

Exploring Factors that Determine whether Middle-Aged Women Participate in Community Activities in South Korea

Eun Joo Kim

Faculty of Liberal Arts, Eulji University, South Korea

kej70@eulji.ac.kr

Abstract. This study investigates the determinants of community participation among middle-aged women in South Korea, focusing on sociodemographic factors (age, education, occupation) and psychosocial factors (gender sensitivity and women's empowerment). A survey was conducted with 100 women in S City, Gyeonggi-do, from January 5 to 30, 2024; after excluding invalid responses, 74 cases were analyzed. Logistic regression analysis revealed that education level, gender sensitivity, and women's empowerment significantly predicted community participation. Interestingly, women with higher gender sensitivity were less likely to participate, whereas higher women's empowerment was associated with increased participation. Among the predictors, education showed the strongest effect, followed by empowerment and gender sensitivity, while age and occupation were not statistically significant. These findings underscore the importance of psychological empowerment and educational background in enhancing civic engagement among middle-aged women. The study suggests that targeted interventions fostering empowerment and awareness could facilitate broader community involvement, contributing to social cohesion and personal fulfillment. Limitations include the cross-sectional design, regional sample, and relatively small size, indicating a need for broader and longitudinal studies.

Keywords: middle-aged women, community activities, participation or not, gender sensitivity, women's empowerment, logit regression analysis

1. Introduction

South Korean society continues to be strongly influenced by patriarchal culture and rigid gender role stereotypes (Jeong, 2020). In particular, social discussions on gender sensitivity have intensified following the #MeToo movement and debates surrounding feminism. Although the Framework Act on Gender Equality and the Gender Impact Assessment system legally pursue gender equality, their implementation at the local level remains limited (Lee, 2019). Nevertheless, the shift toward globalization and localization in the 21st century has increased societal interest in local communities in South Korea, highlighting women's activities centered on regional development. Especially, middle-aged women have been actively engaged in various initiatives aimed at community development.

Since the 1990s, following the revival of local autonomy in South Korea, participation in community-centered policy-making has expanded. Consequently, opportunities for women's involvement have increased through civic organizations, neighborhood communities, and welfare institutions (Park, Kim, & Kim, 2017). Middle-aged women, having more free time after raising children and motivated by social responsibility, actively participate in caregiving, lifelong education, welfare activities, and resident autonomy within their communities. This life stage marks a transition as they begin to be freed from family caregiving duties and experience increased desires for personal growth and social contribution (Lee, 2021).

Middle adulthood is considered an intermediate stage of adult development, typically encompassing the ages between 40 and 60 years, accounting for approximately 40.5% of the total population in South Korea (Statistics Korea, 2023). Although middle adulthood is generally understood as the transitional period between young adulthood and old age, there is no consensus among scholars regarding its precise definition. However, with increased life expectancy and a shortened period of child-rearing, research on middle adulthood has steadily expanded. Particularly, as a stage within the family life cycle, middle adulthood has emerged as a recent phenomenon resulting from the complex interaction of biological and cultural changes. This period is characterized by a decline in parental roles and an increasing focus on the self as an independent and autonomous entity, accompanied by heightened interest in personal needs, desires, and developmental growth.

Middle age is also a time to maintain youth and vitality and to demonstrate authority. Physically, the important topic during this period was 'preservation', while social activities began to become very important. Middle age is the peak period of life, and not only are interpersonal relationships very active, but people also taken on a very important position in society, including culture, society, and the economy (Erikson, 1982). It is also a time when middle-aged people use the time and financial freedom given to them to find new interests, enjoy various leisure activities, and feel the greatest sense of self-fulfilment by having their jobs and actively participating in community activities. Some studies regard the psychology of middle-aged women as a crisis in that they tend to perceive that middle-aged women are psychologically less healthy than men or themselves in previous periods (Yu 2011; Jung 2012; Song 2012). In this way, middle-aged women need social participation activities to positively perceive changes in their lives.

