Jurnal Perencanaan Pembangunan:
The Indonesian Journal of Development Planning
Volume VI No. 1 - April 2022/Page: 116 - 134
https://doi.org/10.36574/jpp.v6i1.235
Article

# Neither the Cohabitation of the Father nor the Grandmother Can Help Exclusive Breastfeeding in Indonesia: Empirical Research Using SUSENAS 2019 and 2020

Etania Ranu Andhika[1]

Corresponding author. Email: dikandraandhika@gmail.com

Submitted: 2021-12-19 | Accepted: 2022-04-22 | Published: 28th April 2022

***Abstract***

Exclusive breastfeeding (EBF) for the first six months is the key to preventing malnutrition in children. However, EBF coverage in Indonesia is only 38%, while the target WHO set in 2030 is 70%. Therefore, targeting the actors behind EBF completeness is needed to boost the EBF rate. The research will uncover the impact of the daily sources of support (both maternal and paternal grandmothers, the father, and the domestic worker) and modifying factors on the EBF choices made by the mother. Using the 2019 and 2020 National Socio-Economic Survey (SUSENAS) data, probit regression suggests that no one's cohabitation with the mother significantly affects EBF completeness. In contrast, maternal characteristics (employment status, economic level, education completion, and residential area of living), baby's gender, and father's education become the most decisive factors. Since the leading actor is still the mother herself, to improve the EBF rate, the policy should be focused on helping breastfeeding mothers to face the challenges, especially in the workplace.

**Keywords**: exclusive breastfeeding; probit; source of support.

[1] Department of Economic Planning and Development Policy, Faculty of Economics and Business, Universitas Indonesia and The Development Economic Division, Graduate School of Asia Pacific Studies, Ritsumeikan Asia Pacific University.

## I. Introduction

### 1.1. Background of problems

Children are the vital investment a country can capitalise on to guarantee the nation's future. Unfortunately, a large portion of today's children still suffers from several issues, including nutrition deficiency. Malnutrition is the primary cause of death among children (Black *et al.*, 2008), stunting (Martorell *et al.*, 1994), and problems in cognitive function, school achievement, and children's behaviour (Beasley *et al.*, 2000; Pollitt *et al.*, 1995).

The World Health Organisation (WHO) recommends exclusive breastfeeding (EBF) for the first six (6) months of the infants' life to prevent malnutrition from happening in children's early life. However, despite its advantages and the efforts directed toward encouraging and protecting breastfeeding, its application rates in all countries remain suboptimal (Rollins *et al.*, 2016). In 2018, the Global EBF rate was only 41%, while the 2030 target that should be achieved is 70% (UNICEF WHO, 2019).

In a middle-income country like Indonesia, EBF practice is still below the rate. Based on the Indonesia Demographic Health Survey in 2017, the breastfeeding initiation rate was relatively high at the beginning at around 67%. However, it dwindled to 38% before the infants reached their sixth month (BKKBN, 2018). Nevertheless, the survey does not identify the reasons for breastfeeding discontinuation. Therefore, identifying target groups and features that indicate intervention is critical to improving the EBF rate.

### 1.2. The problems

Several researchers have already conducted numerous studies to determine the factors affecting EBF. Besides socioeconomic and demographic factors, a personal variable such as the source of support also strongly determines the mother's decision on breastfeeding (Meedya *et al.*, 2010; Sikorski & Renfrew M, 2000). That support may be provided by the father, grandmother, or other baby's caregiver, who potentially offer practical and emotional help for the breastfeeding journey (Crippa *et al.*, 2021; Dennis, 2002; Ekström *et al.*, 2003; Emmott & Mace, 2015; Joseph & Earland, 2019; Negin *et al.*, 2016; Sikorski & Renfrew M, 2000). Emotional and practical assistance are essential as producing adequate breast milk for her infant causes energy loss to the nursing mother (Butte & King, 2005). Also, mothers need someone to give the expressed breastmilk[1] that they store in the fridge to the baby at home when they are away. Thus, the existence of help decreases the burden born by the mother who has high determination to give EBF to the infant.

However, the role of the source of support in affecting EBF is unclear regarding grandmothers in particular. According to research conducted by Choudhury *et al.* (2012) and Gupta *et al.* (2015), the grandmother's role is positively related to EBF success. However, Kohlhuber *et al.* (2008) and Susin *et al.* (2005) found that if a grandmother has a negative attitude towards breastfeeding, the mother is more likely to abandon exclusive breastfeeding. Also, Li *et al.* (1999) discovered that if the grandmother is the infant's primary caretaker, the mother is more likely to practice non-exclusive breastfeeding.

Thus, it is vital to conduct further studies to determine the actors and how they encourage or inhibit EBF to provide more substantial evidence for better public policy formulation. This study seeks to fill the gap in the literature by differentiating between the

[1] Expressed Breast Milk (EBM) is fresh breast milk from the mother that is not directly consumed by the baby. Breast milk can be expressed manually by hand or with a special pump. Expressing breast milk is important to maintain breast milk supply. EBM can be kept frozen or not, until the baby needs it. EBM should be stored in sterilized cups, glasses, jugs or jars that have been washed thoroughly with soap and water. At room temperature, EBM can last for 8 hours. In the refrigerator, it will be safe to consume within 48 hours. If the mother experiences a deep freeze, she can store it for 3 months. Frequent milking (8-10 times in 24 hours) including night express or direct breastfeeding will make it easier to help maintain a good milk supply for successful EBF (WHO, 2009).

role of the paternal and maternal grandmothers in affecting EBF in Indonesia. The purpose of this research is to examine which source of support impacts breastfeeding exclusivity and whether there is any difference between paternal and maternal grandmother presence in affecting mother decision regarding EBF completeness. Furthermore, this study aims to define socioeconomic and demographic characteristics that impact EBF practice.

