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ASSESSING THE NON-FINANCIAL PREDICTORS OF THE SUCCESS AND FAILURE OF YOUNG FIRMS IN THE NETHERLANDS

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In this study, the Lussier (1995) success and failure prediction model is improved and tested on a sample of Dutch firms. Besides clearly defining a specific business plan, work experience is added as a variable, and contrary to previous researches, the discrete variables are dealt with appropriate this time. The results of this improved model show that product/service timing, planning, management experience, knowledge of marketing, economic timing, professional advice, and having a business partner are predictors of success and failure for young firms in the Netherlands.

Keywords: *Business Planning, Small Business, and Success in Business.*

Assessing the Non-Financial Predictors of the Success and Failure of Young Firms in the Netherlands

After two years, an average of 20 percent of the firms established in the Netherlands cease to exist. After five years, this figure is 40 percent (Ministry of Economic Affairs, 2003). These figures indicate that the first few years of existence are crucial for a company. If a company survives the first five years, there is a high chance of a great future. Of course after five years there are still the remaining 60 percent of firms that will one day cease to exist, but here one should take into account the fact that these 60 percent also includes those firms that are discontinued after ten, twenty or thirty years due to mergers, acquisitions or because there is no one to take over or continue the family business.

But why is it important that young firms survive and become successful? "The view on entrepreneurship developed towards a common agreement with respect to its importance for (economic) society" (Bosma, Van Praag and De Wit, 2000, p.9). Successful young companies create a large number of jobs; after start up, a new firm creates half a job on average and one-and-a-half jobs after one year (Houben, 1998). Moreover, the survival of companies is important as the failure of a new entrepreneur would have negative implications in Dutch society (Schutjens and Wever, 2000). In addition, bankruptcies often involve huge personal dramas; families being torn apart, divorces, and lots of stress due to the financial problems. Therefore, prospective entrepreneurs would ideally be able to predict the chances of success for their proposed business. A success versus failure prediction model can help the prospective entrepreneurs to determine the probability of success for the proposed business more accurately. Other parties that might benefit from such a prediction model are existing entrepreneurs, suppliers, venture capitalists, advisors, or public policy makers (Lussier, 1995).

This article addresses the successes and failures of young firms. The problem statement researched in this paper is: What are the non-financial predictors of the success and failure of young firms in the Netherlands?

The term non-financial predictors implies quantitative and qualitative managerial factors. This means that no financial ratios are used as predictors. A firm is defined as a success if it is still in existence and has made profits in at least one year since its establishment. A successful firm is required to have made a profit in at least one year to make a clear distinction between the group of failed firms and the successful ones. The definition of failure has caused much debate (Watson and Everett, 1996). Discontinuance of a business is often used (Baldwin and Gorecki, 1991; Watson, 2003; and Williams, 1993), but for this research a failed firm is defined as a firm that has gone bankrupt or a firm that has

requested a postponement of payments. This definition is in line with the definition of failure used by Lussier (1995), Dun & Bradstreet (2003), and Massel (1978). In order to make a clear distinction between the successes and the failures only these extreme cases are assessed. Obviously, there are also a lot of young firms still in existence, but these cannot be called clear successes if they have not as yet made any profits. Then there are also those entrepreneurs that discontinue their business for other reasons than bankruptcy or problems with paying the creditors. These entrepreneurs are also excluded from this research, as they are not real failures. A young firm is defined as one in existence for less than five years so far. This research is limited to the Netherlands.

Model Selection

With regards to the chances of success and failure of young firms, numerous prediction models exist in academic literature. There are three criteria, which the selected model has to fulfil. Firstly, the aim of this research is to predict successes and failures of young firms; hence the model has to explain both success and failure. Secondly, there has to be a clear distinction between successful and failed businesses, implying that failed businesses are businesses that went bankrupt or requested a postponement of payments and are not businesses that ceased to operate for other reasons. Successful firms have to be identified as clearly successful and not just surviving. Thirdly, the variables selected should be non-financial predictors. This means that no financial ratios are tested, but quantitative and qualitative managerial factors. A number of models, including Bosma, Van Praag, and De Wit (2000); Bruins, Op de Coul, Stigter, and Van Uxem (2000); Cooper, Dunkelberg, Woo, and Dennis (1990); Cooper, Gascon, and Woo (1991); Flerackers (1998); Lussier (1995, 1996a, 1996b); Lussier and Corman (1996); Lussier and Pfeiffer (2000); Reynolds and Miller (1987, 1989); and Schutjens and Wever (2000) were investigated to see which model would best fit the purpose of this study. The model by Lussier (1995) met the criteria that were set the best, and was selected as the basic model for answering the problem statement.

