Cape Peninsula
University of Technology

**PERCEPTIONS OF COOKIE POP-UP CONSENT NOTIFICATIONS
BY ONLINE USERS IN SOUTH AFRICA**

by

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DECLARATION

I, Tandile Delihlazo, declare that the contents of this thesis represent my own unaided work and that the thesis has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

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ABSTRACT

The rapid increase in internet usage has driven businesses to embrace digital technology, leading to the widespread use of cookies for tracking and personalising user experiences. In South Africa, the adoption of cookies has become more prevalent due to the enforcement of the Protection of Personal Information Act (POPIA), which mandates businesses to safeguard user data. Cookie notices aim to promote transparency between online platform firms and their users, enhancing data protection. However, while these notifications are meant to protect user data, many online users remain vulnerable to data leakage due to a lack of understanding of the technology behind cookie consent notices. Users often find privacy rules and consent notifications time-consuming and irritating, rarely engaging with them to control the flow of their personal data.

The study investigated the perceptions of cookie pop-up consent notifications among online users in South Africa. It focused on three main questions: What do South African online users understand about the purpose of cookie consent notifications? What do they understand about the type of information that should be shared online? How do they feel about cookie consent pop-ups protecting their data?

This qualitative study utilised interviews for data collection. A purposive sample of fifteen online users in South Africa was selected for the study. The study used the Contextual Integrity Framework and the Protection of Personal Information Act (POPIA) to guide analysis and interpretation. The data was analysed thematically and interpreted subjectively. The findings revealed that online users lack confidence in the protective measures offered by consent notifications, mainly due to a lack of awareness and interaction with these notices. The notifications' unfriendly design was identified as a significant reason users ignored them and opted for acceptance to gain website access.

The research concluded that despite the importance of cookie consent notifications in protecting user data online, users perceive them as an annoying and untrustworthy technology feature. This perception is rooted in a lack of understanding of how these notifications operate. To address these challenges, it was recommended that consent notices be redesigned using a standardised format that includes an easy opt-out feature without restricting website access.

Keywords: consent, cookies, data, notifications, online users, perceptions, POPIA, privacy

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GLOSSARY

TERM	NOTES
Cookie	A short amount of code is clarified based on purpose, period, and source. This code is saved in the client's cache and transmitted back to the server every time the client connects (Prieto, 2021).
Consent Notices	Notices that give users a choice option to either share their personal information or restrict it.
Consent	Defined under POPIA as any voluntary, precise and informed statement of will that grants permission for the processing of personal data (Adams *et al.*, 2021).
Online users	This refers to people using computer or internet services who usually have a unique online user account (Hooffacker, 2022:40).
Perception	The view, comprehension or interpretation of anything.
POPIA	The Protection of Personal Information Act is South African government legislation that prevents harm to people by safeguarding their personal information, as stated in the Government Gazette of 2013 (South Africa, 2013).

CHAPTER ONE: INTRODUCTION

1.1 Introduction

Internet usage has gained more popular demand, which has driven more businesses to embrace the digital revolution. It is now easier for users to accept digital transformation when performing most of their tasks (Swiegers, 2018). The rise of online users has also motivated some parties with hidden agendas to gain profit by taking advantage of the users and exploiting the environment. The use of digital cookies that keep data about users to allow businesses to track and personalise websites has become critical in the commercial world (Gröndahl, 2020). Though the invention of cookies is for a good cause, it has been proven that there is a risk associated with keeping private data on these platforms. According to Zuboff (2019), nowadays, trackers that capture and analyse personal information have become more popular. Data collected by these cookies has a way of leaking and getting to third parties, which adds more strain to data privacy issues for users (Wagner, 2020).

The South African constitution stipulates that individuals have a human right to privacy. In addition, users' right to awareness about the processing of their data is stipulated as one of the principles in the Protection of Personal Information Act (South Africa, 2013:18). Strict standards are set for data processors and controllers in terms of informing users (Jones, 2022). This openness principle has driven the use of cookie notifications to gain popularity. Cookie consent notifications have been implemented to be a safeguard that promotes transparency between online platform firms and their users (Franken *et al.*, 2019). Though the implementation is in place, the relevance and significance of cookie notification tactics for users have received less attention in South Africa. This study employs qualitative methods to explore the perceptions of South African online users regarding cookie pop-up consent notifications; hence, interviews were used for data collection. Data was collected through semi-structured interviews with internet users in Cape Town. By understanding user perceptions, this research aims to uncover the challenges faced by online users and provide insights that could lead to more user-friendly cookie consent strategies. Additionally, the study seeks to raise awareness among users about the importance of cautious online behaviour. Ultimately, this research addresses a critical gap in understanding how cookie consent notifications impact user privacy and behaviour, aligning with the principles outlined in POPIA.

Internet usage has surged, leading to the widespread adoption of digital cookies for tracking and personalising user experiences. While cookies serve commercial purposes, they pose significant privacy risks as user data can leak to third parties. In South Africa, the Protection of Personal Information Act (POPIA) mandates that users be informed about data processing

through cookie consent notifications. However, the effectiveness of these notifications in safeguarding user privacy and their perceptions of such consent mechanisms have not been thoroughly explored. This study aims to investigate South African online users' perceptions of cookie consent notifications, addressing a critical gap in understanding how these notifications impact user privacy and behaviour.

1.2 Background to the Research Problem

Data is important to businesses in assisting them in growing sales, market share, and overall influence in their sectors. Thus, the determination to limit the usage and exploitation of a user's personal information does not appear to be a top priority for technological companies (Bishop, 2021). In addition, the emerging trend of behavioural surplus that allows companies to collect personal data for personalised advertising has imposed a high risk to users' data privacy and left them vulnerable to cyber-attacks and so forth (Zuboff, 2019). South Africa finalised the POPIA to be effective on the 1st of July 2021. The law protects users' data from being collected and used without user consent. According to Jones (2022), this law enforces website managers to add consent pop-up notifications on websites to protect user data by getting consent to collect their data. Web cookies are essential components of the internet, permitting the implementation of critical and helpful functions such as login details or keeping track of an online shopping basket (Molnar, 2020).

However, cookies also allow for tracking a user's online activities and, in so doing, can potentially eliminate online privacy (Molnar, 2020). Users appear to find digital cookie permission forms irritating, time-consuming and often difficult to understand despite impacting their online data (Gröndahl, 2020). This leads users to seek out the nearest button to remove the consent notification without anticipating the privacy implications (Bollinger, 2021). It appears that some users do not understand what these cookies entail and how they are supposed to protect their online data.

Online users often find cookie consent notifications irritating, time-consuming and difficult to understand, leading them to accept cookies without fully understanding the risks involved. Furthermore, Sharma et al. (2023) reveal that online shoppers seem to put a lower priority on privacy when providing their information to e-commerce websites, and they have difficulty identifying the dangers of having their information used by unauthorized parties during transactions. Despite being implemented to protect user data, the effectiveness of these notifications remains questionable, as they are frequently used for compliance rather than genuinely safeguarding user privacy. This study aims to fill the gap in understanding by exploring South African online users' perceptions of cookie consent notifications and

evaluating their awareness, understanding and perceived effectiveness in protecting their data. The research objectives are to assess user awareness of the purpose of these notifications, understand their perceptions of the appropriateness of information shared online, and evaluate their views on the effectiveness of cookie consent pop-ups in ensuring data privacy.

1.3 Problem Statement

1.3.1 Current status

Though cookie notifications are adopted as a protection measure for online user data, online users rarely read privacy rules or interact with cookie consent notices to control the flow of their personal data (Hildebrand & Nyquist, 2021). Users appear to find digital cookie permission forms irritating, time-consuming and often difficult to understand despite impacting their personal online data (Gröndahl, 2020). According to Nyoni et al. (2024), some participants acknowledged skipping end-user agreements and trusting data controllers to protect their information, as they believed their trustworthiness made reading the user contract unnecessary. The aim of accessing the website highly influences users to allow cookies without understanding the risks (Narayanan, 2020). This proves that most users understand how cookies work and their risks, purposes, and benefits (Jayakumar, 2021).

Businesses find data markets, where user data is exchanged, quite attractive. However, this could put user data at risk because companies and their data controllers don't always follow moral or responsible business practices (Nyoni et al., 2024). Furthermore, According to CSIR survey results, 88% of participants reported having at least one security breach, with 90% of those firms experiencing several attacks, indicating that data breaches are a problem in South Africa (CSIR, 2024).

Literature has revealed that even though cookie consent notifications have been added to protect user data online, their effectiveness is not guaranteed. The consent notification process is used for compliance without ensuring alignment with the POPIA best practice principles.

1.3.2 Future status

According to Da Veiga *et al.* (2018), when a website collects personal information, it should include a link with a clear and easily accessible privacy policy or notice. A regulator or oversight organisation should intervene and ensure that consent notices are created with the users' best interests in mind (Machuletz & Bohme, 2020). Instead of placing the burden of securing personal data on users, policy implementers and legislators should concentrate on controlling how online data is used (Hofstad & Lundqvist, 2021).

1.3.3 Consequences if the current status is not addressed

This can be a stumbling block for future technological initiatives like the fourth industrial revolution, which drives users to use online platforms more often. If users feel unsafe about the privacy of their information online, they may likely resist and feel threatened by these technological improvements (Ngwenya, 2020).

1.3.4 Type of research required to address the problem

A qualitative study explored online user perceptions of the cookie consent pop-up notifications in South Africa. Understanding user awareness assisted in uncovering the benefits or pitfalls of the cookie notification principle.

The body of knowledge suggests that previous studies have been conducted to determine user understanding of cookie consent forms in other countries outside South Africa. The literature review indicates that no similar studies have been conducted in South Africa within the context of the POPIA. Therefore, a study exploring online user perceptions of cookie consent pop-up notifications in South Africa would be beneficial in assisting future innovations that strengthen data protection measures for online users.

1.4 Research Objectives

This study aims to explore South African online user perceptions of cookie consent pop-up notifications.

The objectives of the study are as follows:

- To understand South African online users' awareness of the purpose of cookie consent notifications.
- To determine South African online user's understanding of the appropriateness of information shared online
- To explore South African online users' views about cookie consent pop-ups in protecting their data.

1.5 Research Questions

Main research question: What are South African online user perceptions of cookie consent pop-up notifications?

The sub-questions of the study are as follows:

- What do South African online users understand about the purpose of cookie consent notifications?
- What do South African online users understand about the type of information that should be shared online?
- How do South African online users feel about cookie consent pop-ups protecting their data?

1.6 Literature Review

This section reviews the existing body of knowledge added by previous scholars and identifies possible gaps. It covers the following sections: Cookies, POPIA, Cookie notification, and Online data privacy.

1.6.1 Cookies

Xue (2020) categorises cookies into single-session/temporary cookies and persistent/multi-session cookies, noting that while temporary cookies are deleted after a browser session, persistent cookies remain stored until manually removed by the user. Struzinski (2021) further differentiates cookies by their use, such as session cookies for authentication and personalised cookies for tailored content delivery.

While cookies are undeniably crucial for functionalities like session management and personalised content (Hildebrand & Nyquist 2021; Molnar 2020), their dual role in tracking user behaviour raises significant privacy concerns. Wagner (2020) argues that cookies are benign text files facilitating synchronisation between browsers and web servers. However, Jayakumar (2021:28), citing McStay (2013), contrasts this view and highlights the security risks of persistent cookies, including the potential for tracking user activities without explicit consent. Rasaii et al. (2023) support this observation, noting that websites send significantly more third-party cookies when users click "accept" on cookie banners, underscoring the vital role of user interaction in managing data collection. The noticeable increase in tracking cookies after acceptance suggests that these banners may prioritise data collection over genuine user consent.

The literature reveals a dichotomy in perspectives: while some researchers emphasise the utility and necessity of cookies (Molnar 2020; Wagner 2020), others focus on the privacy risks and user discontent associated with them (Jayakumar 2021; Gröndahl 2020). This disparity underscores a gap in understanding how users perceive these risks and their awareness of cookies' roles. Specifically, there is limited research on South African users' perceptions in the context of POPIA compliance. Rasaii et al. (2023) study revealed that websites tend to send

significantly more third-party cookies when users click "accept" on cookie banners, highlighting the importance of user interaction with these banners. There has also been a noticeable rise in tracking cookies after acceptance.

1.6.2 POPIA

The Protection of Personal Information Act (POPIA) aims to control public and private entities' processing of personal data (Larsen, 2019). This legislation encompasses eight principles that dictate the lawful processing of personal information to safeguard citizens. Crucially, all these principles must be adhered to for the processing to be deemed legal. One principle mandates that the responsible party must notify the data subject through a privacy policy or notice detailing how the organisation gathers, utilises, and discloses personal information (South Africa, 2013:18). Da Veiga *et al.* (2018) emphasise that websites collecting personal data should provide a clear and easily accessible privacy policy link. Additionally, this policy must elucidate how personal information is used and shared, ensuring that users are well-informed, thereby complying with the openness principle.

Although POPIA offers a robust framework, best practices necessitate that disclosure notifications are publicly displayed, thoughtfully designed, and easily accessible, ensuring clarity in both layout and wording (Donnelly, 2020). Despite its significance, Jones (2022) contends that websites frequently infringe on users' rights to control their personal information. Furthermore, Jayakumar (2021) found that most European Union (EU) users only have a basic understanding of cookies, their risks, purposes, and benefits. Users predominantly highlighted the risks associated with cookies over their benefits. It is crucial to determine whether online consent notifications adhere to best practice principles or merely comply with the consent approval process stipulated by the POPIA guidelines.

1.6.3 Cookie consent pop-up notifications

Consent is granted by cookie consent notices as a requirement by privacy legislation to be displayed to individuals when they first visit a website. Mager & Kranz (2021) explained that it is possible to manage consent notices internally or through third-party Consent Management Platforms. Bollinger (2021) further specifies that most website hosts choose full-featured solutions offered by Consent Management Platforms. These include consent notice plugins that automate the entire process and provide a variety of customisable choices. According to Schmidt *et al.* (2020), cookie notice, for starters, informs website visitors about how cookies are used on that site and provides users with the option of choosing which information they want to share with the website.

Despite the intended protective measures, many cookie consent forms employ lengthy privacy statements and deceptive interfaces to persuade users to accept default cookie settings (Fernandez *et al.*, 2021). Bornschein *et al.* (2020) argue that some website alerts are deliberately designed to be inconspicuous, using small bars with low-contrast colours hidden at the margins of visitors' screens. Moreover, Hofstad and Lundqvist (2021) point out that cookie consent messages are often pre-ticked, requiring users to manually untick each box to change the flow of their personal data. This process can be tedious and discouraging. Hu and Sastry (2019) reveal that options can be presented misleadingly, allowing users to decline cookies while unknowingly opting into cookies from other third parties. Abrardi *et al.* (2021) contend that instruments such as tailored privacy settings intended to protect user privacy often become an unpleasant barrage of pop-ups. Sah and Jun (2024) consider that clear privacy notices reduce concerns, build trust in service providers, and increase willingness to share personal information when validating the use of privacy awareness as a measure of fairness. Based on these observations, it is evident that while consent notifications aim to safeguard users, their effectiveness is questionable. Consent, as a mechanism for delivering user control, is inherently flawed due to the persistent power imbalance between website managers and online users (From, 2020:38).

Furthermore, while existing studies (Hofstad & Lundqvist, 2021; Hu & Sastry, 2019) indicate that consent forms often subtly manipulate user choices, there is a notable lack of critical analysis on whether these forms genuinely educate users or serve as compliance tools. Reis et al. (2024) state that fundamental legal principles such as consent and notice have proven ineffective in complex digital systems with advanced data processing methods. This gap is especially significant considering the recent enforcement of POPIA in South Africa, which requires transparent user consent mechanisms. Consequently, this study aims to address this gap by critically evaluating South African users' perceptions of cookie consent notifications, their understanding of data privacy, and the effectiveness of these notifications in aligning with POPIA principles.

1.6.4   Online Data Privacy

Alhassan and Adjei-Quaye (2017) characterise data privacy as protecting information from unauthorised use, recording, or disclosure. The South African Constitution upholds the protection of citizens' personal information as a fundamental human right (South Africa, 1996). Despite the Constitution's explicit affirmation of privacy rights, a survey highlighted that 42% of South Africans are concerned about potentially exploiting their data online (Nyoni *et al.*, 2020). This statistic underscores the dissonance between constitutional protections and the actual concerns of citizens regarding data privacy. Furthermore, Axcell and Ellis (2023)

identified privacy concerns as a key factor influencing participants' attitudes and behaviours towards mobile application browsing.

Sikkeland (2020) reveals that users frequently encounter ads for items they previously searched on different platforms, highlighting the pervasive nature of data tracking. User data can be collected by the first-party website visited or third-party domains separate from those sites. Maffei (2020) further explains that third-party agents enhance the personalisation of advertisements by accumulating extensive data through user profile tracking. This practice raises significant concerns about the extent of data surveillance and the implications for user privacy.

Moreover, Redda (2019) argues that online users should not fear protecting their data. Users' information should always be protected to eliminate trust issues. However, users are frequently uninformed of the risk to their data, and cybercriminals take advantage of this ignorance (Parker, 2021). Pinchot *et al.* (2018) supplemented that even technologically advanced people may be clueless about how their devices and internet activities generate data about them. Nardo (2022) further added that human error threatens online users' data protection, whether caused by ignorance or a lack of knowledge. Therefore, empowering users to prevent professional and emotional harm caused by online data theft is essential.

1.7 Theoretical Framework

The researcher applied the Contextual Integrity Framework and the Protection of Personal Information Act (POPIA) to explore user perceptions of cookie consent pop-ups.

