



## Antecedents, moderators, and performance consequences of membership change in new venture teams

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### Abstract

This paper focuses on initial team size and membership change of new venture teams in two studies: (1) a panel study of 408 emerging ventures, and (2) a cross-sectional study of 124 new ventures. The findings suggest that larger initial team size provides an advantage for new organizations, and that the benefits of adding and dropping team members are contingent on the stage of development of the organization and the dynamism of the environment. Both external environment and team composition factors are associated with turnover in venture teams.

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## 1. Executive summary

The most compelling research finding about new venture teams to date is that team-founded ventures appear to achieve better performance than individually founded ventures (Cooper and Bruno, 1977; Teach et al., 1986; Weinzimmer, 1997). This research provides insights toward our understanding of how new venture teams develop over time. Specifically, we focus on the addition or departure of team members. We address the following questions: (1) Do environmental and internal team factors influence the stability or instability of emerging and new venture teams? (2) Does team stability or instability impact subsequent performance of emerging businesses? (3) Are the effects of adding or dropping team members contingent on organizational stage of development and environmental dynamism?

We base our hypotheses on theoretical constructs developed in the literature on turnover in organizations and the top management team literature. We view changes in the management team as an adaptive mechanism (Boeker, 1997) and specifically investigate changes in the top management as adaptations to the external environment and functions of internal team composition. We also investigate the relationship between these adaptations and emerging firm performance. We test our hypotheses in two samples: the first is a panel study in which 408 new ventures in Sweden were contacted four times at intervals of 6 months; the second is a cross-sectional survey of 124 five-year-old ventures in a western state in the United States. Thus, using samples from two countries, and different data gathering and analysis techniques, we provide evidence that the addition and departure of team members influence the development and performance of businesses. In addition, we analyze external environment and team composition factors related to the addition or departure of team members.

Our empirical results provide evidence that the dynamism of the task environment and the instability associated with newness are related to changes in the new venture team, providing support for the “turnover as an adaptive mechanism” perspective. Additions to the team are negatively related to the performance of emerging Swedish firms. In the U.S. sample, relationships between additions to and departures from the team and performance are contingent on the stage of development of the firm and the degree of dynamism in the environment. As firms develop, departures from the management team are increasingly functional and additions are increasingly dysfunctional. In contrast, additions to the team appear to be functional in highly dynamic environments, whereas departures tend to be dysfunctional. Taken in concert, the overall results suggest that it is usually preferable with respect to performance in new organizations to start with a larger number of team members and drop those that do not fit or make meaningful contributions, rather than to start small and add team members as the need arises.

## 2. Introduction

Although numerous researchers have provided evidence that a significant proportion of new ventures is started by more than one individual (e.g., Cooper, 1973; DeCarol and Lyons, 1979; Eisenhardt and Schoonhoven, 1996; Kamm et al., 1990; Kazanjian and Rao, 1999),

little is known about new venture teams (Kamm et al., 1990). The most compelling research finding to date is that team-founded ventures appear to achieve better performance than individually founded ventures (Cooper and Bruno, 1977; Teach et al., 1986; Weinzimmer, 1997). Team start-ups perform better than individual start-ups; however, a larger initial team size is likely to be associated with greater heterogeneity, which can lead to increased levels of conflict due to diverging perspectives and viewpoints (Amason and Sapienza, 1997). In developed organizations, heterogeneity has been found to be directly related to management team turnover (Harrison et al., 1998; Jackson et al., 1991; Wiersema and Bird, 1993) by reducing social integration, communication, and cohesion (Wagner et al., 1984). Taken together, these studies suggest that initial team size and composition are related to the future development of the new venture in complex ways, and that the adding or dropping of members from a new venture team may influence strategic direction and performance.

In the top management team literature, turnover is framed as an adaptation mechanism such that changes in management team membership frequently are associated with strategic changes (Boeker, 1997; Wiersema and Bantel, 1993). Along with the evidence from the top management team literature, the antecedents and consequences of turnover in new venture teams emerged as an important issue for us when we conducted in-depth interviews in a preliminary study. We discovered a tendency toward significant changes in membership in new venture teams during the early stages of new venture development. These changes seemed to influence the subsequent development of the firms we were studying, yet the few studies that deal with new venture teams have treated start-up team composition as a static variable and have not accounted for changing team membership (e.g., Weinzimmer, 1997; Ensley et al., 2002). A related issue that has been explored only sparingly in the literature is that the demands on a team may differ at different developmental stages (cf. Birley and Stockley, 2000). Possible differences in requisite team characteristics at different developmental stages have been noted in the evolutionary literature (cf. Aldrich, 1999), but such speculations have not been verified empirically in the literature on entrepreneurial teams.

In response to the lack of research in these areas, this paper sets out to answer the following three basic research questions: (1) Do environmental and internal team factors influence the stability or instability of emerging and new venture teams? (2) Does team stability or instability impact subsequent performance in emerging and new ventures? (3) Are the effects of adding or dropping team members contingent on organizational stage of development and environmental dynamism?

