Parent's Use of Strategies to Monitor Children's Activities Online

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Abstract

Although studies have been conducted on the effectiveness of different types of filtering software, limited knowledge is available on parents' use of strategies to monitor their children's activities online. Thus, identifying understanding parents' use of strategies to monitor children's activities online and the extent in which parents use content filtering software will contribute to the body of knowledge. The purpose of this study is to understand parent's use of strategies to monitor children's activities online and the extent in which they use content filtering software in Gauteng Province, South Africa. The study adopted a Social Cognitive Theory to develop a conceptual framework and identify existing theoretical concepts. The conceptual framework adapted Bandura's (2001) framework to inform data analysis. Data were collected through semi-structured interviews and qualitative, thematic content analysis was used for data analyses. The results of the study indicated that parents do use various strategies to monitor children's activities online and further apply knowledge, experience, and social support as a rationale for using those strategies. The study further revealed that there is a gap between parents, technology industry and government regarding the use of content filtering software. Thus, the study recommends parents, industry and government work together to protecting children online through various strategies and address the concerns regarding the use of content filtering software. Parents need to understand the importance of content filtering software and discuss this with their children to be able to protect them online without restricting access to relevant information.

Keywords

Harmful Content, Blocking, Strategies, Filtering, Online Content, Software, Use, Non-Use

1. Introduction

1.1. Background

The Film and Publication Amendment Bill, 2014 (hereafter referred to as "The Bill") inter alia, proposes that distribution of online content must be monitored to ensure that illegal and harmful content is blocked to prevent children from accessing it. Illegal content is suitable for minors (Akdeniz, 2010; FPB, 2014). The Bill of Rights in the Constitution of the Republic of South Africa defines a "child" as "a person under the age of 18 years." Prior research suggested that blocking and filtering solutions can be used as one of the measures to protect children from exposure to online harmful content (Bourdillon, 2013).

Currently, there is limited knowledge available on the extent in which parents use strategies to monitor their children's activities online. It is against this background that this study will apply Social Cognitive Theory to understand parents' use of strategies to monitor children's activities online in Gauteng, South Africa. Filtering software is one of the recommended technologies for preventing children being exposed to inappropriate content online (Mitchell, Finkelhor, & Wolak, 2003), therefore, it is crucial to understand parents' use of strategies to monitor their children's activities online and the extent in which parents use content filtering software to monitor their children's activities online.

1.2. Problem Statement

In the 1990's, proponents of the "Declaration of the independence of cyberspace" actively advocated for the independence of the internet from any jurisdictional laws and declared Internet to be a sovereign platform (Barlow, 1996). This exacerbated the availability of sexually explicit content online, and this content is accessible by anyone with connectivity to the internet. Since then, an online survey conducted by Effective Measure (2017) revealed that there were 33,464,764 internet users in December 2014 in South Africa. This growing number of Internet users includes children, and poses concerns of security and cyber safety amongst children.

Although internet content regulation has been discussed across different discipline in academia, there is limited knowledge on the use and non-use of content filtering software by parents with the aim to protect their children from harmful content. On the other hand, some of the concerns which exacerbate the need to use content filtering software in South Africa includes free access to WI-FI in major cities such as the City of Tshwane, the shift towards digital classrooms, and also it is reported that about 97% of learners in schools surveyed in Gauteng had access to the internet (UNISA Bureau of Market Research, 2012).

Previous studies suggested that children who use social networking sites are likely to experience harm through a sexual message and cyber bullying (Staksrud et al., 2013). Therefore, there are great concerns regarding access of internet content by children. Content filtering software have been favored by some re-

searcher (Mitchell et al., 2003) as well as criticized by others (Rose, 2011). There is various content filtering software which could prevent children from accessing inappropriate content such as Windows family safety, Avira, K9 Web Protection. However, such software has been associated with blocking content which is not harmful or illegal and also unable to block all harmful content. This will be discussed in detail in chapter two.

The debate for filtering and blocking online content in South Africa was elevated by the Film and Publication Board (FPB) (2014) through recommending parents to put measures in place to protect their children from inappropriate content online. The decision to regulate internet content is very sensitive in South Africa due to the history of censorship which was motivated by apartheid. Apartheid manifested in the era of traditional censorship whereby societal views including music, art and films were blocked (Freedom House, 2012). Rose (2011) describes censorship as the restriction of freedom of expression which may be considered offensive or harmful to others. Therefore, there are concerns regarding restricting society of freedom of expression and speech which are outlined in the Constitution of South Africa.

1.3. Purpose of the Study

The purpose of the study was to understand parents' use of strategies to monitor children's activities online and the extent in which they use content filtering software in Gauteng, South Africa. The data was collected through interviews to answer the research objectives.

Research Objectives:
- To explore strategies to monitor children's activities online.
- To understand the extent in which parents use content filtering software among parents in Gauteng.
- To explore different content filtering software available.
- To understand parents' knowledge, social support, social influence, experience, expectations, concerns, attitudes and affordability towards the use of strategies to monitor children's activities online.

The main question which the research seeks to answer was: To what extent are parents using the content filtering software? In order to answer the main question, the following sub-questions are presented:
- What influences parent use and non-use of content filtering software?
- To what extent do parents' expectations, knowledge, experience, social support and social influence contribute to the use of strategies to monitor their children's activities online?
- What are parents' attitudes towards content filtering software?
- Are parents concerned with exposure of content which their children access?
- What are parents' concerns and perceptions regarding content filtering software?
- If parents do not use software, what strategies do they have in place, if any?

With improved and sophisticated technology, there is a need to explore influences on use and non-use of content filtering software and to understand parents' concerns and attitudes regarding such software. The next chapter covers the literature review on parents' use of strategies to monitor children's activities online and the extent in which parents use content filtering software.

1.4. Delimitations

This study is restricted to parents who reside in Gauteng. In addition, influences which may influence parents' attitude towards the use of strategies to monitor children's activities online such as age and gender of parents were not considered in the scope of this study.

2. Literature Review

Awareness of the existing literature and related empirical work is important in investigating any phenomena (Yardley, 2007). Therefore, this study will be exploring existing literature in understanding the use and non-use of content filtering software by society and also a specific focus on parents.

Technology has evolved and access to the internet through mobile phones and home computers has become convenient. This evolution of technology has brought many opportunities to learn and as well as many challenges such as access to harmful content. Children are mostly affected by harmful content as their maturity to handle such content is underdeveloped (Preston, 2009).

This section covers content filtering software, use and non-use of content filtering software, and use and non-use of content filtering software by parents.

2.1. Content Filtering Software

This section covers different filtering software used by individuals as well as parents to block and filter content online. Filtering and blocking software is perceived as software which assists in preventing access to inappropriate content (Jin, 2013). Aceto and Pescapé (2015) described content filtering software as blocking of online content and services. Knapp (2010) emphasized that content filtering software is a method which promotes self-regulation. Self-regulation refers to the regulation of online content by individuals or industry instead of government (D'Udekem-Gevers & Poullet, 2001; Jin, 2013).

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There are various content filtering software which could prevent children

from accessing inappropriate content which are discussed below. However, such software has been associated with blocking content which is not harmful or illegal and is unable to block all harmful content.

Digital Trends (2015) identified the following free content filtering software for home use:

- **Windows family safety** is free content filtering software offered by Microsoft which comes with Windows 8 machines. It requires parents to create an account in order to register. This content filtering software also allows users to filter inappropriate content online, monitor time spent on the internet and limit access to certain applications.
- **K9 Web Protection** is content filtering software which offers an activity log consisting of the browsing history of users. It allows parents to block and filter domains based on categories such as drugs, violence etc. Padmini and Atkinson (2012) recommended K9 web protection as an effective content filtering software with 96% accuracy in blocking inappropriate content.
- **Avira parental control** for social media is a content filtering software which offers parents an analysis of a child's social media activities including friend requests, posts and messages sent and received.

Parents can customise software based on the computer user's age and needs (Behun, Sweeney, Delmonico, & Griffin, 2012). This means parents and children can access the same computer but have different settings in terms of blocking and filtering content, so, parents can access inappropriate content under their settings without exposing children to harmful content.

2.2. Use and Non-Use of Content Filtering Software

This section covers use and non-use of content filtering software in general and explores attitudes, concerns and contributing factors in relation to the use and non-use of the content filtering software.

Blocking and filtering of online content is also associated with concerns such as lack of transparency as well as a violation of freedom of expression and speech. Lack of transparency had led to non-use of content filtering software because users associate such software with censorship (Noll & Meinel, 2005). Lack of transparency has been highlighted as a concern by several researchers (Mthembu, 2012; Akdeniz, 2010; Demeyer et al., 2012). Lack of transparency in this context refers to blocking of harmful content without stating the reasons. Kinikoglu (2014) advocates for transparency through stating the reasons for blocking content online which will encourage users to utilise filtering software.

