

New-Born Startups Performance: Influences of Resources and Entrepreneurial Team Experiences¹

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Received: November 14, 2017

Accepted: December 25, 2017

Online Published: January 8, 2018

doi:10.5539/ibr.v11n2p1

URL: <https://doi.org/10.5539/ibr.v11n2p1>

Abstract

This study examines the interaction effects of entrepreneurial team experiences and resources on new-born startup firm performance, from a contextual view point of entrepreneurship. The sample is from a longitudinal panel data of Kauffman Firm Survey conducted over the period of 2005-2012 by the Ewing Marion Kauffman Foundation. Results suggest that financial resources have positive impacts on startup firms' profitability; whereas the impacts of initial firm size on profitability are negative. Startups are more likely to be profitable when the firm size is small at the new-born stage. The positive impact of financial resources on profitability is greater when entrepreneurial teams have strong industry experience; whereas entrepreneurial teams' industry experience and intangible resources have a negative interaction effect on profitability. Entrepreneurial team's startup experience has most negative interaction effects on new-born startup firms' profitability. This finding indicates that the entrepreneurial team's startup experience plays stronger roles in venturing profitable startups when the amount of financial resources and initial firm size are small; however, the team's startup experience and intangible resources have positive interaction effects on new-born startups' profitability.

Keywords: entrepreneurial team, resources, experiences, new-born startup, performance, profitability, contextual entrepreneurship

1. Introduction

Given the fact that most startups are typically launched and grown by teams but not individuals (Klotz, Hmieleski, Bradley, & Busenitz, 2014; Khan, Breitenacker, & Schwarz, 2015), entrepreneurial teams have received broad research attention due to their important roles in acquiring and exploiting critical resources for starting successful businesses (Shrader & Siegel, 2007; Klotz et al., 2014). Entrepreneurial teams are benefited from various experiences of different founder members. Compared with firms founded by solo entrepreneurs, startup firms founded by entrepreneurial teams have advantages in attracting venture capital and completing initial public offerings (Beckman, Burton, & O'Reilly, 2007); achieve better performance in changing industry environments (Robert Baum & Wally, 2003); and are more successful than solo-founder firms (Chandler & Hanks, 1998). Prior research supports a positive relationship between the entrepreneurial teams and startup success (Cooper & Bruno, 1977; Van de Ven, Hudson, & Schroeder, 1984; Cooper, Gimeno-Gascon, & Woo, 1994).

However, the positive impacts of entrepreneurial teams on startup performance have not been found consistently in previous empirical studies (Le, Kroll, & Walters, 2013; Criaco, Minola, Migliorini, & Serarols-Tarrés, 2014). Entrepreneurial teams' influences are found to be highly contextual (Klotz et al., 2014). A better understand of contexts in which entrepreneurs collectively identify, discover, create, and implement opportunities would help greater understand entrepreneurial teams. Therefore, examining entrepreneurial team phenomenon from a contextual view point could help uncover insightful understandings and provide alternative explanations of entrepreneurship. As context itself is multifaceted, the current study responses to the call of Klotz et al. (2014) that much remains need to be understood regarding to the influences of entrepreneurial teams on various

¹Certain data included herein are derived from the Kauffman Firm Survey release 2.0. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the Ewing Marion Kauffman Foundation.

developmental stages of startups. In the thorough literature review, Klotz et al. (2014) found that the extant entrepreneurial team literature has mainly focused on established firms including firms with IPOs. We need to study founding team's influences in the context of various resource availability at the initial stage of business development. This investigation is important because according to the data of the Bureau of Labor Statistics and Business Dynamics Statistics of Census Bureau, about 31% startups are out of business in the third year, and 51% are out in the fifth years (Robb & Farhat, 2013; Regmi, Ahmed, & Quinn, 2015). How to successfully go through the very early stage of business development is an important task for any new-born startup firm. A number of various theories have been applied to explain the high mortality rate of startup firms. For example, from the perspective of resource based view, entrepreneurial startups' mortality is attributed to limited resources and noncompetitive capabilities (Barney, 1991). Many scholars further argue that in addition to the resources that form the basis of a startup, how human agents exploit resources is critical to firm performance as well (Eisenhardt & Martin, 2000). Thus, a question arises: Can entrepreneurial teams' experiences offset the inherent resource constraints and help a new-born startup firm achieve better performance?

The current study examines the interaction effects of resources and entrepreneurial teams' experiences in the context of initial startup development stage. This study has a few contributions. First, it responds to the call of Klotz et al. (2014) and provides extra empirical evidence of entrepreneurial teams' influences on new-born startup firms to the extant entrepreneurship literature. Second, it helps to reduce research errors as it examines the team-resource-performance associations starting from startup firms' infant period. The widely-documented positive associations among entrepreneurial teams, resources, and firm performance may not necessarily apply to the startup firms at the new-born stage. For example, using incumbent firms as research sample has a risk of "survivorship of bias". Incumbent firms are survivors that have successfully gone through the very tough early stages of business development, but they are only a selected subset of the large number of new-born firms that entered into the market place. A spurious positive association between a certain type of resources and firm performance may be yielded if the selected survival startup firms are employed as the sample. The current study uses a sample of all startups surveyed during the first year when they were just established. Therefore, using a sample of new-born startup firms and investigating firm performance of subsequent years could reduce the survivorship bias of firms. Third, the current study uses 2-year time lag of longitudinal data that better investigates overtime business development. Finally, results of this study also have important practical implementations for entrepreneurs, venture capitalists, business angels, and entrepreneurship educators. New-born startup firms have limited resources available to acquire, therefore, better understanding the association of entrepreneurial team characteristics, resources, and startup performance is strategically meaningful for making startup and investment decisions.

