

# HEALTH STATUS AND EDUCATION LEVEL AS THE DETERMINANTS OF THE QUALITY OF HUMAN RESOURCES IN THE FACE OF THE AGEING PROCESS OF THE POPULATION. SITUATION IN POLAND AND COMPARED TO EUROPEAN COUNTRIES

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## MOTIVES OF THE WORK:

Population ageing affects human resources as well. Generations entering the labour market are smaller due to a decrease in fertility. Generations leaving the labour market are numerous due to a longer lifespan and post-war baby boomers reaching the retirement age. The shrinking of populations at a productive age requires a prolonging of their presence in the labour market. It is one of the ways of preventing a lowering of the standard of living and of sustaining the continuity of development of enterprises.

## DATA AND METHODOLOGY

We consider the following thirteen European countries: Belgium, the Czech Rep., Denmark, France, Germany, Greece, Holland, Ireland, Italy, Poland, Spain, Sweden, Switzerland. The population aged 50-69 years (men and women, separately) is taken into account. The data comes from The Survey of Health, Ageing and Retirement in Europe (SHARE). We use the main sample of the second wave collected in 2006 and 2007, when Poland joined the survey. Because of missing values Austria has been excluded. To achieve the aim of the work, descriptive statistics and logistic models are used. Depend binary variable is indicated as: 0 – inactive; 1 active – describes the labour market status of the older age population.

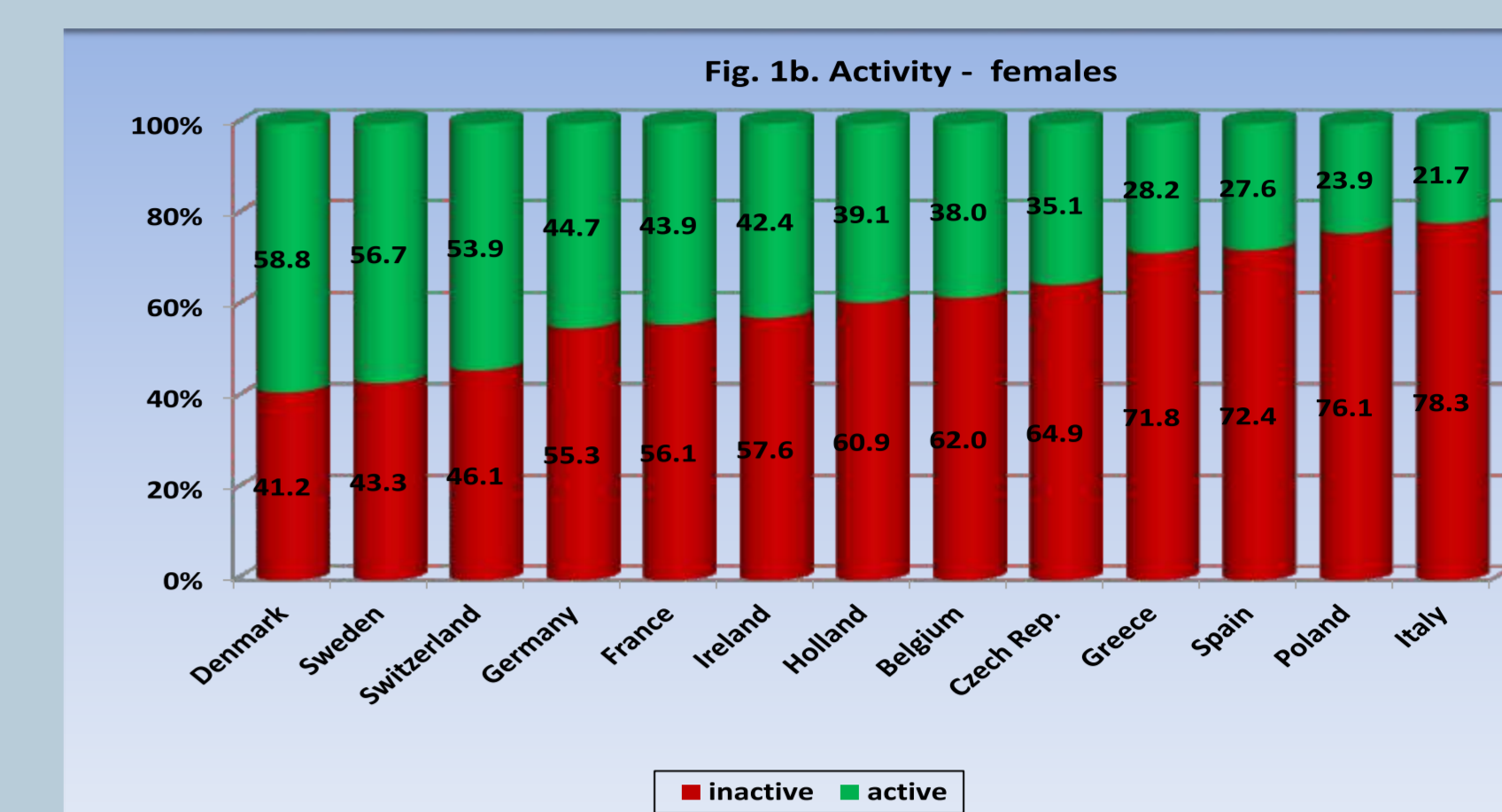
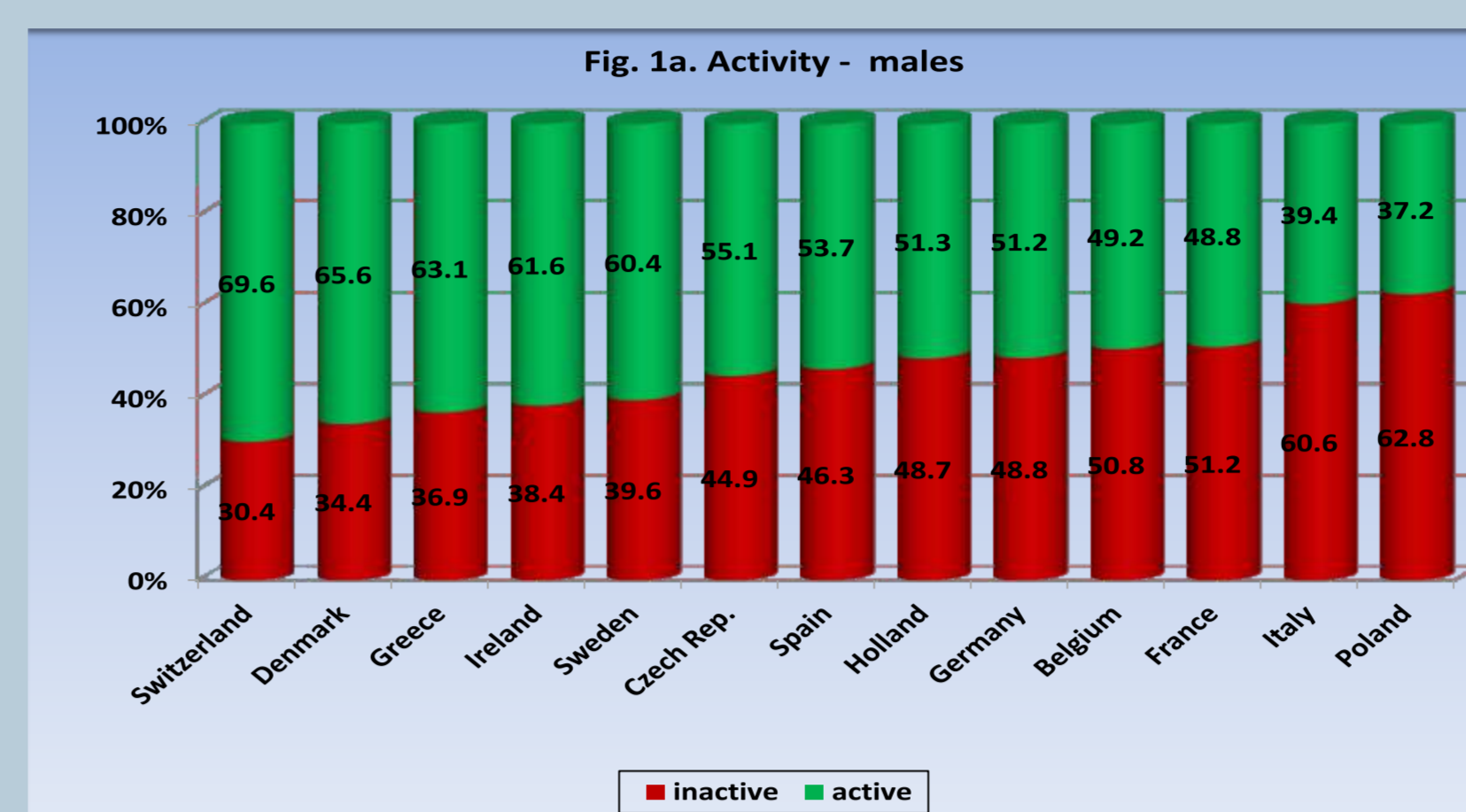
The following demographic, social and economic features are taken into account:

