INVESTMENT BEHAVIOR
IN GENESIS/PRE-SEED ICT VENTURES IN ISRAEL

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ABSTRACT

The study of entrepreneurship over the last decade has contributed significantly to understanding the processes involved in assessment of ventures. Limited research has been conducted on the subject of genesis/pre-seed entrepreneurs and how investors assess them in order to predict post-investment performance. This study is an initial attempt to advance the study toward understanding this special case of genesis/pre-seed stage ventures with a focus of inquiry on the interaction between investors and entrepreneurs in the context of organizing a new venture mainly as a source of new value.

The study results suggest that factors such as forecasted social control, forecasted output control and forecasted behavior control often lead investors to predict higher post-investment performance. It also finds that the investor’s entrepreneurial background as well as the type of investment firm affects the venture’s post-investment performance. These findings provide tentative insight as to how VCs assess and predict performance of genesis/pre-seed ICT ventures in Israel.
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INTRODUCTION

Over the past two decades the venture capital industry has experienced dramatic growth. Disbursements by these funds into portfolio ventures have created many of the most visible new firms today: Microsoft, Apple, Intel, among others. Many of the efforts to stimulate venture activity focus on stimulating capital funds that will invest in genesis/pre-seed ventures; genesis/pre-seed ventures are those that have at most a skeletal business plan or product development plans in preliminary stages. This is a virtuous circle where growth in the activity of these markets is triggered by the VC’s willingness to invest in genesis/pre-seed ventures that spurs the growth of long term prospects for VC investment. One of the highest growth opportunities for the VC industry is in the information systems, communications, and computer technologies (ICT) ventures.

The Venture Capital (VC) industry consists of less than 500 funds worldwide concentrated in California, Massachusetts, Israel, Singapore and a handful of other places. According to the Israel Venture Capital Association 2006 yearbook, 105 of these firms are active in Israel, and 77 of them are active at the genesis/pre-seed stage of ICT investments. See Table 1. Other investor firms that invest in the Israeli ICT genesis/pre-seed ventures are angel firms, corporate VCs and incubators.
TABLE 1
ICT Equity Investors (Genesis/Pre-Seed Stage) Operating In Israel

<table>
<thead>
<tr>
<th>TYPE OF INVESTMENT FIRM</th>
<th>TOTAL FIRMS IN ISRAEL</th>
<th>FIRMS ACTIVE (ICT at genesis stage)</th>
<th>% of ACTIVE IN ICT at genesis stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angel Investors &amp; Repeat Entrepreneur Investment Firms</td>
<td>90</td>
<td>52</td>
<td>38%</td>
</tr>
<tr>
<td>Foreign VCs</td>
<td>43</td>
<td>20</td>
<td>14%</td>
</tr>
<tr>
<td>Israeli based Venture Capital Firms</td>
<td>62</td>
<td>57</td>
<td>41%</td>
</tr>
<tr>
<td>Corporate VC (Investment arm of a technology firm)</td>
<td>9</td>
<td>5</td>
<td>4%</td>
</tr>
<tr>
<td>Incubators</td>
<td>12</td>
<td>4</td>
<td>3%</td>
</tr>
<tr>
<td>TOTALS</td>
<td>216</td>
<td>138</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: www.ivc-online.co.il

The Israeli VC industry is especially interesting because its ICT sector (at the genesis/pre-seed stage) captured 8.5% of the total capital raised in 2006 and nearly 8% in both 2005 and 2004 (www.ivc-online.com). In contrast, the entire USA-based ICT sector (at the genesis/pre-seed stage) captured 2.5% of the total capital raised in 2006, improving by more than double the percentage (1.1%) in 2005 and triple the percentage (0.8%) in 2004 (2007 Moneytree Report).

Genesis/pre-seed ICT represent one of the potentially, highest reward investments available but they also have a very high risk. Investors require an ability to screen out unacceptable projects and entrepreneurs so that they can make efficient and appropriate decisions about where to invest. Understanding the unique factors affecting the decision to invest in these firms is important also for potential policy decisions.

**Venture Capital and Genesis/Pre-Seed Investments (Equity Gap)**

Venture capitalists utilize contracts to mitigate risks. They weigh potential agency and monitoring costs when determining investment decisions and the cost of the type of contract they sign. Information gathering, contract formulation and monitoring costs may
outweigh the benefits of investing in opportunities which are only backed by trust in the 
ethics and abilities of the entrepreneurial team. External equity financing becomes very 
costly when investors cannot distinguish between competent (and honest) entrepreneurs and 
incompetent (and opportunistic) ones (Hart and Moore, 1990). Because of this, investors 
have shifted their investments away from genesis/pre-seed entrepreneurs in favor of safer and 
more mature ventures (Sapienza et. al., 1996). Shunning genesis/pre-seed ventures is a 
phenomenon referred to as the equity gap.

*Equity gap* is best defined as “the small amounts of risk capital from institutional 
sources for ventures at the genesis/pre-seed stage which arise because of the fixed costs of 
investment appraisal and monitoring that make it uneconomic for venture capital funds to 
make small investments and also because of the reluctance of banks to make unsecured 
lending” (Mason and Harrison, 1996).

There are several types of equity investors in Israel, who provide support for 
entrepreneurial ventures at this stage: three types of venture capital firms (Israeli, foreign and 
corporate) and angel investment firms. In Israel, the major difference between them is that 
although all have decision makers who were entrepreneurs before (according to our survey), 
angels invest their own money while venture capitalists invest monies from the periodic 
funds they raise (corporate VCs invest monies from the R&D budget of the corporation). All 
play an important role in reviewing proposed investment opportunities and later in 
overseeing those selected for investment. All exist together in a patient equity capital 
ecosystem that needs their two types of non-financial expertise: their monitoring skills and 
their managed exit experience (Initial Public Offering (IPO), Mergers & Acquisitions 
(M&As), etc). It is these nonmonetary aspects of venture capitalism and angel investments
that make genesis/pre-seed ventures successful. Henceforth all of these types of investors are referred to as VCs throughout this study.

Genesis/pre-seed ventures are a special case because the proposed ventures have no history except for that of the individuals forming the entrepreneurial team (their expected competence and ethics). There are four types of difficulties faced by genesis/pre-seed investors when appraising investment proposals:

1. High uncertainty: a measure of the array of potential outcomes for the new project and later for the new venture/firm. High uncertainty means that the entrepreneurial team as well as their future investors cannot confidently predict how the venture will perform in the future. In ICT genesis/pre-seed investments there is high uncertainty with respect to both the behavior of the entrepreneurial team and the market.

2. The agency problem: because of the day-to-day involvement with the project, the entrepreneurial team (the agent) knows more about the prospects of the venture than the investors (the principal) – the asymmetric information problem. Also, they can take detrimental actions which the investors cannot observe such as undertaking a riskier strategy than initially suggested or not working as hard as expected (opportunism).

3. Lack of tangible assets: most of the entrepreneurial teams at this stage can offer investors only their abilities to produce intellectual property and convert it later into a product with high returns on the needed investment.

4. The conditions of the ICT specific market: the nature of the ICT markets can vary dramatically, whether due to shifts in the intensity of the competition or nature of the customers.

Without the ability to screen out unacceptable projects and entrepreneurs, investors are unable to make efficient and appropriate decisions about where to invest. Investment decision makers realized the difficulty of appraising genesis/pre-seed entrepreneurial opportunities and started to look for programs that would reduce risk and create more value in the new firms. One of those programs is the Entrepreneur/Executive in Residence Program (EIR for short). This research started in 2004 while trying to understand the phenomenon
that was occurring mostly on the Israeli ICT scene. The study (Schwarzkopf, 2005; 2006) explored the equity gap dilemma in the context of the Israeli venture capital (VC) industry.

VC partners, in Israel, are using the Entrepreneur/Executive in Residency (EIR) programs to enlist both ideas and people asynchronously in what they call a “deal”. A deal involves the connection of the right entrepreneurial team, the right idea/vision, the right ICT technological market conditions and the right amount of forecasted valuation growth for the new venture. Entrepreneur/Executive in Residence (EIR) programs are internship programs found primarily in Israeli VC firms and Israeli Angel firms that are interested in investing in ICT startups (and, to a lesser degree, in Israeli offices of foreign-based VC funds). VCs use EIR programs to buffer the asynchronous stages of deal creation, identifying mechanisms used to select, manage, and maximize the performance and value creation of genesis/ pre-seed ICT ventures. The EIR interns play a role in the VC firm prior to start of the venture but do not have a well-defined concept ripe for investment and some have no concept at all. However, all are expected to incubate an idea while receiving a salary and/or market research support from the VC. Eventually each will form their own venture, or join a team funded by the VC.

Das and Teng (2000, 2001, 2003) studied strategic alliances extensively and found that the rationale for alliances is the value-creation potential of the firm’s resources which are pooled together. The alliance partner firms must manage two types of risk: business risk and agency risk. Risk management incurs costs of two types: transaction costs and monitoring costs. They suggested that in order to understand how partner firms can effectively reduce and manage these costs, alliance members need to examine the inter-relationships between trust, control, and risk. In other words, the investment decision of the new firm depends on a
mix of trust and control variables. VCs could forecast the return on investment of the proposed firm if they could forecast the possible value created by the firm and the forecasted transaction and monitoring costs of the alliance.

Based on previous research, our findings (Schwarzkopf, 2005; 2006) demonstrated that EIR programs, by raising the “confidence coefficient” of VCs in the entrepreneur’s behavior, mitigated perceived risks and promoted the likelihood of the EIR venture receiving VC funding. In particular, we focused on the investor’s perceived future transaction and perceived future monitoring costs of the genesis/ pre-seed deals. We elucidated how the perceived future costs are reduced by EIR programs in which goodwill trust and competence trust are high (built during the internship period) and governance mechanisms, behavior control and social control operate effectively (taught to the EIRs during the stay at the VC offices).

We examined, for EIR programs, a framework of the three constructs of risk, trust, and control in order to see how investors in a high uncertainty market resolve transactional problems when deciding to invest in a firm that creates new economic value. The overall proposition was that trust and control jointly affect the expected transactional and expected monitoring costs that then determine the investor’s decision to invest in genesis/ pre-seed ICT ventures.