Kinikoglu (2014) reported that concerns revolve around restricting society freedom of expression and speech. This was reflected in Turkey when over 20 000 webpages were blocked, which led to protests by internet users because there were no reasons provided for blocked content (Kinikoglu, 2014).

2.3. Use and Non-Use of Content Filtering Software by Parents

Some parents do not believe that exposure to harmful content on the Internet

poses much risk to their children, hence they do not use any filtering mechanism (Mitchell et al., 2005). While other parents seek to protect their children using content filtering (Livingstone & Bober, 2005). Thus, this section covers use and non-use of content filtering software by parents through categorizing of contributing influences, attitudes and concerns.

2.3.1. Experience

A study conducted by the United Kingdom (UK) Department of Children, Schools and Families (DCSF) showed that seventy-four percent (74%) of 1433 parents surveyed have concerns over online content which could be accessed by children (Hull, 2010). The study further revealed that children who experienced harmful content online, only twelve percent (12%) reported it to parents.

2.3.2. Expectations

Expectations is a belief about a product's components (Rust et al.,1999), so parents who have strategies in place allowed their children to access online content for educational purposes (Gattiker, 2001). This suggested that some parents have higher expectation of the strategies in use although they were not aware of their children' activities online, and this could be due to lower level of education and also some parents with little knowledge of technology (Valcke, Bonte, Wever, & Rots, 2010; Álvarez, Torres, Rodríguez, Padilla and Rodrigo, 2013).

2.3.3. Social Support

Scharer (2005) described social support as an act of assisting others with information and knowledge. Brady and Guerin (2010) conducted a survey which revealed that parents who joined online-discussions to get support about technology felt supported and satisfied. Marais, Van Niekerk and Von Solms (2011) recommend social support as a mechanism to assist parents in utilising parental controls.

2.3.4. Affordability

Affordability is another contributing factor towards non-use of content filtering software (Mitchell et al., 2005). Ofcom (2012) suggest that parental controls such as content filtering software should be less costly in order to encourage use by parents. Digital trends (2015) identified free content filtering software which parents can download and apply in order to protect their children from exposure to inappropriate material.

2.3.5. Knowledge

Livingstone and Bobier (2006) conducted a study which found 10% of six hundred and seventy-seven (677) parents surveyed were not aware of their children's activities on the internet, while eighteen percent (18%) do not have the knowledge to assist their children with the safety of the internet.

Özgür (2016) asked twenty parents about the type of strategies they use to monitor their children's internet use, and eleven parents said they do not use any tools because they do not have the knowledge of accessing the tool and

therefore lack support.

2.3.6. Concerns

Mitchell et al. (2005) found that some of the concerns by parents for non-use of content filtering software include restricting access to children's educational information. The study highlights that in order for parental controls to be effective, the focus must be based on user-generated content as well as time spent online.

2.3.7. Social Influence

Social influence is the degree to which an individual believes that she or he must use the technology due to pressure from other important individuals (Venkatesh et al., 2003). According to Anandarajan et al. (2002), social pressure is one of the influences explaining the use of a technology in an African context. Social influence is represented by the social pressure on the use of a technology in an African context. Social influence in this study context refers to the degree at which parents perceive opinions of others as important with respect to the use of content filtering software.

2.3.8. Attitudes

Attitudes are described as the degree in which there's an element of bias in an evaluation of a behavior (Thatcher & Matthews, 2012). In this study content, attitudes refer to an opinion of the respondents regarding the use of the content filtering software.

3. Theoretical Background and Framework

Theoretical Background

Social Cognitive Theory (SCT) was developed by Bandura in 1977 and has been widely used in various research fields including Information Systems with a focus on the internet (Hsu, Chiu, & Ju, 2004) and training and use of a technology (Agarwal, Sambamurphy, & Stair, 2000). SCT posits that behaviour is derived from three factors (personal, behavioural and environmental), and individuals learn through observing others' behaviour (Bandura, 1999). Bandura (2001) believes that people can control their behaviour through self-regulation. Behaviour refers to people's perception based on their experience, expectations and knowledge (Bandura, 1977). Bandura (1989) stated that knowledge is an important tool for solving problems. Environment refers to external social factors which can have an impact on individual's behaviour (Andrews, Jones, & Mullan, 2013).

Bandura (1998) explained that environment and people influence each other. In this study, environmental factors are influenced by social support and social influence. Social influence was adapted from SCT as well as an extended Technology Acceptance Model (TAM), and social support was adapted from SCT. Personal factors are motivational forces which drive the outcome of an individu-

al behaviour (Bandura, 1989). Affordability was adapted from Redman (2012) and concerns were adapted from Benner and Wrubel (1989). Both affordability and concerns are personal factors which parents consider when deciding on whether to use or not use technology.

SCT outlined that individuals can achieve outcomes through observing others, and it provides a framework to understand human behaviour (Bandura, 2001) (Figure 1). For that reason, SCT was used to develop a conceptual framework to understand parents' behaviour relating to use and non-use of content filtering software. Imenda (2014) stated that research can be based on concepts from different theories to have a meaningful research understanding, and through a grouping of these concepts, a conceptual framework can be developed. Therefore, this research will also add concepts from other theories in order to understand the use and non-use of content filtering software by parents. Below is a conceptual framework to understand different behaviours which determine use and non-use of content filtering software by parents.

1) Behavioural influences

Behavioural influences comprise of experience, expectations and knowledge. Original SCT themes include knowledge, expectations and experience which were adapted from SCT themes and none of them were dropped throughout the study.

a) Experience

Experience refers to an opportunity to use a particular technology (Venkatesh et al., 2003). Experience is an important factor in determining the user' intention regarding the use and non-use of technology (Dhir, Kaur, Chen, & Lonka, 2016). Bandura (1977) emphasized that prior experience in a similar setting gives rise to people's perception about a future experience. The study further posits that experience has a strong influence on behaviour. In this study, experience refers to a number of years of using content filtering software and satisfaction relating to content filtering software. Thus, parents with the past or current

Personal Influences
- Concerns
- Attitudes
- Affordability

Use and non use of content filtering software

Environmental Influences
- Social Influence
- Social Support

Behavioural Influences
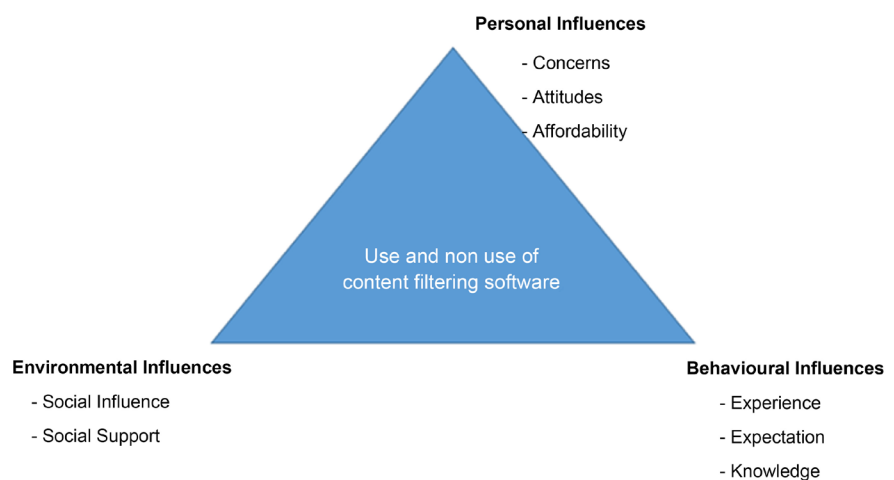- Experience
- Expectation
- Knowledge

Figure 1. Conceptual framework adapted from SCT.

experience in the use of technology may be more comfortable using the technology than those who are less experienced.

b) Expectation

LaRose and Eastin (2004) perceive expectation as a factor whereby people learn from observing others. Expectations is explained as a perceived set of beliefs about a person or product (Venkatesh & Goyal, 2010; Susarla et al., 2003). Bandura (1977) posits that expectations are influenced by experience. Paul (2012) further explains that expectation is a "perceived value" that users expect from acquiring a product. In this instance, expectations refer to user's perceptions about the use of a content filtering software. This implies that parents will use content filtering software and strategies to monitor children's activities online if their perceptions about the technology are good.

c) Knowledge

Brown and Venkatesh (2005) explained knowledge as a user's beliefs that s/he has the ability to use the technology. Knowledge plays a critical role in parents' ability to ensure safety of children online. Bandura (1990) posits that people require sufficient knowledge and guidance in order to act or put mitigation in place regarding their concerns. Thus, creating awareness about a concern is an essential for a change of behaviour (Bandura, 1998).

Knowledge can be about technology or internet content or children's activities. Mitchell et al. (2005) outlined that parents' use of filtering software is influenced by concerns and knowledge about the internet content. Subrahmanyam and Greenfield (2008) recommended that some parents do not have sufficient knowledge about technology as compared to their children.