1.7.1 Contextual Integrity Framework

According to Nissenbaum (2004), contextual integrity relates appropriate privacy protection to particular context norms, requiring that the collection and distribution of data be acceptable for that context and follow the prevailing dissemination rules within it. Two norms of information speak to privacy: its appropriateness and the flow of information or distribution. Appropriateness norms define what information about people can be conveyed in a given situation. The distribution norm asserts that information must be distributed while maintaining the setting in which it was shared.
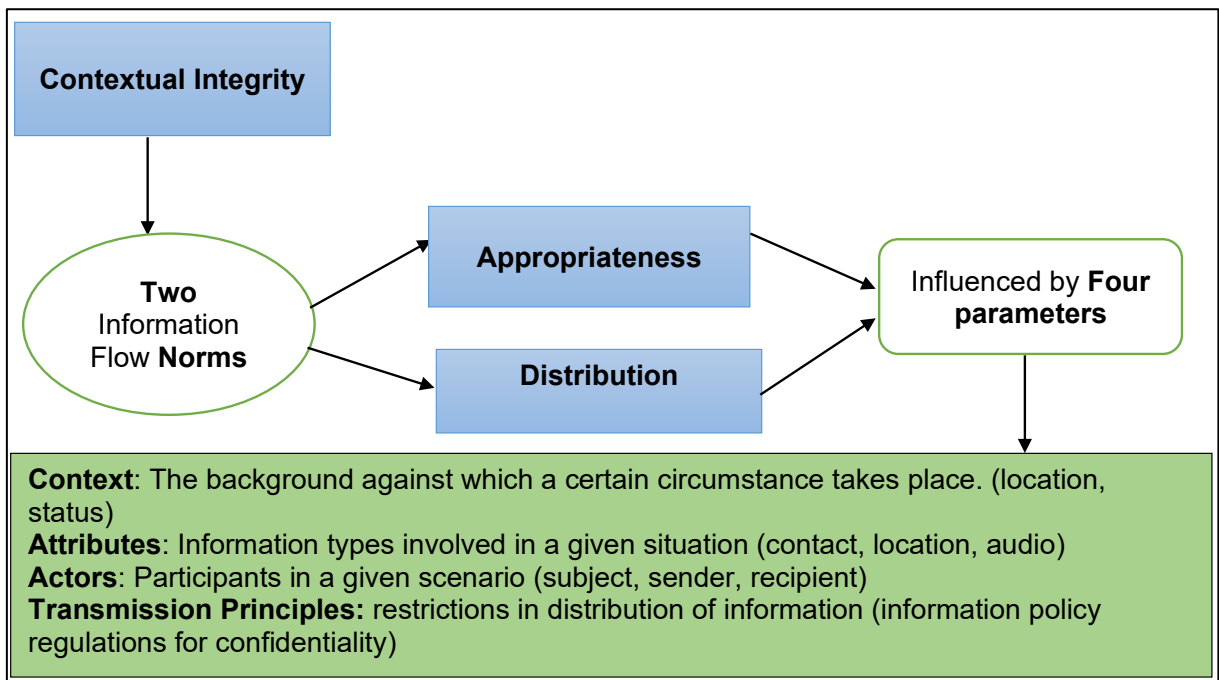
Figure 1-1 Contextual Integrity Framework (Adapted from Nissenbaum, 2004 and 2011)

Nissenbaum (2004) adds that a Contextual Integrity Framework can validate problematic behaviour due to the introduction of a new technical gadget or system. Machuletz and Bohme (2020) highlighted that when users click cookie consent buttons, they are less likely to recall agreed-upon objectives correctly. It raises questions about the goodness of these cookie consent notifications in terms of benefiting the user as per their intended purpose. This framework offers the potential to scaffold the validation of the behaviour of South African online users when dealing with these cookie consent requests to discover their awareness. Nissenbaum (2011) opposes using informed consent as the primary means of protecting online users' privacy. The author added that notices for processing data procedures are very simple or too complex for average internet users.

1.7.2   Protection of Personal Information Act (POPIA)

POPIA is a South African legislation that has been enacted to regulate how personal information is processed by public and private entities (Larsen, 2019). Several principles govern the processing of personal information as per POPIA. Based on the aims of this study, the researcher applied the following two principles as a lens for the study.

- Openness – The subject data needs to be informed of the reasons for collection, the person collecting, information storage, rights of the data subject in terms of access, deleting or correcting the data and a clear indication of third part third-party data sharing during the processing (South Africa, 2013:19-22).

- Data security safeguards – Responsible parties must guarantee the safe preservation of the information and avoid data breaches to protect integrity and confidentiality (South Africa, 2013:19-22).

Figure 1-2 illustrates how the Contextual Integrity Framework and POPIA apply to the study.
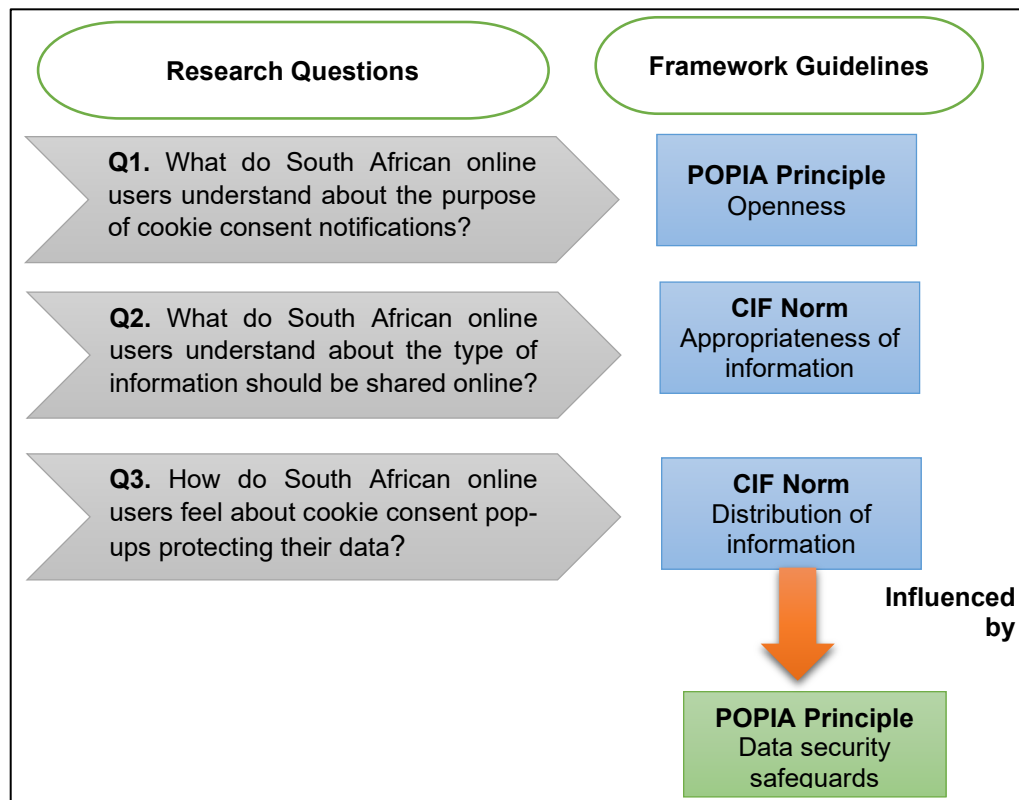
Figure 1-2 Linking Questions to Frameworks Attributes

The researcher used the POPIA openness principle as a lens to analyse user understanding of cookie notifications. The 'Appropriateness' norm from the CIF guided the researcher in analysing user understanding about the type of information that should be shared online. The 'Distribution' norm was used to analyse users' feelings about protecting their data in cookie notifications. The data security safeguards principle was the transmission principle parameter influencing the framework for the study.

1.8 Research Conducted in Previous Studies

Table 1-1 Previous studies undertaken in this field of study

Authors	Year	Field	Topic	Findings
Schomakers, E.M., Lidynia C., Mullmann, D. and Ziefle, M.	2019	Information Management	"Internet user's perceptions of information sensitivity – insights from Germany	The study revealed that users' daily data-sharing activities could be due to a lack of knowledge about the real sensitivity of the information. They may have varied perceptions of hazards and control.
Jayakumar, L. N.	2021	Digital Marketing	"Cookies 'n' Consent: An empirical study on the factors influencing website user's attitude towards cookie consent in the EU"	Findings show that users choose a design that makes it easier for them to opt-out than accepting cookies. The author also mentioned that users have no interest in cookies. It is unfair to require people to comprehend every facet of technology to provide their consent.
Machuletz, D. and Bohme, R	2020	Data Privacy	"Multiple purposes, multiple problems: A user study of consent dialogues after GDPR"	Researchers' new empirical proof showed that design features in permission dialogues may fool users into accepting extra data processing objectives without intention.

Authors	Year	Field	Topic	Findings
Gröndahl, L.	2020	Information Technology	"Public knowledge of digital cookies: Exploring the design of cookie consent forms"	Findings show that users are dissatisfied with the design of consent forms, and many of them fail to meet the GDPR's functional criteria.
Grodzinsky, F. S.	2011	Computer Science & Information Technology	"Privacy in "The Cloud": Applying Nissenbaum's Theory of Contextual Integrity"	The researcher's findings were that Google's policy for privacy is clear in its intention to protect users' data and conforms with the Contextual Integrity Framework. However, the researcher highlighted that in the future, there could be a change in its data storage procedures, and one or more parts of Nissenbaum's framework could be ignored.
Hofstad, N. and Lundqvist, A.	2021	Media and Communication	"Cookies, cookies everywhere! Qualitative interview study about how users interact with cookie consent notices."	Findings highlighted the use of consent notifications as not adding value to assist users in protecting their data. More interactions occur on mobile devices, which are less likely to have these cookies.
Vitak, J. and Zimmer, M	2020	Information Technology	"More Than Just Privacy: Using Contextual Integrity to Evaluate the Long-Term Risks from COVID-19 Surveillance Technologies"	Researchers noted that contextual integrity may be breached when a new technology or practice modifies parameters and shifts information norms, exposing possible harm to privacy.

Summary of Literature Review

Literature has revealed that even though cookie consent notifications have been added to protect user data online, their effectiveness is not guaranteed. The consent notification process seems to be used for compliance purposes without ensuring alignment with the POPIA best practice principles. In addition, users accept these consent pop-ups to get on the website without understanding their impact on protecting their data. Since POPIA has been enforced in South Africa and websites are trying to comply by adding these cookie pop-up consent notifications, there is a gap in understanding user perceptions about these consent notifications in South Africa.

1.9 Research Methodology

This study employs a qualitative research approach, which is particularly suited for exploring South African online users' nuanced perceptions and experiences regarding cookie consent notifications. The research questions focus on understanding user awareness, perceptions of data sharing appropriateness, and the effectiveness of cookie consent notifications in protecting user data. These questions require in-depth insights into users' subjective experiences, making a qualitative approach most appropriate (Creswell, 2009).

Qualitative research methods, such as semi-structured interviews, allow for collecting rich, detailed data that can reveal the complexities of user perceptions and behaviours (Aspers & Corte, 2019). This aligns directly with the study's objectives:

- To understand South African online users' awareness of the purpose of cookie consent notifications. Semi-structured interviews enable participants to express their understanding and thoughts in their own words, providing deep insights into their awareness levels.
- To determine South African online users' understanding of the appropriateness of information shared online. Through open-ended questions, the researcher can explore how users perceive the appropriateness of data sharing and what factors influence these perceptions.
- To explore South African online users' views about cookie consent pop-ups in protecting their data. The qualitative approach facilitates a detailed exploration of user opinions on the effectiveness of consent pop-ups, uncovering specific aspects that users find problematic or effective.

Using thematic analysis for data interpretation allows the researcher to identify and analyse patterns and themes that emerge from the interview data (Braun & Clarke, 2006). This method

is well-suited for addressing the research questions, as it can systematically categorise and interpret the qualitative data to highlight the key issues and insights related to user perceptions of cookie consent notifications.

In summary, the qualitative approach is justified as it aligns perfectly with the study's aim to explore detailed user perceptions and experiences. This approach provides the depth and flexibility needed to uncover the underlying reasons behind user behaviours and attitudes towards cookie consent notifications, which quantitative methods may not fully capture.

This is an exploratory research study. According to Nieuwenhuis (2007), exploratory research aims to discover crucial variables and obtain a better understanding of a phenomenon, group, activity, or situation. Thus, the researcher applied exploratory research to grasp better online user perceptions of the consent notifications embedded in cookie pop-ups. This was achieved through a qualitative research approach, implementing the principles and attributes of the Contextual Integrity Framework and POPIA.

1.10 Data Collection

The primary data-gathering tool for this study was interviews. A semi-structured interview allowed the researcher to alter the questions' order and add follow-up where necessary (Cooper & Schindler, 2006). Semi-structured interviews gathered data from many respondents to give the researcher enough information to understand online users' perceptions. The interviews may not be face-to-face for the convenience of online users who use online platforms like Zoom. Users' experiences were explored for trends, hidden meanings, and other pertinent information that helped the researcher answer the study questions.

1.11 Data Sampling

According to Taherdoost (2016), the researcher employed non-probability sampling, a method frequently used in qualitative research. This approach does not require the sample to be representative or random but necessitates a justified rationale for selecting specific individuals over others. For this study, judgment sampling, a subset of non-probability sampling, was utilised. This method involves purposefully selecting specific scenarios, individuals, or events that provide crucial information unattainable through other means (Malterud & Siersman, 2016).

Given that the study aimed to explore online users' perspectives, the researcher pre-screened respondents to ensure they had recently used an online platform with cookie pop-up notifications. Non-probability sampling is ideal for this study, as respondents were chosen based on specific criteria. The selection criteria focused on South African users interacting with online platforms featuring cookie consent pop-ups within the past year. The researcher could not predetermine the number of required respondents. Data collection continued using a non-probability sample until data saturation was achieved.

1.12 Data Analysis Approach

Data analysis was conducted using thematic analysis, a method well-suited for identifying, analysing, and reporting patterns (themes) within qualitative data (Braun & Clarke, 2006). This approach enabled the researcher to systematically explore the perceptions and experiences of South African online users regarding cookie consent notifications. The seven-step process is detailed as follows:

Step 1. Familiarisation with Data

The researcher began by transcribing all interview recordings verbatim. Initial transcripts were recorded to immerse the researcher in the data, making notes of initial observations and thoughts (Creswell, 2009).

Step 2. Generating Initial Codes

Using the transcriptions, the researcher systematically encoded interesting features of the data across the entire dataset. Coding involves identifying specific segments of the text that relate to the research questions. ATLAS.ti software assisted in organising and managing these codebooks and codes efficiently (APPENDIX E).

Step 3. Generate Themes

The emergent codes were reviewed and collated into potential themes. A theme is a coherent and meaningful pattern in the data relevant to the research questions. Themes were developed by grouping related codes and considering how they form broader patterns of meaning.

Step 4. Reviewing Themes

Themes were reviewed at two levels:

- **Level 1:** Checking that the themes work in relation to the coded extracts. Each theme was assessed to ensure that it accurately represents the data associated with it.
- **Level 2:** Checking that the themes work in relation to the entire dataset. The researcher reviewed the entire dataset again to ensure that the themes accurately reflect the data as a whole and that there are no significant data omissions.

Step 5. Defining and Naming Themes

Each theme was clearly defined and named. This involves writing detailed analyses for each theme, identifying its essence, and determining what aspect of the data each theme captures. Themes were linked back to the research questions and theoretical frameworks (Contextual Integrity Framework and POPIA).

Step 6. Producing the Report

The final step involves weaving together the narrative of the data analysis. This report included vivid examples and quotes from participants to illustrate each theme. The analysis linked the findings back to the research questions, objectives, and theoretical frameworks, discussing the implications of the findings in the context of existing literature.

This detailed approach ensures a rigorous and systematic data analysis, establishing a clear and transparent process for identifying and validating themes. By employing thematic analysis, the study aims to uncover profound insights into user perceptions and experiences regarding cookie consent notifications, thereby contributing valuable knowledge to the fields of online privacy and data protection. The researcher utilised the Contextual Integrity Framework and the Protection of Personal Information Act (POPIA), as described in the theoretical framework section, to guide data analysis and interpretation.

Data saturation, a critical stage in qualitative data analysis, occurs when further data collection and evaluation yield no new insights (Aldiabat & Le Navenec, 2018). In line with this concept, the researcher continuously identified recurring themes and patterns until no additional information emerged. This method ensures that conclusions are drawn from comprehensive and meticulously analysed data, leveraging the repetition of themes to substantiate subjective interpretations.

1.13 Ethical Consideration

Ethics can be defined as the behavioural norms that influence moral judgments about our actions and interactions with others (Cooper & Schindler, 2006). Before commencing data collection for this study, institutional approval and ethical clearance were sought from the Cape Peninsula University of Technology's ethical committee. Additionally, participants were provided with consent forms after being fully and accurately informed about the purpose of the interview and investigation. Participation was entirely voluntary, and all participants' personal data were kept strictly confidential and anonymous. The study adhered to ethical interviewing practices, ensuring no engagement in unethical approaches or techniques. The final report excluded any identities or sensitive information of participants uncovered during the document analysis.

1.14 Delineation

A study that concerns online users' perceptions in South Africa is a large domain, and the timeline for the study is one year. This study's synthesis is not meant to be comprehensive over the entire domain. Therefore, the researcher only focused on Cape Town online users to collect primary data. Cape Town online users represented the study. Taking into consideration that even though most online users in South Africa may have the same experience of cookie consent notifications as the chosen representation, the perceptions may differ according to the other provinces.

1.15 Summary

This research study explores the perceptions of online users on cookie pop-up consent notifications in South Africa. The proposal highlights the importance of data to users and how cookies and their notifications have gained popularity. The literature review further discusses the use of cookies, legislation around data protection in South Africa, and how consent notifications affect the data protection of users, as per previous scholars. The Contextual Integrity Framework has been discussed and chosen as the lens for this study. The researcher in this qualitative study seeks to discover hidden gaps in users' behaviour when interacting with cookie consent notifications. The outcome of this study may influence web managers and law legislators to implement better solutions for protecting online user data.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The background of the study pertains to data privacy issues being experienced by online users due to third-party invasions. To address these issues, South Africa has enforced a Protection of Personal Information Act (POPIA) regulation that assures that personal data is acquired legally, securely and with the appropriate user consent. This regulation was approved in November 2013 and took effect on April 1, 2020, for the remaining clauses. POPIA outlines the basic requirements for accessing and processing any personal information that belongs to another individual. This regulation has driven more websites to add cookie consent notices to alert users of the information collected when visiting their websites and require consent.

The study of literature highlighted a gap in these cookie consent notifications in protecting users' data due to a lack of user awareness about the purpose of the consent notices. The purpose of this study is to understand the perceptions of South African online users about cookie pop-up consent notifications. The objectives of the study are to understand online user awareness of the purposes of consent notices, determine their understanding of the appropriateness of information shared online, and explore the views of online users about cookie consent in protecting their data. A literature review covers the existing body of knowledge to create an integrated outline for the main ideas of the study. This chapter entails these sections: cookies, cookie consent notification, online data privacy, and the theoretical framework of the study.

The conceptual diagram below (Figure 2-1) guides the uncovering of the main ideas of the study.
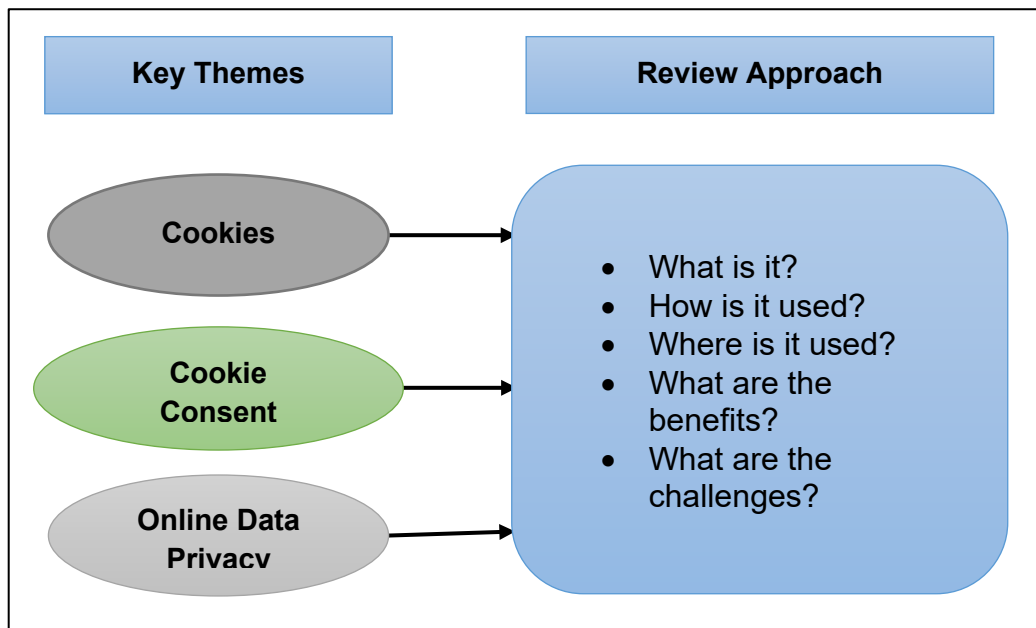
Figure 2-1 Conceptual diagram of the Literature Review (researcher's approach)

2.2 Cookies

Cookies are small pieces of code defined by their purpose, duration, and source, stored in a user's cache and sent back to the server each time a connection is made (Prieto, 2021). These text files can contain various information that is saved to a user's device, with a copy retained by the website (From, 2020). Primarily, cookies are utilised to manage sessions, handle login credentials and preserve shopping cart contents on websites. Additionally, they store user preferences, themes, and settings while also enabling the tracking and analysis of user behaviour, such as visited pages and the time spent on each page (Hofstad & Lundqvist, 2021).

