

Entrepreneurial Passion and Perceived Startup Performance: The Moderating  
Role of Entrepreneurial Orientation

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**ABSTRACT**

The purpose of this study was to explore the relationship between the dimensions of entrepreneurial passion (inventing, founding, and developing), the dimensions of entrepreneurial orientation (risk, innovativeness, and proactiveness), and the dimensions of perceived performance (profit and growth). Few entrepreneurial passion-related studies have examined inventing, founding, and developing, together. Two questions were addressed: What is the relationship between entrepreneurial passion and perceived startup performance? Does entrepreneurial orientation moderate the relationship between entrepreneurial passion and perceived startup performance? An examination of relevant literature about the three constructs preceded the answers. We collected data from 91 leaders/CEOs of early-stage startups – located in a St. Louis, Missouri-based incubator. We used multiple linear regression and hierarchical multiple regression analyses to test the study's 24 hypotheses. Overall, we rejected each of the hypotheses – as well as the 24 models that were found to be statistically insignificant. In four particular models, findings suggested that passion for inventing and the entrepreneurial orientation dimension of risk are partial contributors to enhancing perceived performance – specific to profit; passion for founding and the entrepreneurial orientation dimension of risk are partial contributors to enhancing perceived performance – specific to profit; passion for founding and the entrepreneurial orientation dimension of innovativeness are partial contributors to attenuating perceived performance – specific to growth; and passion for developing and the entrepreneurial orientation dimension of proactiveness are partial contributors to attenuating perceived performance – specific to profit. These findings fill an empirical void pertaining the emerging study of entrepreneurship. We present directions for future research.

**Keywords:** *Entrepreneurship, Startups, Role Identity, Entrepreneurial Orientation, Performance*

## INTRODUCTION

Entrepreneurs and factors related to the creation and strategic orientation of early-stage startup organizations are the focus of this research. Specifically, this study looks at the dynamics associated with entrepreneurs and technology startup companies, located in a St. Louis, Missouri-based incubator, which aims to accelerate the growth and success of such new business ventures via resources and services like physical space, administrative support, and networking connections. Entrepreneurial passion – via identity theory/role identity theory – is the primary lens through which we conducted this research. Other lenses include entrepreneurial orientation and perceived startup performance.

This study is necessary to better understand entrepreneurs and startups that operate in an incubator environment. It addresses the following questions: What is the relationship between entrepreneurial passion and perceived startup performance (RQ<sub>1</sub>), and does entrepreneurial orientation moderate the relationship between entrepreneurial passion and perceived startup performance (RQ<sub>2</sub>)?

### **Startup Organizations**

By their sensitive and fragile nature, startups operate in a world of uncertainty and unpredictability, which is characterized by high dynamics – such as rapid changes and challenges (Salamzadeh & Kesim, 2017, p. 461). According to Estay (2014), startups are “companies that are in their first stages of operation, managed by a founding team, who own the business idea and have undertaken the financing of the organization’s activities during the development of a product or service which they believe there is demand” (p. 12). This study looks at early-stage startups – specifically technology startups that are up to approximately five years of age.

### **Entrepreneurship**

Startups are born from the ideas, thoughts, and inspirations of leading entrepreneurs, who are individuals that start a venture and assume the financial risks of operating a company (Carland, Hoy, Boulton, & Carland, 1984; van Gelderen, Thurik, & Bosma, 2005). Such individuals are also commonly referred to as the entrepreneurs. The study of entrepreneurs (referred to as entrepreneurship) is a relatively new field of study. Edmond and Wiklund (2010) said research focusing on the subject is regarded as the “youngest sibling in the management research family” (p. 144).

In many ways, entrepreneurship is extension of an individual’s identity. Gruber and MacMillan (2017) described identity theory as a promising approach for better understanding an entrepreneur’s identity and behavior (p. 275). Embedded in the process by which individuals see and understand themselves as a business owner, an entrepreneur, a CEO, or a leader is the study of entrepreneurial identity. The emerging construct is providing contributions about the behavioral approaches of entrepreneurs in creating business ventures, such as startup companies (Alsos, Clausen, Hytti, & Solvoll, 2016, pp. 236-237).

### **Identity Theory**

For an entrepreneur, identity acts as a subconscious guide to startup creation beyond an individual's spiritual drive. It serves as a critical source of motivation for behavior and decision making (Gruber & MacMillan, 2017, p. 283) and has emerged as a critical construct to better understand entrepreneurship. According to Hogg, Terry, and White (1995), identity theory places emphasis on the "multi-faceted and dynamic self that mediates the relationship between social structure and individual behavior" (p. 255). Traditionally, researchers have focused on role identity theory in entrepreneur identity – specifically looking at the role-related aspects of an individual's self. Role refers to the behavioral expectations that are associated with an individual's status or role (Hogg et al., 1995; Cast, 2004).

In recent years, researchers have found various aspects of identity theory as a leading theory for studying entrepreneurs.

### **Entrepreneurial Passion**

The personal dynamics that drive entrepreneur behavior are best understood by looking at entrepreneurial passion (via inventor, founder, and developer role identities), which has a positive impact on the commitment and dedication that entrepreneurs devote to their business ventures (Cardon, Wincent, Singh, and Drnovsek, 2009; Cardon & Kirk, 2015; Cardon, Glauser, & Murnieks, 2017). Likewise, entrepreneurial passion provides the "fire that fuels innovation, persistence, and ultimate success" (Cardon et al., 2017, p. 24). Building on the research of Cardon et al., "one particularly important question that has not been fully addressed is what makes entrepreneurs passionate" (p. 24). Cardon, Gregoire, Stevens, and Patel (2013) pointed out there is dearth of systematic empirical evidence regarding passion in entrepreneurship (p. 373).

Specifically, the domains of entrepreneurial passion consist of three distinct roles: inventors, founders, and developers. According to Cardon et al. (2009), inventors "engage in activities that involve seeking new ideas, tinkering with new product development, or scanning the environment for market-disruptive opportunities" (p. 517). Founders engage in activities that focus on acquiring resources to create a company, including finances (funding) and humans (employees) (Cardon et al., p. 517). Likewise, they are passionate about turning an idea or a technology into a business that will attract investors. Cardon et al. said developers focus on market development and financial growth (p. 517). Developers are directly involved in the day-to-day operations (Cardon et al., 2009; Cardon et al., 2013).

### **Entrepreneurial Orientation**

According to Lumpkin and Dess (1996), entrepreneurial orientation focuses on organizational processes, practices, and decision making (p. 136). It is reflective of the entrepreneurial behaviors and actions of an organization – specifically in terms of strategy – and serves as an important element for assessing whether a company is willing to innovate, take risks, and/or be more proactive and aggressive than competitors in the marketplace.

It consists of the following: autonomy, competitive aggressiveness, innovativeness, proactiveness, and risk. Lumpkin and Dess (1996) said these dimensions can be useful in predicting the success of a new business venture – in combination with other factors such as the characteristics of the leading entrepreneur (p. 137). This research focuses on innovativeness, proactiveness, and risk, which are the primary components of Bolton and Lane's (2012) individual entrepreneurial orientation survey, and according to Sharma and Dave (2011) are the primary staples of entrepreneurship (p. 44).

Rauch, Wiklund, Lumpkin, and Frese (2009) said innovation is about engaging in creativity and experimentation that result in new products, services, and technological processes (p. 763). Researchers disagree about the benefits innovativeness for startups. Some advocate for innovative practices and a culture of innovation (to overcome the liability of newness and smallness) (Bogers, 2011; Rosenbusch, Brinckmann, & Bausch, 2011; Spender, Corvello, Girmaldi, & Rippa, 2017; Rompho, 2018). Others advocate against innovation, which in combination with an entrepreneur's higher appetite for risk, could potentially have an adverse impact on company survival (Forlani & Mullins, 2000; Buddelmeyer, Jensen, & Webster, 2010; Hyytinen, Pajarinen, & Rouvinen, 2015).