The remainder of the paper is organized as follows. The first section includes background and hypotheses development. The second part presents methodology, data analysis, and empirical results. Discussion and conclusion are included in the end.

2. Background and Hypotheses

2.1 Resources of Startup Firms

In the entrepreneurship literature, it is widely documented that young firms suffer from a liability of newness so that there are only limited resources available for them (Bruton & Rubanik, 2002). Resources are central to the opportunity implementation (Katz & Gartner, 2004). Lack of resources is attributed to be a principle reason for startups' failure (Rujoub, Cook, & Hay, 1995; Reuber & Fischer, 1999).

Startup firms' resources are heterogeneous. A wide range of firm attributes could be considered as resources. In general, resources are all assets, capabilities, competencies, organizational processes, firm attributes, information, knowledge, and so forth that are controlled by a firm (Barney, 1991). Resources enable startups to conceive and implement startup strategies and help a startup improve its efficiency and effectiveness of business venturing (Daft, 1983). Resources typically include intangible, tangible resources, and organizational capabilities (Barney, 1991).

Intangible resources include brand names, patent, copyrights or innovative capacity etc. (Chatterjee & Wernerfelt, 1991). Intangible resources owned by a startup not only show the firm's knowledge but also reflect its ability to generate specific knowledge (Hitt, Bierman, Shimizu, & Kochhar, 2001). Intangible resources add value into products (Spender, 1996), thereby compared with tangible resources they are more likely to gain competitive advantage to the firm (Hitt et al., 2001). Intangible resources "open up the possibility for differentiation" and achieve high performance (Bettis, 1981).

Tangible resources include financial and physical resources. Financial resources are inputs through internal or

external funds. Internal funds consist of liquidity at hand and unused debt capacity to borrow at normal rates. External funds consist of new equity and possibly high-risk debts (Chatterjee & Wernerfelt, 1991). Financial resource is crucial to the survival and growth of a startup firm. Financial constraint is one of the major resource constraints that cause startups to fail. The amount and availability of financial resources also influence a firm's likelihood of taking pioneering and/or risk-taking behaviors (Schoenecker & Cooper, 1998).

Physical resources of a firm, such as plant, equipment, and machine etc., are characterized by fixed capacity (Chatterjee & Wernerfelt, 1991). The number of employees also has been seen as a critical type of resources that is strongly associated with startup performance (Aldrich & Auster, 1986; Venkataraman & Low, 1994; Carter, Williams, & Reynolds, 1997). Typically, both total asset and the number of employees are used to represent a startup's firm size. Previous empirical studies demonstrate that the employment size at the start-up stage influences the extent to which a business will survive and grow (Birley, 1985). For new-born startup firms, the importance of resources to firm performance could be bigger in the context of the initial stage of business development.

2.2 Entrepreneurial Teams

Although resources are particularly critical to new venture survival, growth, and success (Wiklund & Shepherd, 2003), entrepreneurs' capability of acquiring, managing, and leveraging resources in both efficient and productive ways is another important contributor to startup firms' success (Bruton & Rubanik, 2002). As StevensonGumpert (1985) argued, given the fact that most startups do not own or control sufficient resources, it is more important for entrepreneurial teams to leverage their individual resources to build up organizational resources in order to achieve maximized outputs. Entrepreneurial teams' skills, abilities, and ways of combining assets and people into venturing process form organizational capability. Having strong organizational capability, entrepreneurial teams are able to utilize a set of limited resources to create a unique bundle of resources that helps establish sustainable competitive advantage at the very early stage of business development (Barney, 1991; Greene & Brown, 1997). When startup firms start to grow, they also need strong organizational capability to keep acquiring and reorganizing firm resources (Miller, Friesen, & Mintzberg, 1984). For team-founded startup firms, organizational capability is largely determined by entrepreneurial teams. Team members with various backgrounds bring in a wide variety of life experiences, skills, knowledge, personalities, and social attributes to the entrepreneurial team. Because previous industry, working, and life experiences are major sources of informal learning, each team member's previous experiences can produce tacit knowledge that is transited to the team, and will be further transformed into the firm-level knowledge. Entrepreneurial teams have benefits of larger stock of tacit knowledge and organizational capability, therefore startups founded by teams appear more successful than firms founded by solo entrepreneurs (Chandler & Hanks, 1998).

