

Factors Influencing Female Managerial Performance: A Pilot Study for Model Validation

László Pálmai ¹, Zsolt Kőműves ^{2*} , Bence Végvári ² , Gabriella Szécsi ¹ 

¹ Doctoral School of Economic and Regional Sciences, Hungarian University of Agriculture and Life Sciences, Gödöllő 2100, Hungary.

² Institute of Agricultural and Food Economics, Hungarian University of Agriculture and Life Sciences, Gödöllő 2100, Hungary.

Abstract

This pilot study examines factors influencing the performance of female managers by testing a structural model that integrates psychosocial and organizational dimensions. The model includes organizational culture, managerial power, discrimination, prejudice, insecurity, and family roles. Data were collected through a survey of 179 female managers in Hungary. As the sample is geographically limited, the findings should be interpreted with caution. Partial Least Squares Structural Equation Modelling (PLS-SEM) was used to analyze the relationships among variables. Results indicate that a supportive organizational culture enhances perceptions of managerial power, which positively influences leadership performance. Conversely, experiences of discrimination reinforce prejudices, while family-related obligations heighten perceived bias toward women in leadership. Insecurity was also found to negatively impact managerial performance. The model showed strong internal reliability and acceptable discriminant validity, supporting its use in further research. This study offers novel insights by jointly examining individual, organizational, and societal barriers within a unified framework. Beyond its theoretical contribution, the findings provide practical guidance for organizations and policymakers aiming to foster inclusive leadership environments and promote gender equity in the workplace.

Keywords:

Female Leaders;
Leadership;
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1- Introduction

Over the past decades, the role of women in leadership has received increasing scholarly attention. While the benefits of gender diversity—such as enhanced innovation, improved financial performance, and more inclusive decision-making—have been well-documented [1, 2]. Far less attention has been paid to how structural and psychosocial factors jointly influence female managerial performance. Existing studies tend to examine themes such as discrimination, work-life conflict, or leadership authority in isolation, without integrating them into a comprehensive empirical framework. Furthermore, although previous research has highlighted that women are often appointed to precarious leadership positions [3], few studies have explored how such contextual disadvantages affect women's perceived performance and sense of leadership efficacy. The interplay between organizational culture, gender bias, family roles, and psychological factors such as insecurity remains insufficiently explored—particularly in Central and Eastern European contexts.

This study seeks to address this gap by proposing and testing an integrated structural model that examines the interrelationships between key variables influencing female leadership performance: organizational culture, managerial power, discrimination, prejudice, insecurity, and family-related responsibilities. The model was pilot-tested using data from 179 female managers in Hungary.

* **CONTACT:** komuves.zsolt.sandor@uni-mate.hu

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What distinguishes this research is its attempt to bridge fragmented strands of the literature by treating these variables not as isolated challenges but as interconnected elements of a broader ecosystem that shapes women's leadership experiences. Beyond its empirical contribution, the study offers practical insights for organizations striving to foster inclusive leadership environments and for policymakers aiming to support gender equity in the labor market.

The remainder of our paper is structured as follows: Section 2 reviews the literature of the topic, delving into the key issues of female leaders. Section 3 focuses on methodology, describing the research design, the sample, and the statistical method used. Section 4 presents research results, focusing on validating the proposed model. In Section 5, results are discussed and compared to international literature, with Section 6 providing conclusions, and Section 7 acknowledging the limitations of the study, offering future research directions.

Building on the theoretical background and prior empirical findings, the present study formulates the following hypotheses to be tested within the proposed structural model:

- H1:** Organizational culture positively influences perceived managerial power among female leaders.
- H2:** Perceived managerial power is positively associated with female managerial performance.
- H3:** Perceived discrimination increases the level of prejudice experienced by female managers.
- H4:** Family-related responsibilities positively contribute to the perception of prejudice in leadership roles.
- H5:** Insecurity negatively affects the perceived managerial performance of female leaders.
- H6:** Organizational culture is positively associated with a reduction in perceived prejudice.
- H7:** Prejudice negatively influences both managerial power and performance.

These hypotheses aim to uncover how interrelated social, organizational, and psychological factors shape female leadership performance, and to provide a validated model for further research and practical application.

2- Literature Review

The theoretical framework of this study is grounded in an interdisciplinary approach that draws upon insights from organizational sociology, social psychology, and gender studies. Our point of departure is the recognition that female leadership is not merely a matter of individual competence but a socially constructed phenomenon shaped by institutional norms, cultural expectations, and embedded biases. In developing our model, we aimed to synthesize theoretical dimensions that have typically been addressed separately in the literature but rarely examined in an integrated empirical framework.

The variables included in our study—such as discrimination, prejudice, family roles, insecurity, organizational culture, and managerial power—are discussed in more detail in the subsections below. The chapter concludes with the presentation of our structural model, which aims to empirically test the proposed relationships among these factors.

2-1- *Advantages and Disadvantages of Increasing the Number of Female Leaders*

One of the decisive trends in the transformation of the labor market is the increasing number of women in leadership roles. The perception of this differs in the academic world. According to Halrynjo & Teigen [1], the increasing presence of female leaders can have an impact on company innovation, financial performance and equal opportunities. Bruckmüller & Branscombe [3], Tal et al. [4], and Bertrand et al. [5], see additional positive effects in contributing to flexible organizational change, increasing productivity and helping to solve complex problems more effectively. Kulich et al. [6] and Galsanjigmed & Sekiguchi [7] cite the importance of role models as a benefit that can help to strengthen gender equality in the long term. Several studies focus on women's financial and economic sensibilities. Ryan & Haslam [8] as well as Bruckmüller & Branscombe [3], looking at firms on the London Stock Exchange, found that female managers are typically appointed to lead companies with severe financial problems.

