



Teen Pregnancies and Parenting Impact on the Next Generation's Development: A Textual Analysis

Angela Gong

Bridgewater-Raritan High School, New Jersey, USA.

Abstract

This paper explores the impact of teenage parenting on child development, using the TV show *16 and Pregnant* as an observational tool. By applying Latent Dirichlet Allocation (LDA) to analyze the emotional and social dynamics presented in the series, the study investigates how teen parents influence their newborns' capacities for empathy, trust, perseverance, safety, and confidence. The results reveal complex patterns of emotional and social development: teen parents often struggle with joint parenting efforts, leading to uncertainty and negativity; inadequate trust-building and safety for the child due to fear and anger; and limited parental involvement in fostering perseverance and confidence. Notably, the mother plays a more prominent role in nurturing the newborn's confidence, while the father's influence is often disruptive. The findings emphasize the interconnectedness of the emotional states of teen parents and their children, underscoring the importance of a holistic understanding of adolescent parenthood. The study contributes to the literature by addressing gaps in research, particularly the emotional and social dimensions of teen parenting, and proposes a novel methodology for analyzing sensitive topics through media content. The paper also highlights the broader implications of teenage pregnancies in the context of societal trends, including the challenges posed by digital exposure and the COVID-19 pandemic.

Keywords: Child development, Latent Dirichlet allocation (LDA), Teenage parenting.

1. Introduction

Adolescent pregnancies, defined as pregnancies occurring in individuals under the age of 20 (Assini-Meitin et al., 2018), remain a significant phenomenon despite a noted decline in their prevalence. Globally, adolescents contribute to over 18 million births annually (Moshi & Tilisho, 2023). Concurrently, a reduction in abortion rates suggests an increased likelihood of pregnancies resulting in live births.

The prevalence of non-traditional family structures is notably higher among adolescent parents. A non-traditional or "abnormal" family structure is characterized by conditions such as parental divorce, the absence of one or more parents due to incarceration, estrangement, or other circumstances that impede parental responsibilities, homelessness, or substance abuse within the household. The proportion of these family structures relative to traditional families has increased significantly, a trend largely attributable to the fact that 90% of adolescent births occur in low- and middle-income countries (Moshi & Tilisho, 2023). Consequently, children born to adolescent parents are at an elevated risk of being raised in non-traditional family environments.

Children raised in non-traditional family environments often exhibit higher rates of criminal behavior and violence, a phenomenon linked to the unique challenges associated with these familial conditions (Bosick & Fomby, 2018). This trend is further influenced by the evolving nature of social development in an increasingly digital society. For previous generations born before 1990, people receive their first mobile devices during adolescence, experienced a more gradual introduction to technology. On the contrary, contemporary children have access to a broad range of digital devices—smartphones, tablets, laptops, and smartwatches—at significantly younger ages (Auxier et al., 2020). This shift in early exposure to digital technology may interact with familial and social dynamics. This shift also shapes developmental trajectories.

The digital products in daily life have amplified the influence of social media platforms, where adolescents are frequently exposed to diverse visual and audiovisual content. The implications of this constant digital stimulation remain ambiguous, particularly regarding its role in shaping the informational environment of teenage parents. The ambiguity comes from two aspects: technology exposure may provide beneficial resources and support to young parents; it may also potentially to introduce wrong information or hinder their parenting efficacy.

The recent pandemic exacerbated the situation. As shown in Table 1, COVID-19 pandemic represented a significant setback in efforts to reduce teenage pregnancy rates among certain demographic groups. Challenges arising from shifting societal trends peaked right around the outbreak, particularly due to restrictions on human interaction aimed at mitigating the spread of the virus. These constraints rendered the implementation of effective government interventions and support systems increasingly difficult. Notably, adolescent pregnancy rates, which

had been gradually declining prior to the onset of the pandemic, experienced a monthly increase of 1.53 cases per 1,000 adolescent girls following the first recorded infection on March 20, 2020 (Alunyo et al., 2023).

Table 1. Racial demographics of teenage parents giving birth during COVID.

Total pregnancies (n=4151)		Before state shutdowns- January 2019 through June 2019 (CI)	After state shutdowns- January 2021 through June 2021 (CI)
Adolescent pregnancies (n=244)		5.8% (4.9 - 6.9)	5.9% (5.0 - 7.1)
Of adolescent pregnancies	White (n=210)	82.2% (74.9 - 88.0)	90.4% (84.1 - 94.8)
	Black (n=26)	11.6% (7.4 - 17.0)	4.5% (1.9 - 9.1)
	Hispanic (n=40)	8.0% (5.1 - 11.7)	7.9% (5.0 - 11.8)

Note: Adapted from Paudel et al. (2022).

The rising incidence of adolescent pregnancies is a critical issue, as it translates into approximately 100,000 newborns annually—equivalent to the enrollment capacity of 200 elementary schools within six years. The significance of this issue is obvious.

