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**Economic and Social Performance of New  
Enterprises and Entrepreneurs in the Service Sector**

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## 0. SUMMARY

This paper describes the methodology, data sources and statistical results of a project analysing the behaviour of new enterprises in Denmark and the social and personal background of the entrepreneurs starting up the new enterprises in 1990.

The project is only based on the use of administrative registers as it has been the policy of Statistics Denmark not to increase the burden on the new enterprises which are especially vulnerable towards administrative burdens.

The group of entrepreneurs starting new enterprises in 1990 in Denmark is characterised by being most younger men. Compared to the population relatively many entrepreneurs are in the labour force the year previous to the start-up of their enterprises, and at the same time unemployment prior to the year of start-up is more frequent among the new entrepreneurs. Otherwise the entrepreneurs do not in any significant way differ from the rest of the population.

The analysis indicates that the social background of the entrepreneurs to a high degree structures the choice of sector in which the entrepreneurs start-up. Business services and wholesale trade are male dominated, the persons have more work experience and former unemployment is more seldom. The entrepreneurs had the year before they started the highest gross income and for business services the level of vocational training of the entrepreneurs is higher than for the other sectors. Retail trade and hotel and restaurants are more female-oriented, unemployment in the year prior to business start-up was more frequent and the gross income the year before is lower. Entrepreneurs within transport constitute a third group, consisting of younger persons, male-oriented and with a higher proportion of former unemployed and persons with a lower income the year before.

The longitudinal study of the new enterprises shows that more than half the entrepreneurs have survived between 1990 and 1993. Entrepreneurs within wholesale and retail trade have the lowest survival rates. In order better to understand the behaviour of new enterprises we have analysed the background of the entrepreneurs by dividing them into subgroups of combinations of respectively with or without previous experience in same activity group as the they start their new enterprise and with or without previous work experience at all. Entrepreneurs with both kind of experience have a much higher survival rate than entrepreneurs without any experience, especially within retail trade where the survival rate in the first group is twice as high as the second. It is interesting that the level of vocational education does not increase the survival rate for the entrepreneurs with both kinds of experience, only the entrepreneurs without any experience benefits from longer vocational education.

In the next step in the longitudinal study we have analysed the performance of the enterprises concerning employees and turnover. In general, entrepreneurs with both kind of experience have twice as many employees in 1993 as entrepreneurs without any experience. It is especially within retail trade and hotels and restaurants the employment creation is large. Concerning employees we have compared the distribution of entrepreneurs in general to the 50 largest entrepreneurs (regarding employment). In the Top-50 group the share of entrepreneurs with both kinds of experience is more than

twice the share found in the total population of entrepreneurs. Entrepreneurs with both kind of experience compared to entrepreneurs without any experience in general have a turnover which is four times higher. The differences are particularly large in wholesale and retail trade.

## 1. INTRODUCTION

In the last years the births of new enterprises and their impact on the economic development and the job creation have been major topics in the Danish economic political debate. The debate has been hampered by the difficulties of getting sufficient quantitative data on the new enterprises and the entrepreneurs themselves.

In the first place, it is a basic problem to identify the population of new enterprises. This demands a business register with a full sectoral and size coverage which also has a frequent and reliable updating.

If a business register of such quality is available you are then confronted with the problem of the respondent burden, if more information than pure structural data are requested. Especially the new enterprises are vulnerable towards administrative burdens and in Denmark the workload for enterprises related to requirements of the public administration is a hot political issue at the moment.

In Denmark we are in the fortunate position that Statistics Denmark both has an updated Business Register with a total sectoral and size coverage and access to a range of administrative registers. On this background Statistics Denmark is at the moment carrying out a statistical investigation of the personal and social background of the entrepreneurs and the behaviour of the new enterprises started up in 1990. All statistical information are based on existing administrative data without carrying out any kind of survey. The exercise is financed by the Danish Agency for Development of Trade and Industry and is supposed to be published at the end of 1995.

The population of new enterprises in this study is limited to the ones starting up in the legal form of personal ownership. The reason for this selection is that the entrepreneurs behind the enterprises can only be identified for this legal form of ownership in the Danish Business Register.

The new enterprises are characterised by the fact that about 90% start up as only employing the entrepreneur himself thus indicating a narrow link between the enterprise and the entrepreneur as a person. So it is of importance for the understanding of the behaviour and performance of the new enterprises to get information about the background of the entrepreneur.

