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Utilizing Digital Parenting Apps for Modern Parenting Practices and Child Protection: The Potential of BabyCenter and Google Family Link among Parents of Young Children

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Abstract

The increasing use of digital technology in family life has transformed the way parents access parenting information and support, including in Malanuza and Bajawa, Ngada Regency. Various digital parenting apps are available to help parents obtain parenting information while supporting child protection in the digital environment. However, research on the potential use of digital parenting apps in supporting modern parenting and early childhood protection remains limited. This study aims to analyze the potential use of digital parenting apps, specifically BabyCenter and Google Family Link, in modern parenting practices and early childhood protection. The study employed a descriptive qualitative approach involving 10 young parents with young children who own smartphones. Participants were selected through purposive sampling to explore their perceptions regarding the usefulness, ease of use, and potential applications of both apps. Data were collected through observation, in-depth interviews, and documentation, and then analyzed using the Miles, Huberman, and Saldana model. The results indicate that BabyCenter is viewed as a potential source of information on child growth and development, health, nutrition, and managing sleep patterns, as well as parenting strategies appropriate for the child's developmental stage. Meanwhile, Google Family Link is perceived as a tool that can help parents monitor their children's digital activities, set device usage limits, and control access to inappropriate content. These findings suggest that both apps have the potential to support parenting practices while strengthening child protection in the digital environment. The uniqueness of this study lies in its examination of the potential for using BabyCenter and Google Family Link together to support modern parenting and early childhood protection, based on perceptions of usefulness and ease of use within the framework of the Technology Acceptance Model (TAM).

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INTRODUCTION

Advances in digital technology have brought significant changes to early childhood care within the family environment (Zhao et al., 2023; Lafton et al., 2023). This transformation has been accompanied by the emergence of various digital parenting applications designed to provide parents with access to parenting information while supporting the monitoring and protection of

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children in digital environments (Virani et al., 2021). Recent studies have shown that digital parenting technologies can serve as accessible and timely sources of information regarding children's health, development, and parenting needs (DeWitt et al., 2022). Furthermore, digital technologies enable parents to monitor their children's online activities, thereby helping protect them from potential risks in digital environments (Maier et al., 2025). These findings demonstrate the growing potential of digital technologies to support early childhood parenting by facilitating access to parenting information and enhancing children's digital safety.

Despite these potential benefits, the availability of digital parenting applications does not necessarily guarantee their adoption in everyday parenting practices (Modecki et al., 2022). Parents must be willing and prepared to integrate these technologies into their daily caregiving activities. Consistent with previous studies, the successful use of digital parenting technologies depends not only on the availability of applications but also on parents' acceptance, perceptions, and beliefs regarding the usefulness and relevance of these technologies to their parenting needs (Nichols & Selim, 2022). Therefore, understanding parents' acceptance of digital parenting technologies has become increasingly important for explaining why some applications are adopted while others remain underutilized.

Technology acceptance has been widely recognized as a critical factor influencing individuals' decisions to adopt and use digital technologies. The Technology Acceptance Model (TAM) proposes that technology acceptance is primarily determined by two key constructs: perceived usefulness and perceived ease of use (Alsyouf et al., 2023). Perceived usefulness refers to the extent to which individuals believe that a technology enhances their performance in completing specific tasks, whereas perceived ease of use reflects the degree to which a technology is perceived as effortless to learn and operate. In the context of early childhood parenting, these perceptions are likely to influence parents' decisions to adopt digital parenting applications as sources of parenting information and tools for monitoring children's digital activities. Parents are more likely to use digital parenting technologies when they perceive them as beneficial, relevant to their parenting needs, and easy to use. Therefore, the TAM provides an appropriate theoretical framework for explaining parents' acceptance of digital parenting applications.

