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# THE IMPACT OF PAST PERFORMANCE ON THE EXIT OF TEAM MEMBERS IN YOUNG FIRMS: THE ROLE OF TEAM COMPOSITION

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# THE IMPACT OF PAST PERFORMANCE ON THE EXIT OF TEAM MEMBERS IN YOUNG FIRMS: THE ROLE OF TEAM COMPOSITION

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## ABSTRACT

We investigate the impact of past performance and team composition on exits of members from entrepreneurial teams. Not only does the homophily principle guide team formation, but it also seems to drive exits from teams. Our findings suggest that greater internal diversity along some but not all demographic dimensions is positively associated with a higher rate of team member exits. At the individual level, we find that the more individuals deviate from the norm in terms of age, the more likely they are to leave a team.

## INTRODUCTION

Entrepreneurship research has moved from a focus on individuals to an understanding that entrepreneurial teams play a crucial role in the development of new firms. Recent contributions suggest that entrepreneurial teams are characterized by substantial dynamics. One important such dynamic is that individuals are added to or dropped from the team during the development of the firm. However, the dynamics of these processes are poorly understood. Therefore, we focus on how venture performance and team characteristics influence the exit of team members. To understand this process, we rely on theories of homophily, social identity, and social categorization theory.

## THEORY AND HYPOTHESES

We examine three hypotheses. First, we anticipate that negative past performance influences the likelihood of exits from a team. Second, we expect that greater internal diversity is associated with a higher rate of exits. Third, we believe that the more individuals differ from other team members in terms of certain demographic characteristics, the more likely they are to leave.

### Performance and Turnover

Much of the current research on entrepreneurial teams relies on upper echelon reasoning, addressing how team characteristics influence performance, adopting a unidirectional approach (e.g. Chandler, Honig, & Wiklund, 2005; Ensley, 1999). However, some research indicates that past performance might influence team composition. For example, Wagner et al. (1984) found that poorly performing firms had higher turnover rates. They argued that the cost of replacing top management team members was so high that only very poorly performing executives were replaced. On entrepreneurial teams in young firms, poor performance will be especially worrisome and thus we might expect that members will be under strong pressure to hold others accountable. Members might leave because they are dissatisfied with their team's performance or because they have been targeted as responsible, but in either instance, we anticipate that:

*H1: Negative past performance influences the likelihood of a person exiting a team.*

### Homophily

Why is it that we prefer to form groups with certain people? This question has long occupied social psychological as well as organizational scholars. Frequently, group formation has been studied by looking at either the emergence of natural groups or at the creation of work groups and top management teams within established organizations. These two settings are rather distinct. In the case of natural groups, a group usually emerges through the preferences of the individuals who wish to

associate with one another, such as in friendship groups. In the case of deliberately formed groups, outsiders' influences create a group that would not otherwise form on its own. For example, someone within a firm might deliberately put together a multi-disciplinary team to perform a certain task within a limited time. Entrepreneurial teams represent a hybrid of these two types and thus constitute a unique setting for studying group formation. Entrepreneurial team formation is likely to be decided on by the team members, but they also have an instrumental focus that we believe will affect their composition. For example, the tasks at hand might call for specific competencies to be represented on the team and thus require a deliberate recruiting effort to find the most competent person. Therefore, this setting is highly interesting since the social psychological processes governing natural group formation are likely to be in place at the same time as a team faces pressures for group success at the instrumental level.

Two theories within social psychology shown to be robust in different contexts are the theories of social identity and social categorization. Identity and categorization processes are closely interrelated. They do however, have some distinguishing features. Social identity theory has primarily been concerned with prejudice and the conditions under which groups adopt a "we against them" stance. Social categorization theory builds on social identity but recognizes individual differences by also considering members' possible "me against us" views. Closely linked to these two theories is the similarity attraction principle which leads people to associate with similar others, following the principle of homophily ("birds of a feather flock together"). Homophily is an important mechanism in the formation of social networks (McPherson, Smith-Lovin, & Cook, 2001) as well as in entrepreneurial team formation (Ruef, Aldrich, & Carter, 2003). According to social identity theory, demographic attributes that are easily detected can indeed be socially meaningful (McGrath, Berdahl, & Arrow, 1995; O'Reilly, Caldwell, & Barnett, 1989; O'Reilly, Williams, & Barsade, 1998).

In this paper we focus on readily detectable demographic differences: age, sex, country of birth, prior industry experience, as well as type and length of education. In contrast, most studies conducted on group diversity merely focus on one or two types.