A similar finding was also found by Mulcahy & Linehan [9] who found that the proportion of female managers in loss-making firms is higher relative to profitable firms. However, for the sake of objectivity, it is also important to emphasize that there are studies [10-12] where no clear correlation was found between the increase in the number of female employees, managers and the performance of the company (Table 1). Therefore, examining the role and effects of female leaders is essential for the development of the labor market. As we have seen, many researches emphasize the positive contribution of female leaders to the innovation and performance of companies, but there are still contradictions

and missing links on the subject. Future research should therefore focus not only on increasing the number of female leaders, but also on a deeper understanding of their impacts, so that companies and decision-makers can make more informed decisions to promote gender diversity and equal opportunities.

Table 1. Summary of the Advantages and Disadvantages of Increasing the Number of Female Leaders

Theme/Area	Positive Impact/Argument	Negative or Critical Observations	Reference(s)
Innovation, flexibility, problem-solving	Female leaders contribute to adaptability, innovation, and effective complexity management	–	[1, 2, 4, 5]
Role models and gender equality	Women in leadership serve as role models and promote long-term gender balance	–	[6, 7]
Crisis situations and financial difficulties	–	Women are often appointed in critical times; linked to the “glass cliff” phenomenon	[8, 3, 9]
Representation and company performance	–	Some studies found no clear positive correlation between female representation and firm performance	[10-14]

2-2- Factors Affecting Career Development

A Harris Poll survey in 2018 showed that 50% of US workers would prefer to work under a female manager, as such companies are more goal-oriented and supportive of mothers with young children [15]. Dezső & Ross [16] and Baykal et al. [17] however, highlight that men continue to hold a higher proportion of senior positions.

A question may arise about what factors influence the career development of female leaders. Answering this question is not easy, as the literature presents many classifications. There is no accepted classification, but there is a consensus among researchers on the most influential factor groups. One way to classify these factors is to separate them into social, organizational and individual factors [18, 19]. Another classification distinguishes between positive and negative factors [18-20]. Here, the focus is on how the presence of women in senior management has a positive or negative impact on business performance. Most authors distinguish between internal and external factors [21]. External factors determine the differences between leadership and gender stereotypes. Internal factors are cultural in nature, playing a key role in women's gender roles.

A widely used classification was used by Meschitti & Smith [22], and Block & Tietjen-Smith [23] who separated factors into interpersonal and situational factors. The interpersonal factor is e.g. mentoring, the existence of an informal network of senior managers and friendships. Situational factors focus on hiring and promotion. A widely accepted and applied grouping [24-26] identify barriers to women's career development as organizational barriers (e.g. corporate culture, power structures and perceptions of ambition), stereotypes, double burdens, lack of female role models, and gender roles (e.g. housewife and mother). The grouping of Tabassum & Rafiq [27] conducted by research among managers - showed that women's entry into leadership positions is affected by three different barriers. These are barriers at work, at home and at individual level. The challenge at the work-place level is the organizational culture, gender stereotypes, and lack of mentoring and networking. Family-related obstacles are the result of an imbalance between work and family, a choice between family and career. Our article aims to explore the factors affecting the career development of female leaders based on this grouping.

2-3- Work-level Challenges

The relationship between organizational culture and leadership has been examined in a large body of literature, with most authors concluding that the two concepts are closely related [28, 29]. Tsai [30] found that organizational culture correlates significantly (positively) with leadership power. Muhammad et al. [31], and Aziz [32] concluded that leadership and organizational culture have a positive effect on employee performance. Thelma & Ngulube [33] emphasize that organizational culture and leadership play a key role in shaping and sustaining women's professional development. A supportive and inclusive culture can create an environment and conditions where female leaders can effectively develop their skills and abilities. Bodnár & Sass [34] point out that organizational culture, leadership and traditional female gender roles clash with masculine norms in organizations, leading to biases against women in selection and promotion.

According to Kőműves et al. [25] organizational culture is mainly shaped by men, and this can contribute to the gender gap. A masculine organizational culture makes it difficult for women to fill positions of power and authority. In workplaces where traditional gender roles are strong, female leaders may face overt discrimination, such as disregarding their decisions, instructions, or simply facing multiple obstacles in solving tasks. One of the consequences of discrimination is the development of gender stereotypes that affect the perception of leadership,

as it is generally believed that the characteristics of successful leaders are more masculine, such as aggressiveness, ambition, dominance, independence, and confidence. Stereotypes about women are associated with the characteristics of team spirit, empathy, kindness, sympathy, altruism and tenderness [35]. These biases can hinder career progression. Since effective leadership requires decisiveness, which is primarily represented by men, leadership identities are difficult to reconcile with women [36, 37]. The acceptance of dominant male leaders as the norm helps men to function as leaders, while dominant female attitudes - assertiveness, dominance, aggression - have the opposite effect on the acceptance of female leadership [38, 39]. Women are quickly labelled as hysterical, power-hungry, tyrannical, evil, intolerable, etc. [40, 41]. This mindset is a challenge in leadership roles, especially in workplaces where men are overrepresented [42, 43].