The Lussier (1995) Model

The Lussier (1995) model is designed to test non-financial predictors of the success and failure of young firms. The fifteen variables of the model are capital, record keeping and financial control, industry experience, management experience, planning, professional advisors, education, staffing, product/service timing, economic timing, age of owner, partners, parents having owned a business, being a minority and marketing skills. All variables are supported by a large number of articles from academic journals. In the original research the variables professional advice, planning, education and staffing were found to be significant. The Lussier (1995) model was used to predict success and failure in different countries, for different industries and for companies of different size.

Our Adjustments to the Lussier (1995) Model

Three adjustments have been made to the Lussier (1995) model. The first adjustment was to add the variables marketing plan, production plan, personnel plan, financial plan and R&D plan to the model. This adjustment was made to overcome the limitation of not clearly defining what is meant by a specific business plan. A specific business plan consists of five sub plans: the marketing plan, the financial plan, the personnel plan, the production plan and the R&D plan (Houben, 2000). See table 1 for a short description of each sub-plan.

Table 1
Specific business plan

Marketing plan	Products and services, market, competition and sales
Production plan	Production process, capacity, degree of capacity utilisation and controlling stocks
Personnel plan	Hiring and selection process, composition of board and remuneration
Financial plan	Translating all sub-plans into financial facts
R&D plan	Developing new products and services and improving existing ones

Source: Houben (2000).

The second adjustment is the addition of the variable of work experience. Work experience was added to the model because it showed itself to be a contributing factor to success and failure in pieces of research, Bosma et al. (2000); Flerackers (1998); and Schutjens and Wever (2000), carried out in the Netherlands. Research by Kennedy (1985) also showed it to be a contributing factor. The third adjustment relates to the fact that the Lussier (1995) research did not recode discrete variables into dummy variables; this research will address the discrete variables appropriately. The original Lussier (1995) model and adjustments to this model resulted in the

design of 23 hypotheses. Of these, 21 hypotheses refer to the testing of each individual variable, 1 hypothesis tests the Lussier (1995) model and 1 the adjusted Lussier (1995) model. All variables are presented and explained in table 2. Table 3 presents an overview of the sources of the different variables.

Table 2
Success versus Failure variables

Capital (capt). Businesses that start undercapitalized have a greater chance of failure than firms that start with adequate capital.
Record keeping and financial control (rkfc). Businesses that do not keep updated and accurate records and do not use adequate financial controls have a greater chance of failure than firms that do.
Industry experience (inex). Businesses managed by people without prior industry experience have a greater chance of failure than firms managed by people with prior industry experience.
Work experience (woex). Businesses managed by people without prior work experience have a greater chance of failure than firms managed by people with prior work experience.
Management experience (maex). Businesses managed by people without prior management experience have a greater chance of failure than firms managed by people with prior management experience.
Marketing plan (mapl). Businesses that do not develop a marketing plan have a greater chance of failure than firms that do.
Financial plan (fipl). Businesses that do not develop a financial plan have a greater chance of failure than firms that do.
Personnel plan (pepl). Businesses that do not develop a personnel plan have a greater chance of failure than firms that do.
Production plan (prpl). Businesses that do not develop a production plan have a greater chance of failure than firms that do.
R&D plan (rdpl). Businesses that do not develop an R&D plan have a greater chance of failure than firms that do.
Planning (plan). Businesses that do not develop specific business plans have a greater chance of failure than firms that do.
Professional advisors (prad). Businesses that do not use professional advisors have a greater chance of failure than firms using professional advisors.
Education (educ). People without any college education who start a business have a greater chance of failure than people with one or more years of college education.
Staffing (staf). Businesses that cannot attract and retain quality employees have a greater chance of failure than firms that can.
Product/service timing (psti). Businesses that select products/services that are too new or too old have a greater chance of failure than firms that select products/services that are in the growth stage.
Economic timing (ecti). Businesses that start during a recession have a greater chance of failure than firms that start during expansion periods.
Age (age). Younger people who start a business have a greater chance of failing than older people starting a business.
Partners (part). A business started by one person has a greater chance of failure than a firm started by more than one person.
Parents (pent). Business owners whose parents did not own a business have a greater chance of failure than owners whose parents had a business.
Minority (mior). Minorities have a greater chance of failure than nonminorities.
Marketing (mark). Businesses owners without marketing skills have a greater chance of failure than owners with marketing skills.

