

## COMMERCIAL DRONE USE IN THE CONTEXT OF GOVERNANCE, ETHICS, AND PRIVACY: A TECHNO ETHICAL REVIEW

**Arun Kumar\***

\* Faculty of Engineering, Teerthanker Mahaveer University,

Moradabad, Uttar Pradesh, INDIA

Email id: arun.engineering@tmu.ac.in

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### ABSTRACT

*Surveillance unmanned aerial vehicles (UAVs), sometimes known as drones, have long been employed in Iraq, Pakistan, and Afghanistan by armies from the United States, the United Kingdom, and Australia. Apart from military and recreational purposes, the usage of drones in business applications has increased significantly in the previous five years. The rise in home usage has sparked public concern and controversy, primarily around questions of safety and privacy. A comprehensive analysis of commercial drone literature from 2010 to 2015 was done to analyze social, governance, privacy, and ethical elements of commercial drone usage, guided by a technoethical lens (the study of technology's influence on ethics). The study identified the following significant areas of social and ethical concern associated with commercial drones based on research, magazine, and newspaper articles: The study adds to the field of technology studies and media ethics research by revealing the current status of public understanding of commercial drones from an ethical standpoint. The findings of the techno ethical review imply that, although commercial drone usage may enhance lifestyle and efficiency, greater attention should be paid to potential negative and unknown repercussions in order to promote ethical commercial drone use.*

**KEYWORDS:** Drone, Emerging Technologies, Ethics, Privacy, Techno Ethics.

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### 1. INTRODUCTION

Within the commercial drone literature, this study focuses on the social and ethical dimensions of drone usage and highlights important areas of social and ethical concern associated with commercial drone use [1]. Commercial drone use has grown in popularity over the last five years, providing a new means of obtaining and sharing information, as well as delivering goods and services, as detailed in the Backgrounder, Findings, and Discussions sections. The US Federal Aviation Administration (FAA) has only given 78 certifications to domestic drones in 2010, according to the Electronic Privacy Information Center (EPIC), and there were only 273 active permits in 2010 [2]. According to a 2012 FAA study, the number of permits has risen for over 300. The popularity of domestic drones has grown as the number of domestic drone permits granted in the United States has increased, according to a study of domestic drone usage between 2010 and 2015. Ethical behavior and social responsibility are crucial components in maintaining respect and peace in today's society [3].

As part of his techno ethical approach to new media and communication, the author demonstrates that commercially deploying drones has ethical worth from the perspectives of technology studies, information sciences, and communications. Techno ethics, according, is an interdisciplinary study of technology implications on a society's morality and ethics [4]. Because of public safety and privacy concerns, when drones are utilized commercially in a society, a number of distinct ethical and technological considerations must be addressed. explains this with the story of an Australian lady sunbathing topless in her garden, which was captured by a drone and exploited by a real estate business to advertise a property [5]. The unintentional photography of the lady raised a slew of ethical concerns regarding drone usage. The following research question prompted this study to address the present gap in research concentrating on ethical considerations related to commercial drone use: What is the current level of ethical understanding when it comes to commercial drones? When commercial drones fly in residential areas, clear negative repercussions, such as safety and privacy violation, are immediately recognized after an event [6]. The enforced intervention may not be particularly successful if control and preventative measures are implemented based on clear bad effects. Grounding all commercial drones, for example, owing to safety concerns might stymie drone development for law enforcement purposes. Communication is essential for delivering information between people, whether they're conversing face to face or across a long distance. Verbal, analogue, and digital communication mediums are all options [7].

Telegraphs, radios, telephones, and TVs are examples of analogue media, whereas computers and mobile devices are examples of digital media. Landline telephones have been supplanted by digital wireless transmission devices, or mobile devices, as a result of technological advancements. As a consequence, information, including all photos recorded by drone cameras, may be sent between persons at any time and from anywhere [8]. As a result, society is transformed into a communication system. When society is seen as a system mediated by electronic communication, it suggests that communication between society members is different than it was in previous civilizations. Domestic drones, the subject of this research, are an example of a new developing communication technology that has sparked public concern and controversy about acquired photos that are readily obtained by a person. Journalists benefit from mass media broadcasting straight from drones since it allows for real-time reporting on a scenario. Meanwhile, in the military, communication is critical for gaining and maintaining situational control.

Because there is no danger of losing human pilots, the notion of utilizing a pilotless aircraft to recover information in hostile territory is appealing. Surveillance unmanned aerial vehicles (UAVs), sometimes known as drones, are increasingly being utilized by forces in Iraq, including those of the United States, the United Kingdom, and Australia. Despite their success in combating terrorist threats, the military's use of drones has sparked public outrage and ethical debate over their unintended repercussions. The development of public concern and ethical discussion over military drone usage is reflected in non-military drone uses, as will be discussed further in this article. In current society, drones are now employed for mapmaking, advertising, distribution, law enforcement, environmental research, and agricultural. Although the military considers civilian fatalities to be collateral damage, when it comes to commercial drone usage, this approach presents serious ethical difficulties [9]. According to Berger, the sole consideration made prior to the selling of these drones throughout the world was safety. For example, more

than 40 states in the United States are considering legislation that would enable commercial drones to fly by the end of 2015. Commercial drone usage is an excellent illustration of how public discussion and ethical concerns can stymie progress. In the case of commercial drones, the Federal Aviation Administration (FAA), the United States' national aviation authority, has barred their usage until new norms and regulations are fully implemented.

