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# Development Model of Participatory-Based Demographic Control in Marginalized Communities

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**ABSTRACT**

Population density is positively correlated with fertility rates. Fertility is related to a woman's ability to reproduce. This study aims to: (1) What is the description of the participatory-based birth control counseling model for marginalized communities in Makassar City? (2) How to design a participatory-based birth control counseling model for marginalized communities in Makassar city? and (3) What is the validity, practicality, and effectiveness of the participatory-based birth control counseling model for marginalized communities in Makassar? This research is a type of Research & Development (R&D) research that is structured referring to the development of the model from Borg & Gall, and the modified Four - D. The syntax consists of problem analysis; preparation of lesson plans; development of learning tools; product testing and dissemination. The subjects of this research are marginal communities in three sub-districts. In this study, the extension model disseminated expert validation, three trials, and discussion group forums to determine the model's effectiveness in its implementation. The results obtained from the data analysis are: (1) The extension model to control the demographic figures is based on the active participation of marginalized communities. This counseling model is equipped with tools in the form of a module book, namely the birth rate control module, the prosperous family marriage module, and the long-term contraceptive method. (2) The design of the extension model is carried out through three stages, namely the pre-development stage, the development stage, and the trial stage. (3) The extension model controlling the demographic figures has been tested for validity, practicality, and effectiveness. The test results show that the extension model is valid, practical, and effective to use. The findings of this study are included in the MAD extension model, which includes model books and module books. The MAD extension model is intended for BKKBN extension workers/cades to support the increased active participation of marginalized communities in controlling birth rates.

Keywords: R&D, extension model, marginal, birth rate.

## INTRODUCTION

The population density in Indonesia is always questioned between opportunities and challenges. The government's intervention and implementation of supporting programs also determine the results. Higher education, population density, and infant mortality rates to fertility rates as indicators of the emerging democratic transition will be affected (Dewi et al., 2018; Rahman & Syakur, 2018; Sari & Indrawadi, 2019). Furthermore, demographic changes, human capital, and economic performance will occur.

Population density is positively correlated with fertility rates. Fertility is related to a woman's ability to reproduce (Bagaskoro et al., 2022; Normalasari et al., 2018; Wibowo, 2017). The birth rate of a place describes the number of births (the number of new residents) born. The birth rate is directly proportional to the population of an area. A significant increase in the birth

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rate is influenced by the age of women's first marriage. Eating will trigger a population explosion.

Indonesia's high early marriage ranks second in Southeast Asia (Waleleng & Maitimo, 2018) Rejuvenating marriages is believed to control the population explosion by delaying births. High fertility rates in women married at the age of <18 years are 21.3% higher than those married in adulthood. Most women who marry early have their first child in the first year of marriage. Getting married at a child's age will prolong after reproduction so that it has the potential to give birth more often. In the end, a high number of births will harm the quality of the population.

The government's steps to ensure the improvement of the quality of the population are indicated by the Family Planning (KB) program. In carrying out the family planning program, the National Family Planning Coordinating Board (BKKBN) has shown relatively good results in controlling the birth rate (Husen et al., 2021). Environmental culture's aspects positively impact people's interests and decisions to participate. The impact can be seen in the low participation of marginalized people in family planning (Syaekhu et al., 2019). Marginal communities are identical in their limited access to education, social, economic, and political. The long-term poverty they face eventually makes them adapt (Anwar & Wahyuni, 2019; Prianto, 2020). The low level of education results in their inadequate understanding of the family planning program. The description of the failure of family planning programs in marginalized communities can be seen in their low participation in the use of contraceptives.

Socialization on the use of contraception continues to be carried out by BKKBN cadres and extension workers in supporting the success of the family planning program. There have been many studies regarding training for family planning instructors. Still, there is no available counseling model or tool that serves as a guide for BKKBN cadres or extension workers. The extension materials that cadres and extension workers use are still general. So that socialization is carried out in an unstructured manner. It affects the understanding of marginalized communities that can absorb this information optimally. So this research is intended to develop a structured birth control counseling model to provide deep knowledge to the community. The model obtained can be a reference for relevant agencies in supporting controlling demographic figures.

## METHOD

The design of the Controlling Demographic Numbers (MAD) extension model begins by determining five syntaxes that are appropriate and relevant to the development of the extension model, namely 1) Analysis of model requirements; 2) Preparation of extension model design; 3) the model's application. This study employs the Research and Development (R&D) technique by combining the Gall and Bord and Four D models. This research was conducted in three sub-districts in Makassar City, South Sulawesi Province, which have marginal communities, namely Tallo District, Tamalate District, and Panakukkang District, from September 2021 - May 2022.

