

# THE INFLUENCE OF GADGET USAGE AND MATERNAL ATTACHMENT ON THE COGNITIVE AND MOTOR DEVELOPMENT OF EARLY CHILDHOOD IN SITUBONDO REGENCY

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## ABSTRACT

The purpose of this study is to determine the effects of device use and maternal bonding on early childhood cognitive and motor development in Situbondo Regency. In this research, the sample used was 311 respondents using quantitative methods. The multiple linear regression analysis technique was carried out using SPSS version 22 software. The data collection technique used in this research was observation, interviews, filling out Google forms and also direct questionnaires. The results of this research show a partial contribution, namely between the use of gadgets on cognitive development in early childhood, there is a partial contribution, namely between maternal attachment to cognitive development in early childhood, then there is a partial contribution between the use of gadgets and motor development in early childhood. , while there is no partial contribution of maternal attachment to motor development in early childhood. The use of devices in early childhood requires care and supervision, and also the mother's role in the operation, as overuse of the device by the child can lead to addiction to playing with the device. This negatively affects the child's growth and development process, especially the development of cognitive and motor skills. Dependence on the use of gadgets hinders the child's growth and development process.

**Keywords:** Gadget Use, Maternal Attachment, Cognitive Development, Motor Development

## INTRODUCTION

The development of increasingly sophisticated and modern technology provides convenience to society. One of the conveniences that can be felt directly is communicating. With the sophistication of technology, people can communicate anywhere, anytime, and it makes it easier for people to communicate long distances with relatives. Information and communication technology that is currently developing rapidly is gadgets. A gadget is a small device that has a special function related to current technological developments (Farida, 2021). The development of increasingly sophisticated gadgets can help make people's work easier. With the sophistication of gadgets, people are interested in using them. Sophisticated gadgets give people quick access to information. People use gadgets every day and without realizing it, people use them almost all the time.

In everyday life, not only parents, teenagers, the elderly, but also young children and pre-school children are familiar with gadgets. This is supported by the following research (Neno, 2019) gadget usage among young children in Indonesia has been shown to increase

over the years. This phenomenon is commonly seen in society, where children at this age already hold and operate their own gadgets. There are several types of gadgets, namely cellphones, smartphones, laptops, tablets and computers. Among the different types of gadgets that people often use in their daily life are smartphones. Long-term use of gadgets can affect the user's life. According to Neno (2019) gadget usage has both positive and negative impacts on society, especially on children. This is consistent with the purpose of using gadgets in daily life. The advantages and disadvantages of use of devices in society are the use of devices by young children.

Early childhood refers to children in the early stages of development. During this period, children are at a critical stage of growth and development. This period is also called the Golden Age. The golden age is a period during which children experience rapid growth and development, or called the golden age. During this period, children experience a process of growth and development, where children need support and attention from the mother. Support and attention from the mother can help maximize the child's growth and development process well. During this period, mother play a very important role in caring for and supporting their children. Good attention and a supportive environment are very important in helping young children achieve their maximum potential in development.

The closeness between mother and child plays a very important role in supporting child development. This is also called maternal attachment. Maternal attachment is a concept that refers to the special and strong emotional connection between a mother and her child from the beginning of birth. Good mother and child attachment helps children to overcome the developmental challenges they face, so that they become better. Good maternal attachment can be done by providing stimulus and support to the child, so that the child can go through the growth and development process well. In everyday life, children spend more time with family, especially mothers. Mothers can train and provide stimulus to children using various kinds of media. Mothers can invite children to play and communicate a lot, so that children get a lot of vocabulary. As times become more sophisticated, mothers can learn how to provide stimulus to their children when they are experiencing the development process. Mothers can invite their children to watch educational videos by utilizing sophisticated technology, namely smartphones. With the help of a smartphone, mothers can get a lot of information about the growth and development process of their child and learn how to support their child in the developmental process to ensure the success of their child's development.