- I. explanatory variables:
  - a) education (edu) measured as years of education grouped into three classes: 0-9 (0); 10-14 (1); 15 or more (2);
  - b) health status (ill) considered as a presence (0) or an absence (1) of long-term health problems;
- II. control variables:
  - a) demographic:
    - age (age): 50-54 (0); 55-59 (1); 60-64 (2); 65-69 (3);
    - sex (sex): male (1); female (0);
  - b) socio-economic status (household level) (econPstatus) – variable is a component of marital status and the partner's employment status: single (0); partner's features: pensioner (1); active (2); inactive (3).

## THE AIM OF THE STUDY:

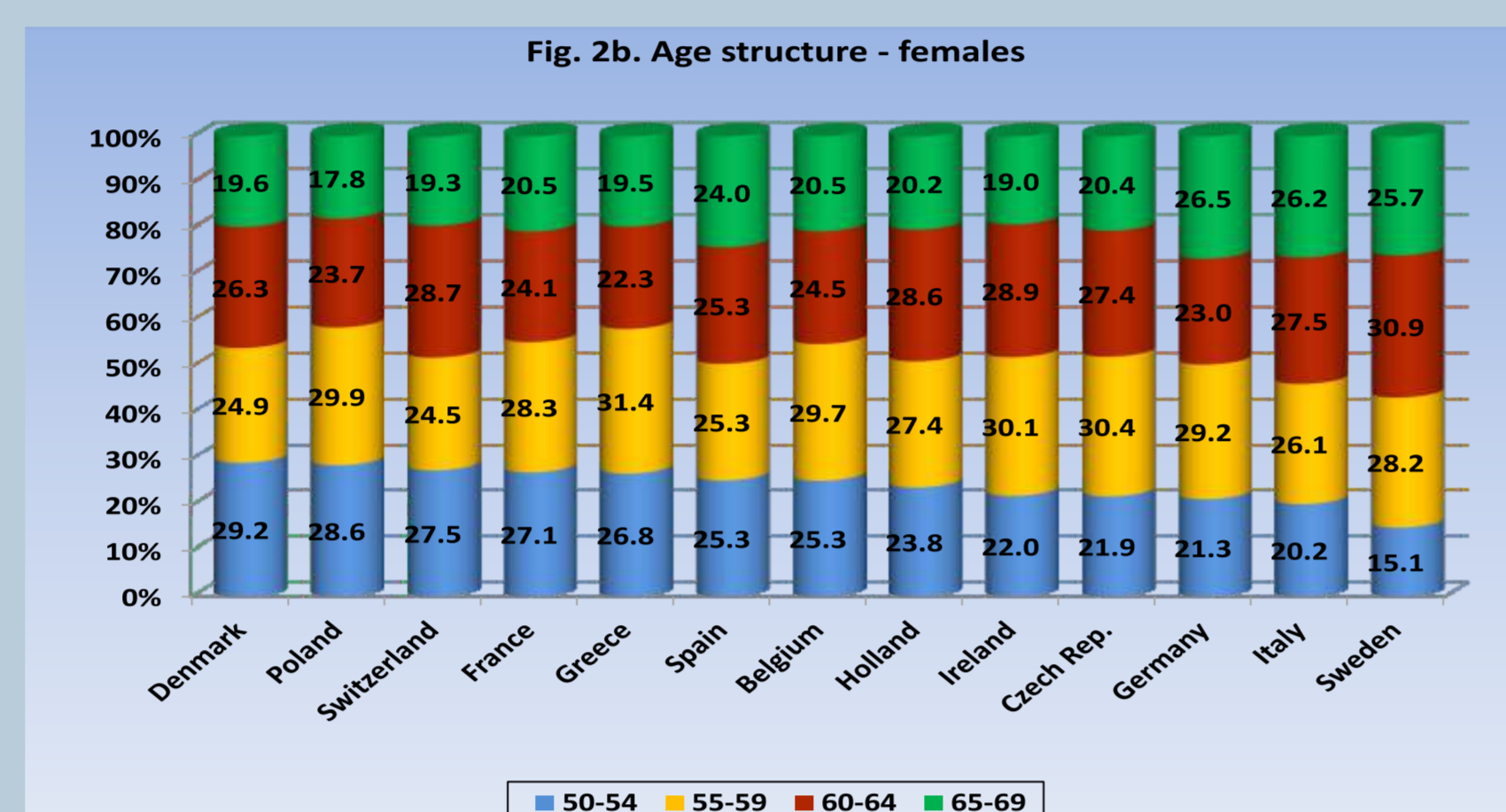
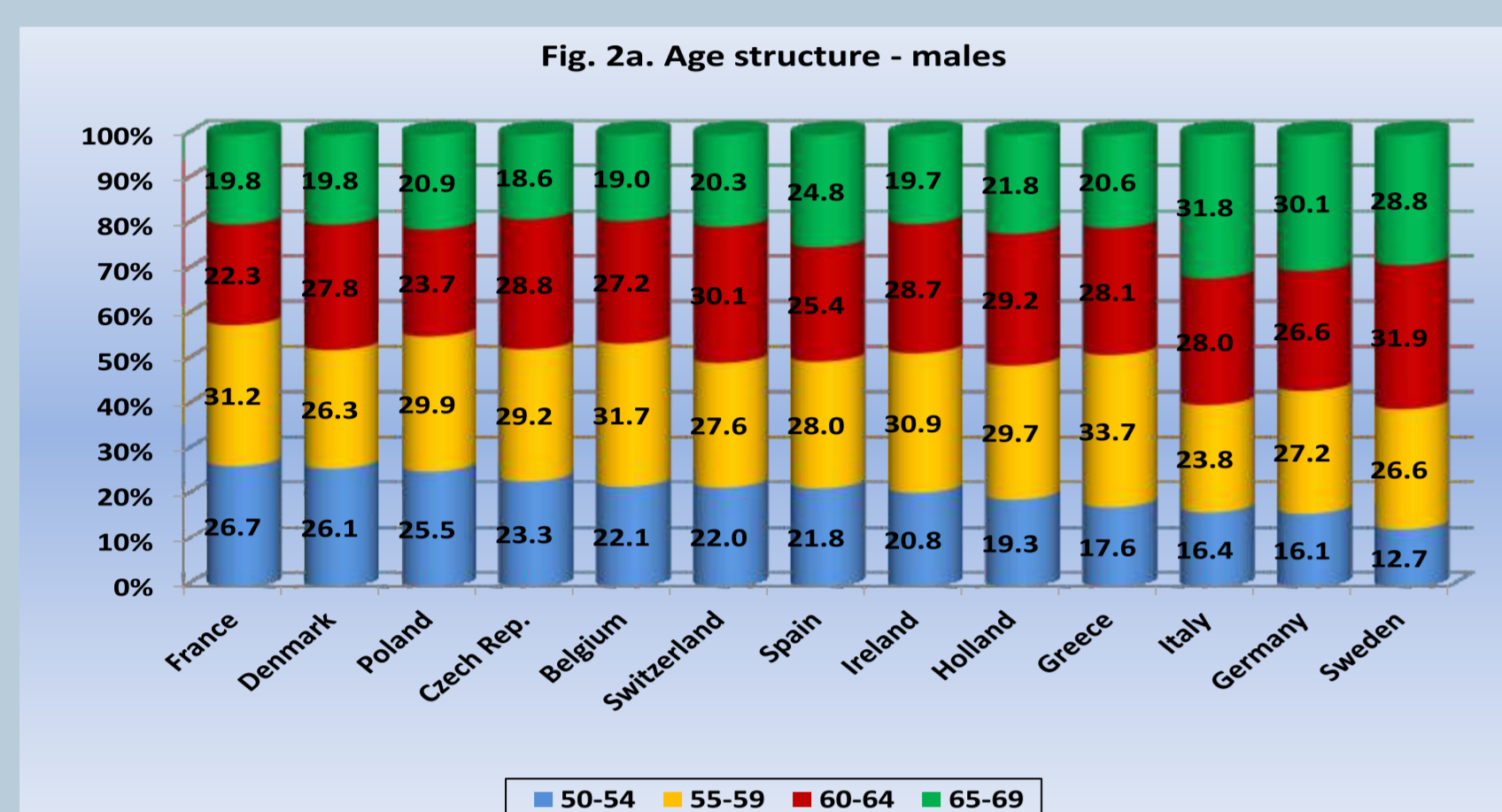
- Estimation of the size and structure of the population aged 50 or more, still active in the labour market;
- Evaluation of the economic activity of the older age population according to their quality, as human resource expressed, by the health status and educational level;
- Diagnosis of the situation in Poland in the midst of other European countries.