This paper - especially prepared for the 10th. Meeting of the Voorburg Group on Service Statistics - gives some main results related to the economic and social performance of new enterprises and entrepreneurs in the service sector. The paper is divided into the following parts; firstly a description of the data sources and methodology used, secondly a statistical part describing the new enterprises in 1990 and the social and personal background of the entrepreneurs starting new enterprises in 1990. Thirdly the enterprises started in 1990 are followed until 1993 to measure the survival rate and the performance of the new enterprises related to turnover and employment creation and finally the

behaviour of the new enterprises is linked with the personal and social background of the entrepreneurs.

## 2. DATA SOURCES AND METHODOLOGY

### 2.1 New enterprises

Statistics Denmark has developed a method which makes it possible to identify business units that constitute a real new enterprise from the gross entrance of units cf. table 1. The method is based on new registrations of business units registered for VAT settlement by the Ministry of Taxation, Central Customs and Tax Administration. In the first place, the gross stock of new registrations of units are matched up against the gross stock of deregistered units for the purpose of capturing take-overs and conversions. This is possible, because the deregistered units must, in case they are taken over by a new owner/converted into a limited liability company, submit the new owner's identification no., name and address on the deregistration form submitted to the Ministry of Taxation, Central Customs and Tax Administration. This piece of information is registered in the Business Register in the record of the cancelling unit with a reference to the new VAT registration number.

**Table 1. Splittings of the gross entrance of business units registered for VAT settlement in 1990.**

	Number of units	Per cent
Gross entrance, total	38 455	100.0
Continuation of existing firms	4 655	12.1
Restarted firms	5 618	14.6
Bankruptcies, etc.	1 008	2.6
Administrative units of registration	9 204	23.9
Public units of registration	947	2.5
Inactive firms	2 031	5.3
Real new-established firms	14 992	39.0

In the next phase the population of take-overs defined by the customs authorities is supplemented by further take-overs identified by Statistics Denmark. The reasons for this are firstly that there is a certain time gap between the birth of a new unit and the deregistration of the old one - a time gap of often up to 1 year. Secondly there is a further delay from the receipt of the deregistration formular and the date of registration of the formular in the Business Register, and thirdly not all take-overs might be registered by the customs authorities.

As only a few variables are present at the time of entrance of a new unit in the Business Register, Statistics Denmark decided for trying to use the telephone number as a criteria

for identity of an enterprise. The principle behind this method is to test a possible linkage between two firms by matching the telephone number of the new unit with the existing telephone numbers of the stock of units in the Business Register.

In a third phase the information in the Business Register combined with economic and employment data from the administrative registers have been used to investigate how many take-overs among the population of new registrations which were not discovered in the above mentioned procedures or by the custom authorities.

All units with more than 1 mill. DKK in turnover in the first 4 quarters of their registration period - except for wholesale trade where the limit was set to more than 5 mill. DKK - or 10 or more employees were picked out for manual checking procedures.

Subsequently, information on the Business Register relating to the newly registered business units' ownership, type of accounting, owners (for personally owned firms) and date of registration, is used for sorting out units that cannot - according to the definition used - be characterized as real new enterprises.

Finally, units which have not been engaged in any economic activities during their first year of life, i.e. zero value in both turnover and purchases, were sorted out. For the latter purpose, the quarterly turnover statistics are used, which only comprise business units within non-agricultural industries liable to VAT settlement.

On the basis of the matchings and investigations of the gross population of new business units registered for VAT settlement during the year mentioned above the following new registrations have been sorted out as not being new enterprises;

*Continuation of existing units in the form of either take-overs or conversions.*  
This group comprises:

- take-overs of existing sole proprietorship
- conversions of personally owned firms into limited liability companies
- partnerships, where personally responsible owners have entered into or withdrawn from during the year.

*Restarted units*, i.e. units registered for VAT settlement, which have been struck off from the register 2 years before re-registration, but have started their activities again. These units start again with their original VAT registration number, but are, all the same, registered with the Ministry of Taxation, Central Customs and Tax Administration as a newly registered unit.

*Bankruptcies, estates of deceased persons and companies in the course of liquidation.* The group represents a special type of continuation, which for legal and administrative reasons are registered with a new VAT registration number with the Ministry of Taxation, Central Customs and Tax Administration.

*Administrative registrations.* This group applies to the cases where an existing firm changes its registration method with the Ministry of Taxation, Central Customs and Tax Administration. In most cases, it will be a new subregistration of an ongoing activity of a

existing firm. This group comprises also newly registered units of registration under personally owned firms, where the owner is already registered for VAT settlement.

*Public units of registration.* The group comprises, central government, local government or independent institutions registered with the Ministry of Taxation, Central Customs and Tax Administration for activities liable to VAT.

*Inactive units.* Firms which during the quarter of registration and the 3 subsequent quarters are not engaged in any economic activities. This means that the firms in question during the 4 quarters are neither registered for purchases or sales reported for VAT settlement.

