses will move a person in certain directions and away from others: toward entrepreneurship or away from it. Second, “to inform” means “to supply with information.” A person’s human and social capital is literally a source of the information used to form or not to form entrepreneurial intentions and, eventually, to go on to entrepreneurial commitment.

Brännback et al. (2007) have argued that if we are to understand how entrepreneurial intentions evolve, we must embrace theories reflecting the inherent dynamics of human decision making. “While the dominant model of entrepreneurial intentions remains invaluable, capturing the dynamics is necessary to advance our understanding of how intent becomes action.” To that end, that offered Bagozzi’s Theory of Trying (TT) as a theory-driven model that assumes a dynamic pathway to intent. Their study offers a significant updating of the intentions model because, rather than focusing on intentions toward a static target behavior, Theory of Trying focuses on intentions toward a dynamic goal. The authors of the study reported in this chapter have deliberately used the older and – some might say out dated – intentions model for reasons of clarity of focus. Whether the emergent intentions process is dynamic or static is not our focal issue. We are interested in what informs the process – potentially human and social capital – rather than the nature of the process – dynamic or static.

In summary, our argument is that even the broadest-brush model of entrepreneurial intent should be a model of informed intent.

3.3 Literature Review and Model Development

3.3.1 Overview

In a recent study on the role of human and social capital and technology in nascent ventures, Schenkel et al. (2009) have provided succinct summation of the underutilized relevance of human and social capital in the modeling that scholars conduct when studying the new venture creation phenomenon.

They argue that research on human and social capital derives from the ideas that actors are both shaped by and contribute to the social construction of their respective economic contexts, citing, inter alia: Aldrich and Zimmer (1986), Burt (1992), Coleman (1988), Davidsson and Honig (2003), and Granovetter (1985).

From a human capital perspective, individuals develop ‘corridors’ of knowledge (Ronstadt, 1988) from information exposure and practical experience that lead them to being alert to new venture opportunities that they could not see previously (Kirzner, 1979), as well as better prepared to engage in successful exploit efforts (Becker, 1993; Davidsson and Honig, 2003). Similarly, from a social capital perspective individuals presumably develop social relationships throughout time that play a significant role in the enhancement of their alertness to entrepreneurial opportunity (Singh, 2000). Such relationships also allow individuals to engage more effectively efforts to form new ventures because of the socially constructed (Larson and Starr, 1993) and continuously evolving (Aldrich and Zimmer, 1986) nature of these forms of economic organization over time. Schenkel et al. (2009: 1)

Schenkel et al. (2009) agree with Davidsson and Honig (2003) in placing a kind of implied blame on intentions research. They argue that much of the reason that the new venture creation research does not utilize knowledge about social and human capital is *because* “much of the work focuses predominantly on intentions rather than behavior.” This is tantamount to saying: “you can’t expect intentions-based literature to embrace knowledge about human and social capital.” The present authors disagree. We think the intentions literature and its associated theoretical modeling can and should embrace the human and social capital literatures. For good measure, we think that gender is also an issue that can be incorporated within an intentions-based focus.

3.3.2 Human Capital and Entrepreneurial Intentions

Information related to economic opportunity is distributed unevenly across economic marketplace participants (Kirzner 1979). This affects both the opportunities for arbitrage in the existing economy and the opportunity to create new ventures. It has been argued that individuals develop unique knowledge that produces a state of readiness, or “absorptive capacity,” allowing some individuals to be more alert to new venture opportunities and create and develop a larger variety of implementation possibilities than those without such knowledge corridors (Kirzner, 1979). Schenkel et al. (2009) point out that implicit within human capital theory is the presumption that the cognitive ability of individuals is increased by the accumulation of knowledge stocks such that it allows some individuals to perceive and act more efficiently and effectively in the marketplace through new venturing activity than others (Kirzner, 1979).

One stream of research – which might be called the “experience” stream – has sought to generate a greater understanding of why and how life context and personal background distinctions may systematically aid the new venture creation process. Another stream stresses “knowledge” as a source of cognitive capability. Human capital theory indicates that both experience and knowledge strengthen the cognitive capability of individuals to recognize opportunities by allowing the “connecting the dots” more effectively among various market forces. For instance, Ucbasaran and Westhead (2002) have shown that experienced entrepreneurs identify more opportunities than novice entrepreneurs. Education is consistently associated with

positive economic return when pursuing nascent entrepreneurial activity (Davidsson and Honig, 2003).