Among the growing number of digital parenting applications, BabyCenter and Google Family Link represent two technologies with complementary functions that have the potential to support early childhood parenting. BabyCenter is a globally recognized parenting platform that provides parents with information on child growth and development, healthy eating habits, physical health, and age-appropriate sleep routines (Beyers-Carlson et al., 2022; Kaur & Singh, 2020; Gu & Taylor, 2018). In contrast, Google Family Link focuses on protecting children in digital environments by enabling parents to monitor device usage, supervise online activities, limit access to age-inappropriate content, and track children's devices (Hidayatullah et al., 2023; Isnain et al., 2024; Wati et al., 2024). Such monitoring is particularly important because exposure to inappropriate digital content may negatively affect children's development (Stoilova et al., 2024). Although these applications differ in their primary functions, with BabyCenter emphasizing educational support and Google Family Link focusing on digital protection, both offer valuable resources that can assist parents in addressing different aspects of early childhood parenting.

Although previous studies have demonstrated the benefits of digital parenting technologies in supporting child-rearing and digital safety (DeWitt et al., 2022; Maier et al., 2025), parenting information applications and digital monitoring applications have generally been investigated as separate technologies. Consequently, limited attention has been given to understanding how parents perceive and accept these two complementary types of digital parenting applications within a single technology acceptance framework. This limitation is particularly important because BabyCenter and Google Family Link serve different purposes, with one emphasizing parenting information and child development and the other focusing on monitoring children's digital activities and online safety. These functional differences may influence parents' perceptions of usefulness, ease of use, and ultimately their acceptance of each application. However, empirical evidence regarding parents' acceptance of these two applications remains limited. Therefore, this study examines parents' acceptance of BabyCenter and Google Family Link based on perceived usefulness and perceived ease of use using the Technology Acceptance Model (TAM) framework) (García et al., 2024).

The present study was conducted among parents of young children in the Malanuza and Bajawa regions of Ngada Regency, where research on the acceptance and potential use of digital parenting applications remains limited. This context is particularly relevant because smartphone use among young parents has increased alongside easier access to digital parenting technologies. However, access to technology does not necessarily lead to its adoption in everyday parenting practices. Parents' experiences with digital technologies and their ability to use digital applications may influence their willingness to adopt these technologies as sources of parenting information and support. Moreover, parenting practices in these communities are strongly shaped by family values, intergenerational knowledge, and community-based childcare traditions. As a result, parents may differ in the extent to which they perceive digital parenting applications as useful and easy to use alongside traditional sources of parenting knowledge. Understanding parents' perceptions within this socio-cultural context is therefore important for explaining the acceptance of BabyCenter and Google Family Link in supporting early childhood parenting.

Unlike previous studies that have examined parenting information applications and digital monitoring applications separately, this study simultaneously investigates parents' acceptance of BabyCenter and Google Family Link within a single Technology Acceptance Model (TAM) framework. By examining two digital parenting applications with complementary educational and protective functions, this study extends the application of TAM in the context of early childhood parenting. The findings are expected to contribute theoretically by broadening the understanding of technology acceptance in digital parenting and empirically by providing evidence of parents' acceptance of digital parenting applications within a family-based childcare context. In doing so, this study offers a more comprehensive perspective on the potential use of digital parenting technologies in communities where family traditions continue to play an important role in child-rearing practices.

Building upon these considerations, this study aims to examine parents' acceptance of two digital parenting applications, BabyCenter and Google Family Link, in early childhood parenting using the Technology Acceptance Model (TAM). Specifically, the study investigates parents' perceptions of the usefulness and ease of use of both applications and explores their potential to support early childhood care and digital protection. Rather than evaluating the effectiveness of the applications, this study focuses on how parents perceive their value and usability in everyday parenting practices. The findings are expected to provide evidence that supports the development of digital parenting technologies while contributing to the achievement of Sustainable Development Goal (SDG) 3 on Good Health and Well-being through improved parenting information and SDG 16 by promoting safer digital environments for children.