Middle age is when people experience various life crises, such as a decline in physical and cognitive abilities, the occurrence of chronic diseases, the loss of family members, the crisis of unemployment, and retirement (Son, 2018). Relatedly, participation in community activities can promote a sense of belonging, increase confidence, and create opportunities for personal growth and social interaction. Ultimately, participation in community activities can enrich the lives of middle-aged women and add value to the community. Therefore, middle-aged women who participate in community activities can enjoy various benefits compared to those who do not. Participating in community activities can help you network with others, build a support system, maintain mental and physical health, learn new skills, contribute to society, and overcome feelings of isolation or boredom.

Participation in community activities is more important for women, who have relatively fewer

opportunities for social activities than men. Moreover, full-time housewives who mainly take care of children or do housework within the home have the chance to live as social and public beings who perform communal tasks within the community outside the house, rather than as beings who perform private tasks within the house through community activities. This is because they can be provided with opportunities (Min and Lee, 2014). In addition, full-time housewives who spend most of their time living in the community have a lot of knowledge and information about the community, so they have the potential to identify the needs of residents and develop policies that can meet them. In this way, community activities have important significance in that they not only provide women with an opportunity to improve their psychological stability and life satisfaction but also serve as a way to solve problems occurring in the community as a whole effectively.

Nevertheless, it is difficult to find studies exploring influential factors that can activate women's community participation. Previous research to date has analyzed the factors that lead to participation in community activities among general citizens (Kang, 2013; Ko, 2004; Kim, 2012; Shin, 2016; Lee, 2023; Jang, 2017; Choi, 2009). In addition, in the case of research conducted on women, studies were conducted on women from vulnerable classes such as women in rural areas, low-income seniors, and marriage migrant women (Go, 2021; Kim, 2020; Kim, 2021; Kim, 2003; Park, Nam, 2015; Choi et. al., 2017; Han, 2012). These previous research results have limitations in understanding and activating the community participation activities of middle-aged women in general. Therefore, this study aims to examine the factors determining whether or not to participate in community activities among middle-aged women. The significance of this study is to provide opportunities for self-realization for middle-aged women individually and to seek ways to improve the quality of life for society by strengthening the factors for middle-aged women's participation in community activities revealed through this study.

The research questions for carrying out these research objectives are as follows.

Research Questions 1. What are the differences in whether middle-aged women participate in community activities according to their age, education, and occupation?

Research Question 2. What is the relationship between middle-aged women's participation in community activities, gender sensitivity, and women's empowerment?

Research Question 3. What are the differences in gender sensitivity and women's empowerment depending on whether middle-aged women participate in community activities?

Research Question 4. What are the factors that predict middle-aged women's participation in community activities?

2. Theoretical Background

2.1. Community Activities of Middle-Aged Women

Community participation activities of local residents are discussed very broadly, depending on the field of community participation activities. Among them, we looked at previous studies that fit the purpose of this study. According to Kim's (2012) study that looked at the participation activities and influencing factors of local citizens, it was found that local residents' experience of community participation activities is highly likely to lead to all participation activities except voting participation and has a high level of influence. The participation of local residents was found to demonstrate its potential as civic awareness, attitude, and difficulty of participation increased. Participation in local communities is important, but based on experience, participation in civic groups can be activated through regional organizational connections.

Additionally, a research report shows that people with high civic consciousness actively participate in community participation activities. In a study by Lee (2014) on community participation activities based on local community awareness, it was found that the higher the educational level and the longer the period of residence, the higher the emotional bond, while the older the person, the higher the local

pride. In addition, the higher the age and educational level, the higher the regional involvement, and the older the person and the longer the period of residence, the higher the intimacy with the region, showing a differential effect based on socio-demographic characteristics.