### 3. Theory and hypotheses

Previous research suggests that changes in the size and composition of a management team may influence the development of the business (Boeker, 1997). Our hypotheses are developed following the model presented in Fig. 1. Task environment dynamism, venture stage of development, team size, and team heterogeneity are all hypothesized to influence new venture team turnover, which in turn has performance implications. The factors external to the team, task environment dynamism and firm stage of development, are hypothesized to exert both

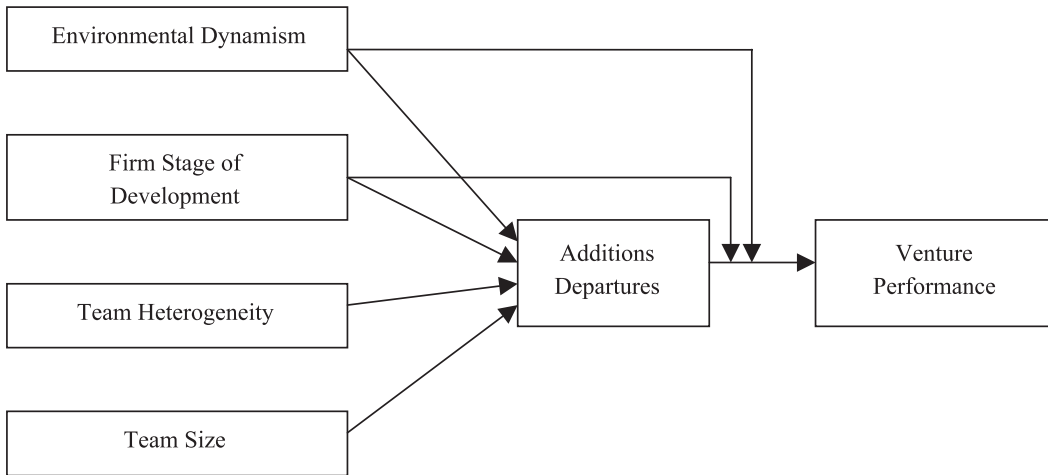


Fig. 1. Research Model.

direct and moderating influences. Our following formal hypotheses conform with the proposed model.

### 3.1. Antecedents of turnover in new venture teams

Evidence suggests that both forces external to the team and team characteristics influence member change in the team. For example, [Boeker \(1997\)](#) suggests that changes in the top management team are a response to changing external environmental factors. In contrast, [Amason and Sapienza \(1997\)](#) provide evidence that team heterogeneity is positively linked to turnover in the top management team.

#### 3.1.1. Environmental dynamism

Changes in the management team are viewed as an adaptive mechanism ([Boeker, 1997](#)). Environmental dynamism places great demands on members of the management team because routine solutions continuously become impracticable ([Wiersema and Bantel, 1993](#)). One of the ways firms operating in unstable environments will change and adapt is by making changes to the management team. We therefore anticipate dynamic environments to be associated with greater turnover. Hence:

**Hypothesis 1.** Industry dynamism is positively associated with turnover (both additions and departures) in new venture teams.

#### 3.1.2. Venture stage of development

As firms move through various stages of growth, the problems that must be addressed change. This results in a need for different skills, priorities, and structural configurations ([Hanks et al., 1993](#); [Kazanjian and Rao, 1999](#)). Both contingency ([Lawrence and Lorsch, 1967](#)) and institutional theorists ([DiMaggio and Powell, 1983](#); [Meyer and Rowan, 1977](#)) argue that

organizations change their structures to match environmental contextual demands. This suggests that as a firm develops, it puts increasing pressure on the management team to change. This change can be at least partially addressed by adding and dropping team members.

**Hypothesis 2.** The stage of development of a company is positively associated with turnover (both additions and departures) in new venture teams.

### 3.1.3. Initial team size and turnover

The Law of Requisite Variety ([Ashby, 1956](#)) suggests that the variety of resources required is contingent on the conditions in the environment. Because the task environment is not yet clearly defined for newly emerging organizations, it is unlikely that the new venture can clearly define the relevant resources, competencies, and capabilities from the outset, but only through experimentation ([Sarasvathy, 2001](#); [Starr and MacMillan, 1990](#)). In addition, research evidence suggests that increased size has a negative effect on the social integration, informal communication, and communication frequency of teams. [Amason and Sapienza \(1997\)](#) found that larger teams often produced high levels of affective conflict, which has been shown to have negative impacts on group cohesion ([Jehn et al., 1997](#)). Similarly, relationship building takes time ([Smith et al., 1994](#)). During the emergent phase of a business, cohesive bonds are less likely to have formed, which also makes it easier to add and drop members. Taken together, these arguments lead to the following hypothesis:

**Hypothesis 3.** Initial team size is positively associated with both the addition and departure of team members.

### 3.1.4. Team heterogeneity and turnover

Functional and demographic heterogeneity among new venture team members may also be related to the stability of the team. This is consistent with upper echelons and strategic decision-making literatures, which suggest that increased levels of conflict result from diverging perspectives and viewpoints, often resulting in affective conflict ([Amason and Sapienza, 1997](#)). [Wagner et al. \(1984\)](#) argued that heterogeneity reduces social integration, communication, and cohesion. Past research ([Harrison et al., 1998](#); [Jackson et al., 1991](#); [Wagner et al., 1984](#), [Wiersema and Bird, 1993](#)) provides some indication that heterogeneity may be positively related to team turnover. Thus, both theoretical and empirical evidence suggest that team heterogeneity is likely to be associated with changes of membership in the new venture team.