According to Rauch et al. (2009), proactiveness means that a company is opportunity-focused and forward thinking when introducing new products and services to the marketplace and ahead of the competition and acting with future demand in mind (p. 763). Risk focuses on bold moves and venturing into the unknown, borrowing heavily, and making significant commitments – even under conditions of uncertainty (Rauch et al., p. 763). Likewise, risk is an important dimension of entrepreneurial orientation as “entrepreneurial firms tend to experience a higher level of external and internal uncertainty” (Wang, 2008, p. 637). According to Antonites and Wordworth (2009), risk is an important aspect of entrepreneurship that has not been adequately addressed (p. 69).

### **Purpose and Significance of Study**

In recent years, researchers studying entrepreneurship experienced a rapid emergence of scholarly thinking and gained considerable prominence in leading disciplinary and mainstream management journals compared to a generation ago when scholarly research on the topic was virtually non-existent (Audretsch, 2012, pp. 755-756). This study focuses on the relationship between entrepreneurial passion (via inventor, founder, and developer role identities), entrepreneurial orientation, and perceived startup performance. It looks at entrepreneurs of early-stage technology startups that operate in an incubator environment. It is important to note there is a long tradition of examining the success and failure of startups, but empirical research about the motives that drive entrepreneurs is scarce. Similarly, there is a scarcity of knowledge about the relationship between entrepreneurial passion, entrepreneurial orientation, and perceived startup performance.

### **Scope and Hypotheses**

Present literature on entrepreneurial passion and entrepreneurial orientation, and their relationship to perceived startup performance, is limited. This study seeks

to expand the literature regarding the domains of entrepreneurial passion, the moderating effect of entrepreneurial orientation, and performance, which is one of the most relevant and prominent constructs in strategic management and organizational research (Miller, Washburn, & Glick, 2013; Selvam, Gayathri, Vasanth, Lingaraja, & Marxiaoli, 2016). In fact, Venkatraman and Ramanujam (1986) described performance as a “recurrent theme” in management (p. 801) – despite the fact that most researchers agree the construct has no clear definition (Venkatraman & Ramanujam, 1986; Rowe & Morrow, 1999; Miller et al., 2013; Selvam et al., 2016). Two accepted determinants of performance are profit and growth (Venkatraman & Ramanujam, 1986; Li, Huang, & Tsai, 2009), which are the focus of this study. Profit is the earnings/profitability and growth are defined as venture size/market share. These delineations serve to eliminate the ambiguity that exists among researchers regarding the definition of performance.

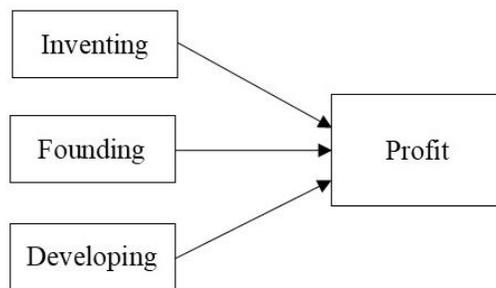
Specific to the identity construct, characteristics suggest that inventors are preoccupied with generating ideas and taking advantage of new opportunities, while founders and developers focus on raising capital, ensuring financial growth, and identifying investors. But, success motivates, all three passion types of entrepreneurs – inventors, founders, and developers. According to Stewart, Watson, Carland, and Carland (1999), coupled with their need for achievement, achieving their goals of growth and profit consumes entrepreneurs (p. 204). That reality helps to inform this study’s hypotheses.

Similarly, entrepreneurial orientation characteristics suggest that startups led by entrepreneurs with a passion for inventing possess higher entrepreneurial orientation toward generating ideas and taking advantage of new opportunities, while startups led by entrepreneurs with a passion for founding and developing have higher entrepreneurial orientation toward securing funding and growth. Nonetheless, these early-stage startups – with consideration to their tolerance for risk, innovativeness, and proactiveness – share a common denominator that is grounded in the entrepreneur spirit to earn a profit. These characteristics form the basis of this study’s hypotheses regarding the relationship between entrepreneurial passion, entrepreneurial orientation, and perceived startup performance:

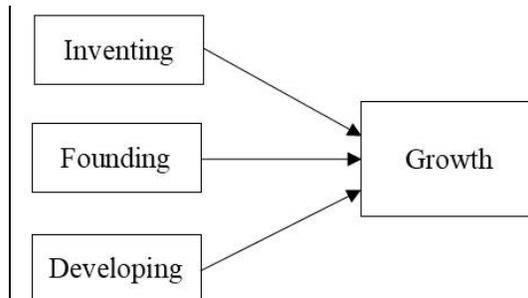
- RH1a: When controlling for the gender of the entrepreneur, age of the entrepreneur, age of the startup, there is a positive relationship between entrepreneurial passion for inventing and the profit dimension of the startup performance.
- RH1b: When controlling for the gender of the entrepreneur, age of the entrepreneur, age of the startup, there is a positive relationship between entrepreneurial passion for inventing and the growth dimension of the startup performance.
- RH2a: When controlling for the gender of the entrepreneur, age of the entrepreneur, age of the startup, there is a positive relationship between entrepreneurial passion for founding and the profit dimension of the startup performance.
- RH2b: When controlling for the gender of the entrepreneur, age of the entrepreneur, age of the startup, there is a positive relationship between

entrepreneurial passion for founding and the growth dimension of the startup performance.

- RH3a: When controlling for the gender of the entrepreneur, age of the entrepreneur, age of the startup, there is a positive relationship between entrepreneurial passion for developing and the profit dimension of the startup performance.
- RH3b: When controlling for the gender of the entrepreneur, age of the entrepreneur, age of the startup, there is a positive relationship between entrepreneurial passion for developing and the growth dimension of the startup performance.



*Figure 1:* RH1a, RH2a, and RH3a (control variables: gender of the entrepreneur, age of the entrepreneur, and age of the startup).



*Figure 2:* RH1b, RH2b, and RH3b (control variables: gender of the entrepreneur, age of the entrepreneur, and age of the startup).

- RH4a: When controlling for the gender of the entrepreneur, age of the entrepreneur, and age of the startup, the risk dimension of entrepreneurial orientation moderates the relationship between entrepreneurial passion for inventing and the profit dimension of startup performance.
- RH4b: When controlling for the gender of the entrepreneur, age of the entrepreneur, and age of the startup, the risk dimension of entrepreneurial orientation moderates the relationship between entrepreneurial passion for inventing and the growth dimension of startup performance.
- RH4c: When controlling for the gender of the entrepreneur, age of the entrepreneur, and age of the startup, the innovativeness dimension of entrepreneurial orientation moderates the relationship between entrepreneurial passion for inventing and the profit dimension of startup performance.
- RH4d: When controlling for the gender of the entrepreneur, age of the entrepreneur, and age of the startup, the innovativeness dimension of entrepreneurial orientation moderates the relationship between entrepreneurial passion for inventing and the growth dimension of startup performance.
- RH4e: When controlling for the gender of the entrepreneur, age of the entrepreneur, and age of the startup, the proactiveness dimension of

entrepreneurial orientation moderates the relationship between entrepreneurial passion for inventing and the profit dimension of startup performance.

- RH4f: When controlling for the gender of the entrepreneur, age of the entrepreneur, and age of the startup, the proactiveness dimension of entrepreneurial orientation moderates the relationship between entrepreneurial passion for inventing and the growth dimension of startup performance.

