

# Wearable Technologies and the Self-optimization of Human Bodies: The Case of Smartwatch <sup>1</sup>

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## Abstract

Smartwatches are wearable technologies mostly used to produce health-related data. This paper focuses on smartwatch uses in terms of surveillance mechanisms. We ask whether, in the example of smartwatch, wearable technologies used in self-regulation facilitate the self-optimization of human bodies. We refer to several scholarly works using the concepts of self-tracking culture, quantification, governance of self and self-optimization. We organize our literary and methodological sources in three dimensions to construct an operational analysis: quantified self, self-definition, and governance of the self. We conducted in-depth interviews with a total of thirteen people by using snowball sampling. The average duration of the interviews was 30 minutes. We recorded the interviews with the permission of the respondents. The most important criterion in choosing the people to be interviewed was that they had five months or more of experience using the watch since the smartwatch requires a certain amount of time to get used to it and develop a habit of use. All interviewees had university degrees and an income-generating profession, mostly white-collar. The paper argues that the smartwatch, as a tool of quantification, encourages users to monitor themselves in order to be responsible individuals for their own health. However, we also acknowledge that the use of smartwatch does not straightforwardly produce empowering or disempowering outcomes for the users. There are dualistic aspects in its use that require further sociological considerations. Although the smartwatch is a tool of monitoring, its different connotations must be understood in its specific relation to the users.

**Keywords:** Smartwatch, Self-Optimization, Quantification, Self-Definition, Governance of Self

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## Giyilebilir Teknolojiler ve İnsan Bedenlerinin Kendilik Optimizasyonu: Akıllı Saat Örneği

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### Öz

Akıllı saatler çoğunlukla sağlıkla ilgili veri üretmek amacıyla kullanılan giyilebilir teknolojilerdir. Bu makale akıllı saat kullanımına gözetim mekanizmaları açısından odaklanmaktadır. Makalede, akıllı saat örneği üzerinden kendilik denetiminde kullanılan giyilebilir teknolojilerin insan bedeninin kendilik optimizasyonu etkisine odaklanıyoruz. Bu amaçla, kendini izleme kültürü, nicelleştirme, kendilik yönetimi ve optimizasyonu kavramlarını kullanan çeşitli bilimsel çalışmalara atıfta bulunuyoruz. Metodolojik kaynaklarımızı operasyonel olarak örgütleyebilmek adına araştırma sorumluluğu üç boyutta incelemeyi uygun gördük: niceliksel benlik, kendilik tanımları ve kendilik yönetimi. Analize temel olması açısından, toplamda 13 kişiyle kartopu örnekleme yöntemiyle derinlemesine görüşmeler gerçekleştirdik. Görüşmelerin ortalama süresi 30 dakika oldu. Görüşmeleri katılımcıların izniyle kaydettik. Akıllı saatin kullanımının alışkanlığı dönüşmesi belli bir süre gerektirdiğinden görüşme yapılacak kişilerin seçiminde en önemli kriter, saati beş ay ve daha fazla kullanma tecrübesine sahip olmalarıydı. Görüşülen kişilerin tamamı üniversite mezunu ve çoğunlukla beyaz yakalı olmak üzere gelir getirici bir meslek sahibiydi. Makale, bir nicelleştirme aracı olarak akıllı saatin, kullanıcıları kendi sağlıklarından sorumlu bireyler olmaları yönünde izlemeye teşvik ettiğini ileri sürmektedir. Bununla beraber, akıllı saat kullanımının kullanıcılar için doğrudan güçlendirici veya güçsüzleştirici sonuçlar üretmediğini de kabul ediyoruz. Akıllı saatin kullanımında daha ileri sosyolojik değerlendirmeler gerektiren ikici (dualistik) yönler vardır. Akıllı saat bir izleme aracı olarak görülse de farklı çağrışımlarının kullanıcılarla olan özel ilişkisi içinde anlaşılması gerekmektedir.

**Anahtar Kelimeler:** Akıllı Saat, Kendilik Optimizasyonu, Nicelleştirme, Kendilik Tanımlama, Kendilik Yönetimi

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## Introduction

The intersection of self-tracking technologies, medicine, and health is a noteworthy subject in contemporary literature, garnering considerable attention and scholarly inquiry (Lupton, 2016; Lupton, 2017; Swan, 2012). In the contemporary world, individuals can easily monitor their health data, encompassing aspects like exercise, diet, and sleep, through advanced wearable technologies. This endeavour may be linked to individuals' capacity to manage and control existing health conditions, or it may constitute a vital component of their pursuit of a healthy lifestyle. In this context, smartwatches, classified as wearable technologies, emerge as technological products with widespread adoption in contemporary society. As with any technological product, the use of smartwatches is a sociological phenomenon that needs a close examination in this context. This paper focuses on smartwatch uses in terms of surveillance mechanisms and the discourse of "normal body". We ask whether, in the example of smartwatch, wearable technologies used in self-regulation facilitate the normalization and self-optimization of human bodies.