## **2.2 Entrepreneurs**

As mentioned in the introduction it is possible in the Danish Business Register unambiguously to identify the entrepreneur of an personally owned enterprise due to the existence of a unique Person Number. A given person is identified in the different statistical registers related to statistics on persons by this Person Number. Thus information related to enterprises and information related to persons can be merged.

For this study data on the social and personal background of the entrepreneurs are extracted from the IDA database (Integrated Database for Labour Market Research) which primarily has been set up to make data available to labour market researchers. The database covers information on labour market conditions for all persons in the population and all establishments with paid employees. At the same time persons who are employed and establishments can be connected.

The information on persons and establishments relate in the first instance to the situation at the end of November of each year. The database is longitudinal containing annual information covering the period 1980-1990.

The precondition of constructing a database linking information from different administrative registers was the introduction of the central Person Number, by which a person can be unambiguously identified in various administrative registers. Data in IDA are taken from a range of registers, where the most important are information on employees during the year from tax registers and information on unemployment obtained from another administrative register.

For this study the following information from the IDA-database have been extracted<sup>1</sup>;

- sex, age and marital status (from the central register of persons)
- vocational education (from the central educational register)
- work experience as an employee (from information on quarterly payments of contributions to the Labour Market Supplementary Pension Scheme (ATP)). Periods where a person has been either self-employed or unemployed do not count as work experience.

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<sup>1</sup>The original administrative sources are mentioned in parenthesis.

- unemployment in 1989 and cumulated period of unemployment since 1980 (from the unemployment register).
- Gross income and wealth in 1989 (from the tax registers).

### 2.3 Longitudinal study

As stated in the introduction one aim of the analysis is to measure the succes of the new enterprises understood as their rate of survival, job and turnover creation in 1993.

The longitudinal study has been impeded by the fact that the Danish Business Register does not operate with/define an identity over time for enterprises. So it has been necessary to carry out our own identification of the units which can be characterized as having survived.

The principle in this method has been to match the population of new enterprises in 1990 with a version of the Business Register from early 1994. The matching units have been considered survived if they in the following match with the VAT-register showed an annual turnover in 1993 of 1 DKK or more.<sup>2</sup>

The non-matching units have afterwards been tested for take-over or change in ownership by using the information on deregistration as mentioned in 2.1 - in this case just in the opposite order. In the case of continuation of the enterprise but under another ownership or legal form the enterprise has been accepted as a survived unit. The unit has then been subject to the same control for a minimum activity as mentioned above.

## 3. STATISTICAL RESULTS

### 3.1 New enterprises

In 1990 14.992 new enterprises - except agriculture and water and energy supply - were started in Denmark. The major part (43%) was in the sector Other services, mainly business services. Altogether the service enterprises constituted 85% of the new enterprises in Denmark in 1990, cf. table 2. This share has been constant through the period 1990 - 93 for which data are available.

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<sup>2</sup>The criteria for the definition of a survived enterprise is of course debatable. If the definition of survival is changed to the annual turnover threshold of DKK 100.000 in 1993, the number of survived enterprises in the service sector decreases from 6.792 to 3.966 (i.e. more than 40%). On the other hand, the total amount of turnover only decreases from 4.7 billion DKK to 4.6 billion DKK (i.e. 2%). But in this project the level for a business activity has been chosen to 1 DKK in correspondance with the definition of an active new enterprise which is turnover or purchases of minimum 1 DKK within the 4 first quarters of existence of the enterprise.

**Table 2. Number of new enterprises 1990, their turnover and export in the first 4 quarters of their registration period.**

ISIC (1968)	Number of enterprises	Total turnover (1.000 DDK)	Of which export (1.000 DDK)
Industry	1 285	404 907	34 882
Construction	1 019	333 428	9 884
Wholesale	1 684	934 837	164 081
Retail	3 030	2 127 394	35 080
Hotels and restaurants	845	461 599	171
Transport	634	168 580	26 634
Other services	6 495	1 651 819	477 844
Total	14 992	6 082 563	748 576

The new enterprises in Denmark can be characterised as very small, normally only employing the entrepreneur himself. Only 9% of the enterprises had employees in their start-up year. These employers were mainly found in the services sector especially in retail trade which employed about 1/3 of the total number of employees in new enterprises in 1990, cf. table 3.

**Table 3. Number of new enterprises with employees, end of November 1990.**

ISIC (1968)	No. of enterprises with employees	Per cent	Total no. of employees	Per cent
Industry	120	8.4	558	11.0
Construction	121	8.5	391	7.7
Wholesale	92	6.5	319	6.3
Retail	407	28.6	1 679	33.2
Hotels and restaurants	294	20.7	1 119	22.1
Transport	43	3.0	112	2.2
Other services	345	24.3	875	17.3
Total	1 422	100.0	5 053	100.0

If the new enterprises are related to the stock of enterprises the birth rate of enterprises in 1990 in Denmark was 4.9%. The highest birth rate was found in retail trade (6.3%) and the lowest in construction (3.1%), cf. table 4.