Using gadgets wisely can have a positive effect on users, but on the other hand, excessive use of gadgets can have a negative impact. The impact felt by children varies depending on the factors driving the impact felt. One of the factors driving the effect of gadget use on children is the duration of use and the purpose of gadget use. When using gadgets there are time limits that need to be considered according to the child's age and the child's needs. Many gadget users do not pay attention to the duration of using gadget. This can have a negative impact, especially on health. You must pay attention to the use of gadgets in everyday life, if you don't pay attention it will result in addiction to using gadgets. The use of gadgets in children requires supervision and attention from the mother, as it is known that children are the successors, if children are not paid attention and looked after when using gadgets in everyday life it will have a negative impact. Concerns that device use may negatively impact children in their golden years, hindering their growth and

development. Gadget addiction can have an effect on cognitive and motor development in children.

Cognitive development is the process of growth and development in children which refers to the ability they have to understand something. At this age, children need communication with parents, family and the surrounding environment to increase their knowledge and train their abilities. The child's interaction with the mother is needed to increase vocabulary and to encourage the child to learn to talk. Children spend most of their time at home with their parents and family. Mothers can invite children to play and interact every day. So that attachment can be formed between mother and child. There is a bond between mother and child, and mother can control device usage by supervising together, playing together with the child. In this way, children's use of gadgets can be minimized or reduced. Not every instance of utilizing gadgets has adverse consequences, provided that a mother exercises control over her child's gadget usage and discourages interactive behaviors while the child is engaged with the device. In this way, the closeness between mother and child will become closer.

Motor development is the process of growth and development of motor skills in children. According to Bann and et al (2020), fundamentally, the progress of motor skills develops according to the maturity of a child's neurological, muscular, or cognitive abilities. With the closeness between mother and child, children can be invited to play together to support the child's motoric development. During this development period, children have to move a lot, so that children can develop well. If during the motor development period a child is given gadget facilities, the child will become addicted and focus on playing with the gadget without moving. This can hinder the child's motoric development process. Children who use gadgets will not play with their friends. The use of gadgets can be beneficial for children's motor development if children are given appropriate shows to support their development process, for example children are given gymnastics shows, children will imitate the movements they watch, so that children will move a lot and not just focus on their gadgets.

This research will explain how gadget use and maternal attachment influence cognitive and motor development in early childhood. The use of gadgets and maternal attachment can influence cognitive and motor development in early childhood. The development of increasingly sophisticated gadgets makes users interested and addicted to using gadgets. Gadget addiction has a huge impact on cognitive and motor development in early childhood.

Based on the description above, the main aim of this research is to solve problems regarding: (1) How does the use of gadgets affect cognitive development in early childhood in Situbondo Regency? (2) How does maternal attachment influence the cognitive development of early childhood in Situbondo Regency? (3) How does the use of gadgets affect motor development in early childhood in Situbondo Regency? (4) How does maternal position influence motor development in early childhood in Situbondo Regency? (5) What is the influence of gadget use and maternal attachment on cognitive development in early childhood in Situbondo Regency? (6) What is the influence of gadget use and maternal attachment on motor development in early childhood in Situbondo Regency? Theoretically, this research provides an understanding of how gadget use and maternal attachment influence cognitive and motor development in early childhood.

## **METHOD**

This research was conducted in Situbondo Regency, specifically in Situbondo District and Asembagus District. This type of research is a quantitative study using a questionnaire. The study included 1,285 people. The sampel for this study includes 311 respondents of this, namely mothers who had children aged 0-6 years. The data collection technique used was a questionnaire using a Likert scale. The research instrument has gone through validity and reliability tests. The data collection techniques used were observation, interviews and filling out questionnaires using google forms and questionnaires. After the data of all respondents were collected, it was analyzed using several linier regression analysis techniques. In analyzing the data, researchers used SPSS version 22 software.