Many female leaders have successfully adapted to traditionally masculine leadership styles by demonstrating determination, strategic thinking, and a focus on results, while retaining skills that are often considered feminine, such as empathy and cooperation. Others sought to transform management standards, replacing hierarchical structures with a more inclusive, team-focused approach that promotes employee engagement and creativity. As a result, modern management models increasingly combine the benefits of different styles, reducing the impact of gender stereotypes.

Berry & Franks [44] also draws attention to the fact that most men today are unaccustomed to successful female leaders, the leadership roles they fulfill, and even often perceive their presence as a threat and negative challenge. In male-dominated organizations, women have to prove their abilities and aptitude to achieve a position, in other words, they have to cope with a lot of obstacles, especially if the goal is to reach a senior management position [45, 46].

Regarding the topic, it is also important to mention the role of structural impacts, such as the lack of mentoring opportunities or the scarcity of networking opportunities. The role of mentors in shaping successful women's careers can be of great importance [47, 48] by helping to expand their network of relationships [49, 50], provide valuable guidance and feedback during their management career, thus facilitating the opening of doors that were otherwise closed to women. According to Chao [51] and Arthur & Kram [52] mentoring should serve a dual purpose, on the one hand to help the career of the mentored (sponsorship, coaching, guidance, etc.) and on the other hand to fulfil psychosocial functions, e.g. the anchoring of different role patterns. Levesque et al. [53] found that this two-way mutual relationship has benefits for mentors and mentees alike. Mentored employees experience better career outcomes, such as salary, promotion and recognition, while mentors develop leadership skills and experience job satisfaction. According to Forret [54] mentoring has the potential to empower women as mentees and men-tors in a masculine organizational context.

2-4- Obstacles at the Individual Level are Lack of Ambition, Lack of Desire for a Career

Dhatt et al. (2016) [55] and Khalid & Aftab [56], show that women are much less motivated to take up managerial positions, which is likely to be related to factors that hinder progression. Blackhurst & Richard [57] explores the reasons for women's lower desire at the level of ambition. It has been found that male and female university graduates have similar levels of career ambition, and in many cases, women express higher levels of ambition than their male counterparts [58]. According to Powell & Butterfield [59] and Beaupre [60] this enthusiasm disappears around the birth of the first child and career aspirations decline, with a simultaneous development of uncertainty that affects managerial performance. According to Galsanjigmed & Sekiguchi [7], insecurity can limit women's career opportunities by negatively affecting performance and thus hampering professional development, as well as perpetuating male-dominated managerial positions and maintaining gender inequality.

Blau & Kahn [61] concluded that uncertainty and leadership performance are negatively correlated. This may be explained by the social psychological model, according to which men - and even women themselves - believe that they are not able to perform the most demanding jobs as well as men [62]. Beltramini et al. [63] added that women often fear that they will no longer be able to perform their maternal duties at an adequate level, but they are equally afraid that they will not have enough time for their partner [61, 64], so they may face relationship problems. Folke & Rickne [65] described in their research that promotion, CEO duties and the resulting workload increase the risk of divorce. There may also be additional pressures on women in leadership positions in that society finds it difficult to imagine a woman being a successful leader, mother and wife at the same time [66]. This thinking does not appear in relation to the successful male leader, father and husband [67]. Thus, women often tend to shift towards less resistance and direct their career goals towards jobs that correspond to social perceptions of women's roles [68].

2-5- Imbalance between Work and Family

Our lives are shaped by multiple roles in our relationships, of which work and family are arguably two critical areas [69, 70]. Each area carries its own role expectations and standards. Social role theory expects men to be present in the world of work, while women must stay at home [71]. Sowjanya et al. [72] highlight that women are expected to raise children, care for family members and take responsibility for the family. The theory also says that women should first and foremost fulfill their expected responsibilities in private life and shape their attitudes and behaviors accordingly. Even if they participate in the world of work, they must put work responsibilities in second place. Fan & Lin [73] report that there is a negative relationship between family role and the resulting work-family conflict for women who prefer their work to their family role, which inevitably leads to prejudice. Björk et al. [74] and Milkie et al. [75] also found a significant relationship between family roles and prejudices.

The question of work-family roles is hampered by social norms and workplace expectations [76, 77]. Research generally shows that women continue to do a disproportionate amount of household work and bear a greater burden of childcare responsibilities, even in couples where both partners earn roughly the same amount of money [78]. According to Pozzan & Cattaneo [79], women worldwide spend on average 4 hours and 25 minutes a day on household and childcare tasks, compared to 1 hour and 23 minutes for men. Alon et al. [80] added that the Covid-19 crisis has amplified and intensified these anomalies, as the large-scale closure of nurseries and schools has forced mothers to stay at home with their children. An example of what has been described is the research conducted by Alon et al. [81] among medical practitioners, which examined gender differences in family responsibilities. A survey of 73,663 people showed that the responsibility for the child in the case of female doctors was significantly higher than in the case of their male counterparts. Female doctors with young children would significantly reduce their working hours, while male doctors kept the same working hours. Thus, the research concludes that female doctors' work is hampered by their responsibility for children, i.e. family responsibilities can have a negative impact on the work of women. A study in Denmark [82] clearly showed that female managers' performance increases linearly with family support. The study concluded that there was evidence of a positive relationship between the performance of the female-led business and the support received from their family. Based on what has been described, we can say that motherhood has a negative effect on women's career development, while fatherhood has no negative effect on men's career development.