In this study, we looked at the research by Kwak and Yoo (2005) as a prior study on age and education among the variables predicting middle-aged women's participation in community activities. In this study, the dominant analysis is that the level of education is high in the involvement of the highly educated, but a study by Jeong (2007) also showed no significant correlation between educational level and resident participation. In a study by Lee (2014), the higher the age and educational level, the higher the level of participation in community activities. This way, differences in research results according to sociodemographic characteristics appeared differently depending on the study.

2.2. Gender Sensitivity

In Korean society, gender sensitivity is translated and used in slightly different terms, such as gender awareness, gender intelligence, gender equality sensitivity, and gender sensitivity, depending on the purpose and context of the researcher using the concept. Although integrated and long-term efforts are currently being made to pursue gender equality in Korean society, it is still difficult to find an agreed-upon operational definition for the term gender sensitivity. Gender sensitivity can vary greatly from person to person, regardless of age or gender. Like people from all demographic groups, middle-aged women may have a variety of attitudes and perspectives regarding gender sensitivity. Some middle-aged women are much attuned to gender issues and may advocate for gender equality and challenge traditional gender norms. Others may be less aware of or less engaged in these issues, depending on their experience, education, and exposure to discussions about gender. Overall, it is important to approach individuals as individuals rather than making generalizations based on age or gender.

Gender sensitivity is a topic of research across various fields, including sociology, psychology, anthropology, education, public health, and gender studies. The main areas of prior research on gender sensitivity are as follows.

First, there is research on gender roles and stereotypes. There have been numerous studies investigating the construction and perpetuation of gender roles and stereotypes in society (Tran Thi Thuy Linh, 2021; Park, 2023; Lee, Han, 2021; Shin et al., 2016; Park, Kim, 2016; Sheikh-Ansari, Aghaie-Khafri, 2018; Hwang, Ha, 2021). Research in this field examines how these stereotypes influence individuals' perceptions, behaviors, and opportunities based on gender.

Second, there is research on gender-based violence (Nam, 2017; Wang Kun, 2024; Lee, 2024; Kim, 2024; Choi, 2024; Yang, 2024; Lee, 2024). Research on gender-based violence, including domestic violence, sexual assault, harassment, and human trafficking, is actively ongoing. Research in this field often focuses on understanding the root causes, prevalence, consequences, and interventions to address gender-based violence.

Third, there are studies on gender equality in education and employment (Kim, 2007; Han, 2018; Park, 2018; Yoon, Kang, 2020; Park, 2015; Park, 2007; Shin, 2012; Sucharita, 2015). In particular, studies on gender gaps in education and the workforce mainly study factors contributing to gender gaps in educational opportunities, career development, and wage equality in various fields.

Fourth, there are studies on the sensitivity of media related to gender (Lee, 2022; Seong, 2006; Kim, 2015; Kim, 2023; Liu Tingting et al., 2021; Warner-Söderholm et al., 2018; Larsson Emelie, 2018; Han L et al., 2013). In particular, research analyzes how gender is represented in popular culture, advertising, news media, and entertainment. Research in this field examines how representations of gender in the media shape gender-related attitudes, perceptions, and social norms.

Fifth, there are studies related to sexual identity and LGBTQ (Kang, 2019; Jeong et al., 2024; Jeong, 2020; Kim, 2023; Jeong, Lee, 2023; Lee, 2021; Lee, 2020; Park, 2023; Vargas Emily A et al., 2021; Ellawala Thermal I, 2018; Seelman Kristie L, 2017; Brand Susan Trostle, Maasch Susan L., 2017;

Angela M Enno et al., 2022). Research on gender sensitivity includes the exploration of gender identity, transgender rights, and LGBTQ issues. This includes research on discrimination, legal recognition, and social acceptance of individuals whose gender identity differs from social norms.

