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THE GLASS CEILING PHENOMENON AS A BARRIER TO COMPETITIVENESS IN THE PROMOTION OF WOMEN IN THE UNIVERSITY ENVIRONMENT

INTRODUCTION

The main aim of the study presented here is an attempt to verify the problem of the competitiveness of women in the sphere of academic promotion (in the sense of acquiring ever higher academic titles and holding management positions within the university hierarchy). This topic is especially interesting because in the world literature there are few studies regarding his subject in the university environment. It is equally important to assess the scale of the glass ceiling phenomenon, and also to understand its individual and organizational conditions. This study will allow us both to introduce changes into the management of universities, and also to become aware of the need for a change in the attitudes of women towards a more effective form of competitiveness for academic promotion.

1. AN OVERVIEW OF THEORY AND RESEARCH

The concept of the glass ceiling appeared in print in the 1980s, and has been described as a nearly imperceptible transparent barrier which makes it impossible for women and minorities to rise to the highest levels in the management hierarchy [Hymowitz and Schellhardt 1986; Morrison, Von

Glinow 1990]. Other authors have called this phenomenon the "concrete wall" or the "sticky floor" [Bell and Nkomo 2001; Betters-Reed and Moore 1995], associating it with racism and sexism with regard to women and women of color. Nowadays, it is more common to speak of a labyrinth in order to characterize the "uneven path" of development and promotion which women encounter in organizations [Eagly and Carli 2007]. Sanchez-Hucles and Davis [2010, p. 172], have aptly described this process: "This trajectory involves diverse challenges, indirect forays, and ventures into foreign territory rather than following a straight line to the top."

The seriousness of this problem can be confirmed by the statement that even if women reach high positions in top management, the barriers continue to exist. In studies on a group of senior leaders [Haslam and Ryan 2008], it appears that women must continually prove their worth, especially in high risk environments, in order not to lose their positions. Female managers often feel isolated and unsupported by their mentors and coworkers in challenging situations, which Hewlett et al. [2008] have called the "glass cliff".

The problem of the glass ceiling was identified in statistics mainly concerning the percentage of women in higher management positions in corporations (State of Wisconsin, 1993), as well as generally in the USA [The U.S. Bureau of Labor Statistics 2007; Catalyst 2006].

The U.S. Department of Labor [1991, p. 1] defined the glass ceiling as "artificial barriers based on attitudinal or organizational bias that prevent qualified individuals from advancing within their organization and reaching their full potential".

A survey of the literature shows that the glass ceiling phenomenon can be analyzed with regard to three paradigms [Riger, Galligan 1980].

One theoretical approach supported by psychologists explains women's low professional status by citing individual differences. Traits, behavior, attitudes and upbringing are said to make women fearful of success and unwilling to take risks.

Research has been carried out aimed at verifying the appearance of differences among managers based on sex. This research has shown that men and women in management positions have more in common than they have visible differences in terms of personality, aptitudes, and motivation [Howard, Bray 1988]. In addition, they are characterized by similar aspirations and values, as well as behaviors and skills related to their professional lives [Eagly, Karau and Makhijani 1995; Morrison and Von Glinow 1990; Powell 1988; Noe 1988; Dipboye 1987; Dobbins and Platz 1986; Ritche and Moses 1983; Riger, Galligan 1980].

The second group favors an explanation of the phenomenon which is based on attitudes held by groups or individuals within the organization.

This school of thought proposes, among others, a bias which results from factors in the work environment, the so-called "contextual circumstances"

[Larwood et al. 1984, 1988a]. Discriminatory practices regarding the careers of women and ethnic minorities apply only when they are approved and condoned by relevant stakeholders.

Many authors explain the process of discrimination based on historically entrenched and still current negative stereotypes, according to which it is men who are predisposed to management roles [Powell 1988; Thomas and Alderfer 1989]. Differences in pay between men and women can be attributed to these stereotypes, and not to assessment of their effectiveness on the job.

The third approach is called structural discrimination, as it explains the phenomenon with reference to the balance of power or influence within specific groups within an organization.

The intergroup theory [Thomas and Alderfer 1989] differentiates two types of groups; identity groups, defined with reference for example to sex, age or race, and organization groups, defined with reference to the types of tasks carried out or positions held by members within the hierarchy of the organization. The status of the identity groups mirrors their relations with other groups in society at large.

It seems that an excellent illustration of the functioning of the intergroup theory is analysis of academic leaders [Turner 2002]. Women of color in management positions feel greater pressure to adapt and a lower tolerance for mistakes, they feel isolated and feel difficulty in convincing their coworkers of their reliability, and have limited influence and authority. In general, women of color are convinced that the academic world sees them through stereotypes. The situation for white women who identify with the dominant group is substantially different – they are among others supported in their rise to high level positions.