2.3 Entrepreneurial Team Experiences and Resources: Interaction Effects on New-born Startup Performance

Entrepreneurial teams' experiences have been found to have strong positive impacts on performance. For example, ShraderSiegel (2007) found that experienced entrepreneurial teams are more productive than less experienced teams. Having strong entrepreneurial team experiences, new-born startups are able to overcome the liability of newness and resource constraints. Entrepreneurial teams' industry experience and previous startup experience are broadly identified as two important experiences that determine entrepreneurial team's success.

2.3.1 The Moderating Role of Industry Experience of Entrepreneurial Team

Experiences of industry and/or the line of business generate domain-relevant tacit knowledge of 'know-what', 'know-how', and 'know-who' (Cooper et al., 1994). Tacit knowledge is accumulated from previous experiences in the same or similar businesses. Important tacit knowledge of 'know-what', 'know-how' and 'know-who' of the industry and/or the business sector is transited into an entrepreneurial team when the team is formed. Entrepreneurial teams obtain necessary domain knowledge through industry experiences of team members. Each member's industry experience provides the team with valuable skills, great information about customer needs, and sophisticated knowledge about how the industry works, including the knowledge of products, technology, operations, market, and customer problems etc. (Delmar & Shane, 2003). Team-level industry experience indicates an entrepreneurial team's knowledge of the industry and/or knowledge of the line of business sectors relevant to the startup firm (Cooper et al., 1994). It strengthens the team's practical and problem solving skills (Lundvall & Johnson, 1994). Strong industry experience helps entrepreneurial teams reduce the uncertainty of venturing, make better venturing decisions, and take better efforts in dynamic environments of the industry (McMullen & Shepherd, 2006).

Entrepreneurial team industry experiences and financial resources. Previous empirical studies provide supports for significant impacts of industry experience on startups' profitability, survival, and growth (Cooper &

Gimeno-Gascon, 1992; Cooper et al., 1994; Westhead, 2000; Ganotakis, 2012; Muñoz-Bullon, Sanchez-Bueno, & Vós-Saz, 2015). Strong industry experience enables entrepreneurs to establish strong social network (Ardichvili, Cardozo, & Ray, 2003). It helps startups not only leverage their networks of prior suppliers or customers, but also create and maintain functional, personal, or social relationships in the industry. Entrepreneurial teams that have strong industry experience are able to access a wide breadth of resources, and access resources easier (Kor, Mahoney, & Michael, 2007). Previous research shows that entrepreneurial team's industry experience has a direct positive association with the debt level of a firm (Bates, 1990).

In addition to facilitate resources accessibility for startup firms, at the initial stage of business development, entrepreneurial teams that have strong industry experience are better in utilizing limited resources. Strong industry experience enables the team to better implement discovered opportunities, serve customer needs better, and solve problems much quickly. It reduces the likelihood of choosing poor decisions on resources allocation; decreases the search costs of new technology (Lundvall & Johnson, 1994); and helps startup firms survive and thrive with less financial capital than their less experienced counterparts (Chandler & Hanks, 1998). Thus:

H1a: Entrepreneurial teams' industry experience positively moderates the relation between financial resources and new-born startup performance: more financial resources lead to higher profitability, and higher level of industry experience of entrepreneurial teams facilitate this relationship.

Entrepreneurial team industry experience and startup size. Entrepreneurial teams' industry experience can help new-born startups overcome the liability of smallness. BrushChaganti (1999) found an interaction effect of team experience/competences and firm size (in a form of the number of employees) on startup firm performance. The authors pointed out that the moderating effect of firm size is uncertain and it may be positive in some cases while negative in others. They attributed this unpredictable size effects to the different combinations of team and organizational resources that are correlated to firm performance. At the very early life stage, startups are usually small in size. Small firm size limits a firm's access to other necessary resources that are required for business operation and development, thus it hinders the firm's performance (Cooper & Dunkelberg, 1986). However, small firms also have an advantage of flexibility, and they are able to make fast venturing decisions and respond to the market quickly. With this regard, smallness is not necessarily a limitation for new-born startups. Entrepreneurial teams' industry experience can offset the downside of smallness because strong tacit knowledge of 'know-what', 'know-how' and 'know-who' enables the startup firm access a broad of necessary resources and helps the firm act in the business segments in an efficient, productive, and less costly way (Lundvall & Johnson, 1994). In the context of initial business development, strong experienced entrepreneurial teams assist small startup firms avoid unnecessary costs, and choose optimized solutions for business operation and development. Strong industry experience reduces the uncertainty associated the venturing process, offsets the liability of newness and smallness, and facilitates the process of establishing new-born startups' legitimacy in the market. When the startup firm is growing into large firm size, the domain-relevant knowledge generated by the entrepreneurial team only will no longer meet the needs of firm growth. The firm will need larger stock of specific knowledge for each business unit; therefore entrepreneurial teams' experiences would have smaller impacts on firm performance when the startup's firm size is large. Thus, industry experience of entrepreneurial teams would have stronger roles in determining startup performance in small-sized rather than in large-sized firms.

H1b: Entrepreneurial teams' industry experience and startup firms' initial firm size have a negative interaction effect on performance: the association of entrepreneurial teams' industry experience and profitability is stronger when the startup firm's initial firm size is small.