2.3. Women's Empowerment

Empowerment is a concept that was developed as an approach for groups that are oppressed and discriminated against in society. One of the representative groups is women. Empowerment interventions for women mean bringing about changes in women's personal and social aspects, and freeing up women's strengths and energies (Bricker-Jenkins, Hooyman, 1986; Lee et al., 2001). Therefore, the goal is to develop the potential strength and ability of individual and group women who experience helplessness. Most women experience a lack of power and strength. The power and lack of power that women experience are formed not only through women's factors but also through social and political processes. In general, people feel helpless and feel a lack of authority and power due to economic instability, lack of experience in the political sphere, lack of access to information, lack of economic support, lack of training in abstract and critical thinking, physical and emotional stress, etc. experienced (Parsons, 1991).

In modern society, women's issues have two sides: psychological problems at the individual level and inequality in resource distribution and alienation in the political process at the social level. Empowerment for women helps women recognize through analysis how institutional gender discrimination and norms limit and oppress women's individual choices and self-development. These specific processes include the development of awareness of self as a woman, reduction of self-deprecation, recognition of the desire for change, recognition and acceptance of personal responsibility for change, and development of group consciousness and critical consciousness (Lee et al., 2001). As a result of these practices, women's self-efficacy increases, self-criticism decreases, self-esteem improves, and group consciousness develops.

3. Research Method

3.1. Participant Characteristics

Participants in this study consisted of 100 middle-aged women residing in S City, Gyeonggi-do, who were recruited through convenience sampling. Data were collected via face-to-face surveys conducted with women visiting S City Hall between January 5 and January 30, 2024. As the questionnaire did not include sensitive topics such as mental health, sexuality, or political orientation, and no personally identifiable information was collected, formal ethical approval was not required. Nevertheless, all ethical research practices were observed. Participants were fully informed about the purpose and scope of the study, and written informed consent was obtained prior to data collection. Participation was entirely voluntary.

To ensure data quality, responses that exhibited signs of careless or random answering were excluded from the analysis. Careless responding refers to inattentive or disengaged responses to survey items (Schmitt & Stults, 1985; Ward & Pond, 2015), while random responding involves intentionally providing arbitrary answers regardless of item content (Beach, 1989; Berry et al., 1992). Both forms of response behavior compromise data reliability by introducing substantial response errors (LaRose & Tsai, 2014). After excluding such responses, a total of 74 valid responses were retained for the final analysis. Descriptive information on the participants' general characteristics is presented in Table 1.

Table 1: General characteristic (N=74)

Observational variable		Frequency	%
Age	40s	4	5.4
	50s	36	48.6
	60s	34	45.9
Education	High school graduation	42	56.8
	College graduation	32	43.2
	Self-employment	13	17.6
Job	Housewife	57	77.0
	Professional	4	5.4

3.2. Measuring Tool

In the case of women's empowerment, the measurement tool used in this study was the Women's Empowerment Scale developed by Kim and Kim (2004) using a feminist and liberal approach. This scale consists of a total of 44 questions: acceptance of femininity (8 questions), self-confidence (12 questions), self-care (8 questions), sense of competence (7 questions), and assertiveness (9 questions). In this study, the Cronbach's α value of all 44 questions was .948, and the Cronbach's α value of each sub factor was acceptance of femininity (.906), self-trust (.895), self-care (.818), competence (.853), It was analyzed as trustworthy due to assertiveness (.832).

Regarding gender sensitivity, the Gender Sensitivity scale developed by the 'Gender and Society' research team at Kyungpook National University and validated by Li Rui (2019) was used. The sub-factors of this scale are sex/gender stereotypes (4 questions), openness to gender roles in public relationships (4 questions), openness to gender roles in private relationships (6 questions), and openness to gender identity (3 questions), awareness of sexual crimes/sexual violence (3 items), and consisted of a total of 20 questions with a total of 5 subscales. The Cronbach's α value of all 44 questions in this study was found to be .910, and in this study, it was found to be .89, .87, .85, .87, .87, respectively, and .87 overall. The women's empowerment and gender sensitivity scale was used on a 5-point Likert scale (1 point: not at all to 5 points: very much), with higher scores indicating higher levels of empowerment and gender sensitivity.