METHOD

This study is a qualitative descriptive study. In this study, the descriptive approach aims to gain an in-depth understanding of and describe parents' perceptions of the perceived usefulness, perceived ease of use, and potential for utilizing the BabyCenter and Google Family Link digital parenting apps in early childhood care and protection practices. The qualitative descriptive approach allows researchers to gain a direct understanding of parents' perceptions and views without testing relationships between variables, as is done in quantitative studies (Colorafi & Evans, 2016; Doyle et al., 2020). The research was conducted in the Malanuza and Bajawa areas of Ngada Regency from March to April 2026. The selection of the research locations was based on several considerations. First, smartphone use among young parents is on the rise, opening up opportunities for the potential use of digital apps in child-rearing (Lamantu et al., 2025). Second, the community still upholds strong family values and community based child-rearing practices. These conditions make this region relevant for examining parents' potential to accept and utilize digital parenting apps as a source of information and a means of child protection within their existing child-rearing practices. The study participants consisted of 10 parents of young children aged 0–6 years. Participants were selected using purposive sampling, which involves intentionally selecting informants based on specific criteria aligned with the study's objectives. Participant criteria included: (1) having young children; (2) using a smartphone in daily life; (3) being familiar with the BabyCenter and Google Family Link apps; and (4) being willing to participate in the study.

Participant characteristics included gender, age, educational level, occupation, number of children, and children's ages. The number of participants was determined based on the point at which the data no longer yielded new themes relevant to the study's focus.

During the data collection process, the researcher conducted preliminary analysis concurrently with the interviews (Aditya et al., 2023). Saturation began to emerge during the interview with the 8th participant when no new information, categories, or themes relevant to the research focus were identified. Interviews with the 9th and 10th participants were still conducted to ensure the consistency of the findings and to confirm that no new themes emerged. Therefore, a sample size of 10 participants was deemed sufficient to address the research objectives. Observations were conducted directly during the activities being observed. The purpose of the observations was to gain an understanding of how parents might use the BabyCenter and Google Family Link apps in their daily parenting activities. The focus of the observations included parents' ability to use the apps, their use of features providing information on child growth and development, their use of recommendations regarding children's diet, health, and sleep patterns, monitoring of children's digital activities, and features for limiting digital device usage time.

Observations were conducted twice for each participant, with each session lasting approximately 15 minutes. The first observation aimed to understand the context of digital technology use in daily parenting, including parents' habits in accessing parenting information through digital devices. The second observation was conducted after introducing the BabyCenter and Google Family Link apps to the participants to observe their initial responses, understanding, and perceptions regarding the ease of use and potential benefits of these apps in early childhood parenting practices. All observation results were recorded in the form of field notes containing the context of the observations, parents' responses, and the researcher's reflections (Malik et al., 2025).

In addition to observations, data were also collected through in-depth interviews. The interview guidelines were developed based on the main constructs of the Technology Acceptance Model (TAM), namely perceived usefulness and perceived ease of use (Anggraeni et al., 2025). The interview domains included: (1) perceptions of the app's benefits in supporting early childhood care; (2) perceptions of the app's benefits in supporting child protection in the digital environment; (3) perceptions of the ease of understanding and learning the app; (4) perceived barriers to understanding and learning the app's features; and (5) the potential for using the app in daily care practices. Examples of questions asked included: "In your opinion, to what extent do you perceive this app to be beneficial in supporting child-rearing?" and "How do you perceive the ease of understanding and learning the app's features that have been introduced?" Each participant took part in a single interview session lasting approximately 20 minutes. The interviews were conducted in-depth to comprehensively explore parents' perceptions until sufficient data was collected to address the research objectives (Priang, 2023). All interviews were recorded using a voice recorder after obtaining parental consent. The interview recordings were then transcribed verbatim immediately after the data collection process was completed. The transcriptions were cross-checked to ensure the accuracy of the interview content. If any information was unclear, the researcher sought clarification from the parents through a member checking process before data analysis was conducted.