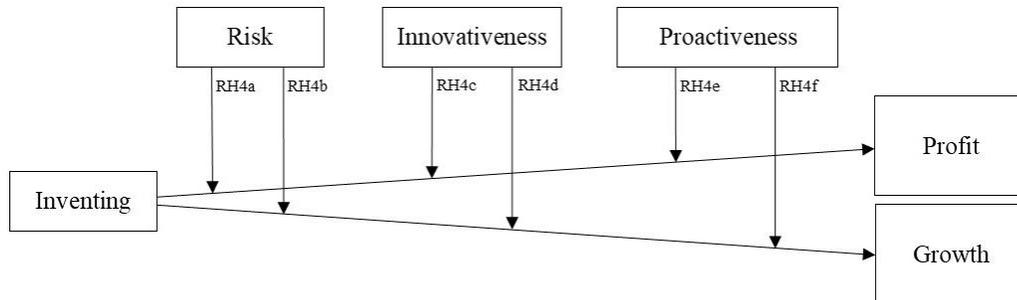
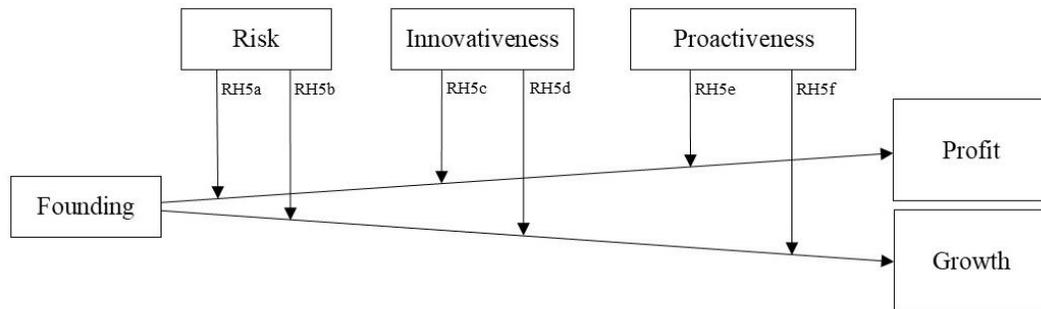


Figure 3: RH4a – RH4f (control variables: gender of the entrepreneur, age of the entrepreneur, and age of the startup).

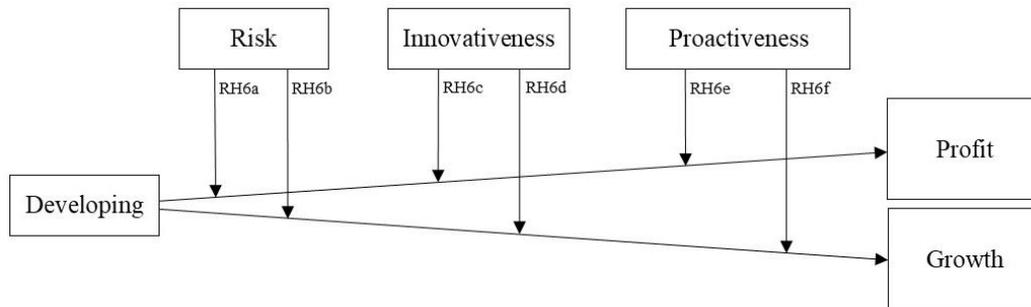
- RH5a: When controlling for the gender of the entrepreneur, age of the entrepreneur, and age of the startup, the risk dimension of entrepreneurial orientation moderates the relationship between entrepreneurial passion for founding and the profit dimension of startup performance.
- RH5b: When controlling for the gender of the entrepreneur, age of the entrepreneur, and age of the startup, the risk dimension of entrepreneurial orientation moderates the relationship between entrepreneurial passion for founding and the growth dimension of startup performance.
- RH5c: When controlling for the gender of the entrepreneur, age of the entrepreneur, and age of the startup, the innovativeness dimension of entrepreneurial orientation moderates the relationship between entrepreneurial passion for founding and the profit dimension of startup performance.
- RH5d: When controlling for the gender of the entrepreneur, age of the entrepreneur, and age of the startup, the innovativeness dimension of entrepreneurial orientation moderates the relationship between entrepreneurial passion for founding and the growth dimension of startup performance.
- RH5e: When controlling for the gender of the entrepreneur, age of the entrepreneur, and age of the startup, the proactiveness dimension of entrepreneurial orientation moderates the relationship between entrepreneurial passion for founding and the profit dimension of startup performance.
- RH5f: When controlling for the gender of the entrepreneur, age of the entrepreneur, and age of the startup, the proactiveness dimension of

entrepreneurial orientation moderates the relationship between entrepreneurial passion for founding and the growth dimension of startup performance.



*Figure 4:* RH5a – RH5f (control variables: gender of the entrepreneur, age of the entrepreneur, and age of the startup).

- RH6a: When controlling for the gender of the entrepreneur, age of the entrepreneur, and age of the startup, the risk dimension of entrepreneurial orientation moderates the relationship between entrepreneurial passion for developing and the profit dimension of startup performance.
- RH6b: When controlling for the gender of the entrepreneur, age of the entrepreneur, and age of the startup, the risk dimension of entrepreneurial orientation moderates the relationship between entrepreneurial passion for developing and the growth dimension of startup performance.
- RH6c: When controlling for the gender of the entrepreneur, age of the entrepreneur, and age of the startup, the innovativeness dimension of entrepreneurial orientation moderates the relationship between entrepreneurial passion for developing and the profit dimension of startup performance.
- RH6d: When controlling for the gender of the entrepreneur, age of the entrepreneur, and age of the startup, the innovativeness dimension of entrepreneurial orientation moderates the relationship between entrepreneurial passion for developing and the growth dimension of startup performance.
- RH6e: When controlling for the gender of the entrepreneur, age of the entrepreneur, and age of the startup, the proactiveness dimension of entrepreneurial orientation moderates the relationship between entrepreneurial passion for developing and the profit dimension of startup performance.
- RH6f: When controlling for the gender of the entrepreneur, age of the entrepreneur, and age of the startup, the proactiveness dimension of entrepreneurial orientation moderates the relationship between entrepreneurial passion for developing and the growth dimension of startup performance.



*Figure 5: RH6a – RH6f (control variables: gender of the entrepreneur, age of the entrepreneur, and age of the startup).*

### **Strengths and Limitations of the Study**

A strength of this study is its ability to provide a better understanding of entrepreneurs and startup organizations that operate in an incubator environment. Incubators are emerging as a topic of interest among entrepreneurship researchers. This study also provides a better understanding of the world of early-stage technology startup companies – specifically about entrepreneurs and how their passion, and entrepreneurial orientation relate to perceived startup performance. Research about early-stage startup companies represent an emerging area of organizational studies, and research about entrepreneurs represent a unique opportunity to examine aspects of leadership (passion, visioning, strategy development, behavior, and decision-making) from prospective that differs from a traditionalist approach to the construct. Furthermore, research about startups and entrepreneurship and entrepreneurial passion remains highly unsaturated – leaving opportunities for a plethora of empirical research and findings related to the topic. Also, unlike studies that examine the success or failure of startup companies, this research looks at the topic from a different lens – entrepreneurial passion related to role identities and entrepreneurial orientation. It attempts to shed light about how identity and entrepreneurial orientation influence perceived startup performance.

The fact that it focuses on startups and entrepreneurs from only the technology sector limits this study. Examining entrepreneurship from a broader lens and across various sectors, such as retail and manufacturing for example, might provide additional insights about the relationship between entrepreneurial passion, entrepreneurial orientation, and perceived startup performance. It is possible that leading entrepreneurs across sectors could demonstrate different motives for starting their businesses and pursuing a certain strategy. Behaviors and decision making could also differ across sectors. Likewise, different environmental issues and pressures, based on sector characteristics, could impact entrepreneurial orientation and perceived startup performance. Another limitation is the narrow geographic scope of this study, which looks at early-stage technology startups and entrepreneurs in one U.S. city. An expanded approach would allow for broader empirical comparisons across U.S. regions as well as internationally.

**Conclusion**

Alsos et al. (2016) said identity has emerged as an important subject of interest in numerous areas of life and work, including entrepreneurship (p. 236). This research looks at the relationship between entrepreneurial passion, entrepreneurial orientation, and perceived startup performance. According to Lumpkin and Dess (1996), entrepreneurs are self-determined pioneers who possess unique, new, and better ways of doing business; essentially, they are self-starters who create their companies based on ideas (p. 140). Similarly, Marques, Ferreira, Ferreira, and Lages (2013) said these self-starters identify and create opportunities and innovations and utilize resources to maximize the benefits of those innovations (p. 78). They are profit and performance driven. It is imperative that there is a study to expand our knowledge and understanding of entrepreneurship and the world of early-stage startup companies operating in an incubator environment.

## LITERATURE REVIEW

Present literature about entrepreneurial passion and its relationship to perceived startup performance is limited. This study seeks to expand the literature regarding the domains of entrepreneurial passion (inventor, founder, and developer role identities) and the moderating effect of entrepreneurial orientation.

