

DIGITAL FOOTPRINT MANAGEMENT: DIGITAL BURIAL¹ DİJİTAL AYAK İZİ YÖNETİMİ: DİJİTAL DEFİN

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Dijital ayak izi yönetimi ve dijital ayak izi farkındalığını incelemeyi amaçlayan bu çalışma, dijital defin kavramına odaklanarak şu soruyu ele alıyor: Ölümünden sonra dijital verilerimize ne olacak? Dijital ayak izi yönetimi yeni bir terimdir ve yönetim bilimi literatüründe dar bir alan bulmuştur. Bu çalışma, bu kavram hakkında farkındalık yaratma girişimidir. Nitel araştırma yöntemlerinden ikincil kaynak taramasından yararlanılmıştır. Ayrıca ikincil kaynak taraması kapsamında çeşitli çalışmalar incelenmiş ve ardından MAXQDA 2022 programı yardımıyla dijital ayak izi alanında yapılan yayınların odak noktalarını belirlemek için anahtar kelimeleri alınarak kelime bulutu analizi yapılmıştır. Bulgulara göre dijital ayak izlerinin doğru ve etkin kullanımı dijital vatandaşlığın bir gereğidir. Dijital ayak izi yönetimi kapsamında ele alınan dijital defin konusu literatürde oldukça yeni bir kavramdır ve bu durum bu çalışmanın en önemli sınırlılığıdır. Gelecekteki araştırmalar için teorik bir çerçeve çizmeyi ve bu alanda çalışmak isteyen diğer akademisyenlere yol göstermeyi ummaktadır.

ABSTRACT

This study aims to examine digital footprint management and digital footprint awareness and deals with this question by focusing on the concept of digital burial: What will happen to our digital data after death? Digital footprint management is a new term and has found a narrow area in the literature on management science. This study is an attempt to raise awareness of this concept. It employs the review of secondary sources as one of qualitative research methods. In addition, it examines various studies under the scope of secondary literature review and then they are subjected to word cloud analysis by taking their keywords to determine focal points of publications conducted in the field of digital footprint with the assistance of program MAXQDA 2022. According to its findings, the correct and effective use of digital footprints is a requirement of digital citizenship. The subject of digital burial, discussed in the context of digital footprint management is a fairly new concept in the literature and this situation is the most important limitation of this study. It expects to draw a theoretical framework for future research and to guide other academicians who wish to work in this field.

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INTRODUCTION

Digital footprints comes into the being as a result of online communication and play an important role in creating vital opportunities for people (Black and Johnson, 2010). Digital footprint refers to the information and data that people create when they are online through their purposeful actions or passive recording. Considering that members of generation Z are productive users of Internet, there have been increasing concerns about the forms of digital footprints created by this generation and what kind of consequences it would have in the future (Thatcher, 2014).

This study principally is an attempt to make sense of the process relating to digital footprint management. In this regard, it aims to classify types of digital footprints, explain concepts of digital burial, and increase awareness of digital footprint management in order to create a conceptual framework for digital footprint management based on the literature. On that note, its scope consists of academic studies such as articles, papers and books published in academic databases. The most important limitation of this research is the inadequacy of academic studies conducted on "digital burial", which is discussed in the context of digital footprint management in national and international literature.

2. Literature Review

2.1. Digital Footprint

Digital footprints leave a mark just like people's physical footprints on the ground; they are even called as digital shadows. Digital shadow is perceived by the mark you leave in the world, and it is often found in the traces we leave in every environment we've been, words we've said, deeds we've done and things we've written. A digital footprint is the trace that an asset including TV, mobile phone, Internet, mobile web, and other devices and sensors leaves during its interactions in the digital environment. All we upload to the information system consisting of interconnected hyper-text documents posted on the Internet, is for others to see and evaluate our footprints in the digital world. Digital footprints offer information about an asset's activity in a digital context. Behavioral targeting, personalisation, target marketing, digital reputation, and other social media or social graphics services all benefit greatly from it as well.