Despite the magnitude of this phenomenon, existing research predominantly centers on teenage parents rather than their children (e.g., Assini-Meytin et al., 2018; Sriyasad et al., 2017). Studies that do address the offspring of adolescent parents often adopt a narrow perspective, treating social development as a unidimensional construct.

In contrast, my study conceptualizes social development as a multifaceted construct encompassing five key dimensions: trust, safety, empathy, confidence, and perseverance.

Another gap in the existing literature is the limited inclusion of emotion-oriented data, as most studies prioritize quantifiable metrics such as the academic performance of teenage parents or neonatal health indicators. This narrow focus overlooks critical aspects of the emotional and social experiences of these populations.

In contrast, my study addresses this gap by collecting and analyzing novel data to provide a comprehensive understanding of the social development of both teenage parents and their children, thereby contributing to a more holistic view of the intergenerational impacts of adolescent parenthood.

This research highlights the interconnectedness of teenage parents and their infants. I emphasize their inseparable bond rather than treating them as distinct entities. The bidirectional interactions between parent and child are pivotal in shaping the social identity of the newborn and influencing the social status and development of the parent.

To the best of my knowledge, this study is the first in the literature on teenage pregnancy to implement a joint objective modeling framework that examines these parent-infant dynamics in a comprehensive manner.

This research employs a joint modeling approach to investigate the intertwined emotional and social development of teenage parents and their children, recognizing their inseparability in shaping developmental trajectories. Emotions are central to social development, as demonstrated by the Discrete Emotion Theory (Ekman, 1992). The theory identifies six core emotions: happiness, sadness, anger, fear, surprise, and disgust. These primary emotions can combine to form more complex emotional states—for example, fear and surprise may coalesce into anxiety, while sadness and anger may manifest as disappointment.

The framework I build based on is robust. This is because these fundamental emotions are universal across cultures, remaining consistent among individuals of varying races, genders, and belief systems. Additionally, emotions have discernible biological markers: changes in body temperature and blood pressure (the so-called “physiological responses”) can indicate the type and intensity of an emotional experience.

The framework I build based on is also adaptive. These six cross-generational emotions exhibit variability with age, as older and more experienced individuals tend to experience less surprise compared to younger counterparts. A critical aspect of Ekman’s Discrete Emotion Theory is the assertion that core emotions are distinct and irreducible. Each emotion is unique and cannot be deconstructed into simpler components. Moreover, emotions are inherently authentic: they cannot be fully fabricated or concealed. When one is truthful to himself or herself, the expression remains consistent and discernible across individuals and contexts.

Specifically, I aim to answer the following questions in this paper:

1. How does a teen parent inform the newborn’s capacity for empathy?
2. How does a teen parent foster the newborn’s trust-building process?
3. How do a teen parent’s friends change their children’s sense of safety?
4. How does a teen parent inform the newborn’s capacity for perseverance?
5. How does a teen parent sponsor the newborn’s confidence?

To answer these questions, I connect the child’s social development with the mental well-being of the teen parents, the psychological and physical well-being of the kids, and any societal problems (such as crime) the parents might have. I employ three theories to build this connection: the Experiential Learning Theory, the Transformative Learning Theory, and the Child Development Theory.

The Experiential Learning Theory focuses on learning through direct experience or doing. This is particularly applicable to teenage parents in this study. The process begins with inquiry, where individuals assess their surroundings. Then, they reflect on past failures and current strategies. Next, an analysis determines the most appropriate course of action. Finally, synthesis occurs, combining ideas to form a cohesive approach.

The theory helps gauge a parent’s maturity. More mature individuals can apply past experiences to present situations more effectively. Teen parents, due to their limited life experience, often struggle with this process. Their ability to utilize these learning cycles is typically less developed than that of adult parents.

The Transformative Learning Theory involves the process of changing or transforming one’s viewpoints based on a new frame of reference. It aims to explain how individuals perceive and effectively use new information about the world around them. This theory is particularly relevant to teenage parents in this study. When confronted with disorienting dilemmas related to child-rearing, such as challenges in caring for their children, a behavioral change becomes necessary. For example, if a baby refuses food intake, the parent must experiment with different feeding

methods or try alternative foods. Finding a solution in these situations can be a transformative experience, as it involves exploring new approaches and understanding unfamiliar scenarios.

Finally, the Child Development Theory addresses the emotional, cognitive, physical, and social growth of children. This study draws on Lev Vygotsky's sociocultural theory (Vygotsky, 1978), which emphasizes the importance of social interaction in the learning process. Vygotsky challenges the notion that learning is an independent activity, highlighting the critical role of social context. For example, a child does not develop communication skills in isolation; instead, confidence is initially built in peer interactions, which encourages the child to express their thoughts and opinions. The foundation of this theory offers valuable insight into how children's development progresses, largely shaped by their ability to socialize and engage with others.

To realize the exploration of connections mentioned above, I employed the well-known program *16 and Pregnant* as the observation source. *16 and Pregnant* is a TV series produced by Paramount. In each episode, the family of a pregnant teenager is highlighted. The program reports the narrative interaction, communication, social, and natural progress from pregnancy to post-delivery life.