Entrepreneurial team industry experience and intangible resources. Intangible resources include brand names, patent, copyrights or innovative capacity etc. Intangible resources owned by new-born startups are typically resulted from licensing and/or founder's previous activities of innovation. Patent and copyrights are the first level success of innovation, however, it is highly uncertain about the results of a patents/or trademark before it is being commercialized into market place. Startups must have strong organizational capabilities to transform intangible resources into successful outputs. Entrepreneurial teams that have strong industry experiences have great tacit knowledge of 'know-what' and 'know-how' of the industry and business segments. Rich industry experiences are very useful in foreseeing potential market value, identifying better business opportunities, and choosing right patents and/or trademarks to commercialize (Kor et al., 2007). Therefore, industry experiences help reduce uncertainty associated with resource employments in the industry (McMullen & Shepherd, 2006). In addition to offset the uncertainty associated commercializing intangible resources, industry experience of entrepreneurial team helps startups quickly establish legitimacy in the market with lower costs of search and commercialization (Lundvall & Johnson, 1994); therefore increases the likelihood of profitability.

H1c: Entrepreneurial teams' industry experience positively moderates the relation between intangible resources and new-born startup performance: more intangible resources lead to higher profitability, and higher level of industry experience of entrepreneurial teams facilitate this relationship.

2.3.2 The Moderating Role of Entrepreneurial Teams' Previous Startup Experiences

Previous experiences of a specific job and position generate specific knowledge, a type of knowledge that is associated with productivity in the same occupations (Ganotakis, 2012). Members of entrepreneurial teams obtain specific knowledge of entrepreneurship through previous startup experiences, namely the number of new businesses a member of an entrepreneurial team was involved in the venturing process, and the level of management role he/she had played previously. Starting up a new business is a complicated and dynamic process. Entrepreneurial teams that already have startup experiences would have stronger capabilities of future business development than inexperienced teams (Brush, Manolova, & Edelman, 2007). Previous studies have shown that startup experience is a useful determinant for new venture performance (Dyke, Fischer, & Reuber, 1992). Entrepreneurs' startup experience enables startup firms to successfully implement and adapt to changes in external environments (Siegel, 1999; Hitt et al., 2001; Lee & Tsang, 2001). It increases the likelihood of establishing a successful new startup (Box, White, & Barr, 1993). Startup experience is documented as one of the most significant factors venture capitalists traditionally use to weight in their funding decisions (Stuart & Abetti, 1990). Habitual entrepreneurs (those with multiple prior experiences of startup) have broader social networks and are more effective in obtaining knowledge of finance and management (Mosey & Wright, 2007). Strong startup experience enables an entrepreneurial team to minimize uncertainty, and helps the startup quickly establish routine and day-to-day activities. It reduces the costs of leveraging financial resources to pursue a business opportunity (Muñoz-Bullon et al., 2015), resulting in more profitable venturing.

H2a: Entrepreneurial teams' entrepreneurship experience positively moderates the effects of financial resources on new-born startup performance: more financial resources lead to higher profitability, and higher level of startup experience of entrepreneurial teams facilitate this relationship.

The influence of initial firm size on new-born startup firms' performance is a two-edged sword. Small-sized venturing requires less resource endorsement and small-sized startups have advantages of being flexible and speedy; whereas these firms have resource constraints that might hinder ongoing business operations and future development. On the other hand, large-sized startup firms are able to access more resources and quickly establish legitimacy, therefore have more competitive advantages in the market. However, large-sized venturing requires large amount of resource commitment so that these firms take longer time to achieve profitability than their counterparts; therefore small-sized new-born startup firms are more likely to obtain profitability in three years.

When entrepreneurial teams have strong startup experience, they have great specific knowledge of business venturing that reduces uncertainty associated with the venturing process. Strong startup experience is very useful in determining where to allocate resources; what day-to-day activities and expenses are necessary for initial business operations; and what venturing steps are the least costly but productive etc., therefore entrepreneurial teams' startup experience can offset the negative impacts of initial firm size on performance and increases the chances of profitability.

H2b: Entrepreneurial teams' startup experience and startup firms' initial firm size have a negative interaction effect on profitability: small-sized startup firms are more likely to be profitable in three years; this relationship is stronger when entrepreneurial teams have high level of startup experience.

Regarding to the intangible resources, because entrepreneurial teams have previously encountered issues associated with commercializing a patent/trademark into market place, they have experiences of finding financial capital, hiring new employees, and establishing contacts with potential customers. Experienced entrepreneurial teams are able to implement venturing efforts in the efficient and less costly manner. Thus, entrepreneurial teams' startup experience should have a positive interaction effect with intangible resources on new-born startup firms' profitability.

H3b: Entrepreneurial teams' startup experience and intangible resources have a positive interaction effect on new-born startup performance: more intangible resources are more likely to be associated with high level of profitability when entrepreneurial teams have high level of startup experience.