The perceived risk and the perceived or expected costs (transactional and monitoring) of reducing risk are the investors’ estimate of the risk itself (Dowling 1986; Fischhoff 1985). Investors, thus, may have different estimates about the level of risk in a given deal. While trust and expected control only reduce perceived risk (state of mind at investment decision time), they do not reduce the actual risk and costs inherent to the firm.
This study, based on the EIR results, concentrates on the decision-making process that leads to equity investment for all types of ICT entrepreneurial teams at their most vulnerable point, which is the genesis/pre-seed stage. The investment is made either simultaneously with or very close to the creation of a firm. The value created by the formation of the firm is not a given. It must be created by the investment of the VCs and nurtured by the entrepreneurial team together with the professionals of the VC firms. We strived to understand the “nascent firm” (genesis/pre-seed stage), the determinants that cause the equity investor to invest and we tried to discover which factors influence the future success of the firm.

**CONCEPTUAL FRAMEWORK AND HYPOTHESIS**

The theoretical and empirical literature in opportunism-based transaction cost economics is vast. No effort will be made here to review the entire literature. Rather, we will summarize the basic arguments of this theory and how they relate to entrepreneurship and the special conditions of investments in genesis/pre-seed ICT ventures and the nascent firms they form.

Opportunism-based transaction cost economics examines the different ways that a transaction can be managed: governance mechanisms and hierarchies (firms). This theory is based on the inability of one economic entity to evaluate the motives and objectives of another entity at low cost (Williamson, 1975). Opportunism includes a broad range of activities (Barney and Ouchi, 1986). According to Fama and Jensen (1983) the above conflicts lead to two particular agency problems:

a) **Moral Hazard**: agents do not put forth the effort originally agreed upon in the contract.
b) **Adverse selection**: agents misrepresent their abilities.

Opportunism-based transaction cost economics assumes that everyone, given the opportunity, will behave in an opportunistic manner. Two types of risk will then affect the decision to invest:

a) **Relational risk**: relates to the consequences of not having satisfactory cooperation or opportunistic behavior by the entrepreneur (Das and Teng, 1996).

b) **Performance risk**: relates to the probability and consequences that the venture objectives (either because of the entrepreneurial team failure or the ICT vision/market) will not be achieved (Das and Teng, 1996).

The most prominent risk is the relational risk between the VCs and entrepreneurs, caused by conflicts in alignment and verification of goals and risk sharing (Van Osnabrugge, 2000). The two ways of managing these risks are contract-based governance and hierarchical governance (giving some people in the exchange the right to monitor and control other people).

If there is no market uncertainty, it is unlikely for an equity investment to create new value and the parties will receive payments based on expectations (Barney, 1986). In such equity investments there are no surprises (positive or negative). When market uncertainty is high, as in genesis/pre-seed ICT ventures, the actual value that might be created from the equity investment may vary significantly from the expected value (positive or negative). If the value is greater, some parties of the new firm will receive higher returns (Rumelt, 1987), and if it is lower they will experience economic loss. This creates strong incentives for some of the parties of the investment to carefully monitor and control the young firm.

The approaches used by VCs to overcome these problems cause two types of costs: ex-ante (before the investment) and ex-post (after the investment):
a) **Ex-ante cost (determining the optimal contract)** (Jensen and Meckling, 1976): pre-investment screening, due diligence and a well negotiated contract. Costs in this category include: the costs of thinking of and planning how to deal with all eventualities; costs of negotiating; costs of writing a contract (that can be verifiable by a third party) and finally the costs of enforcement by a third party (Van Osnabrugge, 2000). This cost is also called transaction cost.

b) **Ex-post cost (determining the optimal control)** (Hart, 1995a, 1995b): because contracts are always incomplete, the allocation of future control is important. Costs in this category will depend on the amount of control needed to insure that the entrepreneur behaves as agreed. As contracts will always be incomplete, the ex-post allocation of power granted to the VC and his ability to be actively involved in the investment is most important (Hart, 1995a, 1995b; Van Osnabrugge, 2000). This cost is also called monitoring cost.

Once an investment is made, it is illiquid and its success is highly dependent on the entrepreneurial team’s behavior. Given the above mentioned information asymmetries, the initial decision to invest is an extremely important step (Sahlman, 1988). Equity funding relies on the ability of the investors to reduce perceived risk in the founding stage of genesis/pre-seed firms (Megginson and Weiss, 1991).

**Investment Criteria for Genesis/ Pre-Seed Ventures**

Research on VC criteria to invest is extensive (Tyebjee and Bruno, 1984; MacMillian, Siegel and Narasimha, 1985; MacMillian & Narasimha 1987; Sandberg et al., 1988; Hisrich and Jankowicz, 1990; Hall and Hofer, 1993; Fried and Hisrich, 1997; Beim and Levesque, 2006; among others) and most of the researchers have divided the criteria into two main groups.

The first group relates to the **concept, proposed firm** and the **market**. These criteria includes appraisal of: technology, product, market, business plan, entrepreneur’s forecasting of obstacles for success (how they will overcome them), and finally, the exit opportunities.
Most of the appraisal is done by the VC (if it is his domain expertise) and a group of consultants working for the investment firm (Fried and Hisrich, 1997).

The other group of criteria is about the entrepreneur and the forecasted relationship with the VC. Smart (1999) talked about how VCs realize that they are betting on people when they make their investment. Zacharakis and Meyer (1998) mention that VCs often discuss the chemistry between them and the entrepreneurs. Deals fall through when the chemistry is not right. Shepherd et al. (2000) argue that the primary criterion used by VCs in assessing a new venture reduces their risks by investing in entrepreneurs they can trust and believe can cope with uncertainty. The entrepreneurial qualities that VCs look for in their entrepreneurs are prior experience (Shepherd et al, 2000), management and marketing experience (Goslin and Barge, 1986), a balanced team with both technical and business orientation (Roberts, 1991), general management skills, quality of management, and a previous track record (Shepherd and Zacharakis, 1999).

In almost all studies, entrepreneur’s criteria were more important than the market/technology criteria. There is, however, one study by Zacharakis and Meyer (1998) that argues that market characteristics may be a better determinant of which ventures receive funding. The study states that more information seems to shift the importance from the entrepreneur to the market. If the VC is confident in the market, the entrepreneur is less important. Other studies talk about management (entrepreneurial team) weaknesses being less important than concept (market, product and technology) weaknesses in forecasting venture success because of the ability of VCs to change management if necessary (Douglas and Shepherd, 2002; MacMillan and Nrasimha, 1987; Rea, 1989).
Das and Teng found that trust is not a behavior or a choice but a psychological state that can be interpreted in terms of probabilities, expectations, and even confidence. Sapienza and Korgaanol (1996) were the first to talk about the importance of the entrepreneur engendering VC trust. They demonstrated how trust, when complemented with control, increased the confidence of the VC in the investment. Shepherd and Zacharakis (2001) showed how certain mechanisms can build trust and, with adequate controls, can increase the VC’s confidence of cooperation from the entrepreneur after the investment. They also showed that there are some optimal levels of control that will allow trust to be developed.

Level of trust (according to them) influences the choice of control. However, this last point is controversial. According to Argyris (1952), more control is associated with less trust, while Sitkin (1995) finds more control associated with more trust. Although cooperation between the entrepreneur and the VC is known to be critical, little is known about what makes this relationship work (Bowden, 1994; Sapienza and Korgaanol, 1996; Cable and Shane, 1997; Shepherd and Zacharakis, 2001). Amit et al. (1990) used the agent theory perspective while Cable and Shane (1997) used the prisoner’s dilemma perspective in order to explain the relationship between control and confidence in the cooperative behavior (trust) of VCs and entrepreneurs in a venture. The question, if trust is a substitute or complement of control, was examined by Rousseau (1995), Smilka (1994) and Shepherd and Zacharakis (2001). In our previous research (Schwarzkopf, 2006) we found that VCs need trust in order to use less perceived control in the forecasting of their relationship with the entrepreneur.

The innate inability to collect accurate and comprehensive information associated with bounded rationality (Dietrich 1994; Aldrich 1999) has cost implications for both VCs and entrepreneurs. VCs are subject to bounded rationality in the sense that they lack
complete information regarding the entrepreneurs’ abilities to exploit new opportunities successfully (Amit et al. 1990a, 1990b). Moreover, they are unable to fully predict market behavior and entrepreneurial behavior. In an attempt to overcome this informational asymmetry and arrive at more rational decisions, VCs invest in due diligence, collecting data on entrepreneurs’ human capital and market expectancies.

However, the due diligence process is limited in the assistance it can provide in terms of reducing VCs’ informational asymmetry. Such asymmetry results from uncertain market conditions and movements (its ability to absorb new innovations), as well as an inability to gather and process all information about technological advancements and competitors. Surprisingly, even when VCs are able to obtain a large amount of information, they face a cognitive overload that decreases their ability to predict a venture’s success potential (Yitshaki 2007). As more information becomes available, it is more difficult for the decision maker to interpret each piece of information, let alone how that information impacts other factors. Thus, it is cognitively harder to create a story or scenario where the venture will succeed (Zacharakis and Meyer 2000). Accordingly, Zacharakis and Meyer (2000) suggest that VCs employ sub-optimal decisions based on heuristics. It has also been argued that VCs tend to rely on partial information rather than any structured decision-making process (Zacharakis and Shepherd 2005).

VCs’ bounded rationality is also affected by their previous experience. Shepherd et al. (2003) talk about VCs’ tendency to rely on automatic information processing to such an extent that they become increasingly susceptible to various sources of cognitive error. Instead of evaluating all of the pieces of information surrounding the proposed venture, experienced
VCs may focus on those characteristics that match past successes or failures. Thus, the bounded rationality of VCs pushes them into a ‘confidence zone’ where their decision-making is based upon past knowledge and experience (Zacharakis and Meyer 2000; Shepherd et al. 2003).

As a result of their bounded rationality, VCs rely not only on data collected in the due diligence process, but also on intuitive decisions based on their gut feelings (Khan 1987; Zacharakis and Shepherd 2001). Thus, bounded rationality affects VC’s ability to make decisions and evaluate new investments accurately (Yitshaki 2007).