This method is innovative as a "low hanging fruit" for data collection in sensitive topics. Without this method, this study would require complicated approval and monitor. This is because teen parents, though carrying the next generation, are considered children and need parental or guardian approval.

I collected the closed captions from episodes of this TV show spanning from 2009 to 2021. Using Ekman's (1992) framework of basic emotions, I manually assigned these emotions to two control groups: teen parents and their newborns. One control group consists of high school students who are not parents, while the other group includes adults who are new parents. This methodology allowed for a comparative analysis of emotional expression across different demographic groups.

Next, I processed the textual data using the Latent Dirichlet Allocation (LDA) method. This technique identifies the underlying topics within a set of documents by analyzing the distribution of words. Each topic is represented by the probability of different words appearing together, allowing for the extraction of thematic structures within the data. This approach provided a nuanced understanding of the key themes present in the closed captions across the episodes.

These are some of the key findings: Topic 1 describes the overall attitude of teenage parents toward their whole situation. Topics 2 and 3 evaluate the mother and father as parents, respectively. Topic 4 details the baby's birth process and daily life with the baby. Finally, Topic 5 focuses on the mother and father as teenagers. Griffiths and Steyvers (2004)'s topic selection algorithm implies that 5 topics are optimal for covering the research of teen parents on their children's mental development.

The rest of the paper is organized as follows: Chapter 2 provides the readers with a systematic review of the literature on newborn development and the impact they receive. Chapter 3 presents our data, modeling methods, and analytics process. Chapter 4 illustrates the findings and provides a comparison. Chapter 5 concludes with reflections on the limitations and suggestions for future studies.

2. Literature Review

This study examines how teenage parenthood affects children's social development. After the introduction, the literature review outlines the main themes, methods, and comparisons to other studies. Following that, the methodology section clarifies key definitions to avoid confusion. It also explains the research design, data collection, and analysis process. Ethical considerations are addressed, and hypotheses are drawn based on the findings.

For example, Sriyasak et al. (2017) investigate teenage parenthood in Thailand, focusing on the role of family support. They conducted interviews with both teen parents and their own parents. Assini-Meytin et al. (2018) review how race and ethnicity influence child-rearing by adolescent fathers. Their findings suggest that teens from lower socioeconomic backgrounds are more likely to engage in criminal behavior, live in poverty, and struggle with substance abuse. These factors significantly affect the child's development.

At the center of my research question is how teen parents raise kids. Parenting styles vary, with some parents being more negligent while others are more involved. These styles often depend on their living conditions. Teen parents facing challenging circumstances may struggle to adequately provide for their growing children (Assini-Meytin et al., 2018). As a result, many children of teen parents are often co-parented by their grandparents, who bring more experience to the caregiving process (Sriyasak et al., 2017). Social development plays a crucial role here. The children's social lives will differ significantly depending on the parenting techniques used and how emotions are nurtured, which ultimately shapes their character traits.

I conducted a novel method of interviews, in which an LDA analysis of *16 and Pregnant* is performed on the effects of teenage parents on their children's social development. The identities of both the teen and the interviewer are public.

According to Sriyasak et al. (2017), a child's social development begins within the teen parent's family. Adolescents often replicate their parents' approach to child-rearing. Teen parents are typically supported in two main ways: financially and with basic caregiving. In terms of financial support, grandparents often cover expenses such as food and clothing for the newborn. In terms of caregiving, grandparents frequently assume the primary caregiver role, participating in activities like breastfeeding and bathing.

Cultural factors also played a significant role in the interviews conducted in Thailand. As the region is predominantly Buddhist, abortion was viewed as a sin, placing pressure on teen parents to keep their babies. While some grandparents expressed disappointment in the teen parents' behavior, others stepped in as mentors, helping to build a better future for their grandchildren.

Assini-Meytin et al. (2018) assert that teenage fathers are more likely to engage in substance abuse, delinquent behavior, and underperform academically. However, many adolescent fathers tend to marry upon reaching adulthood, which often leads to a reduction in these negative behaviors.

Some, however, are not as fortunate. Teen fathers with poor health, low education, and a criminal history may adopt a turbulent parenting style, a pattern more commonly seen among African American and Latino populations

who experience racial discrimination. From a low socioeconomic background, these teen fathers often struggle to create a safe and stable environment for their children, which negatively impacts the social development of their offspring.

Sriyasak et al. (2017) offer a unique approach by considering the support provided by grandparents in the lives of teen parents. This perspective highlights the crucial role grandparents play in the child's early development. On the other hand, Assini-Meytin et al. (2018) focus on the impact of racial factors on juvenile fathers. Their multi-dimensional data collection method addresses various elements contributing to the vulnerability of certain racial groups in the context of teenage parenthood.

While Sriyasak et al. (2017) conducted comprehensive interviews with teen parents in Thailand, the findings were generally positive. Negative comments about the adolescents were directed at their own behavior rather than that of the children.