Of the 14.992 new enterprises, 83% (12.385) were started as personal owned enterprises in the service sector and thus constituting the population included in this analysis



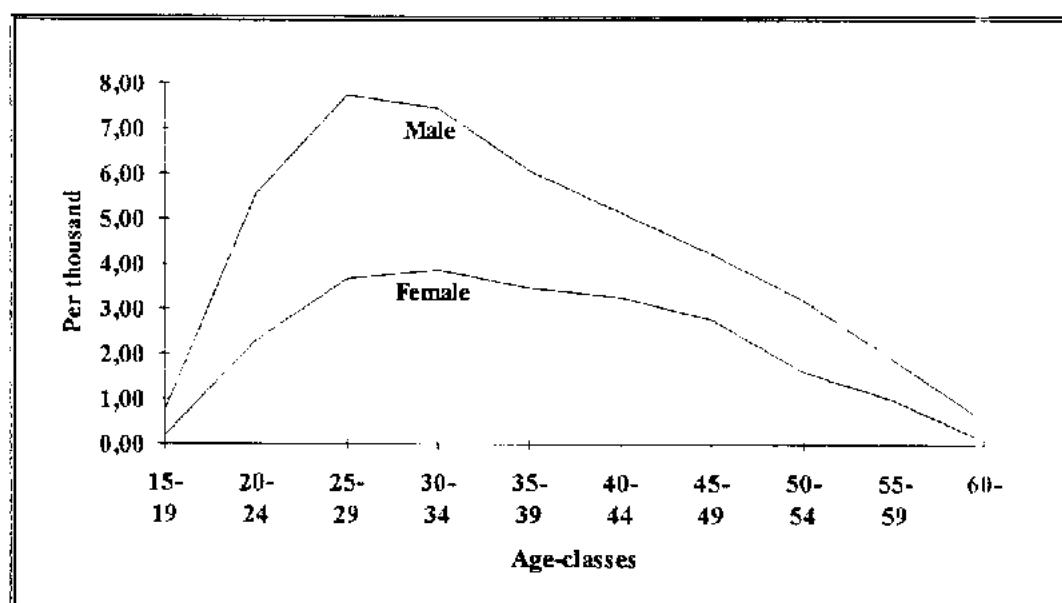
**Table 4. New enterprises related to the total stock of enterprises 1990.**

ISIC (1968)	No. of new enterprises	Total stock of enterprises	Birth rate of new enterprises
Industry	1 285	37 588	3.4%
Construction	1 019	33 316	3.1%
Wholesale	1 684	37 770	4.7%
Retail	3 030	48 145	6.3%
Hotels and restaurants	845	16 410	5.2%
Transport	634	18 001	3.5%
Other services	6 495	117 279	5.5%
<b>Total</b>	<b>14992</b>	<b>306 509</b>	<b>4.9%</b>

### 3.2 Portrait of the new entrepreneurs

Not surprisingly, 2/3 of the new entrepreneurs within the service sector were male. Compared to the total population, the age-classes between 25 and 34 years show the highest proportion of entrepreneurs - this goes especially for male but also female entrepreneurs, even if the female entrepreneurs show a more equal relative distribution across age-classes, cf. figure 1.

**Figure 1. Proportion of entrepreneurs in age-classes compared to the whole population. 1990.**



If the entrepreneurs are broken down by *vocational education*, nearly one third has no vocational education and between 7 and 9% have completed some kind of long further education. Compared to the total population in Denmark, the entrepreneurs are characterised by on the one hand a lower share of persons without any vocational

education and on the other hand a considerable higher share of persons with the longest education (university level), cf. table 5.

**Table 5. Entrepreneurs and persons in the labour force 16 - 66 years in Denmark 1990. Broken down by of vocational education. (Per cent)**

	Entrepreneurs		Persons in labour force	
	less than 40 years	40 years +	less than 40 years	40 years +
No vocational training	35.8	35.3	38.3	41.9
One year vocational training	7.9	0.8	12.0	0.6
Apprenticeship	37.8	39.0	34.1	38.0
Short further education	4.5	5.6	4.9	5.4
Medium further education	6.8	10.4	6.6	9.2
Long further education	7.3	9.0	4.1	4.9
Total	100.0	100.0	100.0	100.0

If one looks at *the relationship of the entrepreneurs to the labour market in 1989* - the year prior to the entrepreneurs' business start-up - the entrepreneurs are mainly characterised by the high number of unemployed persons in November 1989 compared to the share amongst the total population. Not surprisingly the share of persons outside the labour force in 1989 starting new enterprises in 1990 is relatively small, cf. table 6.