On December 21, 2015, the FAA started implementing a drone registration law. The FAA claimed that approximately 300,000 unmanned aircraft owners had registered by January 22, 2016. The rapid increase in drone registrations in the United States reveals that the implications of the good and bad repercussions of operating drones go beyond registration, and this research covers the majority of the other elements. Safety and privacy are key concerns, which are also big concerns in other nations such as Canada and the European Union. It's critical to comprehend the social and ethical implications of commercial drone deployment [10]. A systematic review is used in the research to find literature on commercial drone use from a social and ethical standpoint. The research is confined to commercial drone usage in North America during the previous five years. This assessment excludes military and non-military drones used for non-commercial public and personal purposes. Because academic literature on the use of new emergent communication technologies, such as commercial drones, is still in its infancy, the systematic review scope encompasses both scholarly and non-scholarly commercial drone literature. Non-scholarly papers are included to offer a more complete picture of the present state of knowledge on commercial drones. After eliminating duplicates detected when the three database searches were combined, 36 articles were chosen for examination, and irrelevant articles were identified by perusing the abstracts and then discarded. The articles about commercial drone usage come from a variety of subjects and industries, and they come from newsletters, newspapers, and magazines. To concentrate on current innovations in commercial drone usage, the search period has been confined to the last five years. Multiple social and ethical challenges were discovered, including safety, ethics and morality, legality, privacy, air space, informational integrity, people against robots, and business considerations. From the systematic literature study, the constructions connected to the usage of commercial drones, their occurrence frequencies in numbers, and the percentages are shown below. Because the constructions are interconnected, several of them may be found in the same article.

## 2. DISCUSSION

The most often expressed worries about commercial drone usage. When drones provide the impression that lives are in danger when they operate inside a society, the first worry is drone safety. The majority of the literature on drone safety was found in secondary sources (professional publications, scientific reviews, and media) and academic research, demonstrating that it is a significant problem. When people's lives are on the line, authorities concentrate their efforts on solving problems and implementing stronger rules and regulations to prohibit the use of commercial drones without suitable processes and standards. "Giving authorization to commercially fly a drone to everyone who can afford to acquire one would be a license to murder," he said in a Wall Street Journal essay. Furthermore, in an article for Aviation Week & Space Technology, writes that the FAA is concerned about the same safety problem since the agency lacks a clear distinct decision on flying the same aircraft recreationally and professionally. While recreational flying is permissible, commercial flight is not. "In the

meanwhile, eager users are becoming impatient, and 'illegal' flying is on the increase, taking advantage of the fact that model airplanes are unregulated."

The drone "technology is helping farmers, police enforcement, and state authorities, among others, execute their jobs more efficiently and, in some circumstances, more successfully," according to the article. Commercial drones have a number of advantages in terms of efficiency and effectiveness, as the articles below demonstrate. The authors present a framework for evaluating the effectiveness of a regulatory regime, such as air safety regulation, in the context of threats to public safety posed by "pilots, operators of facilities carried by drones, employers of pilots and facilities operators, and legal persons contracting for or otherwise encouraging the use of drone-based services". These articles, taken together, show how a concerted effort has been made in recent years to improve rules and regulations to limit the use of commercial drones without suitable processes and standards. The following structures were mentioned the most in the articles that were chosen.

They're also seen as visible negative outcomes of politicians using commercial drones for surveillance or private corporations or people using them for espionage. "But when drones come to perch in numbers over American communities, they will drive fresh debates about the boundaries of privacy," Finn of The Washington Post reported in 2011 about the use of a drone for a high-risk operation by Texas police executing a search warrant on private property: "But when drones come to perch in numbers over American communities, they will drive fresh debates about the boundaries of privacy." The significance of proactively addressing the invasion of privacy caused by drone usage as soon as feasible in the context of US law by expressing. While being proactive is crucial, it's also important to remember that anticipating every conceivable application is impossible. This concept of considering all possibilities while developing policy seems to be crucial. "There are also issues about people' privacy," writes the author, "picture a UAV floating over your area with a camera." cautioned in an interview with an insurance review magazine, understanding the dangers and responsibilities of utilizing commercial drones might put the UAV sector on the back burner. The human vs machine argument is on how drones are utilized as a deadly weapon in the military and as a business tool.

The focus of this research is on the latter. Commercial drone usage denotes an activity carried out by a UAV rather than a person. Drone pilots operate the devices and carry out duties from a safe distance. depicts the beginnings of commercial drones as they evolved from military drones. Although the author focuses on military drones rather than commercial drones, this article sparks discussion on how to accomplish the same goal (in the military and in business) of "maximizing the chance for the unit [company] to return to a higher level of performance." When a person drives a machine, such as a drone or a vehicle, there is always an incentive to get sufficient training in order to prevent risky maneuvers. The results of commercial drone operations (in respect to the constructions) are plainly seen. Secondary sources, such as reviews and newspapers, are used more often in the chosen articles than scientific research on commercial drones. Although there are numerous possible good applications of commercial drones, as the chosen articles illustrate, the most discussed subjects are the negative consequences of safety breaches and intrusions of privacy that lead to the formation of new rules and regulations.