Along with other sources (Ajana, 2017; Gilmore, 2016; Sharon, 2017) in the related literature, we primarily refer to the works of Deborah Lupton (2014, 2017) in our analysis by using the concepts of self-tracking culture, quantification, governance of self and self-optimization. We reread these concepts and offer our own exploration with respect to surveillance and normalization processes. In our final discussion, we acknowledge that the use of smartwatch does not straightforwardly produce empowering or disempowering outcomes for the users. There are dualistic aspects that require sociological considerations. These dualisms are key to understand how the users interact with the smartwatch and with themselves via its mediation.

In the upcoming sections, to begin with, we give an overview of the selected literature. Afterward, we explain our methodological approach, the research sample, and describe the profile of the respondents. Then, we continue with the analysis in three sections. First section is the quantified self and explores the quantification processes that have crucial effects in the construction of the new healthy individual. Second section is on self-definitions of our respondents and examines how they participate in this construction. The third and last section is on governance of self and gives an analysis of the whole process with respect to key concepts used by Lupton. Finally, the discussion and conclusion section will dwell on the findings that reveal the dualisms embedded in the use of smartwatch that can be prolific for future studies.

## Theoretical Framework: Self-optimization of Bodies

The background of our conceptual references can be traced to the concepts of surveillance, biopolitics, medicalization, and biomedicalization. These concepts are together defining elements of what Giddens (1996) calls the Late Modern Age. Giddens (1996, p. 7) argues that there is a close link between "bodily development and lifestyle". He points out the close relation between "personal aspects of bodily development and global factors." Reproductive technologies, genetic engineering and medical interventions are new social grounds for human biology (Giddens, 1996, p. 8). Medicalization has become the primary framework for such interventions. It indicates a general spread of ideology of medicine into other social fields that have not been seen as medical in itself (Zola, 1972; Conrad, 1975, 2007). In our case, biomedicalization identifies the context of wearable technologies and associated normalization processes. Clark et al. (2023, p. 92) define biomedicalization as "the increasing reliance of medical organizations, clinical practices, and treatments on techno-scientific innovations and the reorganization of biomedicine itself through applications of computer and information sciences." They argue that it is the continuation of medicalization. Medicalization is still ongoing but in new forms. Digitalization is one significant component of this process, which urges people to rethink about their definitions of health, illness, treatment, embodiment and life in general (Clark et al., 2023, p. 92). This can be observed in the "techno-scientization of biomedical practices", increasing mobilization of

digital technologies replacing less or non-technical treatments (Clark et al., 2023, p. 93). One consequence is the expanding surveillance over bodies by means of electronic record systems and population health databases (Clark et al., 2023, p. 97-98). Surveillance (Lyon, 2001, 2007) is a crucial process more than ever to understand the contemporary construction of the self. This construction is very much connected first to medicalization then to biomedicalization of the social sphere today. We refer to Foucault as our foundational figure to locate these connections. Then, we read respective scholars who base their analysis on Foucauldian paths.

In his seminal work on the birth of the prisons, Foucault (1976, p. 26) locates power not only in human interactions but also on human body. Power is a strategy that is exercised on and through the body. This operation of power produces an individual body as a self along with the truth of his or her own existence. Foucault (1988, p. 19) identifies four technologies in order to understand truth games. These are (1) technologies of production, (2) sign systems, (3) technologies of power, and (4) technologies of self. The link between technologies of power and technologies of the self is what Foucault calls “governmentality” (Foucault, 1988, p. 19). Foucault (2003a, p. 245) defines the governmental state in terms of its population. There are crucial processes to generate the spheres of governmentality; these are the collection and presentation of statistics, calculation and judgment procedures about these statistics. This is to open the social field to intervention and modification (Miller and Rose, 1993, p. 79). Population is the realm of problems such as “health, sanitation, birth, longevity, race...” Biopolitics is “the endeavour to rationalize” and present these problems to “governmental practice” (Foucault, 2003b, p. 202). Nikolas Rose (2007) reformulates Foucault’s approach to biopolitics for contemporary biomedical practices and offers the term “the politics of life itself.” Rose (2007, p. 10) argues that medicine is now about “the maintenance and optimization of the healthy body.” This necessitates a self-management on the sides of individuals and families. Medical technologies, also named as technologies of optimization, help them control their body and mind (Rose, 2007, p. 16). Individuals recast their life processes “to maximize their functioning” (Rose, 2007, p. 17). They adopt the norms set by biomedicalization process and maintain and reform themselves accordingly (Rose, 2007, p. 22). Relying on this background, we define normalization as the embeddedness of self-optimization practices in individuals’ lives. These practices heavily count on techno-scientific interventions on a legitimate ground of biomedical assumptions. Biopolitical social organization together with biomedical spread becomes the foundation that continuously legitimizes such interventions responsabilizing individuals towards self-optimization.

Ajana examines the concept of the quantified self from the perspective of biopolitics. She evaluates the practices of data collection about the body under the name of “self-tracking culture” (Ajana, 2017, p. 1). She suggests that there is an ongoing “biopolitics of the self” in line with neoliberalism, where the body is subjected to management and monitoring techniques. Rather than remaining individualized, self-tracking is evolving into a communal trend, prompting individuals to share their physical activity and biometric data with others. In her analysis, Ajana (2017, p. 5) explores the transformation of individuals’ bodily data into shareable information. Focusing on wearable technologies utilized for the quantification of self, Ajana demonstrates how such practices are integrated into the broader context of the big data ecosystem. Gilmore (2016, p. 2524) also focuses on the relation between the quantified self and wearable fitness technologies and introduces the notion of “everywear.” He emphasizes the multiplicity of personal and institutional values and engagements inherent in wearable fitness technologies. Gillmore (2016, p. 2534) defines using these technologies as “wearing a routine.” These technologies cannot be simply seen as the instruments of disciplinary or capitalistic control that diminish individuals’ agency over their bodies, nor can they be considered as positive tools that simply empower individuals through providing measurable data on bodily movements and performance. Instead, Gillmore (2016, p. 2535) suggests that we should explore how the quantified selves mediate their experience by means of wearable fitness technologies.