*Gender*. Most adults have rather sex-integrated social networks. In their review on homophily in social networks McPherson et al. (2001) concluded that homophily based on gender is not as strong as homophily based on race and education. However, it is well established that in business networks, men tend to socialize more with other men, while women show lower levels of segregation between the sexes. The extent of segregation depends on the context (Jackson & Joshi, 2004; Mehra, Kilduff, & Brass, 1998). Because we are studying new start-ups, we expect homophily on gender in our sample. Furthermore, within organizations it has been shown that men socialize with other men whereas women also socialize a great deal with men (Sachdev & Bourhis, 1991). This could be due to a status effect (O'Reilly, Williams, & Barsade, 1998), i.e. women are viewed as being in minority and therefore have a lower status. According to distinctiveness theory, which is an extension of social identity theory (Mehra, Kilduff, & Brass, 1998), people belonging to lower status groups often aim to socialize with higher status groups as an attempt to become identified with this group. Findings also reveal that relational conflicts are larger when groups are diverse in terms of gender (Jehn, Chadwick, & Thatcher, 1997). Litz and Folker (2002) however, found that top management teams that were gender-balanced also reported superior profitability. In terms of team member turnover, Chatman and O'Reilly (2004) found that men and women differed in their reactions to diversity in terms of sex. Their findings revealed that men were more likely to leave work groups as the proportion of women increased, whereas women were more likely to leave homogenous or balanced workgroups. These findings support the work of Tsui, Egan and O'Reilly (1992) who found that being in a minority in terms of gender affected men more negatively.

Based on our review of the literature, we believe that homophily in terms of gender will be an important aspect of exits from teams. We note that many teams consisting of two people are actually significant others, such as a spousal pair. At this stage, we have no information on whether this is the case, but in the near future we intend to add this information.

*Age*. Within friendships there is a strong degree of age homophily, i.e. people tend to socialize with others of similar age. Age grouping within schools is one factor causing homophily. People

sometimes view a person's age as a proxy for experiences and knowledge, which in turn affects what status is ascribed to that person (Tsui, Xin, & Egan, 1995). There is some evidence suggesting that social integration is associated with diversity in age (O'Reilly, Caldwell, & Barnett, 1989). However, Jehn et al. (1997) found that diversity in visible individual demographic characteristics such as age increased relational conflicts. Zenger and Lawrence (1989) found that similarity in terms of age had a positive effect on the frequency of technical communication taking place within a research division of an electronics company, although these results have been questioned in later research (Lawrence, 1997). Turnover within top management teams has been found to be related to age diversity (Jackson et al., 1991; O'Reilly, Caldwell, & Barnett, 1989; Wagner, Pfeffer, & O'Reilly, 1984; M. F. Wiersema & B. J. Bird, 1993; Williams & O'Reilly, 1998). It is reasonable to expect that higher age diversity in entrepreneurial teams is likely to lead to more turnovers.

*Race*. Within the American context, race is the most influential characteristic on which individuals categorize themselves and others, and homophily on this attribute is exceptionally strong (McPherson, Smith-Lovin, & Cook, 2001). Individuals in a racial minority are less prone to stay with an organization (Tsui, Egan, & O'Reilly, 1992). Findings from the U.S. regarding race are probably not directly applicable in a Swedish context. However, it is likely that country of birth has some impact on social processes, implying possible homophily with regard to whether people are immigrants or native-born Swedes. Nationality of group members has been found to have important influences on team processes and performance (Bochner & Hesketh, 1994; Watson, Kumar, & Michaelsen, 1993; Verkuyten, de Jong, & Masson, 1993). In relation to entrepreneurial teams, homogenous teams based on country of birth are to be expected. Diversity on this aspect is likely to have a negative effect during the early stages of the firm's life.

*Education*. Networks have been shown to be rather high in homophily regarding education (McPherson, Smith-Lovin, & Cook, 2001). People are more likely to form ties with others sharing the same educational level. Depending on the type of relation, educational homophily tends to be more or less pronounced, e.g. in less intimate ties educational homogeneity appears to be more important than in more intimate ties such as marriage. Educational levels within the team could be viewed as sources of informational diversity, resulting in task related conflicts (Jehn, Chadwick, & Thatcher, 1997). Depending on what type of knowledge is needed, however, it could be argued that in certain contexts homophily is preferred whereas in others, heterogeneity offers more advantages. It is likely that teams are rather similar in terms of education, both in regards to type as well as length. However, if a team consists of a husband and a wife, there might be more diversity in education based on the reasoning above. At this stage we can not directly test for this possibility.