Cookies provide functionalities such as shopping cart capabilities, automatic logins, third-party advertising services, and preference settings. As noted by Xue (2020), cookies can be categorised into two types: single-session and persistent-session cookies. Single-session cookies have a limited lifespan, being active only for the duration of a single browser session; once the browser is closed, these cookies are deleted. In contrast, persistent cookies remain in the browser for an extended period and are only removed when the user chooses to delete them.

Struzinski (2021) further elaborates that session cookies allow servers to authenticate users and keep them logged in even after closing a page. Persistent cookies, on the other hand, can function as personalised or tracking cookies, remaining accessible even after the browser is closed, which enables the server to deliver tailored content to users. This dual functionality

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underscores the complex role cookies play in enhancing user experience while also raising concerns regarding privacy and data security.

Cookies are vital for the functionality of websites, particularly in session management (Hildebrand & Nyquist, 2021). Wagner (2020) notes that cookies facilitate synchronisation between a browser and remote servers, enabling websites to operate effectively. Their benefits include essential features such as logging into online accounts and tracking shopping carts (Molnar, 2020). Additionally, cookies can retain information from previously filled online forms, which can streamline user interactions. While tracking user activities may enhance the online experience, the types of information collected can be sensitive.

Nagy (2017) highlights that cookies can store a wide range of data, including usernames, home addresses, email addresses, and phone numbers. This functionality allows users to maintain their activities even if they disconnect before completing transactions. Browsing behaviour cookies are particularly noteworthy, as they are often used to tailor advertising based on user interests (Hildebrand & Nyquist, 2021). This targeted approach can help users find relevant suggestions, saving them time when searching for products or services.

However, despite these advantages, previous studies have shown that cookies can also compromise online data protection. Xue (2020) asserts that while persistent cookies clarify user preferences, they also introduce significant security risks. The primary concern is that these cookies may hold sensitive information about users' interests, habits, and political views (Bollinger, 2021). Nagy's (2017) research indicates that cookies track personal information for activity monitoring, which can become a privacy violation if users are unaware of the data being shared.

The tracking capability of cookies can severely undermine online privacy (Molnar, 2020). Furthermore, Jayakumar (2021) cites McStay (2013) in discussing "cookie synchronisation," a process utilised by third-party advertising partners to insert additional cookies that follow user behaviour beyond the initial website. Such practices pose risks to user data and often occur without the user's knowledge, raising significant concerns about privacy and consent in the digital landscape.

2.3 Cookie consent notifications

Consent, as defined by the Protection of Personal Information Act (POPIA), is a voluntary, precise, and informed expression of will that permits the processing of personal data (Adams *et al.*, 2021). Cookie consent notices are mandated by privacy legislation and are presented to users upon their first visit to a website. These notices can take various forms, including

overlays, banners, prompts or pop-ups (Bollinger, 2021). Consent notices may be managed internally or through third-party Consent Management Platforms (Mager & Kranz, 2021). Bollinger (2021) notes that many website hosts opt for comprehensive solutions from these platforms, which offer automated consent notice plugins with customisable features. According to Schmidt *et al.* (2020), cookie notices inform users about the site's cookie usage and provide options regarding what information they wish to share.

Despite these intentions, many cookie consent forms feature lengthy privacy statements and manipulative interfaces designed to nudge users toward accepting default cookie settings (Fernandez *et al.*, 2021). Some notifications are difficult to notice, employing small bars in low-contrast colours that are often placed at the edges of the user's screen (Bornschein *et al.*, 2020). Such design choices can compromise user privacy, as the perceived integrity of the website may sway decisions. Machuletz and Bohme (2020) provide empirical evidence that the design of permission dialogues can mislead users into inadvertently consenting to additional data processing objectives.

The positioning of cookie consent pop-ups further complicates user interaction. Graßl *et al.* (2021) found that consent alerts placed in the bottom left corner of the browser window are most frequently engaged with, while those at the top receive less attention, primarily because they obstruct website content (Utz *et al.*, 2019). Additionally, Abrardi *et al.* (2021) argue that consent pop-ups can disrupt browsing by presenting too many options, making the experience overwhelming and frustrating for users. Many individuals, lacking a clear understanding of how these notifications protect their data, may choose to ignore them, inadvertently putting their privacy at risk.

Moreover, cookie consent messages often include pre-ticked boxes, requiring users to manually untick options to modify how their data is handled, which can be an inconvenient task (Hofstad & Lundqvist, 2021). This setup can easily mislead users into accepting terms without thorough consideration. Hu and Sastry (2019) highlight that options can be presented deceptively, allowing users to decline certain cookies while still unintentionally opting into third-party tracking. Such practices infringe upon users' rights to data privacy, leaving them with little control over how their information is shared with external entities.

A user's intention to visit a website significantly influences their decision to accept cookies, often without considering the associated risks (Narayanan, 2020). This behaviour can be interpreted as user ignorance, as individuals are presented with the choice to accept or decline cookie consent. However, the efficacy of this decision hinges on their understanding of the implications of such choices. Research by Gadiraju (2019) indicates that users often reject or delete third-party cookies due to their limited comprehension of how these cookies function.

Despite the intent behind cookie consent notifications as a protective measure, their effectiveness remains questionable. Jayakumar (2021) argues that users generally lack interest in cookies, highlighting the unfairness of expecting individuals to grasp the complexities of technology in order to give informed consent. After clicking consent buttons, users are unlikely to retain a clear memory of the purposes for which they consented, potentially leading them to act against their own interests. This raises significant concerns about the integrity and legitimacy of such design features (Machuletz & Bohme, 2020).

According to From (2020), consent cannot effectively empower users, as there is an inherent power imbalance between website operators and users. This imbalance is further exacerbated by the manipulative design of some consent notifications, which can obscure important information and pressure users into accepting terms. Users must be fully aware of their choices and their consequences to safeguard their privacy, making user awareness crucial when navigating these technological features.

2.4 Online Data Privacy

Alhassan and Adjei-Quaye (2017) define data privacy as the protection of information from unauthorised use, recording, or disclosure. The South African Constitution preserves personal information protection as a fundamental human right, emphasising the right to privacy (South Africa, 1996). Data privacy underscores the necessity for users to manage their own information, including how it is stored and shared by others. This empowerment allows users to exercise control over their privacy, achievable through data minimisation options, such as selective data sharing (Nyoni and Velempini, 2018).

Sikkeland (2020) observes that users often encounter targeted advertisements for products they previously searched for online, illustrating how both first-party websites and third-party domains can collect their data. Third-party agents enhance personalised advertising by accumulating extensive user profile data (Maffei, 2020). Schomakers *et al.* (2019) highlight that many users may unknowingly share sensitive information, reflecting a general lack of awareness about the implications of their online activities.

Despite the presence of online data privacy measures designed to protect against cyberattacks, a survey indicated that 42% of South Africans express concerns about potential data exploitation (Nyoni *et al.*, 2020). This indicates a significant lack of confidence in users' ability to safeguard their personal information, compounded by their unawareness of available protective methods (Boerman *et al.*, 2021). While there is widespread concern regarding data privacy, many users experience "privacy fatigue," choosing to ignore privacy issues due to frustration with measures that often fail to guarantee protection (Choi *et al.*, 2018). A critical

challenge in this landscape is that granting access to systems is typically easier than revoking them, thereby limiting users' digital control (Dreyer *et al.*, 2022).

Redda (2019) contends that users should not worry about data protection, arguing that consistent safeguards are necessary to build trust. However, many users remain unaware of the risks to their data, leaving them vulnerable to exploitation by cybercriminals (Parker, 2021). Even technologically advanced individuals may not fully grasp how their devices and online activities generate data about them (Pinchot *et al.*, 2018). Nardo (2022) identifies human error, whether stemming from ignorance or lack of knowledge, as a significant threat to online data protection. Therefore, it is essential to empower users with a comprehensive understanding of protective mechanisms and their responsibilities in safeguarding their data. Empowerment is crucial to mitigating the professional and emotional harm from online data theft.

2.5 Theoretical framework for the study

The researcher used the Contextual Integrity Framework to explore user perceptions of cookie consent pop-ups and supplemented it with the Protection of Personal Information Act (POPIA).

2.5.1 Contextual Integrity Framework

According to Nissenbaum (2004), contextual integrity relates appropriate privacy protection to particular context norms, requiring that the collection and distribution of data be acceptable for that context and follow the prevailing dissemination rules within it. It is a framework for assessing the information flow between agents (people and other entities), focusing on revealing why specific information flow patterns elicit public uproar in the name of privacy (Barth *et al.*, 2006). Different authors have previously used this framework to evaluate the contextual integrity of information. Grodzinsky and Tavan (2011) used a contextual integrity framework to uncover privacy in the cloud. The author used contextual integrity norms to find out how the policies of Google Docs cover privacy norms per the framework of Nissenbaum. Vitak and Zimmer (2020) also used this framework in studying contact tracing apps during COVID-19, basing it on the appropriateness norm for evaluating the contextual integrity of information flow in health personal data.

Figure 2.2 shows how the contextual integrity framework is structured.
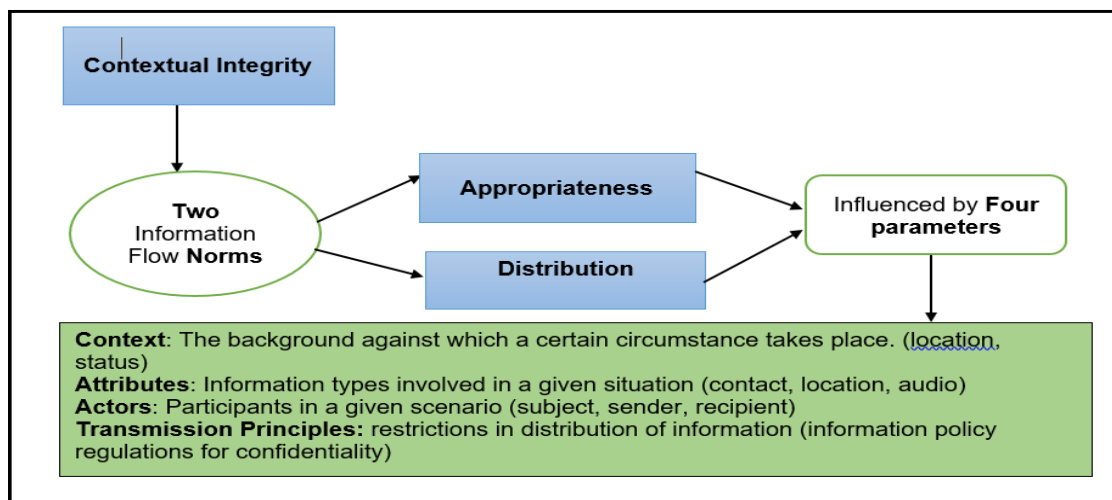
Figure 2-2 Contextual Integrity Framework (Adapted from Nissenbaum, 2004 and 2011)

Two norms of information speak to privacy: its appropriateness and the flow of information or distribution.

Appropriateness norms define what information about people can be conveyed in a given situation.

The distribution norm asserts that information must be distributed while maintaining the setting in which it was shared.

Barth *et al.* (2006) explained that when assessing information flow norms, the parameters that influence them give us an understanding of how these norms should be achieved. Context expresses the notion that people behave in various capacities and roles in society. Context is distinguished not only by roles and customs but also by particular goals or values. The appropriateness of information is based on the contextual norm. The distribution of information relies on the transmission principle, which is influenced by legislation that governs confidentiality in processing information. This can speak to what information can be shared about a subject (the user) by the recipient (website), and it depends on the user's awareness and consent. Therefore, contextual integrity has been violated when one or more contextual informational rules are unfairly broken. Contextual integrity is the quality of situations where these rules have been upheld.

Nissenbaum (2004) adds that a contextual integrity framework can validate problematic behaviour due to the introduction of a new technical gadget or system. Machuletz and Bohme (2020) highlighted that when users click cookie consent buttons, they are less likely to recall

agreed-upon objectives correctly. It raises questions about the goodness of these cookie consent notifications in terms of benefiting the user as per their intended purpose. Nissenbaum (2011) opposes using informed consent as the primary means of protecting online users' privacy. The author added that notices for processing data procedures are very simple or too complex for average internet users. This framework assisted the researcher in validating the understanding of South African online users when engaging with cookie consent requests to discover their awareness. The tenets of this framework (the information norms) supported the analysis of two of the study's research questions.

2.5.2   Protection of Personal Information Act (POPIA)

POPIA is South African legislation that has been enacted to regulate how personal information is processed by public and private entities (Larsen, 2019). Different studies have used POPIA to evaluate the protection of information. Zenda *et al.* (2020) used POPIA to determine if the South African insurance business complies with consent, concentrating on the direct marketing requirements. Staunton *et al.* (2021) also used POPIA to study stakeholder perspectives on protecting personal health information in South Africa regarding data sharing, management and protection. Several principles govern the processing of personal information, as per POPIA. Based on the aims of this study, the researcher applied the following two principles as a lens for the study:

- **Openness:** the subject data needs to be informed of the reasons for collection, the person collecting it, where information was stored, the rights of the data subject in terms of access, deletion, or correction of the data and a clear indication if it would be shared with a third party during the processing (South Africa, 2013:19-22).
- **Data security safeguards**: responsible parties must guarantee the safe preservation of the information and avoid data breaches to protect integrity and confidentiality (South Africa, 2013:19-22).

The study is based on cookie pop-up consent notifications, which act as a protective measure for online user data privacy. The principle of openness speaks to awareness; therefore, the researcher used this principle to analyse users' understanding of consent notifications. In addition, the data security principle plays a significant role in information privacy as it acts as a protective mechanism to guard against unauthorised access to or processing personal data. This principle, therefore, influences the transmission of information.

The researcher added POPIA to enlarge the contextual integrity framework to uncover the study's first aim, which relates to openness. Secondly, the transmission principle supports the framework norms, which speak to the confidentiality regulation. This study was conducted in

South Africa, which uses POPIA as legislation to govern the processing of personal information. Thus, the researcher used the two principles of the act as the transmission principle to analyse the openness aspect and data security in this study. The researcher used the POPIA openness principle as a lens to analyse user understanding of cookie notifications. The 'Appropriateness' norm from the CIF guided the researcher in analysing user understanding about the type of information that should be shared online. The 'Distribution' norm was used to analyse users' feelings about protecting their data in cookie notifications. The data security safeguards principle was the transmission principal parameter influencing the framework for the study.

Figure 2-3 illustrates the gap in the body of knowledge and the main ideas of the study.
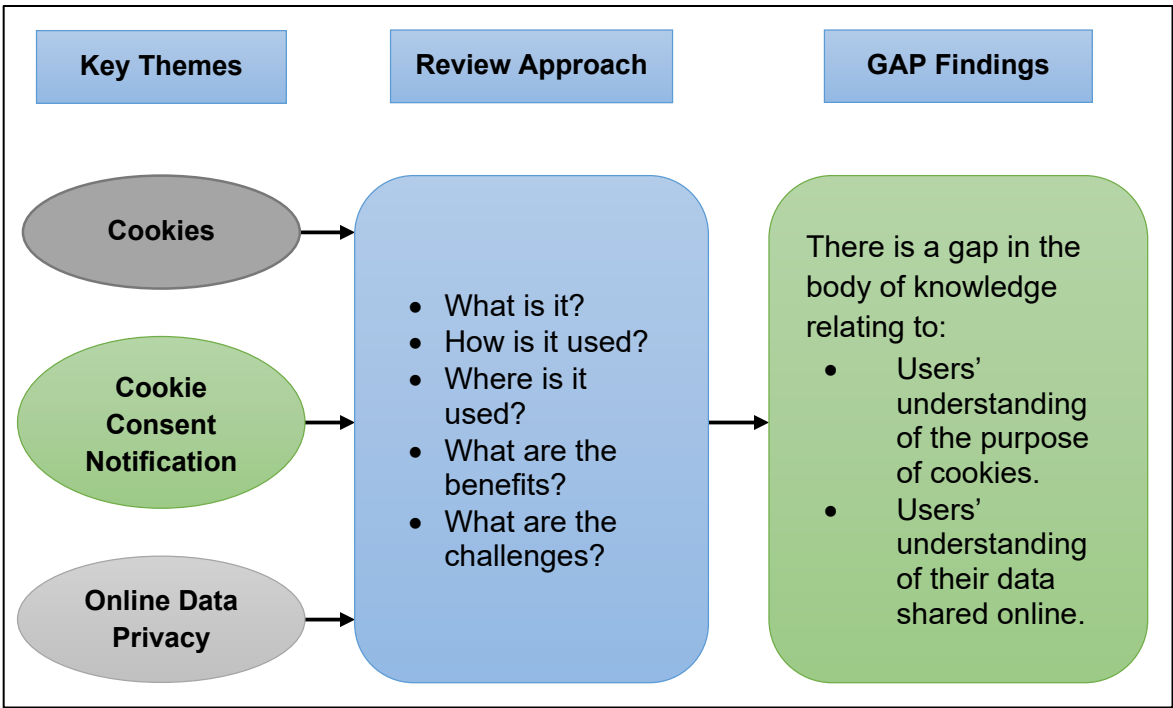
Figure 2-3 Diagram of the Literature Review and establishing the gap

2.6 Summary

The literature study highlighted the benefits of cookies in aiding to improve website browsing for online users. Still, it has also been noticed that the safety of data kept by these cookies cannot be guaranteed. Consent notifications are used as a compliance process that adds a burden on users to account for their actions without understanding their struggles. This has been proven by the notion that some users accept these consent pop-ups to access the website without understanding the impact they have on protecting their data. POPIA legislation has been enforced in South Africa, and websites must comply by adding these cookie pop-up consent notifications, but users' understanding of this is not yet confirmed. Therefore, there appears to be a gap in the body of knowledge relating to understanding user perceptions about consent notifications. This study will, thus, explore the perceptions of South African online users about cookie pop-up consent notifications.

CHAPTER THREE: RESEARCH METHODOLOGY

The prior section examined the literature that supported this investigation, encompassing Cookies, Cookie consent notifications, Online Data Privacy, the Theoretical framework for the study, and the Summary. This chapter looks at the research methodology and techniques adopted by the researcher. The methodology describes the researcher's methods to gather data to address the study's research topics (Alao, 2016).