Neal-Joyce (2022) introduces a new concept, “the quotidian quantifier”, to identify wearable technologies and to signify the culture of measurement in which these technologies gain their meanings. While wearables become elements of biopolitical production, they increasingly define everyday existence of those individuals who use them as the crucial parts of their routines. Similarly, Tikkanen et al. (2023, p. 140) examine “how consumers use smart wearable technologies to improve their agency in their daily lives?” by using a semi-structured in-depth interview. They show that users benefit from these technologies for two reasons: “knowing” and “acting” (Tikkanen et al., 2023, p. 142). Tikkanen et al. (2023) enlarge the reasons to include self-improvement, justification, adaptation, and activism. Self-improvement is based on the motivation to optimize the body and the mind through the collection of related information and data about by the help of wearable technologies. Justification indicates sharing the information obtained in the self-improvement with friends and medical professionals. Adaptation refers to the users’ comprehension of the situational and contextual factors influencing health data that deviate from the norm (e.g., high heart rate/stress level, low sleep quality). Activism is users’ action to change the factors learned in adaptation. For example, a person who knows that the stress level is increasing in the work environment develops his/her own strategies to reduce this stress level (such as increasing physical activity during the day). Tikkanen et al. (2023, p. 145) interpret this situation as users “working on themselves, rather than changing conditions or structures that hamper their well-being.” In a similar study conducted with 30 women using a smartwatch or health-related application, Zampino (2023, p. 132) questions “how women appropriate their digital time clocks by experiencing flexible and subjective time as well as strategies to balance self-care time with work and family time?” She shows that while some women interpret the use of smartwatches as a waste of time and an obstacle to face-to-face relationships, some other women mention the positive effects of smartwatches on their lives. Those who talk about its negative impacts in terms of time say that constant notifications are disturbing especially while they are with their families and children. The positive comments by women are about the exercise and fitness programs and advice. These women cannot find time to go to the gym due to their busy work and family life. Smartwatch helps them follow the change in their fitness levels over time (Zampino, 2023, p. 142). There is not one-way relation between users and wearables. For some, these technologies help organize their time; for others, they turn out to be stress sources and obstacles for the same objective of organizing time.

Jülicher and Delisle (2018) examine the use of wearable devices in Germany. They underline the issue of data security regarding these technologies, which are widely used in Germany as well as around the world. While emphasizing that self-tracking technologies motivate some individuals, they also indicate that the same technologies make some users worried regarding data security, and thereby leading to feelings of pressure and discomfort. Using Foucault’s concept of technologies of the self, Gabriels and Coeckelberg (2018) state that self-tracking technologies transform not only the relationships between one’s own body and oneself but also those between oneself and others. The authors focus on the use of self-tracking technologies in two areas: in workplace and in private and self-initiated manner. In the case of workplace, they discuss how employees voluntarily share the data on their smart bracelets with their managers and co-workers and how this sharing changes the surveillance relations in the work environment. For instance, individuals within workplace engage in a surveillance relationship by assessing each other’s data, like workplace stress and performance. In other words, “colleagues got a look ‘inside’ each other’s bodies” (Gabriels and Coeckelberg, 2018, p. 124). The authors also highlight the physical and psychological problems that this situation may engender, as well as the transformation of social relations. In the second case, Gabriels and Coeckelberg (2018, p. 124) point out that self-trackers can intentionally link their wearable device with others’ devices, such as those of a friend or a partner. By doing so, they can access and assess each other’s data, including information on sleeping patterns, calories expended, steps taken, and the more. This situation, besides posing ethical dilemmas, may also yield

consequences affecting interpersonal communication. As individuals gain the ability to compare their own performance metrics with those of others, it could lead to interpersonal competition and potentially affect their relationships. In this way, self-tracking technologies become the tools to govern social relations as well as the self.

Baker (2020) gives a systematic elaboration on similar concerns and defines four ironies of self-quantification. He discusses automated technology in the example of wearable devices and determines four ironies regarding the self-quantification feature of wearables. The first irony is about the reliability of the information collected by wearable devices. Although smartwatches are claimed to produce data in previously unknown areas of the body (such as physical activity, and sleep), Baker (2020, p. 1483) reveals the possibility that this data may not be reliable. The second irony is that these devices turn into social control mechanisms instead of self-control with reference to Foucault's concept of discipline and bio-power. In the third irony, Baker links these devices to medicalization by noting that quantified self-devices establish the definitions and characteristics of the emerging standards of well-being. Due to these new norms and attributes, individuals find themselves never achieving a state of well-being, but rather perpetually striving for it. The final irony is that quantified self-devices reduce people's options rather than providing them with health-related new ones. Baker (2020, p. 1491) clarifies this issue using the example of daytime fatigue. When an individual reports experiencing daytime fatigue to the quantified self-device, it typically attributes this to sleep quality and provides recommendations for its enhancement. However, daytime fatigue is a multifaceted condition influenced by various factors such as stress levels, dietary patterns, and lifestyle habits. Despite this complexity, the device disregards alternative explanations; concentrating solely on the factor it can most readily measure (Baker, 2020, p. 1491).