However, it is also important and necessary to point out that in modern societies we are witnessing an increasing involvement of men in family life, which has many advantages both at the individual and societal level. In Scandinavian countries, for example, the institution of paternity leave allows fathers to take a more active role in child-rearing, while reducing pressure on women's careers. In addition, more and more men are choosing flexible working arrangements to spend more time with their families, and new role models of caring, emotionally available fathers are emerging in the media. Germany has introduced a quota system of paternity leave, which encourages fathers to take an active part in childcare, so that men benefit financially if they do their share of childcare. In Japan, the government supports paternity leave, and more and more companies are offering fathers longer paid leave, allowing them to take an active part in family life. The example of Iceland is also noteworthy, where fathers are required to take paid leave, thus promoting gender equality in child-rearing. In addition, tech companies such as Google and Netflix are providing longer parental leave for both parents, allowing fathers to spend more time with their children. In Hungary, too, more and more workplaces are supporting flexible work arrangements, which contributes to men playing a more active role in family life. These examples show that men's increasing involvement in family life not only brings benefits at the individual level, but also reinforces gender equality at the societal level.

In the long term, such changes can contribute to a more equal distribution of gender roles and an improved work-life balance.

3- Methodology

3-1- Sample and Research Design

In this study, the authors constructed a holistic model based on prominent literary sources of managerial research. The construction of the model was deemed necessary based on the fact that no PLS-SEM compatible model focusing on female managers was identified in the literature. This pilot study aims to serve as a preliminary research, with the purpose of testing and validating the proposed research model, identifying significant predictors of female managerial power and performance. The research is based on an online questionnaire distributed directly among corporations operating in Hungary through reaching out to HR leadership. The survey was aimed only at female managers, with a total of 179 valid responses collected (Table 2). Data collection was carried out between January and May of 2024.

Table 2. Main characteristics of the research sample

Sample distribution	No. of responses
<i>Leadership sample</i>	
lower management	36
middle management	78
senior managers	34
owners	31
<i>Age distribution of respondents</i>	
18 -25 years old	8
26 -39 years old	55
40 - 59 years old	102
60 - years old	14
<i>Number of employees of the responding manager</i>	
1-4	30
5-9	77
10-49	59
50-99	9
100-249	4
<i>Distribution of respondents' educational attainment</i>	
elementary school	1
vocational school	2
high school diploma	18
matriculation	23
graduate degree	128
post-graduate education	7
<i>Respondent's marital status</i>	
single	17
living in a civil partnership	41
married	104
married but separated	1
divorced	14
other	1
<i>Number of children of respondents</i>	
I have no children	52
1 child	50
2 children	57
3 children	16
4 children	4

The survey data are summarized below:

- Research time: January and May 2024.
- Sampling unit: lower, middle, senior management and ownership level .
- Sector: competitive sector.
- Sampling area: South Transdanubia (Baranya, Tolna, Somogy counties).
- Data source: primary data.
- Research method: survey research.
- Research instrument: questionnaire.
- Mode of contact: online data collection (survey was an online questionnaire based on voluntary data provision, with the anonymity of participants ensured).

The examined dimensions (Table 3) were measured using statements with a five-point Likert scale, with statements building on validated research from relevant authors of the topic. The dimensions of discrimination, prejudice, family roles, and uncertainty were assessed using a validated questionnaire built on the research of Umeh Chinyere and Ezenwakwelu Charity [83], while the dimensions of organizational culture, leadership power, and performance were analyzed using validated statements built on the work of Javidan et al. [84]. Outside of the Dimension-specific Likert-scale questions, the survey also consisted of questions related to demographical information. The proposed theoretical model is illustrated in Figure 1.

Table 3. Dimensions, statements and sources of the model and questionnaire

Dimensions	Number of statements	Sources
Discrimination	13	Diehl & Dzubinski (2016) [85]
		Eagly & Karau (2002) [86]
		Heilman (2001) [87]
		Barak & Levin (2002) [88]
Prejudices	10	Tlepina et al. [89]
		Diehl et al. (2020) [90]
		Takizawa et al. (2024) [91]
		Umeh Chinyere & Ezenwakwelu Charity (2021) [83]
Family Roles	13	Tjahjana et al. (2024) [92]
		Park et al. (2023) [93]
		Tan et al. (2022) [94]
		Umeh és Ezenwakwelu (2021) [83]
Uncertainty	10	Galsanjigmed & Sekiguchi (2023) [7]
		Umeh Chinyere & Ezenwakwelu Charity (2021) [83]
Managerial power	15	Onesti (2023) [95]
		Tjahjana et al. (2024) [92]
		Javidan et al. (2006) [84]
Managerial performance	17	Bany (2024) [96]
		Park et al. (2023) [93]
		Javidan et al. (2006) [84]
Organizational culture	14	Muhammad et al. (2022) [31]
		Bodnár & Sass (2024) [34]
		Tamás and Edina (2022) [97]
		Javidan et al. (2006) [84]