3. Method

3.1 Sample

Data was collected via Kauffman Firm Survey conducted by the Ewing Marion Kauffman Foundation over the period 2005-2012. Since the focus of this study is the initial stage of business development, data of the period of

2005-2007 was used. The random sample of this survey was obtained from the list of new business started 2004 that were included in the Dun & Bradstreet (D&B) database, a rough total of two hundred fifty thousand businesses. A random sample of 32,469 businesses was released for data collection on the Baseline Survey, which was conducted between July 2005 and July 2006. The research team completed interviews with principals of 4,928 businesses that started operations in 2004, which translates to a 43 percent response rate when the sampling weights were applied. A self-administered Web survey and Computer-Assisted Telephone Interviewing (CATI) were used to collect data, and KFS respondents were paid \$50 to complete the interview. CATI completes accounted for 3,781 (77 percent) and Web completes accounted for 1,147 (23 percent) of the interviews. The results across sampling strata show that 2,034 interviews were completed in the two high technology strata, and the remaining 2,894 interviews were completed among non-high-tech businesses.

The First Follow-Up Survey sample consisted of the 4,928 businesses that completed the Baseline Survey. The First Follow-Up was conducted between June 2006 and January 2007, and 3,998 interviews were completed—an 89 percent response rate after adjusting for the sample weights. As the Baseline Survey, respondents were paid \$50 to complete the interview, which was offered either on the Web or through CATI. In the First Follow-Up, a significantly larger percentage of interviews was completed through the Web survey (2,366 or 59 percent) than in the Baseline; Respondents to CATI in the First Follow-Up survey accounted for 41 percent (1,632 interviews).

The second follow-up survey was conducted among 4,523 KFS businesses. This included businesses that completed both the baseline and first follow-up surveys, and those not able to be interviewed during the first follow-up. Businesses identified as no longer operating during the first follow-up were excluded, as were a small number that adamantly refused to participate in the first follow-up. The second follow-up was conducted between May and December 2007, during which 3,390 interviews were completed and 406 businesses were identified as no longer operating. During the second follow-up, 63% of the interviews (2,127) were completed through the Web survey, with CATI completes accounting for 37% (1,263 interviews).

3.2 Measures

3.2.1 Dependent Variables

Dependent variables of this study are measured by profitability. Data was obtained from the second follow up survey. Profitability is measured by a dummy variable. Respondents were asked whether the business loss or profit in year 2005. Answer for “loss” was coded as 0, “profit” was coded as 1.

3.2.2 Independent Variables

3.2.2.1 Entrepreneurial Team Experiences.

Entrepreneurial Team Experiences are measured by average industry experiences of entrepreneurial team, and average startup experience of entrepreneurial team. Each owners' industry experience is measured by owners' years of working experience of an industry in which the business competes. The respondents were asked “how many years of working experience have you had in this industry—the one in which the business competes?” Team level of owners' industry experience is calculated by dividing total years of industry experience of the founding team by the total number of owners of the startup. Each owners' previous startup experience is captured by asking respondents: 1) “how many other new businesses have you started besides?” Then sum all answers together. 2) “if you have other new businesses started besides, were (was) these new businesses in same industry as this business?” The answer is coded as 1 (yes) or 0 (no). Then sum all owners' answers for “yes” together. 3) The number of owners who have more than 5 other new businesses started besides. Each owner has more than 5 other new business started besides was coded as 1, otherwise 0. Then sum all answer “1” together. The sum of the results from the three items measures the level of startup experiences. Team level of entrepreneurial expertise is measured by average startup experience. That is, dividing the total level of startup experience by the total number of owners of the firm.

3.2.2.2 Resources

Intangible resource. Intangible resource is measured by patents, copyrights, and trademarks. This variable was calculated by the total number of patents, copyrights, and trademarks owned by a startup.

Initial firm size. The initial size of a startup is measured by two indicators: initial number of employees and initial firm asset a startup owns. The number of employees is measured by a dummy variable. The number of employees is more than 1 was coded as 1, otherwise 0. The initial total assets in year one was used: 0 = small initial assets of \$10,000 or less; 1 = medium or large assets with initial assets greater than \$10,000.

Financial resource is measured by access to debt, which is measured by the maximum business line of credit. Startups' maximum business line of credit is above \$1 was coded as 1, otherwise 0.

3.2.3 Control Variables

Both firm age and industry type affect startup performance. This sample has controlled the age of startup firms, so industry type was chosen to be the control variable: technological and non-technological industry (dummy coded as 1 and 0), by matching NAICS code with SIC code.

3.3 Data Analysis

The purpose of the current empirical test is the interaction effects of multiple independent variables on startup performance. In order to avoid multicollinearity problem, all independent variables were centered (Jewell, 2004). Centering is defined as subtracting the mean (a constant) from each score, yielding a centered score. Centering is an important step when testing interaction effects in multiple regression to obtain a meaningful interpretation of results (Robinson & Schumacker, 2009). When variables have been centered, the intercept has no effect on the collinearity of the other variables (Belsley, Kuh, & Welsch, 1980). Therefore centering can be used to reduce the issue of multicollinearity.

Outliers were excluded after testing residuals. In addition, all models were appropriately weighted before data analysis.

A series of hierarchical multiple binary logistic regression model was used to test the direct and interaction effects of entrepreneurial team experiences and resources on profitability.