Source: Lussier (1995), Bakker (2004).

Table 3
A comparison of variables identified in the literature as factors contributing to business success versus failure

Study	Independent variables															
	capt	**Rkfc**	**inex**	**maex**	**plan**	**prad**	**educ**	**staf**	**psti**	**ecti**	**age**	**part**	**pent**	**mior**	**mark**	**woex**
Bruno, Leidecker and Harder (1987)	C	C	-	C	C	-	-	C	C	C	-	-	-	-	C	-
Cooper, Gascon and Woo (1991)	C	-	C	N	-	C	C	-	N	N	N	N	C	C	-	-
Gaskill, Van Auken and Manning (1993)	N	C	C	C	C	C	N	-	-	N	-	-	-	-	C	-
Kennedy (1985)	C	-	-	C	C	-	-	-	-	C	-	-	-	-	-	C
Lussier (1995)	N	N	N	C	C	C	C	N	N	N	N	N	N	N	N	-
Lussier (1996a)	N	C	N	C	C	C	C	C	N	C	N	C	C	N	C	-
Lussier (1996b)	N	C	N	N	C	C	N	N	C	C	C	N	N	N	N	-

Lussier and Corman (1996)	C	C	C	N	C	C	C	C	N	C	N	N	C	C	N	-
Reynolds (1987)	C	C	-	-	C	-	-	N	C	-	-	-	-	-	-	-
Sommers and Koc (1987)	-	-	-	C	C	-	-	C	-	-	-	-	-	-	-	-
Flerackers (1998)	C	-	-	-	C	-	C	-	-	-	C	-	-	C	-	C
Schutjens and Wever (2000)	-	-	-	-	C	-	-	-	-	-	-	C	-	-	-	C
Bosma, Van Praag and De Wit (2000)	-	-	C	-	-	-	-	-	-	-	C	-	-	-	-	C
Bruins, Op de Coul and Van Uxem (2000)	C	-	C	N	-	-	N	-	-	-	C	-	-	-	-	N
Number of C in 14 previous studies [a]	10	7	8	10	6	7	5	3	4	3	1	3	0	1	3	U
Number of N in 14 previous studies	1	0	1	2	2	0	2	1	0	1	2	0	0	0	0	U
Number of - in 14 previous studies	3	7	5	2	6	7	7	10	10	10	11	11	14	13	11	U
Total C	17	13	13	16	17	13	10	7	7	8	5	5	3	4	6	4
Total N	5	1	4	6	2	0	5	4	4	4	6	4	2	3	3	1
Total -	6	14	11	6	9	15	13	17	17	16	17	19	23	21	19	9

[a] The 14 previous studies are a summary of results presented in the research by Lussier and Pfeifer (2001).
C supports variable as a contributing factor
N does not supports variable as a contributing factor
- does not mention variable as a contributing factor
U unknown, because only the summaries of the results for the fifteen Lussier (1995) variables were obtained from the study by Lussier and Pfeifer (2001).
The new planning variables have not been entered in the table, because none of the articles made the distinction into sub-plans for planning

Source: Lussier and Pfeifer (2001), Bakker (2004).