**Hypothesis 4.** Demographic and functional heterogeneity in the start-up team will be positively related to both the addition and departure of team members.

## 3.2. Changes in team membership and venture performance

Although turnover in the management team is viewed as an adaptive mechanism ([Boeker, 1997](#)), we found little research published in major management or entrepreneurship journals that investigated changes in team membership and implications for new

venture performance. The literature on teams suggests that changes in the team can require substantial socialization ([Adelman and Frey, 1997](#)) and can impact team performance. Indeed, case study evidence suggests that changes in team membership may substantially influence the development of a venture ([Chandler and Lyon, 2001](#)). However, in the top management teams literature, [Virany and Tushman \(1986\)](#) found no significant performance differences between firms with top management teams that had high versus low turnover.

### *3.2.1. Departures from the team and venture performance*

The literature on personnel turnover provides some guidelines regarding the performance implications of turnover. Starting with departures, scholars agree that both functional and dysfunctional departures exist at both the individual and organizational levels of analysis ([Shaw et al., 1998](#)). According to [Dess and Shaw \(2001\)](#) a cost–benefit perspective argues that recruiting, hiring, and decreased productivity costs result in diminished financial returns. From a human capital perspective, departing members may take valuable tacit and explicit knowledge away with them ([Cascio, 1999](#)). Both of these perspectives suggest a negative relationship between departures and performance. However, there is substantial empirical evidence that, on balance, the poorest performers are likely to leave ([McEvoy and Cascio, 1987](#)). A rationale explaining this finding is that both employers and employees recognize when things are not working out well. The combination of not achieving and not being valued in the organization creates an environment in which poor performers are more likely to leave than good performers. As poor performers leave, there are anticipated positive implications for team performance. We propose that this explanation applies to departures of members from start-up teams and justifies the following hypothesis:

**Hypothesis 5.** Team departures are positively associated with new venture performance.

### *3.2.2. Additions to the team and venture performance*

The dynamics associated with adding team members are different from those associated with dropping team members. Newly formed groups are more likely to operate informally, with tacit cohesion rather than following explicit rules and goals ([Polanyi, 1967](#)). Thus, even in the initial stages of a team, adding members can be disruptive, but the disruption of adding a member increases as the team and organization develops. Adding members into an existing team requires considerable socialization and adaptation by both new and existing team members ([Adelman and Frey, 1997](#)). Both new and existing group members must be clear about both what their expected goals are, and what their roles are in accomplishing various tasks ([Kemer et al., 1985](#)). In addition, sufficient time must be allowed to functionally integrate all members of a team ([Heinen and Jacobson, 1976](#)). We believe these findings apply to the specialized case of new venture teams. Existing team members develop shared expectations for how the business should operate. New members often arrive with very different perspectives and agendas. They require time to learn the cultural norms established by existing new venture members. As a result, individuals added to the

team sometime after start-up are very disruptive to existing practices and are expected to be largely dysfunctional.

**Hypothesis 6.** Team additions are negatively associated with new venture performance.

### 3.3. Moderating variables

We expect the relationships between turnover and performance to be moderated by factors external to the team. When external factors such as the task environment or the stage of development are changing rapidly, it puts more pressure on the team to change in order to meet those exigencies.

#### 3.3.1. Environmental dynamism as a moderating variable

Because team turnover can be a mechanism used for adaptation ([Boeker, 1997](#)), the functionality or dysfunctionality of team changes is likely to depend upon how much change is required by the environment in which the new venture operates. In our context, environmental dynamism refers to the rate of unpredictable change that exists in the task environment that is relevant to decision making ([Sharfman and Dean, 1991](#)). Environmental dynamism places great demands on members of the management team because routine solutions continuously become impracticable ([Wiersema and Bantel, 1993](#)), and it is necessary to adapt to these environmental changes. One way to adapt to the changes implied by a dynamic environment is by making changes to the new venture team ([Boeker, 1997](#); [Wiersema and Bantel, 1993](#)). This suggests that environmental dynamism moderates the relationship between team turnover and performance. Thus:

**Hypothesis 7.** Task environment dynamism moderates the relationship between additions (a), departures (b), and performance. As dynamism increases, both additions and departures from the team will be more positively correlated with performance.

#### 3.3.2. Venture stage of development

Teamwork is influenced by contextual factors and task requirements ([Cannon-Bowers et al., 1995](#)). The literature on venture development suggests that the stage of development of the emerging venture creates significant demands for changes in capabilities and competencies as the exigencies for success change ([Hanks et al., 1993](#); [Flamholtz and Randle, 2000](#)). Previous research indicates that departures are more likely to be functional when the organization has relatively clear performance targets, and more information about how individuals contribute to these performance targets ([James and Soref, 1981](#)). This information is likely to become more available as the venture develops. Thus, the stage of development of a company is expected to influence the relationship between turnover and performance. Both the newness and nonhierarchical nature of new organizations facilitate broad work roles, which allows remaining members to cover responsibilities vacated by departing members. As the venture grows, the business concepts are more likely to stabilize and the roles and work tasks of team members are more likely to have become clarified and formalized. The stage of development of the firm moderates the relationship between

departures from the management team and performance in such a way that as the firm develops, departures become increasingly functional. This leads to the following hypothesis:

**Hypothesis 8.** The stage of development of the new venture moderates the relationship between team departures and performance. As the venture reaches more advanced stages of development, departures will be more positively correlated with performance.