### 1.3. Logical Framework

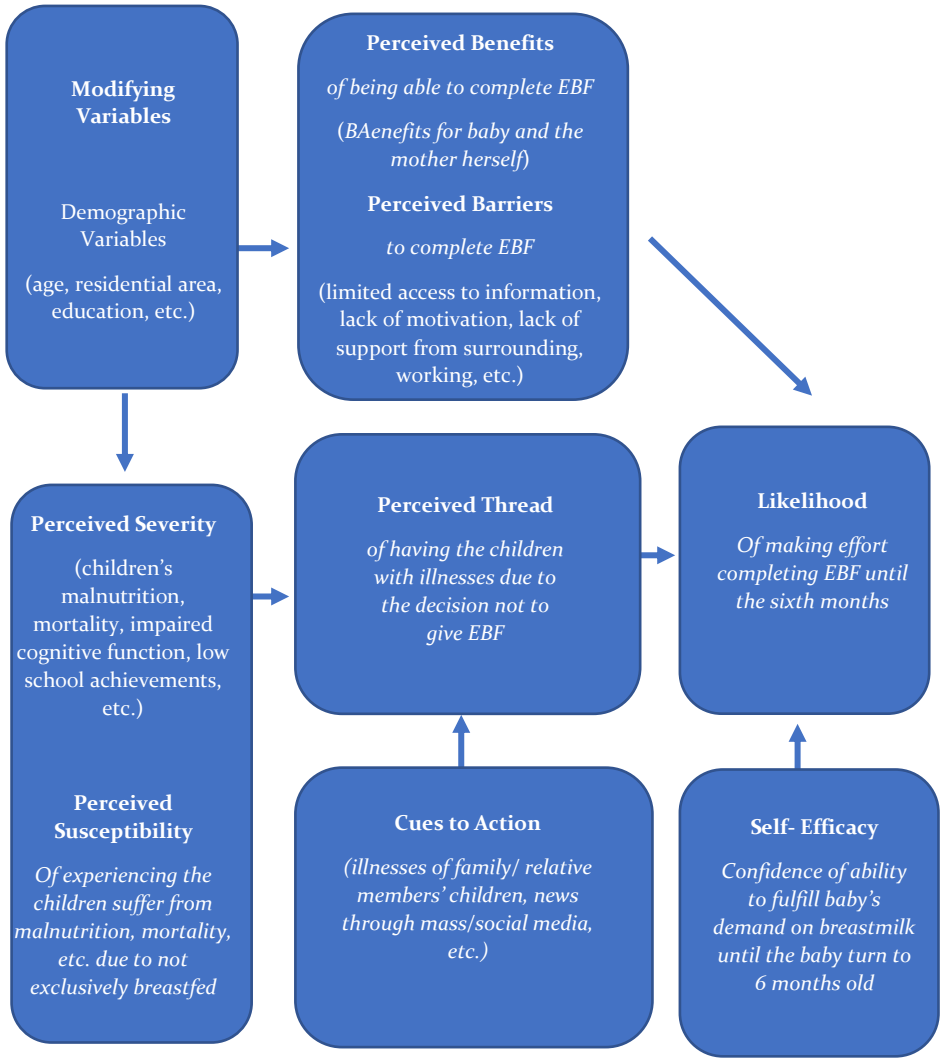


**Figure 1.** Health Belief Model Theoretical Framework Applied to Exclusive Breastfeeding Behaviour (based on Author's interpretation)

Reproduced from James, D. C. S., Pobee, J. W., Oxidine, D., Brown, L., & Joshi, G. (2012). Using the Health Belief Model to Develop Culturally Appropriate Weight-Management Materials for African-American Women. Journal of the Academy of Nutrition and Dietetics, 112(5), 664–670.

In the 1950s, the Health Belief Model (HBM) was proposed to explain why medical screening procedures in the United States failed (Glanz *et al.*, 2008; Hayden, 2019; Janz &

Becker, 1984). The original Health Belief Model's basic premise is that health decisions are determined by personal beliefs or perceptions of disease and the solutions available to reduce its occurrence. According to Hayden (2019), HBM includes seven essential components: perceived severity or seriousness, perceived susceptibility, perceived barriers, perceived benefits, modifying factors, cues to action, and self-efficacy to the model (Crosby *et al.*, 2018; Hayden, 2019).

Modifying variables are factors that change or influence a person's perception of the value of a preventative behaviour (Rosenstock, 1974). Rosenstock (1974) divides this factor into three groups: demographic factors (age, gender, marital status, and ethnicity); socio-psychological factors (peer group, social class, and personality); and structural factors (knowledge and prior experience). Later, Crosby *et al.* (2018) and Hayden (2019) add socioeconomic status as another variable that influences an individual's perception of protective behaviour.

Based on that model, a mother's decision to complete EBF is related to those various components (See Figure 1). According to previous studies, socioeconomic and demographic factors that are strongly connected with mother's decision towards EBF are parents' age, parents' years of schooling, economic status, maternal working status, parity, and type of residential area of living (Mohd Shukri *et al.*, 2021; Neves *et al.*, 2021; Ogunlesi, 2010; Putri & Handayani, 2019; Qiu *et al.*, 2008; Ryan *et al.*, 2002; Senarath *et al.*, 2010; Shirima *et al.*, 2001; Thu *et al.*, 2012). Furthermore, the characteristic of the baby, in this case, is the gender of the infant, which is also likewise associated with the duration and frequency of breastfeeding (Ghosh *et al.*, 2006; Yalçin & Kuşkonmaz, 2011).

The success stories of exclusive breastfeeding are also strongly associated with positive support and assistance from people around the mother (Debnath *et al.*, 2021; Meedya *et al.*, 2010). The form of helping action can be doing housework or taking care of the baby, including giving the expressed breastmilk to ensure the breast milk consumption continues when the mother is not at home. This practical support may enable the mother to focus on breastfeeding directly or indirectly by expressing the milk when away from the baby.

One of the most significant support sources that impact breastfeeding sustainability is the woman's spouse or the baby's father (Dennis, 2002; Meedya *et al.*, 2010; Mohd Shukri *et al.*, 2021; Werdani *et al.*, 2021). Also, it is believed that a nursing mother with a husband and domestic helper assisting her in sharing housework or childcare has more confidence to breastfeed for an extended period (Ku & Chow, 2010).

Moreover, grandmothers' involvement with positive attitudes towards breastfeeding also influences the continuity of EBF (Negin *et al.*, 2016). Besides emotional support, practical breastfeeding support from grandmothers, such as assisting behaviour, may promote breastfeeding if it frees the mother from other tasks such as domestic work (Emmott & Mace, 2015). Although several researchers found that the grandmother's presence can have a notable impact on EBF, the extent of their influence and variables affecting that influence are still not clearly explained by any reviewers (Negin *et al.*, 2016). On the one hand, Ku & Chow (2010) suggest that a mother-in-law's involvement in the nursing mother's household boosts the latter's self-efficacy and longer breastfeeding duration (Ku & Chow, 2010). However, in Nigeria, 25% of nursing mothers were pressured by their mothers-in-law or the baby's paternal grandmother not exclusively to breastfeed (Agunbiade & Ogunleye, 2012).

Since there is a possibility that maternal and paternal grandmothers influence breastfeeding behaviour differently, some researchers have tried to identify the impact of each of them separately. Susin *et al.* (2005) found that the possibility of breastfeeding discontinuity before six months is more remarkable because of maternal grandmothers rather than paternal grandmothers. In contrast, Santo *et al.* (2007) found no significant impact between EBF duration and daily contact with both types of grandmothers. Moreover,

they found that the protective measures to maintain EBF exist when the mother lives with her mother-in-law (Santo *et al.*, 2007). However, there is no study capturing the impact of these types of grandmothers separately in Indonesia.

## II. Methods/Methodology

### 2.1. Data

This research is a cross-sectional analysis using secondary data from the National Socio-Economic Survey (SUSENAS) conducted by Badan Pusat Statistik (BPS, Eng. Statistics Indonesia). It covers all 34 provinces in Indonesia. BPS used the 2010 Indonesia Population (SP2010) census blocks to conduct two-stage stratified sampling in selecting the household samples. In the first stage, BPS employed the probability proportional to size (PPS) method. The number of households results from SP2010 in each stratum in the district/city to select the census blocks. The election of the census blocks is based on a systematic allocation in each urban/rural strata per district/city. After the blocks' household content was chosen, ten households were selected after a frequent update was performed for all households in that selected census block.

The unit of analysis is children whose age is between 6 to 23 months. Therefore, children receiving EBF would be the dependent variable in this research. The main explanatory variables are the cohabitation of people with the mother whose presence may help her complete EBF. Moreover, socioeconomic and demographic characteristics of the mother, education level of both parents, and gender of the baby will be considered the secondary independent variables in this study.

The 2019 and 2020 SUSENAS household sample size is 320,000 and 350,000. The number of household members in the joint dataset of SUSENAS is 2,462,794. The number of children between 6-23 months is 63,658.

However, further examination depicts that only 40,540 observations were included in this research. In this research, only the children whose fathers are the head of the households and live in a monogamous family had been considered. The main reason for this scheme is the author's limitations in embedding the mother and father's characteristics into children's records using the existing questionnaire structure. Moreover, the author aims to focus on analysing which factors affect EBF completion for children, including the role of the father's cohabitation and the characteristics of the biological mother. This study also does not cover children from single-parent families, such as those living with a divorced mother or without the biological mother.