It can be generally stated that extant research clearly supports the premise that both knowledge (especially as measurable in the form of education) and experience directly related to new venturing are important both as sources of human capital and informers of judgments concerning the creation of new ventures. We therefore postulate the following.

Proposition 1 – the education hypothesis: a person of higher education level will be more likely to have the intention to start a new venture than a person of lower educational level.

Proposition 2 – the experience hypothesis: a person with greater experience in starting ventures will be more likely to have the intention to start a new venture than a person with lower experience in starting ventures.

3.3.3 *Social Capital and Entrepreneurial Intentions*

The literature on entrepreneurial networks and the social capital that results from the connections *between* people (as distinct from human capital which is contained *within* people) developed at the same time as the literature on entrepreneurial intention. Both literatures emerged in the 1980s as a reaction to the deterministic approach taken in many psychological studies of entrepreneurs. However, they developed in parallel and did not intersect. Whereas the literature on entrepreneurial intention changed our understanding of what was occurring *within* the mind of individuals, the entrepreneurial network and social capital literature moved the focus away from the mind of individuals to the social surroundings affecting individuals and their decision making. Owing heavy allegiance to the resource perspective developed by Wernerfelt (1984), entrepreneurial network and social capital literature argues that entrepreneurs obtain non-redundant resources (social capital) from their network that makes them perform better. The social capital resources entrepreneurs obtain from their networks have to be understood broadly and include, among other things, information, advice, social support, and legitimacy.

Sociologists' interest in how people's social networks influence their status attainment (Granovetter, 1973; Bourdieu, 1983) has resulted in three propositions:

- social networks affect the outcome of instrumental actions;
- the nature of resources obtained from social networks is affected by people's original position; and
- the nature of resources obtained from social networks is affected by the strength of ties (Lin, 1999).

Entrepreneurship scholars (e.g., Aldrich and Zimmer, 1986; Greve 1995) have also been interested in social networks and the social capital associated with them. Entrepreneurship research shows that social networks affect opportunity recog-

dition (Singh, 2000), entrepreneurial orientation (Ripolles and Blesa, 2005), and the vocational decision to become an entrepreneur (e.g., Davidsson and Honig, 2003; Morales-Gualdron and Roig, 2005; De Clercq and Arenius, 2006) and growth (Lee and Tsang, 2001). Relatively recently, and most importantly for this study, Hmieleski and Corbett (2006) have argued that social networks influence entrepreneurial intentions.

One of the essential results, which previous entrepreneurship research on social networks and social capital has demonstrated, concerns embeddedness. People embedded in networks containing entrepreneurs tend to be more entrepreneurially oriented. People who have close family members in business (Matthews and Moser, 1995; Sanders and Nee, 1996; Davidsson and Honig, 2003; Menzies et al., 2006) or personally know someone who has started a business (Davidsson and Honig, 2003; Morales-Gualdron and Roig, 2005; Arenius and Kovalainen, 2006; De Clercq and Arenius, 2006; Menzies et al., 2006) seem to have a better chance of becoming entrepreneurs.

Researching in Sweden, Davidsson and Honig (2003) found that people who have parents in business or have close friends or neighbors in business are more likely to become nascent entrepreneurs. De Clercq and Arenius (2006) found positive correlations in both their Belgium and their Finish samples between personally knowing people who have started a business and starting a business oneself. In an analysis of the 2001 GEM database, considering a sample drawn across 29 countries, Morales-Gualdron and Roig (2005) also concluded that personally knowing someone who has started a business has a positive impact on people's decisions to become entrepreneurs. Analyzing a similar sample, but only for the Nordic countries and only for women, Arenius and Kovalainen (2006) found the same relationship. Thus, previous research strongly supports the proposition that personally knowing someone who has started a business is positively correlated with the decision to become an entrepreneur. Accordingly, we formalize the following proposition.

Proposition 3 – social capital hypothesis: a person with greater social capital will be more likely to have the intention to start a new venture than a person with lower social capital.

Alternative statement of proposition 3: a person embedded in an entrepreneurial network containing other entrepreneurs will be more likely to have the intention to start a new venture than a person not embedded in a entrepreneurial network containing other entrepreneurs.