The phrase "record of your interactions with the digital world and the methods for exploitation of the data left behind" can be used to define a person's digital footprint. Despite the fact that younger generations frequently use the internet for professional and personal matters, they tend to prioritize the immediate advantages of networking with their friends and social circles rather than the long-term effects of their online behavior (Oxley, 2010). One of the most common uses of the Internet is for social networking sites to facilitate communication. This, in turn, aids in people creating their own online personas (Australian Communications and Media Corporation, 2013a). The development of a person's digital footprint, or the traceable data and information that people produce when they are online, is known as a "digital footprint" (Thatcher, 2014). However, your commercial transactions are included in your digital footprint as well as your social media activities. For instance, if you purchase something from eBay or Amazon online, your name is recorded in the database and linked to the online purchase (Kalbande, 2019).

2.2. Types of Digital Footprints

Digital footprints can be divided into two categories: active digital footprints and passive digital footprints. (Micheli, Lutz and Büchi, 2018). An active footprint is a data trail that someone intentionally or consciously leaves behind. Sending an email to someone (you want them to see it) is an example of leaving an active footprint. Other examples include writing blog posts, publishing on social media sites like LinkedIn, Twitter, and Instagram, and completing forms that ask for email or text update subscriptions. The size of the digital footprint increases with the number of emails sent. Emails could live several years or more because the majority of people save them online. On the other hand, a passive footprint is described as inadvertent or unconscious marks that a person makes online. Examples of this include using applications and websites that use geolocation to determine a user's location; browsing goods and engaging in activities that advertisers aggregate and analyze to create a profile of you and serve you with relevant adverts (Gloor, Colladon and Grippa, 2020). A user's unintentionally left-over data trail or information path on the internet is also referred to as a passive digital footprint. For instance, the IP address can access the web server when the user accesses

a website. The internet service provider and the user's general location are later identified by this address. IP addresses are nevertheless a part of users' digital footprints even though they are subject to change and do not contain any personal information. Some search engines record search history when the user logs in and these histories are called as more specific elements of passive digital footprints (Wook et al., 2019).

In addition to active and passive digital footprint types, we encounter following sub-categories in literature (McDermot, 2018; Micheli, Lutz and Büchi, 2018; Gloor, Colladon and Grippa, 2020; Levy and Gafni, 2021). These are:

- Personally identifiable information: Contains information related to real names of individuals.
- Anonymous: Contains anonymous data. This type of digital footprint hides IP address.
- User input: Contains the data created as a result of user input.
- Sensor data: These are the data created with the help of sensors.

2.3. Digital Footprint Management

People who lack the knowledge or skills to display a strong online presence and who have not received any training in the topic may be at a disadvantage. Digital traces might thereby endanger one's security and reputation. It may harm a person's possibilities for higher education and employment in terms of reputation. Additionally, in terms of security, having digital footprints might make it more likely to be followed, stalked, and harassed. According to Büchi, Lutz, and Micheli (2017), the problem of legal gaps in digital footprints is extremely complicated because it involves actors ranging from individual users and networks to platform providers, data brokers, civil rights organizations, and governmental agencies. At this point, it is of great importance to manage the digital footprints and decide the kind of strategy to be used for digital burial when the relevant person is still alive.

Not all digital footprints are positive, and they may not leave positive footprints. For that reason, managing one's digital footprint has become crucial to maintaining a positive digital identity. Since today's employers use digital footprints to monitor the activities of their employees online, the management of digital footprints has become essential. Since some employment sectors, such as advertising, public relations, and the media, might anticipate and actively encourage you to create a digital footprint, The Career Counseling Service (2012) advises people to capitalize on their digital footprints. For instance, you can look up instances of your online creativity in blogs, profiles, or videos (Kalbande, 2019). In order to manage digital footprints, one must be a competent online media user. People who spend time on the Internet, that connect through one or more technological devices and whose social environment, family, etc. connect with each other in digital spaces are called digital citizens (eTwinning, 2016). One of the biggest requirements for digital citizenship is minimizing the problems that may occur in future by using the footprints in online environments properly. At this point, the concept of digital footprint awareness comes to the fore. For one to be media literate, adapt to modern society, develop technical (sometimes referred to as digital literacy) and cognitive abilities (ability to gather information and comprehend the implications of online activities), one must be conscious of one's digital footprint (EAVI, 2019). In order to manage their digital footprints, people are supposed to be aware of them.