Documentation was used as supporting data for the study. This documentation included photographs of research activities for which parental consent had been obtained, interview transcripts, and screenshots of the BabyCenter and Google Family Link app features discussed during the study. The documentation was not used to verify the accuracy of the data but served to enrich the understanding of the research context and support the interpretation of the interview and observation results.

Figure 1. Research Flow Diagram
Source: Researcher, 2026

The analysis began with a review of the interview transcripts and field notes to gain a comprehensive understanding of the data. Next, the researcher manually performed open coding by assigning codes to statements relevant to the research focus (Beresford et al., 2022). Codes with similar meanings were then grouped into categories. From these categories, themes were developed that represented perceptions of usefulness, ease of use, and the potential for utilizing digital parenting apps. These themes emerged gradually from patterns identified in the data from interviews, observations, and documentation.

The analysis process was then conducted using the Miles, Huberman, and Saldana interactive model, which includes data condensation, data presentation, and drawing conclusions (Asipi et al., 2022). Data condensation was performed by selecting data related to parents' perceptions of the potential use of digital parenting apps. The data was presented by grouping the information into the following main themes: (1) perceptions of the apps' benefits in supporting early childhood care, (2) perceptions of the apps' benefits in supporting child protection in the digital environment, (3) perceptions of the ease of understanding and learning the app's features, and (4) perceived barriers to understanding and accessing the apps, as well as perceptions of the potential future use of the BabyCenter and Google Family Link digital parenting apps in early childhood care and protection practices. This data presentation aims to help researchers identify trends in parents' perceptions regarding the potential use of digital parenting apps. Conclusions were then drawn by interpreting patterns from the analysis results to identify themes representing parents' perceptions of the potential use of the BabyCenter and Google Family Link digital parenting apps in the context of early childhood care and protection in the future, which were subsequently verified through triangulation and member checking. The entire coding process was conducted by the principal investigator. To enhance credibility, the coding results and thematic categorization were discussed with two peers who have experience in conducting qualitative research.

Data validity was ensured through source triangulation, methodological triangulation, and temporal triangulation (Adlini et al., 2022). Temporal triangulation was conducted by comparing the results of the first and second observations, which were carried out at different times during the research period of March–April 2026. Additionally, source triangulation was conducted by

comparing information obtained from participants with different characteristics, and methodological triangulation was conducted by comparing data from interviews, observations, and documentation. The research was conducted in accordance with research ethics, such as obtaining informed consent. Before data collection began, all participants received an explanation of the study's objectives, procedures, benefits, and their right to withdraw from the study at any time. Participant identities were kept confidential, and all data were used solely for research purposes.

RESULTS AND DISCUSSION

RESULTS

The findings of this study, based on interviews, observations, and documentation, describe parents' perceptions of the potential use of the BabyCenter and Google Family Link digital parenting apps, specifically: (1) perceived usefulness, (2) perceived ease of use, and (3) the potential for utilizing digital parenting apps in the care and protection of young children.

Theme 1: Perceived Usefulness in the Potential Use of BabyCenter as a Source of Parenting Information

Nine out of ten parents believe that BabyCenter has the potential to be used as a source of information on early childhood parenting. This app is considered helpful in understanding children's growth and development, eating habits, health, and sleep patterns. Most parents believe that if used consistently, this app can serve as an additional reference for making daily parenting decisions, especially when facing parenting situations that require quick information that can be accessed via a smartphone. One informant stated, "In my opinion, this app can help parents understand their children's development according to their age." "Sometimes we don't know whether our child's development is on track or not" (P1). A similar view was expressed by another informant: "The information in this app can serve as supplementary knowledge and an initial reference for parents, especially those who have just had a child" (P5). Another informant stated, "The app is perceived as a source of information that can supplement knowledge gained from family or personal experience" (P4). The results of the observations reinforce these findings; most parents showed interest when presented with information about age-appropriate developmental milestones. Parents were seen actively exploring information they considered relevant to their children's circumstances. These findings indicate that parents perceive BabyCenter as having the potential to serve as a source of parenting information that can complement the knowledge they have traditionally gained from family or personal experience.