Economists, in turn, explain the phenomenon of discrimination by means of a dual labor market, in which jobs are divided into better and worse categories, which are then addressed to different social groups. The groups associated with the second category of work, women and minorities, have limited employment opportunities and job mobility, and discrimination against them is justified with resort to economic effectiveness [Larwood and Gattiker 1987].

Based on psychological theories, structural barriers in discrimination against women result from the domination of men within the group which runs the organization. Men exaggerate gender differences in accordance with stereotypes regarding the lesser suitability of women to management roles, which in turn undoubtedly influences women's assessment of their own potential and chances for promotion [Riger and Galligan 1980; Kanter 1977]. An essential factor in breaking through these stereotypes is an increase in the proportion of women at different levels of management, and it has been estimated that if this proportion is more than 25%, the women are accepted

as managers [Gardiner and Tiggemann 1999; Jamieson 1995; Kephart and Schumacher 2005; Van der Boon 2003].

In the context of research on the glass ceiling phenomenon, the role of the superior and his attitude towards the promotion of his subordinates regardless of their sex seems to be an important issue.

A vital role is played by the mentor, who assists individuals with their promotions in the organization, but also influences the personnel policy of the organization. The necessity and effectiveness of mentoring can be confirmed by research [Scandura 1991] which indicates that 72% of women in high management positions at executive level at one time had a mentor.

In analyzing the scale of the glass ceiling phenomenon, Morrison and Van Glinow [1990] pointed out the need to take organizational culture into account in order to assess the influence of structures and organizational systems in limiting job mobility within the hierarchy of authority as one of their important conclusions.

Cheung and Halpern [2010] have introduced the concept of a culture gender in their proposed model of leadership, referring to expectations with regard to women and men. The authors believe that an understanding of the careers of women requires an understanding of different cultural contexts, which are a supplement to the paradigms of individual traits, processes, and the influence of the environment.

In the context of comprehending the mechanism by which the glass ceiling phenomenon functions, one of the fundamental questions concerns the ability of women to reconcile the demands of two worlds, the professional world and that of the family. In other words, it must be determined whether having a family and children creates a significant barrier to promotion. In connection with this, studies of management careers focused on the fulfilment of the role of mother by women.

Numerous studies of the careers of female managers have proved that responsibility for the family, home, and other societal obligations, continue to represent an additional source of stress [Dipboye 1987; Morrison et al. 1987, Powell 1988].

In the USA, half of women holding top executive positions with an income of more than $100,000 annually do not have children [Dye 2005, Hewlett 2002].

The situation is similar for female academics [Mason and Goulden 2004] who have reached the highest ranks at universities. Only one third of them are mothers, and 12 years after completing their doctorate twice as many women as men remain single. The authors explain that in the academic environment there is a double standard regarding the sex of the employee. With men, having children is regarded as a sign of stability and responsibility that positively affects their work, whereas with women the perceived effect is the opposite.

Interpersonal competence significantly influences achievement in the workplace [Holland 1985] and promotion [Snyder 1987], as it is associated with self-monitoring (SM) which in turn conditions the appropriacy of social interactions. According to the definition given by Gangestead and Snyder [2000, p. 390] "At the core of the SM construct are individual differences in the propensity for impression management involving the construction of positive social appearances."

Day et al. [2002] have carried out a meta-analysis on the results of 136 studies carried out with the participation of 23 191 individuals on self-monitoring of personality in an organizational context. The results achieved by men in the area of SM can to a certain extent explain the disproportion in their numbers at top level positions within organizations, which partly explains the glass ceiling phenomenon [Glass Ceiling Commission 1995]. It appears that men, in comparison to women, show better understanding of important organizational aspects concerning, among other things, leadership and the attitudes and behaviors associated with it. Although self-monitoring is not the only cause of professional success, it becomes apparent from the studies that a high level of SM has a direct impact on assessment of work and the way that leadership qualities are seen at all levels of the organization. The results indicate that the holding a high position within the organization goes hand in hand with a high level of SM.

Eagly and Carli [2007] believe that women's promotion is dependent on their creation of social capital, which requires blending of assertive behaviors with friendliness and helpfulness, the maintenance of positive relations with coworkers, cooperation with men and support on the part of the mentor.

2. RESULTS OF THE STUDIES – A POLISH CASE STUDY

RESEARCH PROBLEM AND HYPOTHESES

In studying the phenomenon of the glass ceiling at universities two areas must be considered. The first concerns academic promotion and the acquisition of subsequent ranks, and the second concerns the holding of management positions at various levels of the organizational structure of the university.

For this reason two main research hypotheses have been formulated:

Hypothesis 1: Women at universities are discriminated against in academic promotion.