**Research Questions**

VCs are time-constrained agents. They have to divide their time between the fund investors’ requirements, evaluating new venture proposals (deal flow), due diligence with new probable investments and monitoring and advising existing ventures in their portfolio. Expert VCs bear high opportunity costs in allocating time and tend to evaluate alternative investment opportunities by the time needed to control entrepreneurial opportunistic behavior versus the time needed for interventions that create value for the firm.

We propose that VC investment decisions can be predicted from investors’ perceptions of the entrepreneurial team’s trustworthiness and the VC’s forecasted ability to control the team’s opportunistic behavior. We also propose that the type of investment firm and the personal background of the investor affect both the decision assessment and the post-investment performance (creating economic value) of the firm. In genesis/pre-seed investments VCs cannot fully predict the venture’s future economic benefits, so their reliance on the entrepreneurial team is understandable.
In this study we used the “equity investment transaction” as our unit of analysis. We assumed that creating a firm as the organizing entity for genesis/pre-seed entrepreneurial team’s project is done in order to create value and not just to reduce opportunism-based transaction costs (Alvarez & Barney, 2006).

The findings for Entrepreneur in Residency programs (Schwarzkopf, 2005; 2006) (Figure 1) suggested that, although the entrepreneurial team of a venture may not be the sole consideration, VCs evaluate the entrepreneurial team to forecast future success. They use a mix of different perceived future trust and future control constructs in order to forecast the “perceived future transaction costs” and “perceived future monitoring costs” (Figures 1, 2 and 5).

**FIGURE 1: Conceptual Model for “EIR Program”: Investment Decision Making and Performance**

These two types of forecasted costs influence the investment decision assessment (confidence in the deal). The forecasting of the perceived costs is based on the human capital variables of perceived trust and perceived control (Figure 1).
The investors forecast costs in EIR based ventures by (figure 2) using the following constructs (Schwarzkopf, 2005; 2006):

1. Forecast of the perceived transaction costs through goodwill trust, behavioral control and social control.

2. Forecast of the perceived monitoring costs through competence trust, social control and output control.

**FIGURE 2**
Model for Constructs of Trust, Control, and Cost in EIR programs: Investment Decision Making and Performance

Our main goal, in this research, is to answer the following:

1. Could the model (Figure 2) used in EIR-based venture’s investment assessments be used for non-EIR based genesis/pre-seed stage investment assessments?

2. Can investment assessment based exclusively on perceived trust and perceived control predict positive post-investment performance in genesis/pre-seed ventures?

3. Does the background of the investor and the investor firm affect the assessment and/or the post-investment performance?
Antecedents of Post-Investment Performance

**Trust.** Trust entails a positive expectation about the entrepreneur, suggesting that unpleasant outcomes are less likely (Lane and Bachman, 1996). Trust is not one dimensional but changes character as a relationship develops (Lewicki and Bunker, 1996). Risk has to be incorporated in the definition of trust because trust is only relevant in risky situations. Without uncertainty in the outcome, trust has no role of any consequence (Boon and Holmes, 1991; Coleman, 1990; Deutsch, 1958).
In other words, trust represents positive expectations of another in a risky situation (Boon and Holmes, 1991; Gambetta, 1988) and the behavioral reliance on the other in a risky situation (Hosmer, 1995; Moorman, et al 1992). Trust-building measures are ignored by most agency theorists while some economists explicitly rule it out (Shepherd and Zacharakis, 2001). Trust promotes network associations (Miles and Snow, 1992) and reduces harmful conflict and transaction costs (Meyerson, Weick and Kramer, 1996). The health of a venture depends on the trusting relationships of its agents. Ventures with a high level of trust between investors and entrepreneurs foster a sense of community in which everyone takes responsibility for the venture and its wellbeing (Gibb, 1991). We will be using two types of trust: goodwill trust and competence trust.

**Goodwill trust.** Goodwill trust is the expectation of responsible, dependable role performance with integrity (Ring and Van de Ven, 1992; Barber, 1983; Mayer et al, 1995). Goodwill trust reduces agency costs by protecting the VC (principal) against any harmful behavior by the entrepreneur (agent). It only considers the entrepreneur’s intentions (motivation) to do appropriate things, not his ability to accomplish them.

Goodwill trust indicates mutual interests that preclude the possibility of interest conflicts thus increasing a sense of reliability (Bhattacharya, Devinney and Pillutla, 1998; Creed and Miles, 1996). Benign motivations and mutual interests are sources of trust (Rempel, Holmes and Zanna, 1985). VCs believe in goodwill trust when they share the same values and norms as the entrepreneurial team thereby creating social structures and institutional bases in the venture (Zucker, 1986).
We expect the VCs’ decision to invest to be strongly and positively influenced by the motivation of the entrepreneurial team to deliver. This motivation will also affect positively the post-investment performance of the venture.

\[ H1: \text{The higher the perceptions of the goodwill trust the more likely the investors’ decision to invest and higher the quality of the decision.} \]

\[ H2: \text{The higher the perceptions of the goodwill trust the higher the post-investment performance} \]

**Competence trust.** Competence trust is the expectation of technically capable role performance (Barber, 1983) and the expectation of ability and expertise (Mayer, Davis and Schoorman, 1995). The entrepreneur’s competence suggests a high probability of getting things accomplished successfully. It concerns only his ability to do appropriate things, not his intention to do so.

VCs collect information about the entrepreneurial team’s competence and evidence of trustworthiness in past relations with investors through their networks (Creed and Miles, 1996; Shepherd and Zacharakis, 2001). An entrepreneur’s competence influences new venture founding by mitigating the liability of newness (Stinchcombe, 1965). Competence confers status (Blau & Duncan, 1967) and affects the entrepreneur’s capabilities and skills (Becker, 1975) and finally shapes the resource networks of the venture (Burt, 1992; Granovetter, 1974).

Competence trust refers to an individual’s distinctive knowledge about a particular subject matter. It may be the result of work experience (Evans & Leighton, 1989; Cooper, Gimeno-Gascon & Woo, 1994), university education (Gimeno, Folta, Cooper & Wo, 1997) or other means (Shane, 2000). It may be accumulated through experimental learning and/or through second-hand experience. As individuals become knowledgeable at a particular task
through experience, they become increasingly efficient. They learn to focus attention primarily on the key dimensions; the ones that contribute the most variance to the outcome of decisions (Choo & Trotman, 1991).

We expect the VC’s decision to invest to be strongly and positively influenced by the abilities of the entrepreneurial team to deliver. These abilities will also positively affect the post-investment performance of the venture.

**H3:** The higher the perceptions of the competence trust the more likely the investors’ decision to invest and higher the quality of the decision.

**H4:** The higher the perceptions of the competence trust the higher the post-investment performance

**Control.** Control is generally viewed as a process (interactive activity that directs or constrains) of regulation and monitoring for the achievement of a certain goal, standard or purpose (Green and Welsh, 1988). Control is any action that is intended to affect the behavior of other people (Sohn, 1994). It is a regulatory process by which the elements of a system are made more predictable through the establishment of standards in the pursuit of some desired objective or state (Leifer and Mills, 1996).

For the VC there are two different types of control: a) controlling the entrepreneur and b) controlling the venture.

The literature has two approaches to control (Eisenhardt, 1985):

1. *External measure-based control:* establishment and utilization of formal rules, procedures and policies to monitor and reward desirable performance. There are two main modes to formal control (Ouchi and Maguire, 1975):
   
   a. Measuring the behaviors to ensure that the process is appropriate.
   
   b. Measuring the outcomes of the behaviors so as to have an accurate and reliable assessment of performance.
2. *Internal value-based control* (also called clan, informal or normative control): establishment of organizational norms, values, culture and the internalization of goals to encourage desirable behavior and outcome. It is intended to reduce goal incongruence and preference divergence among organizational members. It focuses on developing shared values, beliefs and goals so that appropriate behavior will be reinforced and rewarded (Ouchi, 1979).

Appropriate control mode depends on the knowledge of the transformation process in which appropriate behaviors are to take place and the ability to measure outputs in a precise and objective manner. We will use three types of control: behavior control, social control and output control.

**Behavior control.** Behavior control will be expected when processes which turn appropriate behavior into desirable output exist and behavior expectations of the entrepreneurial team will be compliant with VC's behavior and rules. It is the measurement of behavior itself rather than the final output (Eisenhardt, 1985; Thompson, 1967; Ouchi, 1979; Das and Teng, 2001).

Behavior control facilitates the process of supervision and monitoring by specifying the acceptable boundaries of conduct and the rewards associated with clear, explicit behavior that complies with specified rules (Kirsch, 1996; Geringer and Herbert, 1989; Makhiija and Ganesh, 1997; Shaan, 1983).

We expect VCs to be inclined to invest when they recognize the appropriate behavior of the entrepreneurial team. This behavior influences positively the post-investment performance of the venture because it facilitates monitoring and so frees the VC’s time from supervision. This allows him time for interventions that provide value.

**H5:** The higher the perceptions of the behavior control the more likely the investor’s decision to invest and higher the quality of the decision.
**H6: The higher the perceptions of the behavior control the higher the post-investment performance**

**Social control.** Social control expectations aim to reduce the discrepancies in goal preferences between the VC and the entrepreneur through the realization of common backgrounds and values (Kirsch, 1996). Members of the VC firm and the entrepreneurial team become more committed to the venture and their shared views serve to strongly influence the behavior of all team members (Eisenhardt, 1985; Thompson, 1967; Ouchi, 1979; Das and Teng, 2001).

Social control exists when both investors and entrepreneurs have similar social capital. It helps them get things done. Social control is expected to be strong when relations extend across professional networks, reaching friends and colleagues from earlier jobs (Hansen, 1995). Part of this has been shown before by Franke, Gruber, Harhoff and Henkel (2006) in their work showing that VCs tend to favor teams that are similar to themselves in type of training and professional experience.

We expect VCs to be inclined to invest when they recognize that they have the same goals as the entrepreneurial team because of their shared background and values. This behavior influences positively the post-investment performance of the venture because it facilitates monitoring and so frees VC’s time from supervision and to allocate his time for interventions that provide value.