2) Environmental influences

Environmental influences covers social influence and social support. Both social support and social influence were derived from SCT themes and in addition, social influence was also borrowed from the extended TAM studies. Both themes contributed to the body of literature.

a) Social influence

Social influence is the degree to which an individual believes that she or he must use the technology due to pressure from other important individuals (Venkatesh et al., 2003). In other studies, social Influence was found to be relevant in the context whereby use of technology is mandatory (Venkatesh & Davis, 2000). Bandura (1989) suggested that people's behaviour is influenced by their perceptions, and it can also have an influence on their environment. In this study context, social influence refers to parents' perceptions regarding other peoples' opinion about the use and non-use of content filtering software. According to Anandarajan et al. (2002) social pressure is one of the influences explaining the use of technology in the African context.

b) Social Support

Social support is a remedy to reduce exposure to a potential risk, however, people must be willing to receive such support (Bandura, 1998). Hence, Cobb (1976) advocates that social support is about creating awareness that individuals

are valued, important and have a sense of belonging. Social support can be used as a communication medium which can be either electronic or face to face between people in order to empower one's personal experience (Finn and Kerman, 2004).

Scharer (2005) recommend social networks as a communication medium for social support, while Finn and Kerman (2004) and Lin, Liu, and Huang (2012) suggested technology training for both parents and children to ensure the safety of children online. In this study, social support refers to the ability to find assistance when experiencing challenges using content filtering software. Parents who will benefit from social support, especially on the challenges relating to the use of technology from other parents (Fuchsberger, Sullner, Moses and Tscheligi, 2012) are likely to continue using the technology.

3) Personal influences

Personal influences comprise of affordability, attitude and concern. Affordability and concern are adapted from other literature and attitude is derived from SCT themes.

a) Affordability

Affordability refers to the purchase of a product or service at a reasonable cost which is within a customers' budget (Redman, 2012). Affordability has been identified as one of the limitations of not using the technology (Musa, Meso, & Mbarika, 2005). With that being said, this study aims at understanding how affordability determines the extent in which parents use of content filtering software.

b) Concerns

Concern is described as "a way in which people act" (Benner & Wrubel, 1989: p. 408). In this study, concerns vary in terms of restriction (relating to restricting access to useful information which may benefit children) (Delen, Kaya, Ritter, & Sahin, 2015) and protection (parents use content filtering software to protect children from harmful content) (Livingstone and Bober, 2004). Delen et al. (2015) stated that most parents are concerned with their children's activities online.

c) Attitudes

Attitude refers to individual's behaviour in their choice to use or not use a technology (Davis et al., 1989; Venkatesh, 2013), and in this instance, use or non-use of content filtering software. Furthermore, attitude towards technology refers to "positive or negative feelings about performing the target behaviour" (Fishbein & Ajzen, 1975: p. 216). Attitude to either use or not use a technology is related to opinions of the user concerning its use (Chen and Tan, 2004). This suggests that users with a positive attitude do use the content filtering software as compared to those with a negative attitude.

In this chapter, SCT was adopted to understand parents' behaviour regarding the use and non-use of content filtering software. Chapter four will cover an overview of the research paradigm, setting, and design, data collection method and analysis, as well as ethical considerations.

4. Research Methodology

According to Avison et al. (1999) research methodology must be influenced by the research context, the research objective and the research question. Choosing a research methodology is characterized by the researcher's theoretical perspective and approach towards how data will be used (Gray, 2004). In this Chapter, the research paradigm, research methodology, research design, sampling, data collection and analysis and ethical considerations are discussed.

4.1. Research Paradigm

4.1.1. Interpretivist Research

According to Klein and Myers (1999), interpretivism believes that environments change, and this results in a change in technology and people. In addition, Neuman (2000) outlined that interpretivist focuses on people and their experiences with the aim to understand phenomena. The interpretivist approach does not predefine independent and dependent variables (Kaplan and Maxwell, 1994), instead, it seeks to understand how people interpret their world (Hussey, 1997).

The purpose of the interpretivist paradigm in information systems is to produce a rich understanding of the social context thorough understanding how a phenomenon is influenced by the context (Walsham, 1995). Moreover, the interpretivist approach argues that reality can be interpreted differently as well as understood through subjective interpretation. Thus, an interpretivist approach integrates human experience in order to understand and interpret the world based on a perspective that reality cannot be detached from people (Myers, 2009). This study applied Miles and Huberman's (1994) middle range approach by partly applying a deductive approach through the development of a conceptual framework and a partly inductive approach by remaining open to emerging themes. In conclusion, the interpretivist paradigm will be followed in this study with the aim to seek different perspectives in order to explore common themes.

4.1.2. Positivist Research

The positivist approach is objective in nature, and aims at theory testing, and also tends to be deductive in nature and also uses a quantitative approach to measure variables and test hypothesis in order to discover causal relationship (Neuman, 2003). Pilot tests are conducted in this paradigm to ensure content validity by using instruments such as survey (Moore and Benbasat, 1991; Chau and Hu, 2002).

The positivist approach applies an experimental and relational and descriptive research design which demonstrates that the nature of reality is separated from the study context (Neuman, 2003). However, this study aims at understanding parents' use of strategies to monitor children's activities online and the extent in which parents use content filtering software, therefore, this can be achieved through conducting interviews in order to identify emerging themes from par-

ticipants.

4.2. Research Methodology

This study employed a qualitative research methodology. Qualitative research involves a collection of non-numeric data and involves observation of people and detailed analysis (Denzin & Lincoln, 2005). Subsequently, this study applied a qualitative approach in understanding parents' use of strategies to monitor children's activities online and the extent in which parents use content filtering software.

Qualitative research methods also guided the researcher in engaging parents throughout the interviews to generate a rich understanding to answer the research question and purpose. Thus, this study will be applying qualitative research methods. Kaplan and Duchon (1988) suggested that quantitative research methodology presents a variety of statistical techniques, therefore, this study research questions won't be answered by quantitative approach but rather at engaging with the parents in order to understand strategies they use to monitor children's activities online.

4.3. Research Design

Research design serves as an overall plan which includes decisions about where, what, how much and when data will be collected (Orlikowski & Baroudi, 1991). Research design is influenced by the research objectives and the research questions (Avison, Lau, Myers, & Nielsen, 1999). When applying exploratory research design, "what" research questions are commonly used (Lewis-Beck, Bryman, Liao, 2004). Thus, this study was aiming to answer the "what" question through exploring factors contributing to use and non-use of content filtering software. Furthermore, Brink (2006) emphasized that exploratory study aims at exploring the experience, knowledge and understanding of a selected population through asking questions. The exploratory research design seeks to understand the research problem, generates new insights and adding to the existing knowledge about a phenomenon (Lambin, 2000; Burns & Grove, 2009) and to explore whether phenomena exist (Dane, 2011). Hence, the purpose of the study was to understand parents' use of strategies to monitor children's activities online and the extent in which they use content filtering software in Gauteng, South Africa.

4.4. Research Settings

The study was conducted at the parental spring festival in order to ensure that the participants were comfortable. Spring festivals take place around July-August annually across Gauteng. They take place at school grounds and free parks across cities and towns in the province. They usually involve different fund-raising activities such as selling of food, music concerts, competitions, races and other activities. Both parents and children are involved, and it is generally a fun day function for the whole family. Both parents and children are involved,

and it is generally a fun day function for the whole family.

4.5. Data Collection and Analysis

Bhattacherjee (2012) explained that through interpretivism approach, the researcher can conduct both data collection and analysis jointly. By doing so, a researcher can be able to add new emerging themes throughout the study. When conducting qualitative research, the researcher takes part in the process of data collection and analysis (Creswell, 1998; Klein & Myers, 1999), and data can be collected through interviews and existing documents in order to understand and explain a social phenomenon (Bhattacherjee, 2012). Data collection applied a semi-structured interview to answer the research questions and objectives. Interviews were aiming at understanding and interpreting people's experiences (Seidman, 1998), and this study conducted interviews which covered concepts from the conceptual framework. In-depth interviews refer to a conversation between the researcher and the participants and serve as a tool to obtain insightful qualitative information into the perceptions and experiences of the participants (Burns & Grove, 2009). The aim of the in-depth interview for this study was to allow the parents an opportunity to express their views on the research objectives.

According to Kumar (2011), data collection and analysis can be conducted at the same time in an iterative manner in order to allow analysis results to consequently guide preceding data collection. Data analysis for this study involved coding of all interview data and identification of themes. Therefore, qualitative content analysis was applied in order to understand social phenomena holistically because of the limited prior knowledge about the subject to be researched (Elo & Kyngas, 2008). The interpretivist approach is concerned with extracting knowledge and rich understanding through interviews (Klein & Myers, 1999).

Data analysis followed steps for inductive, qualitative content analysis through the procedure identified by Miles and Huberman (1994):

Step 1: Data reduction. The interviewer reviewed the field notes and interview scripts multiple times in order to organize data according to a coding scheme and also reduce irrelevant data. Since this study applied a middle range approach, the following themes were identified *a priori* from the literature: concerns, experience, expectation, knowledge, social influence, attitudes and social support. Thus, representing a deductive approach, nonetheless, the study was open to new emerging themes which represented an inductive element.