### 2.2. Analysis

#### 2.2.1. Preliminary Analysis

First, the author provides an overview of the data characteristics using cross tabulation and crosstabs children's EBF completion status with main explanatory variables and some controlled variables. The author utilised the IBM Statistic SPSS 25 to prepare the dataset and Stata 16.0 to process data.

#### 2.2.2. Empirical Analysis

The author uses the probit model as the quantitative analysis to examine factors that influence a mother's decision to breastfeed her child exclusively. To examine the partial effect of continuous variables, such as expenditure per capita (lnexp_cap), the number of children (Number_of_children), mother's years of schooling (M_years_schoolig), father's years of

schooling (F_years_schooling), maternal age (M_age_sum), and paternal age (F_age_sum), on the response probability that the baby get EBF, the following equation would be used.

$$\frac{\partial P\,(x)}{\partial x_j} = f\,(\beta_0 + x\beta)\beta_j \quad (1)$$

On the other hand, to explore the partial effect of binary response independent variables such as cohabitation of maternal grandmother (Mat_GM_Cohab), cohabitation of paternal grandmother (Pat_GM_Cohab), cohabitation of the father (F_cohab), domestic worker's cohabitation (Housekeeper_Nanny_cohab), maternal working status (M_Work_Stat), type of residential area (Land_class), and the gender of the baby (Gender), the equation is as follows:

$$F(\beta_0 + \beta_2 x_2 + \cdots + \beta_2 x_2) - F(\beta_0 + \beta_1 x_1 + \cdots + \beta_2 x_2) \quad (2)$$

The probit model to explore whether a baby is exclusively breastfed is given by

$$P\,(x) = F(\beta_0 + x\beta) \quad (3)$$

Where

$$\begin{aligned}\beta_0 + x\beta = {} & \beta_0 + \beta_1 Mat\_GM\_Cohab_{it} + \beta_2 Pat\_GM\_Cohab_{it} + \\ & \beta_3 F\_Cohab_{it} + \beta_4 Housekeeper\_Nanny\_Cohab_{it} + \beta_5 M\_Working\_Stat_{it} + \\ & \beta_6 LnExp\_cap_{it} + \beta_7 Num\_of\_Child_{it} + \beta_8 M\_years\_schooling_{it} + \\ & + \beta_9 F\_years\_schooling_{it} + \beta_{10} M\_age\_sum_{it} + \\ & \beta_{11} F\_age\_sum_{it} + \beta_{12} Land\_class_{it} + \beta_{13} Gender_{it} + \varepsilon_{it}\end{aligned} \quad (4)$$

## III. Results, Analysis, and Discussions

### 3.1. Result and Analysis of Preliminary Analysis

In this section, using crosstabulation results, the author explores the exclusive breastfeeding completion status concerning some features included in the 2019 and 2020 SUSENAS. The EBF status of the children is divided into two responses, yes and no. In Table 1, children exclusively breastfed exceed those who were not. However, the national coverage is just 59.92 %, still relatively far from the 70% target set to be achieved in 2030 (UNICEF & WHO, 2019). Looking deeper into the regional figures, none of the regions met the requirement from WHO either. With a 68,76 % EBF rate, Bali and Nusa Tenggara are regions with the highest EBF coverage. This number is followed by the Java region with a 63,24 % EBF rate and Kalimantan/Borneo with 61,10 %. Furthermore, the region with the lowest EBF rate is Maluku and Papua, with 53,81 %. In other words, only 54 among 100 babies living in Maluku and Papua were exclusively breastfed until six months.

**Table 1.** Regions in Indonesia by Exclusive Breastfeeding Completion of Children whose Age are between 7 to 23 months (row percentage)

| Regions in Indonesia | Exclusive Breastfeeding Completion | | |
|---|---|---|---|
| | No (0) | Yes (1) | Total |
| (1) | (2) | (3) | (4) |
| Sumatra | 41.59 | 58.41 | 100 |
| Java | 36.76 | 63.24 | 100 |
| Bali and Nusa Tenggara | 31.24 | 68.76 | 100 |
| Kalimantan/ Borneo | 38.90 | 61.10 | 100 |
| Sulawesi | 42.63 | 57.37 | 100 |
| Maluku and Papua | 46.19 | 53.81 | 100 |
| Total | 40.08 | 59.92 | 100 |

**Source:** Author's calculation from the 2018 and 2019 SUSENAS

Table 2 on the next page depicts the general picture of exclusive breastfeeding completion when associated with the presence of sources of support living in the same house as the breastfeeding mother. Based on the figures shown, the number of babies exclusively breastfed is higher when both grandmothers, fathers, and domestic workers live in the same house with the mothers and babies. This is in line with the findings of several studies conducted by Debnath *et al.* (2021) and Meedya *et al.* (2010). However, the impact of these support sources on the mother's exclusive breastfeeding decision will be examined further using inferential analysis in the following subsection.

**Table 2.** The Cohabitation with Maternal Grandmother, Paternal Grandmother, Father and House Assistant/Nanny by Exclusive Breastfeeding Completion (row percentage)

| Cohabitation | Exclusive Breastfeeding Completion | |
|---|---|---|
| | **No (0)** | **Yes (1)** |
| With Maternal Grandmother | | |
| No (0) | 40.09 | 59.91 |
| Yes (1) | 39.72 | 60.28 |
| With Paternal Grandmother | | |
| No (0) | 40.18 | 59.82 |
| Yes (1) | 37.43 | 62.57 |
| With Father | | |
| No (0) | 40.82 | 59.18 |
| Yes (1) | 40.08 | 59.92 |
| With House Assistant/ Nanny | | |
| No (0) | 40.09 | 59.91 |
| Yes (1) | 38.00 | 62.00 |

**Source:** Author's calculation from the 2018 and 2019 SUSENAS

Regarding employment status and EBF completion, Table 3 shows that children whose mothers work tend to be weaned sooner than those whose mothers stay at home. Only 59 of 100 infants are exclusively breastfed for children with working mothers. Meanwhile, for non-working mothers, exclusively breastfed children are higher at 61.12 percent. This finding is in line with what has been found by Senarath *et al.* (2010) in five east and southeast Asian countries, including Indonesia. They argue that more effort should be put in addressing the maternal working status issue since they believe that the mother's employment is a significant feature leading to the non-EBF decision (Senarath *et al.*, 2010).

Table 3 also indicates that the more children there are in the household, the better the EBF outcome, except for households with nine and eleven children. Nevertheless, it can be observed that the prevalence of mothers giving EBF to their children is higher when there is more than one child. Some people believe that first-time mothers struggle more with EBF than those who have already given birth and have had more experience with previous children (Senarath *et al.*, 2010). However, if the number of children in the house exceeds four, the previous argument may not apply.

According to Table 3, the EBF outcome in urban areas is different from rural areas. For families who live in urban areas, the EBF completion rate is 60.68 %, which is relatively high compared with families living in rural areas with a 59.44% EBF rate. It indicates that the geographical factor also contributes to affecting EBF decisions.