Assini-Meytin et al. (2018), by contrast, primarily aim to offer solutions based on race for teenage fathers. However, their study does not predict the consequences for families that cannot benefit from these proposed solutions.

3. Data and Methodology

I start this section with definitions.

Teenage Parent is defined as an individual who got pregnant and/or became a parent under the age of 20.

The five pillars of social development are defined as:

1. Trust, which refers to the ability to believe in the reliability of someone or something, without the involvement of manipulation, eventually leading to the development of curiosity.
2. Safety, which refers to feeling secure and protected from danger, not due to isolationism but due to the environment created by those surrounding, eventually leading to the development of exploration.
3. Empathy, which refers to sharing, caring, or being emotional for an individual, not including family members, eventually leading to the development of love.
4. Confidence, which refers to belief in one's abilities and judgment, not arrogance or superiority, eventually leading to the development of communication.
5. Perseverance, which refers to a continuous effort to achieve something, not a stubbornness to achieve something impossible, eventually leading to the development of value.

The four assumptions undergoing my research design are:

1. All answers given on *16 and Pregnant* are honest.
2. The episodes of *16 and Pregnant* are unbiased regarding what is shown.
3. The process of choosing parents and kids on *16 and Pregnant* is unbiased.
4. The director of the *16 and Pregnant* is unbiased.

In this study, I apply the closed caption data to two models: the Latent Dirichlet Allocation model and the Emotion Observation and Spectrum model.

Latent Dirichlet Allocation (LDA) is a powerful statistical model used in natural language processing and machine learning. It helps uncover hidden thematic structures in text documents. LDA is a generative probabilistic model that assumes documents are mixtures of multiple topics. Each topic is represented as a distribution over a fixed vocabulary. The model is valuable because it identifies these topics in an unsupervised manner. This allows researchers to organize, summarize, and interpret large collections of text.

At its core, LDA assumes that each document consists of a mix of topics. Each topic has a specific distribution of words. This reflects how we often think about textual content. For instance, a single article can cover several themes, with different amounts of focus on each. A news article might discuss politics, economics, and technology, giving more emphasis to one than the others. Topics are defined by certain keywords or phrases that are likely to appear when discussing them. After downloading the closed caption data, I first cleaned the data by removing symbols, signs, and non-textual information. I then distill the keywords by removing the short connection words and narrative expressions such as "I", "and", "to", "therefore", and "but". This leaves me with words such as "Frustrated with baby", "Spit milk", "Money diaper", "Saturday night party", and "New girlfriend".

I first tokenize the data to ensure consistency in form, arranging it into meaningful phrases. For example, "diaper" and "diapers" are recognized as the same word. Similarly, "exhausted" and "exhausting" are treated as one. The sentence "I have been staying up all night long but you were on video games and the phone with another girl" is tokenized to "staying up all night long," "you video games," and "phone girl."

The generative process of LDA begins with the assumption that each document has a unique distribution over topics. This distribution is drawn from a Dirichlet distribution, which models distributions over distributions. This ensures that topic proportions are non-negative and sum to one. For each topic, a similar Dirichlet distribution is used to generate the distribution of words. This approach captures the variability and sparsity often seen in real-world text data. In LDA, when a document is generated, the process starts by selecting a topic for each word based on the document's topic distribution. Then, a word is chosen from the selected topic's word distribution. Repeating this process for all words in a document results in a text that reflects a mixture of topics, with certain themes more prominent than others. The challenge of applying LDA is to reverse this generative process. Given a set of documents, the goal is to infer the hidden topic distributions for each document, the word distributions for each topic, and the assignment of words to topics.

LDA's mathematical framework relies on Bayesian inference to estimate the posterior distributions of the model parameters. Since directly computing these distributions is difficult, approximate methods such as Gibbs sampling or variational inference are used. These algorithms iteratively refine the parameter estimates, converging on the best solution to explain the observed data.

The LDA's generative process is based on the idea that each document is modeled as a mixture of K topics, each being a distribution over a fixed vocabulary. A Dirichlet distribution generates two key components: θ_d to represent the topic proportions for a document and ϕ_k to represent the word distribution for each topic K . This enables the LDA to mathematically model relationships between the documents, topics, and words.

Table 2. Description of the teen dad, teen mom, their families, and their relationships with their families for the episodes of 16 and Pregnant.

