Research Ethics within an Internet-based Research Setting: Current Literature Investigation

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Abstract

Purpose: The internet, as a tool, avenue, and field, has wide-researching and specific ethical concerns. Internet-based research ethics is a field that spreads across numerous fields, scoping from natural and biomedical sciences to social sciences, and arts and humanities. Thus, this study which investigates research ethics within an Internet-based Research Setting will be quite valuable. **Research design, data and methodology:** The current authors widely took a look at prior and present literature dataset to explore research ethics within an Internet-based setting. Using numerous search engine, such as 'Goole Scholar', 'Scopus', and 'Web of Science', the current authors could obtain total 42 prior studies that are relevant with our research topic. **Results:** Based on the screening process in the literature datasets, this study could categorize four areas of the research ethics within Internet-based research setting as follows: (1) Human Subjects Ethics, (2) Big Data Ethical Issues, (3) Research Ethics and Cloud, and (4) Computing Interviews and Surveys Ethics. **Conclusions:** This study concludes that although internet-based research has many benefits, the accompanying ethical issues are many. The lack of uniformity in the concept and terminology of online research methods typically brings forth confusion and makes it hard for new researchers to develop mutual guidelines.

Keywords : Research Ethics, Internet-based Research Setting, Publication Ehtics

JEL Classification Code: C35,O30, O35, I23

1. Introduction[1]

The Internet plays a significant role in research. It means that the internet, as a tool, avenue, and field, has wide-researching and specific ethical concerns. Internet-based research ethics is a field that spreads across numerous fields, scoping from natural and biomedical sciences to social sciences, and arts and humanities (Zschirnt, 2019). Ethical frameworks have contributed to

how ethical issues in internet research are evaluated and considered. Internet research is historically and conceptually associated with information and computer ethics. It includes ethical issues like data privacy, data integrity, intellectual property issues, security, participant consent and knowledge, and professional, disciplinary, and community ethics (Abbas et al., 2019). Amid the evolution of the internet, there has been constant deliberation on whether novel ethical issues are surfacing,

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or if the existing issues are the same as concerns in other research avenues. These deliberations resemble philosophical musing in information and computer ethics.

Internet-based research now makes up one of the most used data collection techniques across the world. Undeniably, internet research entailing online surveys is now the most common form of method that is proposed and reviewed by research ethics boards (Zimmer, 2020). Aside from online surveys, a novel scope of approaches is surfacing like data collection via virtual observation in interactive platforms like websites, blogs, social media sites, and chat rooms. Social networking platforms like LinkedIn, Facebook, and X (Twitter), are now routinely used for gaining access and enlisting potential participants (Zimmer, 2020). This pattern is common in healthcare and business disciplines demonstrating the proliferation of internet-based research. Although these online platforms provide an opportunity for researchers to access a wide scope of content and reach a large audience in a generally short period, their use also raises significant ethical concerns.

The general principles and rules that guide ethical practice in internet-based research are fundamentally the same as those that guide other research involving human subjects and include respect for justice, autonomy, and beneficence. As the internet has transformed into a more communicative and social platform, ethical concerns have moved from completely data-centered to more human-focused (Anabo et al., 2019). Some academicians propose that the exact nature of Internet-based research ethics requires new professional and regulatory guidance. As a result, the notion of human subjects research guidelines is included in internet-based research ethics.

The advent of the social web brings up concerns around subject recruitment methods, informed consent practices, and the safeguarding of different expectations and types of privacy in a world filled with ubiquitous and diffused innovations. Moreover, ethical issues focus on concerns of confidentiality and anonymity in data domains where researchers and their participants may not completely comprehend the conditions and terms of those tools (Vogt et al., 2019).

Besides, there are issues regarding the integrity of data as studies can be outsourced to web-based labor platforms and jurisdictional concerns as more information is developed, stored, and shared via cloud computing platforms, leading to various legal issues due to jurisdictional divergences in data legislations. Also, the proliferation of big data research has persisted across different domains, with the concepts of pervasive computing and real-world data readily acknowledged and used in all disciplines (Vogt et al., 2019). The availability and ease of access to sets of big data in different ways have empowered machine learning (ML) and artificial intelligence (AI) to proliferate as conventional research tools, raising more ethical issues.

2. Literature Review

In recent years, many academic journal articles address the issue of internet-based research and ethics. Bailey et al. (2020) focuses on the definition of internet research ethics by describing it as the evaluation of ethical issues and application of research ethic rules as the relate to web-based research. On a wider scope, web-based research is defined as research that is used to gather data and information. Williams (2023) widens the description to include different aspects. First, research examining information on the internet without direct involving human subjects. Second, research that uses the internet as a platform for recruiting and communicating with subjects. Third, research concerning internet usage.