## TYPICAL FEATURES OF THE STRUCTURE OF THE POPULATION UNDER STUDY

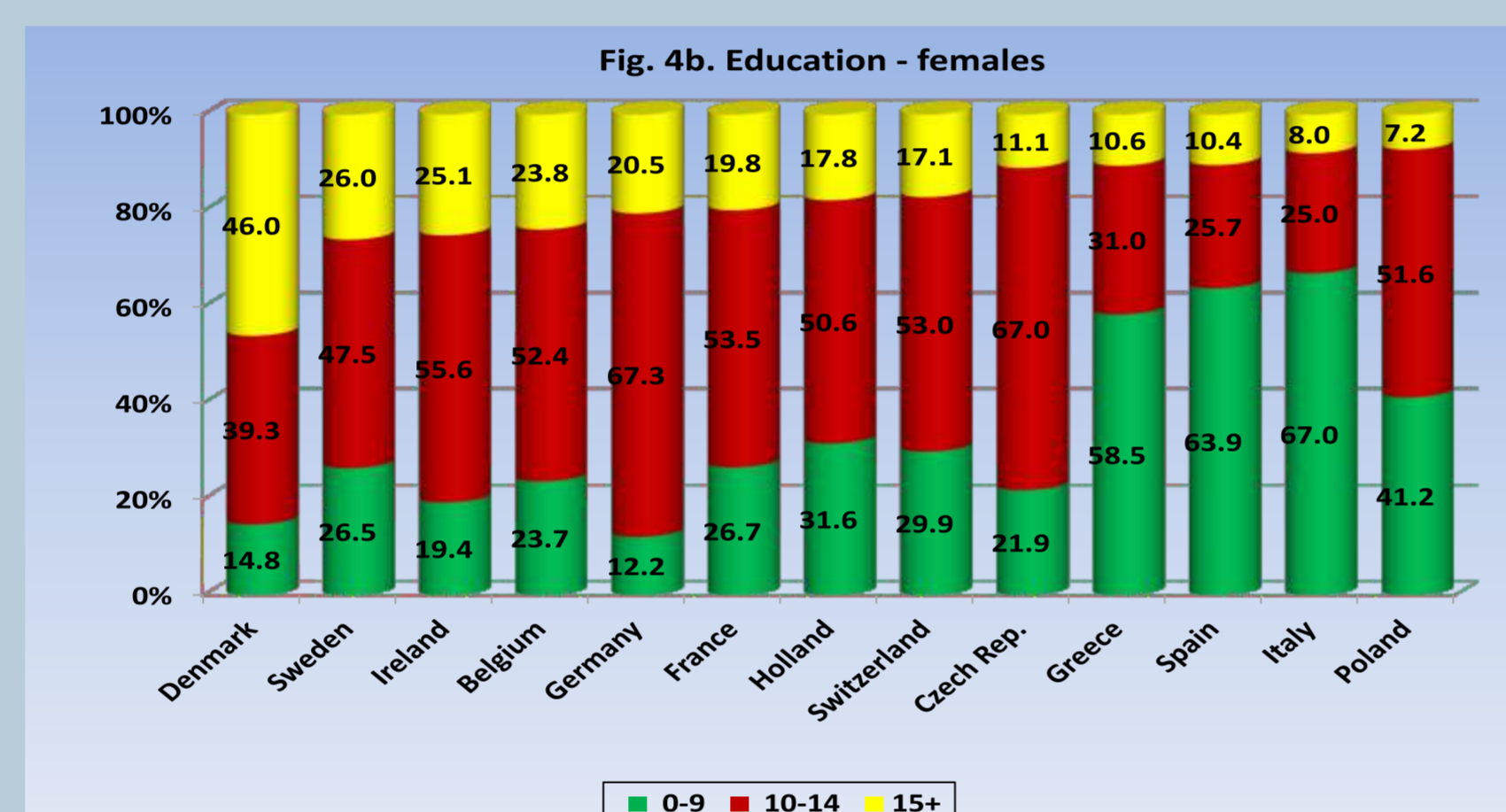
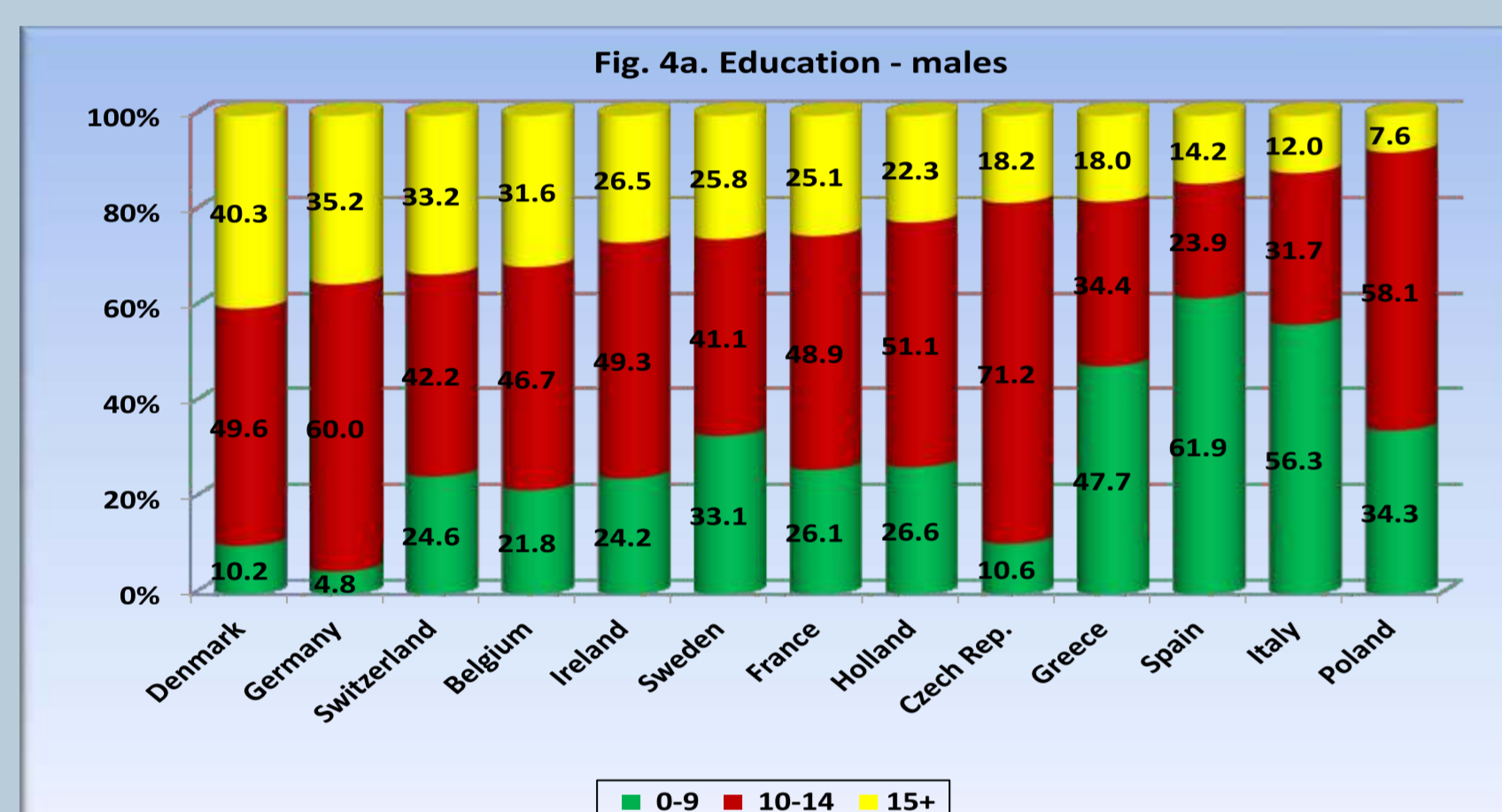


Activity level  
In all of the countries the activity level among males is higher than among females. First of all it could be the result of a higher retirement age for males and socio-cultural determinants. Based on activity levels we are able to distinguish three groups of countries. Poland belongs to countries with low activity levels (37.2% active males, and 23.9% active females).