3.1 Research Design Approach

Research is more widespread in this era, whether it is a personal enquiry or an academic one. Humans' innate curiosity, the pursuit of knowledge and methods of information gathering can be considered forms of study (Kothari, 2004). Saunders *et al.* (2009) highlighted that a methodical technique must be used for academic research, requiring the choice of methodology, approach and other factors. Certain beliefs, principles and assumptions guide how a researcher approaches a study. The research design aims to give a study a suitable structure. The choice of research approach is crucial to the research design process since it dictates how pertinent data would be gathered for the study (Sileyew, 2019).

Nevertheless, other interconnected decisions must be made along the process. According to Saunders *et al.* (2019), the research onion has several layers that provide a framework for designing systematic research in an academic context. The onion outlines the theoretical foundations: the research paradigm, research approach methods, research design and the data gathering procedures.

3.2 Research Paradigm

A paradigm is a foundation of attitudes, values and research methodologies that form the basis of a worldview (Kamal, 2019). It is also a set of experimental beliefs whose framework can be used to evaluate a systematic belief (Aspers & Corte, 2019). In other words, it is our method of comprehending and researching the world as it is. Although scholars have offered many paradigms, this chapter reviews the Positivist, Critical paradigms and Interpretivists that are most frequently applied.

3.2.1 Positivism paradigm

The positivist paradigm describes a research perspective that is based on what is referred to as the scientific method of investigation. It is employed to look for cause-and-effect connections in the natural world. It is the favoured worldview for research because it strives to explain

observations regarding quantifiable objects or truths (Kivunja & Kuyini, 2017). According to Rehman and Alharthi (2016), positivism is the epistemological stance of objectivism. As impartial observers, researchers examine events that happen independently and are not influenced by or interfered with by what is being observed. When studying a specific phenomenon, a positivist researcher should be able to observe occurrences and draw generalisations about what might be expected in other parts of the world.

3.2.2 Critical paradigms

Critical theory questions the status quo and works for a just and democratic society, unlike traditional theory, which investigates and upholds the status quo (Asghar, 2013). According to critical realism, the conditional nature of phenomena descriptions and explanations leaves scientific theories vulnerable to reconstruction and alteration (Reed, 2005). It is founded on the ontological presumptions that real things exist in the world, and we see real things through our perceptions but not the actual things themselves (Saunders *et al.*, 2019). According to Pham (2018), critical researchers purposefully adhere to moral, ethical and political standards while considering the social, political, economic and cultural context of the objects or events under study.

3.2.3 Interpretivism paradigm

The interpretive paradigm investigates people's knowledge of their environment and is based on thoroughly comprehending a subject. Individuals form subjective interpretations of their encounters or attitudes regarding particular items (Rahi, 2017). The interpretivism paradigm postulates that reality is subjective and liable to change depending on the individual's perspective. Creswell (2015) explains that the interpretive paradigm examines individuals' exposures, perspectives, and outlooks regarding these encounters. Considering the presumptions and ideas of the interpretive researcher, interpretative paradigms allow researchers to evaluate various characteristics, such as behavioural aspects based on participants' experiences, which would help represent reality (Alharahsheh & Pius, 2020).

The interpretive methodology, which addresses participant experiences, viewpoints and views regarding the research topic, is used in this study. The interpretive paradigm gathers information that considers all respondents' perspectives and exposures concerning cookie pop-up consent notifications by utilising the participants' beliefs. To elicit insights and explain how people create and maintain their social worlds, the interpretive paradigm is a branch of social science that involves a kind, in-depth investigation of peoples' daily lived engagement in their unique, natural environments (Aspers & Corte, 2019). Creswell (2015) claimed that using an interpretative paradigm allows the researcher to engage with the reality of the

participants. An interpretive approach offers a framework that enables the researcher to investigate participant understandings by listening to what study participants say about their experiences (Thanh & Thanh, 2015). Based on the study objectives of understanding the user perceptions of cookie consent notifications, the researcher finds the interpretive paradigm beneficial in exploring online users' experiences. This means some participants' opinions might only apply to those situations. As a result, they cannot be concluded on comparable situations involving all internet users. Notwithstanding the restrictions mentioned above, the interpretive paradigm is the study's compass because it examines individuals and their experiences within specific social contexts. In that regard, it reflects human nature in a way that is undoubtedly never predictable.

3.3 Research Approach and Methodology

The methodical and structured methodologies researchers employ to carry out their study are research approaches. These approaches vary in the underlying reasoning and investigation techniques that the researcher employed. Two common research approaches can be chosen: inductive and deductive (Kivunja & Kuyini, 2017). In this section, the researcher addresses inductive and deductive research approaches and three research methods: quantitative, qualitative and mixed methods.

3.3.1 Deductive

Deductive reasoning logically concludes a collection of premises, confirmed when everyone is genuine (Ketokivi & Mantere, 2010). Saunders *et al.* (2019) describe a deductive approach to study as drawing precise and accurate conclusions from generic premises or statements that are all true using logical arguments or reasoning. Typically, the hypothesis is formed from reading scholarly literature, and then a research plan is designed to evaluate the theory (Saunders *et al.*, 2015). Deductive approaches to qualitative research apply various forms of pre-existing theory to explore meanings, processes, and narratives of individual and relational phenomena (Casula et al., 2020.

3.3.2 Inductive

The inductive approach is based on the hypothesis developed from an event's observations and on the premise of the outcome, leading to general conclusions or hypotheses (Saunders *et al.*, 2019). This approach aims to generate interpretations from the gathered information and recognise trends and connections to construct a theoretical framework (Scotland, 2012).

According to Saunders *et al.* (2015), to investigate a phenomenon, research first gathers data, and then a theory is developed, usually in the form of a conceptual framework. The foundation of an inductive viewpoint is experience-based learning (Bhattacherjee, 2012). Since the findings are not specific but possibly valid, inductive reasoning aims to increase knowledge (Hughes & Nimmo, 2017).

To gather conclusions from the empirical data to theory, this study used the Contextual Integrity Framework as a starting point to understand general privacy principles. Still, it allowed themes and patterns to emerge inductively from the data. This approach ensures the study remains inductive while recognising the value of established theoretical insights.

3.3.3 Quantitative

Numerical values acquired from observations are used in quantitative research to define and explain phenomena on which the observations can shed light (Taherdoost, 2022). The main goal of the quantitative method is to control the population's perception of the relationship between an independent variable and a dependent or response variable (Mehrad & Zangeneh, 2019). Quantitative research develops a general knowledge of behaviour and other phenomena in many populations and environments.

3.3.4 Qualitative

Qualitative research is an investigation process that aims to comprehend a social or human problem by applying many methodological traditions in inquiry (Khan, 2014). To understand contrary viewpoints within a community, researchers can examine the opinions of both similar and varied groups of people using qualitative methodologies (Choy, 2014). According to Mack *et al.* (2005), in qualitative approaches, participants are free to react freely with their own words to open-ended inquiries. Researchers using this type of inquiry serve an approach to study using an inductive method, emphasising personal meaning and the significance of capturing the complexity of a given circumstance (Creswell, 2015).

3.3.5 Mixed method

A mixed method is a process and approach to research that entails gathering, evaluating, and combining quantitative and qualitative data for a study (Creswell, 2015). According to Taherdoost (2022), researchers might address complex research settings by integrating the two methodologies when using one of the procedures alone is insufficient for a study. Combining these methods can improve comprehension of the issue and produce more comprehensive evidence, giving the researcher both breadth and depth of information.

A common goal of qualitative research is maintaining participants' voices and perspectives (Bhandari, 2020). The aim of the study, which aligns with the qualitative method narrative, led the researcher to use a qualitative approach for this study.

3.4 Research Design

Research design refers to the techniques and processes developed to find, look into and apply solutions to research challenges (Taylor & Medina, 2013). According to Howells *et al.* (2016), research design serves as a crucial framework that directs the way the research questions in the study are administered. Research design includes more than just techniques for gathering and analysing data; it also contains findings, interpretation, and reporting (Vogt *et al.*, 2012). Research designs can be categorised into three types: explanatory, descriptive or exploratory (Saunders *et al.*, 2009).

3.4.1 Descriptive research

Descriptive design attempts to give information about a person or group as well as events or situations, including behavioural patterns, characteristics, attitudes or thoughts (Wang & Park, 2016:85). When conducting a descriptive study, researchers formulate precise factual queries that prioritise "who" and "how" over "why" (Neuman, 2014:39). The objective is to provide an overview of a subject, explain certain features of a phenomenon, and encourage a cursory examination (Zegeye, 2009).

3.4.2 Explanatory research

Finding and quantifying incidental relationships between phenomena is the goal of explanatory or analytical inquiry (Zegeye, 2009). Explanatory studies aim to shed light on an event's underlying causes and motivations rather than merely describing it (Neuman, 2014). Explanatory study researchers are more interested in "why" and "how" to uncover the fundamental causes of a situation or problem and its related components.

3.4.3 Exploratory research

It offers understanding and insights into a problem or circumstance in preparation for a later, more thorough inquiry (Zegeye, 2009). The researcher's objective is to gather enough fundamental data to support additional investigations into newly identified issues or phenomena that require clarification (Wang & Park, 2016). Gupta and Awasthy (2015:16) mentioned that in the exploratory study, a researcher might get a deeper grasp of occurrences by asking "what, how, and why questions". To adjust for any changes brought about by new

insights, exploratory research design necessitates flexibility and adaptation (Saunders *et al.*, 2009).

This study aims to investigate research phenomena that may offer insights into the perceptions of online users of cookie consent notifications, and the use of an exploratory design complements that goal.

3.5 Data Collection Method

Data collection is acquiring and assessing data on relevant variables in a methodical and defined way to address research questions, test hypotheses and evaluate results (Kabir, 2016). The methods utilised for gathering data are crucial because they impact the researcher's methodology and analytical approach, affecting how the information is used and what questions it can answer (Paradis *et al.*, 2016). According to Alao (2016), the data collection tools, which may be well-developed or standardised authentic instruments, are determined by the researcher's needs and the study topics. The following methods are discussed in this section: observations, questionnaires and interviews.

3.5.1 Observations

In observation, information is gathered by the researcher through first-hand observation of behaviours and events in natural environments (Creswell, 2012). It is the method of seeing how people act or behave in circumstances. Paul *et al.* (2014) classified this kind of study as participatory since the researcher had to physically visit the participants' location and take written or audio notes.

3.5.2 Questionnaires

These are instruments with statements or questions that research participants must answer to provide data necessary to meet study goals (Mwita, 2022). A questionnaire is an efficient tool for quickly gathering data from many respondents (Jenn, 2006). Roopa and Rani (2012) added that they are often used in quantitative research to conduct surveys. Using a questionnaire, quantitative data may be gathered in a structured manner that ensures internal consistency and coherence for analysis.

3.5.3 Interviews

Interviews are a means of gathering information through spoken communication between a researcher and a respondent. Interviews can be conducted in person or virtually via phone and video conferencing (Mwita, 2022). Individual perspectives on specific concepts and

circumstances can be investigated through in-depth participant interviews, a qualitative research method (Dudovskiy, 2018). Interviews can be conducted informally (unstructured), semi-formally (semi-structured) or formally (structured).

This study used semi-structured interviews to allow participants to express their views and opinions fully. Semi-structured interviews allow respondents to respond to a series of prepared questions outlining the study's research focus (Creswell 2015). A semi-structured interview allowed the researcher to adjust the sequence of questions and add follow-up as needed (Cooper & Schindler, 2006). Both open-ended and closed-ended interview questions were utilised so that follow-up research could be conducted. To enhance convenience for online participants, platforms like Zoom or Teams were used instead of in-person meetings when necessary. The interview sessions, conducted over forty to sixty minutes, used open-ended questions to collect participants' opinions and impressions on cookie consent notifications.

3.6 Population and Sampling

The population of a study is the "collection of elements" being investigated. Sampling allows a researcher to choose a subset or representative sample of a population that closely reflects the characteristics of interest in a study (Neuman, 2014). The goal of the sampling technique is to minimise the work required to complete the task. There are two significant types of sampling techniques, namely:

3.6.1 Probability sampling

Samples with probability can alternatively be referred to as representative or random samples. Alvi (2016) explained that probability sampling gives each person in the population a known (non-zero) chance of being chosen for the sample. Sharma (2017) described probability sampling as any plan in which the likelihood of selecting each person is the same or at least known, allowing for mathematical readjustment. The two methods of probability sampling are as follows:

- Simple random sampling - is also considered an unbiased method of choosing a sample from a given population because each participant has an equal chance of being selected. A primary constraint of the simple random sampling technique is its requirement for an exhaustive roster of all population members (Sharma, 2017).
- Cluster Sampling or Multi-Stage Sampling - involves choosing samples from naturally occurring groups. Alvi (2016) states this sampling method is employed when the population's constituents are dispersed throughout a large geographic area. The chosen clusters must reflect the population's variety for the sample to be genuinely

representative. Its disadvantage is that the whole population is assumed to share the same viewpoint if the group selected for a cluster sample in the population has a biased attitude (Sharma, 2017).

3.6.2 Non- Probability sampling

Another name for non-probability sampling is judgment or non-random sampling. Not every group in society has an equal opportunity to participate in the investigation (Saunders, 2019). The two methods of non-probability sampling are as follows:

- Quota sampling aims to create a sample proportional to the researched population, such as males vs. girls among students (Sharma, 2017). This sampling approach is utilised for heterogeneous populations that do not meet all predefined requirements. It guarantees that every population subgroup is represented in the sample (Saunders, 2019).
- Purposive sampling is known as judgment, and subjective or selective sampling. Purposeful sampling is a class of sampling methods that depend on the researcher's judgment when choosing study units (Sharma, 2017). Alvi (2016) specified that purposive study includes only elements that fulfil specific criteria rather than everyone available. Purposive sampling allows researchers to establish theoretical, analytic, or logical generalisations based on the researched sample (Sharma, 2017).

This study used purposive non-probability sampling. According to Mujere (2016), it is the recommended approach for qualitative investigations because it employs a non-numerical generalisation. Neuman (2014) mentioned that purposive sampling is adequate in exploratory research to gain deeper insights into some instances or units. The researcher used purposive sampling to select participants who met specific criteria, focusing on individuals familiar with cookie consent notifications. The selection was based on users recently engaging with online applications and interacting with cookie consent notifications on websites or apps. To confirm the suitability of the participants for the study, the first question asked was, "How familiar are you with cookie consent pop-up notifications?"

3.7 Ethics and Consent

Research ethics can be defined as the adequacy of the researcher's action in relationship to the rights of those who form the topic of a study project or who are impacted by it (Saunders et al., 2015:74). This study followed Cape Peninsula University of Technology (CPUT) ethics rules to ensure participants' privacy, confidentiality and anonymity is guaranteed. This research study ensured participants' confidentiality and integrity by protecting their privacy and

preventing harm. Interviews and sessions for focus groups were organised at the participants' convenience, and prior agreement was acquired to record them.

- **Confidentiality**—Participants' rights and identities were protected using pseudonyms to ensure anonymity and confidentiality. The researcher informed participants that the information sought would be used only for academic objectives, such as dissertations, publications, and conferences. It would not be used against them or for financial advantage.
- **Informed consent**—Participants signed an informed consent form before participating in this study. All participants were informed of the study's nature, goals, and objectives. Participants were also informed of their right to decline participation and how data would be safeguarded accordingly.
- **Data Storage**—The obtained data will be retained securely. Hard copies, such as interview notes, would be kept secure and only accessible to the researcher. Data would be anonymised before storage to safeguard participant identities. Identifying information would be maintained separately and password-secured.

3.8 Summary

The first section of this chapter covered the research design approach, which highlighted the principle and goal of the research design approach, including its basis. Section two of the chapter covered research paradigms, explaining the frequently used paradigms and the basis for choosing the paradigm used by the researcher. The third section covered the research approach and methodology, which described the two popular approaches, inductive and deductive. Subsequently, the research methods qualitative, quantitative and mixed methods were discussed. The fourth section covered the research design, highlighting the three types: descriptive, explanatory and exploratory and how they can be exercised in research studies and their benefits. The fifth section discussed the methods of data collection: observations, questionnaires, and interviews. The sixth section covered population and sampling, highlighting probability and non-probability sampling and its elements. The last section covered ethical considerations, highlighting how the research would reflect on the ethics when conducting the study.

The study used interpretivism as a research philosophy and qualitative approaches to achieve its objectives. An exploratory study design was used to understand and examine the phenomenon better. Based on observation of the phenomenon, an inductive strategy was used to develop a new hypothesis. Data collection for this study was interviews. The study used

non-probability purposive sampling to select participants most likely to contribute valuable insights. The data analysis of the study follows in the next chapter.

CHAPTER FOUR: FINDINGS AND DISCUSSION

4.1 Introduction

This chapter provides an analysis of the data gathered and the empirical results of the key conclusions drawn from the data obtained from online user interviews conducted in South Africa. The research study enabled the researcher to draw conclusions about the subject, attempt to address the research questions, offer suggestions and perhaps even propose additional investigation into cookie consent notifications.

As per Chapter 3, this study employs a qualitative methodology with an interpretive perspective to investigate how internet users perceive cookie consent notifications. It is an exploratory study. Exploratory approaches to qualitative analysis are typically not theoretical because they are not intended to prove theories (Leeming, 2018). The researcher anticipates providing new knowledge on the topic that represents the opinions of South African online users. The analysis of this chapter was finished concurrently with the answers to the pre-defined questions pertaining to the themes that emerged from the data collection, keeping the study's goals in mind. The analysis and presentation of the results from the open-ended questionnaire questions are also included. This research aims to explore South African online user perceptions of cookie consent pop-up notifications. The analysis addresses the following research sub-questions:

- What do South African online users understand about the purpose of cookie consent notifications?
- What do South African online users understand about the type of information that should be shared online?
- How do South African online users feel about cookie consent pop-ups protecting their data?

This chapter analyses the gathered data, and the results are presented in accordance with the study's goal as themes relating to subthemes derived from the coding of collected data.

4.2 Analysis Of Findings

The study used the thematic analysis methodology developed by Braun and Clarke. According to Braun *et al.* (2016), research data is categorised and described using themes in thematic analysis. Creswell (2009) recommends thematic analysis as a data preparation, coding and interpretation strategy for qualitative data analysis. Research has also shown that "a rigorous thematic approach can generate an informative analysis that answers specific study questions"

(Braun & Clarke, 2006). According to Alhojailan (2012), it is thought to be the best data analysis technique for investigations that use interpretations to find hidden patterns in data. This approach was thought of for this study because of its interpretative power. As indicated in Chapter 3, the interpretivism paradigm is used in this study. Interpretivists clarify that only subjective interpretation and intervention may lead to a complete understanding of reality. According to Alharahsheh and Pius (2020), knowledge is derived from the human interpretation of events that have been witnessed and from individual views, values, and reasons. This study benefited most from using thematic analysis, which is thought to be the most effective technique for interpreting data and producing information.

The researcher recorded, took notes, and documented the responses to the open-ended questions that were asked during the interviews. Capturing notes during the interviews benefited the transcription process, as the researcher was already informed of the data. Research themes were derived from the data during data analysis and were based on the study's objectives and research questions.