Research methodology

The research design that was chosen for this research was a causal research design. To obtain the primary research data, the respondents were first contacted by telephone and asked for their cooperation. If they agreed to participate, a questionnaire was sent to them by post or by e-mail. The types of questions asked on the questionnaire had different forms: open and closed, dichotomous, multiple choice, Likert summated rating and Semantic differential scales (Brassington and Pettitt, 2000). The questionnaire design is based on the one used by Lussier (1995). Changes have been made to overcome differences regarding language and educational system. Several extra demographic questions were also asked to allow good matching. The sampling process designed by Aaker et al. (1998) was used to obtain the sample. The sample can be split up into two groups: successful and failed firms. A random sample of successful (starters, younger than five years and still in operation) and failed firms (starters, younger than five years and bankrupt or in postponement of payments) was drawn from the trade register of the Dutch Chamber of Commerce. Reliability and validity are assessed through previous research, Lussier (1995, 1996a, 1996b), and pre-testing the questionnaire. The failed firms were matched with successful ones on the basis of size (number of employees and turnover), age (all firms were 5 year old or younger), industry classification, debt-equity ratio at start-up, and also their area of operation (provinces and countries).

The model (see table 4) was tested in SPSS using logistic regression. Discrete variables have to be transformed into dummy variables before they can enter the regression (Tabachnick and Fidell, 1996). The response rate for the successful and failed firms was 41% and 21% respectively. The overall response rate was 31% (Wiseman and Billington, 1984).

Table 4
The Model

Success/Failure = *f*(capital (-), record keeping and financial control (+), industry experience (+), working experience (+), management experience (+), marketing planning (-), financial planning (-), personnel planning (-), production planning (-), R&D planning (-), planning (-), professional advisors (-), education (+), staffing (+), product/service timing (+), economic timing (+), age of owner (+), partners (+), parents having owned a business (+), minority (-), marketing skills (+)).

Plusses and minuses indicate the expected signs.
Source: Bakker (2004)

Logistic regression can predict success and failure from variables that may be continuous, discrete, dichotomous, or a mix of any of these. However, before the analysis, the discrete variables have to be recoded into dichotomous

or dummy variables (Tabachnick and Fidell, 1996). This was not done in the research by Lussier (1995) or Lussier and Pfeifer (2001) in the United States and Croatia, respectively. The variables capital, record keeping and financial control, marketing plan, financial plan, personnel plan, production plan, R&D plan, planning, professional advice, staffing, product service timing, economic timing, and marketing are all discrete variables. A dummy is created for all discrete variables.

Results

The numbers of completed questionnaires that was ultimately used for this research was 84: 42 for the successful and 42 for the failed firms. Even though successful firms were matched with failed firms some small differences between the two sample groups were observed. There were more females owners among the successful firms than among the failed firms. The failed firms are represented slightly better in the higher turnover classes than the successful firms. The successful firms started their firm with more equity than debt compared to the failed firms. Failed firms had more employees than successful firms. Successful and failed firms operate more or less in the same geographical areas. Successful and failed firms were perfectly matched in terms of industry class.

There were 61 significant correlations observed (see table 7, appendix). A large number of these significant correlations were found among the variables that deal with the planning of a firm. The variance inflation factor showed relatively high values for the variables financial planning and planning. For nine of the 21 variables, the difference in means was found to be significant: industry experience, work experience, management experience, the marketing, financial and personnel plans, planning, staffing, age and partner.

The test of the goodness of fit of the model is a test for measuring the overall significance of the model. Comparing the constant-only model with the full model produced a chi-square of 42.698 with a significance of .003. Comparing the full model with the perfect model produced a –2 LL statistic of 73.751. The Hosmer & Lemeshow test, for formally evaluating the goodness of fit, yielded 2.364 with a significance of .968. Besides looking at the goodness of fit, the model's performance can also be assessed by looking at how well the model accurately predicts the data. The model overall correctly classified 81 percent of the successes and failures. Seven of the 21 variables that were tested were found to be significant predictors of success and failure for young Dutch firms. These variables are product/service timing, planning, management experience and marketing ($p<.05$); economic timing, professional advice and partner ($p<.10$).

The original Lussier (1995) model was also used to test the data. The model chi-square is 34.503, the addition of the six variables or change in –2 LL has a significance of .224. The –2 LL statistic is 81.945; the Hosmer & Lemeshow statistic is 12.449 with a significance of .132. The overall classification accuracy of the original model is 81 percent. The significant variables ($p<.10$) are planning, management experience, marketing and product/service timing.