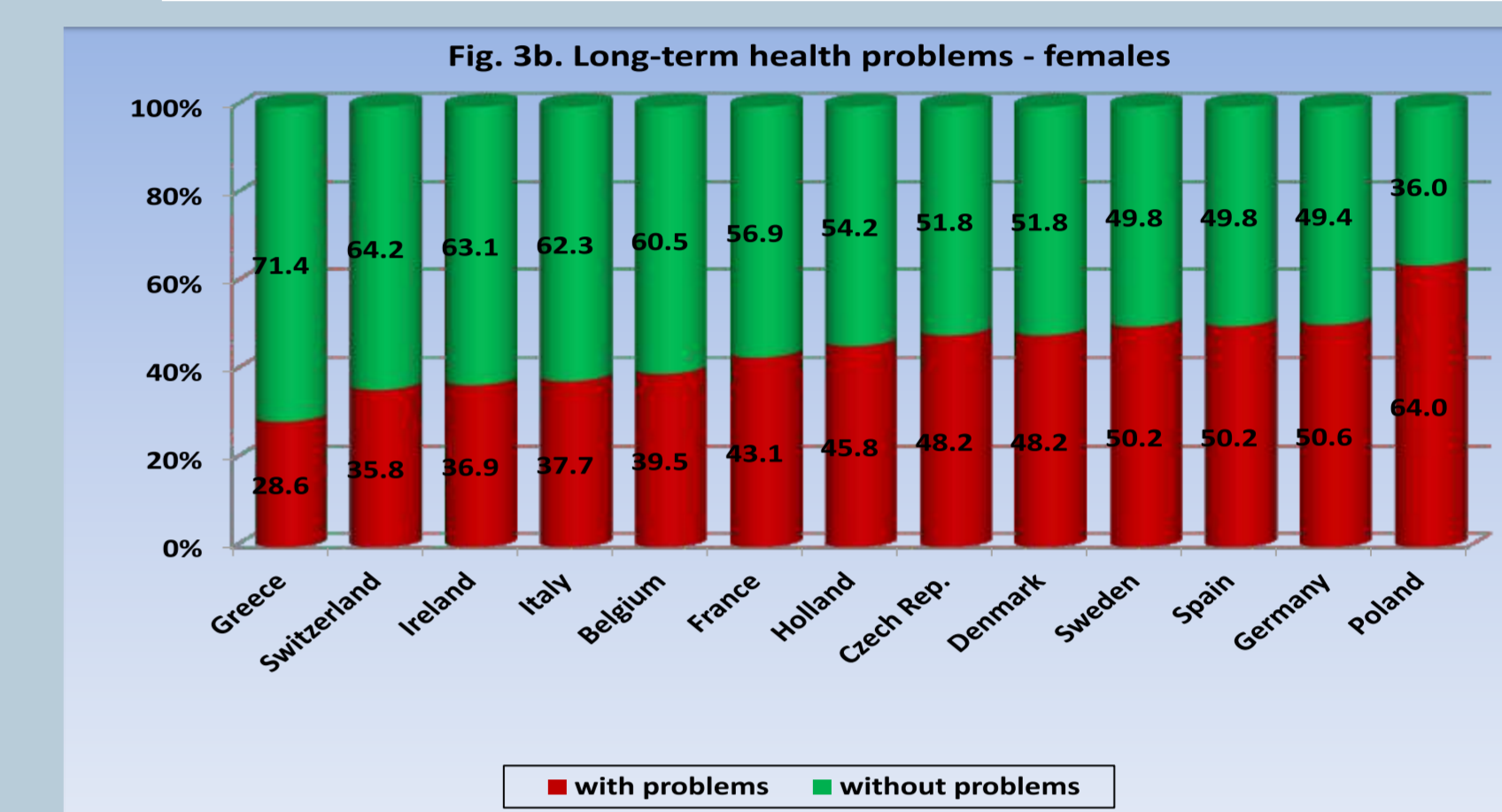
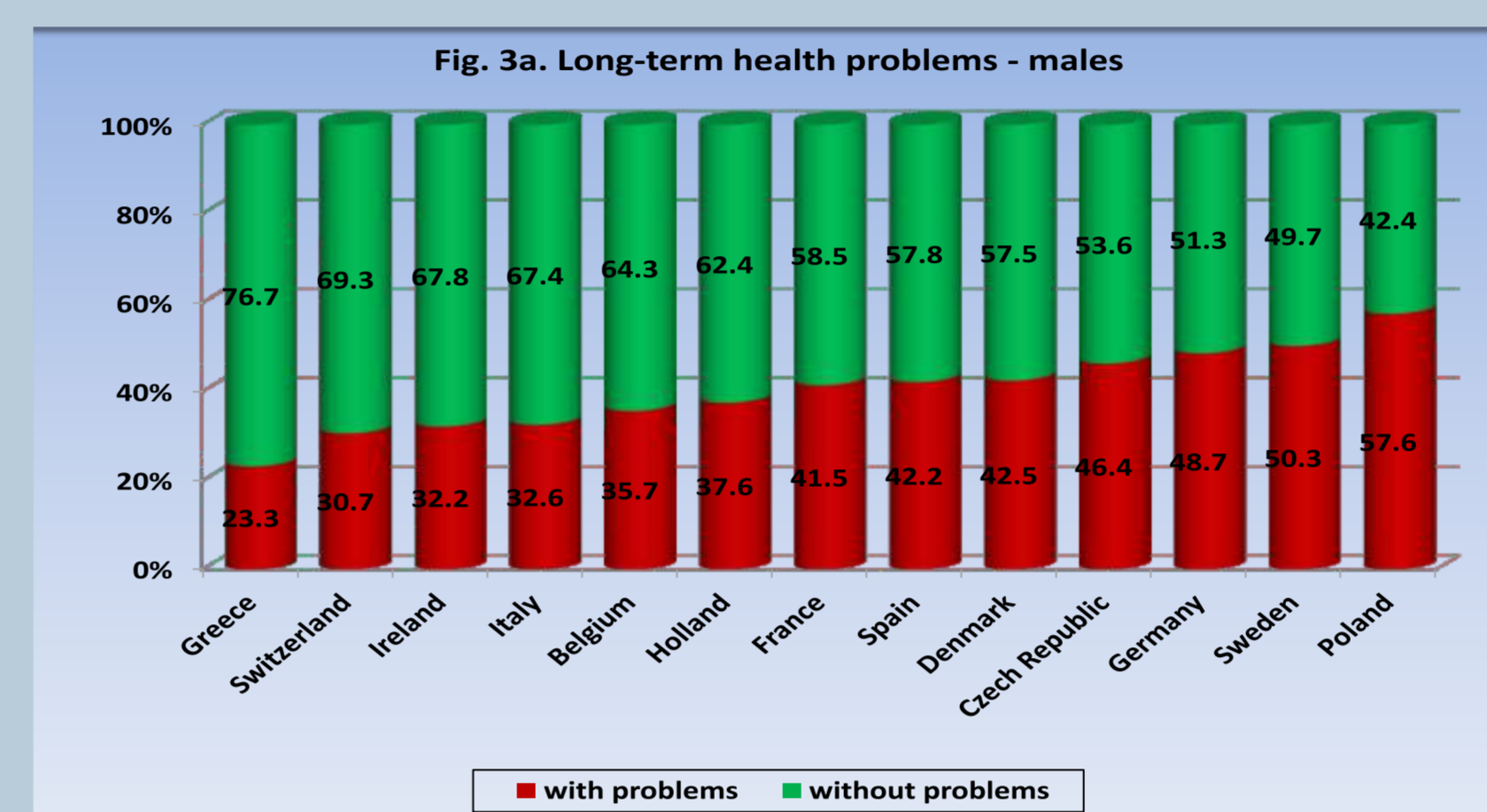
Activity	Males over 60%	Females over 50%
High	Switzerland, Denmark, Greece, Ireland, Sweden 49%-69%	Denmark, Sweden, Switzerland 39%-45%
Medium	The Czech Rep., Spain, Holland, Germany, France, Ireland, Belgium, The Czech Rep. below 40%	Germany, France, Ireland, Holland, Belgium, The Czech Rep. below 30%
Low	Italy, Poland	Greece, Spain, Poland, Italy