Season	Episode	Boy Name	Girl Name	Boy Fam Desc	Girl Fam Desc	Relationship	Cross-relation	Significance	Baby
1	1	Ryan	Maci Bookout	Mother and Father	Mother and Father	Together	Tries to support the baby	Ryan tries to avoid taking care of the baby	Bentley
1	6	Tyler	Catelynn Lowell	Mother and Father (often in jail)	Mother and Father	Together	Tyler's family is unhelpful	Put up baby for adoption	Carly
2	4	Adam	Chelsea Houska	Mother and Father	Mother and Father	Separated	Chelsea's family dislikes Adam's irresponsibility	Chelsea decides to raise the baby herself	Aubrey
2	6	Eric	Samantha Hernandez	Mother	Mother and Stepdad; Father (divorced)	Together	Boy's mother approves; Girl's mother is angry	The girl's mother was also a teen mom	Jordynn
2	8	Corey	Leah Messer	Mother and Father	Mother	Separated	Want Corey and Leah to split	Leah cheated; leads to a split	Ali & Aleeah
3	2	Josh	Jennifer Del Rio	Mother and Father	Mother and Father	Separated	The girl's family wants Josh away	Josh is uncaring and careless of the baby	Joshua & Noah
3	3	Ryan	Jamie McKay	Mother and Father	Mother	Together	Try to support the baby	Ryan is uninvolved & unfaithful	Miah
3	5	Mario	Cleondra Carter	Father and Mother (separated)	Mother	Together	The girl's family is unhappy with another teen pregnancy	The girl's sibling was also a teen mom (at 17); the girl moves in with Mario	Kylie
4	4	Devoin	Briana DeJesus	Father and Mother	Mother	Separated	Supportive mother and sister (also pregnant but got an abortion)	Briana often tries to keep Devoin out of the baby's life	Nova Star
4	9	Blake	Sarah	Mother and Father	Mother	Together	Blake lives with the girl's family; mom argues frequently	Blake cannot support financially	Tinleigh

The LDA variables include θ_d , the document-topic distribution sampled from Dirichlet(α); ϕ_k , the topic-word distribution sampled from Dirichlet(β); z_{dn} , the topic assignment for the n th word in document D ; and w_{dn} , the observed word in position n of document D . First, θ_d is sampled for each document and ϕ_k is sampled for each topic. For every word w_{dn} in document D , a topic z_{dn} is sampled from Multinomial (θ_d), Words are sampled from Multinomial ($\phi_{z_{dn}}$).

The textual sources of the LDA analysis are presented in Table 2. The data in this study refers the closed captions of *16 and Pregnant* downloaded from YouTube. The scope of my research was filtered to topics only relating to the care of the baby; any irrelevant information was avoided. The data defines the role of both parents in the family and how they are affected by friends and other influential figures such as teachers, counselors, and grandparents. The transcript derived from the closed captions is labeled with each of the core emotions of happiness, sadness, anger, fear, surprise, and disgust, as Ekman (1992) supports.

The key step after tokenizing the data is to determine the number of topics in the LDA analysis. I apply leading topic identification methods and present the results in Figure 1.