Sharon (2017) contributes to the discussion of those points revealed in the above ironies and suggests three areas of polarization. Sharon (2017) analyses quantified self-technologies with the understanding of personalized healthcare and mentions three polarized debates found in the literature about these technologies. The first of these debates revolves around whether quantified self-technologies empower individuals in their lives or function as mechanisms of discipline and surveillance. In this discussion, Sharon (2017) evaluates quantified self-technologies among today's surveillance mechanisms and emphasizes that this aspect is made less visible by gamification, fun, and leisure contained in these technologies. The second polarization is whether quantified self-technologies cause "improved overall health or the disintegration of the state and collective responsibility for health" (Sharon, 2017, p. 99). In this context, Sharon assesses self-tracking devices as an extension of the healthism and individualism and emphasizes the transition of health management and responsibility from the state to the individual citizen. The last polarization is whether self-tracking devices are technologies that enable people to produce self-knowledge about their health and bodies, or whether they produce partial and reductionist data about the body. In this polarization, Sharon (2017, p. 106) underlines that self-tracking technologies with their capacity to quantify the body through certain and limited categories may result in people's alienation from their own bodies.

Deborah Lupton is a key figure to locate the process of quantification and its implications for the construction of self. Lupton (2016) helps us to see the different motivations and reasons for the use of self-tracking technologies. She defines five categories to highlight different domains for the use of these technologies: "private, communal, pushed, imposed, and exploited." Lupton (2016) emphasizes that the boundaries between these categories are not clear-cut. Private self-tracking, which is most frequently encountered in the literature, aims to collect data about one's own body to improve his/her quality of life and well-being. Pushed self-tracking refers to the situation wherein individuals are encouraged to utilize these technologies through financial rewards or by institutions, such as schools, workplaces, and insurance companies, seeking to alter behaviour.

Community self-tracking is the communal way of self-tracking with processes such as gamification and competitiveness. Examples include self-tracker groups on social media and platforms formed as a result of quantified self-movement. Fourth, people with addiction problems can use imposed self-tracking for medical purposes as part of their treatment. Imposed self-tracking is also used in workplaces to increase workplace efficiency and productivity. Finally, market research companies commonly use exploited self-tracking to understand people's daily life habits and patterns. To elaborate the relations of users to wearable technologies, Lupton further (2017) offers a sociotechnical analysis. She delves into the dynamic interaction between wearable devices and the real-time data they provide, placing a spotlight on the agency of users within this interaction. She examines the interaction as the one between non-human and human and conceptualizes "agency as a relational force" emerging in a sociocultural context (Lupton, 2017, p. 2). Accordingly, the interaction between users and the wearable devices may vary depending on many factors. It is important, for instance, how the device enters into the life of users, for what purpose they use it, and who else uses it around them.

The current social context associated with communication and information technologies and mobile health innovations bring a new understanding of health and new meanings of healthy and responsible individuals (Lupton, 2012). It also reveals "new forms of capacities, embodiments and subjectivities" (Lupton, 2012, p. 241). This context constructs and reconstructs formations of "idealized entrepreneurial consumers", named as health promoters, "who are receptive to the monitoring, surveillance, and regulation of their physical well-being through personalized automated messages and the exchange of biometric data" (Lupton, 2012, p. 241). Lupton (2014) highlights the social, economic, and institutional background of self-tracking devices. She employs the concept of "self-tracking culture" to indicate that self-tracking has evolved into a cultural phenomenon rather than merely remaining a device utilized in people's lives. Besides, she draws upon an examination of self-tracking cultures, which involves analysing accounts of self-tracking found in various sources such as blog posts, websites, social media platforms like LinkedIn, Facebook, and Twitter, as well as news reports, and product reviews and descriptions. First, Lupton (2014, p. 80) refers to the concepts of self-optimization and governance of self and claims that self-tracking culture encourages new individualism, self-reflection, and critical self-examination. Second, she highlights that, with the introduction of wearable devices, the boundary between where the body ends and technology begins becomes blurred. For this reason, users may find these devices "annoying, irritating, and uncomfortable" (Lupton, 2014, p. 81). Third, Lupton emphasizes that data valorisation constitutes the most pivotal aspect of self-tracking culture, signifying the dual role of the body as both the subject and object of information production and measurement. Finally, Lupton (2014, p. 83) stresses that self-tracking devices are perceived as tools of responsibility for individuals' own health, and their adaptation is encouraged by institutions such as educational, workplace, and governmental entities. Lupton (2014) warns that this scenario may entail financial implications in the future and could exacerbate social inequalities by producing moral judgments. In our analysis, we follow the steps of Deborah Lupton by combining the processes of quantification, governance and the self in the case of wearable technological devices. We see the reconstruction of the self by means of these technologies not only as a process of governance of the self but also as part of a broader culture of self-tracking. We also argue that this is not a straightforward empowering or disempowering relation. It is composed of different and sometimes conflicting aspects that together condition the self and its relations.