A crucial divergence in the description of Internet research ethics is that between the domain as a research tool versus as a research venue. The difference between venue and tool applies across methodological and disciplinary methodologies (Borgueta et al., 2018). Regarding internet research as a tool, the focus is on search engines, digital archives, data aggregators, online survey platforms, crowdsourcing platforms, and application programming interfaces (APIs) (Thompson et al., 2021). Internet-based research venues include domains such as communication platforms (for instance discussion forums and instant messaging), social networking platforms, and interactive websites and blogs.

Another way of framing the difference between venue and tool stems from Burles and Bally (2018), who described a divergence in internet research by applying the ideas of non-intrusive internet research versus engaged web-based research. Non-intrusive examination describes the methods of gathering data that do not interfere with the state of prefabricated text or the nature of a website (Smith et al., 2018; Cagle, 2021). On the other hand, engaged analyses go into the community or site and hence engage with the website's users (Kang, 2023).

These two conceptualizations facilitate researchers with a method of acknowledging when considering safeguards for human subjects need to occur. Singh and Sagar (2021), as well Cilliers and Viljoen (2021), give a good guide on the construct of human-participants research, highlighting a difference between text-centered and person-centered. For instance, Schneider et al. (2018) suggest a range of research factors (subject susceptibility, topic sensitivity, private/public, and level of interaction) that are crucial in determining where on the range of person-centered versus text-centered the research is, and if

the participants would have to consent to a study.

Clark et al. (2018) state that while ideologically helpful for determining the participation of human subjects, the difference between venue and tool or non-intrusive versus engaged internet-based research is becoming exceedingly blurred in the age of third-party applications and social media. Shahraki and Haugen (2018) developed a conceptualization of three phases of internet-based research, and the proliferation of social media typifies the second stage. Conway (2021) asserts that as a concept, social media is a set of web-based platforms that stem from the technological and ideological basis of Web 2.0, and that enables the development and sharing of user-generated material.

Salwén (2021) believes that this delimitation of venue and tool can be mainly sourced to the rising utilization of third-party platforms like Facebook, X, or any of the multitude of web-based platforms where data collection, recruitment of participants, data analysis, and data sharing can all happen on the same platform. With these blurring borders, ethical regulation is inherently difficult.

Specifically, Crawford et al. (2019) argue against the end-user license agreements or terms of use guidelines in virtual domains, stating that these contracts are usually flawed since they depend on regulations and laws from one jurisdiction and try to apply them in a non-location-based setting. Nevertheless, researchers presently make regular use of tools for data integration, stripping data from transaction logs or user profiles, information harvesting from Twitter (X), or string information on cloud platforms like Google Drive only after accepting the terms of services that come with the sites (Rambukkana, 2019). The utilization of these third-party tools transforms primary aspects of research, usually displacing the original researcher as the only proprietor of their information. These discrete and unique features affect the practicalities and concepts of ownership, privacy, jurisdictional borders, and consent.

2.1. Gaps in Research

Research fails to adequately address the dilemma of the social web. The dilemma of the social web has led to a perpetual debate between researchers and their data sources. Additionally, with the increasing use and proliferation of mobile devices, the idea of online research is evolving with a shift away from a place-centered internet to a reality that is dispersed. Data collection using mobile platforms has increased at an unprecedented rate. For instance, mobile devices enable the application of simultaneous gathering of information and sharing from non-location-based settings (Ess, 2020).

Researchers utilizing cloud platforms can disseminate and receive information to and from subjects simultaneously. The effect of these potential for epidemiological studies is impeding scientific possibilities while bringing ethical challenges, as witnessed with mobile-based COVID-19 studies and the sampling of participants' experiences and behaviors in real time. Since internet-based research has developed from an exclusive domain into an almost ubiquitous and usually invisible practice, the conventional concepts of human participants need close consideration.

Research also fails to address the contextual nature of internet research. It has been proposed that each form of online research method (that is survey/interview research, interactive, or observational) is significantly contextual and entails discrete engagement levels and interaction between the researcher and the subject, and this has ethical implications. Recently, Williams (2023) suggested a privacy-by-design concept for web-based recruitment. The concept suggests a proportionate method to ethics evaluation, which supports risk mitigation mechanisms that are proportional to the probability and scope of risks. Nonetheless, the entity that determines or decides the probability or scope of risk is vague. Additionally, approaches to these concerns vary globally. Whether a given jurisdiction's guidelines are up-to-date and sufficient considering public viewpoints and the novel innovations and methods of research that are upcoming, is an open question.