Hypothesis 2: Women at universities are discriminated against in their management careers within the university hierarchy.

The aim if the research was first of all to assess whether the practice of discrimination against women takes place at Polish universities, and secondly the sex of the respondents was taken into to account to compare the opinions of men and women on that topic.

The respondents were separated into two groups due to the probability that their experiences and perception of many aspects of the workplace, including the glass ceiling problem, are different [Gutek, Searle, Klepa 1991; Heilman 1995; Larwood and Gattiker 1987; Morrison 1992; Powell and Mainiero 1992]. This can be confirmed by studies and theories regarding the functioning of stereotypes on the differing attributes of women and men [Heilman 1983; Ruble, Cohen, Ruble 1984].

RESEARCH SAMPLE

Two hundred academic employees, including 100 women and 100 men, from five Cracovian universities, the Jagiellonian University, the Cracow University of Economics, the Agricultural University of Cracow, the Academy of Mining and Metallurgy, and the Cracow University of Technology, took part in the study.

The biographical data collected was intentionally incomplete, especially that which in the opinion of the respondents would allow them to be identified or compromise their anonymity.

The age of the respondents figured within a range of 30 to 65 years old, with the largest groups representing the range from 32 to 42 (35% of the respondents) and from 49 to 60 (42% of the respondents).

The majority of those studied had a doctoral degree (65%), and the remainder (35%) were tenured. From this incomplete data it can be seen that the majority (62%) were adjuncts, the next largest group were lecturers (12%) and persons holding the title of professor (19%). The marital status of the respondents indicates that 57% of the men were married, while only 31% of the women were.

Only 23% of the respondents declared the management duties that they carried out, including 15% who occupy positions such as dean, associate dean, director of the institute, vice-director of the institute, director of the faculty, and director of the department.

Although from this description the research sample may seem to be random, from the point of view of our research the range of ages and academic titles are highly representative regarding acquired experience in academic promotion practices.

MEASURE

The questionnaire used in the study consisted of two parts and included 35 questions. The first part concerned academic promotion, and the second contained items related to promotion in university management. In addition, the respondents had the possibility to add their own commentary to each question.

In the first part of the questionnaire there were 16 items:
– the content of two of them was generally speaking "discriminatory practices against women at universities" and "equal treatment of men and women;"
– a further six items concerned specific aspects of university work, such as "the need to continually prove one's worth and demonstrate ability in academic work in order to be promoted among women," "respect for women's opinions", "the influence of sex on access to financing for research", "the type and complexity of academic assignments", "variety in assessment of academic activity and level of pay dependent on sex;"
– one question concerned the topic "the percentage of women in progressively higher academic ranks;"
– two questions on the issue of whether "having a family creates difficulties in progressing in an academic career" and "delay of acquiring subsequent academic titles caused by starting a family;"
– four questions on the topic of determinant factors in development and academic promotion, such as "the influence of intelligence and creativity," "the level and value of academic work," "the influence of desire for achievement and ambition," and "the influence of random factors;"
– two questions concerned the relationship between "relations with important individuals in the university hierarchy" and "the role of the superior in professional development."

The second part of the questionnaire included 19 items covering the following areas:
– two questions concerned the general assessment of the competence of the management at the university;
– the content of the next seven questions concerned academic promotion practices at the university, such as "equal opportunity for women in occupying management roles at the university at all levels of orga-

nization," "the percentage of women in progressively higher ranking management positions at the university," "uniform predispositions for carrying out management roles," "decisiveness of women in self-promotion regarding their ability to fill management roles," "interest in this type of career among academic workers at the university with respect to sex." Preferences regarding the sex of the superior," "level of care given to academic development and promotion with respect to sex."

– ten further questions concerned the reasons for lesser representation of women among university authorities, such as "men usually promote men," "lack of support from the superior," "lesser flexibility of women", "promotion fixing," "the conviction that women do not make good managers," "bias against women," "women's distaste for these types of positions," "women's fear of taking on such roles," "the lack of management traits among women," and "stereotypical assignment of management roles to men."

In the questionnaire a five-point answer scale was used, in which specific points were related to the content of the questions, in order to capture the variety of experience regarding different aspects and practices of academic promotion of women at universities.

PRESENTATION OF THE RESULTS OF THE RESEARCH

The first part of the analysis concerns the verification of the hypothesis that women at universities are discriminated against in the area of academic promotion. The sex of the respondents has been taken into account in the presentation of their opinions.

Male respondents express a more decisive opinion on the topic of the lack of sex bias in academic promotion at universities, with 66% of them answering that this practice "doesn't often take place," and 16.2% answering "never takes place." In the case of women, almost a half of the respondents (46.9%) feel that such practices do not often take place, but 12.2% responded that such situations "often take place" and 34.7% that such situations "take place sporadically." The difference in answers among men and women are confirmed by the results of a significance test (χ^2 = 22.07; p = 0.001).