Because they may not be simple notions that can be comprehended from observations or event results, the following constructions (ethics and morality) need a higher degree of philosophical

debate. As a result, these structures are treated in a smaller number of articles. Drone shooting raises concerns about unlawful weapon discharge in residential areas, and the air space above private property becomes a contested topic. How much airspace may one claim as their own? Another problem is how to secure one's property against intrusions into one's privacy. This has already been mentioned as a construct. Another aspect of the integrity and authenticity of data collected by drones is controversial due to the source: photos, dates, and timings may all be digitally manipulated. Margot Kaminski, executive director of the Information Society Project, research researcher, and professor in law at Yale Law School, argued that regulations limiting the use of civilian drones might limit the capacity of private persons to obtain legal information in the same setting.

The following constructs are organized into three categories for further in-depth examination based on the overall findings: Commercial drone safety, ethical considerations, and ubiquitous privacy are all factors to consider. Commercial drone usage has grown in popularity in recent years, until ethical principles began to be violated, such as by unlawful or legal (law enforcement) monitoring by drones. Drones are used in both sorts of surveillance, but the goals are distinct. The absence of ethical guidelines for commercial drone usage is one of the most notable findings highlighted by the researchers in the chosen publications. A techno ethical lens presents a synthesis of typical ethical difficulties that occur when seeking to manage ethical considerations in commercial drone usage, which helps to expand knowledge of commercial drones from an ethical viewpoint.

Because ethics is based on diverse moral principles that regulate an individual's, group's, or culture's behavior, such ethical concerns are lacking. This research employs a techno ethics approach, which is a branch of study that examines the ethical elements of technology and how technology changes society by evaluating ethical applications of technology in order to influence technological growth and enhance everyday living in a society. Commercial drone regulators might also benefit from the aforementioned comment. To put it another way, Hansson claims that new legislation will be ineffective if legislators rely just on known numerical probabilities rather than a well-designed ethical analysis to cope with probabilities. Furthermore, according to Hansson, "many varieties of uncertainty have no realistic probabilistic representation." The introduction of commercial drones, as well as innovative inspiration, are characterized as the degrees of impact of commercial drones.

Then there's research and development, license to operate in a society, achievements, and widespread acceptability on par with manned aerial vehicles. Commercial drone operations are still in their early stages. Commercial drone operation is pending in several urban regions in North America and Europe, as previously mentioned. The above-mentioned infringement of private air space must also be addressed, and an appropriate remedy must be found. Regrettably, the commercial drone sector seems to be launching the project without first seeking approval from the appropriate authorities. What are the goals of using commercial drones? Commercial drone utilization can optimize earnings with little effort and resources in the business world. Amazon, for example, may use drones to transport products in order to meet its same-day delivery contract. A real estate agent may take an aerial snapshot of a property to be sold, and farmers can spray pesticides on their crops. Many more beneficial results (planned ends) have been achieved in the past, according to this research. In terms of safety, drones may help rescuers find missing persons in hazardous settings by reducing the physical risk they face. Regrettably,

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the desired goals have not yet justified the methods. Constant law enforcement monitoring, for example, may reduce crime rates but at the cost of privacy. In this investigation, the comparable side effects were also seen.

### 3. CONCLUSION

The commercial usage of drones presents safety, privacy, and ethical problems, according to this research. Commercial drone usage is still in its early stages, and rules and regulations aren't yet in place to allay those fears. Other unfavorable repercussions are listed in the Findings section and must be addressed right once. Because transmission signals may be manipulated or blocked, editors for media sources may not be trained to control material acquired by drones in terms of the integrity and authenticity of the information supplied by them. Nonetheless, this case study may serve as a springboard for additional in-depth academic research on commercial drone usage in a variety of sectors. Drone technology is a novel tool, and further study is needed to see whether it has any beneficial societal implications in our everyday lives. Instead of limiting physical usage due to safety concerns, new regulations should embrace the social viewpoint more. There are a few research constraints to think about, the most important of which is the source selection for analysis. It should be emphasized that scientific studies on commercial drone usage were difficult to come by at this early stage since the industry is still in its infancy, and it will take time to establish a firm foundation of scholarly study on the subject. Given the growing popularity of commercial drones, additional academic work is expected to emerge in the coming years, particularly as the FAA develops new rules for drone usage. Economic optimism is one basis for optimism. In addition, the study's drone coverage is restricted, and it does not give in-depth examination of certain application areas. However, the ethical insights gained from this study should be applicable to specific drone uses in a variety of fields where drones are increasingly being used, such as mapmaking, agriculture monitoring, movie and television filming, environmental research, real estate marketing, news reporting, and hobbyist recreation.

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