**Table 3.** Mother's Employment Status, Number of Children within Family, Type of Residential Area of Living, and Gender of the Baby by Exclusive Breastfeeding Completion (row percentage)

| Variables | Exclusive Breastfeeding Completion | |
|---|---|---|
| | No (0) | Yes (1) |
| Mother's Employment Status | | |
| Non-working mother (0) | 38.88 | 61.12 |
| A working mother (1) | 41.82 | 58.18 |
| Number of Children within the Household | | |
| 1 | 42.58 | 57.42 |
| 2 | 38.34 | 61.66 |
| 3 | 39.45 | 60.55 |
| 4 | 41.25 | 58.75 |
| 5 | 43.22 | 56.78 |
| 6 | 43.59 | 56.41 |
| 7 | 42.19 | 57.81 |
| 8 | 40.63 | 59.38 |
| 9 | 50.00 | 50.00 |
| 10 | 37.50 | 62.50 |
| 11 | 100.00 | 0.00 |
| 12 | 50.00 | 50.00 |
| Residential Area of Living | | |
| Rural (0) | 40.56 | 59.44 |
| Urban (1) | 39.32 | 60.68 |
| Gender of the Baby | | |
| Girl (0) | 39.57 | 60.43 |
| Boy (1) | 40.55 | 59.45 |

**Source:** Author's calculation from the 2018 and 2019 SUSENAS

The distinction of EBF rates between both areas can be explained from an infrastructure perspective. In Indonesia, Baby-Friendly Hospitals (BFH) are still limited in rural areas (Flaherman *et al.*, 2018). The presence of BFH is essential from the first hour after birth in fostering early breastfeeding initiation (Buccini *et al.*, 2014; Titaley *et al.*, 2021). The health worker at BFH also plays an essential role, especially for first-time mothers, in providing the correct information about breastfeeding and tackling myths about breastfeeding perpetuated by the older generations (Buccini *et al.*, 2014). Titaley *et al.* (2021) also found the relationship between BFH and a mother's self-confidence in continuing exclusive breastfeeding in Indonesia. The self-efficacy of a breastfeeding mother may be escalated if she does not receive any free formula milk from the hospital after delivery, as compared to those who receive the free formula milk from the non-BFH (Titaley *et al.*, 2021).

The completion of EBF is also different for male babies and female babies. As shown in Table 3, a baby girl is more likely to get EBF than a baby boy. The EBF completion for female babies is 60.43 %, higher than the EBF rate for male babies at 59.45 %. This may be explained by Lisnawati *et al.* (2020), who argue that the amount of milk needed by baby boys is more significant than that of baby girls. They identified that the gender of the infant affects breastfeeding practices even from the first month (Lisnawati *et al.*, 2020). Thus, it influences the entire breastfeeding journey before reaching the sixth month (Behzadifar *et al.*, 2019).

### 3.2. Result and Analysis of Empirical Analysis: Probit Regression

The author conducted an inferential analysis using the Probit Model. This type of regression explores the impact of independent variables consisting of both continuous and categorical variables on the dependent variable, which is a binary outcome variable.

**Table 4** Probit Regression Summary

| Log-likelihood | Number of Observation | LR chi(13) | Prob> chi2 | Pseudo $R^2$ |
|---|---|---|---|---|
| -27241.112 | 40,540 | 112.21 | 0.0000 | 0.0021 |

**Source:** Author's calculation from the 2018 and 2019 SUSENAS

In Table 4 above, the first column shows the iteration log. It indicates how fast the model converged. The log-likelihood (-27241.112) can be used in comparisons of nested models. The table also shows the number of observations used in the data set with 40,540 samples of children and provides the likelihood ratio chi-square of 112.21 with a p-value of 0.0000. It suggests that this model as a whole is statistically significant. In other words, it fits significantly better than a model with no predictors.

**Table 5** Pearson $\chi 2$ Goodness-of-fit test for the Probit model for EB_Status_1

| Number of Observation | Number of Covariate Patterns | Pearson chi2(40194) | Prob> chi2 |
|---|---|---|---|
| 40,540 | 40,208 | 40470.37 | 0.1648 |

**Source:** Author's calculation from the 2018 and 2019 SUSENAS

The Pearson $\chi 2$ goodness-of-fit test shown in Table 5 tests the observed against the expected number of responses using cells defined by the covariate patterns. Based on the result above, it can be concluded that this model fits reasonably well since the probability (p-value) is 0,1648, more prominent than the alpha used in this research, which is 5%.

Table 6 displays all explanatory variables in the probit model with its associated coefficients, standard errors, the z-statistic, p-values, and the 95% confidence interval of the coefficients. There is sufficient evidence to reject the null hypothesis resulting from the p-value. Six indicator variables significantly affect a mother's decision to breastfeed her infant until six months exclusively. They are the mother's employment status, economic condition, education level, her husband's education level, the type of residence her family is living in, and her baby's gender.

Meanwhile, as there is no sufficient evidence to reject the null hypothesis resulting from the p-value, several children, the age of both parents, and all main explanatory variables in this study are not proven to influence EBF completion. The variables of interest, such as the cohabitation of the father, maternal and paternal grandmothers, and domestic worker, as the source of support, are not significantly associated with the mother's decision to give EBF.

**Table 6.** Variables in the Probit Regression Equation

| Independent Variables | Coef. | Std. Err. | z | P>z | [95% Conf. Interval] | |
|---|---|---|---|---|---|---|
| Maternal Grandmother Cohabitation Status<br>0: No (ref)<br>1: Yes | 0.00274 | 0.03587 | 0.08000 | 0.93900 | -0.06756 | 0.07303 |
| Paternal Grandmother Cohabitation Status<br>0: No (ref)<br>1: Yes | 0.06027 | 0.03490 | 1.73000 | 0.08400 | -0.00814 | 0.12867 |
| Father Cohabitation Status<br>0: No (ref)<br>1: Yes | 0.02002 | 0.06877 | 0.29000 | 0.77100 | -0.11476 | 0.15480 |
| Housekeeper/ nanny Cohabitation Status<br>0: No (ref)<br>1: Yes | 0.08271 | 0.12850 | 0.64000 | 0.52000 | -0.16914 | 0.33456 |
| Maternal Working Status<br>0: on-working mother (ref)<br>1: Working mother | -0.07652 | 0.01306 | -5.86000 | 0.00000 | -0.10212 | -0.05092 |
| Expenditure per capita | -0.06104 | 0.01184 | -5.15000 | 0.00000 | -0.08424 | -0.03783 |
| Number of Children Within Household | -0.01136 | 0.00639 | -1.78000 | 0.07500 | -0.02388 | 0.00116 |
| Maternal years of schooling | 0.00482 | 0.00159 | 3.02000 | 0.00300 | 0.00169 | 0.00794 |
| Paternal years of schooling | 0.00685 | 0.00154 | 4.44000 | 0.00000 | 0.00383 | 0.00988 |
| Maternal Age | 0.00128 | 0.00160 | 0.80000 | 0.42100 | -0.00184 | 0.00441 |
| Paternal Age | 0.00022 | 0.00133 | 0.17000 | 0.86600 | -0.00238 | 0.00282 |
| Residential Area<br>0: Rural (ref)<br>1: Urban | 0.02842 | 0.01357 | 2.09000 | 0.03600 | 0.00182 | 0.05502 |
| Gender of Baby<br>0: Girl (ref)<br>1: Boy | -0.02520 | 0.01262 | -2.00000 | 0.04600 | -0.04993 | -0.00048 |
| _cons | 0.95487 | 0.17535 | 5.45000 | 0.00000 | 0.61120 | 1.29855 |

**Source:** Author's calculation from the 2018 and 2019 SUSENAS

Nevertheless, the author still performed statistical analysis to answer the second hypothesis of whether the maternal and paternal grandmother's presence at home has a different impact on the mother's decision toward EBF. Based on Table 7 below, with the probability 0.2187 and using $\alpha$=5%, the null hypothesis is not rejected. Thus, there is no significant distinction between maternal and paternal presence at the house in influencing EBF behaviour.