Step 2: Data display. Data were then sorted according to categories in order to identify similarities and difference (patterns and relationships) within the themes. This process involved dividing data into manageable themes and patterns (Mouton, 2001) and also reflected what respondents had said in the interview and matched those responses into the underlying theory as well as ensuring there was sufficient evidence to support the theory (Gaskell, 2000).

Step 3. Conclusion drawing/verification. This process allowed the re-

searcher to draw conclusions based on the data display outcomes.

4.6. Sampling Methods and Techniques

Purposive sampling refers to a technique applied in a qualitative research to extract a rich understanding of phenomena using limited resources (Patton, 2002). Purposive sampling allows a researcher to select participates based on their knowledge about a phenomenon, their ability to communicate the subject matter. A combination of purposive and snowball sampling was applied. According to Bhattacherjee (2012), purposive sampling is applicable when both data collection and analysis are conducted at the same time. Purposive sampling applies when respondents are likely to provide and share information about a phenomenon whereby little is known about it (Kumar, 2011).

Snowball sampling involves selecting participants through a network or group then request them to recommend other participants (Kumar, 2011). The interview used a semi-structured with an open-ended approach (Neuman, 2006). Dates for the interview were July-August 2016, and each interview took an hour and were conducted in English because it is a commonly spoken language in Gauteng. Parents were identified at the parental spring festival across Gauteng. Fridlund and Hildingh (2000) suggested between one to thirty (1 - 30) participants for a qualitative research. Therefore, this study sample was ten (10) parents.

4.7. Adequacy and Trustworthiness

Denzin and Lincoln (2005) identified credibility as a factor to be considered when conducting a qualitative study in order to determine the trustworthiness of findings. Creditability was demonstrated as all participants were asked the same questions, and also the researcher was neutral and did not influence participants in answering questions. The researcher also reflected professionalism and was not biased. Participants varied in terms of age, gender, education and their children's age as this variation was likely to increase transferability and strengthen credibility (Graneheim & Lundman, 2004). Moreover, credibility was demonstrated when the researcher interviewed the participants by using a voice recorder and also taking field notes during the interview.

Some literature suggests that reliability and validity are only relevant to quantitative study (Stenbacka, 2001), however, Patton (2002) argued that qualitative study should also be concerned with validity and reliability. Reliability takes the form of trustworthiness in qualitative research (Seale, 1999). The experience of the participants was precisely represented which highlighted that the study is trustworthy and the interviews were recorded and transcribed and communicated with the participants to validate the transcripts.

5. Findings and Discussions

This section contains the results of the data analysis as well as the discussions of the findings. The study initially focused on the use and non-use of a content fil-

tering software (technology), however, results show that parents were not using the content filtering software. This section discusses the revised conceptual framework and is divided into three components (technology, children's activities and strategies to monitor children's activities online).

In this section, the discussions of the data analysis are linked back to the study objectives through the revised conceptual framework:

- To explore strategies to monitor children's activities online.
- To understand the extent in which parents use content filtering software among parents in Gauteng.
- To explore different content filtering software available.
- To understand parents' knowledge, social support, social influence, experience, expectations, concerns, attitudes and affordability towards the use of strategies to monitor children's activities online.

The study discovered that parents are not using content filtering software and as a result, do not have experience with regard to the software. With that being said, parents disclosed that they use other strategies to monitor their children's activities and protect them online. The study also found that parents were not using the technology but did have an interest in their children's activities online. SCT has been demonstrated to be an effective theoretical framework to address human behaviour, and thus, it was useful to explore parents' behaviour with regards to their children's activities. Since parents did not have experience or never used content filtering software, the study did not explore different content filtering software as stated in the study objectives.

Demographics

The sample of this study included 10 participants, two (2) men and eight (8) women. The men were 35 and 36 years old and their professions were in technology and digital media, while women were between the ages of 31 to 45 and their professions ranged from finance, banking, insurance, media and beauty industry. Children were between the ages of 10-17 years old. Parents were from different racial groups (Indian, Black, white and coloured) and their qualification varied from a college degree to Masters degrees.

Research results

This section covers the results of the data analysis. The results are categorised according to the pre-identified and emergent themes. Bandura (2001) emphasised that the results of a study can be organized based on the both predefined and emergent themes from the data. The presentation of the current study results includes direct quotes which added to the emerged from the participant responses and also predefined themes.

The first section was to discuss the respondents' understanding of content filtering software. The rest of the questions were categorised based on the pre-identified themes.

Content filtering software

One of the interview questions was to discover whether parents use content filtering software and their awareness of the software. Ten parents were inter-

viewed and none of them used content filtering software. The most common reason for non-use was due to lack of awareness or knowledge about the content filtering software. However, some of them highlighted that they had other strategies in place to prevent their children from accessing harmful content:

"*No I don't. I wasn't aware of it.*" (Respondent 1)

"*No. Ignorance and not aware of it*" (Respondent 6)

Chaudron (2015) recommended that further research needs to be conducted which focuses on creating awareness on the use of parental controls and protecting children online.

The themes were divided into two major elements which are technology and children's activities which were guided by the findings of the study. These were then, categorized using SCT through behavioural, personal and environmental influences.

5.1. Revised Conceptual Framework

The study initially focused on the use and non-use of content filtering software and data analysis revealed new emerged themes which will be discussed individually and in detail, and were added to the conceptual framework. Thus, the findings led to the study aligning the new themes and revising the research objectives and purpose. The revised framework encompassed themes which were extracted from the literature and the emerged themes were added to the revised framework. Strategies were added as a fourth component to the conceptual framework which covers additional emergent themes and consists of these themes: communication, limiting of time spent online, deactivating data, browsing history and phone settings. All new emergent themes are reflected in italic and below is a revised conceptual framework (Figure 2):
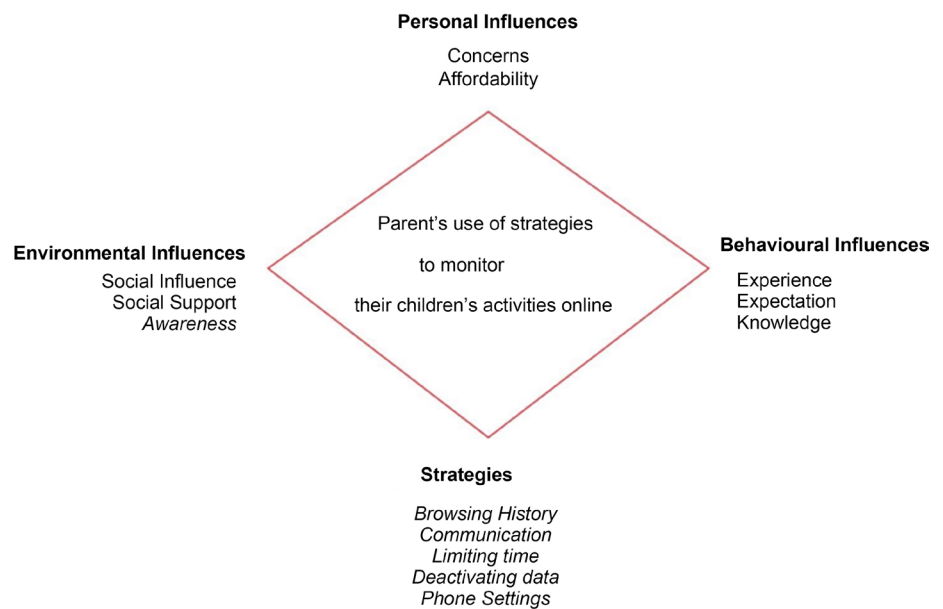

Personal Influences
Concerns
Affordability

Environmental Influences
Social Influence
Social Support
Awareness

Parent's use of strategies
to monitor
their children's activities online

Behavioural Influences
Experience
Expectation
Knowledge

Strategies
Browsing History
Communication
Limiting time
Deactivating data
Phone Settings

Figure 2. Revised conceptual framework.

5.2. Technology

Technology is rapidly changing and is affecting how people view the world and thus, SCT becomes a key framework to understand behaviour (Ratten & Ratten, 2007). This section looks at the study findings based on how technology (content filtering software) influences the four components of the conceptual framework (behavioural, personal, environmental influences and strategies). Technology has given society the privileges to advance our knowledge. This advancement has allowed us to use our mobile phones not only for phone calls and messages but also for accessing social networking sites, communication with people across the world and as well as sharing content. This section covers technological findings relating to the personal, environmental, behavioural influences and strategies. Thus, attitude is no longer relevant to the study as it was aimed at understanding parents' attitude towards the technology.

5.2.1. Personal Influences

This section discusses personal influences (concerns and affordability) related to technology amongst parents with the regard to the use or non-use of the content filtering software.