3.3.4 Gender Differences

Discussion of the influence of gender on aspects of the new venture creation process is closely entailed with the previously discussed “experience” stream of new venture creation research. Within this stream, three specific characteristics of interest

have emerged (1) age, (2) sex (gender), and (3) ethnicity. In this study, we focus on gender.

Despite the high participation by females in entrepreneurial activities around the world (Minniti et al., 2006) and awareness of their role in economic development, there is still too little research in this area (Baker et al., 1997; de Bruin et al., 2006). Nevertheless, a stream of research is emerging. Extant gender research is generally concerned with how female entrepreneurs' *practices* differ from men (e.g., Birley, 1989; Fielden et al., 2003; Klyver and Terjesen, 2007) and the impact on various measures of social and economic performance (e.g., Collins-Dodd et al., 2004; Kim and Ling, 2001; Orser et al., 2006).

It has been suggested that female entrepreneurs are disadvantaged, in part because of a lack of suitable and effective social networks (Fielden et al., 2003; Timberlake, 2005). Research on the social networks of female entrepreneurs is mostly constrained to snapshots at one particular venture stage, such as a new start-up (Menzies et al., 2004) or an existing firm (Cromie and Birley, 1992; Farr-Wharton and Brunetto, 2007), and does not consider the dynamic nature of networks through the entrepreneurship process. Recent reviews call for studies of process differences across individuals' extent of network leverage (Hoang and Antoncic, 2003) and gender (Carter et al., 2001; Godwin et al., 2006). One thing is clear. Though clear patterns of results are not abundant from gender throughout the world, three points do seem well supported. First, a much lower proportion of any country's adult female population participates in entrepreneurship than the proportion of adult males who do so (Brush, 1992). Second, throughout the world women are relatively disadvantaged compared to men with respect to most forms of human capital. Third, in order to succeed at any level of economic endeavor (say employment status in a large corporation) in "a man's world," a woman has to be proportionately better credentialed than a male counterpart. By extension, for the purposes of this model it therefore seems reasonable to argue that a woman may require more human and social capital, in all its forms, than does a man to form the same level of entrepreneurial intentions. Accordingly, we postulate the following propositions.

Proposition 4A: For the same level of entrepreneurial intention, females will possess higher educational levels than males.

Proposition 4B: For the same level of entrepreneurial intention, females will possess greater startup experience of than males.

Proposition 4B: For the same level of entrepreneurial intention, females will possess greater social capital than males.

3.4 Discussion: An Enhanced Model of Entrepreneurial Intentions

In plain language, the fundamental supposition underpinning this model was that entrepreneurial intentions' researchers could and should broaden our representation of the entrepreneurial mind with respect to our theoretical modeling of the way

entrepreneurial intentions are formed. We argued from the literature that a person’s entrepreneurial intent is influenced not just by self-efficacy but by other human capital factors and by social capital factors and by gender. All these factors inform the intension to start or not to start a business and we need to model not just intent but *informed* intent. Our informed intention model is illustrated in Fig. 3.3.