**Table 7.** Result of hypothesis testing about the difference for maternal and paternal grandmothers' effect on EBF

| EB_Status_1 | Coef. | Std. Err. | z | P>z | [95% Conf. | Interval] | LR chi2(1) | Prob > chi2 |
|---|---|---|---|---|---|---|---|---|
| Maternal Grandmother No : 0 (ref) Yes: 1 | 0.042747 | 0.025237 | 1.69 | 0.09 | -0.0067164 | 0.0922111 | 1.51 | 0.2187 |
| Paternal Grandmother No : 0 (ref) Yes: 1 | 0.042747 | 0.025237 | 1.69 | 0.09 | -0.0067164 | 0.0922111 | | |
| _cons | 0.248405 | 0.006515 | 38.13 | 0 | 0.235636 | 0.2611726 | | |

**Source:** Author's calculation from the 2018 and 2019 SUSENAS

Regarding factors that modify a mother's behaviour in EBF, not every significant indicator has a positive relationship with EBF continuation. Infants with working mothers are more likely not to experience exclusive breastfeeding when they reach six months old than those whose mothers do not have jobs. Further, the possibility of achieving EBF is lower among infants living with a family of higher economic status than those whose families are of a lower economic status. Also, the possibility of a mother completing exclusive breastfeeding until six months is not as high when the baby is male as when the baby is female.

However, some variables result in a positive attitude towards EBF. The first factor is the education level of both parents. Having more educated mothers and fathers increases the possibility of children enjoying EBF for a half year. Moreover, living in urban areas also escalates children's possibility to get EBF.

The author also runs a logit regression model to strengthen the analysis to confirm the results above. As expected, the output from both the logit and probit models depicts the same picture about the significance and magnitude of independent variables towards the dependent variables, as shown in Table 8.

**Table 8.** Variables in the Probit Model and Logit Model

| Independent Variables | Probit Model | Logit Model |
|---|---|---|
| Maternal Grandmother Cohabitation Status | | |
| | 0.00274 | 0.00415 |
| 1: Yes | (0.08) | (0.07) |
| 0: No (ref) | | |
| Paternal Grandmother Cohabitation Status | | |
| | 0.0603 | 0.0972 |
| 1: Yes | (1.73) | (1.72) |
| 0: No (ref) | | |
| Father Cohabitation Status | | |
| | 0.02 | 0.0324 |
| 1: Yes | (0.29) | (0.29) |
| 0: No (ref) | | |
| Housekeeper/ nanny Cohabitation Status | | |
| | 0.0827 | 0.133 |
| 1: Yes | (0.64) | (0.64) |
| 0: No (ref) | | |
| Maternal Working Status | | |
| | -0.0765*** | -0.123*** |
| 1: Yes | (-5.86) | (-5.86) |
| 0: No (ref) | | |
| Expenditure per capita | | |
| | -0.0610*** | -0.0987*** |
| | (-5.15) | (-5.17) |
| Number of Children Within Household | | |
| | -0.0114 | -0.0183 |
| | (-1.78) | (-1.78) |
| Maternal years of schooling | | |
| | 0.00482** | 0.00779** |
| | (3.02) | (3.02) |
| Paternal years of schooling | | |
| | 0.00685*** | 0.0111*** |
| | (4.44) | (4.44) |
| Maternal Age | 0.00128 | 0.00207 |
| | (0.8) | (0.81) |
| Paternal Age | 0.000224 | 0.000376 |
| | (0.17) | (0.18) |
| Residential Area | 0.0284* | 0.0454* |
| 1: Urban | (2.09) | (2.08) |
| 0: Rural (ref) | | |
| Gender of Baby | -0.0252* | -0.0407* |
| 1: Boy | (-2.00) | (-2.00) |
| 0: Girl (ref) | | |
| Constraint | 0.955*** | 1.540*** |
| N | 40,540 | 40,540 |

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

**Source:** Author's calculation from the 2018 and 2019 SUSENAS

### *3.3.* Discussion: Neither the father nor the grandmother helps exclusive breastfeeding

This study shows that the EBF rate in Indonesia is still at a suboptimal state. Since the Indonesian mortality rate of children under the age of 5 is still relatively high, with 32 children per 1,000 live births (National Population and Family Planning Board, 2018), the intervention through EBF is critical. EBF may reduce the mortality rate to meet SDGs target to at least only 25 mortality per 1,000 live births (United Nation, 2015). To decrease

at least 10% of mortality of children under five years old, a 90% coverage of EBF is required (Jones *et al.*, 2003).

However, this study could not provide sufficient evidence to demonstrate that frequent contact with the people, who have a high possibility of offering support to the mother emotionally and especially practically at home, significantly shapes the mother's behaviour toward exclusive breastfeeding. Nevertheless, the father's education level was found to statistically support the mother's willingness to complete exclusive breastfeeding until six months. By way of explanation, regardless of whether the father does or does not provide practical assistance to the mother by living at the same house with the mother and the baby, the emotional support from the father contributes to EBF. Support from a father with a higher education level may help in sourcing information on breastfeeding, providing encouragement and motivation, and engaging in decision-making to ease the mother's effort in completing EBF. This finding is also strengthened by the similar results in research conducted by Umami et al. (2018) using a smaller scale of 2016 SUSENAS data in Indonesia. The absence of a father's positive attitude towards breastfeeding only results in the mother's discouragement in carrying on with the EBF mission (Joseph & Earland, 2019; Moyo et al., 2020).

Furthermore, this research could not confirm that both paternal and maternal grandmother residing in the same house as the mother and baby would either assist or inhibit exclusive breastfeeding. The result from this review is consistent with the findings of studies conducted to investigate these factors in Brazil (Santo et al., 2007; Susin et al., 2005). However, from this review, it can be concluded that there is no different effect of maternal and paternal grandmother roles in providing practical support in influencing the mother's decision to complete EBF.

Another source of support, such as domestic workers' presence, could not also be verified to have much of an impact through this review. Although a mother assisted by a domestic worker at home will have more time to relax and focus with the baby (Giugliani et al., 1992), it does not seem to be the critical factor for EBF in Indonesia. The possible reason is that 40,83 % of the mothers are working mothers. Therefore, even if most of them have caregivers for their baby at home, this does not guarantee that it would help them consistently produce breast milk when they are out of the house. Also, these findings do not show sufficient evidence to demonstrate that the number of children within the family and parents' age affect EBF.

Related to the operational status of the mother, the findings from this research is consistent with several studies that declare that a mother's employment is a considerable barrier that endangers exclusive breastfeeding practice (Agampodi et al., 2021; Senarath et al., 2010; Titaley et al., 2021; Umami et al., 2018). The dilemma faced by working mothers can be explained using the theory introduced by Becker in 1981. He claimed that healthy people would opt to work longer hours because of the income effect. Those people think that working is a more productive use of their time than doing home chores (Becker, 1981). As a result, more active people will work longer hours and earn more each hour (Becker, 1981). However, breastfeeding may diminish hourly wages since it decreases a woman's energy (Dewey & McCrory, 1994). Breastfeeding consumes an additional 500-700 calories each day to sustain milk production, whether the mother directly breastfeeds her baby or expresses the milk (Dewey & McCrory, 1994).

Therefore, to ensure the consistent production of breastmilk for their children, particular interventions to encourage EBF and provide solutions for breastfeeding challenges in the working environment need to be applied. If the tiredness from workload is combined with breastfeeding or expressing milk activity, the mother may stop breastfeeding.