### **Entrepreneurial Passion/Role Identity**

Researchers often study entrepreneurial passion in context of role identity. Murnieks, Mosakowski, and Cardon (2011) said there is a scant amount of empirical research about passion and its effects on entrepreneurs (p. 138). Nonetheless, researchers have studied entrepreneurial passion from the context of role identity, which consists of the following domains: inventing, founding, and developing. Ultimately, theoretical and empirical research has focused on passion for developing, inventing, and founding in the context of persistence; an individual's choice to become an entrepreneur; how entrepreneur's run and operate their businesses; an entrepreneur's tolerance for risks; their ability to recognize and take advantage of opportunities; goal achievement; company survival; profitability; and whether entrepreneurial passion fades over time.

In their study, Cardon et al. (2009) asserted that entrepreneurial passion is an intense positive feeling and that comes from engagement and involvement in activities which provide salience to a business owner (p. 515). Thus, entrepreneurial passion comes from one or more roles which are important to an individual's self-identity – resulting in positive feelings about entrepreneurial activities (p. 525). The three role identities were, in fact, first created by Cardon et al. (p. 516).

Murnieks, Mosakowski, and Cardon (2014) conducted one of the first studies linking passion/identity and entrepreneurship – finding a correlation between passion and identity centrality (p. 1,599). They also found that entrepreneurial passion is linked to entrepreneurial self-efficacy and entrepreneurial behavior (p. 1,599).

Answering the call of Cardon et al. (2009) to examine the link between entrepreneurial passion and persistence, Cardon and Kirk (2015) focused their attention on finding out why some entrepreneurs succeed and why others quit. Pointing out that entrepreneurs must be passionate to overcome the challenges that are associated with starting and running a business, Cardon and Kirk found that passion for founding and inventing mediated the relationship between self-efficacy and persistence (p. 1,041). Furthermore, their findings supported those of Murnieks et al. (2007) in that passion for a role has a positive impact on behavior (specifically, spending more time on entrepreneurial tasks) (p. 1,041). They said passion (rather than self-efficacy) drives behavior (p. 1,042). Thus, the relationship between self-efficacy and persistence is based, in part, on the relationship between self-efficacy and passion as well as the relationship between passion and persistence (p. 1,042). The results of their research provide empirical support about the importance of the specific types of entrepreneurial passion.

Research by Collewaert, Anseel, Crommelinck, de Beuckelaer, and Vermeire (2016) focused empirical awareness to the possibility that passion for

founding fades in time. Their study examined identity centrality (an important part of an individual's self-concept) and intense positive feelings for founding (an individual who mobilizes financial resources, hires employees, and finds customers) (pp. 967-968). Collewaert et al. found that entrepreneurs who asked for feedback experienced decreased intense positive feelings due to role ambiguity – compared to entrepreneurs who did not seek feedback (p. 986).

A study by Biraglia and Kadile (2017) looked at entrepreneurial intentions and found that entrepreneurial passion and creativity have a strong, positive relationship with entrepreneurial intentions and self-efficacy as “... the results support the notion that being passionate about entrepreneurial founding activities is likely going to lead individuals to get involved with the intention of a business start-up” (p. 182).

Similarly, Nasiru, Keat, and Bhatti (2014) focused their research attention on the relationship between passion for inventing and passion for founding and entrepreneurial intention, which impacts entrepreneurial success. They also examined perceived creativity as a moderator. Nasiru et al. found that perceived creativity significantly moderates the relationship between passion for founding and intention – and not for inventing and intention (p. 140).

The degree to which role identities impact entrepreneurs' evaluation and selection of opportunities was the focus of Mathias and Williams (2014). Their study focused primarily on founder types (individuals who founded, owned, and managed ventures) (p. 897). It included three scenarios that reflected realistic decisions founders face each day (p. 898). Those scenarios focused on the business owner's role as: (1) investor; (2) entrepreneur; and (3) manager, and they assessed one's attention to risk; scope of opportunities; and opportunity focus (pp. 899-903). Specific to risk attention and scope of opportunities, Mathias and Williams developed the following propositions: (1) founders' perceptions of risk vary by role; (2) in an entrepreneurial role, founders rely on knowledge and past experiences to reduce the scope of opportunities; they ultimately select opportunities that are connected to the current business venture; and (3) as a manager, founders moderately reduce the scope of opportunities – specific to new but related products and services (pp. 905-907). Regarding opportunity focus, they concluded that founders, in their entrepreneur roles, committed themselves to expanding their business in innovative ways – via opportunities they were passionate about (pp. 908-909). Meanwhile, entrepreneurs in manager roles were less action-orientated and more focused on problem solving, research, and analyzing (p. 909). Founders in the investor role were more concerned about issues related to time, such as long-term growth (p. 909). Overall, Mathias and Williams found that individuals hold numerous role identities, which influences thinking and decision making (p. 911). They found their findings especially true when assessing a founders' consideration and selection of opportunities (p. 911).

Opportunity recognition was the focus of Boa, Zhou, and Chen (2017), who looked at the relationship between entrepreneurial passion, opportunity recognition, and entrepreneurial behaviors. Boa et al. noted that passion consists of two dimensions: intense positive feelings (an affective phenomenon of powerful feelings such as desire, enthusiasm, and zeal) and identity centrality (what it means

to be an entrepreneur compared to something else) (pp. 1,211-1,212). They found a positive correlation between both dimensions of entrepreneurial passion and entrepreneurial behaviors and that opportunity recognition partially mediated the relationship (p. 1,217). Thus, entrepreneurs with passion are highly likely – in comparison to others – to identify opportunities and start a business venture (p. 1,211).

Entrepreneurial passion and goal-setting was the focus of Murnieks (2007), who examined the importance of identities among entrepreneurs' self-concepts (which are comprised of various identities), tested whether identity is related to passion, and tested whether identity and passion relate to goal-setting (pp. 9-10). Murnieks found that entrepreneurial roles and entrepreneurial identity do exist – as separate constructs of the individual's self-concept (p. 138). Murnieks also found the effect of passion on behavior is mediated by intrinsic motivation (focused on entrepreneurial work/tasks) (p. 138) and that passion is significantly related to higher degrees of effort – via goal-setting (p. 161).

Mueller, Wolfe, and Syed (2017) researched passion in the context of grit, which they defined as an individual's perseverance toward the achievement of long-term goals (p. 260). Mueller et al. looked at the topic via self-regulation theory (how passion helps in motivating goal pursuit via the effects of goal-related cognitions (p. 260). They proposed that "self-regulatory mode – an individual's orientation toward either acting (i.e., locomotion) or appraising options for actions (i.e., assessment) – plays a central mediating role in determining how goals are pursued, and, thus, the degree to which entrepreneurs exhibit grit" (p. 261). Study results showed a relationship between developer passion and grit and locomotion and assessment mediated that the relationship (pp. 272-274). There was also a positive relationship between locomotion and grit and a negative relationship between assessment and grit (pp. 272-274). Furthermore, Mueller et al. found a positive relationship between grit and venture performance (p. 274).

One identified empirical study, by Campos (2017), examined entrepreneurial passion/role identity and entrepreneurial orientation. That study helps to inform this research as it focuses mainly on passion for developing and predicted that such passion resulted in greater entrepreneurial orientation (p. 356). The study also looked at the mediating effects of alertness, which requires an entrepreneur to be proactive (not overwhelmed by situations and able to identify opportunities) (p. 358). Findings demonstrated a positive relationship between passion (for developing) and entrepreneurial orientation and that alertness mediated the relationship (p. 366).

Developer passion was the focus of Drnovsek, Cardon, and Patel (2016), who examined the direct and indirect effects of passion on technology ventures. The study authors hypothesized that passion – specifically, passion for developing – is positively associated with venture growth (p. 198). They also looked at the mediating effects of setting challenging goals, the degree of difficulty achieving one's goals, and goal commitment, which is connected to better venture growth (pp. 199-202). Predicting that entrepreneurs from this industry are likely to exhibit a passion for developing, Drnovsek et al. found a positive relationship between

passion for developing and venture growth – partially mediated by goal commitment (p. 205). They pointed out that passion for developing is a motivating force to help ensure a business venture is growing (p. 205).