4.2.1 Analysis Process

According to Sundler *et al.* (2019), thematic analysis aims to gain insight into meaning patterns from data on actual experiences. The researcher followed the following process.
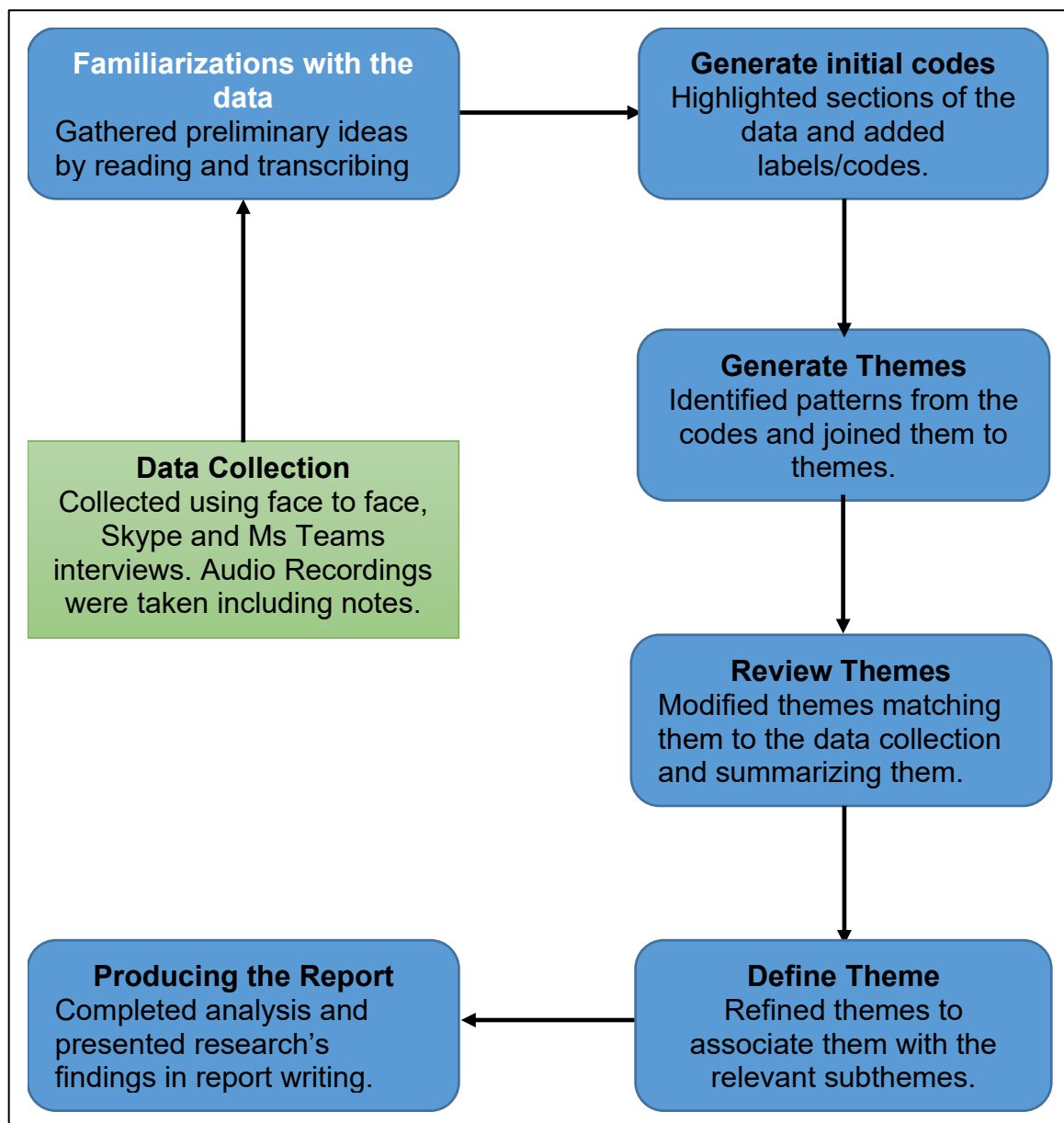
Figure 4-1 Thematic Analysis Process (Adapted from Braun & Clarke, 2016)

Following Braun and Clarke's guidance, the researcher undertook a systematic process, as detailed in Figure 4-1. First, data was collected through in-person interviews, Skype, and Microsoft Teams. Voice recordings of the interviews and participants' responses noted during the sessions were transcribed into text. After transcription, the researcher identified codes from the transcripts, assigning descriptive codes to the data.

These descriptive codes highlighted the key concepts related to the research sub-questions. The researcher then looked for connections between the codes to develop broader themes. These themes were crafted to address the research sub-questions, aligning with the study's aim, objectives, and the existing body of literature. The initially developed themes were subsequently refined for clarity and accuracy.

The researcher revised the emergent themes for quality assurance to ensure they accurately represented the data. These refined themes were then used to categorise the data. To avoid duplication, each theme was only counted once, regardless of how often it appeared in the data. The researcher relied on her critical assessment to form the final themes, ensuring a rigorous and systematic analysis.

4.3 Participation Overview

The data for this analysis was gathered through semi-structured interviews with 15 online users from the Cape Town area. The researcher employed purposive sampling to select participants who met specific criteria, focusing on individuals familiar with cookie consent notifications. The first question, "How familiar are you with cookie consent pop-up notifications?" was posed to validate the appropriateness of the participant selection for the study.

Interviews lasted between forty and sixty minutes, utilising open-ended questions to capture participants' opinions and impressions regarding cookie consent notifications. This approach allowed participants the freedom to express their thoughts fully, aiming to gather additional insights that would enhance the interpretation of the data.

Participant identities were kept confidential throughout the research process. To ensure privacy, individuals were referred to as "Participant" followed by a number, maintaining anonymity in reporting the findings.

4.4 Overview Of Themes

There are various methods for identifying themes in written material. These methods may involve analysing the text for repeated words and their frequencies, as well as examining metaphors and linguistic connectors (Herzog *et al.*, 2019). Themes can also be derived from general knowledge or existing literature on the subject (Braun & Clarke, 2006). In this study, the researcher employed an inductive approach, formulating themes directly from the data based on common sense. The following themes were utilised for data interpretation.

Table 4-1 Overview of Themes

Themes	Sub-themes	Descriptions
User Comprehension of Cookie Consent Mechanisms	Cookie Knowledge	This theme focuses on users' understanding and knowledge about the purposes and implications of cookie consent notices. The theme relates to the question, "What do South African online users understand about the purpose of cookie consent notifications?"
	Cookie Purposes	
	Cookie Acceptance Benefits	
	Cookie Limitations	
Perceptions and Practices of Online Data Disclosure	Information Sharing	This theme addresses how users perceive and practice data sharing online, considering the type of information they are willing to share and under what contexts. The theme relates to the question, "What do South African online users understand about the type of information that should be shared online?"
	Information Sharing Context	
Effectiveness of Consent Notifications in Ensuring Data Privacy	User Concerns on Information Privacy	This theme explores users' perceptions of how well consent notifications protect their data privacy. The theme relates to the question, "How do South African online users feel about cookie consent pop-ups protecting their data?"
	User Sentiments on Cookie as Data Protection Tool	
	User perceptions of consent notifications design	
Enhancing the Efficacy of Cookie Consent Notifications	User Suggestions for Improving Cookie Consent Notifications	This theme seeks to gather user feedback on improving consent notifications. The theme relates to the question, "How do South African online users feel about cookie consent pop-ups protecting their data?"

4.5 Presentation Of Findings

The table included in the themes overview (Table 4-1) serves as the foundation for the researcher's presentation of the study's findings. The sub-themes that link each theme and the data results specific to each topic are examined.

- What do South African online users understand about the purpose of cookie consent notifications?
- What do South African online users understand about the type of information that should be shared online?
- How do South African online users feel about cookie consent pop-ups protecting their data?

4.5.1 User Comprehension of Cookie Consent Mechanisms

This theme explores user knowledge, views and understanding of the purposes and implications of cookie consent notices. To encourage participants to completely express their understanding of the topic, the researcher employed a series of open-ended questions with follow-up inquiries. This theme addresses the first research question, which aims to determine how well users understand the significance of cookie consent notifications. The sub-themes of cookie knowledge, cookie purposes, cookie acceptance benefits and cookie limitations, derived from the key codes related to user understanding of cookie consent, are examined.

Cookie Knowledge

The researcher inquired about users' familiarity with cookie consent notifications. Six participants said they had a basic comprehension of the idea. Eight respondents claimed to be aware of cookie consent notices when using the internet; however, they were unclear about the subject. In contrast, one participant demonstrated a more profound familiarity, stating, "*I am very familiar with this. I have previously worked with it and developed a recruiting website at my previous company, which also included the cookie pop-up*".
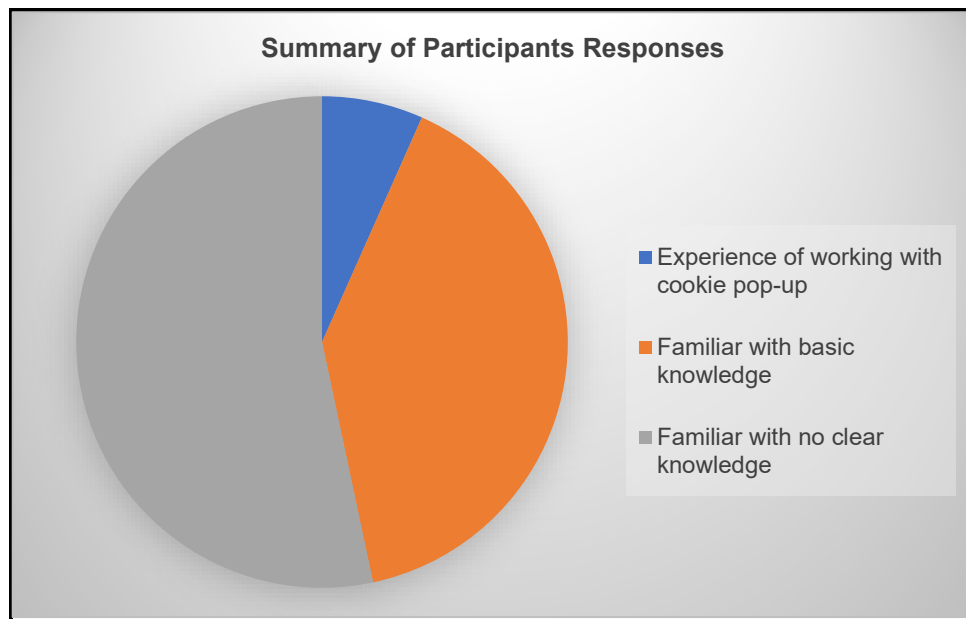
Figure 4-2 Summary of Cookie Knowledge

Cookie Purposes

The sub-theme explored user perceptions regarding the purpose of cookie consent notices. The findings revealed several key aspects: access to browsing history/preferences, user awareness, user tracking for adverts, user statistical reports, and a lack of understanding of cookie purposes.

Eight participants indicated that the primary purpose of cookie consent is to store their browsing history and preferences. For instance, Participant 3 stated, "*From a business perspective, I think it helps them for consumer research to understand preferences, such as which products we typically use and like.*" Many users recognised the benefits associated with this practice, as Participant 15 noted, "*I believe one advantage is that when they gather my information, it enhances my user experience on the website, potentially making it easier for me. It streamlines my interests.*" This perspective underscores that access to browsing history benefits users and provides valuable insights for companies in their advertising strategies.

Additionally, two participants identified user awareness as a significant purpose and advantage of cookie consent notifications. Participant 7 remarked, "*I believe the advantage is that when these notifications appear, there's a sense of awareness being conveyed, whether it's positive or negative.*" While this participant was uncertain about the specifics of that awareness, they noted that such notifications create an immediate consciousness about related issues, occasionally serving as alerts for potential threats. Another participant emphasised that these

notifications explicitly request permission to share personal information, highlighting their role in fostering user awareness.

Ten participants identified user tracking for advertisements as a primary purpose of cookies. Among them, four expressed that these targeted ads are often detrimental, with Participant 2 stating, "*The disadvantage is that they bring unwanted, annoying advertisements without consent.*" Additionally, six participants mentioned access to browsing history and preferences, linking it to the idea that firms benefit from tracking these details. Participant 4 highlighted both the advantages and risks of such tracking, noting, "*From a user's standpoint, while tailored recommendations can be convenient, they often lead to increased spending compared to if marketing efforts were not personalised.*" This reflects a split in user opinions; some appreciate personalised ads for convenience, while others find them intrusive and unsolicited.

Two participants discussed using cookies to compile user statistics on trends, demographics, and website traffic, indicating that businesses profit from this data by connecting it to targeted ads.

However, two users expressed confusion regarding the purpose of consent notifications. Participant 8 remarked, *"I have no idea of their purpose since I do not typically read the fine print boxes. During online shopping, I usually just focus on getting the item I want, whether it's a bag or shoes. I don't pay attention to or care about anything else, as reading through those details can be too time-consuming.*" This statement underscores a significant lack of awareness, which may hinder the potential benefits of consent notifications. Ultimately, while user engagement with these notices can impact data usage, the effectiveness of consent mechanisms is heavily influenced by individual choices regarding attention and understanding.

Figure 4-3 illustrates the average response for each item in the results, supporting the above statements about the results.

Summary of Participants Responses

- Access to browsing history/preferences
- User awareness
- User tracking for adverts
- User statistical reports
- Lack of understanding of cookie purposes

Figure 4-3 Summary of Cookie Purposes

Cookie Acceptance Benefits

This sub-theme investigates how users perceive the advantages of accepting cookie consent notifications. The findings are categorised into four key areas: access to the website, uncertainty about cookie consent advantages, access to browsing history/preference and privacy protection.

Six participants indicated that they accept cookie consent notifications primarily to gain access to websites. For instance, Participant 8 remarked, "*Simply rejecting allows you to proceed to the website without dwelling too much on the concept*," Participant 9 added, "*Continue browsing the website without interruption*." These responses suggest that many users select the "accept cookies" option without fully considering the implications.

Conversely, five participants expressed uncertainty about the advantages of consenting to cookies. Participant 6 noted, "*I'm unsure about accepting them because I'm uncertain about their purpose*," indicating a cautious approach to consent. This participant prioritised the safety of their information, stating, "*I consistently opt to decline them. I prioritise the safety of my information and am willing to forego access to websites if it means not compromising my privacy*." Similarly, Participant 10 expressed a lack of understanding: "*I believe that with a clear understanding of cookie consent notifications, I would be able to respond to you. However, since I am not aware of their actual functionality, I am uncertain*." In this group, participants 8, 10, 13, and 11 accepted cookies mainly for website access, while Participant 6 preferred to decline due to trust concerns.

Five participants recognised that accepting cookie consent could facilitate access to their browsing history and preferences. Participant 1 stated, "*You are granted access to the website, and it stores data for future reference. This enables you to pick up where you left off on the website in case of disconnection*." These users appreciated the convenience offered by this feature, with Participant 14 noting, "*It will display what I have previously viewed or browsed. For instance, if I was searching for a specific shoe, it will direct me to the website related to that search*."

Interestingly, two participants held a different view, believing that accepting consent notifications provided them with privacy protection. Participant 1 remarked, "*I believe that by accepting the cookie consent notification, you are granting permission for your data to be protected*." At the same time, Participant 7 added, "*From a company's perspective, when you agree to them, in many instances, they likely include a security feature to safeguard your data*." Despite their belief in the protective nature of these notifications, they struggled to articulate how this protection is actually implemented.

Figure 4-4 illustrates the average response for each item in the results, supporting the above statements about the results.
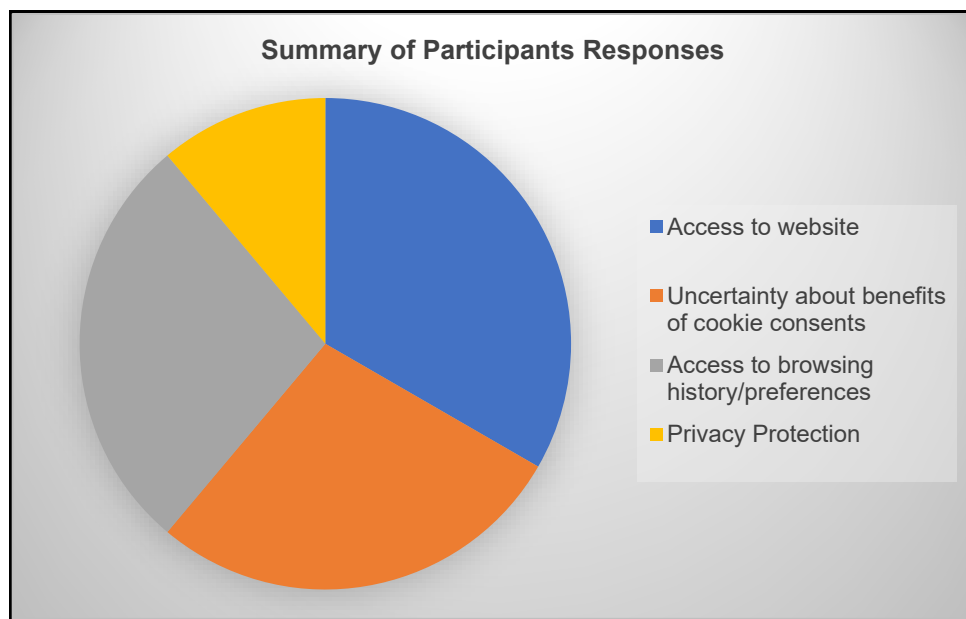
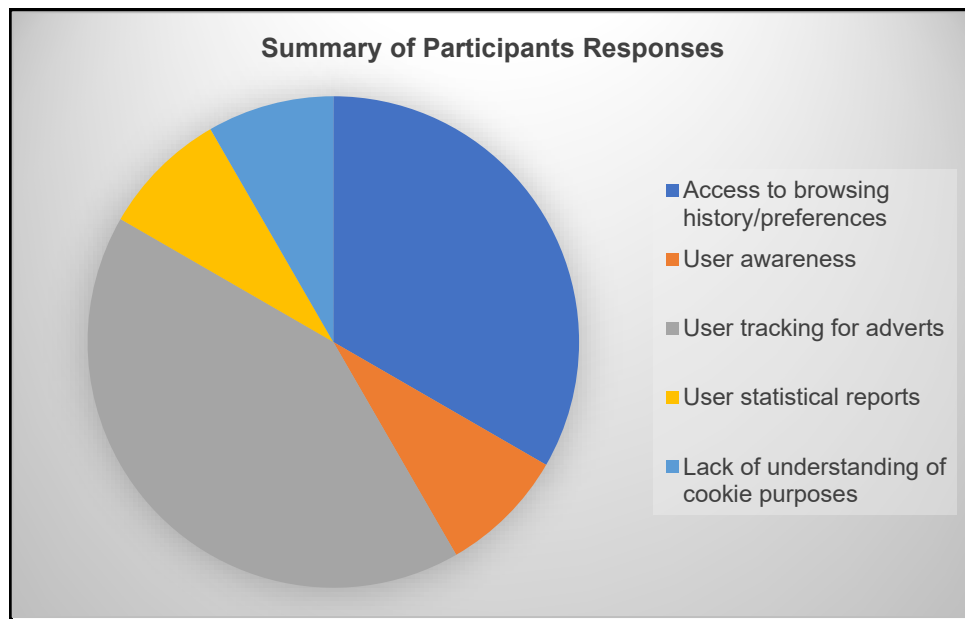*Figure 4-4 Summary of Cookie Acceptance Benefits*

Cookie Limitations

This sub-theme highlights the challenges users face when interacting with cookie consent notifications. Key concepts emerging from this analysis include limited access to websites and aggravation. When asked about the advantages of rejecting consent notices, eight participants

expressed concerns that doing so would hinder their ability to access websites. Participant 1 stated, "*There are no advantages to rejecting, as it will result in being denied access to the website.*" Similarly, Participant 4 noted, "*I don't see much advantage in refusing them either because you cannot use the full features of the website if you reject them.*" Other participants echoed this sentiment, fearing that rejecting cookies would restrict or entirely block access to specific sites. Participant 6 articulated this challenge: "*There are instances where rejecting cookies can limit access on certain websites.*" This perception compelled participants to accept cookie consent notices to avoid losing access to necessary online resources. Participant 11 articulated this reliance, saying, "*Accepting enables me to utilise the website,*" while Participant 1 added, "*You are granted access to the website*" upon acceptance.