4. Results

Table 1 provides correlation coefficients for the variables used in the models. Because the variables included into this study are in the form of ordinal, interval or dichotomous variable. Spearman correlation tests were conducted. Spearman correlation is the most common correlation for use with two ordinal variables or an ordinal and an interval variable. These correlations provide initial indications of strong relationships between entrepreneurial team experiences, resources, and performance. No evidence of multicollinearity was indicated.

Table 1. Spearman’s Rho Correlation

Variable	1	2	3	4	5	6	7
1. Profitability	1						
2. ET industry experience	.094	1					
3. ET startup experience	.078**	.539***	1				
4. The number of employees	.230***	-.005	.014	1			
5. Total assets	.322***	.039*	.067***	.246***	1		
6. Intangible resources	-.009	-.008	.038*	.056***	.039*	1	
7. Access to Debt	.147***	.068***	.100***	.132***	.161***	-.002	1

Table 2. Regressions results for Profitability

Models	Profitability	
	b	EXP(B)
<u>Main Effects Model</u>		
Industry	.055	1.056
The number of employees	.046	1.047
Total assets	-.334***	.716
Intangible resources	.006	1.006
Access to debt	.225*	1.252
<u>Founding Team Experience</u>		
Industry Experience	.034***	1.034
Startup Experience	-.066	.936
R ²		
Hosmer-Lemeshow test	χ ² (df)=8.208(8), p=.413	

Table 3. Results for interaction effects

ModelA: Entrepreneurial Team Experience X Intangible Resources		
Models	Profitability	
	b	EXP(B)
Industry	0.053	1.054
Industry experience	.033***	1.034
Startup experience	-.07	.932
Resources		
Intangible resources	.006	1.006
The number of employees	.047	1.048
Total assets	-.331	.718
Access to debt	.221*	1.248
Industry experience X intangible resources	-.006*	.994
Startup experience X intangible resources	.086*	1.09
R ²	R ² =0.048	
Hosmer-Lemeshow test	$\chi^2(df)=7.949 (8), p=.438$	
Model1B: Entrepreneurial Team Experience X Number of Employees		
Models	Profitability	
	b	EXP(B)
Industry	0.05	1.051
Industry experience	.033***	1.033
Startup experience	.087	1.091
Resources		
Intangible resources	.006	1.006
The number of employees	.059	1.061
Total assets	-.338***	.713
Access to debt	.212	1.236
Industry experience X Number of Employees	.002	1.002
Startup experience X Number of Employees	-.374*	.688
R ²	R ² =0.050	
Hosmer-Lemeshow test	$\chi^2(df)=10.009 (8), p=.264$	

Model C: Entrepreneurial Team Experience X Total Assets			
Models	Profitability		
	b	EXP(B)	
Industry	0.056	1.057	
Industry experience	.03***	1.03	
Startup experience	.248	1.282	
Resources			
Intangible resources	.006	1.006	
The number of employees	.046	1.047	
Total assets	-.317***	.728	
Access to debt	.215	1.239	
Industry experience X total assets	.007	1.007	
Startup experience X total assets	-.481**	.618	
R ²	R ² =0.048		
Hosmer-Lemeshow test	$\chi^2(df)=7.472 (8), p=.486$		
Model D: Entrepreneurial Team Experience X Access to Debt			
Models	Profitability		
	b	EXP(B)	
Industry	0.06	1.062	
Industry experience	.033***	1.031	
Startup experience	.011	1.011	
Resources			
Intangible resources	.006	1.006	
The number of employees	.051	1.053	
Total assets	-.327**	.721	
Access to debt	.185	1.203	
Industry experience X Access to Debt	.036*	1.037	
Startup experience X Access to Debt	-.661*	.516	
R ²	R ² =0.051		
Hosmer-Lemeshow test	$\chi^2(df)=6.36 (8), p=.607$		

Table 2 and 3 presents the results of regression analyses. Normal binary logistic model was used to examine the direct and interaction impacts of resources and entrepreneurial team experiences (industry experiences and startup experiences) on profitability. A total of six models were tested. The first model examined the effects of control variable only. The second model examined the effects of control variable and main effects. The following

four models include the additional two-way interaction terms. The actual test of hypotheses is the significance of the model change from the control variable model to the direct effect model. All results from normal binary logistic regression models show that Omnibus test of Model coefficients are significant at $p=.000$ level, which indicates the model changes are significant. The Chi-squares for H-L (Hosmer-Lemeshow test) of all normal binary logistic regression are not significant, demonstrating that the logistic models are good fit with the data.

Results show that financial resources (access to debt) showed a significantly impact on profitability (.225, $p=.01$). Total asset was found to have significant negative impacts on profitability (-.334, $p=.000$). The number of employees and intangible resources were found not having significant impacts on startup firms' profitability of the year three.

Regarding to the individual impacts of entrepreneurial team's experiences, the results show that only industry experience significantly impacts startup's profitability (.034, $p=.000$). Surprisingly, entrepreneurial team's startup experience was found not having significant impacts on new-born startup firms' profitability.