Emphasizing the early years of a new startup are risky, Stenholm and Renko (2016) examined each of the three role identities from the context of survival – via organizational ecology theory, which focuses on the founding, growth, and mortality of organizations and how organizations change or fail to adapt over the course of their lifespans. From an identity perspective, they emphasized that companies are reflections of the founder (p. 597). They focused attention on the creative use of resources (bricolage) and its impact on the potential benefits of entrepreneurial passion. According to Stenholm and Renko, passion for inventing and developing – but not founding – related to company survival; likewise, bricolage mediated this relationship (p. 606). The fact that passion for founding did not relate to bricolage or survival came as a surprise (p. 607). In retrospect, Stenholm and Renko said the study's timing affected the outcome – as participants had already founded their companies, thus weakening this effect in the startup journey (p. 607).

### **Entrepreneurial Orientation/Performance**

The majority of research on entrepreneurial orientation indicates a positive relationship with performance, profits, and innovation (Lumpkin & Dess, 1996; Wiklund, 1999; Johan & Dean, 2003; Wiklund & Shepherd, 2003; Avlontis & Salavou, 2007; Li et al., 2009; Frank, Kessler, & Fink, 2010; Sharma & Dave, 2011; Bolton & Lane, 2012; Arshad, Rasli, Arshad, & Zain, 2014). In fact, Pittino, Visintin, and Lauto (2017) described entrepreneurial orientation as a “strong predictor” of performance (p. 224).

According to Arshad et al. (2014), entrepreneurial orientation is critical to business success (p. 46) – as measured by growth and financial performance. Empirical literature shows that high entrepreneurial orientation amounts to superior organizational performance – compared to low entrepreneurial orientation (Lumpkin & Dess, 1996; Wiklund, 1999; Johan & Dean, 2003; Wiklund & Shepherd, 2003; Wiklund & Shepherd, 2005; Avlontis & Salavou, 2007; Sharma & Dave, 2011; Bolton & Lane, 2012; Arshad et al., 2014). From a theoretical perspective, Kreiser and Davis (2010) also demonstrated how the three dimensions of entrepreneurial orientation (innovativeness, risk, and proactiveness) – based on organic or mechanistic organizational structure and hostile or munificent environmental characteristics – has a low to very high impact on company performance (p. 46). Similarly, Wiklund and Shepherd (2005) focused their empirical attention on entrepreneurial orientation and performance – pointing out that empirical evidence suggests a positive relationship between the two constructs (p. 71). Wiklund and Shepherd noted that access to capital and environmental dynamism are important to small businesses and that entrepreneurial orientation (risk, innovativeness, and proactiveness) have a positive impact on small business performance (p. 85).

Contrarily, research by Frank et al. (2010) contradicted the findings of Wiklund and Shepherd (2005) and several other researchers who identified a positive link between entrepreneurial orientation and business performance. Frank

et al. showed the link between entrepreneurial orientation and performance cannot be generalized, and their research suggested a negative relationship between the two constructs in certain situations (based on environmental dynamics and access to capital) (p. 190). Frank et al. noted that among medium-sized businesses, entrepreneurial orientation may be counteracted due to higher levels of formalization (p. 194). Ultimately, they found a positive connection between entrepreneurial orientation and business performance among firms in dynamic environments (combined with high access to financial capital) and among firms in stable environments (combined with low access to capital) (p. 190). A negative relationship exists between entrepreneurial orientation and performance among firms in stable environments (combined with high access to capital) and among firms in dynamic environments (combined with low access to capital) (p. 190). This negative effect was strongest among firms in dynamic environments and having low access to capital, which Frank et al. pointed out “underscores the importance of access to capital for the purpose of exploiting opportunities” (p. 191). Although this study does not examine access to capital, it does acknowledge that startups operate in dynamic environments.

Considering RQ<sub>2</sub> of this study, this anomaly is relevant and significant (entrepreneurial orientation having a negative effect on performance) as startups operate in dynamic environments – contrite with uncertainty and unpredictability. Thus, a better understanding of entrepreneurial orientation is critical to the assessment of the relationship between entrepreneurial passion and perceived startup performance.

### **Summary**

We expanded empirical knowledge of entrepreneurs and early-stage startups that operate in an incubator environment via this research. This study focuses on the relationship between entrepreneurial passion, entrepreneurial orientation, and perceived startup performance. There is limited empirical research about passion and its effects on entrepreneurs and organizational outcomes such as performance (Murnieks et al., 2011, p. 138).

## METHODOLOGY/RESEARCH METHODS

A quantitative approach was utilized. We selected this approach because of its ability to eliminate bias and ensure that data is accurately interpreted.

### **Instrumentation**

Domains of Entrepreneurial Passion (inventing, founding, and developing): We used a 13-item survey created by Cardon et al. (2013) in this study. The independent variables of the study consisted of three categorical groups of entrepreneurs – those who are passionate about inventing, those who are passionate about founding, and those who are passionate about developing. It measured each of the three domains (inclusive of identity centrality for each role). Responses to the survey were made using a 7-point Likert scale, ranging from 1 = *strongly disagree* to 7 = *strongly agree*. For inventing, the Cronbach alpha ( $\alpha$ ) is 0.85, for founding, the Cronbach Alpha ( $\alpha$ ) is 0.77, and for developing, the Cronbach alpha ( $\alpha$ ) is 0.72 (p. 382). In this study, the three domains were considered separately based on Cardon et al.'s recommendation that the researcher should maintain a distinction – opposed to calculating an overall entrepreneurial passion score (p. 389).

Entrepreneurial Orientation (risk, innovativeness, and proactiveness): We used a 10-item survey created by Bolton and Lane (2012) in this study. It measures individual entrepreneurial orientation – via three factors: risk, innovativeness, and proactiveness. We conceptualized entrepreneurial orientation as unidimensional, which means these factors was measured as a single measure or test. The research of Miller (1983) and Covin and Slevin (1989) supports this single scale approach, whose Miller/Covin and Slevin entrepreneurial orientation scale is unidimensional. Furthermore, Rauch et al. (2009) – in their meta-analysis of 51 entrepreneurial orientation studies – noted the majority (by a two to one margin) utilized a unidimensional approach, compared to a multidimensional approach (p. 14). Responses to this survey were made using a 5-point Likert scale, ranging from 1 = *strongly agree* to 5 = *strongly disagree*. According to Bolton and Lane (2012), the Cronbach alpha ( $\alpha$ ) is 0.78 – using a student population (p. 228). Furthermore, Bolton (2012) validated the questionnaire with entrepreneurs in Western Kentucky – computing a Cronbach alpha ( $\alpha$ ) of above 0.765 (p. 96).

Perceived Startup Performance (profit and growth): We used a 5-point Likert scale developed by Li et al. (2009). Responses ranged from 1 = *very dissatisfied* to 5 = *very satisfied*. The Cronbach alpha ( $\alpha$ ) for the growth and profit factors are 0.86 and 0.80, respectively (p. 45).

### **Data Collection**

We administered the survey to entrepreneurs of early-stage technology startup organizations that operate in an incubator environment, located in St. Louis, Missouri. We collected data through *SurveyMonkey* over a seven-week period. We also requested participation onsite during the seven-week period. We provided participation incentives – six \$50 gift cards – at the end of the study. We assured all potential participants that their responses were anonymous.

After the participants completed the surveys, we analyzed the response data for each hypothesis in Statistical Package for the Social Sciences (SPSS). Reliability – via SPSS – examined any significant overlaps between the various variables. We conducted a reliability analysis, using the Cronbach Alpha ( $\alpha$ ) of each item.

### **Population**

We drew the sample population purposively from a list of CEOs, who maintain office and working space in a St. Louis-based incubator, which caters to approximately 225 early-stage technology companies. CEOs fit the desired profile of the individuals needed to conduct this study. The list of CEOs is maintained by the incubator's COO.

### **Sample Size**

According to Hair, Black, Babin, and Anderson (2010), 15 to 20 completed surveys (per regression table), will ensure a statistical power of .80 at a level of significance of .05 (pp. 170-171). Thus, this study requires a sample size of 90 to 120 participants – considering there are six predictor variables between the 24 hypotheses.