Conversely, two participants found cookie alerts intrusive, disrupting their focus and engagement with the desired website. Participant 8 expressed her frustration: "*The drawback is that it's bothersome every time it appears, requiring me to accept or reject, which is just too much effort for me.*" Supporting this view, Participant 13 remarked, "*The downside is that when I try to access information on a website, a pop-up covers the content and prompts me to accept or reject it, which consumes time as I must accept to remove the overlaying pop-up.*" Both participants clearly articulated their desire for seamless access to websites, indicating that the consent pop-ups merely prolong their interaction with the site, adding unnecessary delays to their browsing experience.

Figure 4-5 illustrates the average response for each item in the results, supporting the above statements about the results.


Summary of Participants Responses

- Limit Access to website
- Aggravation
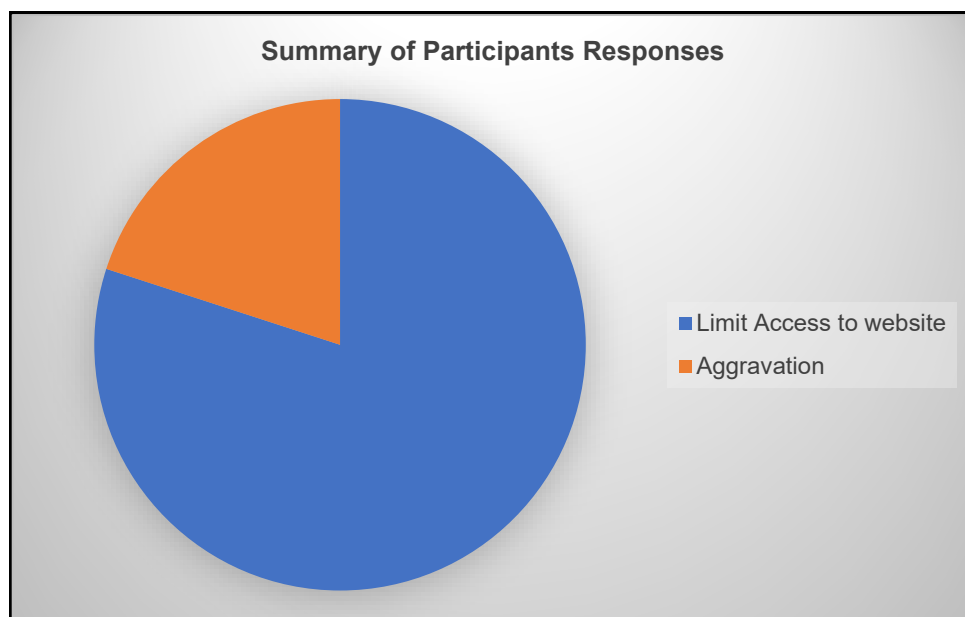
Figure 4-5 Summary of Cookie Limitations

The chart below shows the summary of responses for all subthemes within this subject.
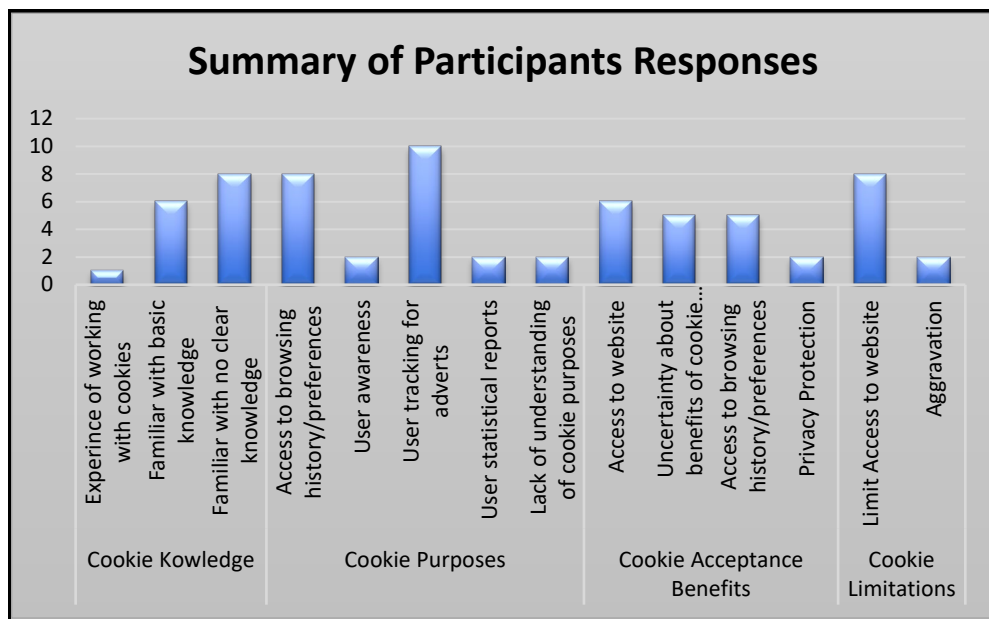
Figure 4-6: Summary of User Comprehension of Cookie Consent Mechanisms

Discussion of User Comprehension of Cookie Consent Mechanisms

The theme name is derived from key codes from the results of user responses regarding their understanding and familiarity with cookie consent notifications. Understanding cookie consent is central to this theme, as evidenced by users' varied responses, which ranged from slight comprehension to uncertainty or lack of understanding. For example, Participant 3 stated, "*I am quite familiar with cookie consent notices. I believe I grasp their concept, although I would not confidently say I fully understand them*." Another participant, when asked about the advantages, responded, "*I'm uncertain because I rarely read those consent notifications, and I don't believe they provide sufficient explanations for their presence*." These responses highlight different levels of user comprehension regarding consent notices. The theme name was formed by grouping the key codes from these responses and aligning them with research question one, which aims to understand the purpose of cookie consent notices. The name is more consistent with the POPIA openness principle by highlighting the user's grasp of cookie consent mechanisms.

According to the above data, most users know that cookies track their browsing history for advertisement. The data also show a lack of engagement with the consent notifications. Users' decision to accept cookies is influenced by their ability to access the website and their perception that refusing them would restrict their access. In addition, users' decisions to accept consent notifications are also influenced by the irritation they experience with the layout and

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presentation of the cookie consent notification, which can be time-consuming for them. The analysis summary revealed several key themes regarding user comprehension of cookie consent mechanisms: tracking user preferences for advertisements, lack of engagement with notifications and irritation and time consumption. These findings align with and extend the current literature on the topic.

Tracking of user preferences for advertisements

According to most users, cookies are used to track their preferences and browsing history to display ads. This result supports the claim made by Molnar (2020) that cookies enable the tracking of users' online activity, thus eliminating any possibility of online privacy. Furthermore, supporting Maffei's (2020) claim that third-party agents employ user profile tracking to obtain additional data to create more personalised advertisements. While some users perceived the tracking of their browser history as beneficial, others expressed uneasiness about this activity, believing it to violate their privacy because they are frequently unaware of it.

Lack of Engagement with Notifications

The study found that users rarely read cookie consent notifications, which aligns with Hildebrand & Nyquist's (2021) assertion that users are often disengaged from privacy rules. This lack of engagement can be linked to the concept of "consent fatigue", as described by Machuletz & Bohme (2020), where users become desensitised to consent requests due to their ubiquitous nature. Without considering the hazards involved, the user's purpose of visiting the website significantly influences whether or not they choose to accept the cookies, claims Narayanan, 2020. The findings support Narayanan, as they also show that most of these users accept the notifications to gain access to the website without understanding their intentions. Furthermore, Jayakumar (2021) asserts that consumers have no interest in cookies and that expecting consent from individuals who don't understand every aspect of technology is unjust. The findings suggest that this disengagement is exacerbated by the perceived complexity and length of the notifications, which users find overwhelming.

Irritation and Time Consumption

Many users indicated that they find cookie consent notifications irritating and time-consuming, often leading them to accept cookies without fully understanding the implications. This finding corroborates Gröndahl's (2020) observation that users see digital cookie permission forms as a nuisance. However, it also expands on this by highlighting specific aspects contributing to user frustration, such as the frequency and intrusiveness of these notifications. This can be

linked to Fernandez *et al.* (2021) claim that many cookie consent forms have lengthy privacy statements and deceptive interfaces that entice users to accept the default cookie settings.

Linking to Theoretical Framework

Using the principle of openness in the POPIA Framework. The openness principle stipulates unequivocally that the subject of the data must be notified of the purpose of the collection, the person collecting it, the location of storage, and their access rights, deletion, updating or unambiguously stating whether data would be shared with a third party while being processed. According to the results of this theme, the openness of the consent notifications is not expressed enough to give users an understanding of their intended purposes due to their complexity for user comprehension. Therefore, results show that principles of openness and data security safeguards are not effectively communicated through current consent mechanisms. This indicates a significant gap between regulatory requirements and user experience, underscoring the need for more transparent and contextually appropriate consent practices.

4.5.2   Perceptions and Practices of Online Data Disclosure

This theme explores users' perceptions and practices regarding online data sharing, focusing on the types of information they are willing to share and the contexts in which they do so. Information sharing and information sharing context emerged as the two sub-themes from the findings. This theme addresses the second question, which tries to comprehend user opinions on what kinds of information ought to be shared online.

Information Sharing

This sub-theme aimed to examine the types of user data that individuals believe should or should not be shared online. The findings are categorised into three distinct perspectives: non-personal data can be shared, no information can be shared, and personal data should not be shared. Four participants expressed that non-personal information should be disseminated online. Three individuals identified non-personal data as insights into user preferences and interests that could be leveraged for tailored advertising. Conversely, one participant suggested that sharing website visitor names with site owners for statistical purposes could be acceptable.

In stark contrast, 14 participants opposed the sharing of personal information, primarily due to trust and privacy concerns. However, they exhibited differing views on what constitutes personal information. Participant 4 defined personal data broadly, stating, "*Any personal data,*

including names, surnames, ID numbers, dates of birth, and cell phone numbers, should be treated privately." Meanwhile, Participant 13 offered a more specific definition, listing "*full name, identification number, residential address, mobile number, and email address*" as personal information.

Some participants acknowledged the value of receiving personalised advertisements based on their search history, leading them to view email addresses as less sensitive. Nonetheless, most participants highlighted identity numbers and bank account details as clear examples of personal information that should remain confidential. Overall, the responses indicate that user preferences are crucial in determining the types of information individuals are willing to share online.

Information Sharing Context

The findings of this sub-theme illustrate users' discretion in sharing data online, reflecting insights from the previously discussed theme. Most users emphasised the importance of avoiding the sharing of private information. Six additional participants indicated that the decision to share data depends on the context of the website visit. For instance, Participant 5 noted, "*Identification number, cellphone number and credit card details are typically required for online purchases.*" This suggests an expectation that such information is necessary for payment processes but emphasises that it should not be shared outside of purchasing scenarios.

Participant 2 highlighted the role of consent in this decision-making process, stating, "*With clear consent, any information can be shared to process online applications. Without consent, my interests can be shared for advertising.*" This underscores that while personal information may be disclosed for transactions, explicit consent remains crucial.

Respondent 13 illustrated a more nuanced view by expressing a willingness to share family photos, which he considers private, to preserve memories online. This indicates that user intent significantly influences decisions about data sharing. However, another participant pointed out that trust in a specific website is also a determining factor: "*It depends on the specific website and what you use it for.*" This participant articulated that their comfort level in sharing information is contingent on the trustworthiness of the company, stating, "*I feel at ease if I trust the company.*" Overall, the findings suggest that users' intentions and the perceived trustworthiness of websites play pivotal roles in shaping their choices regarding online data sharing.

Below are the summary findings for the online data-sharing theme's sub-themes and the average replies for each code.

Summary of Participants Responses

- Non-Personal data can be shared — 14%
- Personal data should not be shared — 50%
- No user information should be shared — 14%
- Personal data should be shared based on the context. — 22%
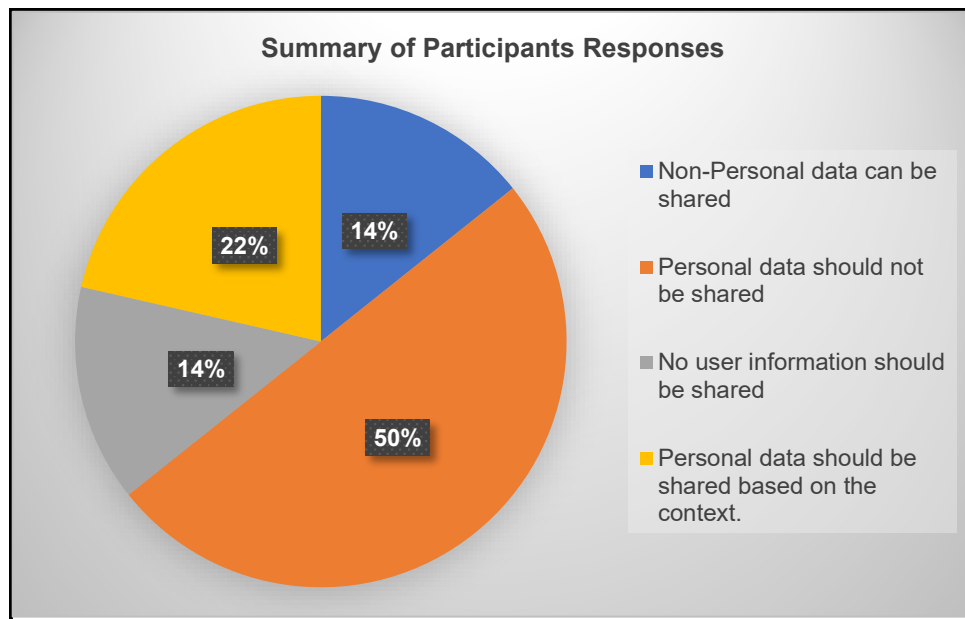
Figure 4-7 Summary of Perceptions and Practices of Online Data Disclosure

Discussion of Perceptions and Practices of Online Data Disclosure

This theme emerged from analysing key terms indicating users' diverse preferences for online data sharing. The theme name reflects the variety of responses, highlighting different perceptions of what constitutes private data and the practices associated with categorising it. For instance, when asked why information should be shared online, one user mentioned, "*For statistical purposes, allowing companies to track the number of visitors to their websites*." At the same time, another asserted, "*No information should be shared*." Additionally, when asked what kind of information can be shared online, responses varied: one user said, "*Any information that is not personal, unless it's for a job application, which requires processing by multiple individuals*," whereas another suggested, "*Age, income ranges, and educational attainment for shopping assessments*." These differing perceptions and practices regarding online data disclosure underpin the theme, ensuring that all opinions are considered. The theme name aligns with the Contextual Integrity framework, which emphasises the appropriateness of information sharing and guides the analysis of the second question of this study. The key terms that came out of the summary of the results of this theme were confidentiality of user information and appropriateness of information sharing.

Confidentiality of user information

A major topic of discussion was the kind of data that is shared and how sensitive they are thought to be. Most users were emphatic about not disclosing personal information online due to privacy worries. Users provided identity numbers, phone numbers, banking information, passwords, residential and postal addresses and full names as categories of personal data. Schomakers *et al.* (2020) assert that users' opinions vary, particularly in how serious they consider their privacy concerns. The results revealed this as some participants considered names and email addresses personal information, while others did not share this opinion. According to study findings, many users expressed privacy concerns as a barrier to sharing their information online as they are unaware of how their data is protected online. The finding links to Boerman *et al.* (2021) that users don't seem to be very confident in their abilities to secure their personal information online since they don't know what options are accessible to them. The variations in user choices highlight the significance of clearly defining the personal information in consent notices to facilitate better comprehension.

Appropriateness of information sharing

Though many users were not comfortable sharing their information online, the context of divulging personal information played a significant role in their decisions to disclose information. Barth *et al.* (2006) present that specific goals or values can identify context in addition to roles and customs. Users expressed varying opinions, each motivated by a distinct set of values, which exemplifies the idea of context. Users were adamant that they did not want their information to be shared online. Yet, others saw the value in giving businesses their email addresses and preferences so they could advertise to them for their convenience. The sharing of user data raises the question of whether it is used only for the purpose it was collected.

Linking to Theoretical Framework

Using the Contextual Integrity Framework, the study highlights that the current cookie consent practices often violate the norms of appropriateness and information flow. The findings suggest that users' expectations of privacy are not met because the consent notifications do not provide sufficient context or transparency. Nissenbaum (2011) claims that appropriateness rules specify what personal information is appropriate to share in a specific circumstance. It determines whether disclosing a particular type of personal information in a specific circumstance is permissible or unsuitable. The study's findings also demonstrate that users link the background in which their data is shared when making an online data-sharing decision. Sharing user information to process online purchases can be deemed suitable for the user's

intention to purchase. However, when user data is transferred to third parties for the benefit of adverts while users are unaware, it breaches data security.

4.5.3 Effectiveness of Consent Notifications in Ensuring Data Privacy

This theme examines users' perceptions of the effectiveness of consent notifications in protecting their data privacy. The findings are organised into two sub-themes: user concerns on information privacy and user sentiments on cookies as a data protection tool. The third research question aims to gauge users' views on whether cookie consent notifications safeguard their online personal information. The results of this analysis sought to address this critical issue.

User Concerns on Information Privacy

The findings of this section indicate that users display significant concerns about their privacy when confronted with cookie consent notices, with "privacy concerns" emerging as a predominant theme. Throughout this investigation, issues related to privacy were consistently highlighted across multiple themes. In the first theme, when participants discussed the drawbacks of cookies and the potential benefits of acceptance, the majority cited privacy as a significant concern. Trust issues related to privacy were further emphasised in the second theme, where participants articulated their reasons for being reluctant to disclose personal information online.

When asked about the advantages of cookie consent notifications, Participant 3 expressed ambiguity: "*For me, I don't actually trust it, especially given the current prevalence of scams and hackers. To me, it seems like there are more disadvantages, as I worry that my information could be stolen or hacked if I consent.*" This sentiment was echoed by Participant 1, who stated, "*I cannot speak much about the benefits, but I do know the downside. Allowing cookies can lead to the sharing of your personal information.*"

Participant 7 further elaborated on reasons to avoid sharing information online, citing privacy concerns: "*Confidential information shared online can promote scams against individuals.*" Similarly, Participant 8 voiced apprehension, stating, "*Since online platforms cannot be trusted, there is a possibility that someone with malicious intent could exploit the situation. This could lead to my funds being stolen, my property or assets being transferred to someone else's name, or even being falsely married to someone I do not know.*"

Twelve participants expressed privacy concerns in response to inquiries about the purpose of cookies, while three did not mention such issues. Importantly, all fifteen participants

acknowledged a general concern about privacy when sharing information online. The responses indicate that privacy concerns are a recurring topic, suggesting that despite various data privacy regulations, including cookie consent notifications, users remain apprehensive about the potential compromise of their personal data.