**Table 6. Entrepreneurs and total population 16 - 66 years in Denmark 1990. Broken down by relationship to the labour market. (Per cent)**

	Entrepreneurs	Total Population
Employed	75.4	73.4
Unemployed	15.1	6.8
Not in labour force	9.5	19.8
Total	100.0	100.0

Nearly 1/3 of the entrepreneurs was during the year 1989 influenced by *unemployment* compared to 1/5 of the total population. The relative high influence of unemployment can also be found if a longer time period, namely 1980 - 1989, is considered. In this period 37% of the entrepreneurs experienced one or more years of cumulated unemployment compared to 28% of the total population.

The reason for this high percentage of entrepreneurs being unemployed is difficult to isolate as on the one hand the unemployment itself can be seen as a driving motivation for becoming selfemployed by starting up a new enterprise. On the other hand the Danish legislation in 1990 made it possible for persons who had been unemployed for minimum 6 months to receive a subvention equaling half the annual unemployment relief per year for a three - years period when starting their own enterprise.

Another variable used in the analysis is *work experience*, cf. table 7. The amount of work experience is of course other things being equal correlated with the age of the person but as shown in the table both the younger and the older age-classes are characterised by longer work experience in the group of entrepreneurs than in the total population. Especially the group having less than one year of work experience is remarkably smaller in the young age-class of entrepreneurs than in the total population.

**Table 7. Entrepreneurs and total population 16 - 66 years in Denmark. Broken down by work experience in 1989. (Per cent)**

	Entrepreneurs		Total population	
	less than 40 years	40 years +	less than 40 years	40 years +
0 year	7.6	4.6	18.7	9.5
1 year	7.0	2.1	9.2	4.1
2 years	6.8	2.4	7.0	3.1
3 - 5 years	23.1	6.7	19.2	0.8
6 - 9 years	25.1	10.9	18.9	11.3
10 - 14 years	21.7	15.6	18.6	15.2
15 - 19 years	8.1	19.2	7.8	16.0
20 years or more	0.7	38.4	0.8	32.1
Total	100.1	99.9	100.2	100.1

If we look at *gross income*, the relative share of entrepreneurs earning more than 200.000 DKK is higher than in general. Oppositely, the share of persons in the lowest income interval (less than 100.000 DKK) is relatively smaller among the entrepreneurs, cf. table 8.

**Table 8. Entrepreneurs and total population 16 - 66 years in Denmark. Broken down by gross income in 1989. (Per cent)**

	Entrepreneurs	Total Population
0 - 100.000 DKK	19.6	31.2
100.000 - 199.999 DKK	42.4	42.9
200.000 DKK +	38.0	25.9
<b>Total</b>	<b>100.0</b>	<b>100.0</b>

In the previous paragraphs we have treated the entrepreneurs as one homogeneous group. But of course the new entrepreneurs constitute as heterogeneous a group as the population as such. This heterogeneity can be illustrated by the characteristics of the entrepreneurs in the different sectors in which they start up.

In the following we have tried to give a snapshot of the average entrepreneur in the different services sectors compared with the whole group of entrepreneurs, cf. table 9.

**Table 9. Snapshot of entrepreneurs in services. Selected variables<sup>3</sup>.**

	Whole sale	Retail trade	Hotels restaurants	Transport	Business services	Other services	Total
Male	1.17	0.82	0.77	1.25	1.11	0.95	1.00
Age < 40 years	0.97	1.04	0.93	1.16	0.91	1.08	1.00
Unemployed in 1989	0.79	1.26	1.38	1.21	0.69	1.13	1.00
With vocational education	1.02	0.95	0.71	0.74	1.16	1.01	1.00
Work experience > 6 years	1.07	0.91	0.88	0.98	1.09	0.96	1.00
Unemployment since 1980	0.82	1.18	1.35	1.19	0.73	1.15	1.00
Gross income > 200.000	1.15	0.64	0.61	0.88	1.45	0.81	1.00

The entrepreneurs broken down by sector fall into three groups;

*Entrepreneurs within wholesale and business services* show similarities as being relatively male dominated, showing the longest work experience and the largest gross income in the year previous to their start-up of a new enterprise. The entrepreneurs within these sectors are also characterised by having a larger share of entrepreneurs with completed vocational education, especially within business services.

<sup>3</sup>The average value of each variable is given the value 1.00. If a sector comes out with a value higher than 1.00 for a certain variable, this implies that the number of entrepreneurs with this given variable is higher in this sector than the average number.