*Team size*. It can be argued that the reason for teams generally performing better than solo entrepreneurs is that they have access to a larger resource bundle. Interpreted this way, one could easily come to the conclusion that the more the merrier, i.e. the larger the team the better. But is that always the case? Size is one of the most common variables employed when examining the relationship between a founding team's characteristics and performance. Cooper and Gimeno (1992) reviewed a number of studies that investigate this relationship and found that six out of ten studies concluded that larger teams were better performers. In their study of 98 US semiconductor firms, Eisenhardt and Schoonhoven (1990) also favored larger teams and proposed that they allowed for more specialization in decision-making, which leads to faster decisions being made since responsibility can be shared among more people. Roberts (1991) found that larger teams perform better, suggesting that the more is indeed merrier. However, there are studies suggesting the opposite, i.e. larger teams face more conflicts (Amason & Sapienza, 1997) and that team size has no significant impact on performance (Ensley, 1999). It may very well be the case that there is a need for a critical mass of people coming together in the entrepreneurial team. Considering that some studies suggest that very large teams imply more conflicts and inertia, it is possible that beyond a certain point, the positive effect levels off and perhaps even becomes negative. It is also important to note that the larger the team, the more likely is the team to be heterogeneous on other variables, e.g. age, which we control for in our analyses.

*Prior industry experience*. Some observers have argued that industry-specific experience is positively associated with the success of entrepreneurial teams (Birley & Stockley, 2000). There are a

number of possible reasons for why this is the case. First, experienced team members are familiar with customers, suppliers, and competitors and are therefore better able to evaluate and tackle strategic issues (Cooper, Gimeno-Gascon, & Woo, 1994). Second, it is also reasonable to assume that they have better developed networks within the industry that they can use as a resource in the venture. Siegel et al. (1993) found that the only difference in the top management team between low and high growth firms was prior industry experiences, which could be considered a proxy for more subjective attributes. Within the entrepreneurship literature, industry experience has been found to be important for the new venture performance (Chandler, 1996; Chandler & Jansen, 1992; Cooper, Gimeno-Gascon, & Woo, 1994; Siegel, Siegel, & MacMillan, 1993).

In summary, pressures toward homophily strongly affect entrepreneurial team formation, resulting in teams that are much less diverse than would be expected, based on the populations from which members are drawn. Moreover, empirical research on various kinds of teams across a wide range of demographic dimensions suggests that there are more changes in the composition of teams when they are diverse. We believe there are strong reasons to expect that the homophily principle is applicable to understanding the conditions under which entrepreneurial team members exit. Therefore we hypothesize that:

*H2: Teams that have higher levels of diversity are more likely to experience team member exits.*

*H3: Individuals that are less similar to other team members in terms of certain characteristics are more likely to leave the team.*

## METHOD

### Research Design and Sample

To test these hypotheses, we have constructed a unique database. It covers all individuals entering into self-employment in knowledge-intensive industries in Sweden during the 1996 to 2000 period. Their firms are tracked annually up to 2002, providing us with a census panel three to seven years long consisting of five cohorts. This is done by using secondary data from Statistics Sweden (SCB). By the help of experts from Statistics Sweden, we combined a number of different registers to create a database covering information on individual as well as firm level.

Entrepreneurial teams, defined as two or more individuals who jointly own and work in the firm from its inception, are singled out for the analyses. The firm is identified as a start up the first year there is any economic activity taking place. This means that the firm can have a negative, a positive or a zero profit, just as long as there are any costs incurred or sales taken place. Consequently, we identify firms at a very early stage in their life. Nonetheless, we have not fully overcome the problem of success bias, because we firms only enter into the database after they have successfully completed the organizing process. Furthermore, the firms identified are limited liability companies. The requirements for starting such businesses in Sweden is an initial investment of at least 100 000 SEK (approximately 10500 euros). This in turn implies that there is an initial barrier for firm entries. However, as we are not interested in predicting start-ups per se, but the development of team composition over time, we believe that this does not constitute a problem.

During the observation period, there were 1,417 teams started in total involving 3,787 individuals; 1,014 individuals exited during the observation period and only 278 individuals entered the existing teams. The number of teams started per cohort ranges between 215 and 376. The average team size at start ranges between 2.62 and 2.91. For each cohort, the teams tend to become fewer and smaller over time.

### Analyses

Both $Chi^2$-tests and logistic regressions are used to study our hypothesized relations. More precisely, event history analysis is used for these panel data because it gives unbiased estimates,

treating teams that did not have any departures as censored in the year that we last observed them. Because we rely on yearly observations, and events leading to our observed measures may occur any time during the year, we follow prior studies using similar data in applying discrete-time logit analysis (Palmer, Jennings & Zhou, 1993; Fischer & Pollock, 2004). The xtlogit command with random effects in the software STATA is used. For each analysis we start by running a base model consisting only of the control variables. Thereafter, the independent variables are included in the analyses. Appendices 1 and 2 present the correlation tables and descriptive statistics for the variables included in the analyses.