Moreover, the period of maternity leave should be lengthened. According to the Indonesian Paediatrician Association (IDAI), short time off work, a lack of workplace support, short rest periods at work resulting in insufficient time to express breast milk, a

lack of room to express breast milk, and conflict between the mother's desire to maintain work performance and milk production are all factors that make breastfeeding a more difficult task for working mothers. (IDAI, 2013).

In contrast with the mother's employment status, they lived in urban areas and had a higher education that encouraged the sustainability of EBF. A higher educational level elevates self-efficacy and eases the mother toward gaining more knowledge in breastfeeding (Mohd Shukri et al., 2021; Senarath et al., 2010). Living in urban areas brings privilege for the mothers to access Baby-Friendly Hospital (BFH) more easily (Flaherman et al., 2018). Meanwhile, travel time, transportation cost, and opportunity cost transform into inhibiting variables in accessing BFH for families living in rural areas. Also, mothers in rural areas in Indonesia are more exposed to the old traditional beliefs that babies should start consuming preleactal food when they turn four months old (Yohmi et al., 2016). Therefore, the limitation of infrastructure and false beliefs towards infant feeding led to the EBF cessation in rural areas.

Similar to the previous study conducted in East and Southeast Asian countries stating that the higher household economic status, the lesser EBF coverage (Senarath et al., 2010), this research also found that an improved economic status negatively influences EBF. Some speculate that this is because women in developing nations with higher family income may consider breastfeeding as outdated and a sign of lower social status, while bottle-feeding is seen as modern and "westernised" (Rogers et al., 1997). However, in this study, mothers with higher expenditure have higher education, live in urban areas, and are working mothers. Thus, it can be concluded that mothers with higher economic status discourage EBF as they feel an urgency to work, as not working decreases their financial capacity. It leads them to decide to substitute breastmilk wholly or partly with formula milk before their baby reaches six months old, so they may be free to rejoin the workforce.

In this study, the EBF success rate in male infants is lower than that of female infants. Ghosh et al. (2006) found that male infants in Bangladesh are breastfed for a more extended period and require more breast milk than female infants. Moreover, male children often indicate feeding time by crying and having a short nap, which results in the exhaustion of mothers, which, in turn, results in difficulties in building a higher self-efficacy (Yalçin & Kuşkonmaz, 2011).

## IV. Conclusion and Recommendation

This study found that exclusive breastfeeding completion varies among explanatory variables. The highest EBF coverage occurs in Bali, Nusa Tenggara, and Java Region. Meanwhile, Maluku, Papua, Sulawesi, and Sumatra are the regions with the lowest rate of EBF. A higher percentage of exclusive breastfeeding completion occurs when the baby lives in the same house with the mother and the maternal grandmother, paternal grandmother, father, and domestic worker compared to not having them at the same house. Moreover, the children whose mothers are non-working mothers get better coverage of EBF than those whose mothers are employed. In addition, more babies living in urban areas experience EBF compared with the infants who live in rural areas. Lastly, the EBF completion rate is also better among female infants than male infants.

The probit model indicates characteristics that affect EBF behaviour in Indonesia. Non-working mothers, lower economic status, more educated mothers, higher-level education of the father, living in urban areas, and having female infants are positively associated with exclusive breastfeeding decisions a mother would make. On the contrary, there is not enough evidence to state that the presence of support at the same house as the mother and baby would impact the mother's exclusive breastfeeding decisions. Furthermore, this study could not prove a differentiated effect on exclusive breastfeeding in Indonesia concerning paternal and maternal grandmothers' cohabitation.

In summary, the leading actor of breastfeeding is still the breastfeeding mother herself, and the presence of supporting actors does not affect her decision whether to continue or discontinue EBF. Therefore, the public policy must focus on improving exclusive breastfeeding coverage to ease the burden on the mothers and enable them to tackle challenges in breastfeeding.

The Indonesian government has already implemented health law number 36/2009 Article 200 and government regulation 33/2012 on granting exclusive breastfeeding, especially in workplaces. The principal mandate is to support the breastfeeding workers, including allowing them extended maternity leave, taking a break to express their breastmilk at the office, and providing lactation facilities. Moreover, the regulation also prohibits the massive advertisement of infant formula milk that may obstruct the exclusive breastfeeding program conducted by the government and healthcare facilities. However, the implementation of this law remains poor. Therefore, the government should strengthen the implementation of these existing laws to guarantee that:

1. There is enough time off work for mothers to rest and to express also store their expressed breastmilk according to the proper guidance,
2. There is enough time off work for mothers to rest and to express also store their expressed breastmilk according to the proper guidance,
3. There is a decent facility for mothers to express breastmilk at the office,
4. There is an extension of the duration of maternity leave, from the current which is at three months to six months at least,
5. The organisers of health care facilities, health workers, pregnant moms, and new mothers do not receive any free infant formula milk or other products in any way which may interrupt the promotion of the breastfeeding program.

Moreover, the success of EBF also depends on the type of living area (rural or urban). Babies in rural areas tend to be exclusively breastfed less than those in urban areas. Therefore, easing information access and providing adequate Breastfeeding Friendly Hospital (BFH) in rural areas should be done.

## References

Agampodi, T. C., Dharmasoma, N. K., Koralagedara, I. S., Dissanayaka, T., Warnasekara, J., Agampodi, S. B., & Perez-Escamilla, R. (2021). Barriers for early initiation and exclusive breastfeeding up to six months in predominantly rural Sri Lanka: a need to strengthen policy implementation. *International Breastfeeding Journal*, *16*(1), 1–12. https://doi.org/10.1186/s13006-021-00378-0

Beasley, N. M. R., Hall, A., Tomkins, A. M., Donnelly, C., Ntimbwa, P., Kivuga, J., Kihamia, C. M., Lorri, W., & Bundy, D. A. P. (2000). The health of enrolled and non enrolled children of school age in Tanga, Tanzania. *Acta Tropica*, *76*(2000), 223–229. https://doi.org/10.1016/S0001-706X(00)00101-7

Becker, G. (1981). *A Treatise on the Family*. National Bureau of Economic Research, Inc. https://econpapers.repec.org/RePEc:nbr:nberbk:beck81-1

Behzadifar, M., Saki, M., Behzadifar, M., Mardani, M., Yari, F., Ebrahimzadeh, F., Majidi Mehr, H., Abdi Bastami, S., & Bragazzi, N. L. (2019). Prevalence of exclusive breastfeeding practice in the first six months of life and its determinants in Iran: A systematic review and meta-analysis. *BMC Pediatrics*, *19*(1), 1–10. https://doi.org/10.1186/s12887-019-1776-0

BKKBN. (2018). *Indonesia demographic and health survey 2017*.