3. Key Findings

3.1. Human Subjects Ethics

As aforementioned in the introduction section, the general principles and rules that guide ethical practice in internet-based research are fundamentally the same as those that guide other research involving human subjects and include respect for justice, autonomy, and beneficence. Autonomy describes the idea that each person is entitled to dignity and privacy that should be safeguarded at all times (Ess, 2020). Framed differently, each subject should have the ability to make their decisions to participate in a study and those who cannot make these decisions should be safeguarded. Within the setting of web-based research, it necessitates research to safeguard the personal information of web users and not disclose any aspect that would allow this personal information to be accessed (Pauley & McDaniel, 2023). The magnitude of the autonomy ethical principle is the focus of the Declaration of Helinski and works through the process of informed consent.

The principle of justice describes the idea that all

research subjects should be treated nobly, fairly, and equally during the entire research process. In procedural words, it necessitates the researcher's identity and study method are clear, and that no part of the community is unevenly burdened or encounters discrimination (Fiesler et al., 2018; McInroy & Beer, 2022). Also, it imposes stipulations on the people who cannot safeguard their interests and hence should be safeguarded from any exploitation for the purpose of research.

The principle of beneficence necessitates researchers to examine all psychological, physical, and social or medical risks and harms that their subjects may encounter due to their involvement in research. It attempts to reduce these risks and optimize their benefits (Murukannaiah & Singh, 2020). Within the setting of internet research, the risk of harm surfaces when there is the disclosure of a subject's identity or any other sensitive information that may put them at risk of reputational damage, legal prosecution, or risk of embarrassment.

3.2. Big Data Ethical Issues

Algorithmic processing is an intimate part of big data research, leading to emerging ethical issues. Current algorithms have analytic powers that surpass traditional norms and beliefs (Foley, 2020). Particularly, analytical algorithms bring ethical issues to their capability of classifying, predicting, filtering, and prioritizing. Markham et al. (2018) state that their application can develop privacy concerns when the data leveraged by the algorithm is inaccurate or inappropriate when wrong decisions happen, where there is a lack of a rational way of correcting mistakes, when a person's autonomy is directly associated with algorithmic scoring, or when the utilization of predictive algorithms causes other privacy harms (Hesse et al., 2019).

Big data research concerns research ethics boards, typically leading to conceptual ambiguities. In other words, it leads to the inability to suitably frame the ethical values and concerns at play in a novel innovation setting (Geneviève et al., 2018). For instance, subject privacy is usually safeguarded within the setting of research ethics via an amalgamation of different practices and tactics that limit personal information collected. However, in the realm of big data, the comprehension and nature of big data are challenging.

Looijmans et al. (2022) argue that when examined from the lens of private information, postings on social media are typically regarded as public, particularly when users do not take any action to restrict access. Resultantly, big data researchers might infer participants do not warrant privacy considerations. Griffin et al. (2021) and Kinder-Kurlanda and Zimmer (2021) suggest that

social media avenues regularly utilized for big data research intentions represent a multifaceted setting of socio-technical dissemination, where users typically fail to comprehend completely how their social activities can be tracked, shared, and disseminated to third parties. Such issues make big data research a concerning ethical area.

3.3. Research Ethics and Cloud Computing

The latest occurrences in cloud computing services have ushered in discrete opportunities and ethical concerns for researchers. Cloud computing is the application of computer resources through the Internet, facilitating on-demand, scalable, and flexible computing from remote sites (Locatelli, 2020). Online productivity platforms like Microsoft 365 and Google Docs are two of the most popular cloud computing platforms.

Hanganu and Manoilescu (2021) suggest that as the dependence on cloud computing rises among researchers, so do the ethical consequences. One of the most significant implications is affirming data security and privacy with cloud-based platforms. For researchers disseminating information on the web for collaborative exploration and analysis, procedures must be followed to affirm that only authorized people can access their web-based data that might contain personal information, as well as adequate encryption is applied for data storage and sharing, and provider of the cloud service keeps reasonable security to maintain breaches (Locatelli 2018; Hese et al., 2019). Additionally, Lapadat (2018) and Chua (2020) state that once research information is uploaded to a cloud service, there should be a focus on the terms of services to determine the level of access to the information that law enforcement, advertisers, and other external entities have.

