

Results of the European Leonardo-project

JASS

**“Joint Analysis and Strategy for
Self-employment for Women with
technical and scientific education”**

The history of the project



- q In 1997 the JASS project was conceived by ComEAST at Otto-von-Guericke University, Magdeburg and submitted to the European Commission for promotion under the European Leonardo da Vinci Programme.
- q At the same time the project idea was presented to the Ministry of Labour, Women's Affairs, Health and Social Affairs which is responsible for implementing the scheme for promoting the establishment of new business enterprises in the Federal State of Saxony-Anhalt and implementing policies of the federal state for the promotion of women.
- q The project was designed to identify first the specific situation of women with mainly engineering and technical degrees on the labour market under the special structural developments and, subsequently, to investigate whether the existing promotion and training schemes for establishing and safeguarding self-employment and motivating highly qualified women are sufficient.
- q The results obtained were to be used for developing specific modules for training courses, for establishing new business enterprises, securing newly established firms and promoting entrepreneurship as well as motivating women.
- q Hence, the project was aimed at reflecting the structural changes in the European partner countries, (in particular in the eastern federal states of Germany). These structural changes have been accompanied by the breakdown of traditional branches of big industry formerly dominating the structure. (See the German Summary)



Further reasons:

in general for Europe:

the number of female engineers and scientists is smaller than the number of the men is

women are more affected by unemployment in the structural changes and, as can be proved, they have lower chances of finding a job in their training branches of the engineering and technology sectors

Only a small number of women make use of the chances to combine their competencies with the advantages and the necessities of regional structural development and establish themselves in business beyond so-called women-specific fields, and to free themselves and other women from discrimination on the labour market by launching their own initiatives and using all means of promotion offered to this end.

from the East-German point of view:

The number of women with such qualification is almost as high as that of men

The history of the project



- q There was the common interest in the European project partnership to find out why women do not use their chances to the same extent as men to create jobs for themselves by setting up their own business
- q although women have been provided with “wide” promotion instruments in their countries and on a European scale and have been strongly canvassed to make use of the same with the aim of supporting their way into self-employment.
- q The project is focussed on developing a real instrument to ensure equal chances in the frame of the European and national policy of “Gender mainstreaming”
- q Another crucial issue of extreme political interest was to establish the causes for this “discrimination” of women on the labour market and identify instruments to counter this development.
- q Hence, economic and labour policies must focus on existing qualifications of women in the field of engineering and technology.

The history of the project




- q All European partners of this project report that their experience is similar to that made in Germany and they consider a specific motivation and training of women in this field an urgent necessity in order to open up chances for women with scientific and technical qualifications on the labour market.
- q This interest is mainly attributable to the long-term experience of the European partners in their striving for equal chances for girls and women in basic and continuing training and their subsequent establishment on the labour market.
- q The European partners co-operating in the project have initiated and successfully implemented their individual projects in a wide variety of ways and on various subjects to accomplish that aim.
- q These partners are mainly the national **WiTEC**-members and two partners that have also a lot of experiences in sociology and gender studies as well as in the field of the labour market issues, processes of self-employment and training, especially for starters.

European Association for Women in Science, Engineering and Technology - WiTEC



WiTEC and the Strategy

- q WITEC is an European association (network) of universities, enterprises, associations, other organisations and individuals who are standing up for the motivation, promotion and support of women and girls in science, engineering and technologies as well as supporting the aim to take more women into leading positions.
- q WITEC was founded in Sheffield (GB) 1988 within the lines Of the European program COMETT. Female representatives from **14 European Countries** (Belgium, Denmark, Finland, France, Greece, Great Britain, Ireland, Italy, the Netherlands, Norway, Sweden, Spain, Switzerland, Estonia and Germany) are currently belonging to the International Board of WITEC. The WITEC secretariat is now located in Germany, hosted by the Gender Institute Saxony-Anhalt. 
- q Main goal of the WITEC association consists of a concrete co-operation in putting the policy of the European Union for equal **opportunities for men and women, especially for women in science, engineering and technology**, into action. With it, WITEC is using the power of its members within the network and several regional, national and European support-programmes. 