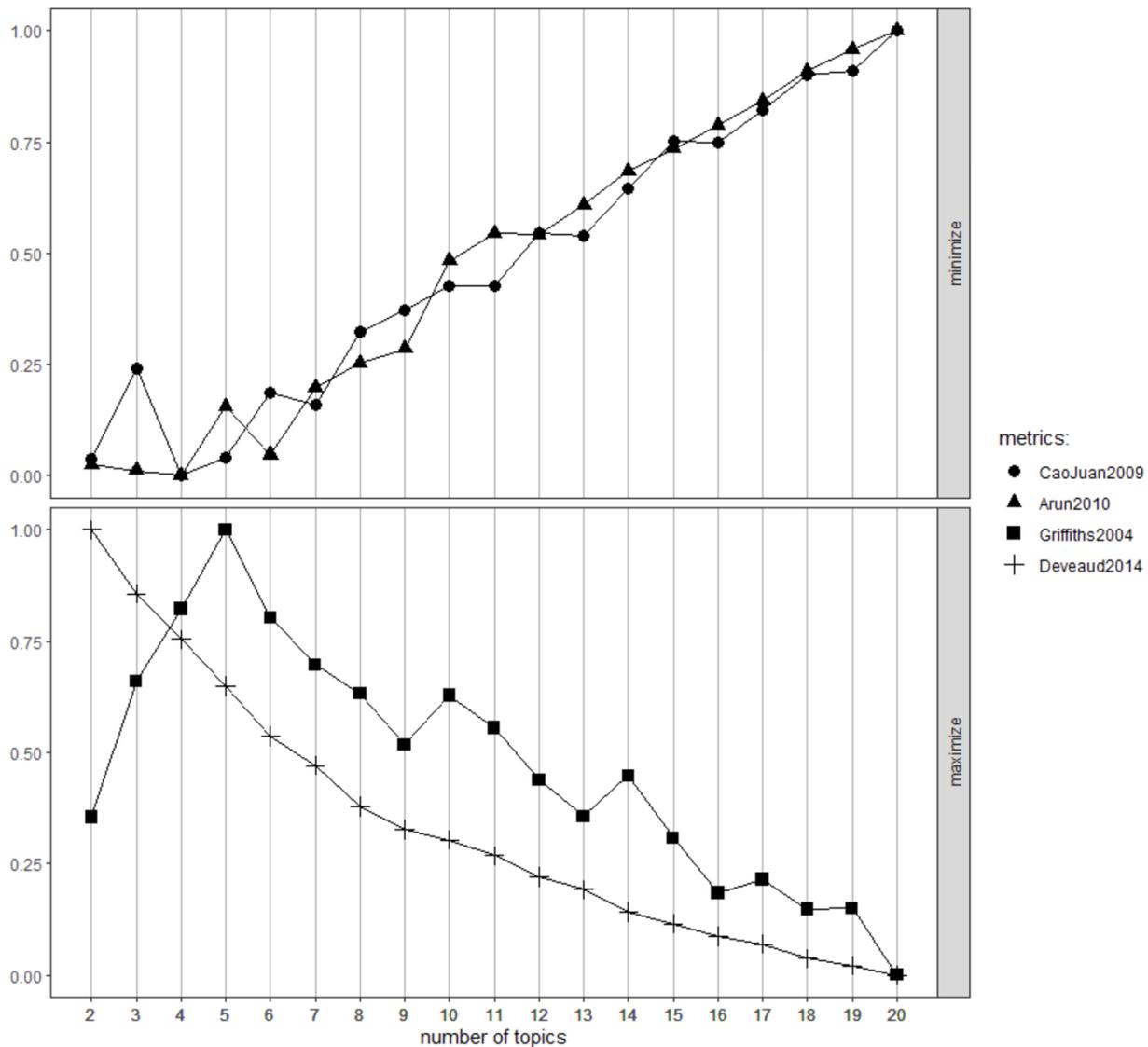


Figure 1. Comparisons of the optimal number of topic usage for a study.

This graph analyzes the scores for different numbers of topics as conducted in studies by Cao and Juan (2009), Arun (2010), Griffiths (2004), and Deveaud (2014). The results suggested by Cao and Juan (2009) and Arun (2010) is indecisive, as it increases continuously as the number of topics increases. Griffiths (2004) has a spike in the data, showing the optimal number of topics as 5. Therefore, based on the plot diagram, I decided to do my LDA analysis, and the number of topics is set (e.g., $k = 5$).

The show *16 and Pregnant* was chosen for data collection over surveys for several reasons. First, the show is easily accessible. Rather than distributing surveys and waiting for responses, in-depth interviews from the show can be accessed digitally. The chronological flow of events in each episode also facilitates comparative analysis.

Another issue with surveys is privacy. Both the teen parent and child fall under the category of minors. Since *16 and Pregnant* is a public TV show, everyone involved has consented to sharing their story. The extensive interviews in the show allow for the observation of non-Q&A information, eliminating the need for direct consent from the participants.

Lastly, using *16 and Pregnant* provides a more honest depiction of emotions than in-person surveys or interviews. Observing body language and tone offers valuable insight into the emotional context of interactions. If authority figures, such as the parents of the teen parents, are present in person, the responses may be less truthful.

IV. RESULTS AND DISCUSSION

Each of the development pillars—empathy, confidence, trust, safety, and perseverance—find their roots in the core emotions identified by Ekman (1992). These foundational emotional responses gradually evolve into the more complex social, emotional, and cognitive skills that are essential for functioning as a mature social being.

Empathy, the ability to recognize and respond to the emotions of others, is closely linked with happiness and sadness. It involves understanding another person's emotional state, whether joy or sorrow. When an individual can share in the happiness or sympathize with the sadness of others, they build the foundation for empathy. This ability fosters meaningful social interactions and strengthens emotional bonds.

Confidence, a key pillar in emotional development, is shaped by emotional feedback and the repeated experience of success. As Ekman (1992) notes, confidence is linked with happiness and surprise. Particularly, positive forms of surprise—like the wonder experienced when learning something new or the exhilaration of achieving success—create lasting memories of accomplishment. These positive experiences boost a child's self-assurance and reinforce their belief in their abilities, fueling further growth and achievement.

Trust, a critical aspect of social and emotional development, is linked with (anti-)fear, (anti-)anger (triggered by betrayal), and (anti-)disgust (triggered by betrayal). For instance, an individual may initially experience discomfort, fear, or aversion towards someone they do not know or trust. However, by choosing to engage and follow that person's guidance or instructions, trust is gradually built. Over time, as trust is established, the negative emotions such as fear, anger, and disgust are diminished, allowing for more positive and productive interactions.

Safety, a fundamental need for emotional well-being, is linked with (anti-)fear and surprise. When placed in a stressful or fearful situation, the natural response is to seek safety, as the body reacts to escape or mitigate discomfort. On the other hand, a nurturing and calming environment fosters feelings of security, providing a sense of safety. In this way, the balance between fear and comfort plays a central role in shaping one's perception of their environment as either threatening or secure.

Perseverance, a trait essential for overcoming challenges, is linked with (anti-)anger and (anti-)disgust. These two emotions can often lead to disruptions, frustration, and the desire to quit when faced with obstacles. However, perseverance is the ability to push through these negative emotions. By overcoming feelings of anger and disgust, individuals learn to persist despite setbacks, thereby developing resilience and determination. This ability to persevere is key to achieving long-term goals and personal growth.