**H7: The higher the perceptions of the social control the more likely the investor’s decision to invest and higher the quality of the decision.**

**H8: The higher the perceptions of the social control the higher the post-investment performance**
**Output control.** Expected output control is the process by which venture goals are set, measured and evaluated (work plan checked against measures and objectives as preset in the business plan) (Geringer and Hebert, 1989). Output control can be achieved through planning and budgeting. This ability to set objectives will allow the VC to exercise control and guide the venture into satisfactory performance. When the right and timely output control is available, all sides of the alliance can adjust strategy accordingly if the objectives are not met.

Although the formal (output control) governance mechanisms put into effect by VCs enable them to minimize their agency costs, these contracts fail to efficiently monitor the entrepreneurs’ work process, as the latter possess idiosyncratic and tacit knowledge. Therefore, VCs use outcome-based contracts to ensure those entrepreneurs’ goals and actions are aligned with their own expectations for outcomes (Whitener et al. 1998). Outcome-based contracts enable the VC to transfer some of the risk to the entrepreneur and to provide an information system that controls what the entrepreneur is actually doing (Eisenhardt 1989; Whitener et al. 1998).

We expect VCs to be inclined to invest in a venture if they feel that the entrepreneurs will deliver timely and correct output control. We also expect better performance if a venture is managed by good and timely governance (output controls).

*H9: The higher the perceptions of the output control the more likely the investor’s decision to invest and higher the quality of the decision.*

*H10: The higher the perceptions of the output control the higher the post-investment performance*
**Risk propensity.** This is the only antecedent that refers to the VC professional and not to the entrepreneurial team. VC’s propensity to take risks is different from a condition of uncertainty, because risk propensity usually relates only to the individual investor’s estimated probabilities of certain venture outcomes. The focus on the negative outcomes of VC risk-taking has been generally acknowledged to be the most relevant in the literature (March and Shapira, 1987).

Propensity to take risk affects the investor’s forecast of perceived transaction and monitoring costs. The higher his risk propensity the less critical he will be when forecasting expected entrepreneurial opportunism. VCs compare risk tolerance to expected opportunism (Ruhnka and Young 1991) and attempt to control risk via contractual covenants. Their aim is to reduce informational asymmetry (Sahlman 1990; Gompers and Lerner 1996). VCs also reduce risk by acquiring a higher portion of equity or by employing a step-wise investment strategy (Amit, et al. 1990a, 1990b; Ruhnka and Young 1991; Amit et al. 1998) We expect that when the investor’s propensity to take risks increases so does the probability of an investment error.

Sometimes VCs limit the entrepreneurs’ managerial and competitive decisions because of their own risk adversity (Barney, Busenitz and Fiet 1994). We expect that when the investor is investing non-financial value (board of directors’ decisions or step-wise investment decisions) and has high risk propensity he will not limit the entrepreneur’s strategies. This increases the probability of creating aggressive and unique strategies in nascent markets and technologies.

**H11:** The higher the risk propensity of the investor, the higher his will to invest and the higher his chance of making a mistake (lower the quality of the decision).
**H12:** The higher the investor’s risk propensity the higher the post-investment performance.

**Mediating Variables**

**Quality of the decision assessment.** All ventures in our survey received initial funding so the investor’s initial decision to invest was high. We know that funding is provided in discrete stages by VCs (Bergemann and Hege, 1998) in order to allow the investors to periodically re-evaluate their initial investment decision. In this study investors were asked to describe their current periodical investment assessment of the venture compared to the original. This combination allows us to get an indication of the investor’s ex post opinion of the investment decision and about the quality of their initial decision.

Zacharakis and Meyer (1998) suggested bias when using surveys to study the investor’s decision process, because they elicit from each the frame of mind in which the appraisal evaluations were made. Our variable tries to bring this evaluation to the present and introduce quality. We expect that a high decision assessment to continue investing is based on a high quality initial decision resulting in higher the performance of the venture in the future.

**H13:** The higher the quality of the decision assessment the higher the post-investment performance

**Moderating variables**

**VC Involvement.** From the perspective of agency theory, the involvement of VCs in their portfolio firms serves as an active control mechanism to ensure that entrepreneurs’ behavior is aligned with their interests. Usually, boards of VC-backed firms are more actively involved than traditional boards, partially because of their larger ownership stake (Fried, Bruton and Hisrich 1998; Yoshikawa, Phan and Linton 2004). In fact, most VCs
require involvement in strategic decision-making, usually via the board (Rosenstein, Bruno, Bygrave and Taylor, 1993), in order to ensure that entrepreneurs act according to their expectations (Floyd and Lane 2000). VCs use the board as a mechanism for aligning managers’ and shareholders’ interests ‘through the monitoring and ratifying of management decisions’ (Hillman, Cannella and Paetzold, 2000).

Studies have shown that VCs also add value to their portfolio firms by assisting in financing, formulating business strategy, building managerial teams, serving as sounding boards, managing crises and developing networks (MacMillan, Kulow and Khoylian 1988; Gorman and Sahlman 1989; Gomez-Mejia et al. 1990; Sapienza, et al., 1996; Morris, Watling and Schindehutte 2000).

VCs’ involvement may serve as a control mechanism to increase their return on investment (ROI) and to maximize investor and entrepreneur profits alike (Gifford 1997). This notion is supported by studies which found active VC monitoring to have a positive effect on the firm’s performance. This is ascribed to the parties’ common compensation incentives (Fried et al. 1998; Yoshikawa et al. 2004).

Fundraising, investment in buyouts and later stage investments take place in an extremely well-developed, globalised market. In contrast, when investing in genesis/pre-seed ventures there is a home bias in the activities of VC funds.

The moderating effects of investor involvement are of two kinds. The first is the background of the specific investor and the second is the type of investment firm with whom he is associated.
Type of investor firm. Israeli-based VC firms are usually more actively involved than other VC firms in the genesis/pre-seed ICT arena (www.ivc-online.co.il). We wanted to see how their involvement differed from other equity investment firms investing in Israel.

*H14:* The type of investor firm (specifically: Israeli VC firms) will influence positively the investor’s decision to invest and the quality of the decision.

*H15:* The type of investor firm (specifically: Israeli VC firms) will influence positively the post-investment performance of the venture.

Investor entrepreneurial experience. Willingness and competence to nurture and monitor the new venture will increase the chance that it will actually generate new economic value (although such value is far from certain). We assumed that entrepreneurial experience of the VC decision maker (as an entrepreneur) can and will influence his investment decisions and the performance of the venture. We tested against non-entrepreneurial backgrounds.

*H16:* Entrepreneurial experience (specifically: non-entrepreneurial background) influences the investor’s decision to invest and negatively the quality of the decision.

*H17:* Entrepreneurial experience (specifically: non-entrepreneurial background) influences negatively the post-investment performance of the venture.

Outcome: The Dependent Variable

Post-investment performance. Empirically defining venture success is problematic (Solymossy, 1998). There is an ongoing discussion about suitable indicators of new venture performance (Brush & Vanderwerf, 1992; Wiklund, 1998). Measures have ranged from subjective self-assessment (Ibrahim & Goodwin, 1986) to quantified and reasonably objective measures of economic performance (Sexton, Upton, Washoltz and McDougall, 1997). Usually, broad measures reflecting multiple aspects of both growth and economic
performance are preferable (Wiklund, 1998; Zahra & Covin, 1995). The venture capital-backed firm has a very limited financial history during the elapsed time between birth and next step financing.

There are several options:

1. Following Cooper et al. (1994), new venture performance can be classified into three mutually exclusive and collectively exhaustive categories: failure, marginal survival and high performance.


Our ventures are young and we chose to measure their post-investment performance as the VC assessment of the sales and market share growth. We asked the investor’s assessment of sales and market growth expectations.

**RESEARCH AND ANALYSIS**

**Data Collection**

**Setting and population.** The target population for this study was equity investors operating in Israel and involved in at least one ICT genesis/ pre-seed investment during the previous 36 months. In order to ensure relevance we wanted only one response per investment firm and preferably from the senior investment decision maker.

**Item development.** In developing the survey (Appendix A) we started by using existing items used previously by several entrepreneurship researchers. We utilized their existing scale items and when necessary adapted or adjusted them to fit the research. When constructs lacked measurement scales in the extant literature, scale items were developed, based on the theory and were refined through interviews with several entrepreneurship researchers and ICT professionals. Most items used a five-point Likert scale. The survey was
in English (not in Hebrew) because the “working” language with VC companies, in Israel, is English. The first part of the survey also included demographic and background information concerning the investment appraisal process stages and the investor’s deal flow funnel (opportunities to invest and their evaluation stages) characteristics.

**Survey development.** The survey was pre-tested (talk aloud interviews and reviewing the questionnaire) with 20 ICT professionals and some changes were made. Because of the small size of the population we could not have a pilot run as it would have made our sample size smaller.

**Data collection and sample.** For the sample, we received from IVA (Israeli VC Association, www.ivc-online.co.il) a list of emails of individuals dealing with equity investments in high-tech ventures. The list contained individuals from 216 investor firms. It contained information about the industries in which the firms invest (life sciences, semiconductors, etc) and the stages of investment of ventures. Using the list and other information we identified 138 firms that invested during the last 36 months in ICT genesis/pre-seed ventures. The list did not contain job descriptions, so to identify the right person to answer the survey, we had to e-mail all the 350 individuals listed as working in our 138 firms.

Each of the individuals in our list received an e-mail indicating our request that one person per firm (preferably one of the managing partners) answer the web-based survey. For about 90 days (11/2006 – 2/2007) we called the 138 firms in order to remind the managing partners about the survey. When we closed the survey we had 70 completed surveys (51% response rate) (See Table 2 below).
Before erasing the names of the individuals, we checked their names with a new list of senior investors we had compiled. Then we erased any type of information that could show the participant’s name or firm in order to provide full confidentiality.