### **Data Analysis**

Descriptive statistics allowed for a detailed analysis of the data – better understanding the demographics of the respondents. With perspective to gender, males led most startups (68.1%) – compared to females (31.9%). The predominant age was 25 to 38 (53.8%). Most of the startups were either one or two years old. Consider, 38.5% were one year or younger, compared to 27.5 that were two years old or younger. With regards to the number of employees, 63.7% of startups had one to four employees, compared to 19.8% with none.

As for 2017 and 2018 sales, 53.8% of entrepreneurs opted to not provide approximate figures, compared to 46.2% that did share sales data over the two-year period. Of the entrepreneurs that provided sales data, 88.1% experienced increased sales from 2017 to 2018, compared to 11.9% that experienced flat or decreased sales.

Additional key demographic data shows that males 25 to 38 led 39.5% of startups in this study. Females between 25 and 38 led 14.2% of the startups. In general, males led 23% of startups that were one-year-old or younger, 40.5% of those two years of age or younger, and 54.7% of startups that were three years or younger. Females led 15.3% of startups that were one year old or younger and 25.1% of those two years of age or younger.

### **Summary**

In this chapter, we discussed the research design in this study, which examines the relationship between entrepreneurial passion, entrepreneurial orientation, and perceived startup performance. We focused on the hypotheses of the study, research variables, instruments that we utilized to measure each variable, how sample participants were obtained, and the methods and procedures utilized to collect data and analyze the data to determine if, and the extent, to which there is a

relationship between the variables. The following chapter discusses the results of the data collection and analysis of the data.

## ANALYSIS AND DISCUSSION

This chapter describes the results of the multiple linear regression and hierarchical multiple regression. We used SPSS to analyze the data and set all alpha levels at .05.

### Reliability Analyses

To measure internal consistency, we computed Cronbach's alpha for each construct. Field (2005) posited that acceptable Cronbach's alpha values fall between .70 or .80. All the factors – with exception to passion for developing and proactiveness – were within the acceptable range of .70 – .80.

Table 1: Cronbach's Alpha and Its Predefined Factors

Factor	Cronbach's Alpha	Number of Items
Inventing	.76	5
Founding	.78	4
Developing	.64	4
Risk	.79	3
Innovativeness	.74	4
Proactiveness	.50	3
Growth	.80	3
Profit	.93	3

### Correlation Analyses

The assumptions of multivariate normality (from the probability – probability plot of regression standard residual) were met. Likewise, we found the dependent variables to be normally distributed. The relationship between the independent variables and dependent variables is linear – suggesting that multiple linear regression and hierarchical multiple regression is appropriate for this data. Based on the correlation table (Table 2), there is no multicollinearity. None of the correlations were above .80. The variance inflation factors were all below 10. The tolerance factors were all above .20, which suggests there is no multicollinearity. Also, based on the residuals, the assumption of homogeneity of variance was met.

Table 2: Correlations Among Independent and Dependent Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender	--											
2. Entrepreneur Age	.08	--										
3. Startup Age	.12	-.17	--									
4. Number of Employees	-.18	.11	.06	--								
5. Inventing	-.23*	.11	.06	.13	(.76)							
6. Founding	-.11	-.02	-.13	-.00	.42**	(.78)						
7. Developing	-.04	.11	-.12	.16	.34**	.61*	(.64)					
8. Risk	-.19	-.04	.11	.16	.22*	.32**	.32**	(.79)				
9. Innovativeness	-.19	.10	.01	.05	.10	.18	.31**	.39**	(.74)			
10. Proactiveness	.05	.04	.14	.19	.19	.20	.34**	.17	.06	(.50)		
11. Growth	.02	-.14	-.02	.11	-.09	-.05	.12	-.01	-.25*	.13	(.80)	
12. Profit	-.05	-.07	-.00	.01	-.10	-.11	.09	.01	-.10	.10	.74**	(.93)

Note. Scale reliabilities (Cronbach alpha) shown on diagonal includes Inventing, Founding, Developing, Risk, Innovativeness, Proactiveness, Growth and Profit \*p < .05. \*\*p < .01.

### Hypothesis Testing Analyses

We conducted multiple linear regression to determine the predictive power of the variables gender, age, startup age, entrepreneurial passion for founding, entrepreneurial passion for inventing, and entrepreneurial passion for developing to the criteria profit and growth. A level of significance of .05 was set in SPSS to support the multiple linear regression analyses. None of the models revealed statistical significance. We rejected RH1a, RH1b, RH2a, RH2b, RH3a, and RH3b based on the results of the analysis.

We conducted hierarchical multiple regression to determine if entrepreneurial orientation moderates the relationship between entrepreneurial passion (founding, inventing, and developing) and perceived startup performance (profit and growth). We examined the three domains of entrepreneurial orientation (risk, proactiveness, and innovativeness) separately. A level of significance of .05 was set in SPSS to support the hierarchical multiple regression analyses. There was some degree of evidence for four hypotheses: RH4a, RH5a, RH5d, and RH6e.

- RH4a: The result in model 1 (gender, startup age, and entrepreneur age) did not contribute significantly to the regression model,  $F(3,87) = .22, p = .88$ , which accounted for .8% of the variation in profit. Adding the risk and passion for inventing moderators in model 2 explained an additional 1.4% of variation in profit ( $R^2 = 2\%$ ), but the change was not significant,  $F(2,85) = .38, p = .86$ . Finally, the addition of the risk-inventing (risk and passion for inventing) interaction variable explained an additional 6.4% of variation in profit ( $R^2 = 9\%$ ). Model 3 was not significant overall,  $F(1,84) = 1.31, p = .26$ . In sum, the addition of the moderators improved the predictive capacity of the model 3, but the models were not significant overall. There were three significant variables in model 3 ( $p < .05$ ) – inventing ( $\beta = 1.42$ ), risk ( $\beta = 2.45$ ), and risk-inventing ( $\beta = -3.14$ ). Thus, risk and passion for inventing has a positive effect on profitability – accounting for 9% of the variation associated with startup profitability.
- RH5a: The result in model 1 (gender, startup age, and entrepreneur age) did not contribute significantly to the regression model,  $F(3,87) = .22, p = .88$ , which accounted for .8% of the variation in profit. Adding the risk and passion for founding moderators in model 2 explained an additional 2% of variation in profit ( $R^2 = 3\%$ ), but the change was not significant,  $F(2,85) = .48, p = .79$ . Finally, the addition of the risk-founding (risk and passion for founding) interaction variable explained an additional 9.2% of variation in profit ( $R^2 = 12\%$ ). The change was significant, but model 3 was not significant overall,  $F(1,84) = 1.91, p = .09$ . In sum, the addition of the moderators improved the predictive capacity of model 2 and model 3, but the models were not significant overall. There were three significant variables in model 3 ( $p < .05$ ) – founding ( $\beta = 1.52$ ), risk ( $\beta = 1.27$ ), and risk-founding ( $\beta = -2.37$ ). Thus, risk and passion for founding has a positive effect on profit – accounting for 12% of the variation associated with startup profitability.
- RH5d: The result in model 1 (gender, startup age, and entrepreneur age) did not contribute significantly to the regression model,  $F(3,87) = .74, p = .53$ , which accounted for 2.5% of the variation in growth. Adding the innovativeness and passion for founding moderators in model 2 explained an additional 5.8% of variation in growth ( $R^2 = 8\%$ ), but the change was not significant,  $F(2,85) = 1.53, p = .19$ . Finally, the addition of the innovativeness-founding (innovativeness and passion for founding) interaction variable explained an additional .1% of variation in growth ( $R^2 = 8\%$ ). Model 3 was not significant overall,  $F(1,84) = 1.27, p = .28$ . In sum, the addition of the moderators improved the predictive capacity of model 2, but the models themselves were not significant overall. There was one significant variable in

model 2 ( $p < .05$ ) – innovativeness ( $\beta = -.24$ ). Thus, innovativeness has a positive effect on growth – accounting for 8% of the variation associated with startup growth.