When doing the analyses, only exits from firms that continue to survive are investigated. Furthermore, in order to be able to look at the diversity variables, it is important that there in fact can be any diversity within the team. Therefore, the year prior to exit the team has to consist of at least two individuals. Without taking this into account we would risk inflating the results since teams where only one individual is left would be included in the group of no exits. This means that a team consisting of two individuals at start in 1997 could consist of only one individual in 1998 through 2002. If this person is included in the analysis predicting exits in 2002 the diversity measures would all be zero and imply that low diversity lowers the likelihood of exits. Even if this is what we predict, the results are likely to be inflated if this is not dealt with. That is the rationale for only analyzing exits from teams larger than or equal to the size of two. If a venture shut down, then that team was treated as right censored in the year it was discontinued. Therefore, we treat all teams that were discontinued or were reduced to only one individual as right censored in the analyses. In the analyses we have controlled for cohort effects, but as there were no effects we have not presented these in the results section.

**Variables and Measures**

*Exit* is our dependent variable and it is measured both on the individual and the team level. It is measured on a yearly basis as an individual no longer sharing ownership and working in the company. This variable can either take on the value of 0, for no exit, or 1, if an exit occurred. At the team level exits also take on the values of either 0 or 1. The variable is coded 1 if at least one exit took place during the year. It does not reveal if there are several individuals leaving the team that year.

*Calculating variation and diversity*. In order to calculate diversity on continuous variables the coefficient of variation is used. It is calculated as the standard deviation divided by the mean of each team. This measure is used for variables such as age, salary and years of education. When the variables are categorical we have instead computed the Blau index, which is frequently used for measuring diversity. It is computed by $1\text{-}\Sigma pi^2$, where $p$ is the proportion of team members in a category and $i$ is the number of categories within each team. The higher the value of Blau's index the more diverse is the team. It is however worth pointing out that the value of e.g. sex is not directly comparable to the value of education type. This is because the theoretical maximum of each index varies depending on the number of possible categories. For type of education, the highest value is one as there are many different categories on type of education. For sex on the other hand, the most diverse teams obtain a value of 0.5. When conducting $Chi^2$-tests the diversity measures have been split into different groups, depending on which percentile they belong to. Thereby, we have created variables indicating whether the diversity is low, medium or high. For some variables we were only able to produce two groups, i.e. low or high. Where possible, the cut off point has been the 33$^{rd}$ and the 66$^{th}$ percentiles. For sex, we had to use the 25$^{th}$ percentile as the splitting point because the values were right skewed and many took on the value of .5. We used the 50$^{th}$ percentile for country of birth and education type and years.

Age, sex, type and length of education, country of birth as well as prior industry experience constitute the compositional variables investigated.

*Age* is measured in years. We calculated the coefficient of variation at a team level. To measure the deviation on an individual level, we have made use of the absolute deviation from the mean age in years. E.g., an individual of 32 years of age belonging to a team with a mean age of 41 obtains an absolute deviation score of 9.

*Sex* is a dummy variable with men having the value of zero and women the value of one. In order to calculate variation on this variable, we applied Blau's index.

*Type of education* consists of 26 different categories based on the international standard for educational classification (ISCED 97), using the two digit level. We applied Blau's index for calculating diversity.

*Years of education* is measured as the number of years of schooling. The years range between five and twenty years. The coefficient of variation is used for computing variation within the team. On an individual level the absolute deviation in years from the team mean is used.

*Country of birth* (Cob) states in what geographic region a person is born and it consists of eleven categories. Namely, Sweden, the Nordic countries (Sweden excluded), EU15 (except Denmark and Finland), new EU countries (except EU25 and the Nordic countries), North America, Oceania, "USSR," Asia, South America and Africa.

*Prior industry experience* is based on industry affiliation. The industry affiliation is grouped into 30 different categories based on a two digit industry classification code (in Sweden SNI02 which is adapted to the European NACE classification). Each individual receives one observation on this variable by identifying the latest observed industry affiliation that an individual possessed prior to joining the team. We used Blau's index to calculate variation on this variable.

*Profit* is the performance of the firm as reported to the tax authorities. It is measured as the result after financial incomes and expenses and it is a continuous variable.