**TABLE 2**
Investor Firms That Answered Our Survey

<table>
<thead>
<tr>
<th>TYPE OF INVESTMENT FIRM</th>
<th>TOTAL FIRMS IN ISRAEL</th>
<th>FIRMS ACTIVE (ICT at genesis stage)</th>
<th>% of ACTIVE IN ICT at genesis stage</th>
<th>FIRMS THAT ANSWERED OUR SURVEY</th>
<th>RESPONSE RATE (Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angel Investors &amp; Repeat Entrepreneur Investment Firms</td>
<td>90</td>
<td>52</td>
<td>38%</td>
<td>21</td>
<td>40%</td>
</tr>
<tr>
<td>Foreign VCs</td>
<td>43</td>
<td>20</td>
<td>14%</td>
<td>9</td>
<td>45%</td>
</tr>
<tr>
<td>Israeli based Venture Capital Firms</td>
<td>62</td>
<td>57</td>
<td>41%</td>
<td>31</td>
<td>54%</td>
</tr>
<tr>
<td>Corporate VC (Investment arm of a technology firm)</td>
<td>9</td>
<td>5</td>
<td>4%</td>
<td>5</td>
<td>100%</td>
</tr>
<tr>
<td>Incubators</td>
<td>12</td>
<td>4</td>
<td>3%</td>
<td>4</td>
<td>100%</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>216</strong></td>
<td><strong>138</strong></td>
<td><strong>100%</strong></td>
<td><strong>70</strong></td>
<td><strong>51%</strong></td>
</tr>
</tbody>
</table>

Demographic data. All investment professionals that answered our survey were at the top of the investment decision process of their firms. They were involved, as investors, in an average of 12 ICT ventures and an average of 3 successful exits. Most of them (66%) have been founders or CEOs of new ventures. Only 17% have never been entrepreneurs before becoming investors (Table 3 below).

**TABLE 3**
Entrepreneurial Background of VCS

<table>
<thead>
<tr>
<th>Demographic characteristic</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never been in a venture as an entrepreneur</td>
<td>17%</td>
</tr>
<tr>
<td>Worked in a new venture but not as the founder or CEO</td>
<td>17%</td>
</tr>
<tr>
<td>Have been the founder or CEO of a new venture</td>
<td>23%</td>
</tr>
<tr>
<td>I could be called a repeat entrepreneur</td>
<td>43%</td>
</tr>
</tbody>
</table>

In order to get some real data about the appraisal process in Israel, we asked them about their deal flow (based on investment opportunities arriving to the pre-screening stage).
We were interested in the origin of opportunities into the deal flow and the ratios of opportunities throughout the investment appraisal process itself. We found that the great majority (84%) of opportunities arrive at the pre-screening phase from within the investors’ network. This confirmed (table 4) our expectations that Israeli VC firms and entrepreneurial background of the investors carry considerable advantage (local social capital).

**TABLE 4**

*Origin of Opportunities in the Deal Flow*

<table>
<thead>
<tr>
<th>Source of Opportunities</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold calls</td>
<td>16%</td>
</tr>
<tr>
<td>Recommended by network</td>
<td>51%</td>
</tr>
<tr>
<td>Recommended but for syndication</td>
<td>16%</td>
</tr>
<tr>
<td>From a known repeat entrepreneur</td>
<td>8%</td>
</tr>
<tr>
<td>From EIR programs</td>
<td>5%</td>
</tr>
<tr>
<td>Born in another venture in the portfolio</td>
<td>4%</td>
</tr>
</tbody>
</table>

As seen in Table 5 below, 31% of our respondents had EIR programs in place and a majority of them (82%) strongly agreed that the programs had developed successful ventures. Of the respondents who had no EIR programs in place only 36% would start one in the future. Although only 5% of opportunities for investment come from EIR programs, most of them (80%) get financed (table 6). Investors also finance, through a syndicate, in EIR program ventures from another investment firm.
TABLE 5
EIR Program Success

<table>
<thead>
<tr>
<th>Does your firm have an EIR program</th>
<th>YES</th>
<th>31%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NO</td>
<td>69%</td>
</tr>
</tbody>
</table>

Would you say the EIR ventures you funded are successful

- strongly disagree: 0%
- somewhat disagree: 0%
- neutral: 18%
- somewhat agree: 0%
- strongly agree: 82%

Although you don’t have an EIR program today, you will start one in the future

- strongly disagree: 10%
- somewhat disagree: 23%
- neutral: 31%
- somewhat agree: 23%
- strongly agree: 15%

From 100% of the opportunities (Table 6 below) that arrived to the pre-screening stage, 46% get screened and only about one percent (1.2%) get financed. Over 75% of the ventures that were funded received investment through syndication and 30% also had government subsidies. Again, this indicates the investor’s need of high local social capital.

TABLE 6
EIR and Non EIR Opportunities That Get Invested (%)

- 46% arrive to screening stage
- 6.5% get into some type of due diligence
- 1.4% get investment proposal
- 1.2% get investment
- 0.9% invested with syndicate
- 0.4% invested with government subsidies
- 80% of EIR projects get invested
Data collected. Our data was free from missing values as related to our model constructs. Outliers in the data set were examined and no evidence of influential behavior was noted in the regression results. A review of the correlation tables (correlations, means and standard deviations are in the Table 7 below) showed no evidence of multicollinearity. Our reliability numbers (table 9) are all above 0.7 (except for one 0.68). Also the reproduced correlation table showed that there are only 1% non-redundant residuals with absolute values greater than 0.05. We can then conclude that they are well represented in the common factor space.
### TABLE 7
Composite Descriptive Statistics and Correlations

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>GOODWILL TRUST</th>
<th>BEHAVIOR CONTROL</th>
<th>SOCIAL CONTROL</th>
<th>POST INVESTMENT PERFORMANCE</th>
<th>DECISION ASSESSMENT</th>
<th>COMPETENCE TRUST</th>
<th>OUTPUT PROPENSITY</th>
<th>RISK TRUST</th>
<th>INVESTOR TYPE 1</th>
<th>INVESTOR TYPE 2</th>
<th>INVESTOR TYPE 3</th>
<th>INVESTOR TYPE 4</th>
<th>BACKGROUND 1</th>
<th>BACKGROUND 2</th>
<th>BACKGROUND 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOODWILL TRUST</td>
<td>4.41</td>
<td>0.70</td>
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<tr>
<td>BEHAVIOR CONTROL</td>
<td>3.63</td>
<td>0.68</td>
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<tr>
<td>SOCIAL CONTROL</td>
<td>3.33</td>
<td>1.01</td>
<td></td>
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<tr>
<td>POST INVESTMENT PERFORMANCE</td>
<td>3.59</td>
<td>0.74</td>
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<tr>
<td>DECISION ASSESSMENT</td>
<td>3.90</td>
<td>0.60</td>
<td></td>
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<tr>
<td>COMPETENCE TRUST</td>
<td>4.01</td>
<td>0.95</td>
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<tr>
<td>OUTPUT CONTROL</td>
<td>4.42</td>
<td>0.61</td>
<td></td>
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<tr>
<td>RISK PROPENSITY</td>
<td>1.17</td>
<td>0.46</td>
<td>-0.084</td>
<td>0.136</td>
<td>-0.276(*)</td>
<td>0.141</td>
<td>-0.158</td>
<td>-0.416(*)</td>
<td>-0.463(*)</td>
<td>-0.547</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>INVESTOR TYPE 1</td>
<td>2.90</td>
<td>0.99</td>
<td>0.091</td>
<td>0.041</td>
<td>0.001</td>
<td>-0.255(*)</td>
<td>-0.083</td>
<td>0.031</td>
<td>0.057</td>
<td>0.083</td>
<td>1</td>
<td></td>
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<tr>
<td>INVESTOR TYPE 2</td>
<td>0.14</td>
<td>0.35</td>
<td>-0.151</td>
<td>-0.138</td>
<td>-0.316(**)</td>
<td>0.175</td>
<td>-0.105</td>
<td>-0.176</td>
<td>-0.084</td>
<td>0.026</td>
<td>-0.785(*)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INVESTOR TYPE 3</td>
<td>0.11</td>
<td>0.32</td>
<td>-0.114</td>
<td>0.165</td>
<td>0.039</td>
<td>0.173</td>
<td>0.189</td>
<td>-0.074</td>
<td>0.07</td>
<td>-0.096</td>
<td>-0.223(**)</td>
<td>-0.547</td>
<td>1</td>
<td></td>
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<tr>
<td>INVESTOR TYPE 4</td>
<td>0.30</td>
<td>0.46</td>
<td>-0.115</td>
<td>-0.009</td>
<td>-0.260(*)</td>
<td>-0.162</td>
<td>-0.207</td>
<td>-0.253(*)</td>
<td>-0.287(*)</td>
<td>0.152</td>
<td>0.729(*)</td>
<td>-0.207(*)</td>
<td>-0.235</td>
<td>1</td>
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</tr>
<tr>
<td>INVESTOR BACKGROUND 1</td>
<td>2.26</td>
<td>0.74</td>
<td></td>
<td>0.208</td>
<td>0.215</td>
<td>0.119</td>
<td>0.203</td>
<td>0.194</td>
<td>0.12</td>
<td>-0.008</td>
<td>0.234</td>
<td>-0.256(*)</td>
<td>-0.004</td>
<td>0.111</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INVESTOR BACKGROUND 2</td>
<td>0.17</td>
<td>0.38</td>
<td></td>
<td>-0.004</td>
<td>0.196</td>
<td>0.05</td>
<td>-0.117</td>
<td>-0.204</td>
<td>-0.005</td>
<td>-0.038</td>
<td>-0.184</td>
<td>-0.248(*)</td>
<td>0.075</td>
<td>0.033</td>
<td>-0.785(*)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>INVESTOR BACKGROUND 3</td>
<td>0.40</td>
<td>0.49</td>
<td></td>
<td>0.035</td>
<td>0.255(*)</td>
<td>-0.124</td>
<td>0.025</td>
<td>0.171</td>
<td>0.071</td>
<td>0.065</td>
<td>0</td>
<td>-0.11</td>
<td>-0.216</td>
<td>-0.287(*)</td>
<td>-0.371(**)</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

* **significant at the 0.01 level (2-tailed).  
  * significant at the 0.05 level (2-tailed).  
  n=70 (no missing data)
Analysis

In order to test our hypotheses we performed three different methods of analysis. We used exploratory factor analysis to refine the construct measures and eliminate items, as necessary. Confirmatory factor analysis was used to determine the convergent and discriminant validity of the constructs and finally we used structural equation modeling analysis to test the relationships defined by our hypotheses.