The first topic clustered is presented in Figure 2.



Figure 2. Generated word cloud for overall attitude of teen parents.

Topic 1 is the overall attitude of teen parents towards their situation. The core word for this word cloud is "next". The core emotion in accordance to Ekman (1992) is fear. The word suggests feelings of anxiety and people unable to live in the moment. Additional prominent words include "hate", "quit", "stick", "stress", and "adoption". These words correlate to the emotion of anger, and both fear and anger do not help to develop important aspects of a child's mental development. Empathy, confidence, trust, safety, and perseverance are not created with the overall viewpoint of teenage parents.

The second topic clustered is presented in Figure 3.



Figure 3. Generated word cloud for the teen mom as a parent.

Topic 2 is about the teen mom, as shown through the word “mom”, as a parent. Although this word cloud offers a more positive viewpoint than Topic 1, the happiness is moderate and limited. Words like “music” and “okay” suggest superficial joy towards the baby. To be considered deeply happy, for instance, words involving physical touch such as “hug” would need to be included. Despite this, the baby is still developing mentally. The words “think”, “want”, and “know” demonstrate empathy, “can”, “good”, and “yes” lead to confidence, and “okay”, “baby”, and “mom” build trust and safety. The third topic clustered is presented in Figure 4.



Figure 4. Generated word cloud for the teen dad as a parent.

Topic 3 is about the teen dad, as shown through the word “daddy”, as a parent. This word cloud has very mixed feelings of happiness, sadness, anger, and fear. This is shown in contrasting words like “cute” and “hope” versus “serious”, “scary”, and “hell”. The words are also more abstract than the words a teenage mother is associated with. Interpretations can vary for “walk”, “god”, and “date”. Similar to Topic 2, the baby can develop mentally. Perseverance is shown through the words “tomorrow”, “hope”, and “act”. The fourth topic clustered is presented in Figure 5.



Figure 5. Generated word cloud for the birth of the baby.

Topic 4 is a live scene about giving birth and living with the baby. There are many verbs, including “imagine”, “suppose”, “hang”, “bite”, and “check” that correlate to Ekman’s (1992) core emotion of fear. All of them establish a tone of uncertainty and unpleasantness. The negativity originates from the words “epidural”, “bite”, and “hang”. After pain during labor, the teen parents continue to suffer from the workload of caring for the baby. They are exhausted and do not have adequate financial support. As a result, the baby is neglected in terms of mental development through their education and well-being. It is being treated as an animal since only basic care such as changing diapers and feeding is being done. A more caring environment might feature words such as “park”, “crib”, “toy”, “play”, and “crawl”. The Fifth and last topic clustered is presented in Figure 6.



Figure 6. Generated word cloud for the parents as teenagers.

Topic 5 concerns the baby growing older and focuses on situations such as daycare. The emotions of fear and sadness are about the young parents as teenagers. They value important judgments, as shown through “decide,” “call,” “reason,” “choice,” “promise,” “forever,” “didn’t,” and “shouldn’t.” In this topic, minimal leads to mental developments such as empathy and confidence.

Similar to a quantitative and statistical model, I structure the research questions articulated in Chapter of this study into corresponding hypotheses.

Regarding research question 1:

{ H_0 : A teen parent does not inform the newborn’s capacity for empathy.
 H_a : A teen parent informs the newborn’s capacity for empathy differently compared with a traditional parent.

I cannot reject H_0 . Based on Topic 1, empathy is not developed in the stressful situation of a teenage pregnancy. Everything is treated with uncertainty and negativity, from the mother’s superficial happiness in Topic 2 to the father’s volatility in Topic 3. The parents are indecisive as people because of their poor financial environment and have no consistent joint effort when parenting the baby.

Regarding research question 2:

{ H_0 : A teen parent fosters the newborn’s trust – building process like traditional parents.
 H_a : A teen parent fosters the newborn’s trust – building process to a lesser degree.

I reject H_0 . According to the findings in Topic 4, trust is not adequately built in non-traditional families. In a stressful situation such as a teen pregnancy uncertainty and unpleasantness is common. Due to the lack of financial support, parents can only afford to treat their baby like an animal. Only the baby’s basic needs are met and no trust is built.

Regarding research question 3:

{ H_0 : A teen parent builds the newborn’s sense of safety like traditional parents.
 H_a : A teen parent builds the newborn’s sense of safety insufficiently.

I reject H_0 . Topic 2 demonstrates how a teenage mother can foster the baby’s sense of safety through the words “okay” and “baby”. However, when comparing this to Topic 3, the Dad only fosters the baby’s perseverance. The parents do not work together like traditional parents but take completely different responsibilities for the baby’s mental development. As stated by Topic 5, teen parents make many difficult decisions regarding their baby. The lack of safety stems from this instability.

Regarding research question 4:

{ H_0 : A teen parent helps grow the newborn’s perseverance as a normal family.
 H_a : A teen parent helps grow the newborn’s perseverance inadequately.