## **DISCUSSION**

### **The Effect of Gadget Use on Cognitive Development in Early Childhood**

The results of the analysis of the gadget use variable can be concluded that it has a significance value of 0.000 and a t value of 3.545, which means that the gadget use variable has a significant effect on cognitive development. Thus the average is 39.80 from 311 respondents. This states that the gadget use variable has a significant effect on cognitive development in early childhood, so that H1 is accepted and H01 is rejected.

It can be concluded that the higher the use of gadgets, the higher the cognitive development in early childhood. This is consistent with the findings of Damayanti (2020) that there are symptoms of negative impacts of insecurity experienced by Sorowako children in terms of the aspect of cognitive development. Gadget usage among children does not necessarily have negative effects or consequences, there are also positive impacts. If you child uses the device under the supervision of their mother or guardian. Children must use gadgets wisely, meaning that gadget use must be appropriate for the duration of use according to the child's age. During the use of gadgets by children, mothers must always communicate with children, prevent children form focusing too much on gadgets. Children who are too focused on using gadgets can damage the child's concentration when studying.

Based on previous research, the results of research according to Annisa and et al (2022) showing that children's familiarity with using electronic devices (gadget) affects their critical thinking skills and creativity and can also affect children's speaking abilities. This is also in accordance with what was stated by Harsale & Qalbi (2020) that children tend to be dependent on gadgets, which has an impact on decreasing focus or concentration when children study. Based on previous research by Bangsawan (2022) conducted in Teluk Pulau Raya Village, West Tanjung Jabung Regency, it was concluded that there is a negative influence of gadget use on cognitive development in early childhood if gadgets are not used regularly. The use of gadgets can have a positive or negative impact on a child's development. For the better development of children, it is important for parents to supervise, control and monitor all activities of their children.

It can be concluded that the use of device by children can have both positive and negative effects. This happens if children use gadgets not regularly and without parental supervision. In this study, the variable indicators for gadget use include first, the duration of gadget use, where gadget use in early childhood has its own duration according to the child's age. Second, the benefits of using gadgets where children use gadgets as a learning medium

or as an entertainment medium depend on the child's needs and the parents' policies in providing gadgets. Third, the impact of gadget use on young children can positively or negatively influence how mothers provide supervision and rules to prevent their children from becoming addicted to gadget use.

The positive impact of using gadgets in children on cognitive development is that it can increase children's creativity. This is in line with what was explained by Yumarni (2022) as the use of gadgets has the positive effect of training children's creativity, advances in technology have given rise to a variety of creative and challenging games. This can happen if the mother becomes a guide and director who can direct the child so that the child is not addicted to using gadgets. The use of gadgets must be appropriate to the child's portion, parents are the ones who play a role in directing children in using them. Mothers must be active in directing children and also providing stimulus so that children can develop better.

### **The Influence of Maternal Attachment on Cognitive Development in Early Childhood**

Based on the test results using SPSS version 22 software, the calculated t value of the maternal attachment variable was 2.130 with a significance value of 0.034. The results of these calculations show that the significance value is smaller than the significance limit value of 0.05. The hypothesis states that the maternal attachment variable (X2) has a significant effect on cognitive development in early childhood, so that H1 is accepted and H0 is rejected.

It can be concluded that the higher the mother's attachment value, the higher the cognitive development in children of this age. According to Anapratwi and et al (2013) attachment is a child's desire to always feel close to an attachment figure, usually the mother or main caregiver. Indicators of maternal attachment variables in this study were secure pattern attachment, fight pattern attachment, and avoidance pattern attachment. According to Diananda (2020), attachment shows a deep impression, the mother is the child's first attachment since birth. A mother who provides the response her child needs will make the child have a pleasant impression (secure attachment), so that the child will later have maturity in thinking. A secure attachment will give the child a sense of self-confidence so that the child can think creatively according to the child's wishes.

Based on previous research by Solikha and et al (2023), secure attachment is one of the factors that can support cognitive development in children. Optimal attachment between mother and child can influence child development. Meanwhile, developmental disorders in children occur because the attachment between mother and child is less than optimal. For working mothers, children tend to spend time with a nanny or with their grandmother.