Table 5
Logistic Regression Model Test Results

Test for the Goodness of Fit of the Model (comparable to the overall F test for regression)		
-2 Log Likelihood	73.751	Significance
Hosmer & Lemeshow	2.364	.968
Model Chi-square	42.698	.003
Improvement	42.698	.003

Classification Accuracy of the Model			
	Predicted Group		**Percentage Correct**
Actual Group	**Failure**	**Success**	
Failure	81% (34)	19% (8)	81%
Success	19% (8)	81% (34)	81%
Overall Correctly Classified			81%

Parameter Estimates and Significant Variables			
Variable Name	**Beta**	**Wald**	**Significance**
Capital	.948	1.072	.300
Record Keeping and Financial Control	1.503	2.514	.113
Industry Experience	.024	.182	.670
Working Experience	-.167	2.476	.116
Management Experience	-.187	4.693	.030**
Marketing Plan	-1.713	2.471	.116
Financial Plan	-1.020	1.048	.306
Personnel Plan	.926	1.320	.251
Production Plan	.711	.741	.389
R & D Plan	.122	.020	.886
Planning	2.754	5.330	.021**
Professional Advice	-1.495	3.115	.078*
Years of Education	.057	.229	.633
Staffing	1.300	2.205	.138
Product Service Timing	2.052	5.716	.017**
Economic Timing	-1.520	3.675	.055*
Age	-.057	1.164	.281
Partner	-1.151	2.886	.089*
Parents	-.809	1.071	.301
Minority	.847	.248	.619
Marketing	1.771	4.015	.045**
Constant	1.791	.583	.445

* p<.10 ** p<.05

Source: Bakker (2004).

Discussion

In this research matching was done more accurately than in the research by Lussier (1995) and by Lussier and Pfeifer (2001). Besides industry, age and the number of employees, the firms in this research have also been matched on the basis of turnover and debt-equity ratio at start-up to ensure a more relevant comparison. The high correlations and multicollinearity are not a reason for concern, because they do not severely damage the model, which was observed when testing an adjusted model.

The difference in means for the 21 variables was assessed. Testing the significance of the difference in means can be seen as a comparison of the resources available to successful and failed firms (Lussier, 1995). The successful firms had fewer difficulties in finding and retaining qualified personnel than the failed firms, as was expected. Contrary to expectations, owners of failed firms had more industry, work, management and life experience (age). Similar results regarding these variables were found by Bruins et al. (2000), Cooper et al. (1991), Flerackers (1998), and Reynolds and Miller (1989). A possible explanation for these results is that one needs a young, fresh and flexible mentality in order to be a successful entrepreneur, and not a mentality that has been "fixed" too much by all the years of experience.

Moreover, failed firms prepared more detailed financial, personnel and overall plans than successful firms. This can be explained by the fact that "out-of-the-box-thinking" is required in order to successfully run a business. A surplus of rules described in predefined plans can be a kind of a straightjacket in which this concept cannot be put into practice, because the company is too focused on following the pre-defined plans. Houben (2000) and Braunschweig (2003) as well mention the risk of exaggerating planning.

Also contrary to expectations, it appears that having a business partner does not increase the chances of success. This can be explained because one cannot have two captains on a ship; this will ultimately go wrong and cause problems. Cooper et al. (1991) found as well that having a partner is not a predictor for survival.

Assessing the goodness of fit of the model, the adjusted Lussier (1995) model proofs to be a good model. The model correctly predicts 81 percent of the successes and failures in the sample, which is equally accurate as the Lussier (1995) model. Regarding the classification accuracy of the model, this research outperforms previous researches in the U.S. and Croatia. Possible explanations for this are the more

accurate matching and the use of dummy variables in the logistic regression.