*Entrepreneurs within retail trade hotel and restaurants* show some opposite features as being relatively female dominated and having experienced the longest period of unemployment in the year prior to their business start-up.

*The entrepreneurs within the transport sector* show a third pattern as they are characterised by the highest share of male persons, persons less than 40 years and showing a high rate of unemployment in the year prior to their business start-up and also a relatively low income level.

### **3.3 Longitudinal study of new enterprises**

In the previous part of this study the characteristics of the enterprises and entrepreneurs in the year of start-up have been analysed, i.e. activity group, social and personal background of the entrepreneur.

The major interest in new enterprises is the possible contribution of these enterprises to the overall generation of jobs and economic growth in the society. In order to throw light on these items a longitudinal study of the new enterprises started in 1990 for the period 1990 - 1993 has been carried out. As mentioned in section 2.3 the study has been carried out on the basis of the information contained in the Business Register and the VAT-registers.

The aim of this study has been in the first step to measure the survival rate of the new enterprises which can be characterised as the immediate or simple criteria of success. In the second step the performance of the enterprises - understood as the number of employees and turnover in the period 1990 - 93 has been examined. These variables have been chosen partly due to the general interest (this particularly goes for the employment) and the more pragmatic reason that these variables are the ones available when basing the study on register data.

Furthermore it is the aim of the study not only to describe the actual behaviour of the new enterprises but also to try to look into possible elements of explanations of differences in the performance of the enterprises. Again the study is limited to the existing sources and from the above-mentioned IDA-database we have chosen the variables; experience in same activity group, work experience and vocational education of the entrepreneur.

An entrepreneur is defined as having experience in the same activity group if he in 1990 starts up in the same activity (understood as the 3 first digits in ISIC 1968) as the one he in 1989 was employed in. The evident problem is that if he prior to 1989 - but not in 1989 - had work experience from the activity group in which he started up in 1990, this experience will not be reflected in the actual classification of the experience of the entrepreneur.

An entrepreneur with work experience is classified as a person with 6 or more years of paid full-time employment in the period 1980-1989 (both years included). The reason for this relatively high threshold is that the employment period is calculated from an administrative source, i.e. the payments of contributions to the Labour Market Supplementary Pension Scheme. The payments include any kind of paid employment exceeding 9 hours work per week. These administrative conditions mean that young

persons during their vocational education (apprenticeship) earn work experience. In order to cushion these administrative regulations the threshold for work experience has been defined as 6 years or more.

A priori we argue for the possible causality between these person-related variables and the survival of the new enterprises.

The longitudinal study shows that more than half of the entrepreneurs (56%) starting up in 1990 have survived in 1993, cf. table 10. Not surprisingly the entrepreneurs within wholesale (47%) and retail trade (50%) are showing the lowest survival rates.

**Table 10. Rate of survival 1990 - 1993. Broken down by experience in same activity group and job experience**

	Whole sale	Retail trade	Hotels restau- rants	Trans port	Business services	Other services	Total
<u>With experience in same activity group:</u>							
- with work experience	0.54	0.81	0.73	0.73	0.66	0.73	0.69
- without work experience	0.44	0.59	0.64	0.60	0.58	0.68	0.61
<u>Without experience in same activity group:</u>							
- with work experience	0.52	0.51	0.62	0.60	0.61	0.65	0.58
- without work experience	0.39	0.42	0.47	0.46	0.49	0.52	0.46
Total	0.47	0.50	0.56	0.56	0.57	0.61	0.56

In order to differentiate the behaviour of the enterprises not only by sector we have divided the entrepreneurs into 4 subgroups consisting of combinations of entrepreneurs with and without respectively experience in same activity group and work experience.

While entrepreneurs as mentioned have an average survival rate of 56 %, there is a great deal of variation between the above-mentioned subgroups. Entrepreneurs with both general work experience and experience in same activity group have the highest survival rate, and they have on average a possibility to survive with their business which is 50 % higher than entrepreneurs without any experience at all, cf. table 10.

The analysis shows that more experience of any kind increases the survival rate for entrepreneurs, but experience in same activity group is on average more important than general experience. Though in wholesale it seems that general work experience is more important than experience in same activity group.

One very interesting result is that entrepreneurs in retail trade with both general experience and experience in same activity group have the highest survival rate of all. The survival rate for this subgroup is nearly twice as high as the entrepreneurs in retail trade without experience at all. This indicates that the low overall survival rate for

entrepreneurs in retail trade is caused by the great number of inexperienced entrepreneurs, which - due to the low barriers of entrance - start up in retail trade.

The study indicates the importance of the branch experience of the entrepreneur for the survival of the new enterprises. As a further step we have looked at the possible importance of the educational background of the entrepreneur combined with the branch experience.