H1a predicts a positive interaction effect of industry experience and financial resources (access to debt) on profitability. Results show that industry experiences and access to debt have significant positive interaction effects on profitability (.036, $p=.01$). H1a is supported. This finding indicates that when a startup has large financial resources and the entrepreneurial team has strong industry experience, this startup firm has more odds of making profits in three years. Entrepreneurial teams' startup experience and financial resources have a negative interaction effect on the startup firm's profitability in three years (-.661, $p=.01$), supporting H2a, but in an opposite direction. Entrepreneurial teams' strong startup experience is more likely associated with profitability when startup firms do not have access to financial resources; whereas when startup firms have access to financial resources, less startup experienced entrepreneurial teams are more likely to make profitable venturing.

H1b and H2b hypothesize interaction effects of initial startup firm size and entrepreneurial team experiences on performance. Results show that entrepreneurial teams' industry experience and initial firm size (number of employees and total asset) do not have significant interaction effects on profitability. In the main effect model, entrepreneurial teams' industry experience is found to be significantly related to profitability (.034, $p=.000$). In the contingency model, no significant interaction effect of industry experience and firm size was found. H1b was rejected. This finding indicates that the influences of entrepreneurial teams' industry experience on profitability do not differ across initial firm sizes of startups.

On the other hand, results show significant moderating effects of entrepreneurial teams' startup experience on the relationship between initial firm size and profitability. Startup experience and the number of employees have a joint negative effect on profitability (-.374, $p=.001$). The joint effect of entrepreneurial team's startup experience and total asset is also negative (-.484, $p=.001$). H2b was supported. In the main effect model, it shows a negative relationship between initial firm size of total asset and profitability (-.334, $p=.000$), and no significant direct effect of number of employees on profitability. The results of the main effect model show that small-sized startup firms are more likely to generate profits in three years than medium/large sized counterparts. Medium/large sized new-born startup firms have more resources commitments in the very early stage of business development, therefore they are less likely to make profits in three years. However, the significant negative interaction effect of team's startup experience and startup firms' initial firm size on profitability (-.481, $p=.001$) indicate that the negative main effect of initial firm size on profitability depends on entrepreneurial teams' startup experience. The association of small initial firm size and profitability is stronger when entrepreneurial teams have high level of startup experience. Strong startup experience and size can offset resource constraints, increasing the chance of obtaining profits in the first three years of firm life. Put in another way, entrepreneurial teams' startup experience has significant impacts on new-born startup firms' profitability when startup firms' initial firm size is small. H2b was supported.

H1c and H2c hypothesize the interaction effects of team experiences and intangible resources on performance. Results demonstrate that team industry experiences and intangible resources have significant negative interaction effects on profitability. When startups have more intangible resources, strong industry experienced new startups have higher likelihood of having negative profitability in the third year (-.006, $p=.01$). H1c is supported, but it is in an opposite direction. The main effect model shows a significant positive impact of industry experience on profitability (.033, $p=.000$). The negative interaction effect of entrepreneurial teams' industry experience and intangible resources indicates that the amount of intangible resources weakens the positive influences of entrepreneurial teams' industry experience on profitability. Strong industry experienced teams are more likely to make profits in the third year when new-born startup firms have less intangible resources.

Startup experience has significant impacts on startup profitability (.086, $p=.01$). When startups have high intangible resources, strong startup experience significantly increases the likelihood of achieving positive profitability in three years. H2c is supported.

Table 4 shows a summary of all results.

Table 4. Results Summary

IV	DV	Hypotheses	Profitability
Intangible resources			<i>No sig.</i>
Access to Debt			<i>Sig. (.225, p=.01)</i>
Total assets			<i>Sig. (-.334, p=.000)</i>
The number of employees			<i>No sig.</i>
Industry Experiences			<i>Sig. (.34, p=.000)</i>
Startup experience			<i>No sig.</i>
Industry experience × access to debt		<i>H1a</i>	<i>Sig. (.36, p=.01)</i>
Industry experience × total assets		<i>H1b</i>	<i>No sig.</i>
Industry experience × number of employees		<i>H1b</i>	<i>No sig.</i>
Industry experience × intangible resources		<i>H1c</i>	<i>Sig. (-.006, p=.01)</i>
Startup experience × access to debt		<i>H2a</i>	<i>Sig. (-.661, p=.01)</i>
Startup experience × total assets		<i>H2b</i>	<i>Sig. (-.481, p=.001)</i>
Startup experience × number of employees		<i>H2b</i>	<i>Sig. (-.374, p=.01)</i>
Startup experience × intangible resources		<i>H2c</i>	<i>Sig. (.086, p=.01)</i>

5. Discussion

Although extant empirical literature has widely documented significant impacts of startup firms' resources and entrepreneurial team's experiences on startup performance, few studies tested the interaction effects of resources and team experiences on a sample of new-born startup firms that are at the infant stage. Moreover, the dependent variables used to measure startup performance in the majority of the current literature are survival, productivity, or growth. Few studies shed lights on the early years of profitability, a performance measure that is vital for startups to stay in business. The purpose this study is to empirically test the influences of entrepreneurial teams on new-born startup firms' performance, from a contextual view point. Specifically, this study aims to examine entrepreneurial teams' experiences on new-born startup firms' profitability in various contexts of resource availability.