User Sentiments on Cookie as Data Protection Tool

This section seeks to understand how users feel about cookie consent notices as a means of safeguarding user data when they are online. The terms user uncertainty about cookie safeguarding data, cookie consent notice not being guaranteed for data protection, and compliance with data protection measures were the keywords for this sub-theme.

When participants were asked about their understanding of how cookie consent notifications protect their online data, twelve expressed uncertainty regarding the effectiveness of these notifications. For instance, Participant 8 articulated a lack of confidence, stating, "*I am not at ease because I would require a better understanding of how it ensures the security of my data.*" Similarly, Participant 9 emphasised that ignorance about cookie functionality fosters doubt about data protection, remarking, "*If I understood the methods they use to safeguard my data, it would reassure me. However, without insight into their data protection measures, I hesitate to trust them.*"

Participant 2 highlighted a critical perspective: "*They ask you to consent while claiming they will protect your data, though this is not always guaranteed.*" The participant elaborated that while they would typically provide consent, they were unaware that this often led to constant advertisements, challenging the notion of guaranteed protection. This statement raises important questions about consumer awareness and the necessity of reading terms and conditions to fully understand what the consent notification entails. Therefore, consenting without thorough comprehension may fail to provide genuine protection, as individuals may overlook the implications of pre-checked boxes related to data sharing.

The requirement for users to read the terms and conditions to understand what is actually protected by cookie consent notifications raises significant concerns. Without this awareness, users remain unaware of what data-sharing options are pre-checked in the consent notice. Consequently, consenting without prior examination does not provide proper protection, highlighting users' general lack of understanding about this issue.

When asked about their views on cookie consent notifications as a data protection method, nine participants expressed uncertainty regarding their effectiveness, with two outright stating that such protections are non-existent. Participant 11 asserted, "*It fails to safeguard my data;*

instead, it serves the interests of companies by facilitating the sharing of my information." She further elaborated, "That is not true; they do not provide protection, so I am definitely not comfortable." Participant 4 echoed this sentiment, stating, "*I don't necessarily believe it effectively safeguards my online data. While it's reassuring to think that companies adhere to such standards, unfortunately, that's not always the reality.*"

Additionally, Participant 15 responded dismissively, indicating a lack of interest, and stated, "*Highly indifferent and lacks credibility.*" Participant 2 also voiced doubts, asserting, "*I do not think it's the best tool for protecting your data; somehow, your data can be shared unknowingly.*" These responses collectively illustrate a pervasive lack of confidence among users in the efficacy of cookie consent notifications.

Two participants noted that businesses claiming to secure data do so by adhering to data protection regulations. Participant 4, when asked how cookies protect user data, remarked, "*I believe it indicates to me that the company likely abides by or is attempting to comply with the POPI Act, ensuring they won't misuse my personal information as previously mentioned.*" Participant 14 supported this perspective, stating, "*They assert that they adhere to policies aimed at safeguarding my data.*"

These responses suggest that only these two participants from the pilot study demonstrate an awareness of the regulations designed to protect user information online, indicating a limited understanding among the broader group regarding the expectations that businesses are obligated to meet. This lack of awareness raises concerns about users' ability to critically assess the effectiveness of data protection claims made by companies.

The summary results of the respondents' assessments of the impact of cookies on data privacy are shown in the diagram below (Figure 4-8).
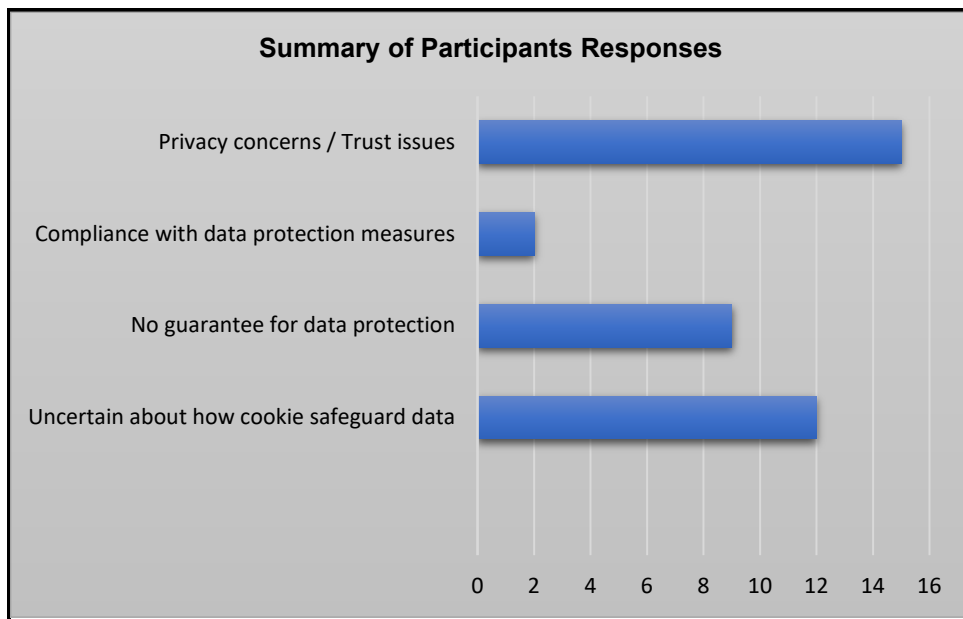
Figure 4-8 Summary of Discussion of Effectiveness of Consent Notifications in Ensuring Data Privacy

Discussion of Effectiveness of Consent Notifications in Ensuring Data Privacy

The analysis of the collected data regarding question 3 of the research revealed several key codes related to the effectiveness of consent notices. When users were asked to express their feelings about consent notices in terms of data protection, many expressed doubt regarding their effectiveness. One user articulated this uncertainty, stating, "*There are uncertainties regarding protection*," while another commented, "*I don't necessarily believe it effectively safeguards my online data.*" When discussing their understanding of how consent notifications protect their data, a user noted, "*They make you aware that they will be protecting your data, though it is not always guaranteed.*" Another participant conveyed a lack of trust in these measures, stating, "*I currently lack insight into their data protection measures, and I am hesitant to trust them with my data.*" The theme name aims to encompass all results reflecting users' perceptions of consent notices as tools for data protection. This theme underscores the efficacy of these notifications, reflecting principles of data protection and user trust as outlined in the Contextual Integrity distribution of information norms and the data security safeguards of the POPIA Framework. The key findings summarized within this theme include issues of data privacy trust issues and insufficient comprehension of data protection through consent notices. These results contribute to and expand upon the existing literature on this topic.

Data Privacy Trust issues

The findings indicate a widespread concern among users regarding the privacy of their online data, with many expressing fears that their information could be exploited for fraudulent

activities and scams without their knowledge. This resonates with Nyoni *et al.*'s (2020) survey findings, revealing significant apprehension among South Africans, where 42% are worried about their data being misused online. Choi *et al.* (2018) also found that some users disregard online privacy concerns due to frustration with ineffective safeguards that fail to protect their data adequately. The study's results underscore users' disbelief towards the effectiveness of consent notices in protecting their data despite the existence of data policies intended for their benefit. This scepticism highlights a critical gap between policy intentions and user perceptions of their practical outcomes. From (2020:38) argues that persistent power imbalances between website managers and online users render consent ineffective as a tool for empowering consumers. The study corroborates existing literature by highlighting users' dissatisfaction with permission notices, which they perceive as failing to ensure the safeguarding of their data.

Insufficient comprehension of data protection through consent notices

The findings reveal a widespread uncertainty among users regarding how permission notices safeguard their information, echoing Jayakumar's (2021) observation that many users possess only a basic understanding of cookies—their risks, purposes, and benefits. Parker (2021) underscores that this lack of awareness leaves users vulnerable to data risks exploited by malicious actors. The majority's lack of engagement with consent notifications further contributes to their misunderstanding of data protection mechanisms, consistent with prior research indicating that uninformed users face greater risks than protections. The fact that users often overlook permission notices and accept website access without fully assessing potential consequences underscores these concerns.

Linking to Theoretical Framework

Nissenbaum's (2011) theory of distribution norms posits that information should be disseminated while maintaining the context in which it was originally provided. The study's findings underscore users' concerns regarding the privacy of their online data. It highlights worries that certain information may be shared without adhering to users' specified settings, potentially leading to fraudulent activities facilitated by such data breaches. Upholding the POPIA principle of data security mandates responsible parties to retain information and prevent unauthorized access securely. Survey participants express scepticism towards permission notices that pledge data protection, citing instances where unauthorized third parties have exploited user-provided information online. These findings suggest that organizations must ensure data security to comply with data protection regulations and instil trust among users.

4.5.4   Enhancing the Efficacy of Cookie Consent Notifications

This theme examines user feedback on how to enhance consent notifications to better align with their needs. A key sub-theme specifically addresses user suggestions for improving cookie consent notifications. The insights gathered from this theme aim to respond to question 3, which investigates users' perceptions of the effectiveness of cookie consent notifications in protecting their online data. Additionally, these findings serve as a basis for further recommendations.

User Suggestions for Improving Cookie Consent Notifications

Study participants were asked to provide feedback on improving cookie consent notifications to enhance data security for users. Their responses highlighted three key areas: clear, short, standardized method for consent notices, clear, bold, short, precise content on the consent notices, and user education on consent notices.

Participant 6 emphasized the importance of "*clear options for selecting consent preferences and establishing a standardized method for presenting notifications across all websites*." This participant noted the inconsistency of consent notices on different sites and suggested that a uniform design would improve user interaction with these notifications.

Eleven participants expressed the need for better-designed pop-up alerts for cookie consent. Participant 8 stated, "*Information should be straightforward, written in plain English, easily comprehensible, and presented in larger text for quick understanding*." Participant 11 echoed this sentiment, pointing out that the current presentation is often unclear, requiring users to scrutinise the fine print. The individual clarified, "*Notifications should be transparent rather than making users navigate to another page for terms and conditions. A simple statement indicating that using the website may share your details with third parties would suffice*." These comments reflect a desire for clearer communication regarding data sharing, ensuring that notices are noticeable and not easily ignored.

Additionally, a couple of participants highlighted the necessity of educating users about cookie consent notifications, as many encounter them daily without fully understanding their purpose. One participant remarked, "*Educating through awareness involves providing clear information on how data protection measures are implemented*." They noted that while lengthy notices may contain important information, users often lack the time to read them when accessing websites. Thus, knowledge should be disseminated through various platforms before users engage with the notices. Another participant stated that understanding how cookies protect their data would benefit from better education on cookie consent notifications.

However, one participant expressed ambiguity regarding the effectiveness of consent notices, stating, "*Even if there were assurances that your information won't be shared, it's difficult to consider it completely safe, as the internet always carries risks.*" This comment underscores a general lack of confidence in the effectiveness of consent notifications and the broader methods used to protect user data online.

Below are the findings that illustrate users' recommendations for enhancing consent notices to benefit them.
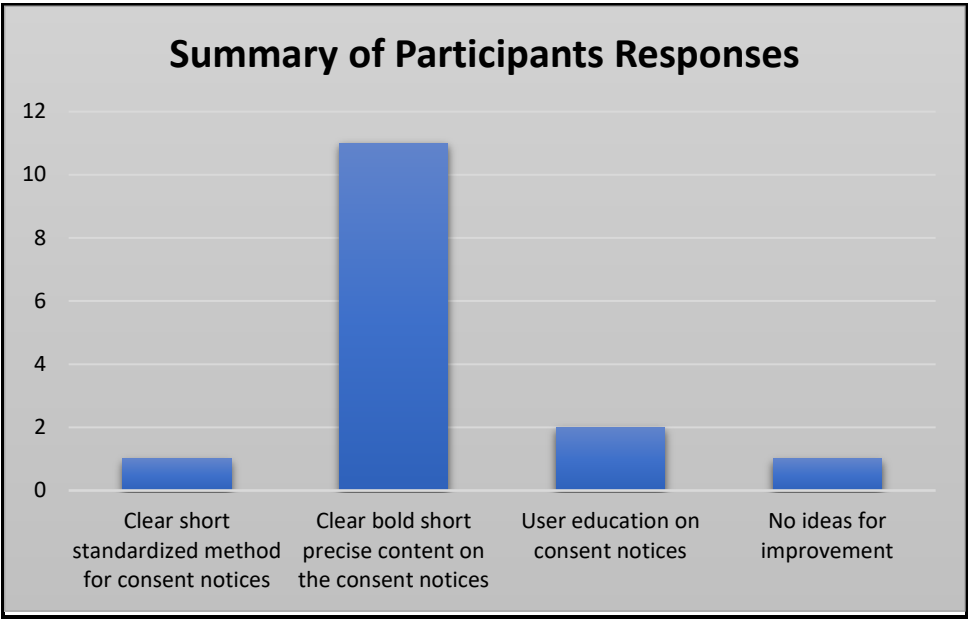
Figure 4-9 Summary of Enhancing the Efficacy of Cookie Consent Notifications

Discussion of Enhancing the Efficacy of Cookie Consent Notifications

The theme's title emerged from analysing codes related to user feedback on improving consent notifications. Participants were asked to provide suggestions for enhancing these notices to serve users better. The responses highlighted a perceived inefficiency in the current consent notices, indicating a need for significant changes to enhance their effectiveness. For instance, one user remarked, "*Instead of lengthy consent forms, a concise note explaining the data protection measures should be provided,*" which underscores deficiencies in the existing design. Another participant noted, "*If websites could present the notification concisely and clearly, it would be easier to read.*" This response further emphasizes that targeted improvements could significantly increase the effectiveness of consent notices. The name of this theme underscores the objective of improving effectiveness, aiming for notifications that are informative and capable of safeguarding user data effectively. This goal aligns with principles outlined in both the Contextual Integrity framework and POPIA. The findings

highlighted a key summary term used to delve into the theme's findings: the need for improved clarity and user-friendliness.

Need for Improved Clarity and User-Friendliness

Users strongly needed cookie consent mechanisms to be more transparent and more user-friendly. This finding is consistent with Bollinger's (2021) study, which noted that many cookie consent forms use deceptive designs that obscure user choices. Furthermore, it is discovered that permission notices often fail to fulfil their intended purpose of raising user awareness. Many survey respondents expressed ongoing uncertainty about the objectives and measures these notices employ to safeguard user information. Bornschein *et al.* (2020) assert that some website notifications are easily overlooked because they appear as small, low-contrast bars at the periphery of users' screens. Survey results indicate a consensus among users that a redesign of consent notices is necessary, emphasising the need for brief, clearly articulated intentions. Concerns have been raised about current design practices' legal and ethical implications (Machuletz & Bohme, 2020). Ultimately, the study's conclusions highlight that these design elements pose significant barriers to users' understanding of consent notices, underscoring the need for reform.

According to Nardo (2022), human error, stemming from ignorance or lack of understanding, poses significant risks to online users' data security. Therefore, it is imperative to equip consumers with tools to mitigate online data theft's emotional and professional repercussions. The findings from this theme underscore the importance of educating users about consent notices, as lack of knowledge often leads to ignorance. Despite including educational content in permission notices, users appear to receive inadequate information, prioritising access to websites over understanding the implications. Users strongly believe that a dedicated awareness campaign is necessary to effectively educate people about these issues rather than assuming the absorption of this information while engaged in other internet activities.

Linking to Theoretical Framework

Drawing upon the Contextual Integrity Framework (Nissenbaum, 2010), it is clear that the current design of cookie consent notifications does not uphold appropriateness and distribution norms. Users perceive a lack of detailed information regarding how their data would be utilised and feel that their consent is not obtained meaningfully. Nissenbaum (2011) argues against relying solely on informed consent to protect online users' privacy, citing that users often perceive information about data processing as either overly simplistic or overly complex. This perspective aligns with findings indicating user uncertainties towards consent forms, with some expressing doubts that modifying these notices can ensure data privacy guarantees. Bollinger

(2021) claims consent notices can appear as pop-up windows, overlays, banners, prompts, or other forms. The findings for this theme demonstrated the various approaches to presenting consent notices as a problem that needs to be addressed. Standardising the notices' presentation can help users deal with consent notices more efficiently and improve them. It can also remove user uncertainty when dealing with this technology.

Implications for Practice

The findings have several implications for both practitioners and policymakers. There is a clear need for practitioners to redesign cookie consent mechanisms to be more transparent and user-friendly, potentially through simplified language and more intuitive interfaces. For policymakers, the study suggests that existing regulations like POPIA must be enforced more stringently and updated to ensure that consent mechanisms truly empower users rather than merely serving as a compliance checkbox.

4.6 Summary

This chapter presented the results of the qualitative approach together with their interpretation. The data analysis method used was thematic analysis. The chapter began with an analysis of the findings that described the researcher's methodology for doing so. This was followed by a participation overview detailing the criteria for participant selection for the study. A summary of the study's themes and sub-themes and how they related to the research questions was also presented. The presentation of findings covered disclosing the data collection outcomes. The key themes from the data were given a synopsis and presentation.

The study's findings provide valuable insights into the perceptions of South African online users regarding cookie consent notifications. By linking these findings to existing literature and theoretical frameworks, the study confirms previous research and identifies specific areas where improvements can be made. This deeper understanding can inform the development of more effective privacy practices that align with user expectations and regulatory standards. Chapter Five covers the research's findings and recommendations.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarises the study, emphasising the key findings and conclusions derived from the research. The study explored the perceptions of cookie pop-up consent notifications with online users in South Africa. To gain deeper insight, the study investigated the understanding of cookie consent notifications, the type of information to share online and users' feelings about the data protection offered by these pop-ups. Preceding chapters were aligned and elaborated. The first segment of the chapter provided a reduced summary of all the chapters by pointing out key points elaborated in each. In the second section, the researcher provided research answers by addressing the research's main questions. The chapter ends with a proposed recommendation based on overall reviews and findings; conclusions and possible areas for further research are also provided.

5.2 Overview of the Chapters

This section reviews the previous chapters by stating essential points from each chapter.

Chapter One

The researcher presented and introduced the background of the study, the research problem and the problem statement about cookie consent notifications in this section. It defined the research challenge and provided more details about the goals and questions of the study.

Chapter Two

This section critically analysed previous and current studies on cookie consent notifications online privacy and evaluated their impact. The chapter employed a "what, how, and where" approach to discuss each literature component. It provided a detailed explanation of cookies, cookie consent notifications and online data protection according to the researcher's methodology. The critical analysis covered each topic's benefits, challenges and gaps. Furthermore, the section further developed the POPIA theoretical framework and the contextual diagram used in the study, highlighting how each framework would contribute to the study's analysis.

Chapter Three

The study examined the research methods in this section. Qualitative approaches were selected for the research to give participants the latitude to express their opinions about cookie pop-up consent notices. The technique of semi-structured interviews was employed as a means of gathering information. Purposive sampling was the method of choice for the non-probability sampling approach used in the research.

Chapter Four

Chapter 4 critically examined the practical data gathered from semi-structured interviews with online users. The responses were analysed, findings were drawn, and the outcomes of each theme were discussed in depth. The chapter also highlighted the practical implications of the study's findings.