**Table 11. Rate of survival broken down by experience in same activity group and vocational education.**

	Whole sale	Retail trade	Hotels restau- rants	Trans port	Business services	Other services	Total
<u>With experience in same activity group:</u>							
- no vocational education	0.50	0.73	0.69	0.68	0.59	0.74	0.68
- second level education	0.53	0.73	0.50	0.68	0.63	0.75	0.66
- third level education	0.50	0.64	1.00	1.00	0.66	0.59	0.63
<u>without experience in same activity group:</u>							
- no vocational education	0.42	0.43	0.53	0.48	0.54	0.57	0.49
- second level education	0.46	0.50	0.57	0.64	0.58	0.60	0.55
- third level education	0.54	0.52	0.56	0.52	0.55	0.56	0.55
Total	0.47	0.50	0.56	0.56	0.57	0.61	0.56

A priori one could expect, that entrepreneurs with vocational education at second level (apprenticeship) in all services sectors - except business services which to a large degree consists of knowledge based activities - would have a higher probability of surviving than especially entrepreneurs with either no or short vocational education.

Our investigation shows that this expectation cannot be fulfilled, at least not for the entrepreneurs with experience in same activity group, cf. table 11. But inferences should be made with precautions, as both the differences and the underlying observations in some cells are rather small.

Bearing these reservations in mind, the results indicate that the survival rates for entrepreneurs without experience in same activity group increase with the length of the vocational education.

The blurred results in the analysis of the importance of the vocational education can partly be explained by the fact that respectively experience in same activity group and the level of vocational education cannot be isolated from one another. An example of this is that as part of the vocational education (apprenticeship) you have to work as an employed trainee in an enterprise in the activity group in question.

In a second step of the longitudinal study we have analysed the performance of the new enterprises in the period 1990 - 1993 concerning employment, i.e. the development in number of full-time employees, and turnover.

In 1990 and 1993 the enterprises had respectively 3571 and 8742 full-time employees, which is equivalent to 0.29 and 1.29 full-time employees per enterprise. The average job creation of the new enterprises varies across sectors with hotels and restaurants creating most jobs (2.9 per enterprise) and business services the least (0.7 per enterprise), cf. table 12.

In this study we are only able to measure the direct effect on employment creation at the micro level of the new enterprises. It is not within the frame of this study to measure the net effect on the job creation at a macro level meaning also taking into account the indirect effects of job creation or the job destruction in terms of the reduction of employment and production in existing enterprises.

**Table 12. Full-time employees per enterprise, broken down by sector.**

ISIC (1968)	Total	
	1990	1993
Wholesale	0.13	0.94
Retail trade	0.48	1.88
Hotels and restaurants	1.28	2.87
Transport	0.16	1.41
Business services	0.09	0.71
Other services	0.16	1.20
Total	0.29	1.29

The above-mentioned breakdown of employment by sectors can be characterised as a traditional approach where the job creating process of course is influenced by the nature of the different activity groups. Furthermore we have carried out the breakdown of the employment creation according to another dimension, i.e. the person related variables; experience in same activity group and work experience. We have established the two opposite possibilities; with experience in same activity group and work experience and without experience in same activity group and without work experience - in both cases further broken down by level of vocational education.

The result of this breakdown of the employment created shows that in all sectors the average number of employees in enterprises run by entrepreneurs with experience of both kinds exceeds the general average, cf. table 13. Especially outstanding is the performance of the enterprises run by the entrepreneurs with experience within the retail trade as they on average have 4.8 employees per enterprise.



**Table 13. Entrepreneurs with both kind of experience: Full-time employees per enterprise, broken down by level of vocational education.**

ISIC (1968)	Vocational education at second level		Education at third level		No education		Total	
	1990	1993	1990	1993	1990	1993	1990	1993
Wholesale	0.33	1.25	0.14	0.80	0.25	1.60	0.29	1.28
Retail trade	2.83	5.11	0.00	1.29	1.30	4.17	2.41	4.79
Hotels and restau	2.55	3.67	1.50	2.00	2.57	3.21	2.50	3.27
Transport	0.04	1.44	0.00	0.50	0.20	1.56	0.15	1.50
Business services	0.25	1.09	0.29	1.34	0.19	0.97	0.26	1.19
Other services	0.55	1.91	0.20	0.68	0.30	2.11	0.38	1.68
<b>Total</b>	<b>1.12</b>	<b>2.68</b>	<b>0.26</b>	<b>1.17</b>	<b>0.57</b>	<b>2.10</b>	<b>0.74</b>	<b>2.14</b>

If then the job creation is broken further down by vocational education, the analysis shows that entrepreneurs with vocational education at second level (apprenticeship) creates more employment than the other entrepreneurs, especially in the hotels and restaurants and retail trade, where also the total employment creation was particularly high. Also of interest is the finding that the only sector where the employment creation of the entrepreneurs with further education exceeds the total employment creation is in business services.