Exploratory factor analysis. We did an exploratory factor analysis (using SPSS) of the items with a prior hypothesized eight factor model. Given the small size of the population (138) and of the sample (51% response rate) we had to be satisfied with only “good” results (acceptable results from studies of small samples; if the sample is big compared to the population being explored (Bollen & Stine, 1992; Efron & Gong, 1993)). Our results show that the KMO measurement of sampling adequacy is 0.72 (values between 0.7 and 0.8 are still considered “good”; Hutchenson & Sofroniov, 1999) and we get a significant result in the Bartlet’s test. This means our measures are correlated. Because of these correlations we used oblique rotation (although we have a small sample size).

As for convergence and discriminant validity, they were examined by using the pattern matrix and the factor correlation matrix. The pattern matrix (table 8) below shows high loadings (convergent validity) and no overlapping in the loadings between factors which implies good factor discrimination.

In the tables (B1 & B2 from Appendix B: EFA factor correlations and explained variances) we see that for each factor its measures are highly correlated and for others they are not correlated. We conclude again that we have good convergent and discriminant validity. Our eight factors also explain 85% of the variance.
To test sample size validity we referred to Stevens (1992) recommendations that for a sample size of 70, loadings should be over .55 (alpha=.01). In table 9 below we see that all but two of our loadings are above 0.55. Also according to MacCallum, Widaman, Zhang and Hong (1999) if most communalities are above 0.6 then a sample size of 70 is perfectly adequate. Ours are.

We can conclude that our EFA analysis shows that the hypothesized eight factors support our model constructs.

### TABLE 8
Pattern Matrix

<table>
<thead>
<tr>
<th>Pattern Matrix</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Items</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk Propensity</td>
<td>RP2</td>
<td>0.735</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>RP4</td>
<td>0.920</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goodwill Trust</td>
<td>GT5</td>
<td>0.715</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>GT6</td>
<td>0.555</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavior Control</td>
<td>BC3</td>
<td>0.976</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BC4</td>
<td>0.840</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Control</td>
<td>SC3</td>
<td>0.526</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>SC4</td>
<td>0.952</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output Control</td>
<td>OC2</td>
<td></td>
<td></td>
<td></td>
<td>0.644</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>OC3</td>
<td></td>
<td></td>
<td></td>
<td>0.591</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competence Trust</td>
<td>CT4</td>
<td>0.814</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CT6</td>
<td>0.866</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CT10</td>
<td>0.825</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Investment Performance</td>
<td>PIP1</td>
<td>0.878</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PIP2</td>
<td>0.671</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decision Assessment</td>
<td>PIP8</td>
<td>0.538</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PIP7</td>
<td>0.590</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PIP9</td>
<td>0.743</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PIP10</td>
<td>0.902</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Extraction Method: Principal Axis Factoring. Rotation Method: Promax with Kaiser Normalization. Rotation converged in 8 iterations. Only values over +/- 0.35 shown.
Confirmatory factor analysis. Using the results from the SPSS EFA we used AMOS in order to confirm our eight factors (see Fig B1 in Appendix B).

Because relatively large samples are required for CFA, the likelihood of obtaining good fit statistics, even if correlations are high, is high. The contrary can be said for small sample sizes. With CFA we got a Chi-square of 219.28 with 124 degrees of freedom and a p <0.000001; which means that we can reject the null hypothesis (all items in one factor) and our hypothesis is accepted (division of items into 8 factors). As exhibited in table 10 (below) all our loadings are significant (*** and most are above 0.7. The small size of the sample size (although it is 51% of population) gives us borderline results in our other fit statistics. CFI is 0.87, SRMR is 0.079 and RMSEA is 0.099 (Brown & Cudeck, 1993) talk about
RMSEA of 0.09 being still a reasonable error but recommend looking further if the RMSEA is bigger than 0.1).

Our CFA analysis confirms our division of the items into eight factors according to our constructs. The eight factors’ validity and reliability have been proven.

TABLE 10
CFA Loadings

<table>
<thead>
<tr>
<th>Method of Analysis and Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural equation modeling analysis.</td>
</tr>
<tr>
<td>Structural equation modeling was used to test the overall fit for the hypothesized model and to provide an analysis of the structural</td>
</tr>
</tbody>
</table>
coefficients and associated hypotheses. We started by forming new variables based on factor averages (according to the developed and accepted factors from the CFA/EFA analysis).

We used methods that would take into consideration both our mediation and moderation effects. In regards to moderation, we built new variables in order to test the overall fit with the differences in the backgrounds of the investors and of the investment firms they work in. The variables were built in order to test against mediation of Israeli VCs and non-entrepreneurial backgrounds of investors.

**TABLE 11**
Results for First Specified SEM Model

<table>
<thead>
<tr>
<th>Initial Model</th>
<th>Coefficient</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOODWILL TRUST</td>
<td>0.249</td>
<td>0.063</td>
</tr>
<tr>
<td>SOCIAL CONTROL BEHAVIOR</td>
<td>0.221</td>
<td>0.073</td>
</tr>
<tr>
<td>CONTROL</td>
<td>0.244</td>
<td>0.017</td>
</tr>
<tr>
<td>OUTPUT CONTROL COMPETENCE</td>
<td>0.212</td>
<td>0.113</td>
</tr>
<tr>
<td>TRUST</td>
<td>0.084</td>
<td>0.456</td>
</tr>
<tr>
<td>RISK PROPENSITY</td>
<td>0.038</td>
<td>0.733</td>
</tr>
<tr>
<td>INVESTOR TYPE 2</td>
<td>0.090</td>
<td>0.425</td>
</tr>
<tr>
<td>INVESTOR TYPE 3</td>
<td>0.176</td>
<td>0.091</td>
</tr>
<tr>
<td>INVESTOR TYPE 4</td>
<td>0.038</td>
<td>0.742</td>
</tr>
<tr>
<td>INVESTOR BACKGROUND 2</td>
<td>-0.016</td>
<td>0.878</td>
</tr>
<tr>
<td>INVESTOR BACKGROUND 3</td>
<td>0.018</td>
<td>0.877</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Decision Assessment</th>
<th>Coefficient</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSESSMENT</td>
<td>0.435</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>GOODWILL TRUST</td>
<td>0.294</td>
<td>0.010</td>
</tr>
<tr>
<td>OUTPUT CONTROL COMPETENCE</td>
<td>0.120</td>
<td>0.213</td>
</tr>
<tr>
<td>TRUST</td>
<td>0.294</td>
<td>0.004</td>
</tr>
<tr>
<td>SOCIAL CONTROL BEHAVIOR</td>
<td>0.355</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>CONTROL</td>
<td>0.133</td>
<td>0.172</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Post investment performance</th>
<th>Coefficient</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RISK PROPENSITY</td>
<td>0.057</td>
<td>0.599</td>
</tr>
<tr>
<td>INVESTOR TYPE 2</td>
<td>-0.165</td>
<td>0.081</td>
</tr>
<tr>
<td>INVESTOR TYPE 3</td>
<td>0.023</td>
<td>0.827</td>
</tr>
<tr>
<td>INVESTOR TYPE 4</td>
<td>-0.013</td>
<td>0.920</td>
</tr>
<tr>
<td>INVESTOR BACKGROUND 2</td>
<td>0.007</td>
<td>0.953</td>
</tr>
<tr>
<td>INVESTOR BACKGROUND 3</td>
<td>0.022</td>
<td>0.829</td>
</tr>
</tbody>
</table>
We ran the hypothesized model in Figure B2 (Appendix B) and encountered no particular problems while achieving convergence without any boundary conditions.

Our SEM strategy was to start with a “saturated” model (see Figure B2 and Tables 11) that had good fit statistics (Table 12). Then we proceeded to eliminate one by one the paths that were not significant. We ran the model 11 times. After each step, we made the necessary changes (Appendix B: SEM). Paths were deleted based on p-values of the regression coefficients and according to incremental contributions to the model. In every run we took out the paths that had the highest (not significant) p results. We did this until all paths were significant.

Table 12 offers the fit statistics for the first and for the final (11th run) models (for all the fit statistics of the 11 runs see Table B4 and for all p results see Table B3; both in Appendix B: SEM). In table 13 and in Figure 4 (below) we can see our final model and the paths that have been taken out during our analysis.
### TABLE 13
Final Re-Specified Model Results

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>P</th>
<th>Standardized Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>0.135</td>
<td>N/R</td>
</tr>
<tr>
<td>H2</td>
<td>0.920</td>
<td>N/R</td>
</tr>
<tr>
<td>H3</td>
<td>0.563</td>
<td>N/R</td>
</tr>
<tr>
<td>H4</td>
<td>0.829</td>
<td>N/R</td>
</tr>
<tr>
<td>H5</td>
<td>&lt; 0.001</td>
<td>0.336</td>
</tr>
<tr>
<td>H6</td>
<td>0.185</td>
<td>N/R</td>
</tr>
<tr>
<td>H7</td>
<td>0.040</td>
<td>0.226</td>
</tr>
<tr>
<td>H8</td>
<td>0.009</td>
<td>0.273</td>
</tr>
<tr>
<td>H9</td>
<td>&lt; 0.001</td>
<td>0.349</td>
</tr>
<tr>
<td>H10</td>
<td>0.958</td>
<td>N/R</td>
</tr>
<tr>
<td>H11</td>
<td>0.753</td>
<td>N/R</td>
</tr>
<tr>
<td>H12</td>
<td>0.001</td>
<td>0.305</td>
</tr>
<tr>
<td>H13</td>
<td>&lt; 0.001</td>
<td>0.508</td>
</tr>
<tr>
<td>H14</td>
<td>0.436</td>
<td>N/R</td>
</tr>
<tr>
<td>H14</td>
<td>0.116</td>
<td>N/R</td>
</tr>
<tr>
<td>H14</td>
<td>0.877</td>
<td>N/R</td>
</tr>
<tr>
<td>H15-M1</td>
<td>&lt; 0.001</td>
<td>0.309</td>
</tr>
<tr>
<td>H15-M2</td>
<td>0.634</td>
<td>N/R</td>
</tr>
<tr>
<td>H15-M3</td>
<td>0.127</td>
<td>N/R</td>
</tr>
<tr>
<td>H16</td>
<td>0.878</td>
<td>N/R</td>
</tr>
<tr>
<td>H16</td>
<td>0.660</td>
<td>N/R</td>
</tr>
<tr>
<td>H17-M1</td>
<td>0.014</td>
<td>-0.207</td>
</tr>
<tr>
<td>H17-M2</td>
<td>0.827</td>
<td>N/R</td>
</tr>
</tbody>
</table>