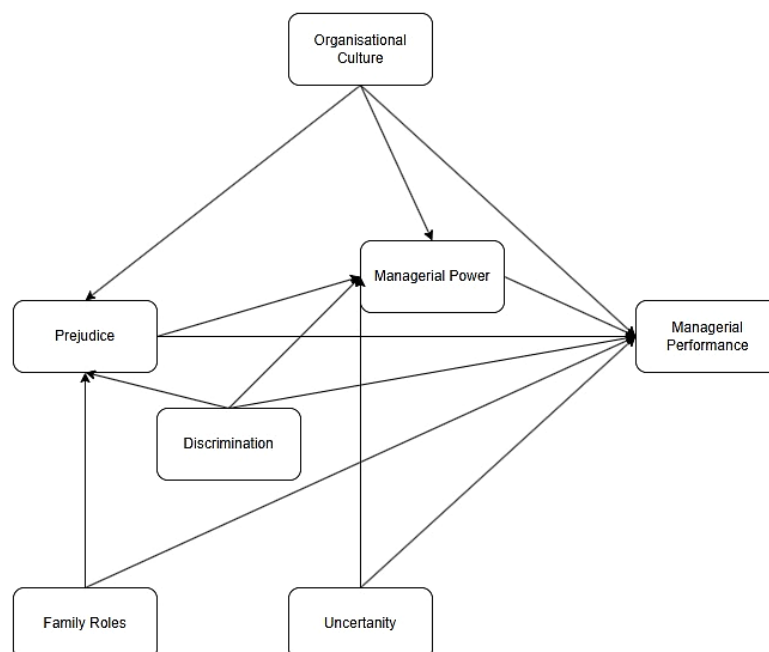


Figure 1. Proposed Theoretical Model

3-2- Statistical Methods – PLS-SEM

Analysis of the survey results was carried out using the PLS-SEM methodology with the SmartPLS 3.0 software. The component-based PLS-SEM approach is a more suitable method compared to other structural equation modelling approaches for larger models with smaller sample sizes [98], which makes it suitable for pilot-testing our measurement model. The full assessment of the model and the methods used to confirm its usability is described in detail in Section 4.

4- Results

4-1- PLS-SEM: Partial Least Squares - Structural Equation Modelling

PLS-SEM is a structural equation modelling technique, which aims to maximize the explained variance of different endogenous constructs [99]. This method has been quite popular in recent years in different behavioral fields, marketing, and human resources as well. The method builds on a two-component model, analyzing relationships between variables. The two components are the inner model, which includes paths that visualize relationships between different independent and dependent constructs [99, 100]. Dependent constructs are variables that are influenced by other constructs within the model. In the graphical representation, this influence is depicted by arrows pointing toward these constructs, indicating the relationships or effects. In contrast, independent constructs within the inner model are not influenced by other constructs [99, 100]. The outer, or measurement model, establishes the relationships between latent constructs and their observed indicators. These relationships are quantified using coefficients, which are represented as outer loadings [99, 100].

4-2- Measurement Model

The assessment of the measurement model was done based on Al-Emran et al. [101] with the following structure: Internal consistency was assessed with Cronbach's Alpha, with convergent validity being assessed through Average Variance Extracted (AVE) values and outer loadings. These steps were followed by assessing discriminant validity through the Fornell-Larcker criterion and the HTMT ratio, while multicollinearity was assessed through VIF values. The evaluation of the measurement model involves assessing internal consistency reliability, convergent validity, and discriminant validity. Internal consistency indicates how well the indicators represent a specific latent construct. According to Hair et al. [99] internal consistency is determined by ensuring that Composite Reliability (CR) and Cronbach's Alpha (α) exceed the threshold of 0.70 for all constructs. As shown in Table 4, all constructs in the model meet or exceed this threshold, ranging from 0.837 to 0.919 for α , and from 0.877 to 0.932 for CR, demonstrating high levels of reliability.

Table 4. Internal consistency reliability and convergent validity

	Cronbach's Alpha	rho_A	Composite Reliability	AVE
Discrimination (DI)	0.920	0.928	0.932	0.559
Family Roles (FR)	0.862	0.887	0.894	0.550
Managerial Performance (MPE)	0.842	0.843	0.881	0.514
Managerial Power (MPO)	0.861	0.870	0.894	0.547
Organizational Culture (OC)	0.827	0.837	0.873	0.537
Prejudice (PR)	0.861	0.863	0.897	0.592
Uncertainty (UN)	0.865	0.885	0.892	0.509

Following the assessment of internal consistency, convergent validity was examined as part of the measurement model evaluation to determine the extent to which a measure correlates with alternative measures of the same concept [99]. This assessment involved analyzing the outer loadings of the items and the average variance extracted (AVE).

According to Hair et al. [99] high outer loadings are desirable, as they indicate that the associated indicators share substantial commonality within a given construct. A threshold of 0.708 or higher is recommended. However, values below this should not be automatically discarded; instead, they should be evaluated in relation to composite reliability and validity. Lower outer loadings are not uncommon in social sciences, particularly in newly developed models and scales [102], such as our proposed model. Based on the literature, constructs with outer loadings between 0.40 and 0.70 should be considered for removal, especially if their exclusion results in an increase in AVE or composite reliability [99]. Following this, we deleted statements with values until the model showcased suitable CR and AVE values. A total of 40 statements were deleted among 7 constructs, 2 from Discrimination, 4 from Prejudice, 6 from Family Roles, 2 from Uncertainty, 8 from Managerial Power, 8 from Organizational Culture, 10 from Managerial Performance. The lowest number of statements remaining was 6 for Prejudice and Organizational Culture, with all constructs retaining more than enough statements for further analysis. As shown in Table 3, AVE values exceed the minimum level of 0.5, demonstrating sufficient convergent validity.

Following the steps of the measurement model's evaluation, we assessed discriminant validity next, through both the Fornell-Larcker Criterion [103] and the Heterotrait-Monotrait ratio. The Fornell-Larcker Criterion, compares the square root of the AVE value of a given construct to the correlation values of each construct. In this evaluation, the square root of AVE values of a construct must exceed the correlation values to every other construct in order to confirm discriminant validity [103].