Similar to departures from the team, the stage of development of the firm may also impact the relationship between additions and performance. For example, teams working on demanding tasks where the strategy must be adjusted quickly in response to task environment contingencies are likely to know the preferences, task-related competence, strengths, weaknesses, and other characteristics of team members. This knowledge forms the basis of expectations regarding what other team members are likely to do in a given situation ([Salas et al., 2000](#)). As the team begins to coalesce and fit into more clearly defined roles, the addition of new team members disrupts the established patterns. Thus:

**Hypothesis 9.** The stage of development of the new venture moderates the relationship between team additions and performance. As the venture reaches more advanced stages of development, additions will be more negatively correlated with performance.

#### 4. Hypothesis testing

To test these hypotheses, we conducted two survey-based empirical studies. The first is a real-time longitudinal study of 408 emerging firms in Sweden that were identified after they consciously started the process of developing a firm, and before they reached first sales. This study is used to analyze the effects of initial team size and team turnover during the prestart-up and early start-up phases. The second study is a retrospective cross-sectional study examining the first 5 years of operations of 124 new ventures in the Rocky Mountain Region of the United States and analyzes the same effects in more mature start-ups. In addition, environmental dynamism and team heterogeneity are examined.

##### 4.1. Study 1: *Emerging ventures*

###### 4.1.1. *Methods*

In this study, we examined the role of initial team size and turnover for 408 emerging firms during four consecutive 6-month periods. We observed emerging team activity in a dynamic real-time setting, providing an opportunity to examine the effects of team resources ([Carter et al., 1996](#)).

###### 4.1.2. *Sample*

To construct a sampling frame, we contacted 35,971 randomly selected individuals in Sweden by telephone, of which 30,427 (84.6%) agreed to participate. Of these, 728 were



nascent entrepreneurs currently starting an independent business. A final sample of 408 provided complete data on the initial survey and three successive surveys that were conducted at 6, 12, 18, and 24 months following the initial screening interviews.

## 4.2. Measures

### 4.2.1. Performance

We identified those firms whose owners indicated that they had reached profitability at any time during the study (6, 12, 18, or 24-month intervals). This was a self-reported measure that asked directly if they had reached profitability. As profitability is both nominally essential and a primary goal of new ventures, we consider this to be a highly relevant indicator of successful emerging activity.

### 4.2.2. Team size

The number of legal team owners declared at the 24-month time point provides an estimate of team size. Since tracking these emergent firms started before start-up, this time point provides a reasonable indicator of team size at or shortly following start-up.

### 4.2.3. Departures

During each of our four follow up surveys (6, 12, 18, and 24 months), we asked if initial team members had ever left. This information was used to construct a dummy variable coded “1” if initial team members had ever left.

### 4.2.4. Additions

During the follow-up surveys, we also asked if any team members had been added. This information was used to construct a dummy variable coded “1” if team members had ever been added.

### 4.2.5. Control variables

Emerging firms may only generally be aware of their intended product or service, and the outcome is frequently quite different from the initial intentions. For this reason, it was only possible to measure industry-level factors at a very broad level of analysis. We controlled for industry according to three major groupings: service, trading, and manufacturing. This was determined by the researchers after reading a short description of the major product/service. Dummy variables were constructed for the service and trading categories, since in dummy variable models, the entire variance is captured by models that include  $n-1$  categories.

## 4.3. Analysis and results

Given our use of dichotomous dependent variables and the nature of the independent and control variables, we used binary logistic regression analysis for hypotheses testing. To test H3, we examined initial team size as a predictor of turnover. As the new organization

Table 1

Hierarchical logistic regression analysis predicting turnover in study 1 (emerging ventures in Sweden)

Independent variables	Additions		Departures	
	Base model	Full model	Base model	Full model
Service firm	1.41***	0.80 <sup>†</sup>	0.81 <sup>†</sup>	0.83 <sup>†</sup>
Trading firm	1.04***	0.54	0.64*	0.65*
Initial team size		0.77***		−0.02
−2 log likelihood	312.94	275.87	337.64	337.61
Model $X^2$	17.06	54.14***	6.59*	6.61*
$\Delta X^2$		37.80***		0.02
<i>n</i>	408	408	408	408

<sup>†</sup>  $p < 0.10$ .\*  $p < 0.05$ .\*\*\*  $p < 0.001$ .

develops, we anticipate pressures for team changes, both additions and departures, to be exerted. The upper portion of the second column of Table 1 details the standardized regression coefficients of the control variables. The lower portion details the base model's goodness of fit as measured by significance and  $-2 \log$  likelihood. This model represents a statistically significant improvement over and above the base model ( $\Delta\chi^2=37.80$ ;  $p < 0.001$ ). Initial team size is not predictive of whether team members are dropped ( $p > 0.05$ ). However, that initial team size has a statistically significant positive impact on adding team members ( $p < 0.001$ ) is supported. Thus, H3 is supported in the case of additions to the team, but not departures.