3.3. Data Analysis

The data collected in this study were analyzed according to the research problem, using through the IBM SPSS 26 version. First, a cross-analysis examined differences in middle-aged women's participation in community activities by age, education, and occupation.

Second, Spearman's quantile correlation analysis examined the correlation between middle-aged women's participation in community activities, gender sensitivity, and women's empowerment factors.

Third, to analyze differences in gender sensitivity and women's empowerment according to middle-aged women's participation in community activities, descriptive statistics that could explain the collected data were first calculated, and independent samples were used to confirm the statistical significance of the difference in scores between groups. A t-test was performed.

Fourth, a logistic regression analysis was performed to determine the statistical significance of the model with age, education, occupation, gender sensitivity, and women's empowerment as independent variables, and the statistical significance of individual independent variables for group classification accuracy and participation in community activities. It was carried out. Logistic regression analysis is suitable when the dependent variable is a dichotomous variable, such as 'present/absent', as in the questionnaire in this study. Unlike discriminant analysis, the variance-covariance matrices of groups categorized by the dependent variable must be the same and independent. This is because it does not require the assumption that variables must have a multivariate normal distribution (Kim, 2004).

Specifically, a method of simultaneously inputting the variables subject to analysis was applied, and Hosmer and Lemeshow tests were conducted to measure each model's overall goodness of fit.

4. Research Results

4.1. Differences in Participation in Community Activities among Middle-Aged Women by Age, Education, and Occupation

Table 2 shows the results investigating differences in middle-aged women's participation in community activities by age, education, and occupation.

Table 2: Differences in participation in community activities according to age, education, and occupation (N=74)

	Classification	I am considering participating in community activities. (n=46) Frequency (%)	No intention to participate in community activities (n=28) Frequency (%)	Total (n=74) Frequency (%)	χ^2	df	p
Age	40s	4(8.7)	0(0.0)	4(5.4)	3.050	2	.218
	50s	23(50.0)	13(46.4)	36(48.6)			
	60s	19(41.3)	15(53.6)	34(45.9)			
Education	High school graduation	34(73.9)	8(28.6)	42(56.8)	14.58***	1	.000
	College graduation	12(26.1)	20(71.4)	32(43.2)			
	Self-employment	7(15.2)	6(21.4)	13(17.6)			
Job	Housewife	35(76.1)	22(78.6)	57(77.0)	2.83	2	.243
	Professional	4(8.7)	0(0.0)	4(5.4)			

*** $p < .001$

In terms of age, the group that responded that they considered participating in community activities was highly represented in their 50s (23 people (50.0%)). In terms of education, the group that responded that they were thinking of participating in community activities was high school graduates (34 people (73.9%)) were found to be high. Among the group that responded that they were considering participating in community activities in their occupation, the housewife group was high at 35 people (76.1%). In addition, as a result of conducting a cross-analysis to determine whether there was a significant difference in participation in community activities according to age, education, and occupation, there was no statistically significant difference in participation in community activities between groups according to age and occupation. However, in the case of educational background, the statistical value is 14.58 and the significance probability is .000. At the significance level of .001, it can be said that there is a significant difference in whether middle-aged women participate in community activities depending on their educational background.

4.2. Middle-Aged Women's Participation in Community Activities and Correlation with Predictors

Table 3 shows the results of examining middle-aged women's participation in community activities and the correlation between age, education, occupation, gender sensitivity, and women's empowerment as predictors.