*Team size, mean age* and *salary* are control variables used. The former two are controls on a team level and the latter is a control for the individual level. *Team size* is the number of individuals on the team each year. This variable is frequently used as a proxy for diversity. The more people on a team the more diverse it is likely to be. A majority (67 %) of the teams in our sample were started by two persons. *Mean age* is calculated as the mean age of all the individuals that are members of the team on a yearly basis. We used this variable as a control because age and departures are likely to be related. *Salary* is measured as the total taxable income an individual receives during a year. In the analyses it is a lagged variable so that the salary an individual had at time *t-1* is likely to impact the decision to leave a team at time *t*.

## ANALYSES AND RESULTS

### The Impact of Past Performance

Hypothesis one, which predicts that negative past performance will influence the likelihood of a person exiting a team, is tested by conducting a $Chi^2$-test and by including past performance in a logistic regression. The results from these analyses are presented in table 1 and 2. In table 1 all the compositional variables as well as past performance are cross tabulated against team member exit. According to the $Chi^2$-test there is a statistically significant difference in team member exits when comparing teams with different profit levels. The group with low profits has a slightly higher exit rate. However, looking at the small differences in distribution between the groups the relationship between past performance and team turnovers appears to be rather weak. Turning to the logistic regression in table 2 it is therefore no surprise that past performance is insignificant. It is possible that past profit is not optimal for measuring past performance, especially because we focus on young firms that often experience a few years with very small profits. At this stage, when measuring past performance in terms of profit, we do not find support for hypothesis 1.

### The Impact of Diversity

According to hypothesis two we anticipate that teams showing high levels of diversity will experience more team member exits. The results in table 1 indicate that for all compositional

variables, except for sex diversity, the most diverse groups also exhibit higher turnover levels. This is especially true in terms of age diversity and industry experience diversity. Sex diversity on the other hand negatively correlates with team member exits. The more sex diverse, the less likely is a team to have any members exiting. This may be strongly driven by the fact that spousal pairs often start new ventures. If someone runs a firm together with a significant other one has reason to believe that they have strong incentives to stick together besides firm instrumental reasons. At this stage, we have not been able to control for this, but in future work we will also consider spousal information.

In table 2 all variables along with the control variables are included in a logit analysis. Model 1 only contains the control variables and in model 2 the independent compositional variables are added. The control variables of team size and mean age of the team both have an impact on the likelihood of team member exits. Thus, the larger the team size the larger the likelihood of team member exits and the higher the mean age the less likely the occurrence of team member exits. However, the mean age of the team has a rather small negative effect that becomes insignificant in model two. Turning to the independent variables, we find that the coefficient of variation in age has a positive relation with team member exits, implying that increased diversity in age makes the team less stable. Blau's indices of industry experience as well as type of education also have a positive relation with team member exits. The Blau index of sex on the other hand has a negative impact on exits. Considering that many teams in fact consist of married or partners, this is not a surprising finding. Instead, as mentioned previously, it is important to control for this in the future.

Interpreting the results from a logit model is somewhat different from an OLS as the outcome variable takes on a binary value. Therefore, in order to better explain the impact of a predictor it is common to convert its coefficient into odds ratios. This is done by taking exp(coef). The odds ratios will then tell us how much larger the odds are for being in the highest group of the dependent variable, i.e. the team experiencing team member exits or not, when the independent variable increases with one unit. Looking at team size, the odds of having team member exits become 1.3 times higher when the team size increases with one person (exp(0.26)). For the age coefficient of variation these odds increase drastically when the coefficient of variation increases with one unit, more precisely the odds are 70 times higher at such an increase (exp(4.27)). For sex diversity the odds become smaller, i.e. 0.34, meaning that more diversity in terms of sex is good for team stability. An increase in industry experience by one unit increases the odds for belonging to the group with exits by 1.68 times and for type of education the equivalent number is 1.52. It is important to remember the nature of the independent variables when interpreting these results. A one unit increase in team size is rather straight forward, i.e. having a team of four as opposed to three members. However, for the diversity variables a one unit increase is a bit more complex to visualize. For all of the diversity measures it is rather difficult, or even impossible, to have a one unit increase. E.g. in the data analyzed the values for the age coefficient of variation ranges between 0 and 0.81, for sex diversity it ranges between 0 and 0.5 and for type of education it ranges between 0 and 1. Therefore, we can not have a one unit increase in age or sex diversity. However, the likelihood of belonging to the teams that experience exits is still much higher for the teams diverse in terms of age (as the coefficient is very large). For diversity in industry experience and type of education, there are teams with a value of one, but having a one unit increase means that one needs to move from complete homogeneity to full diversity. For sex, on the other hand, a one unit increase is impossible to occur. However, the odds do decrease as the team becomes more diverse in terms of sex. Based on the explanation above the use of odds may be a bit misleading but it is an analytical tool that eases the interpretation of the results. Diversity in years of education and country of birth do not appear to have an impact.