Product/service timing, planning, management experience and marketing are significant ($p<.05$) predictors of success and failure for young firms in the Netherlands. Economic timing, professional advice and partner are also significant ($p<.10$) predictors. The signs for planning, management experience and partner were exactly the opposite of what was expected. Possible explanations are that too much planning restricts a firm in its ability to quickly respond to changes in the market, ultimately leading to firm failure. Houben (2003) and Braunschweig (2003) address this issue as well. Too many years of management experience can mean that a manager no longer has an open mind regarding to new issues, also ultimately leading to firm failure. Bruins et al. (2000) and Flerackers (1998) provided similar results and explanations. Finally, the sign for partner can be explained by the fact that two persons being in charge of the same thing will cause problems. Cooper et al. (1991) also found this.

Conclusion

This paper investigated the non-financial predictors of the success and failure for young Dutch firms. The Lussier (1995) model was selected as the basic model for answering the problem statement. Adjustments to the Lussier (1995) model were made regarding planning, work experience and the treatment of discrete variables. This research transformed the discrete variables into dummy variables to enable a good logistic regression analysis. All the adjustments resulted in a new model: the adjusted Lussier (1995) model. The non-financial predictors of success and failure for young firms in the Netherlands are product/service timing, planning, management experience and marketing ($p<.05$), as well as economic timing, professional advice and partner ($p<.10$).

Practical Implications for Entrepreneurs and Public Policy Makers

This section will highlight the main practical implications for entrepreneurs and public policy makers. With entrepreneurs potential and existing entrepreneurs are meant. Public policy makers are the government and other institutions (for example Ministry of Economic Affairs, Tax Administration, Chamber of Commerce, Netherlands Foreign Trade Agency) that are involved in the design of public policy. An overview of the practical implications for entrepreneurs and public policy makers is presented in table 6.

Table 6
Practical Implications for Entrepreneurs and Public Policy Makers

Management experience	Entrepreneurs should not be hesitant to start up a new firm, because they lack management experience.
Specific planning	Planning is important, however the entrepreneur should be aware of the risk of 'over-planning'.
Professional advice	Entrepreneurs should recognize the importance of different (non-) governmental institutions that can be a source of support for the firm.
Product/service timing	Entrepreneurs should be clearly aware in which phase of the product cycle their product/service is. The aim should be to focus on those products and services that are in the growth stage.
Economic timing	Entrepreneurs should not be hesitant to start their business because of bad macro-economic prospects.
Partner	Entrepreneurs should be aware of the risks that are involved in starting their business with one or more business partners. The aim should be to find business partners with complementary skills, not with similar skills.
Marketing	Entrepreneurs should recognize the importance of a thorough understanding of marketing.
Public Policy Makers	
Management experience	Public policy makers should (continue to) stimulate entrepreneurship also under those parties (for example students, low-level employees) that lack management experience.
Specific planning	Planning is important, however public policy makers should not overdraw the importance of a business plan (for example to require highly detailed business plans in order to start up a firm).
Professional advice	Public policy makers should (continue to) stimulate organisations that provide support to entrepreneurs.

Product/service timing	Public policy makers should provide the information that allowes the entrepreneur to make good judgements on the appropriate timing of launching new products and services.
Economic timing	Also in times of economic recessions, perhaps even especially, public policy makers should (continue to) stimulate entrepreneurship.
Partner	Public policy makers should stress the risk of starting a business with one or more business partners that do not have complementary, but similar skills.
Marketing	Public policy makers should stress the importance of a thorough understanding of marketing.

Source: Bakker (2004).

Limitations

Every piece of research, including the research presented here, suffers from various limitations. When one uses the model to assess the chances of young firm success and failure, it is important to consider that the model is not intended to replace existing default risk techniques. The model should be used together with other present techniques used by investors, lenders, creditors and other groups to avoid default. This model does not provide numerical guidelines for distinguishing success from failure. Careful judgement is needed to consign a probability (Lussier, 1995). One more general limitation is that firms might be successful or fail for other reasons than those investigated in this research. Another limitation relates to definition of success; firms had to have made a profit in at least one year since start-up and still be in operation. This definition might have resulted in firms being in the sample of successful firms that had made a profit in their first year and then made losses in the subsequent years and are still in existence. To call such firms true successes might be questionable. On the other hand, those firms that had never made a profit were excluded from the research. It might very well be the case that a firm did not make profits in its first years (due to large investments), but will make profits in later years and then turns out to be a very successful firm. The variables in this research were all assessed on the basis of one question only: to draw general conclusions on the basis of one question only about for example the degree to which a firm which started in an undercapitalised state (variable capital) is a limitation. Moreover, a large number of the variables are the subjective self-reported perception of business owners. Other limitations relate to statistics used. Using logistic regression carries certain limitations: outliers in the solution, the ratio of cases to variables, multicollinearity and the adequacy of expected frequencies (Tabachnick and Fidell, 1996).