1) Affordability

Researchers have recommended that content filtering software should be less costly or free to parents to create awareness and also encourage use (Ofcom, 2012; Marais et al., 2011). This was supported by the findings as one interviewee highlighted that if the content filtering software is affordable then they will use it, but on condition, it does not block content which is relevant to their children's research assignments.

Respondents reported that apps are now free, and so, if this software is available in an app which will be convenient to use, then it should be free and be easy to use.

Respondents carry different views with regard to affordability of the content filtering software as some stated that affordability is not a concern or reason for not using content filtering software, however, the software should still be free in order to encourage use:

"*The software must be free because apps are now free.*" (Respondent 9)

"*… due to affordability.*" (Respondent 7)

"*… for the protection of the children, so every parent should have access to it.*" (Respondent 6)

There is a common ground about affordability not being a concern between literature and findings as Delen et al. (2015) revealed that affordability is not a concern for parents, this has been highlighted by some parents. Avaa (2014) recommended that content filtering software should focus on filtering only harmful content, noted that although this might have budget restrictions, it's a better approach rather than blocking an entire website.

2) Concerns

Concern about the software

One of the research objectives was to understand parents' concerns and respondents stated that they have used various strategies to monitor their children online activities. Literature revealed that parents do have concerns on various content filtering softwares available which could block relevant educational information. Some parents are concerned with content distributed online and attempt to monitor their children's activities online (McAfee, 2012). The study findings confirmed that parents are concerned about availability of content online as well as whether the software won't block content which is not intended to be blocked, while another respondent pointed at the time and effort a parent needs to spend setting up content filtering software.

"*Open free PC at the gym do not have such filtering and also at a friends' home or schoolmate.*" (Respondent 2)

"*My concern is about the extent in which the software blocks content, how will it not block content which is beneficial to children*?" (Respondent 1)

"*Filtering software requires a lot of time and effort to configure and it is not worth it because the challenge is the free Wi-Fi at the restaurant*" (Respondent 7)

5.2.2. Behavioural Influences

Behavioural influences cover experience, expectation and knowledge of parents with regard to technology and various strategies parents use. SCT suggests that observation play an important role in influencing behaviour even for parents. All these themes were identified in the literature review and the outcome will be discussed below.

1) Experience

The findings discovered that respondents do not have experience with the use of content filtering software, however, they use various strategies to monitor their children's activities. This concur well with the literature as Livingstone et al. (2012) demonstrated that there is a low usage (27%) of the technology and other studies further revealed that a relatively small number of parents (two parents from twenty-two (22) surveyed) used a tracking software as well as their own experience to navigate the internet controls (Özgür, 2016). The present study found that all parents are not using the technology, however, the sample size was not sufficient to be able to generalise findings. This was also demonstrated in the study findings which showed that all parents used other strategies such as monitoring their children's internet history, deactivating data, limiting time, communication, and phone settings. Therefore, parents used their own experience to protect their children from harmful content online.

2) Knowledge

Respondents were asked whether they communicate to their children about the importance of a content filtering software, however, because none of them uses the software, they have never communicated about it. Another question was to understand if respondents believed that exposure to the internet poses risks to their children, and 80% agreed because the internet is not controlled and therefore they can be exposed to harmful content such as nudity and violence:

"*If is not controlled, then, yes.*" (Respondent 4)

Respondents explained that they do communicate to their children about the importance of understanding social media and how to use it, and harmful content.

Another question was about whether respondents were aware of the type of content children access online. Most of the respondents are aware of their children's activities online and mentioned that they stream YouTube videos, play games and watch cartoons.

"*YouTube videos for songs and lyrics or Television programmes.*" (Respondent 2)

"*They play games.*" (Respondent 4)

"*I do not have* 100% *full control of what she watches but when I check she is always watching cartoons.*" (Respondent 3)

Özgür (2016) conducted a study to understand parents' knowledge of the internet and risk associated with the internet and the results showed that 55% of parents reported having not used any tools to protect their children from online harmful content because they do not have the knowledge of accessing the tool. Lack of knowledge is one of the reasons for non-use of the content filtering software by parents (Marais et al., 2011).

3) Expectations

Although parents did not use the content filtering software, responses (30%) regarding expectations of a content filtering software highlighted that it should be able to block and restrict sites which are not suitable for children, while others (20%) expected the content filtering software to notify the parents when children attempt to access sites which are blocked.

"*Limit what she can access, view what she tried to access.*" (Respondent 10)

"*Alerts/Notifications and monitoring.*" (Respondent 8)

"*I expect the software to allow parents to restrict access through blocking adult content*" (Respondent 3)

Ofcom (2012) found that some parents do not use content filtering software due to the effort expected in setting up such software. Another study found that some parents had a higher expectation regarding the software, although they were not aware of their children activities online, and was due to a lower level of education (Alvarez et al., 2013).

5.2.3. Environmental Influences

This section covers technological components (awareness of software) of the conceptual framework. Awareness emerged as a new theme and interviewees offered diverse responses about their lack of awareness regarding the content filtering software.

Awareness on the internet safety has been in the forefront of many organisations across the globe regarding protecting children from exposure to online harmful content (Valcke, De Wever, Van Keer, & Schellens, 2011). Majority of the parents revealed that they were not aware of the content filtering software

and, therefore, do not use it to protect their children online but use other strategies.

The study further revealed that parents would appreciate support with regard to using content filtering software and strategies available to monitor children's activities online, support in terms of training, notification of sites their children attempted to access and also automated reports regularly which state their children's activities online.

Awareness of software

Awareness of software focuses on respondents' feedback on the content filtering software. The findings revealed that all respondents were not aware of the content filtering software, and further emphasized that awareness campaigns need to be conducted to inform parents about such software and protect children from accessing harmful content. Respondents further revealed that such software will be important to protect their children from harmful online content, and for sharing knowledge:

"... *If the government would create a campaign, I would have been more informed and by the time I get my child a smartphone, I would have made sure that I installed a content filtering software.*" (Respondent 3)

"*Yes, for knowledge sharing.*" (Respondent 8)

"*For protection of children.*" (Respondent 6)

The findings revealed a need for training for parents and also government intervention in a way of a campaign to share knowledge will be beneficial for parents in order to protect their children online. This was also supported by the literature as (Chaudron, 2015) highlighted that Training and awareness campaigns on how to use technology to protect children online should be facilitated either by employers and industry.

5.3. Children's Activities

The internet plays an important role in the lives of children to advance their knowledge, parents are expected to guide their children in order to avoid them from accessing harmful content (Dueranger & Livingstone, 2012). The study findings revealed that parents monitor their children's activities using various strategies and this section covers how parents monitor their children's activities online. Although the intention of the study was to apply SCT to understand the use and non-use of the technology, the findings showed that parents are not using the technology but that they use strategies to monitor their children's activities online. So, this led to the alignment of the study to focus on the use of strategies to monitor children's activities online.

SCT views people as self-organised and self-regulated as compared to being reactive to external influences (Bandura, 2001). Self-regulation captures the ability for individuals to influence their own actions which affect their environment influences (Bandura, 1986). Thus, since the present study has found that parents are not using content filtering software, this section will reflect on

how parents are currently applying self-regulation on their children's activities online through various strategies.

The next section covers parents understanding of their children's activities online with respect to the personal, environmental, and behavioural influences.

5.3.1. Behavioural Influences

This section covers parents' expectation regarding children's behaviour online and experiences on their children's activities online.

1) Expectation

The findings revealed that parents indicated they expect their children's behaviour online to be safe and communicate to them when faced with such content. One parent reported they trust their children, therefore, expect them to watch content appropriate to their age.

"*She saw a topless man during an advert break while watching a movie and she reported it to me as she thought they were showing adult stuff.*" (Respondent 3)

"*I expect my children to communicate at all times when exposed to inappropriate images.*" (Respondent 4)

"*I trust their innocence, so I expect them to only watch kiddies show.*" (Respondent 6)

"*He can be exposed to harmful content such as violence, pornography.*" (Respondent 9)

Delen et al. (2015) indicated that parents need to set expectations with their children which indicate the standard process of using the technologies in order to protect them from harmful content. This has been highlighted in the findings as other parents (20%) indicated that they trust their children, therefore, do not monitor their activities. Mitchell et al. (2005) found that 60% of parents do not use content filtering software and this was because they trusted their children.

2) Experience

One of the research objectives was to understand parents' use of strategies to monitor their children's activities online. The study indicated that parents know what their children access online, however, there was no indication that they participate in their children's activities.

"*I do not have* 100% *control of what she watches, but when I look she's usually watching cartoons.*" (Respondent 3)

"*I allow her to download games on my phone and am less effort for me.*" (Respondent 5)

The findings revealed that some parents allowed their children to perform certain activities online as a strategy to monitor their activities such as downloading and playing games, watching cartoons and YouTube videos.

Parents need to engage with their children in order to understand their experiences online (Delen et al., 2015), and this can be done through participating in their activities online and also support them which will improve parents' experiences (Davies, 2011).