Findings of this study show that financial resources (in the form of asses to debt) are vital for new-born startup firms' profitability. Entrepreneurial teams' industry experiences strengthen the financial resources and profitability relationship. This finding is consistent with previous findings of the extant entrepreneurship literature. Entrepreneurial teams' industry experience generates strong 'know-what', 'know-how' and 'know-who' of the industry and/or business sectors, so that it enables new-born startup firms to access more financial resources and utilize resources better in the process of startup venturing. Moreover, strong entrepreneurial teams' industry experience helps reduce costs of searching new materials and technology; therefore, new-born startups that have strong industry experienced teams have more chances of being profitable in the first three years of life span.

However, the interaction effect of entrepreneurial teams' startup experience and financial resources is negative on profitability. Entrepreneurial teams' strong startup experience weakens the positive main effect of financial resources on profitability. Strong startup experienced teams obtain profitability better when the startup does not have access to financial resources. One explanation for this finding is that entrepreneurs who have strong specific knowledge of how to establish a startup may not have sufficient knowledge of business management and administration. When these entrepreneurs access to large amount of financial resources, they may not be able to make right decisions of business operations. This result indicates that although it has been broadly accepted that

financial constraints faced by entrepreneurs is one of the major reasons of startup failure, the impacts of financial resources on startup performance are not conclusive. Great access to debt may positively strengthen the startup performance in some cases, however, they may be also negatively associated with performance in other cases. Moreover, the impacts of access to debt are contingent on specific experiences of the entrepreneurial team. To better understand the influences of financial resources and entrepreneurial team in the early period of firm life, more studies need to be done. Future research needs to examine the influence of early financial structure, sources and costs of finance on new-born startup performance, and better understand the role entrepreneurial teams play on this relationship.

Results also show that different types of resources and entrepreneurial team experiences have heterogeneous impacts on startup performance. Entrepreneurial teams' startup experience has a positive joint effect with intangible resources on profitability; whereas entrepreneurial teams' industry experience and intangible resources have a negative joint effect on profitability. It indicates that entrepreneurial teams' startup experience is more useful in mobilizing intangible resources to achieve profitability than industry experience. One explanation for this unexpected result is that although strong industry experiences generate great tacit knowledge of 'know-what' and 'know-how' of the industry that enables entrepreneurs to foresee potential market value, identify better business opportunity, and choose right patents and/or trademarks to commercialize, commercializing patents into market place and utilizing intangible resources are practical issues. Startup experienced entrepreneurial teams have previously encountered issues associated with commercializing a patent/trademark into market place. They have rich experiences of practices so that they are able to implement venturing efforts less costly. Moreover, strong industry experience could possibly lead to strong overconfidence in a particular business sector so that it might hinder entrepreneurs from searching new information, knowledge, and technology required for applying intangible resources into business settings.

Firm size is showed to have negative influences on profitability. Although some entrepreneurship scholars argue that large firm size is associated with better performance of entrepreneurial firms because they are able to access large amount of resources, findings of this study support a negative effect of initial firm size on startup firms' early years' profitability. Startup venturing is a dynamic and uncertain process, large amount of resource commitment in the early venturing stages might scarify the flexibility and speed of change. Small initial sized startups are more likely to be profitable in the third year. Entrepreneurial teams' industry experience does not have joint effects with the startup's initial firm size. Strong industry experience of the entrepreneurial team positively increases the chance of obtaining profitability. Such influence of entrepreneurial team won't vary across the initial firm sizes.

However, entrepreneurial teams' startup experience has mostly negative moderating influences on the relationship between resources and profitability. Moreover, findings of this study also indicate that entrepreneurial teams' startup experience plays more important roles in small sized startups, where direct impacts of founders are more likely to take place. An explanation for these findings is that specific knowledge of business venturing that is obtained through a few startup experiences may not be able to be successfully transitioned into necessary knowledge required for business management. New-born startup firms mostly operate in very dynamic and changing environments, entrepreneurs may need longer time to learn from past experiences. Moreover, the specific knowledge of business venturing differ from the domain relevant knowledge of business operation and management. Beside knowledge obtained through startup experience, entrepreneurs need to acquire other types of knowledge for better firm performance.

Findings of the current study provide an extra empirical evidence of the interaction influences of entrepreneurial teams and resources on new-born startup firms' performance from a context view point. It helps better understand entrepreneurial team and provide alternative explanations for entrepreneurship. Results suggest that entrepreneurs, as unique heterogeneous resources of a startup firms, are important contributor to outperformance (Alvarez & Busenitz, 2001). Entrepreneurial teams' knowledge and experience play important roles in helping new-born startup firms successfully adapt to external environments and achieving superiority in performance. However, the influences of entrepreneurial teams are contingent in the various contexts of resource availability.

6. Conclusion

This study empirically tests the joint impacts of resources and entrepreneurial teams on new-born startup performance. It provides an extra empirical document for the importance of entrepreneurial teams to startup performance at very beginning stage of business development. Results of this study have potentially important implications for understanding entrepreneurial teams, practices of new-born startup, and venture investment decision making. This study also reveals that a contingent approach could give us a deeper insight into the relationships among entrepreneurial team, resources, and startup performance.

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