Among those respondents who observed the phenomenon of discrimination at the university, the majority of women feel that such practices affect them directly (76%), whereas men feel that the problem affects both men and women equally.

In the case of the next question concerning the equal treatment of men and women in their professional lives at universities, there is a noticeable

difference in the answers received based on sex (χ^2 = 12.82; p = 0.002). The answer that the "decision to follow an academic career by a woman is treated with equal seriousness as that decision made by a man" was given by 64% of the men but only 32% of the women. As many as 22% of the female respondents feel that their aspirations and plans are treated rather sceptically due to traditional gender roles assigned to them. The influence of the individual's situation on the answer given can be seen in the frequency of answers such as "sometimes" (46% of women and 32% of men). One of the arguments used was "the influence of the immediate supervisor."

Several specific aspects of the equal treatment of men and women at universities were verified, such as the necessity of proving one's worth and demonstrating one's possibilities in academic and professional work in order to achieve academic promotion, and respect for women's opinions, the influence of sex on access to funding for research projects, the type and complexity of assigned tasks, differences in assessment of academic and research work, and pay levels dependent on sex.

Regarding the greater necessity for women to prove their own worth, opinions of the respondents were significantly different dependent on sex (χ^2 = 35.65; p = 0.001). In the opinion of men (range of answers from "rather not" 52%, and "definitely not" 40%), there is no such pattern that women must continually prove themselves in order to be promoted academically. Women have a very different opinion, as 56% of them feel that their academic career is dependent on how far they are able to prove their usefulness in academic and research work.

Similar patterns are observed in questions concerning the remaining areas of activity at the university (χ^2 = 30.97; p = 0.001), in which as many as 62.5% of women feel that in order to be promoted academically they must work harder than men and prove their professional worth. The opposite opinion is held by 85.3% of the men surveyed.

Half of the women surveyed feel that they rather do have the possibility of stating their own views and winning respect for their opinions. There is a noticeable group, however, that feel differently (30%). In turn, men do not see this problem, as many as 81.6 % feel that women are taken into account and respected by the general scientific community. Tests of significance confirmed the dependence of the answers given on the sex of the respondent (χ^2 = 21.22; p = 0.001).

In the next area surveyed as many as 84% of the total number of respondents feel that everyone has equal access to funding for their own research. A breakdown by sex reveals that 96% of men and 72% of women feel this way. However, the comments provided by those who answered thus in the survey complement the sense of the question, stating for example "the fact that everyone has equal access to funding does not mean that every-

one receives it, because other factors are decisive," or "everyone has equal access to funding apart from the group of academic workers excluded by the university authorities." The mechanism for awarding funding is illustrated by the opinion of 20% of the women, who feel that men have easier access to funding if only because of "friendly relations with management." It is women who underscore the influence of the university authorities and the superior on the sharing of financial resources.

Our research on the equality of women and men also included assessment of the relationship between sex and the type of academic tasks assigned at universities. Significance tests do not indicate a sex-determined difference in answers (χ^2 = 5.84; p = 0.12) between male and female respondents, as most of the respondents feel that sex plays no significant role in the assignment of tasks. There is, however, a certain number of respondents (24% of the women and 14% of the men) who answered "I don't know."

In the context of the complexity of tasks carried out by both male and female academic workers in similar positions, there seems to be a justification for searching for an answer to the question about the relationship between sex and pay. It appears that as many as 78% of the men surveyed and only 36% of the women feel that pay is the same for the same work at the same level. In the opinion of a part of the group studied, men are "much better paid" (16% of the women and 6% of the men) and "slightly better paid" (20% of the women and 6% of the men). In turn 28% of the women and 10% of the men answered "I don't know" to this question. Significance tests confirm the dependence of the assessment of pay levels and sex in equivalent positions (χ^2 = 20.60; p = 0.001). Summing up, about one third of the women feel that men are better paid compared to women carrying out the same work.

One more very important area of study is the question of the assessment of academic and research work. Although the majority of academic workers feel that sex does not have an influence on assessment, there is a clear qualitative difference in the firmness of the opinions formulated. In contrast to women, among men the conviction dominates that assessment "definitely does not depend" on the sex of the worker (43% of men and 22% of women) and "rather doesn't depend" on the sex of the worker (39% of men and 54% of women). It must be remembered though that in the opinion of 20% of the women sex has an influence on assessment. An insignificant number of respondents answered "I don't know." Variation in the answers given by men and women was confirmed by a significance test (χ^2 = 26.31; p = 0.001).