5.3.2. Environmental Influences

This section covers environmental influences of the conceptual framework. It consists of emerging here which is awareness, social support and social influence.

1) Awareness of children's activities

Sorbring and Lundin (2012) conducted a study which revealed that some parents believe they have been aware of their children's activities online. The findings support this fact as respondents (80%) reported that they are aware of the activities and content their children access online because their children use smartphones and home computers to play games. Other parents mentioned that their children use YouTube (10% percent) to view songs and lyrics and cartoons (10% percent):

"*You Tube videos for songs and lyrics or TV programmes.*" (Respondent 2)

"*Yes, Cartoons.*" (Respondent 3)

In a study to determine the level of parental awareness with regard to children activities online, Hamade and Samir (2015) discovered that parents who were aware of their children's activities online were more engaged and aware of the type of activities their children perform online (Delen et al., 2015).

2) Social Support

It was revealed that majority of the parents would benefit from social support in terms of understanding content filtering software functionality in order to be able to use the software. Respondents were asked about whether support and training will be necessary, although none of them has used the content filtering software before, some respondents (80%) did highlight that support and training would be beneficial to guide parents who do not have sufficient knowledge, to reduce time for research and as well as for the protection of children.

The finding supports this fact as parents reported that social support will be beneficial through technology-driven solutions such as automated reporting (online activities and notifications) and continuous online support:

"*Yes. Automated reports (what was blocked and amount of data spend) and it doesn't have to be an individual support.*" (Respondent 2)

"*Technical support must be available.*" (Respondent 3)

"*Training will be useful as some parents are not technologically savvy.*" (Respondent 3)

"*I have no idea how to set it up so that I can only block harmful content*" (Respondent 4)

Social support has been proven to be useful for parents in protecting their children online (Ktoridou et al., 2015). Further 20% of respondents reported that they do not need any training as they will be fine setting up content filtering software due to their knowledge about technology, while others believed that it is a personal accountability.

"*No training needed, training will be too much to deal with and I can setup software using my knowledge.*" (Respondent 2)

"*No, it's a personal accountability.*" (Respondent 9)

3) Social Influence

Parents reported that they would use content filtering software if they found that other parents would use it, while (20%) reported that they would use it based on other parents' recommendation, and others (30%) reported that they would use it for the safety of their children. All respondents did not know anyone using content filtering software. However, the majority of the respondents have highlighted protection as the reason to consider using the content filtering software.

Respondents (50%) reported that they would use the technology if they knew other parents who are using the software and

"*Yes. Because of the need to protect children.*" (Respondent 4)

"*I will use it as well for the safety of my children*" (Respondent 7)

"*A lot of parents can benefit from using this software.*" (Respondent 2)

Respondents were also asked about the government interference through enforcing of the content filtering software. The findings showed that respondents (70%) will use the content filtering software if the government were to enforce it, while others reported that it's for the protection of their children as well as:

"*Yes, for the purpose of protecting my kids.*" (Respondent 4)

"*Because most parents buy their children smartphones without thinking of exposure of harmful content, therefore, government will assist a lot.*" (Respondent 10)

"*It will be ideal for protecting my child because I cannot watch her 24 hours*" (Respondent 8)

Meanwhile, other respondents (30%) reported that government cannot enforce such decisions and also the level of comfort regarding harmful content will differ between parents, so the government cannot enforce it:

"*My level of comfort with content and information might be different from another person. Therefore, that will create difficulty.*" (Respondent 2)

"*Don't like people forcing things on me, so I will not use it if they do.*" (Respondents 9)

In addition, some parents highlighted that they would use content filtering software if the government or industry enforce it in order to comply. Compliance has been viewed as one of the components for driving social influence (Venkatesh & Davis, 2000).

5.3.3. Personal Influences

Concerns

There is a growing trend amongst parents on the use of the internet by children (Jin, 2013). This growing trend still reflect in the findings which revealed that parents become concerned with the availability of harmful content which can be accessed by their children.

Concern about the harmful content

Of the concerns were based on the advertisements while children are watching movies or television, highlighting that although parents can try block harmful

content, do not believe that the software will have the ability to block such adverts.

"My biggest concern is the ads, so I don't know if there's a way in which those ads can be blocked and filtered." (Respondent 3)

Hopper-Losenicky (2010) stated that blocking and filtering of online content can be futile in instances whereby there are adverts and games within webpages. The study found that although there are contradicting facts about ways in which parents tackle the concerns, most of them agree to the fact that exposure to the internet poses many risk to their children. With literature revealed that parents must take accountability of their children and the type of content they access online (Kim, 2007). This agrees with the finding as some of the parents (20%) responses as they have believed that government should not intervene as it's a personal accountability to ensure that their children are safe online.

Some parents (80%) argued that facilities such as schools, adverts during movies and television programmes for children and gyms need government interference as they cannot be accountable while their children are away from them. Overall, it has been found that parents are concerned with exposure of content which their children access online, and therefore, with assistance from schools, other parents and other public areas, concerns about the filtering content software and exposure of harmful content can be addressed.

5.4. Strategies for Monitoring Children's Activities

Strategies were one of the themes which emerged through data collection. One of the sub-questions was to discover strategies parents use to monitor their children online. The study findings indicated that some respondents (80%) use strategies for monitoring their children's activities online such as browsing history, communication, time spent online, deactivating data, parents' presence and settings on the computers and phones. The other respondents (20%) trust their children and therefore do not have any strategy.

5.4.1. Browsing History

The findings revealed that 40% of the respondents browse history as a method of monitoring their children's activities online. Some parents highlighted that they use the device history, while others stated that they do spot checks on who their children are chatting with.

"*She uses my iPad so I always go and check history. I do not have* 100% *of what she watches but when I check she is always watching cartoons.*" (Respondent 2)

"*We do spot checks on history in order to check who they are chatting to. The software could be useful because of its presence full time.*" (Respondents 3)

In a study conducted by Sorbring and Lundin (2012), which looked at the parents' insights into their children's internet use and found that most parents had a good idea of what children were doing online. The study found that parents use various methods to monitor and protect their children from harmful content such as browsing history. Delen et al. (2015) conducted a study to un-

derstand whether parents are aware of their children's activities, and the results showed that parents used browsing history.

5.4.2. Communications

Communication was discovered to be one of the strategies which respondents (20%) use in preventing their children from accessing harmful content online. Parents highlighted that they discuss the danger of harmful content online with their children regularly, as well as talking about harmful content and also benefits of the internet. Lastly, one parent pointed that communication is key as it allows children to be open by reporting harmful content whenever it reflects either on television or online. Some interviewees stated that they communicate with their children about the danger of online content, share passwords to their mobile phones and about their online experiences and activities.

"*We talk about it weekly because they understand social media more than us so we discuss social media and how to use it.*" (Respondent 2)

"*In a sense, I do, if she watches something on television and she sees a topless man, she literally says this is not for kids. Those ads been played before the stuff she wants to watch then it becomes a problem.*" (Respondent 3)

Sorbring and Lundin (2012) found that parents who have an open communication with their children are aware of their activities online because they discuss it freely. Communication has been showed to improve interaction between parents and children as well monitoring children's activities online (Liau, Koo, & Ang, 2008; Valcke et al., 2011). Thus, communication proved to be a strategy in monitoring children's activities online and ensuring that they are not exposed to harm.

5.4.3. Limiting Time

The study findings also proved that some parents limit time children spent online as a strategy for monitoring their children's activities online. The study found that some parents limit time children spend online as a strategy to protecting them from online harm. One interviewee reported that their children access the internet for an hour in the afternoon after school to watch YouTube videos and lyrics for an hour under supervision.

"*The girls' usage of the internet is limited to a certain time during the day.*" (Respondent 2)

Martínez de Morentin, Cortes, Medrano and Apodaca (2014) conducted a study which aimed at discovering the time children spent on the internet, and it was revealed that children spent 7 hours per week browsing the internet. Studies have found 62% of parents monitored their adolescents online by checking their Internet activities or enforcing rules (Dowdell, 2011). Limiting access to allow children to access the internet for a certain duration during the day was highlighted as one of the strategies which were outlined during the interviews.

5.4.4. Deactivating Data

Deactivating data was one of the strategies from data collected. It refers to the

switching data mode off during the time that children are using a device in order to restrict them from accessing any harmful content through the internet. When the interviewee was asked about mature content on their mobile phones which children could access, they've reported that they switch off mobile data to protect their children from accessing harmful content while using their cell phone to play games.

"*I allow my child to use my cell phone only when data is off to play games*" (Respondent 9)

Studies show that parental supervision is important as it allows parents to easily monitor their children's activities online through various approaches as well as improving children's behaviour online (O'Neill, Livingstone, & McLaughlin, 2011; Davies, 2013). Thus, by ensuring that children play games when data is off, it will eliminate access to the internet and as well as exposure to harmful content.