As shown in Table 5, the square root values of AVE for each of the model's latent variables are higher than the correlation values in the corresponding rows and columns [103], establishing sufficient discriminant validity.

Table 5. Discriminant validity based on the Fornell–Larcker criterion

	DI	FR	MPE	MPO	OC	PR	UN
DI	0.748						
FR	0.449	0.742					
MPE	-0.108	-0.105	0.717				
MPO	-0.063	-0.092	0.608	0.740			
OC	-0.060	-0.117	0.470	0.505	0.733		
PR	0.651	0.399	-0.094	-0.103	-0.014	0.770	
UN	0.448	0.549	-0.322	-0.205	-0.250	0.445	0.713

The other method of assessing discriminant validity is the Heterotrait-Monotrait (HTMT) ratio, in which values cannot exceed 0.9 [104]. As shown in Table 6, HTMT values of our proposed model stayed well under the required value of 0.9, ranging from 0.125 to 0.710. Therefore, based on the Fornell-Larcker criterion and the HTMT ratio, we can conclude that our proposed model fulfills the requirements of discriminant validity.

Table 6. Discriminant validity based on the HTMT criterion

	DI	FR	MPE	MPO	OC	PR	UN
DI							
FR	0.481						
MPE	0.139	0.166					
MPO	0.133	0.147	0.706				
OC	0.149	0.170	0.539	0.571			
PR	0.708	0.449	0.166	0.213	0.126		
UN	0.531	0.688	0.346	0.224	0.261	0.532	

Another important aspect to consider in evaluating the measurement model is multicollinearity, which was assessed using the variance inflation factor (VIF). While the most widely accepted maximum threshold for VIF is 10.0 [105], more conservative limits, such as 5.0 [99] and 3.33 [106], have also been suggested. The VIF values for the model, presented in Table 7, indicate no signs of multicollinearity among the latent constructs.

Table 7. Inner VIF values

Constructs	DI	FR	MPE	MPO	OC	PR	UN
DI			1.908	1.83		1.252	
FR			1.552			1.265	
MPE							
MPO			1.367				
OC			1.411	1.079		1.013	
PR			1.869	1.843			
UN			1.699	1.416			

4-3- Structural Model

After evaluating the measurement model, we proceeded to assess the structural model using a bootstrapping method in SMART-PLS with a subsample of 5000. Model fit was evaluated using the Standardized Root Mean Square Residual (SRMR), following the guidelines of Hu & Bentler [107], which suggest a maximum SRMR value of 0.1. The results indicate a satisfactory model fit, with SRMR values of 0.084 for the saturated model and the estimated model.

R^2 values were assessed according to Chin [108], where values of R^2 greater than 0.1 or equal to 0 were accepted. The R^2 classification scale is as follows: $R^2 < 0.19$ indicates a very weak correlation, $0.19 < R^2 < 0.33$ suggests a weak correlation, $0.33 < R^2 < 0.67$ represents a moderate correlation, and $R^2 > 0.67$ indicates a substantial correlation. R^2 reflects the proportion of variance in the dependent variables explained by the independent variables in the model.

Figure 2 presents R^2 values for the 3 dependent constructs, indicating a moderate correlation for Prejudices and Leadership Performance, and a weak correlation for Managerial Power. The R^2 value of 0.441 for Managerial Performance indicates that 44.1% of the variance in how female managers perceive their own performance is explained by the exogenous variables affecting it, namely Family Roles, Organizational Culture, Discrimination, Uncertainty, and Managerial Power. The explained variance is considerably lower for Managerial Power, with exogenous variables only explaining 26.8% of the variance in how female managers feel about their own managerial power. In the case of Prejudice, the exogenous variables Discrimination, Organizational Culture, and Family Roles explain 43.8% of prejudice perceived by female managers. The results show a moderate explanatory power for Managerial Performance and Prejudice, and a weak explanatory power for Managerial Power.

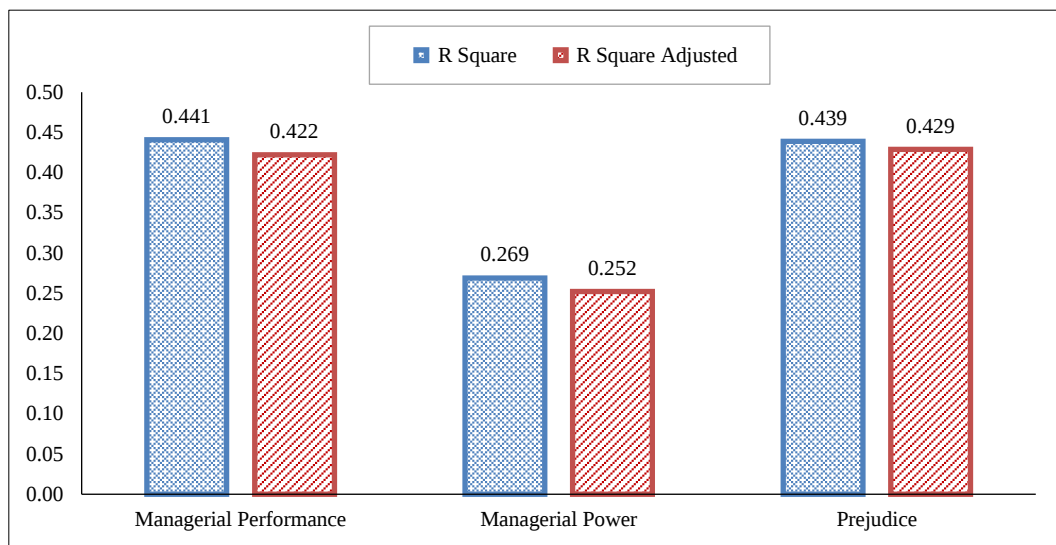


Figure 2. Saturated model results

Table 8 presents the results of the bootstrapping analysis, highlighting the relation-ships between the latent variables. It shows the correlation coefficients for both the original and bootstrapped models. The minimal differences between the correlation coefficients of the two samples indicate the reliability of the original sample.