*path taken out during the analysis*

*path remaining*
RESULTS

TABLE 14
Final Hypotheses Tables

<table>
<thead>
<tr>
<th>INDEPENDENT VARIABLES</th>
<th>Coeff</th>
<th>T-val</th>
<th>P-val</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision Assessment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCIAL CONTROL</td>
<td>0.226</td>
<td>2.055</td>
<td>0.040</td>
</tr>
<tr>
<td>BEHAVIOR CONTROL</td>
<td>0.336</td>
<td>3.492</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>OUTPUT CONTROL</td>
<td>0.349</td>
<td>3.316</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Post investment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DECISION ASSESSMENT</td>
<td>0.508</td>
<td>5.247</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>SOCIAL CONTROL</td>
<td>0.273</td>
<td>2.631</td>
<td>0.009</td>
</tr>
<tr>
<td>RISK PROPENSITY</td>
<td>0.305</td>
<td>3.499</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>TYPE OF INVESTMENT FIRM</td>
<td>0.309</td>
<td>3.502</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>BACKGROUND OF INVESTOR</td>
<td>-0.207</td>
<td>-2.462</td>
<td>0.014</td>
</tr>
</tbody>
</table>

Antecedents effects on the Mediator (Quality of the Decision Assessment)

H5: We found evidence to support that the investor’s perceptions of the expected behavior control of the entrepreneurial team affects the quality of the decision assessment. The effect is positive ($\beta = .336$) and significant.

H7: We found evidence to support that the investor’s perceptions of the expected social control of the entrepreneurial team affects the quality of the decision assessment. The effect is positive ($\beta = .226$) and significant.

H9: We found evidence to support that the investor’s perceptions of the expected output control of the venture (entrepreneurial team) affects the quality of the decision assessment. The effect is positive ($\beta = .349$) and significant.

Effects on the Outcome Variable (Performance of the Firm after the Investment)

H8: We found evidence to support that the investor’s perceptions of the expected social control of the entrepreneurial team affects the performance of the firm. The effect is significant and positive ($\beta = 0.273$).

H12: We found evidence to support that the risk propensity of the investor affects the performance of the firm. The effect is significant and positive ($\beta = .305$)
**H13:** We found that more confidence and a better decision assessment affect the performance of a firm. The effect is significant and positive ($\beta = .508$).

**H15:** We found evidence to support that Israeli VCs affect post-investment performance differently than other types of investment firms. The effect is significant and positive ($\beta = 0.309$).

**H17:** We found evidence to support that non-entrepreneurial background of investors, in all investment firms, affect post-investment performance differently than other professionals. The effect on the performance of the firm is negative ($\beta = - 0.207$) and significant.

**No Supportive Evidence was found for:**

**H1, H2, H3 and H4:** These hypotheses were all about trust. Although we have shown in previous research, in the special case of the EIRs, that VCs mitigate risk through the use of BOTH trust and control we see that with other investment opportunities they mitigate it with control only.

**H6 and H10:** These hypotheses were all about control that can be managed with a contract. It also means that those with problematic forecasted control problems will not get investment and so their importance is negated.

**H11, H14 and H16:** These hypotheses were all about the individual making investment decisions, his background, his risk propensity and the investment firm that he works with. This means that although all three qualities are important for the post-investment performance of the firm, they do not vary the decision assessment process.

**DISCUSSION AND FINDINGS**

One aim of this study was to gain greater insight in models that can predict post-investment performance of genesis/pre-seed ventures. The rationale for this was the need of VCs to predict through differences in individuals the how, why and where of their new successful venture. Our model does identify potential elements that can be utilized in order to predict performance.

Our analysis presents answers that are both enlightening and paradoxical and can be summarized (Table 14 and Figure 4):
Social control, behavior control and output control (the three forecasted control variables) have a positive influence on the mediating construct (investment decision assessment). The social control variable also influences post-investment performance directly. (H5, H7, H8 and H9 are confirmed).

The variables of trust (goodwill and competence) that are so important in EIR based ventures have no significant influence on either the mediating or the dependent variable in our model (other genesis/ pre-seed entrepreneurs). In EIR programs, trust was built during the internship period. In future research we would like to see if trust is built during the due-diligence period (can take several months) (H1, H2, H3, and H4 are rejected).

There is a positive relationship between the investment firm (preferred Israeli VC) and the background of the investor (negatively when the investor doesn’t have an entrepreneurial background) and the post-investment performance of the firm. This moderating effect of background as an entrepreneur and being part of an Israeli VC firm reflect local social capital (networks) and so affects post-investment performance (H15 and H17 are confirmed).

The post-investment performance is strongly affected by a high quality decision assessment. This is due to the expected causality of a good assessment but also because the obligation the VC professional (to invest non financial time) feels towards the venture after his positive initial decision to invest (especially if he feels he was correct in his assessment) (H13 is confirmed).
The First Question

Could the model (Figure 5; Schwarzkopf, 2006) used in EIR based genesis/pre-seed venture’s investment assessments be used for all investments at the genesis/pre-seed stage?
We found evidence that VC investment decisions could be predicted from investors’ perceptions of the forecasted ability to control the team’s opportunistic behavior. We found no justification for using the trust constructs. Our final model (Figure 6) is a subset of the one used for EIR (Figure 5) assessment decisions.

**FIGURE 6**
Non-EIR: Investment Decision Model

<table>
<thead>
<tr>
<th>Behavior Control</th>
<th>Output Control</th>
<th>Social Control</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transaction Costs</strong></td>
<td><strong>Control minimizes expected costs</strong></td>
<td><strong>Monitoring Costs</strong></td>
</tr>
</tbody>
</table>

The Second Question

Does the entrepreneurial team based investment assessment predict positive post-investment performance? We found evidence to support the hypotheses that a good assessment based exclusively on investors’ perceptions of the forecasted ability to control the team’s opportunistic behavior can forecast post-investment performance.

The Third Question

Does the background of the investor and the type of firm he works in affect the assessment and/or the post-investment performance? Evidence supported the hypothesis that the entrepreneurial background of the investor (no entrepreneurial experience, negatively) and the hypothesis that type of investment firm (Israeli VC firms, positively) influence the post-investment performance.
SUMMARY AND IMPLICATIONS

VC professionals are more time-constrained than money-constrained. They have to divide their time between the fund investors’ requirements, evaluation of new venture proposals (deal flow), due diligence with new probable investments and monitoring and advising existing ventures in their portfolio. In order to be successful they try to predict transaction and monitoring costs using only entrepreneurial team’s factors. They will only invest when their prediction of costs based on these factors is low (different for every investor). We see that a good quality assessment based entirely on the entrepreneurial team can predict post-investment performance.

The entrepreneurs look for both financial and non-financial investments. They have to build a game strategy based on their own human capital and the non-financial investment differences between VC firms.

The “perfect” genesis/ pre-seed entrepreneur will be the one that has the same qualities as those that come from an EIR program. Given the high cost (to VCs) of EIR programs most investments will still come from the regular (Table 4) deal flow. We looked at the assessment at the beginning of the process where trust does not yet exist. We tend to believe (for future research) that during the long due-diligence process (even up to the second investment stage) trust can be built and the EIR model will again take precedence.

LIMITATIONS AND FUTURE RESEARCH

The conclusions of this research are limited by five factors: the size of our sample, historical perspective, self reporting data, cultural bias (Israel only) and ICT markets.

- Given the population size of the VC industry in Israel we can only hope to increase the size of the population by continuing our research by surveying investors in other areas of interest (Silicon Valley, Singapore and Europe).
• VCs were asked to review feelings and actions from a historical perspective (beginning of assessment); also continued interaction with the entrepreneurial team could distort recollection. In future research, information should be gathered immediately after the decision and then ask the same questions after the investment is done.

• Other limitations are the flaws of being based on self-reporting data and on recollection of past events. Given the time constraint of expert VC professionals we can just hope that we will be able sometime to follow “real time” the processes of assessment of genesis/pre-seed ventures.

• The cultural limitation exists because the model draws on quantitative data collected only in Israel. It would be appropriate to test the conclusions on other countries. Perhaps cultural differences could explain why the genesis/pre-seed investments are more dominant in some countries than in others. Israeli VCs differ from their Silicon Valley counterparts in their enthusiasm toward early stage ventures in the ICT industry.

• The last limitation is the incredible elasticity and potential of the ICT markets. Most ventures in the ICT market change their proposed market and even products during their first couple of years (Schwarzkopf, 2006). The same cannot be said about life sciences, semiconductors and other high tech areas. We should also look at venture assessments in other markets.

The framework, based on this research, highlights the factors that make up successful genesis/pre-seed investment decisions and can help practitioners (investors and entrepreneurs) as well as scholars.

Practitioners

• Investors can use our findings to identify differences and faults in their investment decision processes. They can also use the data in order to recruit professionals with entrepreneurial backgrounds.

• Genesis/pre-seed ICT entrepreneurs suffer from the equity gap and the understanding of the VCs’ decision process can help them better prepare their search for equity investors. It can also help them choose between investors.

Scholars

Those involved in executive education in the fields of entrepreneurial finance and strategic planning are provided with findings and discussions that may enhance their
explanations of post-investment performance and the VC assessment process especially for those ventures that have no history and the investor’s decision must be based entirely on human capital factors. We also present here important demographic data on assessment and deal flow processes.