European Network for Women in Science, Engineering and Technology - WiTEC

WiTEC-Aims

- Events, Actions, and Projects which increase professional development and career opportunities
- Supporting women who are working and studying in those fields
- Increasing the number of women and girls who are choosing professions and studies in science, engineering and technology
- Initiating training and model projects which are of use for the development of technical, entrepreneurial and leading qualities of those women
- Supporting the exchange of experience and information and creating corresponding consultation offers
- Stimulating, pushing forward and supporting a research on this field
- Supporting an national and international linking of this field



Partnership of the project

Partners from Germany, Belgium, Netherlands,
Spain, Sweden and United Kingdom



WiTEC-Germany



WiTEC-United Kingdom



First step:

Examination design (designed, discussed, determined):

- x **Analysis of the structure and development of establishing new business enterprises in the region**
Countries involved: Federal Republic of Germany, the Netherlands, Spain

- x **Empirical inquiry among new female and male entrepreneurs with a university or college degree in scientific and technical fields who had already successfully established their own business enterprises**
Countries involved: Federal Republic of Germany, Belgium, the Netherlands, Spain, Sweden, Great Britain

- x **Empirical inquiry among female students of engineering and natural sciences**
Countries involved: Federal Republic of Germany, Belgium, the Netherlands, Spain, Sweden, Great Britain

- x **Empirical inquiry among women with scientific and technical education attending a qualification course for new entrepreneurs**
Countries involved: Federal Republic of Germany, Spain



q Second phase steps:

- x **Analysis of the structure and development of establishing new business enterprises**

- x **Questionnaires**
created by the ISIS GmbH (D),
discussed by the partnership,
adapted and translated by the partners

- x **Questionnaires Actions**
started with the entrepreneurs,

followed by the students and

the participants in training courses



☐ Third phase steps

- × **Quantitative evaluation of the questionnaires by the ISIS GmbH (D)**
 - drawing up the table books for the different strands of the examination entrepreneurs, student and participants of training courses

- × **Qualitative evaluation of the quantitative results by the European partners**
 - Empirical inquiry among female and male entrepreneurs with an technical background

 - Empirical inquiry among female students

 - Empirical inquiry among female participants in training courses for new entrepreneurs

- × **Development of special training modules, based on the determined needs by the IHK Bildungszentrum Halle-Dessau GmbH**



q Selection of the respondents

problems in all European countries:

- I no statistics about the qualification background of the entrepreneurs
- I no sex related statistics about enterprises

q Structure of the companies

women enterprises are mostly small (1-5 employees),

q Branches

q Operating results

q Employment



0. Selection of the respondents

problems in all European countries:

- ┆ no statistics about the qualification background of the entrepreneurs
- ┆ no sex related statistics about enterprises

inquired women (and also men) should have an academic degree and should have it in scientific and technical fields

- ┆ this is important for the results among the entrepreneurs and their branches because the share of companies founded by women in industrial fields was much higher in this studies than it is the case considering the overall average in general



1. Structure of companies

x Branches

| Branch | Germany | Netherlands | Spain | Sweden | United Kingdom |
|----------------------------------|---------|-------------|-------|--------|----------------|
| Agriculture and forestry | | | | | |
| Building construction | X | X | | | |
| Mining, energy, water | | | | | |
| Chemistry | | | | | |
| Metal and electrical engineering | | | | | |
| Other industries and crafts | X | | | X | |
| Commerce | X | | X | X | X |
| Money economy , insurance | | | | X | |
| Education and health | | | X | | |
| Other services | X | X | | X | X |