## Methodology

In this research, we refer to three concepts, *quantified self*, *self-definition*, and *governance of the self* to construct an operational analysis. The first one, quantified self, comes from Lupton (2016, p. 2): “It involves practices in which people knowingly and purposively collect information about themselves, which they then review and consider applying to conduct of their lives.” In line with this concept, we asked the interviewees about their motivations to use a smartwatch, changes in their lives after using smartwatches, and their definitions of smartness in the example of a smartwatch.

The second concept is self-definition. Although the self seems to belong to the psychology literature, sociology literature emphasizes that the construction of self cannot be thought of separately from society (Mead, 1934). For this reason, in this research, we took people’s self-definitions as a sub-topic by considering their opinions on health improvement and self-tracking/monitoring. Thus, we wanted to observe how our respondents discussed the self-definition of the subject who was using a smartwatch. We also asked how the users’ self-definition changed with the use of the smartwatch? Lastly, we wanted to follow the new considerations of respondents triggered by the smartwatch use, the considerations which they had or could not thought of before.

The third concept is the governance of the self, we base on Foucauldian notion of technologies of the self. As Foucault (1988, p. 18) defines, these technologies “permit individuals” to produce certain effects “on their bodies and souls, thoughts, conduct” and “to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality.” We operationalize the governance of the self to trace the ways our respondents transform their daily practices by using smartwatch. Under this subtopic, we asked the interviewees about their definition of healthy body and the contribution of smartwatch to reach it. Finally, we asked whether they changed their life routines and habits together with the use of a smartwatch.

We formulated the interview questions in accordance with our conceptual references. In this sense, they were to operationalize the aspects of quantified self, self-definition, and governance of the self. Accordingly, we classified the contents of our interviews in line with these focal points. We gave particular attention to intersections among three references since such convergences can point out the operational logic of smartwatch use and, besides, may give us new routes for further research. However, for the sake of our analytical position, we interpreted and differentiated the contents in their affinity to the relevant concepts.

## The Sample

The design and methods of the research were examined and approved by Middle East Technical University Human Research Ethics Committee with the number 0020-ODTÜIAEK-2024 on 18 January 2024. We completed the interviews during the last ten days of January. We used snowball sampling to find interviewees and had no difficulty finding smartwatch users because it is a widespread technology today. Almost all interviewees had a friend, relative, or acquaintance who used a smartwatch. After people agreed to interview us, the time and place of the meeting were planned based on their availability, and all interviews took place in public areas (cafes and restaurants). The interviewees were generally eager to talk as they were experienced smartwatch users for a long time. The interview questions generally worked in the field. However, after the first two interviews, we added the question, “for what reasons would you recommend a smartwatch to someone else?” since both interviewees mentioned their reasons for recommending it to others, even though we did not ask. Not using smartwatches was advantage in the field because we noticed that the interviewees explained the questions about the features of the smartwatch and their usage of these features in much more detail when they saw the analogue watch on our wrist. Although it was not a conscious choice, conducting the interviews with an analogue watch benefited the research process. It gave the interviewees the impression that we needed to familiarize ourselves with smartwatch features.



We conducted in-depth interviews with a total of thirteen people by using snowball sampling. The average duration of the interviews was 30 minutes. We recorded the interviews with the permission of the respondents. The most important criterion in choosing the people to be interviewed was that they had five months or more of experience using the watch. Since the smartwatch is a wearable technology, it requires a certain amount of time to get used to it and develop a habit of use. Except for one interviewee, all of our interviewees met this criterion. As shown in Table 1, all interviewees had university degrees and an income-generating profession, mostly white-collar. The average age of the people was 30. Considering that the smartwatch is an expensive technological product, it is unsurprising that the interviewees came from a certain economic level. Another important feature of the sample was that nine respondents used Apple smartwatches. This led these users to mention common themes specific to this brand during the interviews (like the battery running out quickly). Only five interviewees said they used smartwatches while sleeping. This situation was crucial as it meant that some of the interviewees could discuss sleep data. Detailed profiles of respondents can be seen in Table 1.

Table 1  
Profile of Respondents

Respondents	Sex	Age	Education	Occupation	Duration of smartwatch usage
1	M	25	Bachelor's	Engineer	2 months
2	M	33	Bachelor's	Engineer	8 months
3	M	28	Bachelor's	Engineer	5 months
4	M	34	Master	Research Assistant	3 years
5	F	23	Bachelor's	Physiotherapist	1 year
6	M	30	Bachelor's	Designer	6 years
7	M	37	PhD	Academician	2 years
8	M	27	Bachelor's	Engineer	1 years
9	F	27	Bachelor's	Engineer	5 months
10	F	28	Master	Research Assistant	1 year
11	M	30	Master	Engineer	7 years
12	M	48	Bachelor's	Manager	5 years
13	F	28	Bachelor's	Engineer	2 years

The first limitation of the study was about the different durations of smartwatch use. Although we determined a minimum duration of use (five months) for our sample selection, the range of duration was from 5 months to 7 years. That is, the durations were not only different but also they were not even close. The second limitation was that our respondents used different brands of smartwatches. One well-known popular brand was especially preferred by the interviewees. Nevertheless, there were other different brands and different models of these brands with their different features. While there were similarities between the brands and models, the users had a different experience with a specific brand or a model. All these differences were not reflected in our analysis. In summary, our research assumed more or less a similar duration of use among the respondents. Besides, it assumed the use of an undifferentiated brand or a model, which would supposedly provide similar user experiences.