In sum, the results suggest that there are indeed differences in diversity between the groups that experience exits. More precisely, age, industry experience and type of education diversity seem to increase the likelihood of team member exits. As this study is currently at an early stage, one cannot draw too strong conclusions, but the results indicate that diversity on certain compositional dimensions is related to the exits of team members from a team, lending tentative support for hypothesis 2.

### The Impact of Absolute Deviation on an Individual Level

Hypothesis three predicts that individuals who are less similar to other team members in terms of certain characteristics are more likely to leave the team. We display the results from chi2-tests in table three. Individuals exiting the teams are compared to the ones that are staying in the teams. The variables on which deviation measures have been calculated are age and years of education. According to the chi2-tests we can see that the distribution on both deviation variables differ significantly between the two groups, i.e. the difference is not likely to be due to randomness. Absolute deviation in terms of age has the largest impact. The impact of deviation in terms of years of education is smaller. See Tables 3 and 4.

Continuing with multivariate analyses, table 4 presents the results from the logit model on the individual level. The first model is a base model only including the control variables salary, household wealth, sex and age. The second model includes also the independent deviation variables. Two of the four independent variables have an impact on the likelihood of an individual exiting a team. The older an individual is the less likely he or she is to exit the team. A higher salary also decreases the likelihood of exits. The odds for the former are 0.97 and the odds for the latter are very close to but still below 1. In order to better understand the odds of salary, it might be appropriate to rescale this measure as a one SEK (Swedish Krona) increase in salary is extremely small (approximately 0.1 Euro). Sex and household wealth do not turn out to have a significant impact on the exits of individuals. Model two tests the relationships between the deviation measures and exits. The control variables are still significantly related to the exits of individuals from teams. Additionally, the higher the deviation in terms of age the higher is the likelihood of exits, the odds increase with 1.09 (exp(0.09)). Deviation in terms of years of education on the other hand is not found to have an impact. These results lend some support to the notion that individuals more different on certain characteristics are more likely to exit a team. At this stage we have only investigated two deviation measures and further aspects of deviation need to be studied in the future. Furthermore, these results should be interpreted with caution as we have not controlled for the dependence between the observations. As individuals belonging to the same team are likely to be influenced by the actions of other team members, this aspect is critical to look further into before arriving at any clear conclusions.

## DISCUSSION AND CONCLUSIONS

Over the past decade, entrepreneurship research has moved from a focus on individual entrepreneurs to an appreciation of the role entrepreneurial teams play in the development of new firms. Recent contributions suggest that entrepreneurial teams are highly stable over time, but that individuals are occasionally added to, or dropped from, a team. Thanks to our unique database, we have been able to study such team departures over time. By applying theoretical principles of homophily, social identity, and social categorization theory, we have gained a greater understanding for how the tangible characteristics of team members affect the probability of their departures from a team.

Our first hypothesis, concerning the relationship between past performance and team member exits, was not supported. There are two possible explanations. Either performance does not play a role in this process or we have not been able to capture past performance efficiently. Perhaps measures such as return on assets would be a better proxy.

With regard to our other two hypotheses, team demographics appear to be important factors in the development of teams over time. Not only does the homophily principle seem to guide formation (Kim & Aldrich, 2004; Ruef, Aldrich, & Carter, 2003), but it also appears to drive the process of team member exits (Kim & Aldrich, 2004), lending support to the argument that social psychological processes are part of the team development. The strongest diversity and deviation measure that influenced team member exits concerns age. This is inline with previous findings concerning age and network characteristics as well as top management team turnover. As Sweden is a context where people in general do not socialize much over generation boundaries, the negative impact of age diversity on team turnover might be even stronger. Therefore, it would be interesting to compare these findings with a culture where age integration is larger.

Are exits good or bad? That is a question worth asking. In this paper our aim has not been to distinguish between different types of exits, i.e. if the exit is good or bad from a company's point of view. What we can say, however, is that when exits take place, they appear to partly be related to the diversity of the team. In that sense, similarity can be argued to be the putty holding the team together. One could also ask if it is the "right" person exiting the team or if it is more the case of a path of least resistance, i.e. is it easier to expel members that are different? Future research could focus on different types of exits as well as what happens to the team and the firm after the exit has taken place.

**Limitations**

Demographic attributes constitute social categories at a general level. We note that at lower levels other factors may be important from a diversity or similarity perspective. Such aspects relate to less visible factors such as beliefs and values. The lower level variables probably play a more important role in interpersonal attraction. However, these identities are less stable over time and context. The more readily detectable characteristics are almost always salient in social interaction because they are difficult to disregard (Lau & Murnighan, 2005). Nonetheless, not having more subtle measures diversity is a shortcoming of the current study.