In the context of the analysis carried out, one very important question concerns the percentage of women at progressively higher academic ranks, including at the professorial level. In the opinion of 58% of the women surveyed and 38% of the men, there is a difference based on sex. However, 26% of the total of respondents (18% of the women and 34% of the men) "does

not see such a pattern at their university." About a quarter of the respondents of both sexes stated that they do not know what the figures are at their university regarding this issue.

In light of the results of the study, an assessment of the influence of the non-work sphere on academic promotion is important. The issue of the influence of having a family on success in an academic career is often raised in the literature, especially in regard to women.

Among the academic workers surveyed, 54% of the women and 42% of the men feel that having a family "to a certain extent creates difficulties in achieving success in an academic career." Only about a quarter of the women as well as men feel that it is possible to "reconcile family and professional responsibilities." There is also a group of women (14%) and men (6%) who feel that having a family seriously interferes with the realization of an academic career, and that the professional sphere should take priority and the family life should be in second place. Summing up, the majority of women (68%) express the opinion that having a family creates a barrier in pursuing an academic career. Men also (48%) recognize this problem. The discrepancy observed in opinions expressed based on sex (χ^2 = 12.05; p = 0.034) can be explained by the fact that having a family is a direct burden on women due to natural and also cultural divisions of roles in the family. Male academics also recognize the problem that having a family means an additional burden for them.

The pattern noted has been additionally confirmed with respect to the answers to the question regarding "postponement of an academic title, including the title of professor, due to the establishment of a family." That this is mainly a problem for women can be seen from the percentage of positive answers (38%) in comparison with 74% of men, for whom establishing a family did not interfere with the achievement of higher academic titles.

It seems to be a justified conclusion that the advancement to higher ranks of academic titles is related to creativity and intellectual traits as well as the value of academic and research work, as objective indicators of a professional career. In the opinion of 58.6% of the respondents, higher academic titles are gained only by those who are creative and intelligent, although only 10.1% of those surveyed state this categorically, while the remainder feel that "intelligence and creativity facilitate academic promotion, but do not guarantee it." A considerable number of women (38%) and far fewer men (26.5%) feel that "academic promotion often does not go hand in hand with intellectual traits." It needs to be further noted that 14.3% of men claim that "the acquisition of further academic ranks and the title of professor do not depend on intelligence and creativity."

Academic promotion is associated with a high level and value of research by 50.5% of the total of respondents (including 62% of women and 79.1% of

men). The influence of non-substantive factors in academic promotion at universities can be felt in the number of respondents, 24% of women and 18.4% of men, who answered that they "rather don't" or "definitely don't" see a connection between the value of a person's academic work and academic promotion. In addition, 11.1% of those surveyed (14.2% of women and 8.2% of men) claim that academic promotion depends on "acquaintances and arrangements", and on other factors "not necessarily related to a high level of knowledge and value of research."

In the case of both questions, regarding the relationship of academic promotion to intellectual traits ($\chi^2 = 5.82$; $p = 0.12$) and with academic achievement ($\chi^2 = 4.73$; $p = 0.316$), a considerable overlap in the manner of answering the questions can be seen among workers of both sexes.

In the undertaken study the influence of motivation and career ambition was also assessed. The manner of answering the question was related to the sex of the respondent ($\chi^2 = 4.31$; $p = 0.05$). According to the majority of women (62%), high levels of ambition do not positively influence academic career development, whereas 58% of men feel that it does.

Differences in the perception of determining factors in an academic career also appeared in the case of assessment of the influence of random factors such as luck, to which as many as 36% of the women attribute a significant meaning, in contrast with 80% of the men who do not believe in an accidental course of events ($\chi^2 = 3.17$; $p = 0.075$).

Analyzing the conditions for academic career development, we have taken into account "connections with the right people" and the support of the superior. In as much as the first factor might hold negative connotations, the role of the superior in promoting subordinates is rather positive.

The results of the study show that although the majority of respondents (58%) feel that relations with important people in the university hierarchy do not have an influence on one's career, it must be added that as many as 46% of the women and 38% of the men have the opposite opinion. Undoubtedly, the academic promotion mechanism in each institution should be transparent, and based on the highest standards of objective criteria.

In the case of the role of the superior in career development, as many as 63% of the respondents (including 68% of the women and 58% of the men) are convinced of the vital importance of the support of the superior in academic promotion.

The second part of the analysis concerns the verification of the hypothesis that women at universities are discriminated against in holding of management positions within the university hierarchy. A comparison of opinions was carried out with respect to the sexes of the respondents.

In the real university environment, there is the possibility of promotion in the sense of holding higher positions and carrying out manage-

ment functions. Depending on norms and organizational culture, holding of management positions is often associated with academic promotion, that is, the holding of the title of professor with *habilitation* and the status of independent researcher. Combing these two criteria may result not from the additive character of an individual's predisposition, but rather from the rules of functioning of a hierarchical organization and respect for decision made by those holding the title of professor. It is well-known of course, basing on the theory of J. Holland [1985], that typically managerial predispositions and scientific ability do not necessarily go hand in hand, and in fact are opposites in the hexagonal model of the typology of professional personality types.