x **Operating Costs**

| Germany | Netherlands | Spain | Sweden | United Kingdom |
|---|--|---|---|---|
| <p>Women yielded a lower turnover than men</p> | <p>Women yielded a lower turnover than men</p> | | <p>Women reach near 25% of the male turnover</p> | <p>Turnover and profit in the last few years has increased dramatically</p> |
| <p>Achieved a comparatively higher turnover than the average number of all female entrepreneurs</p> | | | | |
| <p>They left the high losses zone to the low or fairly profit</p> | <p>Men have higher losses or balanced results, than females had higher profits</p> | <p>Balanced result or fair profit Since 1997 more companies with "high losses</p> | <p>1997 the entrepreneurs had balanced results, the results 1999 showed fair profit</p> | <p>1997 only 15% reported a fair profit, 1999 40%</p> |



x **Employment**

| Germany | Netherlands | Spain | Sweden | United Kingdom |
|--|---|---|---|---|
| <p>Females starts often as a self-employment company, men-commercial company</p> | <p>Women do not often set up a one-person company, most commercial company</p> | <p>Women enterprises have mostly 1-2 employee</p> | <p>The same percent for one-women company and stockcorporation, men-stock corporation</p> | <p>Small businesses as self-employment</p> |
| <p>women companies have fewer employees than male companies</p> | <p>their companies have fewer employees than male companies</p> | <p>With increasing the turnover and profit the employment also increase</p> | <p>women companies have fewer employees than male companies</p> | <p>70% of the women companies employ less than three people</p> |
| <p>in the processing sector the number is higher than in other branches</p> | <p>the share of female employees in companies led by women is higher than by men</p> | | | |
| <p>the share of female employees in companies led by women is higher than by men</p> | | | | |



1. Structure of companies

Summary

- I Women (with scientific and technical background) start their companies very often in “non-technical” branches
- I Women companies started often as companies with the legal form self-employment, except NL
- I Women companies have less employees than men companies, but they employ more women than men (important for the labour market)
- I The turnover and the profit is more less than in male companies, but it is increasing
- I The turnover and the profit of the female lend companies in processing branches are much higher than the profit and the turnover of female lend companies in other branches is (but lower than in male lend companies)
- I In relation of the branches - women companies deal their services and products mainly in the regional and national market



q

2. Reasons to set up a new business enterprise

- x Freedom of decision making
- x Self Fulfilment
- x Economic Independence
- x Make better use of skills

Not at first

- x Unemployment
except Saxony-Anhalt (and may be Spain with 50% unemployed respondents)
there unemployment is one of the most named reason to set up a business,
but not in the technical branches

q

3. Conditions and preconditions

- x Women have long professional experiences, but lower experiences in management fields than men and they have also business contacts
- x Both, women and men started with less money
- x Family and friends support is important for both



q **4. Modalities**

q **Favourable circumstance in order of priority**

- x Professional experiences over a number of years
- x Existing business contacts
- x Existing premises
- x Supports by family (e.g. 1. Place German women, 8. place Dutch women, but 4. Place Dutch men)

q **Consolidation problems**

- x knowledge about the market
- x problems asking for subsidies and credits
- x not enough experience in treating with banks
- x making business plans
- x using new technologies



q **5. Personal preconditions and Training needs**

q **Most of the female entrepreneurs are convinced, that the most important characteristics to be succeeded business are:**

- x high motivation
- x commitment
- x determination
- x reliability

and also

- x management skills, creativeness, flexibility, ability to make decisions, legal and commercial knowledge

q **Training needs (asked by respondents)**

- x new technologies
- x commercial and economic knowledge
- x knowledge of data processing

Round the half of the female entrepreneurs took part in general training courses for setting up new business enterprises or used consultants



Needs from the inquiry among new entrepreneurs in technical fields

Thesis and Training needs

- x **Women with an engineering or technical degree make use of their high level of qualification to a much lesser extent than men for setting up their own business enterprises**

Training needs:

Specific management knowledge is required for founding sole-proprietorships which are very sensitive, in particular when they appear as newcomers on the market.