Table 3: Middle-aged women's participation in community activities and correlation with predictors (N=74)

	Participation in community activities	Age	Education	Job	Gender sensitivity	Women's Empowerment
Participation in community activities	1					
Age	.269***	1				
Education	.181***	.485***	1			
Job	.264***	.386***	.302***	1		
Gender sensitivity	.222***	.385***	.308***	.506***	1	
Women's Empowerment	.325***	.408***	.322***	.467***	.632***	1

*** $p < .001$

As a result of examining Spearman's correlation between middle-aged women's participation in community activities and the predictor variables, it was found that there was a positive correlation between participation in community activities and the predictor variables. In other words, the positive correlation between participation in community activities and women's empowerment ($r = .325$, $p = .000$) was highest, followed by the relationship between age ($r = .269$, $p = .000$) and education level. ($r = .181$, $p = .000$), relationship with the job ($r = .264$, $p = .000$), and relationship with gender sensitivity ($r = .222$, $p = .000$). Therefore, it can be seen that middle-aged women's participation in community activities has the highest correlation with women's empowerment among the predictor variables.

4.3. Differences in Gender Sensitivity and Women's Empowerment Depending on Middle-Aged Women's Participation in Community Activities

Descriptive statistics were calculated to determine the differences in gender sensitivity and women's empowerment according to middle-aged women's participation in community activities, and independent studies were conducted to determine the statistical significance of the differences in gender sensitivity and women's empowerment scores between groups depending on whether or not they participated in community activities. The results of the sample t-test are shown in Table 4.

Table 4: Differences in gender sensitivity and women's empowerment depending on middle-aged women's participation in community activities (N=74)

Dependent variable (stress)	I am considering participating in community activities. (n=46)	M	SD	t	p
	No intention to participate in community activities (n=28)				
Gender sensitivity	have	2.8630	0.26800	-1.00	.318
	have no	2.9464	0.44720		
Women's Empowerment	have	3.6393	0.42803	2.53***	.000
	have no	3.3938	0.35907		

*** $p < .001$

As a result of examining the differences in gender sensitivity and women's empowerment between groups depending on whether middle-aged women participated in community activities, gender sensitivity was found to be higher in the group with no intention of participating in community activities compared to the group that participated. To determine the statistical significance of the difference in scores depending on participation in community activities regarding gender sensitivity, first, it was confirmed whether Levene's assumption of equal variance was met, and as the test results accepted the null hypothesis at the significance level of .05, the variance of the two groups was It could be said that it was the same. Accordingly, as a result of conducting an independent samples t-test, the difference between groups in gender sensitivity scores according to participation in community activities did not show a significant difference at the significance level of .001. In other words, it can be predicted that whether gender sensitivity is high or low does not determine whether middle-aged women participate in community activities.

In addition, women's empowerment was found to be higher in the group that participated in community activities compared to the group with no intention of participating in community activities. To determine the statistical significance of the difference in scores depending on participation in community activities for women's empowerment, it was checked whether Levene's assumption of equal variance was met. As the test results accepted the null hypothesis at the significance level of .05, the two groups' variance could be said to be the same. Accordingly, as a result of an independent samples t-test, the difference between groups in women's empowerment scores according to participation in community activities was significant at the significance level of .001. In other words, if the female empowerment score is high, middle-aged women are more likely to participate in community activities. In conclusion, women's empowerment is a predictor that determines whether middle-aged women participate in community activities.

4.4. Logistic Regression Analysis Results Predicting whether Middle-Aged Women Participate in Community Activities

The results of analysing the statistical significance and group classification accuracy of the model using each factor predicting middle-aged women's participation in community activities as independent variables using logistic regression analysis are shown in Table 5.

Table 5: Logistic regression analysis results predicting whether middle-aged women participate in community activities

			Estimation		
			Participation in community activities		Classification Accuracy (%)
			have	have no	
Observation	Participation in community activities	have	34	12	73.9
		have no	9	19	67.9
		Total			71.6
χ^2			31.809(df=5, p=.000)		
Hosmer & Lemeshow			24.47(p=.002)		
-2Log			66.355		
Cox & Snell R ²			.349		
Nagelkerke R ²			.476		

According to the logistic regression model, the classification accuracy was 73.9% for participants who engaged in community activities and 67.9% for those who did not, resulting in an overall accuracy of 71.6%. This indicates a moderately high level of predictive performance.