For this reason, the study of the phenomenon of discrimination against women in the holding of management positions at universities was preceded by the assessment of the opinion of employees on the topic of the competence and readiness to manage in individuals carrying out management duties. It appears that in the opinion of the majority of respondents (75.8%), including 80% of the women and 74.1% of the men, individuals carrying out management roles at their universities are insufficiently prepared to manage. Also, in the opinion of the majority of respondents (61.1% of the total, including 56% of the women and 76.3% of the men) individuals carrying out management roles "are not more scientists than managers," which may mean that to a certain extent they stand out in the typical academic environment due to their display of managerial traits. However, in this context, as a complement to the developing picture of the "scientist-manager," 34% of the women and 42.9% of the men feel that individuals in management positions at universities "have many shortcomings as managers."

In order to verify our hypothesis, the participants in the study were asked to answer the question "Do women have equal chances in working in management roles at universities at higher level positions?" the answers given were dependent of the sex of the respondent ($\chi^2 = 27.53$; $p = 0.001$). The majority of men (65.3%) feel that women have the same chances as men, whereas 46% of the women had the opposite opinion. Moreover, similar groups of respondents (12% of the women and 14.3% of the men) chose to answer that women have equal chances in relation to "only certain management functions," with the exception of rector (in the men's answers).

The assessment of equal chances of men and women in academic promotion was complemented by the results of the answers to the question regarding the percentage of women at higher levels and ranks of management functions in the university hierarchy. Significance tests confirmed that the answers given were dependent on the sex of the respondent ($\chi^2 = 18.22$; $p = 0.001$). The majority of women (78%) feel that in the case of higher management positions there are significantly fewer women, and this opinion was

shared by a significant number of men (40%). Only 6% of the women and 38% of the men saw no such pattern at their university.

As in the world literature on gender-dependent managerial predispositions, it seemed interesting to assess the opinion on this subject in very specific academic environment (assessment of the managerial staff has been described earlier).

The majority of women (60%) and 44% of the men feel that both women and men have the same managerial predispositions. It must be noted though, that 26% of the women and 38% of the men feel that men are better suited to management roles. Significance tests indicate a fairly similar manner of answering the question among men and women (χ^2 = 7.70; p = 0.103).

In this study women attributed the following traits to female managers; hard-working, organizational ability, meticulousness and precision, integrity, reliability, and emotionality. Men on the other hand see female managers as hard-working, meticulous and precise, and particularly emphasize their ambition, which may be a decisive factor in the women's decision to pursue such a career.

In the case of male managers, both groups named the same traits most frequently; decisiveness, organizational ability, ambition, and confidence. Moreover, women added competence and availability, as well as the negative trait of lack of self-criticism.

As getting a managerial position in the university hierarchy requires self-promotion in the university environment, the subsequent questions aimed to assess this sort of behavior with respect to sex. In the opinion of 68% of the female respondents and 40% of the male respondents, women display less decisiveness than men in self-promotion regarding their suitability for management positions. On the other hand, 34% of the men and 20% of the women expressed the opinion that this is rather not the case, and 7% of the respondents of both sexes that this is definitely not the case. In summary, it can be said that lack of active pursuing a management career and passivity in self-promotion may be one of the important causes of the disproportion among men and women with regard to promotion in ranks of the university.

One important issue is the assessment of the level of interest in this type of career among university workers with regard to sex. Significance tests show that there are similar preferences among men and women (χ^2 = 1.16; p = 0.884). The comments of those studied suggest that, if they were to receive such an offer, 40% of the women and 36% of the men would agree to take on a management position, and listed such positions as dean, director of the institute, department head, team leader, and even rector. In each group compared there is a subgroup of 34% undecided (who answered "I don't know"). A career of this would not be interesting for 28% of the respondents

(who answered "rather not" or "no"). This group listed as reasons for this attitude the lack of managerial predisposition, lack of this type of ambition, dedication to a strictly scientific career, and also family duties (mentioned by the women). Summing up, it can be said that the majority of those studied are equally interested in promotion and a career within the management structure of the university.

The comments of the respondents regarding their preferences for the sex of their superior also seem significant. It appears that for the majority of both women (60%) and men (54%), the sex of the person carrying out a management role is irrelevant . It must be noted though, that as many as 32% of women and 38% of men would prefer a male superior. Significance tests confirmed the similar type of answers from men and women ($\chi^2 = 3.08$; $p = 0.379$).