## Quantified Self

The most used feature of the smartwatches is notifications. Smartwatches can connect to the phones; and all respondents emphasized that they actively used this feature in their daily lives. They mentioned that they never missed calls, texts, emails, or notifications even if their phone was not with them. Secondly, although some respondents did sports regularly, they all underlined that they could track their sports data. They could find the answers for how much kcal they burned, what their average heart rate was during sports, and learn their peak and drop points. The third most used feature of smartwatches was tracking health data like heart rate, ECG, sleep stages info, BMI, and pedometer. Although a few respondents had heart problems like arrhythmia, most respondents said that they could check their health data regularly thanks to their smartwatches. Those respondents also mentioned the three rings feature of smartwatches about their daily activities. These three rings refer to active calories burnt, total steps, and workouts completed in one day. The total step ring would be closed if the pre-set daily target were reached. As Neal-Joyce (2022) reminds, the respondents used their smartwatches as “quotidian quantifiers” since the watches quantify most of their daily activities. They produced registers of quantified data on daily basis.

Besides, the respondents indicated the movement and water alerts of the smartwatches among the features of tracking health data. According to the respondents’ choice, the smartwatches could remind to move and drink water throughout the day. Because almost all respondents worked in an office job, they spent most of their time in front of the computer. Thus, they agreed on the benefit of the movement alert of the smartwatches especially if they worked on a tight deadline or if they were in a busy workday. Such uses were clear examples of self-tracking culture (Ajana, 2017; Lupton, 2014). Our interviewees had a common motivation to participate in this self-monitoring and in producing a culture of surveillance. They critically examined their selves under the technological guidance of smartwatches. In addition to these motivations, some respondents argued that the smartwatches were like accessories that suited effortlessly to every outfit. They stated that they could easily change the straps if they wanted. The straps in different materials and colours could be purchased at an affordable price. While some interviewees expressed their interest in new technologies and so in buying and using the smartwatch, others highlighted their curiosity about the product and desire to purchase it due to its association with the popular culture. This demonstrated an interesting relational (Lupton, 2017) character of the smartwatches since they gained meanings for our respondents within the popular culture of visibility, which is again an aspect of surveillance culture. However, after having used the watch for some time, they discovered additional features, such as health- and sport-related data. While people’s initial motivation for purchasing and using a smartwatch may not always revolve around tracking their health and sports data, an essential finding was that they regularly monitored these data after a while. That is, in the case of smartwatches, the visibility dimension of surveillance culture led to its dimension of self-tracking. The motivation of having and showing the watch was merged with the motivation of being tracked by the watch. In this way, smartwatches became an important part of self-tracking culture through which our respondents lived (Lupton, 2014)

To summarize the motivations; one aim of the respondents was to track notifications, although tracking health and sports data was not their primary concern. Only one respondent used the smartwatch for health purposes based on a doctor’s advice because she had a heart problem that could cause her to faint in her everyday life. The respondents used smartwatches for tracking their health, sports, and sleep data. Participants who used it specifically to this purpose saw the smartwatch as a device that produced information about their bodies. They remarked that, with the smartwatch, they had access to information about their bodies, which they could not access before. With the help of this information, they added new routines to their lives and set standards about these routines. As Gillmore (2016, p. 2534) says, our respondents “wore a routine” by wearing smartwatches

in their lives, reorganized their existing routines and set new ones. Watches mediated their daily experiences and routines. Wearing routines came with the concentration on measurable factors (Baker, 2020). Increasing measurability of their bodies helped the respondents generate and maintain their routines.

Throughout the interviews, almost all respondents indicated using smartwatches decreased their health-related risks. For instance, they mentioned the smartwatch's ability to detect severe car crashes and hard falls and to make contact with emergency services. Because it detected these situations and called emergency service immediately, they emphasized that smartwatches save time in life-threatening situations. Nevertheless, when asked whether this kind of feature could be used in real life, only one respondent, with an arrhythmia problem, indicated using this feature when she fainted in her office. Even though respondents were relatively young and only one of them had a chronic disease, they underlined that gaining data about their health decreased risk and that smartwatches could accelerate the diagnostic process if they had a problem with their health. As Tikkanen et al. emphasized (2023, p. 142), "knowing" and "acting" were important motives behind the reason for our respondents' using the smartwatch. Knowledge gave them a chance to work on themselves (Tikkanen et al., 2023). The below quotation clearly summarized the importance of getting data about health:

"Of course, the watches are not hundred percent reliable in measuring or notifying arrhythmia; but it is better than not wearing anything at all. Even if it tells you to pay attention only once, or warns when your heart rate is too high or too low; that data is better than nothing" (37, academician, 2 years).