Digital footprint management is a strategy used to track, monitor and manage the traces left by a person or business due to their online activities. A digital footprint is digital data resulting from the activities of our internet-connected devices. This data reflects the online behavior and activities of a person or business (Buchanan et al., 2017). Digital footprint management is important for maintaining a person or business's online image, managing and strengthening its reputation. This strategy helps protect online reputation and prevent malicious activity. It is also essential for businesses to communicate and interact with their customers (Wook et al., 2019). Digital footprint management strategies may include elements such as social media monitoring, search engine optimization (SEO), online reputation management, content management, crisis communication, and online privacy protection. These strategies are used by individuals and businesses looking to protect their online presence. Digital footprint management is an essential tool for maintaining the online image of a person or business. A good digital footprint management strategy can help monitor the online activity of individuals or businesses, manage and strengthen their reputation (Mayda, 2022).

2.4. Digital Burial

The digital footprints that people leave behind on the Internet and social media can potentially affect people's future careers or job prospects. On social media platforms, people's stories in their social networks can sometimes cause them lose their jobs, to be expelled from their schools and even to be prosecuted, depending on the content in their social media accounts (Cooper, 2015). Just as there is a need for legal regulations, rules and control in all areas of life, digital footprints should be placed in a formal structure, taken under control and transferred to guardians by law or deleted/destroyed by the owner. In other words, the decision of "*digital burial*" should be made when that person is still alive and healthy.

3. METHODOLOGY

The scope of the research consists of 28 studies written in English and published in Web of Science, Scopus or Google Scholars. The main purpose of this research is to make a systematic review to classify digital footprint types, explain concepts of digital burial, and increase awareness for digital footprint management.

In order to achieve these goals, it takes following steps: a) Developing the research methodology, b) Scanning the relevant electronic database, c) Interconnecting studies on digital footprint. This study has examined only printed works due to the inability to control mistakes made in their original versions, and to be objective in the selection of relevant articles and dissertations. This research has conducted systematic analysis based on reviews of secondary sources as one of the qualitative research methods. Systematic analyzes are secondary research studies in which randomized controlled trials are collected and synthesized (Corcoran and Pillai, 2008). To call a study attempting to find an answer to a research question a systematic analysis, it is required to identify the studies to be used, carefully select them and synthesize their outputs in a systematic, transparent and reproducible manner (Yıldız, 2022). When done correctly, systematic analyzes provide reliable evidences in research (Ata & Urman, 2008).