Recommendations for Further Research

There are inconsistencies within the literature and this study. The majority of the variables tested in this research are identified in the literature as factors contributing to firm success and firm failure. However, in this research only seven of the 21 variables have been found to be significant. More research is needed to resolve these inconsistencies. Furthermore, the means of eight of the 21 variables, as well as the signs of four coefficients behaved in a different direction than expected for example, failed firms used a more detailed business plan. This surprising outcome is also a topic that needs to be investigated further. It appeared that the failed firms from the sample had more employees than the successful firms. It could be that the step up from being a small firm to a medium-sized firm is a hard one, and that the transition from having 0-5 employees to 10-20 employees is difficult for firms to cope with. The relationship between firm failure and growth (in the number of employees) could be an interesting topic for further research. Another recommendation is to combine quantitative research with qualitative research to gain deeper insight into the reasons explaining success and failure, and still being able to make general remarks on the basis of the outcomes. Holding interviews with a selection of the successful and failed business owners could be one way of achieving this. Another way could be to use a case study methodology (appendix table 7).

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Appendix

Table 7

Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. capital	1																				
2. rkfc	-.318***	1																			
3. indus. exp.	.024	-.010	1																		
4. work exp.	-.004	.096	.713***	1																	
5. mgmt exp.	-.202	.406***	.315***	.551***	1																
6. mark. plan	.085	-.219**	.065	-.100	-.305***	1															
7. fin. plan	.048	-.366***	.032	-.080	-.323***	.706***	1														
8. pers.plan	-.041	-.245**	.027	-.054	-.233***	.674***	.668***	1													
9. prod plan	-.054	-.132	.135	.092	-.120	.504***	.503***	.464***	1												
10. r&d plan	-.098	-.058	.172	.034	-.131	.492***	.437***	.370***	.511***	1											
11. planning	.095	-.262**	.052	-.067	-.225**	.751***	.777***	.658***	.615***	.581***	1										
12. prof. adv.	.144	-.402***	.014	-.114	-.278**	.460***	.660***	.436***	.388***	.370***	.543***	1									
13. yrs. educ.	.023	.031	-.096	-.096	.080	.014	.072	.099	.055	-.263**	.091	-.135	1								
14. staffing	-.095	-.029	-.009	-.244**	-.258***	.166	.197	.113	-.022	.112	.110	.053	-.109	1							
15. pr/ser tim	.111	-.012	.172	.086	-.078	.110	.123	.027	.057	.233**	.157	.082	-.189	.072	1						
16. ec. time	.111	-.065	-.088	-.071	-.195	-.049	-.034	-.018	-.121	.025	-.082	.031	-.184	-.031	-.189	1					
17. age	-.029	.179	.557***	.667***	.582***	-.030	.079	.030	.194	.064	.147	.043	.096	-.210	.073	-.233**	1				
18. partner	.083	.101	-.008	.076	.088	-.357***	-.331***	-.353***	-.238**	-.275**	-.243**	-.220**	.148	-.354***	-.216**	-.022	.022	1			
19. parents	.033	-.006	-.194	-.176	-.107	.009	-.147	.005	-.016	.066	-.069	-.023	-.038	.006	.157	.072	-.221**	.067	1		
20. minority	.094	-.032	.078	.050	.054	.168	.053	.024	.050	.154	.130	.155	.040	.024	.046	.043	-.051	.016	-.121	1	
21. marketin	-.049	.085	.132	.324***	.380***	-.276**	-.249**	-.194	-.003	-.153	-.293***	-.147	.203	-.286***	-.030	.021	.274**	.096	.002	.036	1

*** Correlation is significant at the 0.01 level (2-tailed).
** Correlation is significant at the 0.05 level (2-tailed).

Source: Bakker (2004).