Table 8. Bootstrapping results

Relationship between latent factors	Original Sample (O)	Sample Mean (M)	SD	T Statistics	P Values
Discrimination → Managerial Performance	-0.032	-0.036	0.060	0.537	0.591
Discrimination → Managerial Power	0.067	0.071	0.094	0.713	0.476
Discrimination → Prejudice	0.591	0.591	0.056	10.491	0.000
Family Roles → Managerial Performance	0.082	0.083	0.057	1.436	0.151
Family Roles → Prejudice	0.139	0.147	0.064	2.173	0.030
Managerial Power → Managerial Performance	0.482	0.481	0.073	6.601	0.000
Organizational Culture → Managerial Performance	0.177	0.188	0.119	1.495	0.135
Organizational Culture → Managerial Power	0.492	0.498	0.074	6.612	0.000
Organizational Culture → Prejudice	0.038	0.036	0.057	0.656	0.512
Prejudice → Managerial Performance	0.050	0.045	0.076	0.654	0.513
Prejudice → Managerial Power	-0.112	-0.108	0.097	1.157	0.247
Uncertainty → Managerial Performance	-0.232	-0.240	0.068	3.391	0.001
Uncertainty → Managerial Power	-0.062	-0.081	0.086	0.716	0.474

Based on Table 8, five significant relationships can be identified. Uncertainty has a significant negative effect on Managerial Performance ($p=0.001$), meaning that an increase in uncertainty will lead to a decrease in Leadership Performance. The negative coefficient suggests that when female managers experience higher level of uncertainty, the

perception of their own managerial performance decreases, showcasing that uncertainty can hinder effective managerial performance. Family roles had a significant effect on prejudice ($p=0.030$), meaning that the negative feelings of female leaders related to their family roles will increase their opinion about prejudice related to their leadership as women, indicating a link between the pressures of double burden of work and family life, and the feeling of bias and prejudice. Discrimination had a significant effect on Prejudices ($p=0.000$), meaning that female leaders who experience discrimination are more likely to agree with prejudiced views of their role. Organizational culture had a significant effect on Managerial power ($p=0.000$), meaning that female managers working in organizations with a supporting work environment and an inclusive, empowering, and supporting culture feel more authority in their leadership roles. Managerial Power had a significant effect on Managerial Performance ($p=0.000$), meaning female leaders who feel more authority believe they can perform better as leaders. This result shows that female leaders who feel empowered and in control are significantly more likely to assess their own managerial performance highly.

Due to this study being a pilot for model validations, the authors would like to indicate that the results are only preliminary, and a finalized study, building on the pilot results will be conducted at a later stage. The results showed no significant relationship between discrimination and managerial performance, and discrimination and managerial power, among many others, however, the authors plan to continue investigating these factors in the planned further study with a larger sample.

5- Discussion

When interpreting the findings, it is important to compare them with previous empirical studies. In several respects, our results are consistent with earlier research that highlights the relationships between organizational culture, managerial power, and discrimination [1]. At the same time, some of our findings—particularly regarding the role of insecurity and the impact of family responsibilities—diverge from those of other studies. While certain scholars emphasize the importance of a supportive family background and spousal involvement in the success of women in leadership roles [109], others stress that reconciling work and domestic responsibilities remains a significant source of stress, contributing to heightened feelings of insecurity and, indirectly, to lower self-assessed leadership performance [110]. In our sample, the influence of family obligations appeared more pronounced, and the subjective perception of insecurity was stronger. These patterns may reflect specific cultural features of Central and Eastern Europe, as well as structural differences in organizational contexts.

Moreover, whereas many international studies highlight self-efficacy as a central construct, our model places greater emphasis on external organizational and societal factors. This difference is not only theoretically relevant but also has practical implications: it suggests that efforts to support women in leadership positions are likely to be more effective when adapted to local cultural and institutional realities. Overall, comparing our findings to prior research allows for a more nuanced interpretation of the results. While certain components of the model are reinforced, the divergences raise new questions about the influence of cultural context and the need for further inquiry into intersectional dimensions.

To the best of the authors' knowledge, no comprehensive PLS-SEM model has been created to analyze the obstacles female managers might perceive in their leadership roles before. As an exploratory research, this pilot study aims to test the constructs most often identified as barriers in the context of female management, building on earlier literary works, aiming to construct and test a hypothesized model which could help researchers and policymakers better understand the complex topic of female management. The theoretical model builds on 7 constructs, creating a suitable model for analysis with partial least squares structural equation modeling with SmartPLS 3.0. The proposed model, illustrated earlier in Figure 1, displayed satisfactory levels of convergent and discriminant validity, showed no issue of multicollinearity, indicating a good model fit, with R^2 values of 0.441 for Managerial Performance, 0.269 for Managerial Power, and 0.439 for Prejudice, showing moderate correlations for Managerial Performance and Prejudice and weak correlation for Managerial Power based on Chin [108].