The opinion of the respondents on the amount of care given to academic development and promotion depending on the sex of the superior was also assessed. The majority of the women (63.8%) feel that women in management positions show greater care for the professional development of all their subordinates. A significant group of men (33.3%) and only 14.9% of the women are convinced that "they focus most of their attention on their own professional career." A substantial part of those surveyed (22.8%) had no opinion about this, or indicated that it depended on the individual leader. Significant discrepancies in the answers given were confirmed by tests of significance ($\chi^2 = 17.44$; $p = 0.002$).

In order to explain the lower number of women in university leadership, the following causes were examined:
- Men usually promote men ($\chi^2 = 2.67$; $p = 0.102$);
- Lack of support form the superior ($\chi^2 = 8.30$; $p = 0.004$);
- Lesser availability of women ($\chi^2 = 0.16$; $p = 0.689$);
- Phenomenon of "fixed" promotions ($\chi^2 = 5.26$; $p = 0.022$);
- Conviction that women are not suitable for such positions ($\chi^2 = 0.23$; $p = 0.629$);
- Gender bias ($\chi^2 = 8.30$; $p = 0.004$);
- Unwillingness of women to take such positions ($\chi^2 = 2.76$; $p = 0.096$);
- Fear of women to take such positions ($\chi^2 = 0.832$; $p = 0.362$);
- Lack of managerial traits among women ($\chi^2 = 1.08$; $p = 0.298$);
- Stereotypical assignment of roles to men ($\chi^2 = 5.65$; $p = 0.017$).

An analysis of those aspects in which there was a significant discrepancy between he assessments of respondents of different sexes indicates that women to a greater degree are convinced that the phenomenon of their lesser representation amongst university authorities is influenced by a lack of support from the superior (24% of the women and 4% of the men), by the unofficial system of "fixing" promotions (28% of the women and 10%

of the men), by gender bias (24% of the women and 4% of the men), and by stereotypes concerning the assignment of managerial predispositions and roles to men.

Men, on the other hand, differ from the women in their assessment of the unwillingness of women to take management positions in the university hierarchy (30% of the men and 16% of the women).

Respondents of both sexes agree regarding causes such as the lesser availability of women (46% of women and 50% of men), the conviction that women are not suitable for such positions (24% of women and 20% of men), the fear of women to take this type of position (30% of women and 22% of men), and the lack of typical managerial traits among women (14% of women and 22% of men).

Among other causes for the lesser representation of women in university management positions, the following were mentioned; the lesser percentage of women among independent researchers (with habilitation), greater interest in family life than in the university and promotion to higher positions (the opinion of both men and women), the unwillingness of women themselves to take such positions (the opinion of men).

DISCUSSION OF THE RESULTS

This research was carried out first and foremost to assess whether academic workers see a problem of discrimination and barriers to advancement for women at universities.

In organizations, the problem of the glass ceiling is often marginalized or completely unnoticed despite the results of research which clearly confirms the existence of this phenomenon [Crosby, Clayton, Alksnis, Hemker 1986; Twiss Tabb, Crosby 1989]. In this context, it explains the fact that the women studied, in contrast to the men, see the problem of discrimination regarding promotion and acquisition of further academic titles, as well as their unequal treatment in basic areas of work at the university. This is probably caused by two factors, firstly that men do not experience the phenomenon to a great extent, and secondly that the barriers themselves are difficult to detect because of their informal character. In the work environment, there are formal and informal interactions in which sex may be one of the significant determinants conditioning perception and expectations of employees both with regard to the leadership as well as with regard to the process of their individual and social identity [Lord and Brown 2004; Lord, Brown and Freiberg 1999].

In our studies, the results suggest that in the academic environment there is skepticism regarding the plans and aspirations of women due to tradition-

ally assigned roles. Because of this clear "role conflict," women experience postponement of successive achievements in academic promotion. This is confirmed by the pattern that the responsibility of women for the family comprises an additional and significant burden which influences career achievement [Dipboye 1987; Morrison et al. 1987, Powell 1988]. The study shows that women more often interrupt their careers due to burdens associated with the family [Gallese 1985; Lyness and Thompson 1997; Parasuraman and Greenhaus 1993; Powell and Mainiero 1992; Strober 1982].

The necessity for women to constantly prove their being worthy and demonstrate their skills in the workplace and in the academic realm in order to be promoted is caused by the necessity to break stereotypes [Mason and Goulden 2004] and face the challenge of the double standard which applies to women and men [Foschi 1992, 1996, 2000; Lyness and Heilman 2006]. According to Foschi's theory, women who want to advance academically must considerably exceed the standards set for men, especially in roles identified as typically male. In the opinion of the women studied, the multifaceted support of the superior is exceptionally important, both as a mentor and as an intermediary allowing women access to funding for their independent research. It is women, in fact, who highlight the role of the university authorities and the superior in the distribution of funding.