However, one informant expressed doubts about using the app as a primary source of information. This informant argued that parenting information obtained from parents, family members, or direct experience is still considered more relevant to the context of daily life. These findings indicate that the adoption of digital applications does not entirely replace the long-standing sources of parenting knowledge used within the family environment. Overall, these findings suggest that parents view BabyCenter as a potentially useful source of parenting information that can complement the knowledge they have traditionally gained from family, personal experience, and their social environment. This potential is particularly evident in its ability to provide quickly accessible information when parents need references regarding the growth, development, and needs of young children.

Perceived Usefulness in the Potential Use of Google Family Link as a Tool for Protecting Children's Digital Activities

Informants believe that Google Family Link has the potential to help parents monitor their children's digital activities. Informants noted that the growing use of digital devices among young children requires more structured supervision from parents (Coverdale et al., 2025). Features such as screen time limits, app usage monitoring, and device tracking have the potential to help keep children safe in the digital environment (Kouroupa et al., 2024). The app is seen as capable of supporting efforts to prevent exposure to age-inappropriate content when integrated into daily parenting practices. One informant stated "If this app is used, parents can track their children's activities while they're using their phones, making it easier to monitor them." (P6). Another

informant stated, "In my opinion, this app can help protect children from age-inappropriate content when they're using the internet." (P8). Observations show that most informants paid particular attention to features related to monitoring children's digital activities. Parents believe that digital supervision is becoming increasingly important because children begin using digital devices at an early age. These findings suggest that Google Family Link is perceived as having the potential to help protect children from various risks that may arise in the digital environment.

Theme 2: Perceived Ease of Understanding and Learning the BabyCenter and Google Family Link Apps (Perceived Ease of Use)

Seven out of 10 informants assessed that BabyCenter and Google Family Link were relatively easy to understand after receiving an explanation on how to use the apps. Parents viewed the app interfaces as clear enough to be learned gradually. One informant stated, "In my opinion, it's not too difficult. After it was explained, I began to understand the functions within the app" (P7). Another informant remarked, "If used frequently, I think parents can quickly get used to this app" (P10). The results of the observations showed that most informants were able to follow the app familiarization process and understand the basic functions demonstrated by the researcher. Parents also actively asked questions when they encountered parts they did not understand. Some participants even took the initiative to explore the available information on their own. These findings suggest that both apps are perceived as having a fairly good level of ease of use, making them likely to be accepted by parents as part of modern parenting practices.

Subtheme 2: Perceived Barriers to Understanding and Learning the BabyCenter and Google Family Link Apps

Nevertheless, 3 out of 10 informants reported several barriers that could potentially affect the apps' utilization. The most frequently mentioned barriers were limited technological proficiency and the use of foreign languages in some of the app's information. One informant explained, "For someone like me who isn't used to using apps like this, it takes time to learn how to use them" (P3). Another informant stated, "There are some parts I don't understand yet, so I have to ask for help to figure them out" (P2). "I usually ask my parents or family for help more often than I look for information through the app" (P9). However, these barriers did not lead to rejection of the apps; rather, they were viewed as obstacles that could be overcome with guidance (Mazaheri Habibi et al., 2024).

Theme 3: The Potential Use of BabyCenter and Google Family Link in Child-Rearing and Child Protection

Eight out of 10 informants believed that BabyCenter and Google Family Link have complementary functions. BabyCenter was perceived as having the potential to support the educational aspects of child-rearing, while Google Family Link was perceived as having the potential to support the protective aspects of child protection in the digital space. One informant stated, "In my opinion, these two apps complement each other. One provides information on parenting, while the other helps monitor children's use of technology" (P10). The observation results showed that most informants were able to distinguish the functions of the two apps and saw opportunities to use them together to support early childhood parenting. Parents view the combination of parenting information and digital monitoring as having the potential to support parenting practices that are better suited to the challenges of current technological developments. These findings indicate that parents do not merely view the potential use of the two apps separately but also as complementary forms of support in addressing the challenges of modern parenting and child protection in the digital age.