Black, R. E., Allen, L. H., Bhutta, Z. A., Caulfield, L. E., de Onis, M., Ezzati, M., Mathers, C., & Rivera, J. (2008). Maternal and child undernutrition: global and regional exposures and health consequences. *The Lancet*, *371*(9608), 243–260. https://doi.org/10.1016/S0140-6736(07)61690-0

Bonet, M., Marchand, L., Kaminski, M., Fohran, A., Betoko, A., Charles, M. A., & Blondel, B. (2013). Breastfeeding duration, social and occupational characteristics of mothers in the French "EDEN mother-child" cohort. *Maternal and Child Health Journal*. https://doi.org/10.1007/s10995-012-1053-4

Buccini, G. D. S., Beni´cio, M. H. D. A., & Venancio, S. I. (2014). Determinants of using pacifiers and bottle feeding. *Revista de Saude Publica*, *48*(4), 571–582. https://doi.org/10.1590/S0034-8910.2014048005128

Butte, N. F., & King, J. C. (2005). Energy requirements during pregnancy and lactation. *Public Health Nutrition*, *8*(7a), 1010–1027. https://doi.org/10.1079/phn2005793

Choudhury, N., Moran, A. C., Alam, M. A., Ahsan, K. Z., Rashid, S. F., & Streatfield, P. K. (2012). Beliefs and practices during pregnancy and childbirth in urban slums of Dhaka, Bangladesh. *BMC Public Health*, *12*(1). https://doi.org/10.1186/1471-2458-12-791

Crippa, B. L., Consales, A., Morniroli, D., Lunetto, F., Bettinelli, M. E., Sannino, P., Rampini, S., Zanotta, L., Marchisio, P., Plevani, L., Giannì, M. L., Mosca, F., & Colombo, L. (2021). From dyad to triad: a survey on fathers' knowledge and attitudes toward breastfeeding. *European Journal of Pediatrics*. https://doi.org/10.1007/s00431-021-04034-x

Crosby, R. A., Salazar, L. F., & Diclemente, R. J. (2018). Health Behavior Theory for Public Health. In *Health Behavior Theory for Public Health*.

Debnath, F., Mondal, N., Deb, A. K., Chakraborty, D., Chakraborty, S., & Dutta, S. (2021). Determinants of optimum exclusive breastfeeding duration in rural India: a mixed method approach using cohort and content analysis design. *International Breastfeeding Journal*, *16*(1), 1–7. https://doi.org/10.1186/s13006-021-00359-3

Dennis, C. L. (2002). Breastfeeding initiation and duration: a 1990-2000 literature review. *Journal of Obstetric, Gynecologic, and Neonatal Nursing : JOGNN / NAACOG*, *31*(1), 12–32. https://doi.org/10.1111/j.1552-6909.2002.tb00019.x

Ekström, A., Widström, A. M., & Nissen, E. (2003). Breastfeeding Support from Partners and Grandmothers: Perceptions of Swedish Women. *Birth*, *30*(4), 261–266. https://doi.org/10.1046/j.1523-536X.2003.00256.x

Emmott, E. H., & Mace, R. (2015). Practical support from fathers and grandmothers is associated with lower levels of breastfeeding in the UK millennium cohort study. *PLoS ONE*, *10*(7), 1–12. https://doi.org/10.1371/journal.pone.0133547

Flaherman, V. J., Chan, S., Desai, R., Agung, F. H., Hartati, H., & Yelda, F. (2018). Barriers to exclusive breast-feeding in Indonesian hospitals: A qualitative study of early infant feeding practices. *Public Health Nutrition*, *21*(14), 2689–2697. https://doi.org/10.1017/S1368980018001453

Ghosh, R., Mascie-Taylor, N., & Rosetta, L. (2006). Longitudinal study of the frequency and duration of breastfeeding in rural Bangladeshi women. *American Journal of Human Biology*, *18*(5), 630–638. https://doi.org/10.1002/ajhb.20533

Glanz, K., Rimer, B. k., & Viswanath, K. (2008). *Health Behavior and Health Education Theory, Research and Practice*.

Gupta, M. L., Aborigo, R. A., Adongo, P. B., Rominski, S., Hodgson, A., Engmann, C. M., & Moyer, C. A. (2015). Grandmothers as gatekeepers? The role of grandmothers in

influencing health-seeking for mothers and newborns in rural northern Ghana. *Global Public Health*, *10*(9), 1078–1091. https://doi.org/10.1080/17441692.2014.1002413

Hayden, J. (2019). Introduction to Health Behavior Theory. In *Introduction to Health Behavior Theory* (Vol. 3). Jones & Bartlett Learning.

IDAI. (2013). *Breastfeeding Success At Work*. https://www.idai.or.id/artikel/klinik/asi/sukses-menyusui-saat-bekerja-2

Janz, N., & Becker, M. H. (1984). The Health Belief Model. A decade later. 1984; 11 (1): 1-47. *Health Education Quarterly*, *11*(1), 1–47.

Jones, G., Steketee, R. W., Black, R. E., Bhutta, Z. A., Morris, S. S., Child, B., & Group, S. S. (2003). The Lancet CHILD SURVIVAL II How many child deaths can we prevent this year? Child survival II. *The Lancet*, *362*(July 5), 65–71.

Joseph, F. I., & Earland, J. (2019). A qualitative exploration of the sociocultural determinants of exclusive breastfeeding practices among rural mothers, North West Nigeria. *International Breastfeeding Journal*, *14*(1), 1–11. https://doi.org/10.1186/s13006-019-0231-z

Kohlhuber, M., Rebhan, B., Schwegler, U., Koletzko, B., & Fromme, H. (2008). Breastfeeding rates and duration in Germany: A Bavarian cohort study. *British Journal of Nutrition*, *99*(5), 1127–1132. https://doi.org/10.1017/S0007114508864835

Ku, C. M., & Chow, S. K. Y. (2010). Factors influencing the practice of exclusive breastfeeding among Hong Kong Chinese women: A questionnaire survey. *Journal of Clinical Nursing*, *19*(17–18), 2434–2445. https://doi.org/10.1111/j.1365-2702.2010.03302.x

Li, J., Kendall, G. E., Henderson, S., Downie, J., Landsborough, L., & Oddy, W. H. (2008). Maternal psychosocial well-being in pregnancy and breastfeeding duration. *Acta Paediatrica, International Journal of Paediatrics*. https://doi.org/10.1111/j.1651-2227.2007.00602.x

Li, Y., Kong, L., Hotta, M., Wong Kum Thong, S. A., & Ushijima, H. (1999). Breast-feeding in Bangkok, Thailand: Current status, maternal knowledge, attitude and social support. *Pediatrics International*, *41*(6), 648–654. https://doi.org/10.1046/j.1442-200X.1999.01149.x

Lisnawati, N., Rahayuning Pangestuti, D., & Zahroh, W. (2020). The effect of gender on the exclusive breastfeeding practices in the first month of life. *E3S Web of Conferences*, *202*. https://doi.org/10.1051/e3sconf/202020212021

Martorell, R., Khan, L. K., & Schroeder, D. G. (1994). Reversibility of stunting: Epidemiological findings in children from developing countries. *European Journal of Clinical Nutrition*.

Meedya, S., Fahy, K., & Kable, A. (2010). Factors that positively influence breastfeeding duration to 6 months: A literature review. In *Women and Birth*. https://doi.org/10.1016/j.wombi.2010.02.002

Mohd Shukri, N. H., Wells, J., & Fewtrell, M. (2021). Differences in maternal characteristics and their associations with breastfeeding attitudes among primiparous mothers. *Midwifery*, *95*(January). https://doi.org/10.1016/j.midw.2021.102931

Moyo, G. T., Magaisa, T., Pagiwa, A., Kandawasvika, R., Nyanga, L., Gomora, Z., & Oldewage-Theron, W. (2020). Barriers and facilitators of exclusive breastfeeding: Findings from a Barrier Analysis Conducted in Mwenezi and Chiredzi Districts, Zimbabwe. *World Nutrition*, *11*(3), 12–21. https://doi.org/10.26596/wn.202011312-21

National Population and Family Planning Board. (2018). *Survei Demografi dan Kesehatan*

*Indonesia 2017*.