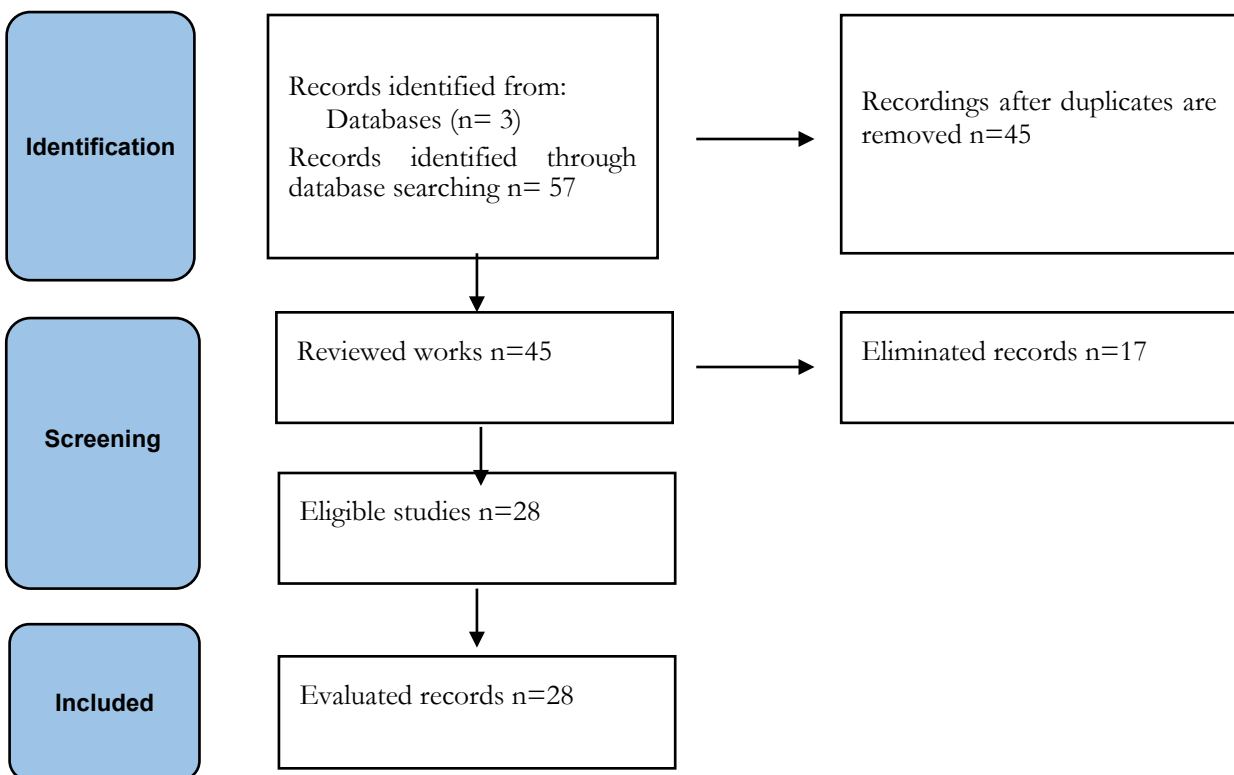


Figure 1. PRISMA Flow Chart

Source: Moher, Liberati, Tedzloff and Altman, 2009: 873-880

According to PRISMA method shown in Figure 1, the total number of studies obtained by database scanning is 57. It has reached this sample through Web of Science, Google Scholar, Scopus Databases. Keywords of Digital footprint, digital burial, digital footprint awareness, digital footprint management were scanned in these databases. Table 1 presents the results of electronic database scanning.

Table 1. Electronic Database search results

Keyword	<i>Digital Footprint, Digital Burial, Digital Footprint Awareness, Digital Footprint Management</i>
Limits	<i>Title+English</i>
Year	<i>2010-2022²</i>

Within the scope of this research, word cloud analysis has been carried out by the assistance of the program Maxqda 2022. Word cloud analysis contributes to an easy understanding of the general composition of repetitive words in the context of a visual richness allowed by the program (Williams, Parkes, & Davies, 2013: 45). The main purpose of visualizing the data obtained via Maxqda is not to visualize information, but to make it more comprehensible and create a fast information flow (Fronza et al., 2013: 57-58). By word cloud analysis with the assistance of Maxqda and by taking keywords of studies that the research has found via data scanning, this study detects the most repeated ones (three were chosen as the number of repetitions) tries to determine the focus of publications in such a way that would add visual depth.

4. FINDINGS

The systematic analysis in this study has divided existing works on digital footprint into several categories. It has attempted to generalize and conceptualize all collected studies. Types of studies taken under review are summarized in Table 2.

Table 2. Types and Numbers of Examined Studies

Article	18
Paper	10

Figure 2 shows the most frequently used keywords in works taken under examination in this study; they were obtained after word cloud data analysis were carried out in the program Maxqda 2022.



Figure 2. Word Cloud Analysis

When we look at the word cloud in Figure 2, it becomes apparent that the use of the word "digital" is the most common one among other keywords in the publications analyzed in the study. It is followed by "management", "online" and "footprint". The word "management", which is one of the most frequently repeated words in the cloud, could not be found surprising since this study aims to include management

²The date range was accepted as the beginning of 2010 the publication year of the first studies, by examining the literature on digital footprint management.

dimension in the digital footprint concept. In this context, the prominent words this study has found as a result of data visualization by means of word cloud analysis are compatible with relevant topics. Table 3 summarizes the findings of systematic analyses.