Table 1: Relevant Past Studied Found (Total 42 Studies)

Used Previous Resources
Zschirnt (2019), Abbas et al. (2019), Zimmer (2020), Anabo et al. (2019), Vogt et al. (2019), Williams (2023), Borgueta et al. (2018), Thompson et al. (2021), Burles and Bally (2018), Smith et al. (2018), Cagle (2021), Kang (2023), Singh and Sagar (2021), Cilliers and Viljoen (2021), Schneider et al. (2018), Clark et al. (2018), Shahraki and Haugen (2018), Conway (2021), Salwén (2021), Crawford et al., (2019), Rambukkana (2019), Ess (2020), Kang and Hwang (2023), Williams (2023), Pauley and McDaniel (2023), Fiesler et al. (2018), McInroy and Beer (2022), Murukannaiah and Singh (2020), Foley (2020), Markham et al, (2018), Hesse et al. (2019), Geneviève et al. (2018), Looijmans et al. (2022), Griffin et al. (2021), Kinder-Kurlanda and Zimmer (2021), Locatelli (2020), Hanganu and Manoilescu (2021), Locatelli (2018), Chua (2020), Hokke et al, (2018), Lapadat (2019), Kelley and Weaver (2020).

3.4. Interviews and Surveys Ethics

Hokke et al. (2018) articulate that interviews and surveys are well-developed and common avenues of Internet research. In performing interviews and surveys online, researchers face ethical issues regarding acquiring informed consent, maintaining data confidentiality, and ensuring participant anonymity (Lapadat, 2019). Consent is regarded to be knowledgeable when people know the use of the data gathered about them and their entitlement to give, withdraw, or withhold the consent as they wish.

Enrolment of subjects for research entails clear and open communication between the potential subjects and researcher; however, this aspect may be compromised in internet research. Various methods through which online consent can be acquired include online statements or emails that may need subjects to consent to the terms of participation, hence implying consent (Kelley & Weaver, 2020; Kang & Hwang, 2023). Nevertheless, it is hard to certify whether the subject has carefully read the details, whether the individual giving the consent is the real subject, and whether there are any issues in understanding the terms. Also, verifying certain issues like mental capacity and age to give consent may be hard.

4. Discussions

Although internet-based research has many benefits, the accompanying ethical issues are many. Additionally, the lack of uniformity in the concept and terminology of online research methods typically brings forth confusion and makes it hard for new researchers to develop mutual guidelines for using methods. Whereas the guiding ethical principles applicable to internet-based research are similar to those used in any research involving human subjects, the application of these guidelines can be different depending on the form of the web-based method and its goal. While there are grey areas, careful appraisal of scholarly works implies that preserving anonymity, transparency, confidentiality, and ensuring information security are significantly important. Infringement of these can have significant implications, particularly when it entails the collection of sensitive and personal information. Paying close attention to the awareness, perception, and expectations of privacy among subjects is one of the crucial aspects. With careful planning, design, and deployment, researchers can handle most of these concerns while ensuring the subjects' privacy rights are safeguarded and ethical practice standards are met.

There are different ways in which informational privacy can be upheld. Legislature is one such method. For instance, the legal right to privacy for everyone worldwide has been declared in the Universal Declaration of Human Rights. Breaching such laws should lead to severe penalties such as fines or jail terms. With all the threats posed, it comes down to the researchers themselves to remain vigilant and informed to ensure maximum privacy over data. Researchers are encouraged to be aware of all social media loopholes before blindly consenting to their terms. For example, Facebook reserves the right to share personal information with its partners and developers and most social networking platforms can sell all private information in case of a merger or dissolution. Also, it is advisable to keep a separate email account for all social media sites and promotional websites in addition to the primary one for research to avoid it being filled with spam and junk, and use a Virtual Private Network when logging online to avoid companies and websites tracking your IP information. Ultimately, it is up to the researcher to control ethical breaches.

5. Future Areas for Research

The increased use of artificial intelligence and social media for research and the vagueness of ethics in this domain should be a future area for research. Despite all the measures taken to control data privacy, several factors have undermined the various efforts put in place. With new technology emerging each day, it is becoming more and more difficult to explicitly control the sharing of information, especially online. Thanks to artificial intelligence and social media taking over it has become extremely easy to locate personal data, download pictures posted, and obtain their profile information. For instance, new artificial intelligence models that are currently in use in the advertising industry are based on tracking consumer activities to provide more tailored content such as what songs they download or articles they read. Mobile applications on smartphones nowadays also tend to flood cell phones with advertisements without consent.

Research in these domains should be focused on information privacy ethics. Informational privacy, also known as data protection or privacy is the effective right or claim that an individual, group, business, and so on to control the dissemination of information that pertains to them. It is the control that one has over their private information and how it is revealed to other parties if and when that is the case. Research should extend to these areas to ensure that internet-based research leveraging artificial intelligence and social media upholds information privacy as it is one of the most common ethical breaches in online research settings.

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