Smartwatches helped produce health knowledge for our respondents and led them to act accordingly. This is thanks to clearly defined and quantified data emerged during the use of watches. However, the interviewees were not passive agents when they used smartwatches and took action based on the data recorded by smartwatches. As discussed earlier, while the interviewees emphasized that the health and sports data motivated them and positively influenced their lives, some interviewees had a different assessment of the surveillance mechanisms implemented by their smartwatches. One of them stated that the smartwatch did some "tricks" to motivate him to do sports. Since he thought it would be in his best interest to fall for these tricks, he tried to comply with them as follows:

"...those little games that encourage you to win medals when you don't actually think about it, let's say dance for five minutes to win that award, you know, even though you know it's a trickery, it would be beneficial for me to fall for it, so I tried to motivate myself in that way." (37, academician, 2 years)

Another interviewee interpreted the changes in people's lives resulting from the usage of the smartwatch in relation to its surveillance aspect. Our respondents tended to change their actions because they knew they were under surveillance. The power of the smartwatch to change the routines of the users did not result simply from the data it collected but from its ability to monitor, which maintained self-tracking culture (Ajana, 2017).

### **Self-definitions**

Most of the respondents pointed out the positive effects of using smartwatches in their lives and in the kind of person they would be. To locate this effect, we asked them about their own definitions of the smartwatch and tried to understand their perceptions about it. From the answers to this question, we reached four main themes. The first one was setting routines and goals to organize the respondents' life. For the first three months, the smartwatch monitored users' health data, sleep hours, sports routines, and fitness levels to organize daily routines and set goals for them. The respondents emphasized that, thanks to this feature, they put more effort into fulfilling the goals set by their smartwatches. The second theme was decreasing health-related risks. Our respondents believed that using smartwatches was a precaution before and during severe car crashes, heart attacks, or faints. Besides, the respondents stated that collecting health data, like the drops and falls of heart rate on a daily/weekly/yearly basis, was beneficial for the detection of possible illnesses or diseases in the future.

Third, all respondents mentioned that they knew their bodily limits thanks to the smartwatch. As examples, they indicated their heart rate peaks during cardio exercise, the changes in their heart rates during sleep, their sleep stages and the duration in deep sleep. Fourth, all the respondents underlined that their body and health consciousness increased after using the smartwatch. The four themes demonstrated that the use of smartwatch increased the sense of individual responsibility for our interviewees and gradually integrated them into an ideology of healthism (Sharon, 2017). In line with this point, the respondents signified three topics under the fourth theme. The first one was learning/realizing the details of a healthy life. For instance, the respondents said that they did not know details about healthy life before using smartwatches. One respondent stated that, after using the smartwatch, he learned the importance of the sleep stages (like deep sleep and REM sleep) along with the duration for healthy sleep. Another expressed having increased their knowledge about body mass index:

“Before, I never knew whether my weight was at the obesity limit or under it; I mean, I honestly was not interested. I was thinking that if I reached that limit, I would stop myself; but after the smartwatch, I realized that there were details about healthy life.” (33, engineer, 8 months)

The second topic underlined under the increasing interest in the bodily health was knowing one’s rank. Smartwatches help make comparisons among users who have similar demographic characteristics (age, BMI, activity level, etc.). As one respondent puts:

“It gives my oxygen capacity with respect to my peers. For example, it says that among your peers, your oxygen capacity is great, or it says, bad.” (48, manager, 5 years)

The third topic related to increasing body and health consciousness was taking feedback about performance and health. Smartwatches evaluate daily performances of sports and sleep, and suggested ways of increasing the quality and quantity of users’ activities. One respondent, who was 28 years old and used a smartwatch for eight months, gave as an example playing football every Thursday. During the play, he could measure his performance by checking the records of his smartwatch. He summarized the feedback feature of his smartwatch indicating his increased body consciousness. Because of those features that increased their individual responsibility for their body in line with healthism (Sharon, 2017), our respondents defined the smartwatch as an assistant that helped make arrangements in their lives. Smartwatches also assisted them in familiarizing with their bodily limits and reactions. This familiarization process can be considered in line with the process of self-optimization (Lupton, 2014, p. 80). The more they knew, the more responsible they felt about, and the more they strive for themselves (Baker, 2020).

Nevertheless, we found that our respondents did not always take every feedback seriously. The use of the smartwatch did not necessarily lead to behavioural change. In other words, the information produced by the help of the smartwatch did not always turn into a mechanism that would change the respondents’ relationship with their bodies and routines. For example, one interviewee stated that he did not care about the notification coming from his smartwatch informing him that he had not exercised enough that day and he emphasized that he did not take any action:

“... it [the smartwatch] says your ring [activity] is not closed today and I say [who cares] if it is not closed, let it not be” (28, engineer, 5 years).

Considering this result, it can be said that the data provided by, and surveillance embedded in the smartwatch did not automatically make a difference in our respondents’ life. We think that the users’ interpretations of the smartwatch may influence and determine the characteristics of the changes they are going to experience.