5.3 Summary of Outcome

A summary of the study is provided in this section. This covers the methods used to accomplish the goals and purpose of the study. Both of the study's first chapters provided the purpose and goals. The study aims to explore South African online user perceptions of cookie consent pop-up notifications.

The objectives of the study are as follows:

- To understand South African online users' awareness of the purpose of cookie consent notifications.
- To determine South African online user's understanding of the appropriateness of information shared online.
- To explore South African online users' views about cookie consent pop-ups in protecting their data.

A set of research questions was developed to accomplish the aims. The responses to the questions made the study's goals and objectives possible. The principal inquiry for the research was: What are South African online user perceptions of cookie consent pop-up notifications? To address the main question, the following sub-questions were formulated:

- What do South African online users understand about the purpose of cookie consent notifications?
- What do South African online users understand about the type of information that should be shared online?

- How do South African online users feel about cookie consent pop-ups protecting their data?

Addressing the research questions

This part addresses the main and sub-questions to clarify the primary research question. A summarised visual representation of the outcomes for each question is illustrated in Figure 5-1.

What do South African online users understand about the purpose of cookie consent notifications?

Online users understand that cookies track their data for advertisements and help access their browsing history for convenience. However, they lack a clear understanding of the purpose of the consent notification. They find it time-consuming and irritating, prioritising quick access to the website over engaging with the notice. This critical insight reveals a gap in user comprehension and highlights the need for more effective communication about the importance and function of consent notifications.

What do South African online users understand about the type of information that should be shared online?

A critical analysis reveals that the lack of understanding of user privacy rights can lead to data infringement. Respondents in the study viewed personal data as confidential, expressing concerns about their information falling into the wrong hands. Although the criteria for personal data varied among users, there was consensus that identity numbers and banking information should always be protected and only shared with the user's consent. Most users were uncomfortable sharing their data online due to privacy concerns. Interestingly, respondents considered their preferences and browsing history as non-personal information that could be shared for convenience in accessing their browsing history. This indicates a need for more transparent communication about the risks and protections associated with different data types.

How do South African online users feel about cookie consent pop-ups protecting their data?

Respondents in the study identified trust issues as a significant concern regarding consent notifications, noting the lack of assurance that their information is safeguarded online. Privacy concerns were highlighted as the biggest worry, citing the perceived lack of credibility in the protection measures of consent notifications. Users pointed out deficiencies in the design of

these notifications, which often led them to ignore the notices. They expressed a strong need for more precise and more user-friendly cookie consent mechanisms. The lack of user interaction with consent notifications undermines their intended purpose of protecting user data. There is a critical need for greater transparency and improved design in consent notices to ensure they meet privacy regulatory requirements and effectively serve their intended function for users.

5.4 Limitations of the Research

The limitation of this study is that it was conducted exclusively with online users in Cape Town. The findings may not represent the entire country because South Africa has nine provinces, each with diverse towns. The use of semi-structured interviews and the study's time constraints further restricted the research, limiting the findings to the average responses of the participants involved. This narrow scope highlights the need for broader, more inclusive research to obtain comprehensive insights. The limited availability of face-to-face interviews and the predominant use of online interviews further restricted opportunities for direct interaction. Additionally, participation was hindered by some users' reluctance, originating from a perceived lack of understanding of the topic.

5.5 Delimitations of the Research

Due to participant selection criteria, this study does not accurately reflect the opinions of all demographic groups among Cape Town's online users. This is mainly due to a purposive non-probabilistic strategy adopted for sampling. Additionally, face-to-face and online interviews underpin data collection based on the participants' willingness to engage. The study's short duration led to the creation of a valuable framework to fill in the critical gaps in the study. An exploration of the topic was based on a limited scope. A more comprehensive study could substantiate and extend the findings of the study. Moreover, the research is founded on two theoretical frameworks. Further investigation of additional frameworks is beyond the scope of this study but would benefit greater inclusivity for analysis of user adoption and acceptance of consent notifications.

5.6 Recommendations

The technology behind consent notifications is crucial for ensuring online user protection. The study's findings indicate a lack of user engagement with these notifications, highlighting the need for more effective implementations to provide the technology adds value to users.

As illustrated in Figure 5-1, the following gaps identified in the study require improvements:

- **Redesign of Consent Notices:** The study revealed the need for more precise, user-friendly consent notice designs.

- **Standardisation:** The design of consent notices needs to be standardised to align with privacy regulations and enhance ease of use.

- **Opt-Out Options:** There should be a clear opt-out option for all cookie notices that automatically sign for necessary cookies without interfering with user access to the website.

- **Enforce improved consent notices**: The POPIA legal framework should require website managers to design cookie consent banners that are both highly visible and explicit about third-party access to user data when users accept consent notifications.
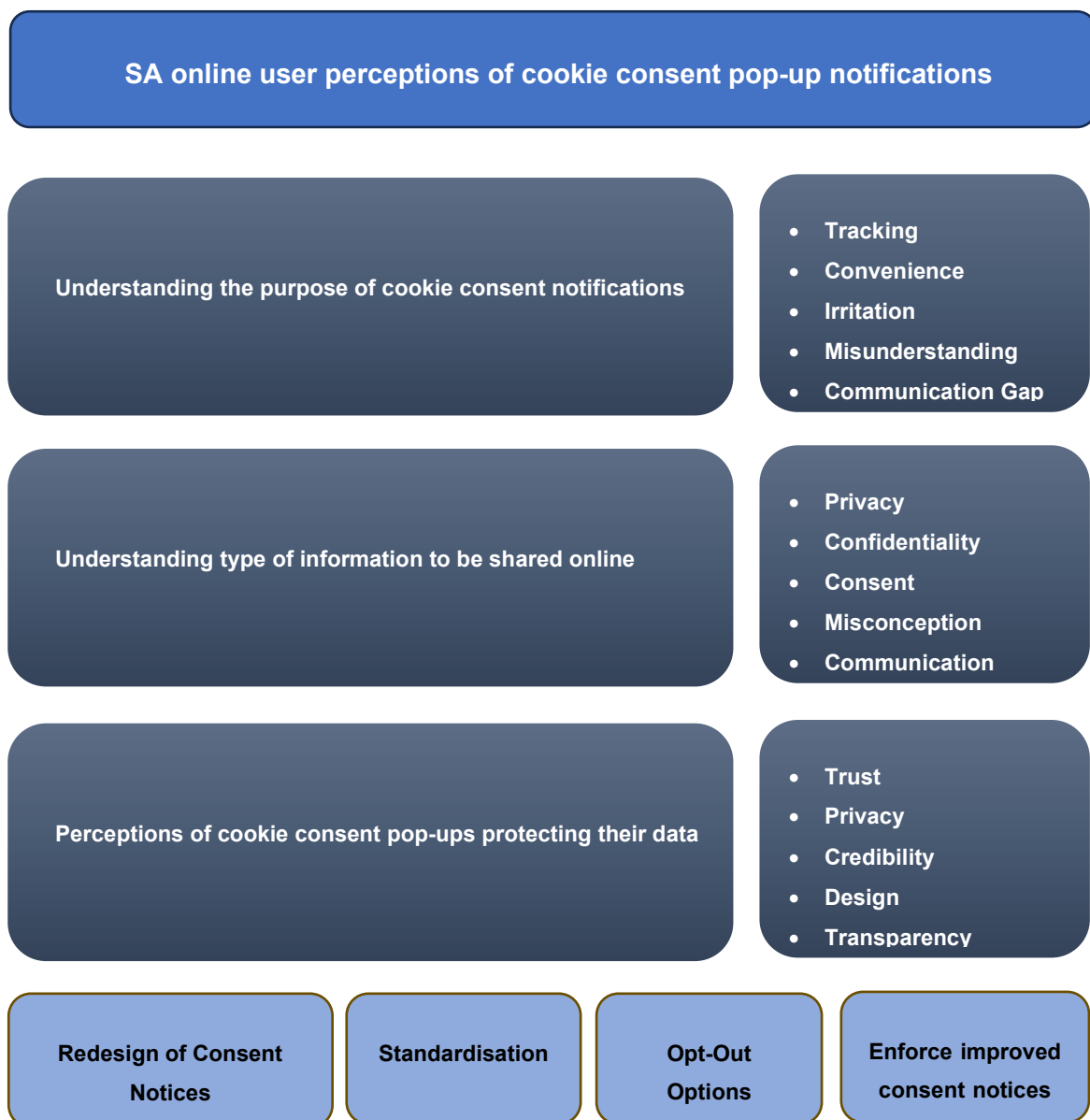

Figure 5-1 South African Online User Perceptions of Cookie Consent Pop-Up Notifications

These critical insights call for improvements to ensure consent notifications are effective, user-centric, and compliant with privacy standards.

5.7 Further Study

This study was comprehensively and meticulously conducted, as detailed in Chapter 1. However, there is potential for further research on cookie consent notifications. Future studies could employ a different theoretical framework, such as the Technology Acceptance Model (TAM), to analyse data and track website user behaviour when interacting with consent notices. This study was limited to selected frameworks, leaving room for research encompassing selection and adoption decisions. Additionally, future research could focus on developing a framework to evaluate the effectiveness, user-friendliness and transparency of cookie consent notifications, addressing critical gaps identified in this study.

5.8 Conclusion

This chapter concludes the study, presenting its outcomes, which include an overview of the chapters, a summary of findings, an evaluation of the study's results, limitations, recommendations and suggestions for further research. The summary of findings reflects on the study's aims and questions, addressing them based on the results. The study's objectives were achieved, and the research questions were answered.

The main finding reveals a lack of user credibility in consent notification protection measures, influenced by a lack of awareness of how these notices work. Despite the crucial role of trust between users and technology developers in ensuring the acceptance and proper use of data protection measures, the study identified a gap in this trust. User-friendliness is a key factor in designing websites to provide adequate user interaction. However, the study found that users perceive a lack of this element in cookie consent notifications, leading to user disregard and significant risks to their data.

Recommendations are provided to address these gaps, and further studies are suggested as guidelines to improve the efficiency of consent notifications.

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APPENDICES

Appendix A: Ethical Clearance Certificate

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22 May 2023

Tandile Delihlazo
c/o Department of Information Technology
CPUT

Reference no: 205040691/2023/9

Project title: Perceptions of cookie pop-up consent notifications by online users in South Africa

Approval period: 22 May 2023 – 31 December 2024

This is to certify that the Faculty of Informatics and Design Research Ethics Committee of the Cape Peninsula University of Technology approved the methodology and ethics of Tandile Delihlazo (205040691) for Master of Information communication and Technology.

Any amendments, extension or other modifications to the protocol must be submitted to the Research Ethics Committee for approval.

The Committee must be informed of any serious adverse event and/or termination of the study.

Dr Blessing Makwambeni
Chair: Research Ethics Committee
Faculty of Informatics and Design
Cape Peninsula University of Technology

Appendix B: Turnitin Report

Tandile_23-08-24

4%	3%	2%	2%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	etd.cput.ac.za Internet Source	1%
2	Submitted to Vaal University of Technology Student Paper	<1%
3	Submitted to London School of Marketing Student Paper	<1%
4	Submitted to University of KwaZulu-Natal Student Paper	<1%
5	lib.iium.edu.my Internet Source	<1%
6	repository.up.ac.za Internet Source	<1%
7	wiredspace.wits.ac.za Internet Source	<1%
8	Submitted to University of South Africa Student Paper	<1%
9	Submitted to Mancosa Student Paper	<1%

Appendix C: Ethical Consent Form

Cape Peninsula University of Technology

FID/REC/ICv0.1

FACULTY OF INFORMATICS AND DESIGN

Individual Consent for Research Participation

Title of the study: Perceptions of cookie pop-up consent notifications by online users in South Africa

Name of researcher: Tandile Delihlazo
Contact details: email: tandie12@gmail.com   Phone: 072 689 1724

Name of supervisor: Dr Errol Francke
Contact details: email: FranckeE@cput.ac.za   Phone: 082 494 7851

Purpose of the Study: The purpose of this study is to explore perceptions of cookie pop-up consent notifications by online users in South Africa. Data protection mesures such as cookies allow for the tracking of user's online activities and in so doing have the potential to fully eliminate online privacy. The researcher aims to explore user perceptions of cookie consent pop-up.

Participation: The study will use interviews to collect data from the participants. It is restricted to collecting the views, ideas, preferences and opinions of the research participants using open-ended questions. Participation in the study will be voluntary and will be afforded an opportunity to withdraw at any stage of the study.

Confidentiality: I have received assurance from the researcher that the information I will share will remain strictly confidential unless noted below. I understand that the contents will be used only for this research and that my confidentiality will be protected. A consent form will be filled out where I agree to participate in the study. I understand that I have the option to withdraw from the research study at any stage.

Anonymity: The data collected will be used for the study and all participants will remain anonymous. The identities, personal information and data collected of the participants will be safeguarded against unauthorised access.

Conservation of data: The data collected for the study will be safeguarded against unauthorised access. In lieu of the POPI Act, the data will only be used for the purposes explained to research participants and only kept for the duration required.

Voluntary Participation: I am under no obligation to participate and if I choose to participate, I can withdraw from the study at any time and/or refuse to answer any questions, without suffering any negative consequences. If I choose to withdraw, all data gathered until the time of withdrawal will destroyed.

Additional consent: I make the following stipulations (please tick as appropriate):

	In thesis	In research publications	Both	Neither
My image may be used:			✓	
My name may be used:			✓	
My exact words may be used:			✓	
Any other (stipulate):				

Acceptance: I, (print name) AYEZA JANJAM

agree to participate in the above research study conducted by Tandile Delihlazo of the Faculty of Informatics and Design in the Department of Information Technology at the Cape Peninsula University of Technology, whose research is under the supervision of Dr Errol Francke.

If I have any questions about the study, I may contact the researcher or the supervisor. If I have any questions regarding the ethical conduct of this study, I may contact the Secretary of the Faculty Research Ethics Committee at 021 469 1012, or email naidoove@cput.ac.za.

Participant's signature: _____   Date: 2023.11.07

Researcher's signature: _____   Date: _____

Tandile Delihlazo

Digitally signed by Tandile Delihlazo
Date: 2023.11.20 13:48:07 +02'00'

85

Appendix D: Interview Protocol

Research Title: Perceptions of cookie pop-up consent notification by online users in South Africa

Interview Protocol

1. How familiar are you with cookie consent pop-up notifications?
2. What do you think are the advantages and disadvantages of cookie consent notifications?
3. What do you think are the advantages of accepting cookie consent notifications?
4. What do you think are the benefits of rejecting cookie consent notifications?
5. Can you share your understanding of the purpose of cookie consent notification?
6. What kind of user information do you believe can be shared online?
7. Why do you think information should be shared online?
8. What kind of user information do you think should not be shared online?
9. Why do you think certain information should not be shared online?
10. What is your understanding of cookie consent pop-up notifications protecting data online?
11. How do you feel about cookie consent pop-up notifications as a tool to protect your online data?
12. Share ideas that can be used to improve cookie consent notification as a tool for protecting your data.

Appendix E: Codebook

Code Group	Code Name	Comments
Cookie Acceptance Benefits	Privacy Protection	User understanding of the purposes of cookies - What do South African online users understand about the purpose of cookie consent notifications?
	Uncertain about Advantages	User understanding of the purposes of cookies - What do South African online users understand about the purpose of cookie consent notifications?
	Access the website without dwelling much on the concept	User understanding of the purposes of cookies - What do South African online users understand about the purpose of cookie consent notifications?
Cookie Knowledge	Experience working with cookies	User knowledge about cookies - What do South African online users understand about the purpose of cookie consent notifications?
	Familiar but not clearly knowledgeable	User knowledge about cookies - What do South African online users understand about the purpose of cookie consent notifications?
	Familiar and have some basic understanding	User knowledge about cookies - What do South African online users understand about the purpose of cookie consent notifications?
Cookie Limitations	Limit Access to the website.	User knowledge about cookies - What do South African online users understand about the purpose of cookie consent notifications?
	Aggravation	User understanding of the purposes of cookies - What do South African online users understand about the purpose of cookie consent notifications?
Cookie Purposes	User Tracking for adverts	User understanding of the purposes of cookies - What do South African online users understand about the purpose of cookie consent notifications? ● How do South African online users feel about cookie consent pop-ups protecting their data?
	User Awareness	User understanding of the purposes of cookies - What do South African online users understand about the purpose of cookie consent notifications?
	Access Your Browsing History/Preferences	User understanding of the purposes of cookies - What do South African online users understand about the purpose of cookie consent notifications?
	Lack of understanding of cookie purposes	User understanding of the purposes of cookies - What do South African online users understand about the purpose of cookie consent notifications?
	User statistical reports	User understanding of the purposes of cookies - What do South African online users understand about the purpose of cookie consent notifications?
Improving Consent Notices	Clear, bold, short alert straight to the point	User thoughts on improving cookie consent notifications for the benefit of users - How do South African online users feel about cookie consent pop-ups protecting their data?
	Educating Users about Cookies	User thoughts on improving cookie consent notifications for the benefit of users
	No ideas for data protection due to trust issues	User thoughts on improving cookie consent notifications for the benefit of users - How do South African online users feel about cookie consent pop-ups protecting their data?
	Clear, short, standardized method for consent notifications	User thoughts on improving cookie consent notifications for the benefit of users - How do South African online users feel about cookie consent pop-ups protecting their data?

Code Group	Code Name	Comments
Information Sharing	Personal Data	User preferences about sharing information online - What do South African online users understand about the type of information that should be shared online?
	Non-personal data	User preferences about sharing information online - What do South African online users understand about the type of information that should be shared online?
	No information should be shared.	User preferences about sharing information online - What do South African online users understand about the type of information that should be shared online?
	Basic user information	What users think should be shared online - What do South African online users understand about the type of information that should be shared online?
Information Sharing Context	Non-personal data, depending on the purpose for visiting the website	User understanding of when information can be shared online - What do South African online users understand about the type of information that should be shared online?
	Processing job applications/credit card purchases	User understanding of the purposes of cookies - What do South African online users understand about the purpose of cookie consent notifications?
	Personal Benefit	User preferences about sharing information online - What do South African online users understand about the type of information that should be shared online?
User Concerns on Information Privacy	Privacy Concerns	User feelings about the privacy of information online - ● How do South African online users feel about cookie consent pop-ups protecting their data?
User Sentiments on Cookie as Data Protection Tool	Compliance with data protection regulations	User understanding of the purposes of cookies - What do South African online users understand about the purpose of cookie consent notifications?
	Cookie consent can not be regarded as an effective tool for data protection	User feelings on cookies protecting their data online - How do South African online users feel about cookie consent pop-ups protecting their data?
	Uncertain about Cookie Safeguarding data	User understanding about cookie protecting their data - How do South African online users feel about cookie consent pop-ups protecting their data?

Appendix F: Editing Certificate
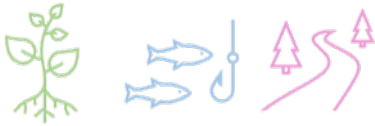
DR PATRICIA HARPUR

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Editing Certificate

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To Whom It May Concern

This document certifies I have copy-edited the following thesis by **Tandile Delihlazo**:

PERCEPTIONS OF COOKIE POP-UP CONSENT NOTIFICATIONS

BY ONLINE USERS IN SOUTH AFRICA

Please note this edit does not cover any content, conceptual organisation, or textual changes made after the editing process.

Best regards

Dr Patricia Harpur

21 August 2024