Table 3. Findings of Examined Studies

Source	Findings
Hick et.al., 2020	Digital footprints of different social groups suggest that they may experience systematic advantages or disadvantages. For example, the traces left online by users with low socioeconomic background differ from those with high level of impact.
Sjöberg et.al., 2016; Phelan, 2021	Digital footprint helps detect and prevent fraudulent and illegal activities
Chen et.al., 2019	Digital footprints allow customization according to customer preferences
Sun et.al., 2022	Digital footprints enable businesses to tailor their offers according to interests and demands of their customers.
Nawi et.al., 2020	Digital footprints help corporations cut costs
North and Oliver, 2014; Sagay and Jahankhani, 2020; Loutfi, 2022	In the process of developing a corporate strategy, it is possible to retrieve data simply by using recorded information, which is the digital footprint of users.
Benson and Filippaios, 2010; Vervier et.al., 2017; Arya, 2019; Surmelioglu, Y., Seferoglu, S. S. 2019	Hiring companies use digital footprints to identify qualified individuals. Digital footprints are very important for career management
Koid et.al., 2018; Osborne and Connelly, 2015; Kumar and Raj, 2020; Chin and Wang, 2020	Digital footprints help manage an individual's online profile/portfolio.
Osborn and Simpson, (2017); Naumov and Kabanov (2016); Levy and Gafni (2021)	Digital footprints help law enforcement in finding cyber-criminals.
Dumeresque, 2013; Karabatak and Karabatak, 2020; Markos, 2012	Corporate companies can advertise products based on users' online behavior.
Haimson et.al., 2016; Shmatko, 2021	It is possible to track online behaviors of users through digital footprints during online identity transitions.
Arakerimath and Gupta, 2015; Younes, 2019; Seliger, 2020	The digital footprint, as a strategic tool, helps us deliver a better business experience. But one of its disadvantages is the collection of data relating to the online activities of customers without their knowledge and consent, especially in the passive digital footprint. Our personal data can be used to generate income without our knowledge, and constantly encountering advertisements can be annoying and distracting.

5. CONCLUSION

All transactions and operations we perform on the Internet lead us to leave digital footprints behind us. Do people know what happens to these digital footprints? What exactly does a digital footprint mean? These are questions that modern people need to raise awareness as heavy users of the Internet. The starting point of this research is to raise awareness about the digital footprint and to shed light on digital burial, which deals with the future of digital footprints after the relevant person's death. In this regard, our findings indicate that digital footprints could have certain disadvantages since users leave them in a passive way; however, it is obvious that with the right management of their traces, it is likely to play a very important role in presenting the right

content to web users in the future. In addition to assisting online web service providers in understanding their customers and serving them accordingly, creating a positive impression of an individual in terms of career management depends on their digital footprints. Every second, some amount of active or passive digital footprint is left on the web and it will continue to be produced as long as people appeal to online contents as a fundamental requirement of our age.

With this study, it has been predicted that the concepts like digital footprint management, digital heritage and digital burial will be used more frequently in the future, it would be necessary to establish a legal basis for these concepts, the academic studies in the field of management will also change with the development of these concepts and as a distinct profession digital curators will come to the fore. In addition, with the rapid changes in socio-economic structure of our digitalized world, it is expected that academic studies on digital footprint management will increase and different areas of employment will emerge for private sector employees who wish to work in this field.

To sum up, while this study aims to raise awareness about digital footprint management, it is up to users how to manage their digital footprints and control privacy issues.

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GENİŞLETİLMİŞ ÖZET

Çevrimiçi iletişimin bir sonucu olarak ortaya çıkan, dijital ayak izleri insanların yaşamsal fırsatlar oluşturmalarında önemli bir rol oynamaktadır (Black ve Johnson, 2010). Dijital ayak izi, insanların çevrimiçi olduklarında amaçlı eylem veya pasif kayıt yoluyla oluşturduğu bilgi ve verileri ifade etmektedir. Özellikle Z kuşağının internetin üretken kullanıcıları olduğu göz önüne alındığında, bu kuşağın yarattığı dijital ayak izi türleri ve gelecekte ne gibi sonuçlar doğuracağı konusundaki endişeler her geçen gün artmaktadır (Thatcher, 2014). Dijital ayak izi konusunda eğitilmiş olmayan ve uygun bir dijital varlık göstermek için gerekli bilgi veya becerilere sahip olmayan kişiler potansiyel bir dezavantaja sahip olabilmektedir. Bu nedenle dijital ayak izi, itibar ve güvenlik açısından risklere neden olabilir. İtibar açısından kişinin eğitimine ve kariyerine zarar verebilir. Ayrıca güvenlik açısından dijital ayak izi, takip edilme ve taciz edilme olasılığını arttırabilmektedir. Dijital ayak izi konusundaki yasal boşluklar konusu, bireysel kullanıcılar ve ağlardan, platform sağlayıcılarına, veri komisyoncularına, sivil haklar gruplarına ve devlet kurumlarına kadar çeşitli aktörleri içerdiğinden oldukça karmaşıktır (Büchi vd., 2017:3). Bu noktada da, dijital ayak izlerinin yönetimi ve kişinin sağlığında nasıl bir strateji kullanılarak defin işleminin gerçekleştirileceğinin karara bağlanması büyük önem teşkil etmektedir.