The observations and feelings of the women studied regarding assessment of their own academic research activity finds justification in studies carried out by Sackett, DuBois, and Noe [1991]. It turned out in that study that if women comprised less than 20% of the workforce, they were assessed worse than men according to different measures of work performance. Sex-based differences in levels of pay can also be explained by the same mechanism.

In the opinion of the respondents, that is the majority of the women and a large number of men, the percentage of women at higher levels of academic rank, including professors, lessens steadily. The assessment of such determinants of academic promotion as academic achievement and individual predisposition (intelligence and creativity specifically), which do not always play the deciding role in acquisition of academic titles, could suggest the influence of contextual factors. From certain statements made by the respondents, we get a picture of outright favoritism of men. Stereotypes regarding women and the barriers described earlier, as well as the arrangement of power between specific groups (for example, the domination of men among university authorities) according to intergroup theory, explain the mechanism of promotion within the academic environment studied.

Promotion at the university also concerns the exercise of power and holding of management positions in the university hierarchy, and so in this study an attempt was made to verify the equal chances of women with regard to men in this area.

The study shows that the majority of men feel that women have the same chances as men for gaining management positions at the university. The problem of discrimination is recognized by the greater part of the women who observe the drastically decreasing numbers of women at higher management levels. Moreover, opinions were given by the whole of the study group suggesting that women have equal chances as men with regard only to "certain management functions" with the exception of rector (the men's comments). This result can be confirmed by a review of the literature, which shows that women most often occupy the lowest rungs of the management hierarchy and are underrepresented at executive levels. Studies have also shown that women are suitable candidates for high-level management positions in the organizational hierarchy [Catalyst 2005; Richardson and Loubier 2008].

The juxtaposition of opinions regarding the representation of women at executive levels in the organization with an assessment of the predispositions seems to be significant. The majority of women studied and a significant group of men feel that both women and men have identical predispositions for management duties. This assessment is in accord with the results of numerous studies which have proved the absence of essential individual differences between men and women in management positions and their similar predispositions in this sphere [Eagly, Karau and Makhijani 1995; Morrison and Von Glinow 1990; Powell 1988; Noe 1988; Dipboye 1987; Dobbins and Platz 1986; Ritche and Moses 1983; Riger, Galligan 1980]. It must be noted though, that about one third of the respondents feel men to be better managers. Such preferences may be explained by the influence of stereotypes, but also by management style and individual traits. Jacobs and McClelland [1994] underscore the differences in the type of power exercised by men and women, though in studies the superiority of one or the other group was not demonstrated [Eagly 2007; Eagly and Carli 2007; Richardson and Loubier 2008].

Women have a tendency to use resourceful power, which involves inspiring, helping, and supporting others. Men are said to use reactive power, involving assertive and aggressive behaviors addressed to other individuals and groups exhibiting power. In these studies, the feminine style of management has a highly administrative character, but also shows care for the professional development of subordinates.

The lower numbers of women at top management levels at universities can be explained not only by barriers such as the glass ceiling, but also by a too infrequent recourse on the part of women to strategies aimed at demonstrating their own capabilities and talents, in contrast to those individuals who occupy high-level management positions [Wickwire and Kruper 1996]. This failure to pursue management positions and passivity with regard to

the self-promotion of their predispositions and competences may be one of the significant causes of the disproportion in promotion at universities. As the studies show, the successful realization of such a career demands self-monitoring and an understanding of the importance of self-promotion.

The men studied not only speak of the lack of self-promotion, but also of an outright unwillingness of women to win management positions within the university hierarchy. On the other hand, women are more convinced than men that their lesser representation within the university leadership is influenced by the lack of support from their superiors, by the informal system of fixing promotions, and by a gender bias and stereotypes which assign managerial predispositions and roles to men.

Respondents of both sexes (about half of the total) agrees that the lesser availability of women is a barrier to promotion. About one quarter of those surveyed expressed the conviction that women are not suitable for management positions and do not possess typically managerial traits, and moreover fear promotion to this type of position.

CONCLUSIONS

The most important conclusions of this study are:
- The academic environment is not free of the influence of bias, stereotypes, and barriers characteristic of the glass ceiling as described in the literature.
- Perception of this phenomenon depends on the sex of the workers, and men hardly see the problem at all.
- Awareness of the conditions for professional development and promotion, both on an individual level and within the organization, demands knowledge and cognizance of the patterns illustrated by studies carried out in this area.
- The potential of women enables them to be promoted but demands the use of additional strategies of self-promotion and acquisition of social capital.
- The conflict of roles associated with women's responsibility for the family demands a search for solutions, as it is still a significant barrier to promotion for women.

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