### **The Effect of Using Gadgets on Motor Development in Early Childhood**

Based on the test results using SPSS version 22 software, the calculated t value of the gadget use variable was 5.143 with a significance value of 0.000. The results of these calculations show that the significance value is smaller than the significance limit value of 0.05. The hypothesis states that the gadget use variable (X1) has a significant effect on motor development in early childhood, so H1 is accepted and H0 is rejected. Based on previous research, according to Sunita and Mayasari (2018) excessive use of the device can affect various physical disorders, namely, children can experience back pain, and children also have a high potential for obesity due to lack of physical motor movement. Children who use

gadgets more often tend to rarely carry out motor activities or movements such as running, playing ball and playing games that support motor development in children (Mimin, 2022). Excessive use of gadgets is not very good for children's motor development.

Children who play with gadgets without paying attention to the duration will result in a lack of physical motor movement in the child, because the child will sit for a long time in one place which, if not addressed immediately, can have a negative impact on the child's development. Children will become lazy about moving and will also have the potential to become obese. It's different if children use gadgets for positive things that support children's motor development so that children can practice their motor development.

This is also in line with the results of research by Agustin and et al (2021) which states that the higher the use of gadgets, the less or lower the child's motor skills will be. The higher the pattern of interaction between children and gadgets, this will automatically limit the child's motor activity, so that the child will receive less motor stimulation. Motor development must be trained to get optimal and good development results. Motor development that is not trained by providing stimuli to children will tend to experience obstacles in their growth and development. In contrast, children who receive attention and stimulus will be more agile in moving.

### **The Influence of Maternal Attachment on Motor Development in Early Childhood**

Based on the test results using SPSS version 22 software, the calculated t value of the gadget use variable was 0.374 with a significance value of 0.711. The results of these calculations show that the significance value is greater than the significance limit value of 0.05. The hypothesis states that the maternal attachment variable (X2) is not significant on motor development in early childhood, so H0 is accepted and H1 is rejected. The indicators for the attachment variables in this research are secure attachment, resistant attachment and avoidant attachment.

Based on previous research, according to Zusy (2015), secure attachment tends to give children the courage to explore even though the attachment figure is not visible, but the child understands that the attachment figure is there. Children who are attached will be more confident in exploring mature motor functions, which will make it easier for children to explore the environment. With a secure attachment, children will easily carry out motor activities. Secure attachment can increase a child's confidence to try and attempt to do something they have not experienced.

Maternal attachment has an important role for children, but many factors are interrelated and contribute to children's motor development. In motor development, there are certain situations or conditions where the mother's attachment does not fully influence the child's motor development. This shows that maternal attachment is not always the only factor that influences motor development, many factors can influence motor development in early childhood.

### **The Influence of Gadget Use and Maternal Attachment on Cognitive Development in Early Childhood**

Based on the results of the F-test, we can conclude that the calculated F of the simultaneous test is 10,857 and the significance value is 0.000. The significance value of 0.000 is smaller than the significance level used, namely 0.05. So it can be concluded that the use of gadgets and maternal attachment simultaneously or together have a positive and

significant effect on cognitive development in early childhood. The simultaneous effect indicates that the variables of gadget use and maternal attachment together can be used as predictors to determine cognitive development in early childhood.

The higher the level of cognitive development in early childhood, the more controlled the use of devices in infancy and the more optimal the bond between mother and child. If the device is controlled and used wisely under the supervision of the mother, it will have a positive effect and will not cause addiction in young children. According to Hasanah (2019) gadgets are a factor that also has an effect on various aspects of development in early childhood. This is consistent with Wulandari and Hermiati (2019) the positive effects of gadget use are out weighed by the negative effects, especially in all aspects of a child's development. Excessive use of gadgets can lead to addiction to using them. When children become addicted to using gadgets, their growth and development are stunted.

Based on previous research by Damayanti (2020), gadgets have a negative effect on various aspects of supporting the growth and development of early childhood, namely cognitive development in children. Children who exceed the limit for using gadgets in a day can result in loss of concentration when studying and also a decrease in the child's ability to focus. Children who have difficulty focusing will tend to have difficulty making friends.