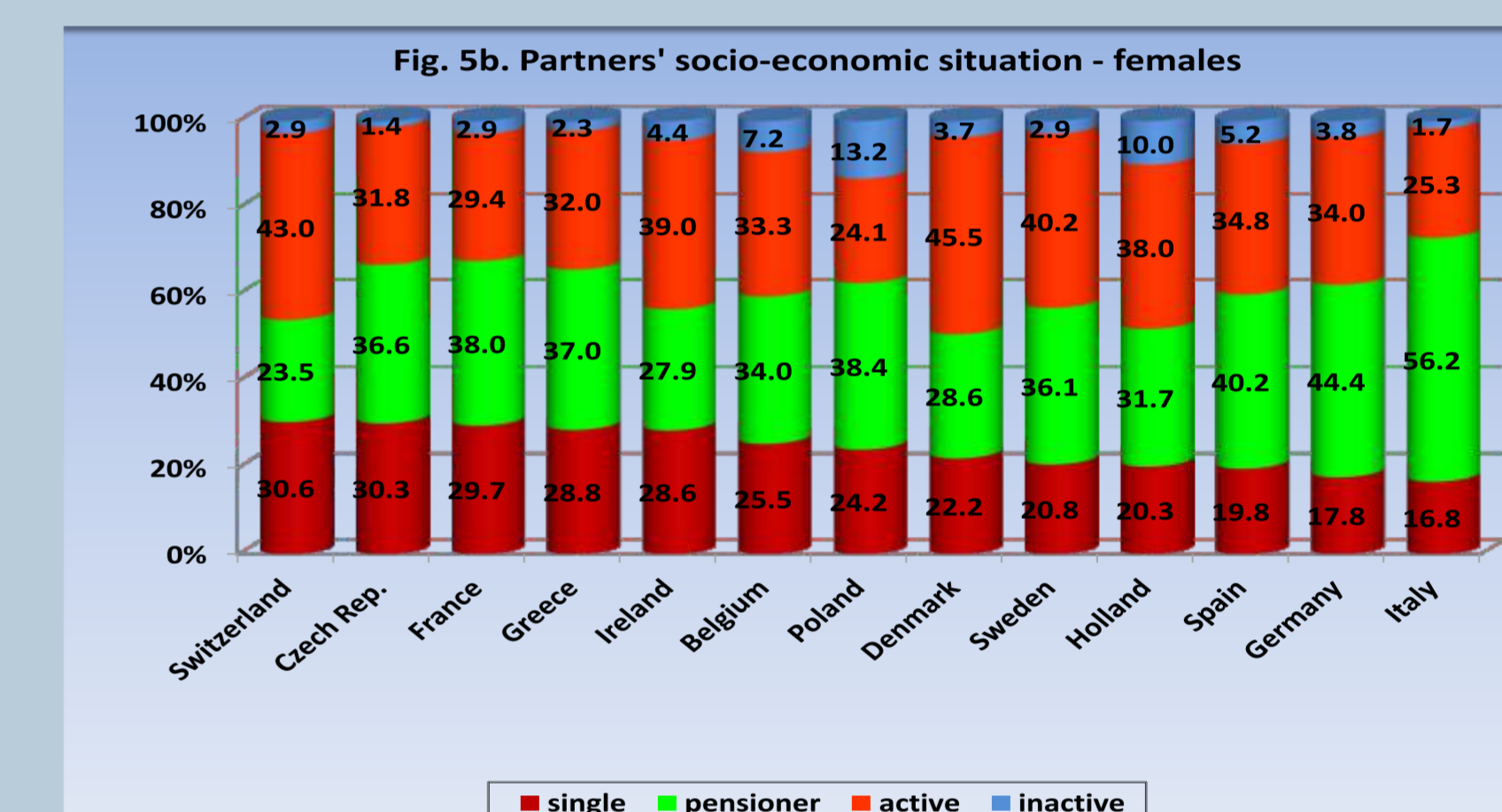
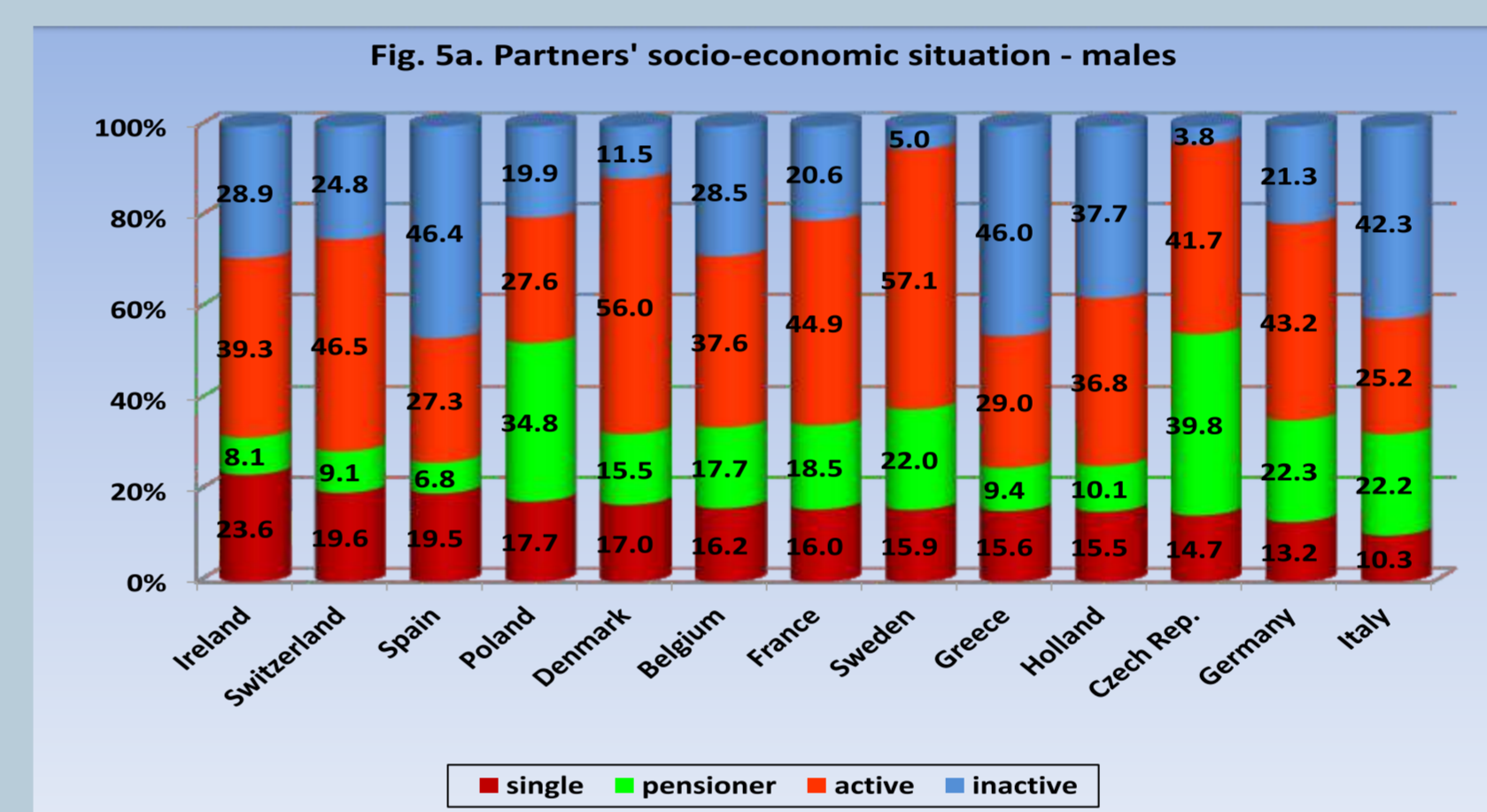
Age structure  
The age structures, ranged according to the percentage of the population aged 50-54 years, are presented above.