Negin, J., Coffman, J., Vizintin, P., & Raynes-Greenow, C. (2016). The influence of grandmothers on breastfeeding rates: A systematic review. *BMC Pregnancy and Childbirth*, *16*(1). https://doi.org/10.1186/s12884-016-0880-5

Neves, P. A. R., Barros, A. J. D., Gatica-Domínguez, G., Vaz, J. S., Baker, P., & Lutter, C. K. (2021). Maternal education and equity in breastfeeding: trends and patterns in 81 low- and middle-income countries between 2000 and 2019. *International Journal for Equity in Health*, *20*(1), 1–13. https://doi.org/10.1186/s12939-020-01357-3

Ogunlesi, T. A. (2010). Maternal socio-demographic factors influencing the initiation and exclusivity of breastfeeding in a Nigerian semi-urban setting. *Maternal and Child Health Journal*, *14*(3), 459–465. https://doi.org/10.1007/s10995-008-0440-3

Pollitt, E., Gorman, K. S., Engle, P. L., Rivera, J. A., & Martorell, R. (1995). Nutrition in Early Life and the Fulfillment of Intellectual Potential. *The Journal of Nutrition*, *125*(suppl_4), 1111S-1118S. https://doi.org/10.1093/jn/125.suppl_4.1111S

Putri, T. E., & Handayani, D. (2019). Child health investment on early age marriage mothers in rural Indonesia. *Proceedings of the 33rd International Business Information Management Association Conference, IBIMA 2019: Education Excellence and Innovation Management through Vision 2020*, 8138–8144.

Qiu, L., Zhao, Y., Binns, C. W., Lee, A. H., & Xie, X. (2008). A cohort study of infant feeding practices in city, suburban and rural areas in Zhejiang Province, PR China. *International Breastfeeding Journal*, *3*, 1–8. https://doi.org/10.1186/1746-4358-3-4

Rogers, I. S., Emmett, P. M., & Golding, J. (1997). The incidence and duration of breastfeeding. *Early Human Development*, *49*(SUPPL.). https://doi.org/10.1016/S0378-3782(97)00053-4

Rollins, N. C., Bhandari, N., Hajeebhoy, N., Horton, S., Lutter, C. K., Martines, J. C., Piwoz, E. G., Richter, L. M., & Victoria, C. G. (2016). Why invest, and what it will take to improve breastfeeding practices? *The Lancet*, *387*(10017), 491–504. https://doi.org/10.1016/S0140-6736(15)01044-2

Rosenstock, I. M. (1974). Historical Origins of the Health Belief Model. *Health Education & Behavior*, *2*(4), 328–335. https://doi.org/10.1177/109019817400200403

Ryan, A. S., Wenjun, Z., & Acosta, A. (2002). Breastfeeding continues to increase into the new millennium. *Paediatrics*, *110*(6 I), 1103–1109. https://doi.org/10.1542/peds.110.6.1103

Santo, L. C. D. E., De Oliveira, L. D., & Giugliani, E. R. J. (2007). Factors associated with low incidence of exclusive breastfeeding for the first 6 months. *Birth*, *34*(3), 212–219. https://doi.org/10.1111/j.1523-536X.2007.00173.x

Senarath, U., Dibley, M. J., & Agho, K. E. (2010). Factors associated with nonexclusive breastfeeding in 5 east and Southeast Asian countries: A multilevel analysis. *Journal of Human Lactation*, *26*(3), 248–257. https://doi.org/10.1177/0890334409357562

Shirima, R., Greiner, T., Kylberg, E., & Gebre-Medhin, M. (2001). Exclusive breast-feeding is rarely practised in rural and urban Morogoro, Tanzania. *Public Health Nutrition*, *4*(2), 147–154. https://doi.org/10.1079/phn200057

Sikorski, J., & Renfrew M, J. (2000). Support for breastfeeding mothers. *Cochrane Database of Systematic Reviews (Online)*, *2*.

Susin, L. R. O., Giugliani, E. R. J., & Kummer, S. C. (2005). Influence of grandmothers on breastfeeding practices. *Revista de Saude Publica*, *39*(2), 141–147. https://doi.org/10.1590/s0034-89102005000200001

Thu, H. N., Eriksson, B., Khanh, T. T., Petzold, M., Bondjers, G., Kim, C. N. T., Thanh, L.

N., & Ascher, H. (2012). Breastfeeding practices in urban and rural Vietnam. *BMC Public Health*, *12*(1). https://doi.org/10.1186/1471-2458-12-964

Thulier, D., & Mercer, J. (2009). Variables associated with breastfeeding duration. In *JOGNN - Journal of Obstetric, Gynecologic, and Neonatal Nursing*. https://doi.org/10.1111/j.1552-6909.2009.01021.x

Titaley, C. R., Dibley, M. J., Ariawan, I., Mu'asyaroh, A., Alam, A., Damayanti, R., Do, T. T., Ferguson, E., Htet, K., Li, M., Sutrisna, A., & Fahmida, U. (2021). Determinants of low breastfeeding self-efficacy amongst mothers of children aged less than six months: results from the BADUTA study in East Java, Indonesia. *International Breastfeeding Journal*, *16*(1), 1–15. https://doi.org/10.1186/s13006-021-00357-5

Umami, A. R., Ratnasari, V., & Zain, I. (2018). Semiparametric Bivariate Probit Model in Data Working Mother Status and Exclusive Breastfeeding. *Journal of Physics: Conference Series*, *1097*(1). https://doi.org/10.1088/1742-6596/1097/1/012071

UNICEF & WHO. (2019). Increasing Commitment To Breastfeeding Through Funding and Improved Policies and Programmes. *Global Breastfeeding Collective*, *3*, 1–4. https://www.who.int/nutrition/publications/infantfeeding/global-bf-scorecard-2019/en/

United Nation. (2015). *Transforming our world: the 2030 Agenda for Sustainable Development*. https://doi.org/10.1163/157180910X12665776638740

Victora, C. G., Bahl, R., Barros, A. J. D., França, G. V. A., Horton, S., Krasevec, J., Murch, S., Sankar, M. J., Walker, N., Rollins, N. C., Allen, K., Dharmage, S., Lodge, C., Peres, K. G., Bhandari, N., Chowdhury, R., Sinha, B., Taneja, S., Giugliani, E., … Richter, L. (2016). Breastfeeding in the 21st century: Epidemiology, mechanisms, and lifelong effect. *The Lancet*, *387*(10017), 475–490. https://doi.org/10.1016/S0140-6736(15)01024-7

Werdani, K. E., Wijayanti, A. C., Sari, L. E., & Puspasari, A. Y. (2021). The role of the husband in supporting exclusive breastfeeding among teenage mothers in Boyolali, Indonesia. *Enfermeria Clinica*, *31*, S239–S242. https://doi.org/10.1016/j.enfcli.2020.12.030

WHO. (2004). The global burden of disease 2004. In *Update, World Health Organization*.

WHO. (2009). Infant and Young Child Feeding: Model Chapter for textbooks for medical students and allied health professionals. In the IAP *Textbook of Pediatrics*. https://doi.org/10.5005/jp/books/11894_132

Yalçin, S. S., & Kuşkonmaz, B. B. (2011). Relationship of lower breastfeeding score and problems in infancy. *Breastfeeding Medicine*, *6*(4), 205–208. https://doi.org/10.1089/bfm.2010.0092

Yohmi, E., Marzuki, N. S., Nainggolan, E., Partiwi, I. G. A. N., Sjarif, B. H., & Oswari, H. (2016). Prevalence of exclusive breastfeeding in Indonesia: a qualitative and quantitative study. *Paediatrica Indonesiana*, *55*(6), 302. https://doi.org/10.14238/pi55.6.2015.302-8.