I reject H_0 . Topic 3 signifies how the teenage father grows the newborn’s perseverance through the words “tomorrow”, “hope”, and “act”. Despite this, the mother is absent in this process, so a development from only the dad cannot be considered a traditional family situation. This is due to the words “adoption” from Topic 1 and “daycare” from Topic 5. The parents do not persevere and stay around their baby; they want someone else to take the burden of parenthood from them.

Regarding research question 1:

{ H_0 : A teen parent sponsors the newborn’s confidence as other newborns from a regular family.
 H_a : A teen parent sponsors the newborn’s confidence, unlike other newborns from a regular family.

I reject H_0 . The teen mom sponsors the newborn’s confidence through words such as “can”, “good”, and “yes”. However, due to the absence of the teen dad in this development and the mediocre happiness of the mother, there is no character development for the baby. Overall, the decisions of young teen parents are made for themselves, as shown in Topic 5. The judgments all relate to getting the baby away to create more time for their pursuits.

4. Conclusion

In this paper, I studied a TV show named *16 and Pregnant* to understand how the next generation is impacted by teenage parenting. I aim to answer five questions spelt in Chapter One using the Latent Dirichlet Allocation model. The summary of the results are:

1. A teen parent does not inform the newborn’s capacity for empathy. Based on Topic 1’s words “quit”, “stick”, and “stress”, the baby’s situation is treated with uncertainty and negativity. There is no consistent joint parenting effort, from the mother’s superficial happiness to the dad’s volatile and mixed emotions. Both parents are indecisive due to their poor financial environment.
2. A teen parent inadequately fosters the newborn’s trust-building process. Based on the emotion key-ins done on the transcripts of *16 and Pregnant*, the most recurring emotions when discussing the baby are fear, anger, and sadness. Trust is based on the lack of fear, anger, and disgust, so it is not achieved for the baby.
3. A teen parent’s friends do not positively change their child’s sense of safety. Safety is the sense of security derived from the lack of fear and surprise. However, as stated by the emotion key-ins on the episodes of *16 and Pregnant*, a teen parent’s friends can cause fear and surprise. Seeing their friends have fun during the summer, travel, and go to college while they must prepare for the baby evokes surprise at how much others are doing and the fear of missing out. This environment created by the parent’s friends does not adequately develop a child’s sense of safety.

4. A teen dad can inform a newborn's capacity for perseverance. Although limited, Topic 3 reinforces this claim with the words "tomorrow", "hope", and "act" being associated with the word "daddy". Because the mother is not involved in the newborn's perseverance, disrupting factors are involved. Topic 5 uses the words "didn't", "choice", and "shouldn't" to show how the development of perseverance is often interrupted by difficult parenting decisions.
5. A teen mom can sponsor a newborn's confidence. It is a one-sided effort that does not involve the dad. This is shown in Topic 2 with the words "can", "good", and "yes" being linked to the word "mom". The lack of the father's involvement demonstrates limited and inconsistent efforts made to the newborn's confidence.

Although the data collected for this study was as accurate as possible, it is important to recognize that TV shows, such as *16 and Pregnant*, do not provide a complete or fully accurate portrayal of teen pregnancy. The show may exaggerate certain aspects, like desperation and fighting, for dramatic effect. This is a common strategy in television, designed to create engaging and emotionally charged content. As a result, the depiction of these experiences might not fully reflect the complexity of real-life situations.

Additionally, the study's findings may be skewed due to the small sample size. The data is drawn from a limited number of publicly available TV episodes, which limits the scope of the analysis. This small sample size may not capture the diverse range of experiences that teen parents face, leading to a potential bias in the results.

However, collecting data on teen pregnancies from other sources, such as surveys or interviews, is challenging. Teen pregnancies are a sensitive topic, and many individuals may hesitate to share their personal experiences. In this sense, TV shows offer a unique way to gather data on an otherwise difficult-to-study subject. While the method has limitations, it remains one of the few ways to explore the emotional and social dynamics of teen parenthood.

Future research could explore the existing policies aimed at supporting teen parents, with a focus on understanding their effectiveness. A critical question to address is why there are so few comprehensive policies specifically tailored to assist teenage parents. Such studies could examine the availability and accessibility of resources, such as financial assistance, parental education, and mental health services, and evaluate how these policies impact the well-being of teen parents and their children. Additionally, future research could investigate the role of societal attitudes and stigma in shaping policy decisions, particularly in regions with higher rates of teen pregnancies.

Another area for future investigation is how the development of school-age and teenage children is influenced by non-traditional parenting arrangements. This includes studying children raised by teen parents, as well as those in families with diverse structures, such as single-parent households, grandparents as primary caregivers, or co-parenting arrangements. Research could examine the long-term effects on children's cognitive, emotional, and social development. Understanding how these unique family dynamics affect academic performance, peer relationships, and mental health could provide valuable insights for developing supportive interventions for children growing up in non-traditional family settings. As these two questions are broad and is not a necessary condition for my current research, I propose that they be examined separately.

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