### **The Influence of Gadget Use and Maternal Attachment on Motor Development in Early Childhood**

Based on the results of the F test calculations, it can be concluded that the simultaneous test has a calculated F of 14.497 and a significance value of 0.000. The significance value of 0.000 is smaller than the significance level used, namely 0.05. So it can be concluded that the use of gadgets and maternal attachment simultaneously or together have a negative and significant effect on cognitive development in early childhood. The simultaneous effect indicates that the variables of gadget use and maternal attachment together can be used as predictors to determine motor development in early childhood.

According to Mimin (2022), motor development is related to efforts to optimize physical growth, both gross physical which emphasizes the ability of large muscles and fine physical which emphasizes the ability of small muscles in children. According to the United States and Canadian Pediatric Association, it is important for children aged 0-2 years not to use gadgets. Meanwhile, 1 hour per day is given to children aged 3-5 years, while 2 hours is given to children aged 6-18 years. In fact, children currently use gadgets more than 4-5 times more than the recommended amount (Hasanah, 2017). Increased use of devices in early childhood can negatively impact aspects of early childhood development. Children tend to focus on their devices, so excessive use of devices without parental supervision can lead to obesity in children, so that children move less. Apart from causing obesity in children, children will also experience delays in the process of motor development. When the bond between mother and child is strong, the child will be more confident in exploring his motor development to try things he has never experienced. With optimal attention, mothers can control their children's use of gadgets. Mothers can accompany, supervise and also invite children to communicate while children use gadgets

## CONCLUSION

Based on the research results, it can be concluded that a gadget is a small device that has a special function related to current technological developments. Long-term use of gadgets can affect the user's life. Device use in early childhood should be considered and managed to avoid influencing addiction to device use. Results of this study show that there is a significant impact between gadget use and early childhood cognitive development. based on tests using SPSS version 22 software, the calculated t value of the gadget use variable is 3.545 with a significance value of 0.000. The calculation results show that the significance value is smaller than the significance limit value, namely 0.05. So the hypothesis states that the gadget use variable (X1) has a significant influence on cognitive development so that H1 is accepted and H0 is rejected. For the variable maternal attachment to cognitive development, the calculated t value was 2.130 with a significance value of 0.034. The calculation results show that the significance value is smaller than the significance limit, namely 0.05. So the hypothesis states that the maternal attachment variable (X2) has a significant influence on cognitive development in early childhood, so H1 is accepted and H0 is rejected.

The calculation result of the calculated t value for the gadget use variable is 5.143 with a significance value of 0.000. This shows that the significance value is smaller than the significance limit value, namely 0.05. So the hypothesis states that the gadget use variable (X1) influences motor development in early childhood. For the maternal attachment variable, the calculated t value was 0.371 with a significance value of 0.711. Meanwhile, the results of this calculation show that the significance value is greater than the significance limit value of 0.05. So the hypothesis states that the maternal attachment variable (X2) is not significant on motor development in early childhood.

Based on F-test calculations results, it can be concluded that the simultaneous test has a calculated F of 10.857 and a significance value of 0.000. The significance value of 0.000 is smaller than the significance level used, namely 0.05. So it can be concluded that the use of gadgets and maternal attachment simultaneously or together have a positive and significant impact on cognitive development in early childhood. The simultaneous effect indicates that the variables of gadget use and maternal attachment together can be used as predictors to determine cognitive development in early childhood. Meanwhile, for the results of the F test calculation, it can be concluded that the simultaneous test has a calculated F of 14.497 and a significance value of 0.000. The significance value of 0.000 is smaller than the significance level used, namely 0.05. it can be concluded that simultaneous or shared use of gadgets and maternal bonding have a negative and significant effect on cognitive development in early childhood. The simultaneous effect indicates that the variables of gadget use and maternal attachment together can be used as predictors to determine motor development in early childhood.

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