At this stage, we have not been able to control for spousal relations, which is a weakness, as it will influence the expected relations. For sex diversity, for example, the expected positive relationship between sex diversity and member exits becomes negative if the members are also significant others. This needs to be controlled for in future studies. Furthermore, when studying individual deviations, we have only investigated two deviation measures and there are more we could test. Therefore, in the future we will include other aspects of deviations from the norm to obtain a more comprehensive picture.

Another limitation is that the current analyses on an individual level do not deal with the problem of dependent observations. This means that some of the estimates might be biased and inefficient. Therefore, in the future our analyses will control for these aspects, either by applying multilevel analyses or by using the gllamm program designed for STATA. This does not mean, however, that the results do not give support for our hypotheses, because the observations on the team level do not suffer from this problem.

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## Appendix 1: Correlation Table on Team Level

| Variable | Mean | s.d. | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Member exit | .0693546 | .2540772 | 1.00 | | | | | | | | |
| Team size | 2.636182 | 1.551568 | 0.24*** | 1.00 | | | | | | | |
| Age mean | 42.67996 | 8.958324 | -0.07*** | -0.11*** | 1.00 | | | | | | |
| Age (co.of var.) | .1141591 | .1420525 | 0.25*** | 0.32*** | -0.27*** | 1.00 | | | | | |
| Sex (Blau) | .4498699 | .1282879 | -0.08*** | -0.05*** | 0.31*** | -0.16*** | 1.00 | | | | |
| Cob (Blau) | .1037894 | .2546561 | 0.04** | -0.08*** | -0.05*** | 0.11*** | -0.14*** | 1.00 | | | |
| Industry exp. (Blau) | .3337066 | .2982049 | 0.04** | 0.04** | | | 0.05*** | 0.42*** | 1.00 | | |
| Profit (t-1) | 171660.6 | 2552919 | -0.04** | | | | | -0.03$^{\dagger}$ | | 1.00 | |
| Years of edu. (co.of var.) | .1129788 | .0966164 | 0.08*** | 0.11*** | 0.03* | 0.26*** | | 0.04** | | | 1.00 |
| Type of edu. (Blau) | .6223998 | .3769865 | | -0.06*** | 0.07*** | -0.14*** | | 0.19*** | 0.17*** | | -0.19*** |

Significance levels: $^{\dagger}$ p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001

## Appendix 2: Correlation Table on Individual Level

| Variable | Mean | s.d. | 1. | 2. | 3. | 4. | 5. | 6. |
|---|---|---|---|---|---|---|---|---|
| 1. Individual exit | 0.03 | 0.18 | | | | | | |
| 2. Salary(t-1) | 248753.8 | 261767.6 | -0.06*** | | | | | |
| 3. Household wealth (t-1) | 451448.4 | 2071590 | -0.02$^{\dagger}$ | 0.07*** | | | | |
| 4. Age | 41.3 | 11.4 | -0.08*** | 0.16*** | 0.14*** | | | |
| 5. Sex | 0.44 | 0.5 | 0.02* | -0.25*** | | | | |
| 6. Absolute age deviation | 4.48 | 5.42 | 0.17*** | -0.12*** | -0.02* | -0.20*** | | |
| 7. Absolute years of education deviation | 1.15 | 1.06 | 0.08*** | -0.05*** | | -0.07$^{\dagger}$ | 0.04*** | 0.29*** |

Significance levels: $^{\dagger}$ p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001