The results of the test of H5 and H6 are provided in Table 2. The upper portion of the second column of Table 2 details the standardized regression coefficients of the control variables. The lower portion details the base model's goodness of fit. In the third column, we enter the variables pertaining to team characteristics (i.e., initial team size, addition of team members, and departure of team members). This model represents a statistically significant improvement over and above the base model ( $\Delta\chi^2=23.95$ ;  $p < 0.001$ ). H5 (that departures

Table 2

Hierarchical logistic regression analysis predicting performance in study 1 (emerging ventures in Sweden)

Independent variables	Base model	Full model
Service firm	1.70**	2.01***
Trading firm	2.24**	1.47***
Initial team size		0.62***
Addition to team		−1.03***
Departure from team		0.15
−2 log likelihood	453.72	429.75
Model $X^2$	103.62	127.57
$\Delta X^2$		23.95***
<i>n</i>	408	408

\*  $p < 0.05$ .\*\*\*  $p < 0.001$ .

would have a positive impact on performance) is not supported ( $p > 0.05$ ). However, H6 (that adding team members is negatively associated with performance) is strongly supported ( $p < 0.001$ ). The nonsignificant result for departures does not refute the basic model, since relationships are expected to be weaker at earlier stages of development.

In summary, teams with a larger initial number of members are likely to add even more members, but additions to teams are negatively related to achieving profitability, whereas departures from the team seem to be unrelated to achieving profitability.

## 5. Study 2: 5-year-old ventures

### 5.1. Methods

The second study was intended to analyze the effects of initial team size and changes in team composition in the first 5 years after start-up. A time period of 5 years was chosen because our initial case studies indicated that teams tended to stabilize within 5 years. Study 2 focused specifically on teams; therefore, we collected a greater volume of team-centered information than we did in study 1.

#### 5.1.1. Sample

To complete study 2, we selected all companies from the Utah State Department of Commerce that registered in Utah during 1993 in either the corporate or limited liability company form. The data collection process followed that proposed by [Dillman \(1978\)](#). Questionnaires were mailed to the individual listed as the president of each of 988 firms. One hundred and twelve questionnaires were returned as nondeliverable at the current address. A follow-up postcard was sent 1 week after the initial mailing, followed by a second mailing of the questionnaire 2 weeks later. One month after the second mailing, attempts were made to phone each of the presidents in nonresponding firms. A total of 620 companies were reached by telephone. This resulted in 65 more firms that consented to participate. Questionnaires were mailed to those who consented, resulting in 42 additional questionnaires returned. After the process was finished, we collected data from 183 firms, for a response rate of 21%. Because the response rate was relatively low, we checked to see if our 21% sample was representative of the population. We collected information from a random sample of 50 nonresponding firms about the number of founding team members, firm size in number of employees, sales level, and SIC codes. There were no significant differences between the responding sample and the nonresponding sample in number of employees, sales levels, or industry representation. Thus, we believe our sample to be representative of the population.

Fifty-nine of the companies reported start-up dates prior to 1993. The registration in 1993 represented a name change or an ownership change. Because we wanted to focus on companies in their first 5 years, those companies were dropped from the analysis, and analysis proceeded with 124 companies. Seventy-nine of the companies were initiated through team efforts; 45 companies were started by individual entrepreneurs.

## 5.2. Measures

### 5.2.1. Team size

Respondents were asked how many individuals were management team members at start-up. Individuals were considered to be members of the management team if they played a significant role in the day-to-day management of the company *and* held an equity position in the company.

### 5.2.2. Team heterogeneity

Respondents were asked to provide demographic information for each team member including years of industry experience, educational level, educational curriculum, gender, race, political affiliation, and religious affiliation. Consistent with much of the top management team literature (e.g., [Wiersema and Bantel, 1993](#)), we employed [Blau's \(1977\)](#) index to calculate heterogeneity for categorical variables, and the coefficient of variation for continuous variables. [Blau's \(1977\)](#) index was calculated as an indicator of team diversity for categorical variables including educational curriculum, gender, race, political affiliation, and religious affiliation. The coefficient of variation was employed to calculate demographic diversity for industry experience and educational level. The coefficient of variation converts the standard deviation to a value that can be compared between two number sets of different magnitudes. The coefficient of variation is expressed as a percent, and thus is a number that ranges from 0% to 100%. In addition, we asked presidents to assess the degree of competence of each team member in each of five functional areas: finance, marketing, general management, operations, and entrepreneurship. The coefficient of variation for each of these areas was summed to provide an overall measure of the degree of functional variation within the team.

### 5.2.3. Departures

Respondents were asked how many initial team members had ever left the company. Thus, for this study, departures are represented by the number of team members departing from the team.

### 5.2.4. Additions

Respondents were asked how many team members had been added. Thus, for this study, additions are represented by the number of team members added to the team.

### 5.2.5. Environmental dynamism

The environmental dynamism scale was borrowed from [Chandler and Hanks \(1994\)](#), who adapted it for use with new ventures. Environmental dynamism is measured by a five-item scale that referenced the degree of technological and product change in the industry. Coefficient  $\alpha$  for the scale is 0.76.

### 5.2.6. Stage of development

[Hanks et al. \(1993\)](#) showed that over 95% of the variance existing between firms at different stages of development is accounted for by size in the number of employees and business age.