- x **Self-employment is a clearly stronger alternative to unemployment for women.**

Training needs:

Purposeful analysis of personal conditions for establishing a new business enterprise;
Courses to establish new ideas;



- x **Enterprises developed much more favourably in branches in which the new female entrepreneur had gained professional experience and obtained qualifications required compared to those where they had no experience or qualification.**

Training needs:

Use of the existing potentials of qualification and professional experience as a basis for developing an own idea for establishing a business enterprise.

Imparting marketing knowledge to enable new female entrepreneurs to identify market niches in their previous working and/or qualification environment.

- x **The conditions for the establishment of a new business enterprise, such as existing business contacts and experience in management positions, were much more unfavourable among women than among men.**

Training needs:

Learning of management and guidance techniques;

Personality training.

Result

Three training modules that focussed on this training needs were developed (end of this documentation)



- q 1. **Attitude towards self-employment**
- q 2. **Conditions of self-employment**
- q 3. **Specialist qualifications required for self-employment**
- q 4. **Personal requirements for self-employment**
- q 5. **Summary**



q

1. Attitude towards self-employment

| Germany | Netherlands | Spain | Sweden | United Kingdom |
|---|---|---|---|---|
| Have thought about starting their own bussiness | Have thought about starting their own bussiness | Have thought about starting their own bussiness | Have thought about starting their own bussiness | Have thought about starting their own bussiness |
| 52,6% (yes and yes+additional conditions) | 51% large degree of freedom less saw disadvantages (lot of work) | 70,8% (yes and yes+additional conditions) | 73,7% (yes and yes+additional conditions) | 20% |



q **Advantages**

- x Independence, freedom
- x free organisation of time
- x being ones own boss

q **Disadvantages**

- x lot of time and work
- x high risk of economic position
- x strong competition



2. Conditions

Netherlands, Spain and the UK:

- x Highest priority:
Netherlands, Spain and the UK
(Germany 5. Place and Sweden last)

also

but

- x High priority
only in Germany the last position

Ideas for new products

**Better use of own skills
economically independent**

**preparation for self-employment during the
study**



q **3. Specialist qualifications required for self-employment**
Knowledge acquired during the study

x **less knowledge in business skills**

- Time management
- personnel management
- drafting foundation concept
- promotion schemes for new female entrepreneurs

x **knowledge is better in**

- communication
- computing



q 4. Personal requirements for self-employment

- x all the surveys showed, that the students expect, that all the personal qualities, which were listed, must be characteristics by entrepreneurs, but they felt also, that they need some more qualification to reach this standard themselves

Sometimes they give characteristics like reliability, diligence, commitment - the "typical female" characteristics- a higher priority than creativeness, leadership skills and mobility, decisive characteristics for entrepreneurs.

Selected Results and problems - Students

5. Summary

- x the students (in technical fields) don't feel well informed and well prepared during their study to start their own business
- x they are interested in entrepreneurs skills, included in their study or in additional courses
- x they are not only interested in theoretical lessons, but also in practical experiences, through lessons by experts and also through placements

These points are so important, because

The share of female students in technical fields is less and it could be an additional support for female students in science, engineering and technology to become successfully on the labour market, also as an entrepreneur.

Female students in science, engineering and technology, qualified on a high standard in their special field, combined with management skills could be the female entrepreneurs in the economical structure dominated fields.



Female students in science, engineering and technology, qualified on a high standard in their special field, combined with management skills could be the female entrepreneurs in the economical structure that is dominated by innovative, technical fields and services around technique,

Women with education in science, engineering and technology, good advised, well trained and supported by different programmes in regional, national and international level could set up their own bushiness enterprises in their qualification field.

This would also mean a higher share on economic power, participation in dominated fields of the society, more participation in social processes and also more freedom and independence for themselves.

To support this by all the parts of the society, focussed at the differences of conditions and needs of women and men means the “Gender Mainstreaming Policy” and is the together responsibility by women and by men.