- RH6e: The result in model 1 (gender, startup age, and entrepreneur age) did not contribute significantly to the regression model,  $F(3,87) = .22$ ,  $p = .88$ , which accounted for .8% of the variation in profit. Adding the proactiveness and passion for developing moderators in model 2 explained an additional 1.7% of variation in profit ( $R^2 = 2\%$ ), but the change was not significant,  $F(2,85) = .42$ ,  $p = .83$ . Finally, the addition of the proactiveness-developing (proactiveness and passion for developing) interaction variable explained an additional 6.3% of variation in profit ( $R^2 = 9\%$ ). Model 3 was not significant overall,  $F(1,84) = .133$ ,  $p = .25$ . In sum, the addition of the moderators improved the predictive capacity of model 2 and model 3, but the models themselves were not significant. There were three significant variables in model 3 ( $p < .05$ ) – developing ( $\beta = -.161$ ), proactiveness ( $\beta = -1.77$ , and proactiveness-developing ( $\beta = 2.91$ ). Thus, proactiveness and passion for developing has a positive effect on profit – accounting for 9% of the variation associated with startup profitability.

Although these hypotheses were not fully confirmed, there is some evidence of significance among the variables – as it relates to relationships between passion for inventing, passion for founding, passion for developing, risk, innovativeness, proactiveness, startup growth, and profit.

### Summary

In this chapter, we presented the results of the study data as described in the 24 hypotheses that examined the relationship between entrepreneurial passion (inventing, founding, and developing), entrepreneurial orientation (risk, innovativeness, and proactiveness) and performance (profit and growth). Although there was no statistical evidence for 24 of the hypotheses, there was some degree of statistical significance for four hypotheses (RH4a, RH5a, RH5d, and RH6e). See Figures 6 – 8:

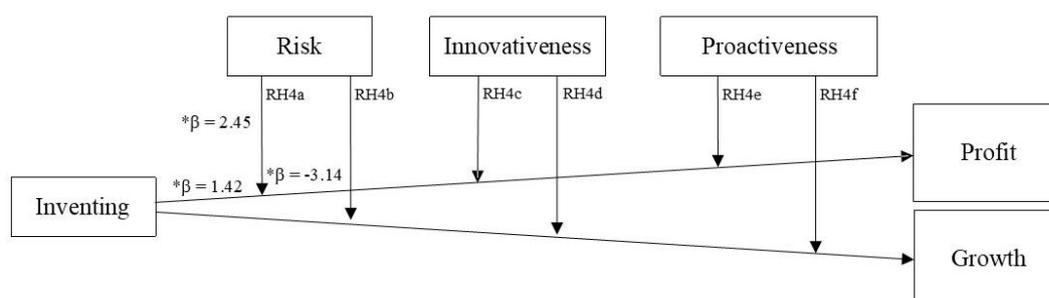


Figure 6: Summary of RH4a – Rh4f.

Note. \* $p < .05$ .

RH4a demonstrated statistical significance between profit, passion for inventing, and the risk dimension of entrepreneurial orientation while accounting for the other predictor variables. Inventing and risk were significant, positive, linear predictors of profit. However, the interaction term consisting of risk and inventing was also significant. This suggests that the relationship between inventing and profit depends on the values of risk, and the relationship between risk and profit depends on the values of inventing (See Figure 6).

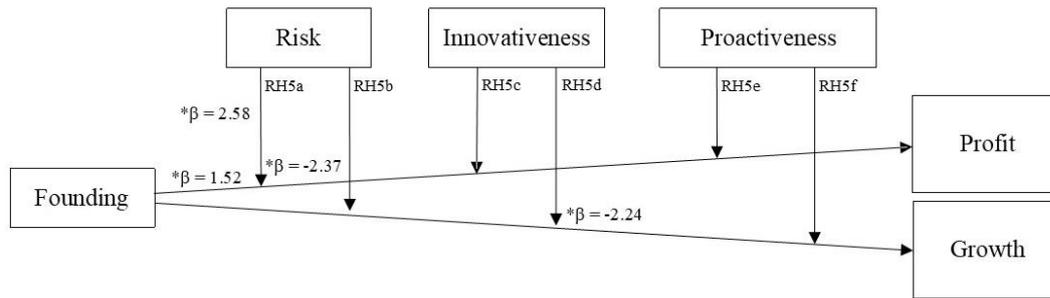


Figure 7: Summary of RH5a – Rh5f.

Note. \* p < .05.

RH5a demonstrated statistical significance between profit, passion for founding, and the risk dimension of entrepreneurial orientation while accounting for the other predictor variables. Founding and risk were significant, positive, linear predictors of profit. However, the interaction term consisting of risk and founding was also significant. This suggests the relationship between founding and profit depends on the values of risk, and the relationship between risk and profit depends on the values of founding (See Figure 7). RH5d revealed significance between growth, and passion for developing and the innovativeness dimension of entrepreneurial orientation while accounting for the other predictor variables. Innovativeness is a significant, negative, linear predictor of growth (See Figure 7).

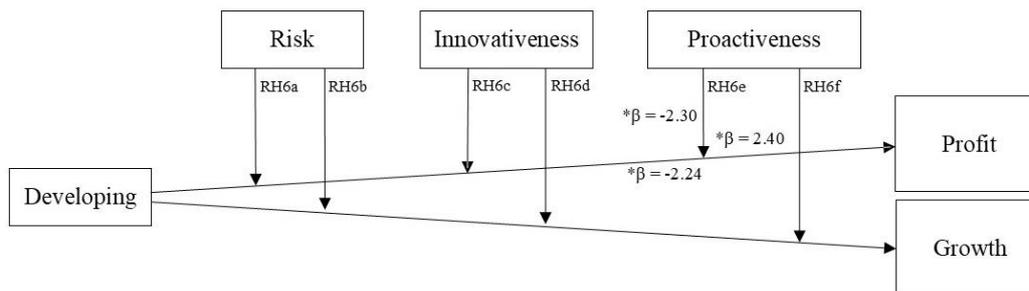


Figure 8: Summary of RH6a – Rh6f.

Note. \* p < .05.

RH6e revealed significance between profit, passion for developing, and the proactiveness dimension of entrepreneurial orientation – while accounting for the other predictor variables. Developing and proactiveness are significant, negative, linear predictors of profit. However, the interaction term consisting of proactiveness and developing was significant. This suggest the relationship between developing and profit depends on the values of proactiveness, and the relationship between proactiveness and profit depends on the values of developing (See Figure 8).

We present further discussion on the results of this study, impact, and recommendations for future research in the conclusion.

## CONCLUSION

In this chapter, the findings of 24 hypotheses are examined and explained. The findings provide further understanding of entrepreneurial orientation/role identity and entrepreneurship, overall. We go to great lengths in this study to explain the literature relating to the three variables and their respective domains. This chapter focuses on the inferences drawn from the data analyses and expands on the implications of the study findings (from theory to practice). In addition, it proposes limitations and directions for future research.

### Theoretical and Practical Implications

RH1a, RH1b, RH2a, RH2b, RH3a, and RH3b (six hypotheses) indicated there was no significant relationship between any of domains (passion or performance) – regardless of the control variables (gender, age of the entrepreneur, and age of the startup). What it means is that perceptions of performance are not predicated on the leader/CEO's passion/role identity. This is despite evidence from Drnovsek et al. (2016) and Campos (2017) that a positive relationship exists between passion for developing and venture growth (p. 205).

RH4b, RH4c, RH4d, RH4e, RH4f, RH5b, RH5c, RH5e, RH5f, RH6a, RH6b, RH6c, RH6d, and RH6f (14 hypotheses) indicated that entrepreneurial orientation does not moderate the relationship between entrepreneurial passion and perceived performance – regardless of gender, the age of the entrepreneur, and age of the startup company. However, findings from RH4a, RH5a, RH5d, and RH6e (four hypotheses) revealed evidence of a relationship between the three variables – as the models, overall, were insignificant.

Although RH4a, RH5a, RH5d, and RH6e were rejected, the findings yielded both tangible and applicable results:

- RH4a implies that a passion for inventing and the risk dimension of entrepreneurial orientation are partial contributors to enhancing perceived performance – specific to profit.
- RH5a implies that a passion for founding and the risk dimension of entrepreneurial orientation are partial contributors to enhancing perceived performance – specific to profit.
- RH5d implies that a passion for founding and the innovativeness dimension of entrepreneurial orientation are partial contributors to attenuating perceived performance – specific to growth.
- RH6e implies that a passion for developing and the proactiveness dimension of entrepreneurial orientation are partial contributors to attenuating perceived performance – specific to profit. This finding differs from Drnovsek et al. (2016) and Campos (2017), who found a positive relationship between passion for developing and performance – specific to growth.