1) Model Needs Analysis

They were analyzing the needs of the model used as material for product planning by looking at the characteristics of the community, initial knowledge, attitudes about controlling the birth rate, and the counseling model for managing the birth rate that is currently needed. A questionnaire was distributed to three districts to identify the characteristics, learning, and attitudes of the community. The questionnaire results serve as a reference for discussion with BKKBN cadres/extensions through discussion group forums (FGD) to identify the extension model needed by the needs of marginalized communities and BKKBN cadres/extensions.

2) Preparation of extension model design

Based on the results of the first stage, the design of the extension model is carried out by considering aspects of community characteristics, initial knowledge and attitudes of the community, and the extension model required by BKKBN cadres/extension workers.

3) Model Application

The development of the extension model kit is based on the BKKBN IEC, the extension model, and the materials for controlling demographic figures. The model set for Controlling Demographic Numbers (MAD) was obtained through model books, modules, and power points. The tool was further validated by three experts in the fields related to controlling demographic figures. They started with compiling extension outcomes by integrating extension materials and compiling indicators of extension outcomes. Devices that have been validated are then tested.

The trial was conducted twice, namely individual trials involving six respondents who were taken at random. According to the results of individual tests, revisions were made to complete the lack of equipment. Furthermore, group trials involving 35 respondents from 3 sub-districts were studied using a pre-post test. Revisions were made to improve the device based on the results of group trials. The final product is then disseminated. The final product developed is then disseminated to determine its practical and effective level.

The dissemination was carried out through a forum group discussion (FGD). This research data use qualitative data and quantitative data. Qualitative data was obtained from experts' criticism, suggestions, and comments on the product. Qualitative data were obtained from observations and interviews in individual and group trials (Sugiyono, 2010). Quantitative data comes from a questionnaire or questionnaire. Three experts assisted validity data analysis, and practicality data analysis came from observations of the implementation of the extension model and community response questionnaires. The effectiveness analysis is obtained through the calculation of the average.

## RESULT AND DISCUSSION

The extension model developed is based on the participatory basis of the marginal community of Makassar City. Developing the extension model for BKKBN cadres/extension produces MAD module book products, extension tools, and instruments that have met the validity criteria. The product has undergone development phases to produce a good quality MAD Model. The results of this counseling model were carried out in 3 stages, namely:

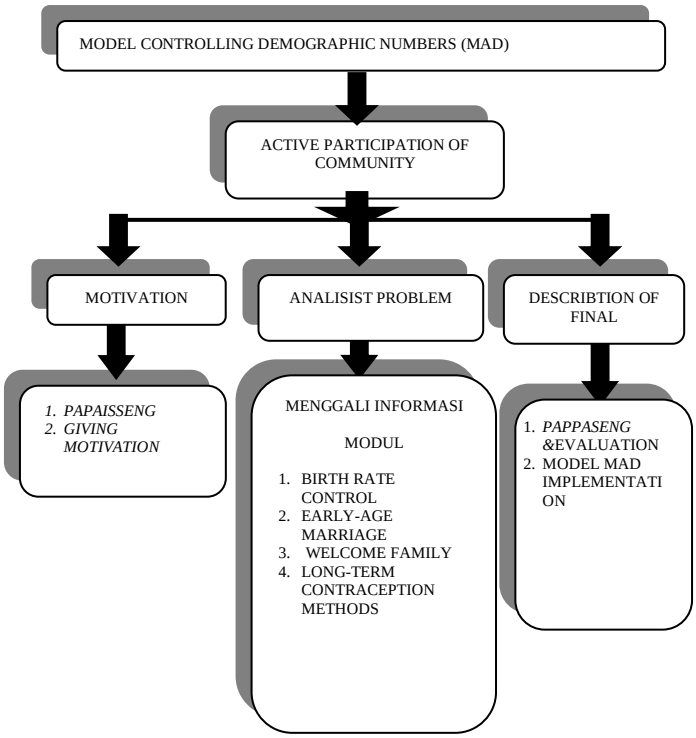


**Figure 1. Description of the MAD Extension Model**

1) Motivation is the initial stage of introduction to the community by integrating local wisdom and motivating them to actively participate in the birth rate control program. 2) Problem Analysis is the core activity filled with material from the counseling module. In providing the materials, the BKKBN cadres interact with the community to identify problems that prevent them from actively participating. 3) Final Description, assessing the effectiveness of the counseling provided. When the evaluation is done, the BKKBN extension worker or cade will give *pappaseng* about how the community is working to lower the birth rate (Antonetamasela et al., 2022; Lettiyani et al., 2020; Resnawaty et al., 2021).