DISCUSSION

Perceived Usefulness in the Potential Use of Digital Parenting Apps (BabyCenter and Google Family Link)

The research findings indicate that most parents view BabyCenter as a potential source of information on early childhood parenting, particularly regarding children's growth and

development, health, eating habits, and sleep patterns. These findings suggest that parents perceive BabyCenter and Google Family Link as sources of information that can support their daily parenting needs. These findings can be understood through the lens of the Technology Acceptance Model (TAM), specifically the concept of perceived usefulness, which explains that individuals tend to accept technologies they perceive as useful particularly those that provide information relevant to their parenting needs (Atchariyachanvanich et al., 2011). In the context of this study, the perceived benefits do not stem from long-term use of the apps, but rather from parents' assessments after becoming familiar with the apps and exploring the available information. Furthermore, these findings indicate that parents consider the relevance of the available information to their needs as caregivers (Tervahartiala et al., 2025). The available information is considered capable of helping parents understand their children's development and serving as an additional reference when facing specific parenting situations (Sefton-Green et al., 2024). These findings expand our understanding of perceived usefulness in the context of digital parenting, as perceived benefits are not only related to the efficiency of technology use but also to the value of the information obtained through that technology.

These research findings align with various international studies showing that parents utilize digital media as a source of information regarding their children's health and development (Christakis et al., 2025). These findings are consistent with research by (Sipiläinen et al., 2026) which indicates that digital technology is increasingly used by parents as an information source when addressing various child-rearing needs. Similarly, the opinion expressed by (Sipiläinen et al., 2026) is that parents often use digital technology to quickly obtain parenting information when facing situations that require immediate decisions. Research by Strehlke et al. (2025) also found that parenting apps serve as an additional source of information that helps parents gain knowledge about child development and boosts their confidence in fulfilling their parenting roles. These findings suggest that the need for quick and easy access to information is one of the main reasons parents consider using digital technology in child-rearing (Westrupp et al., 2025).

However, this study also found that some parents still place greater trust in information obtained from family, parents, relatives, and direct experience than in information obtained from digital parenting apps. These findings indicate that acceptance of technology does not happen automatically but is influenced by cultural context and long-established sources of knowledge (Novianti et al., 2024). This contrasts with some studies conducted in developed countries, which show a tendency for parents to rely on digital apps as their primary source of parenting information (Syukur et al., 2024; Holst et al., 2025). Therefore, digital apps are perceived not as a replacement for existing sources of knowledge but as a supplementary source of information that complements what parents already know (Christakis et al., 2025).

In the same context, this study also shows that Google Family Link is perceived as having the potential to support child protection in the digital environment. Parents perceive that the monitoring features in the app can help them understand their children's digital device usage and reduce the risk of exposure to age-inappropriate content (Kahfi et al., 2024). These findings align with the concept of digital parenting, which positions digital monitoring as a crucial part of parental responsibility in the digital age (Syukur et al., 2024). The study's results also align with the theory of parental mediation, which explains that parents strive to reduce the risks associated with digital media use through various forms of monitoring and control (Symons et al., 2017). These findings are also consistent with the research by Livingstone, which shows that the increasing use of digital devices among children prompts parents to seek various protective strategies that keep pace with technological advancements. In this study, parents perceive digital monitoring apps as tools that have the potential to help them fulfill these protective functions. These findings indicate that the perceived benefits are not only related to the educational aspects of parenting but also to efforts to ensure children's safety when interacting with digital technology. These findings contribute to the literature on child online protection by demonstrating that parents perceive technology as beneficial in helping them fulfill their protective roles toward their children and as an extension of their existing parenting practices in daily life (Wang et al., 2021). The results of this study indicate that digital protection is an important aspect of parents' acceptance of parenting technology (Duerager & Livingstone, 2012).