Dijital ayak izlerinin hepsi olumlu olmayabilir, olumlu izler de bırakmayabilirler. Bu nedenle, pozitif bir dijital kimliği sürdürmek için kişinin dijital ayak izinin yönetimi çok önemli hale gelmiştir. İşverenler, çalışanlarının faaliyetlerini çevrimiçi olarak izlemek için artık dijital ayak izini kullandığından, dijital ayak izinin yönetimi gereklidir. Kariyer Danışmanlık Hizmeti (2012) bazı istihdam sektörlerinin (örneğin reklamcılık, halkla ilişkiler ve medya) dijital ayak izine sahip olmanızı bekleyebileceği ve aktif olarak teşvik edebileceği gerçeği nedeniyle insanların dijital ayak izlerinden yararlanmaları gerektiğini tavsiye etmektedir. Örneğin bloglarda, profillerde veya videolarda çevrimiçi yaratıcılığınızın örnekleri aranabilmektedir (Kalbande, 2019:2). Gittikçe önemi artan dijital ayak izlerini kişinin doğru ve etkin şekilde yönetebilmesi için de, iyi bir çevrimiçi ortam kullanıcısı olması gerekmektedir. Çevrimiçi şekilde vakit geçiren, bir ya da daha fazla teknolojik cihazla bağlantı kuran, sosyal çevresi, ailesi vb. ile dijital şekillerde bağlantı kuran herkes dijital vatandaş olarak adlandırılmaktadır (eTwinning, 2016). Dijital vatandaşlığın da en büyük gerekliliklerinden birisi, çevrimiçi ortamlarda var olan ayak izlerinin doğru kullanılarak ileride oluşabilecek problemlerin en aza indirilmesi olmaktadır. Bu noktada da dijital ayak izi farkındalığı (digital footprint awareness) kavramı ortaya çıkmaktadır. Dijital ayak izi farkındalığı, medya okuryazarı olmanın, modern topluma ayak uydurabilmenin, teknik (genellikle dijital okuryazarlık olarak adlandırılır) ve bilişsel becerilerin (bilgi edinme ve çevrimiçi aktivitelerin etkilerini anlama kapasitesi) kazanılması açısından gerekli bir ön şarttır (EAVI, 2019). Kısaca, bireylerin dijital ayak izlerini yönetebilmeleri için dijital ayak izi farkındalığına sahip olması beklenmektedir.

Bu çalışmanın temel araştırma problemi dijital ayak izi yönetimi sürecini anlamlandırmaktır. Bu bağlamda literatürden hareketle dijital ayak izi yönetimini kavramsal bir çerçeve oluşturmak için, dijital ayak izi türlerini sınıflandırmak, dijital defin kavramlarını açıklamak, dijital ayak izi yönetimi farkındalığını arttırmak amaçlanmaktadır. Bu bağlamda araştırmanın kapsamını akademik veri tabanlarında yayınlanmış makale, bildiri, kitap gibi akademik çalışmalar oluşturmaktadır. Araştırmanın en önemli kısıtı ulusal ve uluslararası yazında dijital ayak izi yönetimi bağlamında ele alınan “dijital defin” konusuna dair yapılmış akademik çalışmaların yetersiz olmasıdır.