Phone settings

The findings revealed that there is a clear indication that some parents are aware of their children's activities online and use device settings by blocking certain folders, while other parents share a password with their children to allow them access to their children's phone at any point. One of the interviewees reported that they setup a password for videos and images thereby preventing access to certain content which may be harmful to their children.

"... *I only have age restriction settings on my phones operating systems.*" (Respondent 3)

"*I have never used software but I have access to his phone so I can track who he chats with and what he says on social media*" (Respondent 1)

Parents use various strategies to understand and manage children's use of the internet (Sorbring and Lundin, 2012). In conclusion, parents highlighted different strategies which they apply to protect their children online.

6. Conclusion

The main contribution of this study includes identifying of strategies which consist of themes that emerged through data collection which parents identified as a strategy to monitoring activities and protecting their children's online. Initially, the study used SCT to understand how parents' behaviour is influenced by personal, behavioural and environmental influences, and the results revealed that although parents do not use the technology, they use other strategies. Thus, the study applied SCT themes to analyze and thus, the themes were categorized into technology and children's activities. So, themes relating to technology were derived from behavioural, personal and environmental influences, while themes relating to children's activities were derived from personal, behavioural and environmental influences as well as the newly emerged component which is one of the strategies.

Literature has shown that parents' perceptions regarding the use and non-use

of content filtering software differ based on knowledge, experience and expectations, social support and social influence. Themes were obtained through literature review and some emerged through data analysis. The literature review revealed that knowledge, social support, social influence, experience, expectations, concerns and affordability contributed to the extent in which parents use content filtering software and strategies to monitor their children's activities online. The findings revealed browsing history, communications, limiting time, deactivating data and phone settings as strategies parents use to monitor children online. In conclusion, this study contributes to the body of literature on parents' use of strategies to monitor their children's activities online through four components depicted in the revised conceptual framework.

Limitations

Sampling in this study focuses only on parents residing in Gauteng with children who have access to computer and smartphone at home. In addition, this research did not sample children in order to understand their experience with harmful content because of the time constraints and ethical considerations. Research scope is limited to exposure of harmful content distributed online which can affect children. It is not in the scope of this study to focus on other types of filtering software as this would broaden the scope of the research. Lastly, the study depends on a single source of data, therefore, no triangulation is possible.

The study separated the components by technology and children's activities and further themes into all the components. The study found that all parents are not using content filtering software because they are not aware and lack knowledge of such software.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

References

Aceto, G., & Pescapé, A. (2015). Internet Censorship Detection: A Survey. *Computer Networks, 83,* 381-421. https://doi.org/10.1016/j.comnet.2015.03.008

Agarwal, R., Sambamurthy, V., & Stair, R. (2000). Research Report: The Evolving Relationship between General and Specific Computer Self-Efficacy—An Empirical Assessment. *Information Systems Research, 11,* 418-430.
https://doi.org/10.1287/isre.11.4.418.11876

Akdeniz, Y. (2010). To Block or Not to Block: European Approaches to Content Regulation, and Implications for Freedom of Expression. *Computer Law and Security Review, 26,* 260-272. https://doi.org/10.1016/j.clsr.2010.03.004

Alvarez, M., Torres, A., Rodriguez, E., Padilla, S., & Rodrigo, M. J. (2013). Attitudes and Parenting Dimensions in Parents' Regulation of Internet Use by Primary and Secondary School Children. *Computers and Education, 67,* 69-78.
https://doi.org/10.1016/j.compedu.2013.03.005

Anandarajan, M., Igbaria, M., & Anakwe, U. (2002). IT Acceptance in a Less-Developed Country: A Motivational Factor Perspective. *International Journal of Information Management, 22,* 47-65. https://doi.org/10.1016/S0268-4012(01)00040-8

Andrews, K. L., Jones, S. C., & Mullan, J. (2013). Perceptions and Practices of Adults with Asthma: A Social Cognitive Analysis. *Journal of Asthma & Allergy Educators, 4,* 49-56. https://doi.org/10.1177/2150129712454882

Avison, D., Lau, F., Nielsen, P. A., & Myers, M. (1999). Action Research. *Communications of ACM, 42,* 94-97. https://doi.org/10.1145/291469.291479

Bandura, A. (1977). Self-Efficacy: Toward a Unifying Theory of Behavioral Change. *Psychological Review, 84,* 191-215. https://doi.org/10.1037/0033-295X.84.2.191

Bandura, A. (1989). Social Cognitive Theory. In R. Vasta (Ed.), *Annals of Child Development. 6. Six Theories of Child Development* (pp. 1-60). Greenwich, CT: JAI Press.

Bandura, A. (2001). Social Cognitive Theory: An Agentic Perspective to Be an Agent Is to Intentionally Make Things Happen by One's Actions. Agency Embodies the Endowments, Belief Systems, Self-Regulatory Capabilities and Distributed Structures and Functions Through Why. *Annual Review of Psychology, 52,* 1-26.
https://doi.org/10.1146/annurev.psych.52.1.1

Barlow, J. P. (1996). *A Declaration of the Independence of Cyberspace.*
https://projects.eff.org/~barlow/Declaration-Final.html

Behun, R. J., Sweeney, V., Delmonico, D. L., & Griffin E. J. (2012). Filtering and Monitoring Internet Content: A Primer for Helping Professionals. *Sexual Addiction and Compulsivity, 19,* 1-2. https://doi.org/10.1080/10720162.2012.666425

Benner, P., & Wrubel, J. (1989). *The Primacy of Caring: Stress and Coping in Health and Illness.* New York: Addison-Wesley.

Bhattacherjee, A. (2012). *Social Science Research: Principles, Methods, and Practices. Textbooks Collection* (Book 3). Florida: Open Access Textbooks Collection.

Bourdillon, S. (2013). Online Monitoring, Filtering, Blocking. What Is the Difference? Where to Draw the Line? *Computer Law & Security Review, 29,* 702-712.
https://doi.org/10.1016/j.clsr.2013.09.006

Brady, E., & Guerin, S. (2010). "Not the Romantic, All Happy, Coochy Coo Experience": A Qualitative Analysis of Interactions on an Irish Parenting Website. *Family Relations, 59,* 14-27. https://doi.org/10.1111/j.1741-3729.2009.00582.x

Brown, S. A., & Venkatesh, V. (2005). Model of Adoption of Technology in Households: A Baseline Model Test and Extension Incorporating Household Life Cycle. *MIS Quarterly, 29,* 399-426. https://doi.org/10.2307/25148690

Burns, N., & Grove, S. K. (2009). *The Practice of Nursing Research: Appraisal, Synthesis, and Generation of Evidence.* St. Louis, MO: Saunders Elsevier.

Creswell, J. W. (1998). *Qualitative Inquiry and Research Design: Choosing among Five Traditions.* Thousand Oaks, CA: Sage.

D'Udekem-Gevers, M., & Poullet, Y. (2001). Internet Content Regulation Content Regulation: An Analysis of Some Recent Statements—Part I. *Computer Law and Security Reviews, 17,* 371-378. https://doi.org/10.1016/S0267-3649(01)01103-7

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science, 35,* 982-1003. https://doi.org/10.1287/mnsc.35.8.982

Delen, E., Kaya, F., Ritter, N., & Sahin, A. (2015). Understanding Parent's Perceptions of Communication Technology Use. *International Online Journal of Educational Sciences, 7,* 22-36. https://doi.org/10.15345/iojes.2015.04.003

Demeyer, K., Lievens, E., & Dumortier, J. (2012). Blocking and Removing Illegal Child Sexual Content: Analysis from a Technical and Legal Perspective. *Policy and Internet, 4,* 1-23. https://doi.org/10.1002/poi3.8

Denzin, N. K., & Lincoln, Y. S. (2005). Introduction: The Discipline and Practice of Qualitative Research. In N. K. Denzin, & Y. S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research* (3rd ed., pp. 1-32). Thousand Oaks, CA: Sage.

Dhir, M., Kaur., P., Chen., S., & Lonka., K. (2016). Understanding Online Regret Experience in Facebook Use-Effects of Brand Participation, Accessibility and Problematic Use. *Computers in Human Behavior, 59,* 420-430.
https://doi.org/10.1016/j.chb.2016.02.040

Effective Measure (2017). *South Africa Online-February 2017.*
https://www.effectivemeasure.com/blog/south-africa-online-february-2017/south-africa-online-february-2017-png/

Elo, S., & Kyngas, H. (2008). The Qualitative Content Analysis Process. *Journal of Advanced Nursing, 62,* 107-115. https://doi.org/10.1111/j.1365-2648.2007.04569.x

Film and Publication Board (2014). *Draft Online Content Regulation Policy.*
https://www.fpb.org.za/wp-content/uploads/2016/08/online-content-regulation-policy-2016.pdf

Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research.* Boston, MA: Addison-Wesley Publishing Company.