Perceived Ease of Use in the Potential Utilization of Digital Parenting Apps (BabyCenter and Google Family Link)

Most parents found BabyCenter and Google Family Link relatively easy to understand after receiving an explanation of how to use them. These findings suggest that ease of use is perceived as an important aspect in supporting the potential utilization of digital parenting technology. According to the Technology Acceptance Model (TAM), perceived ease of use refers to the belief that a technology can be used without requiring excessive effort (Aditya & Wardhana, 2016). In the context of this study, ease of use is reflected in parents' ability to understand the basic functions of BabyCenter and Google Family Link after receiving an explanation, as well as their willingness to explore the available features. The findings of this study support the TAM concept, which explains that technologies perceived as easy to use are more likely to be adopted in the future.

Nevertheless, some parents still face challenges in understanding certain features of the app. These difficulties are more related to the process of adapting to a new app and limited experience with digital parenting apps than to the use of digital technology in general. These findings indicate that the perception of ease of use is influenced not only by the app's characteristics but also by users' experience in utilizing technology relevant to the parenting context. These findings provide a broader understanding of the concept of perceived ease of use namely, that ease of use is perceived through the interaction between the technology's characteristics and prior experience in using that technology. These findings align with the research by Nikou and Economides, which showed that prior experience with technology influences an individual's perception of an app's ease of use. Therefore, this suggests that the acceptance of parenting technology is influenced not only by perceived benefits but also by users' ability to adapt to new technology (Asqia et al., 2024).

The Potential Use of Digital Parenting Apps (BabyCenter and Google Family Link) in Early Childhood Care and Protection

Research findings indicate that parents view BabyCenter and Google Family Link as having complementary functions. Parents perceive BabyCenter as having the potential to support the educational aspects of parenting by providing information on child development, health, and regular sleep patterns. Meanwhile, Google Family Link is perceived as having the potential to support the protective aspects of parenting through monitoring children's digital activities. These findings suggest that parents do not view digital parenting merely as a means of obtaining information or simply as a form of technological monitoring. Rather, both apps are perceived as the most complementary tools in supporting the fulfilment of parenting roles in the digital age. This understanding aligns with the concept of digital parenting, which emphasizes the importance of balancing support for children's development with protection from various digital risks (Fajria et al., 2025)**.**

The main contribution of this study lies in the empirical finding that parents view educational and protective functions as two interrelated needs in modern parenting practices. These findings differ from most previous studies, which generally examined parenting information apps and digital monitoring apps separately. In this study, both types of apps were analyzed simultaneously, thereby providing a more comprehensive picture of how parents perceive the potential of digital technology to support early childhood parenting. Theoretically, the findings of this study expand the body of research on digital parenting, which has tended to examine parenting information apps and digital monitoring apps separately. Furthermore, they strengthen the application of the Technology Acceptance Model (TAM) in the context of digital parenting by demonstrating that perceived usefulness and perceived ease of use remain relevant in explaining parents' acceptance of these two types of technology, which serve distinct functions. Empirically, this study adds evidence regarding parents' perceptions of the potential use of digital parenting apps in a societal context that still strongly upholds family values and community-based child-rearing. The findings are best understood as a snapshot of parents' perceptions regarding the potential use of the digital parenting apps BabyCenter and Google Family Link in the context of modern early childhood care. From the parents' perspective, these findings expand the body of research on digital parenting, particularly regarding the functions of these two apps, which are viewed as part of the same parenting needs. Thus, the digital parenting apps examined in this study have the potential to be accepted as a source of parenting support and child protection when they are perceived as useful,

easy to understand, and aligned with the needs of parents of young children in the context of daily life.