Since we have controlled for age with our sampling procedure, we used the number of full-time equivalent employees as our measure of the stage of development of the firm.

### 5.2.7. Performance

Company presidents were asked to provide sales figures for each of the 5 years from 1994 through 1998. These were reported in 22 categories ranging from less than \$50,000 to more than \$10,000,000. In this study, we use sales growth as our measure of performance. Sales growth was calculated as the slope of the sales regression line from 1994 to 1998. Previous research shows that sales figures are reliable when self-reported ([Brush and Vanderwerf, 1992](#); [Chandler and Hanks, 1993](#)). Because the sample controls for venture age (5-year-old firms), sales growth provides a reliable estimator of performance that makes valid comparisons across 5-year-old firms.

### 5.2.8. Control variables

Company age is controlled by the sampling procedure. Only firms that were initiated in 1993 are included in the analysis. After reading the description of the major product or service, we divided firms into four groups: (1) manufacturing, (2) retail, (3) business services, and (4) other. A total of 89% of the observations fit within the manufacturing, retail, and business services categories.

## 6. Results

We used hierarchical regression to test H1-H4. These hypotheses use additions and departures from the team as dependent variables. Results are displayed in [Table 3](#). Teams are more likely to add members in unstable environments. The dynamism or instability of the environment does not appear to influence the number of departures. Thus, partial support is found for H1. H2 stated that the stage of development of the business would be positively related to turnover. However, there was no support for this hypothesis with either additions or departures to the team. H3 stated that initial team size would be positively related to turnover. In study 1, this hypothesis was supported with respect to additions, but not departures. In study 2, it was supported with respect to departures. Thus, between both studies, there is evidence that initial team size does impact turnover and H3 is partially supported.

We analyzed several different types of team heterogeneity to respond to H4. Results are displayed in [Table 4](#). Once again, industry groups were used as the control variables. There is marginal support ( $p < 0.10$ ) that heterogeneity in industry tenure and religious affiliation are positively related to departures. Heterogeneity in type of education, industry tenure, and functional specialization are positively related to additions ( $p < 0.05$ ), providing partial support for H4. Heterogeneity in industry tenure is the only construct related to both additions and departures, but different aspects of team heterogeneity are related to both additions and departures.

To test H5-H9, we used hierarchical regression analysis. Results from the regression analysis are displayed in [Table 5](#). The hypothesized form of moderation can be tested using

Table 3

Regression analysis using environmental dynamism, stage of development, initial team size, and external training to predict turnover in study II (Hypotheses 1–3)

Variable	Adds	Drops	Adds	Drops	Adds	Drops
Manufacturing	-0.11	-0.15	-0.06	-0.14	-0.07	-0.14
Retail	0.11	0.11	0.12	0.10	0.10	0.11
Business service	0.05	0.11	0.08	0.12	0.09	0.12
Dynamism	0.18*	0.04				
Team size			0.08	0.25**		
Stage of development					0.10	0.06
$R^2$	0.07	0.06	0.03	0.12	0.04	0.07
$F$	2.30*	2.25 <sup>†</sup>	1.24	4.92***	1.28	2.49*
$n$	124	124	124	124	124	124

<sup>†</sup>  $p < 0.10$ .

\*  $p < 0.05$ .

\*\*  $p < 0.01$ .

\*\*\*  $p < 0.001$ .

complementary moderated regression analysis (Venkatraman, 1989). The multiplicative effect may result in high levels of multicollinearity. However, Southwood (1978) demonstrated that a simple scale of origin transformation reduces multicollinearity and it remains a valid analytical tool for testing moderation. After the transformation, the  $t$  score associated with the interaction term is a valid estimator of the significance of the interaction term (Venkatraman, 1989).

Table 4

Moderated regression analysis using demographic and functional diversity to predict turnover in study 2 (Hypothesis 4) (5-year-old firms in the United States)

Independent variables	Departures		Additions	
	Base model	Full model	Base model	Full model
Manufacturing	-0.24	-0.22	0.03	-0.04
Retail	0.08	0.11	0.08	0.06
Business service	0.01	0.03	-0.11	-0.17
Blau's index, education type		-0.16		0.27**
CV years of industry experience		0.19 <sup>†</sup>		0.24**
Blau's index, gender		0.06		-0.12
Blau's index, religious affiliation		0.19 <sup>†</sup>		0.10
Blau's index, political party		0.16		0.05
CV functional diversity		0.13		0.32**
$\Delta R^2$		0.15		0.16
$\Delta F$		2.63**		3.03**
$R^2$	0.08	0.23	0.03	0.19
$F$	2.24*	2.59**	1.01	2.40**
$n$	124	124	124	124

<sup>†</sup>  $p < 0.10$ .

\*  $p < 0.05$ .

\*\*  $p < 0.01$ .