The model's overall significance was confirmed by the chi-square test, $\chi^2(5) = 31.809$, $p < .001$, indicating that the set of predictors significantly improves the model over a null model. The Nagelkerke R^2 value was .476, suggesting that approximately 47.6% of the variance in community activity participation among middle-aged women was explained by the model.

However, the Hosmer–Lemeshow test produced a statistically significant result, $\chi^2 = 24.47$, $p = .002$, indicating a lack of fit between the model's predictions and the observed data. This suggests that while the model is statistically significant and the predictor variables have explanatory power, its predictive accuracy in terms of alignment with actual outcomes is limited.

To further assess model adequacy, pseudo R^2 values were examined. The Cox & Snell R^2 was .349 and the Nagelkerke R^2 was .476, indicating a moderate level of explanatory power. Although the model does not exhibit an ideal fit, these indices suggest that the included variables offer meaningful insights into the factors associated with community participation among middle-aged women.

The results of analyzing the statistical significance of individual independent variables according to middle-aged women's participation in community activities are shown in Table 6.

Table 6: Results of statistical significance analysis of individual independent variables according to participation in community activities

	B	S.E.	Wald	df	p	Exp(B)
Age	0.436	0.656	0.442	1	0.506	1.547
Education	3.262	0.876	13.859	1	0.000	26.112
Job	0.615	0.779	0.625	1	0.429	1.850
Gender sensitivity	3.320	1.237	7.209	1	0.007	27.657
Women's Empowerment	2.456	0.911	7.274	1	0.007	0.086
Constant term	-10.106	4.753	4.521	1	0.033	0.000

*** $p < .001$, ** $p < .01$

Among the predictor variables, excluding age and occupation, educational background (Wald = 13.859, $p = .000$), gender sensitivity (Wald = 7.209, $p = .007$), and women's empowerment (Wald = 7.274, $p = .007$) had a significance level. .01, .001 was analyzed to predict whether middle-aged women would participate in community activities. The regression equation derived by logistic regression analysis is as follows.

Logit (middle-aged women's participation in community activities) = $-10.106 + 3.262$ (educational level) + 3.320 (gender sensitivity) + 2.456 (women's empowerment)

In logistic regression analysis, when the values of other independent variables are held constant, the regression coefficient (B) increases by 1 unit when the value of the independent variable increases by e^B compared to the probability that a middle-aged woman intends to participate in community activities. Therefore, assuming that the scores of other independent variables are the same if the value of each independent variable increases by 1 point, it is predicted that the probability of a middle-aged woman's intention to participate in community activities will be approximately $e^{+3.262} = 26.112$ times higher in educational level than the probability of not having any intention to participate in community activities. e is a natural constant with the value of -10.106, which is $(-10.106) + 3.262 = 26.112$. Additionally, gender sensitivity can be predicted to increase by approximately $e^{+3.320} = 27.657$ times. It can be predicted that women's empowerment will increase by about $e^{+2.456} = 0.086$ times. In other words, middle-aged women with higher levels of education, greater gender sensitivity, and a higher degree of empowerment are more likely to participate in community activities.

These findings suggest that although these variables were not statistically significant predictors in the t-test, they emerged as significant in the logistic regression analysis. This difference can be attributed

to the nature of logistic regression as a multivariate analytical method that assesses the independent contribution of each variable while controlling for the effects of others. In contrast, the t-test is a univariate analysis that does not account for potential confounding factors. Therefore, relationships that may not have been detected in the t-test could appear in the regression analysis after controlling for such confounders. These results imply that, when considering the complex interactions among variables, regression analysis can offer a more refined and realistic interpretation.