Overall, this study aligns with empirical research demonstrating a connection – of some sort – between entrepreneurial orientation and performance. These overall findings align with Frank et al. (2010), who examined startups in both stable (low access to capital) and dynamic (high access to capital) environments. They found negative relationships between entrepreneurial orientation and performance. In acknowledging the relevance of Frank et al., this study agrees that early-stage technology startups (those in an incubator setting) operate in dynamic and ever-changing environments.

Consider that based on this study's results, all three dimensions of entrepreneurial orientation, in some way or another, contributed to the relationship between entrepreneurial passion, and perceived performance. Thus, in combination with certain domains of passion and entrepreneurial orientation – in either a positive or negative manner – entrepreneurial orientation influences leader/CEO perceptions of market share and/or earnings. These

findings contribute to the body of research about entrepreneurship through a holistic approach of studying each of the three passion types – in combination with the entrepreneurial orientation dimensions of risk, innovativeness, and proactiveness, as well as the perceived performance dimensions of growth and profit.

The practical implications of this study's hypotheses are summarized as follows:

- Entrepreneurs who are preoccupied with generating ideas and taking advantage of new opportunities (inventors) should consider the value of risk taking to help ensure that the startup venture is profitable. Risk focuses on bold moves and venturing into the unknown, borrowing heavily, and making significant commitments – even when uncertainty exists (Rauch et al., 2009, p. 763).
- Entrepreneurs who are preoccupied with raising capital and attracting investors (founders) should also consider the value of risk taking to achieve profitability. Overall, there is some degree of risk associated with all business ventures.
- Founder types should proceed with caution when innovating, exploiting opportunities and experimenting with new products, services, and technology processes. Overall, innovation has been cited as being both beneficial and dangerous for startups due to factors such as newness, smallness, concern over appetite for risks (Forlani & Mullins, 2000; Buddelmeyer et al., 2010; Hyytinen et al., 2015). Thus, being a founder and innovative could hinder startup growth.
- Entrepreneurs who are directly involved in the day-to-day operations and are passionate about growing, nurturing, and expanding the company (developers) should proceed with caution when considering market opportunities or introducing new products and services into the market to get ahead of the competition. In many ways, developers are committed and dedicated visionaries, but being a developer and proactive could jeopardize startup profitability.

### **Limitations**

Notwithstanding the importance of the implications of these research findings, the results of this study are subject to several limitations. Examining entrepreneurship from a broader lens and across various sectors might provide additional insights about the relationship between entrepreneurial passion, entrepreneurial orientation, and perceived performance. It is possible that leading entrepreneurs across sectors – and outside of an incubator environment – could demonstrate different motives for starting their businesses and pursuing a certain growth and profit strategies.

The narrow geographic scope of this study is another limitation. This study examined early-stage technology startups and entrepreneurs in one incubator environment and city in the United States. An expanded approach – with a larger sample size – would have allowed for broader empirical comparisons across U.S. regions as well as internationally. With this study, there were unexpected limitations to population access – resulting in a four-week extension to acquire data.

This study met the sample size requirement of 90 to 120 participants by Hair et al. (2010). In all, there were 91 participants. The sample size has a direct impact on the appropriateness and the statistical power of multiple regression. A larger sample size would have increased the power of the study – making the results more meaningful (more generalizable across the landscape of entrepreneurship and early-stage technology startups). The dependent variable – performance, itself – is ambiguous. In this study, profit is earnings/profitability and growth as venture size/market share. These delineations were developed to eliminate the ambiguity that exists among researchers regarding the definition of performance. According to Murphy, Trailer, and Hill (1996), definitions of successful

performance for new ventures vary widely – mainly due to a lack of agreement among researchers (p. 15).

The last limitation focuses on the correlation analysis, which revealed a couple of low alphas – the developer (.50) and proactiveness (.64) domains of entrepreneurial orientation. The limitation related to the low alpha values are about the reliability of the scales and not the correlations. Most alphas were borderline acceptable. The two performance domains, growth (.80) and profit (.93), proved to be good predictors.

### **Recommendation for Future Research**

It would be prudent for researchers to explore the link between an entrepreneur's age and perceived performance (growth)– via the holistic context of entrepreneurial passion (all three domains) and/or specifically the developer domain of passion. The relationship between these two variables yielded a significant result that should be further examined – although age and passion for developing were not among this study's hypotheses. The findings suggest that entrepreneurs become less interested in growth as they age.

In addition, the utilization of a mixed-methods design might provide a more thorough understanding and clarity about the entrepreneurial passion domains, entrepreneurial orientation domains, and performance domains – via an analysis of the perspectives and thoughts of study participants. The inclusion of such an approach could provide a deeper understanding of the nature of each variable and its domain.

Finally, although this study focused on the entrepreneurial passion/role identity, the research phase of empirical literature shed light on another aspect of entrepreneurship, the dimensions of social identity (Darwinians, Communitarians, and Missionaries). A study combining aspects of passion/role identity and social identity would provide an opportunity to further investigate entrepreneurship and macro-level outcomes. Consider, there are many similarities between the theoretical approaches – as social identity theory also focuses on leader self-conceptions and performance. For Darwinians, the basic social motivation is one's self-interest, which focuses on making money, creating personal wealth, and building a company that spans generations (Fauchart & Gruber, 2011, pp. 942). The motivation of Communitarians is to support and receive support from the community, as well as create products that address novel consumer needs (Fauchart & Gruber, 2011; Sieger, Gruber, Fauchart, & Zellweger, 2016). According to Fauchart and Gruber (2011), the basic of Missionaries revolves around the advancement of a cause; their product or solution is typically created with societal benefits in mind (pp. 942-947). In the future, consideration should be given to expanding empirical research about entrepreneurship by incorporating social identity theory.

### **Conclusion**

We tested these dynamic relationships via multiple linear regression and hierarchical multiple regression analyses. Study findings showed these relationships – inclusive of a handful of control variables – are complex. First, the mere fact of being an entrepreneur does not relate to perceived performance. Similarly, one's passion/role identity does not automatically relate to perceived performance. Indeed, more research is necessary to better understand the emerging theory of entrepreneurial passion/role identity and how its dimensions interact with other variables and organizational outcomes – such as performance.

While we did not prove more conclusive evidence supporting the relationship between passion and perceived performance in this study, the findings suggest the risk, innovativeness, and proactiveness dimensions of entrepreneurial orientation – to some degree – moderate the relationship between passion and perceived performance – based on certain variable combinations. These variables moderate in both positive and negative ways. Based on this

understanding, there are key takeaways for leading entrepreneurs/CEOs who are operating their technology startups in an incubator environment:

- Risk (bold moves, venturing into the unknown, or borrowing heavily) may account for the relationship between passion for inventing (having a focus on new business ventures and opportunities) and profit. Taking risks could prove beneficial. In summary, for inventors, one contributor to startup profit could be risk.
- Risk helps to enable the relationship between passion for founding (turning an idea or technology into a business that will attract investors) and profit. Taking risks could prove beneficial. In summary, for founders, one contributor to startup profit could be risk.
- Innovativeness (experimenting with new products, services, or technologies) could have an adverse impact on the relationship between passion for founding and growth. In summary, for founders, one impediment to startup growth could be innovativeness.
- Proactiveness (forward thinking and anticipating future needs and changes in the market) could have an adverse impact on the relationship between passion for developing (growing, nurturing, and expanding the company via day-to-day involvement) and profit. In summary, for developers, one impediment to startup profit could be proactiveness.

These findings are consistent with existing empirical evidence that confirms a relationship between entrepreneurial orientation and performance – either positive or negative. While the literature provides an abundance of answers about the link between passion, identity and self-concept, there is little knowledge about how passion/role identity influences organizational outcomes such as earnings/profit and/or venture size/market share. Considering there is a dearth of systematic empirical evidence regarding entrepreneurial passion, according to Cardon et al. (2013, p. 373), this study fills a critical and acknowledged void in the study of entrepreneurship.

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