Table 5

Hierarchical regression analysis predicting performance in study 2 (Hypotheses 5–9) (5-year old firms in the United States; dependent=sales growth)

Independent variable	Control variables	Base model	Full model
Manufacturing	0.32*	0.32 <sup>†</sup>	0.19
Retail	0.10	0.11	0.05
Business service	0.23	0.24	0.05
Number of start-up team members		0.09	0.07
Team members added		-0.02	-1.96***
Team members departing		-0.02	2.09***
Venture stage of development		0.10	1.15***
Industry dynamism		-0.04	-0.05
Stage of development×Additions			-5.11***
Stage of development×Departures			5.85***
Industry dynamism×Additions			0.39*
Industry dynamism×Departures			-0.63***
$\Delta R^2$		0.02	0.27
$\Delta F$		0.29	7.35***
$R^2$	0.05	0.07	0.34
$F$	2.07 <sup>†</sup>	0.81	4.36*
$n$	124	124	124

<sup>†</sup>  $p < 0.10$ .

\*  $p < 0.05$ .

\*\*\*  $p < 0.001$ .

In the first step, the control variables for industry membership are entered into the equation. In the next step, the research variables were entered. No direct effects on sales growth for team departures or additions were found. Thus, H5 and H6 were not supported in

Table 6

Summary of results

Hypothesis	Results	Study 1	Study 2
H1: Dynamism positively related to turnover	Table 3	Not tested	Supported
H2: Company stage of development positively related to turnover	Table 3	Not tested	Not supported
H3: Initial team size positively related to turnover	Tables 1 and 3	Supported additions	Supported departures
H4: Team heterogeneity positively related to turnover	Table 4	Not tested	Partial support
H5: Departures positively linked to performance	Tables 2 and 5	Not supported	Not supported
H6: Additions negatively related to performance	Tables 2 and 5	Supported	Not supported
H7: Dynamism a moderator of the link between turnover and performance	Table 5	Not tested	Supported (additions); reversed (departures)
H8: Stage of development a negative moderator of the link between departures and performance	Table 5	Not tested	Supported
H9: Stage of development a positive moderator of the link between departures and performance	Table 5	Not tested	Supported

the second study. In the third step, we entered the interaction terms. The full model makes strongly significant contributions and all interaction terms are significant. The results indicate that stage of development enhances the positive effect of team departures and the negative effect of team additions, supporting H8 and H9. Task environment dynamism creates a positive effect of team additions, supporting H7a. This occurs at higher performance levels. Interestingly, in the relevant range of the regression, the positive interaction effect occurs at lower performance levels. Task environment dynamism enhances a negative rather than a positive effect of team departures, which reverses H7b.

In summary, study 2 provides evidence that departures from the team are increasingly related to sales growth performance as the company develops. Additions to the team become increasingly negative as the venture develops. As can be seen in [Table 6](#), the results across both studies are generally consistent, painting a picture largely supportive of our hypotheses, but somewhat contrary to popular wisdom.

## 7. Discussion

Because research on the dynamic nature of new venture team membership is in its infancy, we built on the top management team literature and the literature on turnover to develop our hypotheses. We hypothesized that larger initial team size would be associated with more team departures and team additions in both our samples. We found that the greater the number of members in emerging ventures, the more likely they were to add members, but size had no effect on team departures. Conversely, the greater the number of initial members in the team of 5-year-old ventures, the more likely they were to drop members, but size has no effect on team additions. That team size does influence turnover is evident, and we speculate that the stage of development plays an important role in determining how. We suspect that this may be the result of a liability of newness. In order to attract team members at earlier stages when the organization is more unstable and at higher risk, it is necessary to provide greater incentives, either monetarily or through equity sharing. A new organization that has more critical mass may be considered more legitimate, and thus be perceived as more attractive ([Meyer and Rowan, 1977](#)). Thus, the upside potential of significant equity gains, combined with more legitimacy, may be sufficient incentives to attract a particular segment of potential team members.

We also examined the effects of team heterogeneity on turnover in one of our samples. Building on previous studies (e.g., [Wiersema and Bantel, 1993](#)), we hypothesized heterogeneity to be related to subsequent turnover in the team. We found support for three out of six indicators of heterogeneity, viz., major field of education, years of industry experience, and diversity in functional expertise. These indicators all relate to the work activities that individuals perform in the firm, suggesting that individuals bring into the work environment cultural and disciplinary perspectives that impact the organizational dynamic. Teams composed of members whose disciplines and employment background yield alternative paradigmatic approaches appear to result in higher turnover, perhaps due to increasing levels of conflict ([Amason and Sapienza, 1997](#)). We also found that heterogeneity



in religious affiliation had a marginally significant effect on departures. This finding may indicate that differences in core values translate into work-related conflict. Other demographic characteristics did not have a significant impact on turnover.

After analyzing the antecedents of turnover, we moved to our hypotheses regarding outcomes. We hypothesized that departures from the team would be positively related to performance. Building on the insights from the lifecycle literature, we also hypothesized that this relationship would be moderated by stage of development so that the effect of dropping members from the start-up team would become increasingly positive as the venture develops. While the former hypothesis received no support, the latter did. Similar results were achieved for team additions. Adding members hurt performance for emerging ventures in our first study, but in our second study, it was only when we considered the interaction with stage of development that team additions affected performance. A comparison of the main effects and contingent relationships indicates that the influence of team turnover on performance might be misinterpreted if the stage of development of the new venture is not considered.