The principle of developing a model based on active community participation is instructional development on literacy/modules and instructors/instructors. The MAD extension model uses the participation base proposed by (Artisa, 2018). Through structured and thorough counseling, this model's goal is to improve the community's knowledge and willingness to take an active role in lowering the birth rate. The MAD extension model comprises four modules with materials related to each other, namely: module 1) The Birth Rate Control Module. 2) Module on Early Marriage. 3) Module for a Prosperous Family. 4) Module on Long-Term Contraception Methods.

1) Needs assessment

The needs analysis results in development also become the basis for developing an extension model. This stage is carried out to determine the problems of BKKBN cadres/extension workers in increasing the participation of marginalized communities in controlling the birth rate. In addition, this stage is also carried out to discover the problems marginalized communities face, so their contribution is hampered. Researchers involved 45 BKKBN cadres and extensions and marginalized communities. The results of the analysis explained that no comprehensive and structured extension model makes it easy for BKKBN cadres/extensions to increase the knowledge and attitudes of marginalized communities in controlling the birth rate.

The results of this study reinforce the importance of developing a birth control counseling model for marginalized communities in the city of Makassar. Thus, this model will produce social impacts related to community participation.

2) Extension Model Development

The design phase produces an initial product that can be used as a solution to increase active community participation. Model books, module books, extension outcomes, evaluation tools, and validation sheets are the results of this stage.

3) Model Implementation

In the early stages of implementation is the birth of a prototype model. Where the prototype meets five model criteria, namely: 1) training syntax, social system, reaction principle, support system, and instructional impact and accompaniment.

**The Validity of the Extension Model**

The validity of the extension tools (model books, lesson plans, modules) that are the focus of attention for improvement include (1) extension modules based on local wisdom in South Sulawesi, (2) adding Malthus theory (3) KEI BKKBN-adapted modules for long-term contraceptive methods The main objective is to increase people's knowledge and attitudes about controlling the demographic number (MAD) on a participatory basis. It is a characteristic that distinguishes it from using other extension models (Lettiyani et al., 2020). With the hope that the community is directed to real problem situations that exist in order to give birth to behavioral awareness, the material is equipped with pictures to be observed, analyzed, and given the conclusion that its purpose can create a pleasant attraction.

Changes in the extension model have a reasonably good impact on the extension workers and the community. So far, extension workers have provided counseling using no precise models and materials, resulting in limited extensions. As stated in the study of the model theory controlling the demographic number (MAD) based on participation, counseling is done in a way that is geared toward participation.

The three instruments tested include: (a) training model books, (b) module books, and (c) lesson plans. The results of the validity and reliability tests of the research instrument can be seen in the following Table 1:

**Tabel 1.**
**Instrument Validation Results**

| Aspect & Rating | Average | Category |
|---|---|---|
| Model Book | 3,82 | Very Valid |
| Module | 3,85 | Very Valid |
| RPP | 3,82 | Very Valid |

Source: Data Analysis(2022)

Furthermore, the extension tool that is also validated is the module. All areas evaluated by the experts were deemed to be "extremely valid," according to the extension module's validation results. It is evident from the cumulative average score, which ranged between 3.5 and 4.0 and came in at 3.85. Lesson plans are another approved training resource. With an average score of 3.82, the lesson plan's validation results are considered to be "extremely valid."

**The Practicality of the Extension Model**

Practicality can be measured by two approaches, namely: (1) a theoretical approach, based on the expert's assessment that the extension model controlling the demographic number (MAD) on a participatory basis is feasible to be applied in extension, (2) an empirical approach, based on the results of observations of the implementation of the model and the instructor's response to the model.

The results of the analysis of the implementation of the model on the individual test, where the total average value of the implementation of the extension model controlling the demographic number (MAD) on a participatory basis in the individual trial is 3.00, which can be declared well implemented. In the group test, the average score obtained was 2.94, which was declared well implemented. On the other hand, the average assessment of the extension agent's practical response is 3.6, and it's easy to use the model and extension tool to control the demographic number (MAD) through participation. Test results and community responses to the extension model control the demographic number (MAD) on a participatory basis. The summary results of the three community groups in the group trial where each group has several people vary between 10 and 9 people, so the total is 35. The average value of the summary of the results of the knowledge control test based on participatory demographic numbers (MAD) is 57.85. with a maximum score of 67.62 and the lowest score of 49.98. So, based on what has been said above, we can say that the average community response in the group trial in the application of the extension model controlling the demographic number (MAD) based on participatory practice is used in many groups.