LIMITATION

This study has several limitations that should be considered when interpreting the findings. First, the research data were primarily obtained through interviews and observations focused on parents' perceptions of the potential uses of the BabyCenter and Google Family Link digital parenting apps. This approach carries the potential for self-report bias, as the information provided relies heavily on each parent's understanding, experience, and subjective judgment. Consequently, the findings of this study primarily reflect parents' perceptions of the potential uses of digital parenting apps and may not necessarily represent the views of all parents or digital parenting app users in general. Both studies involved only parents of young children as the primary data source. The research did not include other parties who also play a role in child care and protection, such as teachers, other family members, and peers. Consequently, the findings provide a better picture of how parents view the potential use of digital parenting apps rather than offering a more comprehensive picture of the acceptance and use of technology in broader parenting contexts.

Third, the relatively limited number of participants all from the Malanuza and Bajawa regions of Ngada Regency means that the findings of this study are not intended to be generalized to the entire population of parents of young children. Fourth, this study focused only on two digital parenting apps: BabyCenter and Google Family Link. Therefore, the findings cannot represent parents' perceptions of other types of digital parenting apps that may have different features, functions, and characteristics. Additionally, this study examined parents' perceptions after they were introduced to the apps; thus, the findings reflect perceived potential for use rather than long-term usage experiences. Given these limitations, future research is recommended to involve a more diverse group of participants from various regions and sociocultural backgrounds, incorporate the perspectives of other parties involved in child-rearing, and compare various digital parenting apps with different characteristics. Longitudinal research is also needed to understand how parents' perceptions evolve after using the app over a certain period of time and to explore the relationship between the use of digital parenting apps and child-rearing and child protection practices in daily life.

CONCLUSION

This study shows that most parents perceive the digital parenting apps BabyCenter and Google Family Link as having the potential to be utilized in early childhood care and protection practices. Based on the Technology Acceptance Model (TAM), both apps are perceived as having perceived usefulness that is relevant to parents' needs. BabyCenter is seen as a potential source of parenting information that can supplement parents' knowledge regarding their children's growth and development, health, eating habits, and sleep patterns. Meanwhile, Google Family Link is perceived as having the potential to support the supervision of children's digital activities through features that monitor and restrict the use of digital devices. In terms of perceived ease of use, most parents found both apps relatively easy to understand after receiving instructions on how to use them. However, some parents still perceived barriers in the form of limitations when using digital parenting technologies. These findings suggest that technology acceptance in parenting is influenced not only by perceived benefits but also by users' ability to adapt to the introduced technology.

Overall, parents view BabyCenter and Google Family Link as having complementary functions. BabyCenter is perceived as having the potential to support the educational aspects of parenting by providing information relevant to parents' needs, while Google Family Link is perceived as having the potential to support the protective aspects through monitoring children's digital activities. These findings indicate that parents do not view the two apps as substitutes for existing parenting practices, but rather as additional sources of support that can complement their family's experiences, knowledge, and daily parenting practices. Theoretically, this study expands the application of the Technology Acceptance Model (TAM) in the context of digital parenting by demonstrating that perceived usefulness and perceived ease of use remain relevant in explaining

parents' acceptance of two types of apps with distinct functions namely, educational and protective functions. Future research is recommended to involve a more diverse group of participants, examine various other types of digital parenting apps, and explore app usage experiences over a longer period. Further research is also needed to understand how parents' perceptions evolve after sustained use of these apps in the parenting and protection of young children.

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AUTHOR CONTRIBUTIONS

A.K.J. contributed to the conceptualization of the research, the formulation of the research question, the development of interview guidelines, data collection, data analysis, the interpretation of findings, the preparation of the initial draft, and the coordination of manuscript preparation. P.Y.D.P. contributed to the research design, methodology development, formulation of the theoretical framework, and critical revision of the manuscript. A.H.B.M. contributed to conceptual validation, the interpretation of research findings, and the refinement of the manuscript's content. M.A.N. contributed to the validation of research findings, the interpretation of results, and the refinement of the discussion section. E.M. contributed to data collection, data verification, the transcription of interview results, and manuscript editing. All authors have read and approved the final version of the manuscript.

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