Education  
The educational level is measured in years of education grouped into three classes: 0-9; 10-14; 15 or more. Countries are grouped by the longest period of education (15+). In all of the countries, with the exception of Denmark, the percentage of males with the longest educational phase is higher than for females. Poland, Italy, Spain, and Greece possess the lowest percentage of the population with the longest period of education and at the same time the highest percentage of persons who spent 0-9 years at school. In the case of men, Denmark, Germany, Switzerland, and Belgium have got the highest percentage of the population with the longest educational phase. In addition, in Germany and in the Czech Republic, where the percentage of the population with a shorter education period is low, the frequency of the intermediate period (10-14) is meaningful.



Health  
Populations without long-term health problems prevail in the majority of the countries. The exceptions (over 50% with long-term health problems) are: among males in Poland and Sweden; and among females in Poland, Germany, Spain, and Sweden. Compared to other European countries the situation in Poland should be treated as the worst.



Partners' socio-economic situations  
There are considerable differences in partners' socio-economic situations according to sex. The proportion of single-person households is higher among females than males. When a woman lives with a partner, he is most frequently a pensioner. At the same time he is rarely inactive (fig. 5b). If a man lives with a partner, most frequently she is active (fig. 5a). Comparing women's partners, a higher proportion of inactive male partners is observed. We are able to enumerate some specific features.  
For partners of males: (1) high proportion of inactive partners and low percentage of pensioners among partners (Spain, Greece); (2) high proportions of active partners, and quite high percentage of pensioners among partners (Italy); high proportion of single persons, high percentage of pensioners among partners (Poland); low proportion of single persons, high percentage of pensioners among partners, very low percentage of inactive partners (Czech Republic).  
For partners of females: (1) low percentage of singles, high proportion of pensioners as partners, and very low frequency of inactive partners (Spain, Germany, Italy); (2) high percentage of singles, relatively high proportion of pensioners as partners, and very low frequency of inactive partners (Czech Republic).

MALE	$\theta_0$	$p$	age	$p$	edu	$p$	ill	$p$	econPstatus	$p$
Denmark	1.70	0.00	-1.63	0.00	0.64	0.00	0.76	0.00	0.27	0.01
Sweden	2.25	0.00	-1.72	0.00	0.42	0.00	0.87	0.00	0.52	0.00
Czech Rep.	1.33	0.00	-1.80	0.00	0.45	0.01	1.24	0.00	0.37	0.00
Italy	1.19	0.00	-1.82	0.00	0.59	0.00	0.69	0.00	0.23	0.03
Belgium	1.24	0.00	-1.64	0.00	0.36	0.00	1.06	0.00	-0.02	0.76
Switzerland	3.52	0.00	-1.82	0.00	0.16	0.37	0.65	0.02	0.03	0.82
France	1.30	0.00	-2.12	0.00	0.80	0.00	0.86	0.00	0.00	0.96
Holland	1.50	0.00	-1.69	0.00	0.42	0.00	0.88	0.00	0.11	0.21
Poland	0.59	0.04	-1.54	0.00	0.35	0.05	0.98	0.00	-0.02	0.82
Germany	2.51	0.00	-1.98	0.00	0.36	0.05	0.90	0.00	0.06	0.58
Greece	2.28	0.00	-1.36	0.00	0.10	0.36	1.27	0.00	-0.23	0.00
Ireland	1.64	0.00	-1.41	0.00	-0.08	0.66	1.50	0.00	0.13	0.28
Spain	1.52	0.00	-1.53	0.00	0.06	0.73	1.54	0.00	0.07	0.47

## MODELS

$$\text{logit}P = \alpha_0 + \alpha_1 \text{age} + \alpha_2 \text{edu} + \alpha_3 \text{ill} + \alpha_4 \text{econPstatus}$$