**Table 1: Chi2-Test Team Level (Counts and Percentages Are Reported)**

| Past performance | N | No exit | | Exit | |
|---|---|---|---|---|---|
| Low | 1 491 | 1 333 | 89.4 % | 158 | 10.6 % |
| Medium | 1 490 | 1 358 | 91.1 % | 132 | 8.9 % |
| High | 1 535 | 1 418 | 92.4 % | 117 | 7.6 % |
| Chi2 0.016 | | | | | |
| **Age (Coefficient of variation)** | N | No exit | | Exit | |
| Low | 1 465 | 1 411 | 96.3 % | 54 | 3.7 % |
| Medium | 1 427 | 1 349 | 94.5 % | 78 | 5.5% |
| High | 1 487 | 1 212 | 81.5 % | 275 | 18.5% |
| Chi2 0.000 | | | | | |
| **Sex (Blau's index)** | N | No exit | | Exit | |
| Low | 1 135 | 942 | 83.0 % | 193 | 17.0 % |
| High | 3 244 | 3 030 | 93.4 % | 214 | 6.6 % |
| Chi2 0.000 | | | | | |
| **Country of birth (Blau's index)** | N | No exit | | Exit | |
| Low | 3 756 | 3 445 | 91.7 % | 311 | 8.3% |
| High | 760 | 664 | 87.4 % | 96 | 12.6 % |
| Chi2 0.000 | | | | | |
| **Industry experience (Blau's index)** | N | No exit | | Exit | |
| Low | 2 343 | 2 256 | 96.3 % | 87 | 3.7 % |
| Medium | 2 884 | 2 797 | 96.3 % | 87 | 3.7 % |
| High | 779 | 556 | 71.4 % | 223 | 28.6 % |
| Chi2 0.000 | | | | | |
| **Years of education (Coefficient of variation)** | N | No exit | | Exit | |
| Low | 1 477 | 1 390 | 94.1 % | 87 | 5.9 % |
| Medium | 1 339 | 1 221 | 91.2 % | 118 | 8.8 % |
| High | 1 432 | 1 253 | 87.5 % | 179 | 12.5 % |
| Chi2 0.000 | | | | | |
| **Type of education (Blau's index)** | N | No exit | | Exit | |
| Low | 2 258 | 2 091 | 92.6 % | 167 | 7.4 % |
| High | 2 258 | 2 018 | 89.4 % | 240 | 10.6 % |
| Chi2 0.000 | | | | | |

**Table 2: xtlogit Predicting Team Member Exits (Team Level)**

| Variable | Model 1<br>Control variables | Model 2<br>Independent variables |
|---|---|---|
| Team size | 0.36*** | 0.26*** |
| | (0.04) | (0.03) |
| Mean age | -0.04*** | -0.02† |
| | (0.01) | (0.01) |
| Age (co. of var.) | | 4.27*** |
| | | (0.44) |
| Sex (Blau's index) | | -1.09* |
| | | (0.46) |
| Cob (Blau's index) | | 0.44 |
| | | (0.28) |
| Industry exp. (Blau's index) | | 0.52* |
| | | (0.24) |
| Profit (t-1) | | -2.40e-08 |

| | | |
|---|---|---|
| | | (1.56e-08) |
| Years of education | | 0.68 |
| (coefficient of variation) | | (0.72) |
| Type of education | | 0.42* |
| (Blau's index) | | (0.18) |
| Constant | -1.94*** | -3.34*** |
| | (0.34) | (0.42) |
| Log likelihood | -1252.3649 | -1104.0031 |
| Wald chi2 | 129.06*** | 223.43*** |
| Number of observations | 4 379 | 4 248 |
| Number of teams | 1 370 | 1 346 |

Significance levels: † p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001
Standard errors are reported in parentheses below the coefficient estimate.

**Table 3: Chi2-Test Individual Level (Counts and Percentages Are Reported)**

| Absolute age deviation | N | No exit | | Exit | |
|---|---|---|---|---|---|
| | 3 437 | 3 365 | 97.9 % | 72 | 2.1 % |
| | 3 417 | 3 290 | 96.3 % | 127 | 3.7 % |
| Chi2 0.000 | 3 391 | 3 125 | 92.2 % | 266 | 7.8 % |
| Absolute deviation years of edu. | N | No exit | | Exit | |
| | 3 742 | 3 625 | 96.9 % | 117 | 3.1 % |
| | 2 771 | 2 657 | 95.9 % | 114 | 4.1 % |
| Chi2 0.000 | 3 350 | 3 166 | 94.5 % | 184 | 5.5 % |

**Table 4: xtlogit Predicting Individuals' Exits From Teams (Individual Level)**

| Variable | Model 1<br>Control variables | Model 2<br>Independent variables |
|---|---|---|
| Salary (t-1) | -1.71e-06*** | -1.57e-06*** |
| | (3.43e-07) | (3.70e-07) |
| Household wealth (t-1) | -4.10e-08 | -6.71e-08 |
| | (4.23-08) | (5.08e-08) |
| Age | -0.03*** | -0.03*** |
| | (0.004) | (0.004) |
| Sex | 0.09 | 0.11 |
| | (0.10) | (0.11) |
| Absolute age deviation | | 0.09*** |
| | | (0.01) |
| Absolute years of education deviation | | 0.04 |
| | | (0.05) |
| Constant | -1.85*** | -2.36*** |
| | (0.21) | (0.28) |
| Log likelihood | -1926.0005 | -1550.079 |
| Wald chi2 | 139.64*** | 386.19*** |
| Number of observations | 14 283 | 9 863 |
| Number of individuals | 3 386 | 3 131 |

Significance levels: † p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001
Standard errors are reported in parentheses below the coefficient estimate.