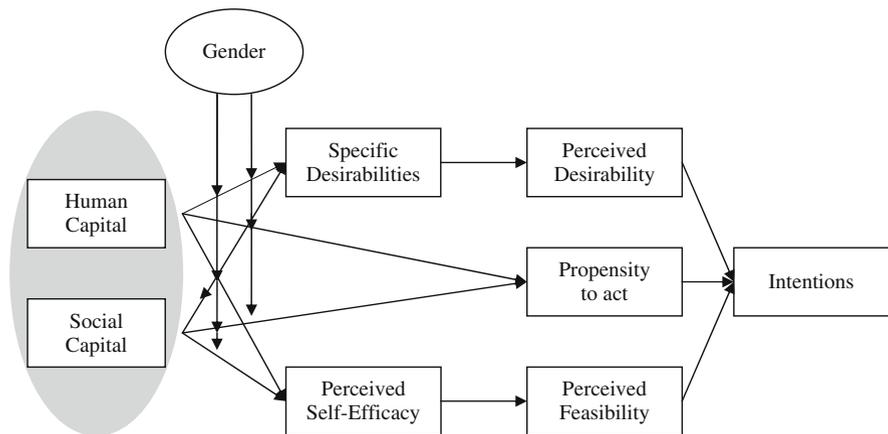


Fig. 3.3 The Informed Intention Mode

Our developed propositions, permit – or mandate – the redrawing of the fundamental Shapero–Krueger entrepreneurial intentions model. In our propositions, we argued that human capital and social capital influenced individuals’ likelihood to develop entrepreneurial intentions. However, our argument did not cover the pathway through the Shapero–Krueger model. This is still to be explored. In Fig. 3.3, we have drawn the most straightforward expected effects, where both human capital and social capital have an influence on, respectively, specific desirability, propensity to act, and perceived self-efficacy. However, as stated, other pathways are possible as well and this is a task for future research to estimate just as it has been the task of previous research to estimate the pathways through the original Shapero–Krueger entrepreneurial intentions model.

In our development of the propositions, we were relatively specific about the content of both human and social capital. We operationalized human capital as education level and experience in starting a venture and social capital as being embedded in an entrepreneurial network containing other entrepreneurs. Regardless of these more or less specific operationalizations, we intend by using the more general concepts of human and social capital to broaden the applicability of the model by explicitly including influences from the knowledge that resides within the individual and the knowledge and influences that flow from the individual’s social environment. Thus, the influence of human capital is not limited to education level and experience of starting a venture, and the influence of social capital is not limited to being embedded in an entrepreneurial network containing other entrepreneurs.

Other human capital and social capital variables are highly likely to be relevant and have the potential to influence, respectively, specific desirability, propensity to act, and perceived self-efficacy – or influence through other pathways the original Shapero–Krueger entrepreneurial intentions model.

3.5 Conclusion and Implications

This chapter contains some generic messages important for future research and implications for actual entrepreneurs, educators, and policy makers. Below we will elaborate briefly on these.

Generically, while perhaps the “informed” model of entrepreneurial intentions that we have drawn is not the “right” one in terms of absolute precision, we believe that we are able to argue strongly that *some* kind of informed intent model is now mandatory. On the evidence of the literature review, the notion of informed intent is important. It will no longer be satisfactory to leave social and human capital out of our modeling of entrepreneurial intentions formation and we believe that anything we argue about the importance of experience to the process needs to draw a clear distinction between men and women. The implications for future research are obvious and urgent. The big questions are all about “how.” How do human and social capital influence entrepreneurial intentions? Is it via the pathway suggested in the prevailing intentions model or in some other way? Researchers need to formulate designs capable of answering these kinds of questions and thus taking the informed intent model beyond the tentative stage to a clearer picture of path dependency. The authors of this chapter intend to explore this question empirically in future research.

Accepting that intentions are partially formed by human and social capital has essential implications for both actual and, more importantly, potential entrepreneurs. Previously, human capital and social capital were perceived as influential factors for individuals discovering entrepreneurial opportunities and their ability to evaluate and exploit these. However, our enhanced model of entrepreneurial intent suggests that human capital and social capital have an even earlier influence and therefore become even more important to actual entrepreneurs. Not only do they impact individuals’ ability to discover, evaluate, and exploit opportunities, but they also impact their intentions to do so. Therefore, ambitions to become an entrepreneur have to be followed by a continuous development and maintenance of both human and social capital.

For educators, the model also has important implications. Educators have previously played an essential role in making those students – with entrepreneurial intentions – capable of discovering, evaluating, and exploiting opportunities. The informed intent model further suggests that they also have a vital role in forming these intentions. A long debate has taken place about how to stimulate entrepreneurial intentions through education.

Although it may be regarded as beyond the scope of this chapter, one specific lesson can be drawn from this model. Educators, apart from providing the general knowledge about many aspects of entrepreneurship, need to stimulate students to

develop and maintain their networks. Their social networks are important not only in the process of discovering, evaluating, and exploiting the entrepreneurial opportunity (Shane and Venkatarammen, 2000) but also in the process of shaping the *intention* to do so. So, educators with ambition to stimulate entrepreneurship need to integrate the building of social capital into their teaching. This can be done by intensive interaction with business practitioners and the business environment during a course. Integrating development of business networks into the course is consistent with the fact that human and social capital can be difficult to separate and need to be treated as two interdependent factors (Otteson and Klyver, 2008).