Considering the significance of the variables we are able to classify all of the countries into the following groups:

- all variables (two determinants and two control variables) are significant;
  - two determinants are significant and one control variable is insignificant;
  - one determinant is insignificant and all control variables are significant;
  - one determinant and one control variable are insignificant;
  - two determinants are insignificant;
- The groups are different according to sex:
- Males:**
- Denmark, Sweden, Italy, the Czech Republic - all variables are significant;
  - Belgium, France, Holland, Poland, Germany – only the control variable, Partners' socio-economic situation, are insignificant;
  - Greece - explanatory variable, education, is insignificant and all control variables are significant.
  - Ireland, Spain, Switzerland - explanatory variable, education, and control variable, Partners' socio-economic situation, are insignificant
- Females:**
- Denmark, Greece - all variables are significant;
  - Belgium, France, Holland, Poland, Sweden, Ireland, Spain, the Czech Republic - only the control variable, Partners' socio-economic situation, is insignificant;
  - Germany, Italy - explanatory variable, health status, and control variable, Partners' socio-economic situation, are insignificant
  - Switzerland - explanatory variables, health status and education, are insignificant.

The probability of being active decreases faster in the female population than in men in all countries except Poland and the Czech Rep., where a decrease of probability among women is greater than men.

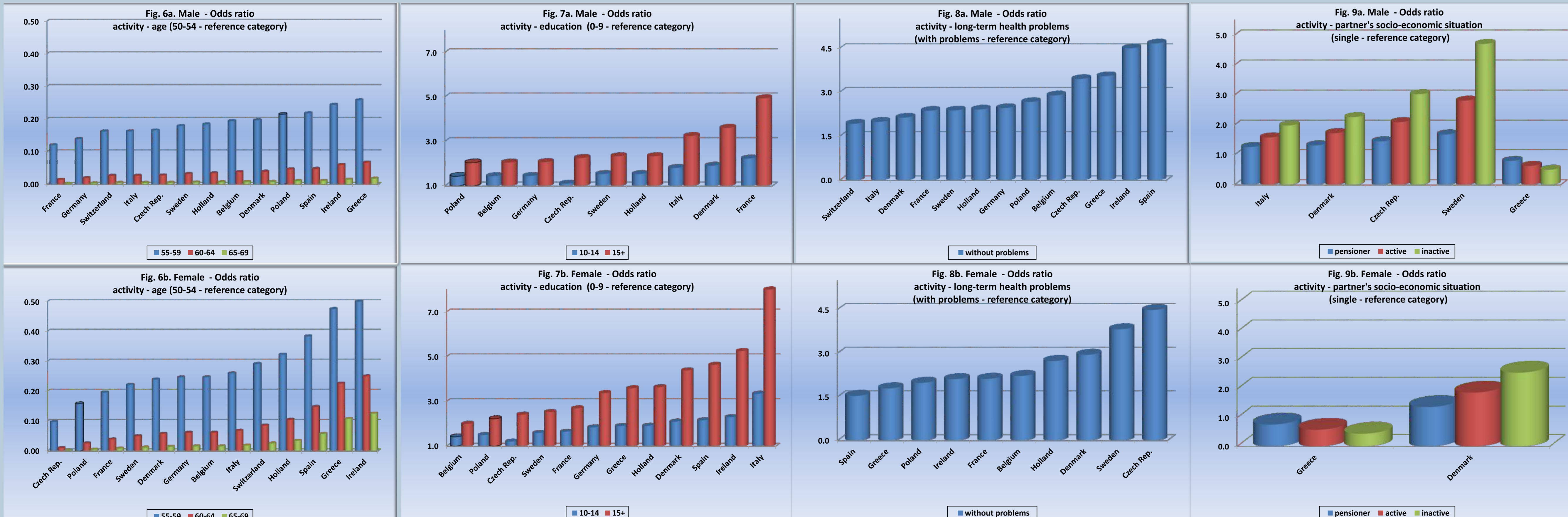
Partners' socio-economic situation among males in Denmark, Sweden, Italy, and the Czech Rep. (I group) indicates that if a man lives with a partner then his probability of being active increases. Only in Greece (III group), living with a partner decreases this probability. In the case of females in Denmark, living with a partner increases the probability of being active whereas in Greece it decreases this probability (similarly to men).

Education in male populations is an insignificant determinant of activity in Greece, Ireland, Spain, and in Switzerland; and among females is insignificant only in Switzerland. The educational level, when it is significant, increases the probability of being active. The influence is stronger for women in: Denmark, the Czech Republic, Spain, Sweden, Ireland, Holland, Poland, Germany, and Italy; stronger for men in France and similar for both sexes in Belgium and Switzerland.

Health measured as an absence of long-term health problems for males is significant in all of the countries and for females is insignificant in Germany, Switzerland, and Italy. Absence of long-term health problems, when it is significant, increases the probability of being active. The influence is stronger for women in Denmark, Sweden, Holland, and the Czech Republic. It is stronger for men in Greece, Belgium, Spain, France, Ireland, and Poland.

In Poland all of the determinants have a significant influence on the activity of older persons. The control variable, age, is significant as well and another control variable, partners' socio-economic situation, is insignificant. The influence of education is stronger for females whereas the influence of health is stronger for males. The influence of health is stronger than education for both the male and female populations.

## ODDS RATIOS FROM LOGISTIC REGRESSION OF ACTIVITY ON LABOUR MARKET ON SELECTED VARIABLES



## GENERAL CONCLUSIONS

- It can be stated that according to sex, the influence of educational levels differs from the health status in relation to the activity of older persons. Among females, the influence of education is stronger than health in most countries.
- The absence of long-term health problems influences stronger activity levels in most of the male populations.
- Both determinants (education and health) affect stronger activity levels of women in Denmark, Sweden, Holland, and the Czech Republic.
- Age is a variable that significantly influences the activity of older persons in all of the countries. The probability of being active diminishes with age.
- In most of the countries, the living arrangement (single or partner households) has no significant influence in the activity of older persons.
- We observed this significant influence most frequently among the male population with the relatively shortest educational phase. In these living with a partner increased the probability of being active.

## RECOMMENDATIONS FOR AN ACTIVE AGEING POLICY

- Well-educated, experienced, and in good physical and psychological condition, the older generations are interested in an active ageing.
- An active ageing policy should be directed to people leaving the labour market due to long-term health problems. A lack of adjustment to work environments due to deteriorating physical and psychological conditions can be the cause of leaving the labour market.
- An interest in participating in the labour market will grow among women, along with the growth of their educational level.