Consequently the entrepreneurs without both kind of experience show a relative bad performance creating less employment than the average or the experienced entrepreneurs, cf. table 14. In a few cases a different pattern can be found, especially within hotels and restaurants the entrepreneurs without both kind of experience show a better performance than the entrepreneurs with experience, if they on the other hand have completed a vocational education (apprenticeship).

**Table 14. Entrepreneurs without both kind of experience: Full-time employees per enterprise, broken down by level of vocational education.**

ISIC (1968)	Vocational education at second level		Education at third level		No education		Total	
	1990	1993	1990	1993	1990	1993	1990	1993
Wholesale	0.10	1.10	0.33	0.53	0.09	1.09	0.12	1.00
Retail trade	0.20	1.41	0.08	0.88	0.17	1.19	0.17	1.24
Hotels and restau	1.37	4.10	1.18	3.00	0.71	1.73	0.88	2.35
Transport	0.04	1.00	0.25	0.00	0.07	1.44	0.07	1.26
Business services	0.09	0.97	0.04	0.44	0.04	0.73	0.05	0.67
Other services	0.06	0.99	0.08	0.91	0.14	1.09	0.10	1.04
<b>Total</b>	<b>0.19</b>	<b>1.33</b>	<b>0.11</b>	<b>0.63</b>	<b>0.17</b>	<b>1.13</b>	<b>0.17</b>	<b>1.10</b>

As the employment creation is a crucial issue in the political debate we have focused on the largest employers in 1993 among the new enterprises started in 1990, cf. table 15. Among the 50 largest employees - or the so-called gazelles - the share of entrepreneurs with experience in same activity group has nearly doubled. If also work experience is analysed we find the same - and even stronger - pattern, as the share of entrepreneurs with both kind of experience has risen from 16% for all new entrepreneurs to 36% in the Top-50.

**Table 15: The distribution of entrepreneurs with the highest number of employees in 1993 regarding experience in same activity group.**

	With experience	Without experience
Top-50 employers	46%	24%
Total population of entrepreneurs	24%	76%

If we finally look at the turnover generation in 1993 of the enterprises started in 1990 we can find the same general pattern that the entrepreneurs with both kind of experience perform much better than the average or unexperienced entrepreneur, cf. tables 16 and 17. On average the experienced entrepreneurs created 3.5 times the turnover of the unexperienced entrepreneurs. The experienced entrepreneurs within retail trade showed the largest difference with 7 times the turnover of the unexperienced entrepreneurs.

**Table 16. Entrepreneurs with some kinds of experience: Turnover per enterprise (in thousand DKK) broken down by level of vocational education.**

ISIC (1968)	Vocational education at second level		Education at third level		No education		Total	
	1990	1993	1990	1993	1990	1993	1990	1993
Wholesale	1 053	2 509	442	745	898	2 276	934	2 226
Retail trade	3 025	4 219	11 966	17 194	2 445	3 628	3 220	4 541
Hotels and restau	955	950	726	765	878	997	901	962
Transport	403	845	119	235	428	883	414	855
Business services	291	541	223	423	278	588	256	491
Other services	322	561	64	133	188	552	214	459
Total	1 229	2 022	461	818	689	1 275	876	1 512

When breaking down the turnover by vocational education as well as branch and work experience, it is an interesting finding that the entrepreneurs with no completed vocational education in most sectors create a higher turnover than the entrepreneurs with further education. This goes for entrepreneurs with and without both kind of experience. As found with regard to employment creation, the entrepreneurs with vocational

education at second level (apprenticeship) came out with the largest turnover for both experienced and unexperienced entrepreneurs with a few exceptions as entrepreneurs within retail trade with a further education and both kind of experience and entrepreneurs in transport with no completed vocational education and without both kind of experience. But it should be mentioned that the number of observations in the latter groups are very small.

**Tabel 17. Entrepreneurs without any experience: Turnover per enterprise (in thousand DKK) broken down by level of vocational education.**

	Vocational education at second level		Education at third level		No education		Total	
	1990	1993	1990	1993	1990	1993	1990	1993
Wholesale	227	836	351	617	352	761	246	759
Retail trade	298	619	158	315	295	659	285	616
Hotels and restau	504	830	417	671	375	522	405	601
Transport	143	315	78	388	134	489	135	428
Business services	117	301	94	199	87	182	96	214
Other services	109	219	112	157	93	169	100	184
Total	209	467	140	263	205	434	195	413