The quality of this extension model is also measured by its level of practicality. The researcher used an observation sheet to keep track of how the training model was being used and a questionnaire to find out what the instructor thought. Two observers were present during the training process, and the findings of their observations led to the classification of the farm laborer training model as fully implemented with an average score of 3. The categorization of the training model as practical is a sign of this. Table 2 displays the outcomes of using this training model.

**Table 2.**
**Results of The Implementation of The Extension Model Category Average Component**

| Component | Average | Category |
|---|---|---|
| Syntax | 3 | Valid |
| Social System | 3,12 | Valid |
| Reaction Principle | 2,79 | Valid |
| Support System | 3,08 | Valid |
| **Total Average** | **3** | **Valid** |

Source : Data Analysis (2022)

From the public response questionnaire that has been distributed, it has been obtained that the average response is positive. It means that almost all workers stated that the counseling, materials, modules, and lesson plans during the training process were considered reasonable. Furthermore, the practicality of the training model was also obtained from the data on the instructor's response to the model. Specifically, the results of the instructor's response to the extension model can be seen in table 3:

**Table 3.**
**Community Response to the Extension Model**

| Aspects | Community Response | |
|---|---|---|
| | Average | Category |
| Validation | 3,4 | Very Good |
| Reliability | 3,4 | Very Good |
| Objective | 3,6 | Very Good |
| Practicality | 3,7 | Very Good |
| **Average** | **3,6** | **Very Good** |

Source: Data Analysis (2022)

**The Effectiveness of the Extension Model**

The effectiveness of the MAD Extension Model is seen from the N Gain Score Pre Test and Post Test values in the individual test, group test, and dissemination. The average N-Gain Score value of the pre-test and post-test of the four extension modules (MAD) in the individual test showed that the gain was quite effective. The average N-Gain Score of the pre-test and post-test of the four extension modules (MAD) in the group test showed that the gain was quite effective. The average N-Gain Score of the pre-test and post-test of the four counseling modules (MAD) in the dissemination shows that the acquisition is quite effective in increasing the knowledge and attitudes of the community in actively participating in supporting the control of birth rates.

The results of the data analysis of the effectiveness of the extension model obtained through the pretest and posttest of public knowledge were then analyzed quantitatively by running Excel. The results of the t-test analysis can be seen in Table 4:

**Table 4.**
**N-Gain Score**

| Module | Averange N-Gain |
|---|---|
| 1 | 78,33 |
| 2 | 74,24 |
| 3 | 50,62 |
| 4 | 75,29 |
| **Total Average** | **69,62** |

Source: Data Analysis (2022)

## CONCLUSION

Based on the results of research developments and discussions related to the birth rate control (MAD) extension model that has been developed, several things can be concluded, namely: The extension model to control demographic figures is based on the active participation of marginalized communities. This counseling model is equipped with tools in the form of modules, namely the birth control module, the early marriage module, the prosperous family module, and the long-term contraceptive method (MKJP) module.

The design of the extension model begins with needs analysis, designing the extension model, developing tools, testing, and implementing the extension model. Birth rate control counseling in the community is required by extension workers/cadres and the community; The stage of preparing the extension design, which covers the scope of determining extension outcomes, setting indicators of extension outcomes, determining extension module materials, compiling lesson plans, and implementing participatory-based extension activities; The stage of developing extension tools for extension models (Select Material, Method and Media); product trials in the form of Extension Model Books, Extension Implementation Plans, and extension materials in the form of modules; evaluation; and the dissemination stage carry out revisions and final improvements to the results of group trials and then disseminate them using the Forum Discussion Group Pre-test post-test to know the effectiveness of using the device in the extension process so that it is ready for adoption by product users.

The extension model developed, gets the final results from a team of experts, namely population experts, extension experts, and sociologists by validating and after revisions, the validation of the extension model book from the aspects that are considered to be in the excellent category. With this excellent response, a participatory-based extension model is used and tested for BKKBN extension workers/cadres and marginalized communities in Makassar City. Products that have been validated and revised are then tested on BKKBN extension workers/cadres and marginalized communities. Based on the results of individual trials and group tests, the response of BKKBN extension officers/cadres to the participatory-based extension model that was developed was declared easy to use. The trial of individual and group

responses in marginalized communities was declared feasible to be used as a participatory-based birth control counseling model.

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