5. Conclusion

This study sets gender sensitivity and women's empowerment as predictors that determine middle-aged women's participation in community activities, such as age, education, and occupation, which correspond to sociodemographic personal variables, and as motivation variables that can predict participation. The analysis data was collected through a survey of 100 middle-aged women in S-city, Gyeonggi-do, who were randomly selected. The survey was conducted on middle-aged women visiting public institutions in S City for one month from January 5 to January 30, 2024. The research results are as follows.

First, about participation in community activities, people in their 50s were likelier to participate in community activities. In terms of educational background, those with a high school diploma were most likely to participate in community activities than those with a college diploma. Regarding occupation, housewives expressed the opinion that they would participate in community activities rather than self-employed workers or professionals.

Second, there appeared to be a correlation between participation in community activities, gender sensitivity, and women's empowerment sub-factors.

Third, we analyzed differences in gender sensitivity and women's empowerment depending on participation in community activities. As a result of the analysis, the average value of gender sensitivity was higher for those who did not participate in community activities than for those who participated, and the average value for women's empowerment was higher for the group of people who participated in community activities.

Fourth, age and occupation were not statistically significant predictors of participation in community activities. As a factor predicting participation in community activities, the educational level was the highest, followed by women's empowerment and gender sensitivity.

This study identified that educational attainment, gender sensitivity, and women's empowerment serve as significant predictors of middle-aged women's participation in community activities. Notably, these variables substantially increase the likelihood of participation, suggesting their critical roles in facilitating individual social engagement and empowerment. These findings align with international theories and prior research related to civic participation and empowerment, indicating that policies aimed at enhancing educational levels, strengthening gender sensitivity, and promoting women's empowerment may positively influence the expansion of social participation among middle-aged women.

However, several important limitations must be considered when interpreting these results. First, potential issues concerning the reliability and validity of the measurement instruments for gender sensitivity and women's empowerment, along with the cross-sectional research design, caution against overinterpretation of their predictive power. Second, the sample is limited to specific regions and populations, and the relatively small sample size restricts the generalizability of the findings. Therefore, future research should replicate these results with larger and more representative samples. Lastly, the study lacks in-depth exploration of complex interactions and causal mechanisms among variables, indicating the need for follow-up studies employing qualitative methods or longitudinal designs.

In summary, this study provides valuable foundational data for policy and program development by identifying key factors that promote social participation among middle-aged women. Nonetheless,

careful interpretation is warranted, taking into account the methodological limitations and further research is essential to address these issues.

6. Discussion

This study confirmed that educational attainment, gender sensitivity, and women's empowerment serve as significant predictors of middle-aged women's participation in community activities. In particular, each of these factors showed an exceptionally strong effect size, increasing the likelihood of community participation by more than ten times. This suggests that these variables are key elements in enhancing individuals' social capital and motivation for engagement. These findings are in line with Arnstein's (1969) ladder of citizen participation and Kabeer's (1999) empowerment model, and they support previous international studies highlighting the crucial roles of educational level, gender sensitivity, and empowerment in promoting community engagement.

Moreover, the results emphasize the importance of logistic regression analysis, as it revealed relationships that were not apparent in the univariate analysis. This highlights the need to control for confounding variables and demonstrates that a multivariate approach is more effective in understanding realistic causal relationships in complex social phenomena.

However, this study has several limitations. First, the sample was limited to a specific region and age group, which may restrict the generalizability of the findings. Additionally, the relatively small sample size could reduce the reliability of the effect estimates, and the possibility of sampling bias cannot be completely ruled out. Future studies should include larger and more representative samples to replicate and validate the findings. Furthermore, due to the cross-sectional design of this study, causal interpretations are limited. Thus, follow-up research combining qualitative methods is needed to explore the in-depth mechanisms linking women's empowerment and community participation.

In conclusion, this study suggests that policies and programs aimed at promoting community participation among middle-aged women should focus on enhancing educational opportunities, gender sensitivity, and empowerment. Future research should aim to expand these findings by including more diverse populations and employing multi-layered analytical approaches.

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