Freedom House (2012). *Freedom on the Net.*
https://freedomhouse.org/sites/default/files/FOTN%202012%20summary%20of%20findings.pdf

Graneheim, U. H., & Lundman, B. (2004). Qualitative Content Analysis in Nursing Research: Concepts, Procedures and Measures to Achieve Trustworthiness. *Nurse Education Today, 24,* 105-112. https://doi.org/10.1016/j.nedt.2003.10.001

Hamade, N., & Samir, K. (2015). Website Parental Awareness and Mediation of Children's Internet Use in Kuwait. *12th International Conference on Information Technology—New Generations*, Las Vegas, 13-15 April 2015.
https://doi.org/10.1109/ITNG.2015.107

Hsu, M. H., Chiu, C. M., & Ju, T. L. (2004). Determinants of Continued Use of the WWW: An Integration of Two Theoretical Models. *Industrial Management and Data Systems, 104,* 766-775. https://doi.org/10.1108/02635570410567757

Imenda, S. (2014). Is There a Conceptual Difference between Theoretical and Conceptual Frameworks? *Journal of Social Sciences, 38,* 185-195.
https://doi.org/10.1080/09718923.2014.11893249

Jin, C. H. (2013). The Effects of Individual Innovativeness on Users' Adoption of Internet Content Filtering Software and Attitudes toward Children's Internet Use. *Computers in Human Behavior, 29,* 1904-1916. https://doi.org/10.1016/j.chb.2013.03.009

Kim, Y. (2007). A Study of PICS/RDF-Based Internet Content Rating System: Issues Related to Freedom of Expression. *Journal of the Korean Society for Information Management, 24,* 271-297. https://doi.org/10.3743/KOSIM.2007.24.3.271

Kinikoglu, B. (2014). Evaluating the Regulation of Access to Online Content in Turkey in the Context of Freedom of Speech. *Journal of International Commercial Law and Technology, 9,* 36-55.

Klein, H. K., & Myers, M. D. (1999). A Set of Principles for Conducting and Evaluating Interpretive Field Studies in Information Systems. *MIS Quarterly, Special Issue on Intensive Research, 23,* 67-93. https://doi.org/10.2307/249410

Kumar, R. (2011). *Research Methodology: A Step-by-Step Guide for Beginners* (3rd ed.). Thousand Oaks, CA: Sage Publications Inc.

Lambin, J. J. (2000). *Market-Driven Management. Strategic and Operational Marketing*. Australia: Palgrave Macmillan Education Australia.

Liau, A. K., Khoo, A., & Ang, P. H. (2008). Parental Awareness and Monitoring of Adolescent Internet Use. *Current Psychology, 27,* 217-233. https://doi.org/10.1007/s12144-008-9038-6

Livingstone, S., & Bober, M. (2005). *UK Kids Go Online: Final Report of Key Project Findings*. London: London School of Economics and Political Science.

Livingstone, S., & Bober, M. (2006). Regulating the Internet at Home: Contrasting the Perspectives of Children and Parents. In D. Buckingham, & R. Willett (Eds.), *Digital Generations: Children, Young People, and New Media* (pp. 93-113). Mahwah, NJ: Lawrence Erlbaum Associates.

Livingstone, S., Ólafsson, K., O'Neill, B., & Donoso, V. (2012). *Towards a Better Internet for Children: Findings and Recommendations from EU Kids Online to Inform the CEO Coalition*. LSE, London: EU Kids Online. http://eprints.lse.ac.uk/50228/1/__Libfile_repository_Content_Livingstone%2C%20S_Child-ren%E2%80%99s%20use%20of%20online%20technologies%20in%20Europe%28lsero%29.pdf

Miles, M., & Huberman, A. M. (1994). *Qualitative Data Analysis*. Thousand Oaks, CA: Sage Publications.

Mitchell, K. J., Finkelhor, D., & Wolak, J. (2003). The Exposure of Youth to Unwanted Sexual Material on the Internet: A National Survey of Risk, Impact, and Prevention. *Youth & Society, 34,* 330-358. https://doi.org/10.1177/0044118X02250123

Mitchell, K. J., Finkelhor, D., & Wolak, J. (2005). Protecting Youth Online: Family Use of Filtering and Blocking Software. *Child Abuse and Neglect, 29,* 753-765. https://doi.org/10.1016/j.chiabu.2004.05.008

Mthembu, M. A. (2012). High Road in Regulating Online Child Pornography in South Africa. *Computer Law & Security Review, 28,* 438-444. https://doi.org/10.1016/j.clsr.2012.05.010

Musa, P., Meso, P., & Mbarika, V. (2005). Toward Sustainable Adoption of Technologies for Human Development in Sub-Saharan Africa: Precursors, Diagnostics, and Prescriptions. *Communications of the Association for Information Systems, 15,* 592-608. https://doi.org/10.17705/1CAIS.01533

Myers, M. D. (2009). *Qualitative Research in Business and Management.* London: Sage.

Noll, M. G., & Meinel, C. (2005). *Web Page Classification: An Exploratory Study of the Usage of Internet Content Rating Systems*. https://www.michael-noll.com/assets/uploads/Michael-Noll_Usage-of-Internet-Content-Rating-Systems_2005-v1.1.pdf

O'Neill, B., Livingstone, S., & McLaughlin, S. (2011). *Final Recommendations for Policy, Methodology and Research*. http://www.lse.ac.uk/media@lse/research/EUKidsOnline/EU%20Kids%20II%20%282009-11%29/EUKidsOnlineIIReports/D7.pdf

Orlikowski, W. J., & Baroudi, J. (1991). Studying Information Technology in Organisations: Research Approaches and Assumptions. *Information Systems Research, 2,* 1-28. https://doi.org/10.1287/isre.2.1.1

Özgür, H. (2016). The Relationship between Internet Parenting Styles and Internet Usage

of Children and Adolescents. *Computers in Human Behavior, 60,* 411-424. https://doi.org/10.1016/j.chb.2016.02.081

Padmini, D. D., & Atkinson, S. (2012). Evaluating the Effectiveness of Free e-Safety Software. *Advances in Communications, Computing, Networks and Security, 9,* 36-41.

Patton, M. W. (2002). *Qualitative Evaluation and Research Methods* (3rd ed.). Thousand Oaks, CA: Sage.

Ratten, V., & Ratten, H. (2007). Social Cognitive Theory in Technological Innovation. *European Journal of Innovation Management, 10,* 90-108. https://doi.org/10.1108/14601060710720564

Rose, A. C. (2011). *Censorship and Content Regulation on the Internet Penn State University.*

Rust, R. T., Inman, J. J., Jia, J. M., & Zahorik, A. (1999). What You Don't Know about Customer-Perceived Quality: The Role of Customer Expectation Distributions. *Marketing Science, 18,* 77-92. https://doi.org/10.1287/mksc.18.1.77

Scharer, K. (2005). Internet Social Support for Parents: The State of Science. *Journal of Child and Adolescent Psychiatric Nursing, 18,* 26-35. https://doi.org/10.1111/j.1744-6171.2005.00007.x

Seale, C. (1999). Quality in Qualitative Research. *Qualitative Inquiry, 5,* 465-478. https://doi.org/10.1177/107780049900500402

Seidman, I. (1998). *Interviewing as Qualitative Research: A Guide for Researchers in Education and the Social Sciences* (2nd ed.). New York: Teachers College Press.

Staksrud, E., Ólafsson, K., & Livingstone, S. (2013). Does the Use of Social Networking Sites Increase Children's Risk of Harm? *Computers in Human Behavior, 29,* 40-50. https://doi.org/10.1016/j.chb.2012.05.026

Stenbacka, C. (2001). Qualitative Research Requires Quality Concepts of Its Own. *Management Decision, 39,* 551-555. https://doi.org/10.1108/EUM0000000005801

Thatcher, A., & Matthews, M. (2012). Comparing Software Piracy in South Africa and Zambia Using Social COGnitive Theory. *African Journal of Business Ethics, 6,* 1-12. https://doi.org/10.4103/1817-7417.104697

Valcke, M., Bonte, S., De Wever, B., & Rots, I. (2010). Internet Parenting Styles and the Impact on Internet Use of Primary School Children. *Computers & Education, 55,* 454-464. https://doi.org/10.1016/j.compedu.2010.02.009

Valcke, M., De Wever, B., Van Keer, H., & Schellens, T. (2011). Long-Term Study of Safe Internet Use of Young Children. *Computers and Education, 57,* 1292-1305. https://doi.org/10.1016/j.compedu.2011.01.010

Venkatesh, V., & Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science, 46,* 186-204. https://doi.org/10.1287/mnsc.46.2.186.11926

Venkatesh, V., & Goyal, S. (2010). Expectation Disconfirmation and Technology Adoption: Polynomial Modelling and Response Surface Analysis. *MIS Quarterly, 34,* 281-303. https://doi.org/10.2307/20721428

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly, 27,* 425-478. https://doi.org/10.2307/30036540

Walsham, G. (1995). The Emergence of Interpretivism in IS Research. *Information Systems Research, 6,* 376-394. https://doi.org/10.1287/isre.6.4.376