On a higher and more abstract level, the same implications regarding integrating development and maintenance of social networks into education apply to policy makers. From the informed intent model, it seems likely that one crucial way of stimulating not only the capacity but also the intention to become entrepreneurial can be enhanced by an education system that interacts with industry. Thus, interaction between the industry and the education system should be an explicit, formulated policy for every nation wanting to increase the level of entrepreneurial intent among its population. Furthermore, other initiatives that stimulate individuals' development and maintenance of both social and business networks seem to be a way of increasing a population's entrepreneurial intentions.

In a paper entitled, *Watch Out, Isaac! Reciprocal causation in entrepreneurial intent*, Krueger et al. (2007) used a biblical analogy to classify the entrepreneurial intentions model as a kind of "Isaac": a greatly loved "son" of many research "fathers and mothers." They mooted the possibility that they might (for various reasons, including the problem of reciprocal causality) have to do as Abraham was instructed to do in the bible and kill the adored child. In the metaphor of the current book, destroying the entrepreneurial intentions model (killing Isaac) would translate to closing the entrepreneurial mind on the importance of entrepreneurial intentions. The study reported in this chapter has shown that, when it comes to the study of entrepreneurial intentions, we don't have to close the entrepreneurial mind. We just have to broaden it.

References

- Acs ZJ, Audretsch DB (2003) Handbook of Entrepreneurship Research: An Interdisciplinary Survey and Introduction. Boston: Kluwer Academic.
- Ajzen I (1991) The theory of planned behavior. *Organizational Behavior and Human Decision Processes* 50: 179–211.
- Aldrich, HE and Zimmer, C (1986). Entrepreneurship through social networks. In: Sexton, DL and Smilor, RW (eds.), *The art and science of entrepreneurship*. New York: Ballinger, pp. 3–23.
- Anderson JR (1990) *Cognitive Psychology and its Implications* (3rd ed.). New York: W.H. Freeman.
- Arenius P, Kovalainen A (2006) Similarities and differences across the factors associated with women's self-employment preference in the Nordic countries. *International Small Business Journal* 24: 31–59.
- Baker T, Aldrich HE, Liou N (1997) Invisible entrepreneurs: The neglect of women business owners by Mass Media and Scholarly Journals in the United States. *Entrepreneurship and Regional Development* 9: 221–238.

- Bandura A (1977) *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura A (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Becker GS (1993) *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. Chicago: University of Chicago Press.
- Bird B (1988) Implementing entrepreneurial ideas: The case for intention. *Academy of Management Review* 13: 442–453.
- Birley S (1989) Female entrepreneurs: Are they really different? *Journal of Small Business Management* 27: 32–37.
- Bourdieu P (1983) Forms of capital. In: Richardson J (ed.), *Handbook of theory and research for the sociology of education*. New York: Greenwood Press, pp. 241–258.
- Brännback M, Krueger NF, Carsrud AL, Elfving J (2007) “Trying” to be entrepreneurial. MPRA Paper No. 8814, posted 21. May 2008/22:58. Online at <http://mpra.ub.uni-muenchen.de/8814>. Munich Personal RePEc Archive.
- Burt RS (1992) *Structural Holes: The Social Structure of Competition*. Cambridge, MA: Harvard University Press.
- Brush CG (1992) Research on women business owners: Past trends, a new perspective and future directions. *Entrepreneurship Theory and Practice* 16: 5–30.
- Carter S, Anderson S, Shaw E (2001) *Women's Business Ownership: Review of Academic, Popular and Internet Literature*. Report to the Small Business Service.
- Coleman JS (1988) Social capital in the creation of human-capital. *American Journal of Sociology* 94: 95–120.
- Collins-Dodd C, Gordon IM, Smart C (2004) Further evidence on the role of gender in financial performance. *Journal of Small Business Management* 42: 395–417.
- Cozby P (1997) *Methods in Behavior Research*. London: Mayfield Publishing Co.
- Cromie S, Birley S (1992) Networking by female business owners in Northern Ireland. *Journal of Business Venturing*, 7: 237–251.
- Davidsson P, Honig B (2003) The role of social and human capital among nascent entrepreneurs. *Journal of Business Venturing* 18: 301–331.
- de Bruin A, Brush CG, Welter F (2006) Introduction to the special issue: Towards building cumulative knowledge on women's entrepreneurship. *Entrepreneurship Theory and Practice* 30: 585–593.
- De Clercq D, Arenius P (2006) The role of knowledge in business start-up activity. *International Small Business Journal* 24: 339–358.
- Farr-Wharton R, Brunetto Y (2007) Women entrepreneurs, opportunity recognition and government-sponsored networks. *Women in Management Review* 22: 187–207.
- Fielden SL, Davidson MJ, Dawe AJ, Makin PJ (2003) Factors inhibiting the economic growth of female owned small businesses in North West England. *Journal of Small Business and Enterprise Development* 10: 152–166.
- Forbes DP (1999) Cognitive approaches to new venture creation. *International Journal of Management Reviews* 1: 415.
- Godwin L, Stevens C, Brenner L (2006) Forced to play by the rules: Theorizing how mixed-sex founding teams may benefit women entrepreneurs in male dominated contexts. *Entrepreneurship Theory and Practice* 30: 623–642.
- Granovetter MS (1973) The Strength of Weak Ties. *American Journal of Sociology* 78: 1360–1380.
- Granovetter MS (1985) Economic action and social structure: The problem of embeddedness. *American Journal of Sociology* 91: 481–510.
- Greve A (1995) Networks and entrepreneurship – An analysis of social relations, occupational background, and use of contacts during the establishment process. *Scandinavian Journal of Management* 11: 1–24.
- Hindle K (2004) Choosing Qualitative Methods for Entrepreneurial Cognition Research: a Canonical Development Approach. *Entrepreneurship Theory and Practice* 28: 575–607.