These findings move the literature forward by providing evidence that lifecycle and growth theories are important complements to the top management team literature when seeking to understand the dynamics of new venture teams (e.g., [Hannan and Freeman, 1977](#); [Slater, 1966](#); [Van de Ven and Poole, 1995](#)). As the organizational ethos is in developing stages, it may be particularly difficult to incorporate outside agents into the tasks necessary for functional group formation and transition. Emerging organizations have yet to establish sufficient organizational legitimacy ([Aldrich and Fiol, 1994](#); [Singh et al., 1986](#)) to shoehorn new team members into the expected mold. As a result, they appear to pay a considerably higher price for incorporating new members than for eliminating existing ones.

There may also be an issue regarding direction of causality. Does the disruption caused by new members result in poorer performance, or do unmet performance expectations prompt existing team members to look for an external savior? In the latter case, adding team members may be a symptom of poor performance, resulting in within-team conflict because expectations are not achieved. In either case, adding team members appears to be increasingly disruptive as the organization develops. We point out, however, that these findings may hold only during the first 5 years of a new venture, since we did not investigate beyond that range.

With respect to departures, as business concepts stabilize and the roles and work tasks of team members are clarified (e.g., [Flamholtz and Randle, 2000](#); [James and Soref, 1981](#)), it is easier to assess how individuals contribute to performance targets in these stages. As a consequence, departures from the team are likely to be increasingly functional in ventures that have reached more advanced stages of development than in less developed stages.

Taken together, these findings suggest that removing members from the new venture team increases performance as the new venture develops, while the risk of hurting it through such changes decreases. On the other hand, adding members to the team at very early stages of development could be risky, and adding them as the organization reaches more advanced stages of development, during the first 5 years, has significant negative performance implications.

The dynamism of the task environment also seems to influence teams. New ventures in unstable and unpredictable task environments appear to be more likely to try to address

unforeseen and unforeseeable contingencies by adding members to the team, and this appears to be a successful strategy. The negative consequences of team additions do not materialize in these environments. Team departures in dynamic environments tend to have a negative influence on growth. Although this contradicts our hypothesis and general findings, it is consistent with a human capital perspective (Dess and Shaw, 2001). The specific finding that industry dynamism is a negative moderator of the relationship between departures and performance coupled with the finding that industry dynamism is not associated with departures of team members suggests that members leave predominantly for reasons not directly linked with the task environment such as loss of interest or within group interpersonal dynamics.

In summary, new firms may be characterized as being highly dynamic, nonbureaucratic, and highly cohesive—all factors that favor cohesive team membership and suggest a liability and destabilizing influence of adding new members. Thus, while well-established organizations provide an opportunity to inculcate a newcomer with existing values, our findings suggest that new team members seem to be added successfully only when the task environment dynamic.

### *7.1. Implications for future research and practice*

This combined study illustrates the advantage of jointly analyzing two samples at different stages of the start-up phase. We believe that this technique provides richness in the findings that cannot be achieved when examining samples individually. Our findings suggest that there are some marked differences between prestart-up and poststart-up ventures. We believe that our findings regarding the effects of dropping and adding people in emerging and new ventures provide insights that should stimulate further research.

In order to understand the role of new venture teams, their dynamic characteristics need to be taken into account. The competence, skills, and collaboration of team members are probably very important to new venture outcomes. However, the composition of many new venture teams change, leading to changes in competence, skills, collaboration and—as suggested in this paper—new venture outcomes. Further, the consequences of such changes seem to differ depending on how far the new venture has developed. Researchers should therefore take into account the changes that new venture team go through, as well as how far they have developed. A static assessment of team characteristics may give misleading results.

The findings of this study have some rather clear implications for practice. In accordance with these results, it appears that adding team members during start-up through the first 5 years of the business is detrimental except in highly dynamic environments. In contrast, dropping team members during start-up does not appear to be detrimental, and dropping them after start-up during the first 5 years of operation appears to be significantly beneficial. It appears that, within reason, larger start-up teams are preferable. This implies that the best strategy for emergent organizations may be to ensure that a sufficient number of individuals are onboard right from the very start, recognizing that some may depart. The alternative scenario, beginning with a group not large enough to survive the initial maturation of the organization and adding members as required, appears to be very costly from an organizational perspective except in highly dynamic environments. As the new venture

develops and matures, it becomes clearer who contributes to the team and who does not, as well as if new skills are needed. Therefore, it appears beneficial to wait until these later stages of development before determining who is really redundant, ineffective, or disinterested.

## 7.2. Limitations

In addition to the limitations of time frame, we are constrained to mention an additional caveat with respect to these studies. There are obvious differences in culture and business environment between the Swedish and U.S. samples. As a consequence, some of the effects we have attributed to the stage of development might also be attributable to cultural and environmental differences. [Hofstede \(1984\)](#) shows that the United States and Sweden are relatively close to each other with respect to individualism, power distance, and uncertainty avoidance. In his plots showing overall cultural similarity, the United States and Sweden are in two different but closely associated clusters. For example, Norway, Canada, and the United States fall in one cluster with Sweden, Great Britain, and Denmark in a closely adjacent cluster. This suggests that there are many more similarities than dissimilarities between the cultures of the United States and Sweden. As a result, we cannot eliminate a competing cultural explanation, but believe venture stage of development and environmental dynamism to have a greater influence than cultural differences.

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