CONCLUSION

In the case of ICT genesis/pre-seed venture we see that expert VCs (who bear high opportunity costs in allocating time) will tend to evaluate alternative investment opportunities by the time needed to:

- **Control behavioral risk.** According to our research VC investment decisions can be predicted from the investor’s perceptions of the entrepreneurial team’s future opportunistic behavior (control constructs for non-EIR ventures).

- **Interventions that create value at the venture.** According to our research, experienced VCs are extremely important in creating value through their periodic interventions (their background as entrepreneurs and belonging to an Israeli VC influence post-investment performance).

We can conclude then:

- VC professionals try to predict transaction and monitoring costs. Based on this forecast they will or will not continue on their due-diligence process. These costs are predicted (by VCs) through forecasted control constructs (as seen by them prior to the due-diligence period).

- VCs will start programs like the EIR, where the residency period builds trust between the future entrepreneur and the investor. EIR programs showed how a certain program can build trust and, together with adequate controls can increase the confidence of the VC.

- VCs will find other ways for trust to be built between the VC and the nascent entrepreneur in order to reduce expected opportunistic behavior. We expect that this will be done sometimes during the long period of due-diligence and contract signing.
There is much to be done to further investigate the types of programs that can help build more genesis / pre-seed ventures. We need to understand how they get financing, close the existing equity gap and how they, ultimately, survive. I can just hope that others will join us in this effort.
APPENDIX A
Survey: Items Used in the Model

1. TYPE OF INVESTOR ITEM:

How would you describe your "investment environment?"

- Angel Investor
- Repeat Entrepreneur Investment Firm
- Silicon Valley based Venture Capital Firm
- Israeli based Venture Capital Firm
- USA (other than Silicon Valley) based Venture Capital Firm
- European based Venture Capital Firm
- Corporate VC (Investment arm of a technology firm)
- Incubators

2. INVESTOR ENTREPRENEURIAL EXPERIENCE ITEM:

Have you had any entrepreneurial experience before joining the firm?

- Never been involved in a new venture
- Worked in a new venture before but was not the founder or CEO
- Have been the founder or CEO of a new venture
- I could be called a serial entrepreneur (involved in a series of ventures as a CEO or founder)

3. MORE DEMOGRAPHIC INFO:

Number of your associates actively involved in ICT (Information, Internet, Software and Communication) venture funding decisions?

Average years of experience in the investment business by the partners?

Percentage of ICT ventures in your portfolio

1. Over 75%
2. 50%-75%
3. 25%-50%
4. Under 25%

How many years have you worked as an investor?
How many ventures have you personally been involved in as an investor so far?

__________ ventures

__________ successful exits
Mark the percentages of ventures that your firm has invested (during the last 5 years) considering the stage at the time of first investment

- Genesis-/pre-seed ______%  
- Seed ______%  
- Early Stage ______%  
- Midstage ______%  
- Late stage ______%

In what form do deal flow venture opportunities present themselves to your firm for screening?

- ______% cold calls  
- ______% recommended by your network  
- ______% born within another firm in your portfolio  
- ______% recommended for syndication by another VC  
- ______% repeat entrepreneur  
- ______% part of EIR programs

In the deal flow funnel, how would you sum up the filtering of venture opportunities, during the last 20 months; Out of 100% in prescreening stage

- ______% arrive at first screening stage  
- ______% arrive at due diligence stage  
- ______% invested by your firm  
- ______% invested, but in a syndicate  
- ______% invested, with some type of government incentive

Does/did your firm have an entrepreneur/executive in residency program?

**If YES**

- How many in total? (number)____  
- When did you start? (years) ____ years ago  
- Was the EIR program successful?  
- How many arrived at the due diligence phase? (number)_____%  
- How many were invested in? (number)_____%  
- Would you say the EIR ventures you funded are successful?

**If NO**

- You don't believe in EIR's value?  
- Would you start an EIR program in the future?
4. RISK PROPENSITY ITEMS:

The following questions will help us better understand your personal feelings about RISK.

Choose between
1. Receiving $300 for sure
2. 20% chance of winning $1500

Choose between
1. Receiving $160 for sure
2. 10% chance of winning $1600

5. COMPETENCE TRUST ITEMS:

During the appraisal process I thought that the entrepreneurial team had:

Entrepreneurial Team references

<table>
<thead>
<tr>
<th>1 Very</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 Very</th>
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Entrepreneurial Team technical skills

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<th>4</th>
<th>5 Very</th>
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</thead>
<tbody>
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<td>Poor</td>
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<td>Good</td>
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Entrepreneurial Team managerial experience

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<td>Good</td>
<td>Good</td>
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6. GOODWILL TRUST ITEMS:

Please rate on a 5-point scale to what extent you agree with the following:

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<tr>
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<th>3</th>
<th>4</th>
<th>5 Strongly</th>
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</thead>
<tbody>
<tr>
<td>Disagree</td>
<td>Agree</td>
<td>Neutral</td>
<td>Agree</td>
<td>Agree</td>
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</table>

I trusted the Entrepreneurial Team

I thought that this entrepreneurial team will behave in a consistent way and according to our expectations
7. BEHAVIOR CONTROL ITEMS:

I felt the Entrepreneurial Team’s understanding concerning the following issues was similar to mine:

Casual and informal issues

Personal and background issues

8. SOCIAL CONTROL ITEMS:

The Entrepreneurial Team and I have different areas of industry experience (negative)

Our background includes similar IDF experiences

9. OUTPUT CONTROL ITEMS:

At the time of appraisal I thought that the Entrepreneurial Team would provide timely feedback on the performance of the venture

At the time of appraisal I thought that the Entrepreneurial Team would provide timely feedback on the consequences of strategic decisions

At the time of appraisal I thought that the Entrepreneurial Team would provide additional/supplemental reports or explanations about performance of the venture

10. DECISION ASSESSMENT ITEMS:

In light of the subsequent on the job performance of the Entrepreneurial Team, how accurate was the competence assessment of them during the due diligence process and how was performance really?
The Entrepreneurial Team **technical assessment**

<table>
<thead>
<tr>
<th>Extremely not accurate</th>
<th>Not accurate</th>
<th>Neutral</th>
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<th>Extremely accurate</th>
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<tr>
<td>1</td>
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<td>3</td>
<td>4</td>
<td>5</td>
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</tbody>
</table>

The Entrepreneurial Team **technical performance**

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<th>Much Better</th>
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</table>

The Entrepreneurial Team **managerial assessment**

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</table>

The Entrepreneurial Team **managerial performance**

<table>
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<th>Worse</th>
<th>Neutral</th>
<th>Better</th>
<th>Much Better</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

11. **POST-INVESTMENT PERFORMANCE ITEMS:**

Please indicate on a scale from 1 to 5 how satisfied you are with VENTURE X’s progress on the following criteria over the last year.

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<thead>
<tr>
<th>Extremely not satisfied</th>
<th>Not satisfied</th>
<th>Neutral</th>
<th>Satisfied</th>
<th>Extremely satisfied</th>
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<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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</tbody>
</table>

In the following I seek to understand how satisfied you have been with VENTURE X’s attainment of various goals.

**Sales**

**Market Share**
APPENDIX B
Statistics

1. EXPLORATORY FACTOR ANALYSIS: additional tables

TABLE B1
EFA Based Factor Correlation Matrix

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<thead>
<tr>
<th>Factor</th>
<th>DA</th>
<th>CT</th>
<th>BC</th>
<th>RP</th>
<th>GT</th>
<th>PIP</th>
<th>SC</th>
<th>OC</th>
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<td>1.00</td>
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<td></td>
<td></td>
<td></td>
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<td>RISK PROSPERITY</td>
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<td>-0.35</td>
<td>0.24</td>
<td>1.00</td>
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<td>0.25</td>
<td>0.15</td>
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<td>0.28</td>
<td>0.23</td>
<td>0.50</td>
<td>1.00</td>
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</table>


TABLE B2
Variance Explained by the Factors

<table>
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<tr>
<th>Factor</th>
<th>Initial Eigenvalues</th>
<th>Extraction Sums of Squared Loadings</th>
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<tr>
<td></td>
<td>Total   % of Variance</td>
<td>Cumulative %</td>
</tr>
<tr>
<td>DECISION ASSESSMENT</td>
<td>DA</td>
<td>5.96     31.38</td>
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<tr>
<td>COMPETENCE TRUST</td>
<td>CT</td>
<td>3.40     17.92</td>
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<tr>
<td>BEHAVIOR CONTROL</td>
<td>BC</td>
<td>1.77     9.31</td>
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<tr>
<td>RISK PROSPERITY</td>
<td>RP</td>
<td>1.29     6.80</td>
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<td>GOODWILL TRUST</td>
<td>GT</td>
<td>1.13     5.92</td>
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<td>POST INVESTMENT PERFORMANCE</td>
<td>PIP</td>
<td>1.00     5.28</td>
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<tr>
<td>SOCIAL CONTROL</td>
<td>SC</td>
<td>0.83     4.37</td>
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<td>OUTPUT CONTROL</td>
<td>OC</td>
<td>0.69     3.65</td>
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</table>
2. CONFIRMATORY FACTOR ANALYSIS: additional figure

FIGURE B1
CFA Model
3. STRUCTURAL EQUATION MODELING: additional figures and tables

FIGURE B2
First Specified Model
### TABLE B3

**p Values Used For Re-Specification of the Model (11 Steps)**

<table>
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<th>step 3</th>
<th>step 4</th>
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### TABLE B4

**Model Fit Statistics for All 11 Re-Specified SEM Models**

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**Note:** The values in the table represent various fit indices commonly used in structural equation modeling (SEM) to assess model fit. Higher values for RMSEA and LO 90 generally indicate poorer model fit, whereas lower values for CMIN/DF, PCLOSE, NPAR, and CMIN generally indicate better model fit. The AIC (Akaike Information Criterion) is used to compare models, with lower values indicating a better fit.
REFERENCES


Creed, W. E. D. and Miles, R. E. 1996. Trust in organizations: A conceptual framework linking organizational forms, managerial philosophies, and the opportunity costs of