- Hmieleski KM, Corbett AC (2006) Proclivity for improvisation as a predictor of entrepreneurial intentions. *Journal of Small Business Management* 44: 45–63.
- Hoang, H. and Antoncic, B. (2003). Network-based research in entrepreneurship – A critical review. *Journal of Business Venturing* 18: 165–187.
- Jenkins M, Johnson G (1997) Entrepreneurial intentions and outcomes: A comparative causal mapping study. *Journal of Management Studies* 34: 895.
- Katz JA, Shepherd D (eds) 2003 *Advances in Entrepreneurship, Firm Emergence, and Growth*, JAI volume 6. Greenwich, CT: JAI Press.
- Kim JLS, Ling CS (2001) Work-family conflict of women entrepreneurs in Singapore. *Women in Management Review* 16: 204–221.
- Kirzner IM (1979) *Perception, opportunity and profit*. Chicago, IL: University of Chicago Press.
- Kirzner IM (1973) *Competition and Entrepreneurship*, Chicago, IL: University of Chicago Press.
- Klyver K, Terjesen S (2007) Entrepreneurial network composition: An analysis across venture development stage and gender. *Women in Management Review* 22: 682–688.
- Kolvreid L (1996) Organizational employment versus self-employment: Reasons for career choice intentions. *Entrepreneurship: Theory and Practice* 20: 23–31.
- Krueger NF (2003) The cognitive psychology of entrepreneurship. In: Acs ZJ, Audretsch DB (eds.), *Handbook of Entrepreneurship Research: An Interdisciplinary Survey and Introduction*. Boston: Kluwer Academic, pp. 105–140.
- Krueger NF (1993) The impact of prior entrepreneurial exposure on perceptions of new venture feasibility. *Entrepreneurship: Theory and Practice* 18: 5–21.
- Krueger NF (2000) The cognitive infrastructure of opportunity emergence. *Entrepreneurship: Theory and Practice* 24: 5–23.
- Krueger NF Brazeal DV (1994) Entrepreneurial potential and potential entrepreneurs. *Entrepreneurship Theory and Practice* 18: 91–104.
- Krueger NF, Carsrud AL (1993) Entrepreneurial intentions: Applying the theory of planned behavior. *Entrepreneurship and Regional Development* 5: 315–330.
- Krueger NF, Dickson PR (1993). Self-efficacy and perceptions of opportunities and threats. *Psychological Reports* 72(3, pt.2.), 1235–1240.
- Krueger NF, Dickson PR (1994) How believing in ourselves increases risk taking: Perceived self-efficacy and opportunity. *Decision Sciences* 25: 385–400.
- Krueger NF, Reilly MD, Carsrud AL (2000) Competing models of entrepreneurial intentions. *Journal of Business Venturing* 15: 411–432.
- Krueger NF, Brannback M, Carsrud A (2007) Watch Out, Isaac! Reciprocal causation in entrepreneurial intent. Paper delivered at the *Australian Graduate School of Entrepreneurship (AGSE) Research Exchange Conference*. Brisbane.
- Larson A, Starr JA (1993) A network model of organization formation. *Entrepreneurship Theory and Practice* 17: 5–15.
- Lee DY, Tsang EWK (2001) The effects of entrepreneurial personality, background and network activities on venture growth. *Journal of Management Studies* 38: 583–602.
- Lin N (1999) Social networks and status attainment. *Annual Review of Sociology* 25: 467–487.
- Matthews CH, Moser SB (1995) Family background and gender: Implications for interest in small firm ownership. *Entrepreneurship and Regional Development* 7: 365–377.
- Menzies TV, Doichon M, Gasse Y, Elgie S (2006) A longitudinal study of the characteristic, business creation process and outcome differences of Canadian female vs. male nascent entrepreneurs. *International Entrepreneurship and Management Journal* 2: 441–453.
- Menzies TV, Doichon M, Gasse Y (2004) Examining venture-related myths concerning women entrepreneurs. *Journal of Developmental Entrepreneurship* 9: 89–107.
- Minniti M, Arenius P, Langowitz N (2006) *Global Entrepreneurship Monitor: 2005 Report on women and entrepreneurship*. Babson College and London Business School.
- Mitchell RK, Busenitz L, Lant T, McDougall PP (2002). Toward a theory of entrepreneurial cognition: Rethinking the people side of entrepreneurship research. *Entrepreneurship Theory and Practice* 27: 93–104.