Based on the Bootstrapping report, 5 significant relationships could be identified. Discrimination had a significant positive effect on prejudice, meaning that as female managers perceive higher levels of discrimination, they will be more likely to perceive or experience prejudice against their role in the organization, reinforcing biased views. This result is in line with the earlier findings of Phelan & Rudman [111], who found that women in leadership roles often face prejudice due to the "lack of fit" between their perceived gender roles and their managerial role, resulting from a discrimination compared to male managers. These results are also confirmed by the role congruity theory, which describes that the perceived masculinity of managerial roles can lead to prejudice against female leaders [87]. Managerial Power had a significant positive effect on Managerial Performance, which shows that female managers who perceive higher levels of authority feel that they perform their managerial duties better, showcasing that providing female managers with adequate levels of authority can enhance their managerial performance. The findings of Ragins [112] confirm that managers with higher power, as interpreted by their subordinates, are evaluated as better managers. Organizational Culture had a significant positive effect on Managerial Power, meaning that female managers who perceive their organization as more inclusive and supportive feel that they have higher authority in their managerial decisions, highlighting the importance of creating an organizational culture void of gender bias, in order to empower female managers

in their role. This finding is in line with previous research of [113-115], who confirm that organizational culture has a positive impact on the emergence of female leaders, with a greater prominence of the role of leadership power. Family roles had a significant positive effect on prejudices, meaning that respondents who felt that the double burden of company and family life affected their lives in a negative way perceived higher prejudice towards their role as managers. The connection between prejudice stemming from the compatibility of the female gender role and the managerial role has been confirmed by Eagly & Karau [87] in relation to evaluation from subordinates, however, our results show that female managers themselves are also aware of these prejudices stemming from the perceived compatibility of their double roles. The last significant relationship was identified between Uncertainty and Managerial Performance, which showed a significant negative relationship, meaning that female managers who perceive uncertainty in their role and work will report lower levels of performance. Similar results have been found by Karakulak et al. [116] who found that female leaders who worry about their leadership are more likely to leave their leadership roles.

Based on the findings of this research, we can conclude that the measurement model is suitable for investigating managerial power and managerial performance of female managers, and a larger-scale study can be conducted building on the tested constructs. One crucial takeaway, however, is that while the model functions well, the number of statements within each latent construct seems higher than necessary. Therefore, we believe that following the findings and results of the pilot study, a reduction of statements can be carried out, building on the initial findings of internal consistency reliability and convergent validity, focusing on the outer loadings of individual indicators.

6- Conclusion

This study examined the perceived leadership performance of women in managerial positions by testing an integrated structural model that incorporated organizational, psychological, and social dimensions. Drawing on interdisciplinary theoretical perspectives, we focused on the combined effects of organizational culture, managerial power, discrimination, prejudice, insecurity, and family roles on leadership perceptions. The findings from our pilot study in Hungary provide preliminary support for several hypothesized relationships, suggesting that leadership performance is not merely an outcome of individual capability, but is shaped by a broader constellation of structural and psychosocial influences.

One of the key contributions of this study lies in its holistic approach: rather than treating gender-related challenges in isolation, it offers an integrated framework for understanding how systemic and interpersonal factors interact in shaping women's leadership experiences. While the empirical model yielded statistically significant insights, the study also revealed areas that warrant further investigation, particularly regarding the impact of intersectional identities and cultural variation.

Several limitations should be acknowledged. The sample is geographically limited, and the cross-sectional design restricts the ability to draw causal inferences. Moreover, some constructs lost multiple indicators during model refinement, highlighting the need for scale revalidation in larger, more diverse samples.

Despite these limitations, the study contributes to the ongoing discourse on gender and leadership by offering a model that can inform both academic inquiry and organizational practice. Future research should explore the applicability of this model in different national and organizational contexts, and test interventions aimed at reducing the impact of discrimination and insecurity on women's leadership trajectories.

6-1-Limitations and Further Research Directions

The present research has made a number of valuable findings about the factors that influence the performance of female managers, but there are limitations. The study was based on a limited sample of 179 female managers in Hungary, so future research could increase the generalizability of the results with a larger, internationally representative sample.

The PLS-SEM model used in this research offers a unique approach to analyzing the performance and power of women leaders, but fine-tuning and adding additional variables (e.g. emotional intelligence, organizational support) to the model could further strengthen the analysis. In addition, future research could compare the factors influencing the career performance of female and male managers and examine whether the effects at the lower, middle and senior management levels differ. Based on the assessment of the validity of the proposed research model, the authors also plan to continue this research, with an increased sample size, learning from and building on the results of this pilot study.

7- Declarations

7-1-Author Contributions

Conceptualization, Z.K. and B.V.; methodology, Z.K. and B.V.; software, B.V.; validation, Z.K., L.P., and G.S.; formal analysis, L.P.; investigation, G.S.; resources, L.P.; data curation, Z.K.; writing—original draft preparation, G.S.; writing—review and editing, G.S.; visualization, G.S.; supervision, L.P.; project administration, L.P. All authors have read and agreed to the published version of the manuscript.

7-2- Data Availability Statement

The data presented in this study are available on request from the corresponding author.

7-3- Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

7-4- Institutional Review Board Statement

The study was conducted in accordance with the Declaration of Helsinki and approved by the Institutional Review Board of the Hungarian University of Agriculture and Life Sciences (2024. January 03.).

7-5- Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

7-6- Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the authors.

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