Çalışmanın bulgularına göre, kelime bulutu analizinde incelenen yayınlarda anahtar kelimeler arasında en yaygın olarak "dijital" kelimesinin kullanıldığı görülmektedir. Bunu “yönetim”, “çevrimiçi” ve “ayak izi” kelimeleri takip etmektedir. Ayrıca çalışmanın bulguları (incelenen yayınlar) dijital ayak izlerinin kullanıcılar tarafından pasif bir şekilde bırakıldığı için bazı dezavantajlara sahip olabileceğini göstermektedir; ancak dijital ayak izlerinin doğru yönetilmesi ile gelecekte web kullanıcılarına doğru içeriğin sunulmasında, çevrimiçi web servis sağlayıcılarının müşterilerini daha iyi anlamalarına, buna göre hizmet vermelerine, kişinin kariyer yönetimi açısından da olumlu izlenimler yaratmasına yardımcı olacağı beklenmektedir. Yine çalışma sonucunda elde edilen bulgulara göre dijital ayak izlerinin doğru ve etkin kullanımı dijital vatandaşlığın bir gereği olarak karşımıza çıkmakta ve dijital ayak izi yönetimi, dijital miras ve dijital defin kavramlarının ilerleyen süreçlerde daha sık duyulacağı, yönetim bilimi literatüründeki akademik çalışmaların gelişim göstereceği, ve dijital kuratörlük mesleğinin gündeme geleceği öngörüsünde bulunmaktadır. Buna ek olarak dijitalleşen dünyamızın değişen sosyo-ekonomik yapısı ile dijital ayak izi yönetimi çalışmalarının artması hususunda akademisyenlere ve sektör çalışanlarına yönelik önerilerde bulunulmuştur. İnternet ve sosyal medya kullanımının geride bıraktığı

dijital ayak izleri, insanların gelecekteki kariyerlerini veya iş beklentilerini potansiyel olarak etkileyebilmektedir. Sosyal medya platformlarında insanların sosyal ağlarındaki hikayeleri, onların sosyal medya hesaplarında bulunan içeriğe dayalı olarak, bazen işlerini kaybetmelerine, okudukları okullardan ihraç edilmelerine hatta yargılanmalarına dahi neden olabilmektedir (Cooper, 2015). Hayatın her alanında yasal düzenleme ve kurallara, kontrole ihtiyaç olduğu gibi dijital ayak izlerinin de biçimsel bir yapıya oturtulması, kontrolü, yasalarla vasile devri ya da sahibi tarafından silinmesi/yok edilmesi yani “*dijital defin*” kararının kişinin sağlığında verilmesi gerekmektedir.

Araştırmanın kapsamını; Web of Science, Scopus, Google Scholars'ta yayınlanmış 28 İngilizce çalışma oluşturmaktadır. Bu araştırmanın temel amacı, dijital ayak izi türlerini sınıflandırmak, dijital defin kavramlarını açıklamak, dijital ayak izi yönetimi farkındalığını artırmak için sistematik bir inceleme yapmaktır. Araştırmanın amacına ulaşmak için şu adımlar izlenmiştir: a) Araştırma metodolojisinin geliştirilmesi, b) İlgili elektronik veri tabanının taranması, c) dijital ayak izi konusunda yapılmış çalışmaların sentezi. İncelenen tüm çalışmaların orijinalinde yapılan hataların kontrol edilememesi, incelenen makale ve tezlerdeki çalışmaların seçiminde objektif olmak amacıyla sadece basılı çalışmalar incelenmiştir. Araştırmada nitel araştırma yöntemlerinden ikincil kaynak tarama stratejilerine göre sistematik analiz yapılmıştır. Sistematik analizler kontrollü çalışmaların toplanarak sentezlendiği ikincil araştırma çalışmalarıdır. Araştırma sorusuna cevap arayan bir çalışmanın sistematik analiz olarak adlandırılması için kullanılacak çalışmaların belirlenmesi, titizlikle seçilmesi, çıktıların yapılarak sentezlenmesi sürecinin sistematik, saydam ve tekrarlanabilir şekilde yapılması gerekir. Doğru şekilde yapılan sistematik analizler, araştırmalarda güvenilir kanıtlar oluşturmaktadır (Ata ve Urman, 2008).