- Morales-Gualdron, ST, Roig S (2005) The new venture decision: An analysis based on the GEM project database. *International Entrepreneurship and Management Journal* 1: 479–499.
- Orser BJ, Riding AL, Manley K (2006) Women entrepreneurs and financial capital. *Entrepreneurship Theory and Practice* 30: 643–665.
- Ottoson H, Klyver K (2008) Entrepreneurial human and social capital – complements or substitutes? Paper presented at NCSB, Tallinn, Estonia.
- Ripolles M, Blesa A (2005) Personal networks as fosterers of entrepreneurial orientation in new ventures. *International Journal of Entrepreneurship and Innovation* 6: 239–248.
- Ronstadt R (1988) The corridor principle. *Journal of Business Venturing* 3: 31–40.
- Sanders J, Nee V (1996) Immigrant self-employment: The family as social capital and the value of human capital. *American Sociological Review* 61: 231–249.
- Schenkel MT, Hechavarria DM, Matthews CH (2009) The role of human and social capital and technology in nascent ventures. In Reynolds PD, Curtin RT (eds). *New Firm Creation in the United States*. Berlin: Springer, pp. 157–185.
- Shapiro A (1982) Social dimensions of entrepreneurship. In: Kent C, Sexton D, Vesper K (eds.), *The Encyclopedia of Entrepreneurship*. Englewood Cliffs, NJ: Prentice Hall.
- Shane S, Venkataraman S (2000) The promise of entrepreneurship as a field of research. *Academy of Management Review* 25: 217–226.
- Shaver KG, Scott LR (1991) Person, process, choice; The psychology of new venture creation. *Entrepreneurship: Theory and Practice* 16: 23–45.
- Shepherd DA, Krueger NF (2002) An Intentions-Based Model of Entrepreneurial Teams Social Cognition. *Entrepreneurship: Theory and Practice* 27: 167–185.
- Shook CL, Priem RL, McGee JE (2003) Venture creation and the enterprising individual: A review and synthesis. *Journal of Management* 29: 379–399.
- Singh RP (2000) *Entrepreneurial Opportunity Recognition Through Social Networks*. London: Garland Publishing, Inc.
- Timberlake S (2005) Social capital and gender in the workplace. *Journal of Management Development* 24: 34–44.
- Ucbasaran D, Westhead P (2002) Does entrepreneurial experience influence opportunity identification? In: Reynolds PD, Autio E, Brush CG, Bygrave WD, Manigart S (eds). *Frontiers of Entrepreneurship Research*.
- Wernerfelt B (1984) A resource-based view of the firm. *Strategic Management Journal* 5: 171–180.