Furthermore, some respondents associated notifications by smartwatches with negative connotations. For instance, they mentioned that tracking health data often made them obsessed about their own health; and thus,

following notifications with a smartwatch might be distracting. Some interviewees emphasized that the continual notifications from the smartwatch were extremely irritating and distracting throughout the day. While one participant discontinued this feature, others continued to utilize it, asserting its significance as one of the pivotal features of the smartwatch. These respondents continued to use this technology, especially the feature of notification, even though they were uncomfortable. This raises the question of whether the smartwatch became an integral part of their daily lives. Most interviewees said that they used their phones less with a smartwatch. This situation indicates an increasing dependency on another technological device rather than a decrease in the phone use. Contrary to the second point that pointed out that the interviewees ignored the smartwatch data and warnings, taking these notifications and data all day long may create addiction. One respondent stated:

“I feel very uncomfortable when I don’t wear the watch because I am very much used to looking at all my messages on it. It [not wearing] creates a serious sense of deficiency, and this is very disturbing. Because it feels a bit like an addiction. On a negative note, yes, it feels lacking.” (30, engineer, 7 years)

### **Governance of Self**

In the section about the quantified self, we delved into individuals accessing numerical information about themselves through smartwatches and explored their motivations. The following section focused on how the use of smartwatch shaped individuals’ self-definition. In connection with these two topics, in this section, we discuss the changes in our respondents’ practices, behaviours, and habits resulting from using smartwatches. Our interviewees generated new practices with the use of the smartwatch. There were such newly acquired habits now integrated into their lives. In other words, this section examines the new routines the users of smartwatches brought into their lives or the routines they changed. It is about the changing relationship of control over their bodies.

First, almost all respondents mentioned that they were more motivated to do sports after using smartwatches. Increased motivation brought regular and more exercise. The interviewees emphasized that doing sports was increasingly more a part of their routines with the 3-ring smartwatch application. This application set goals for and gave feedback to them based on their exercise and sports data. As one respondent emphasized:

“... It may seem unnecessary, but when you set a goal with the watch, you strive to achieve it.” (25, engineer, 2 months)

Besides, the interviewees stated to be more motivated in doing sports because the smartwatch gave concrete data for this experience like calories burned, the highest and lowest heart rates, and active calorie burning time. One interviewee stated that the smartwatch provided an output by embodying the sports experience:

“...when we do sports, we do it and it ends. Normally, we do not have a direct result or output; but when there is a smartwatch, there is an output. It tells you that you have burned this many kcal... It directly tracks you in regular systematic ways and presents it [the data] to you. That is, I think it can motivate you.” (28, research assistant, 1 year)

So far, we saw how the interviewees were more motivated to do sports and how they added more exercise into their lives. Moreover, most interviewees underlined that the movement reminder of their smartwatches increased their daily movement along with the movements during sports. As one respondent explained:

“So, I became more motivated and directed towards health. I paid more attention to my nutrition, resting, sitting, and standing. There was actually a difference. I had been sitting a lot at work, never getting up. I started to get up...” (23, Physiotherapist, 1 year)

Our interviewees also stated that they changed their habit of sleep. Some respondents emphasized that they took action to increase the quality of their sleep due to the data provided by their smartwatches about their sleep. There were applications that tracked sleep hours and stages, and gave the users recommendations to improve the sleep quality. Based on those recommendations, our respondents gained new routines for the increased quality of sleep. Some of these routines were drinking herbal tea before sleep, reading books instead of spending time on the telephone or TV, and reducing liquid consumption before going to bed. Likewise, some respondents mentioned having changed their routine of drinking water. There were respondents who actively used the water reminder feature mentioned that their daily water intake increased. In addition to these changing routines in sports, movement, and sleep, all interviewees stated that they used their (smart)phones less because they could follow the calls, messages, and notifications on their smartwatches. In this way, they could check whether the notifications were important only by looking at their wrist. Only if there were a vital situation they should answer, they would use their phones. One of the respondents, who was a manager, indicated the significance of the notification-tracking feature in professional life. He defined associated this feature of smartwatches “to be able to stay in the moment, to be in control of everything to come, not to miss anything” (48, manager, 5 years). In general, the users in our study emphasized that their daily routines (such as increasing exercise frequency, improving sleep quality, moving more frequently during the day) changed positively thanks to the health data provided by and notifications of their smartwatches. They took off their old routines and wore new ones (Gilmore, 2016). The watch helped them to optimize their health and to govern their self to be a new healthy individual (Lupton, 2014). After a critical self-examination, they reflected the effect of smartwatches on their bodies and rendered their self as both subject and object of the ongoing production and measurement of information (Lupton, 2016).

Still, there were respondents who said that the data and warnings coming from the smartwatch might be annoying and frustrating if they were not able to follow a daily plan in accordance with the daily goals set by their watches:

“Besides, when I am deprived of sleep, I become even more demoralized when I realize that I have only slept for 5 hours. When I do not know this, I could just say yes, I slept less today, and that is all... Knowing more does not always help, especially when I cannot do anything about it.” (28, research assistant, 1 year)

This quotation exemplifies the irony that Baker (2020) defined. Because of the high level of norms and attributes that quantified self-devices establish, the users could not achieve a state of well-being, which created frustration:

“You increase your exercise every day and move more; the watch will reward you. Nevertheless, when you stop doing it, there is a constant demoralizing feedback. ‘You are falling, you are not moving, move more’” (37, academician, 2 years)

Thus, smartwatches can be “annoying, irritating, and uncomfortable” (Lupton, 2014, p. 81) as well as encouraging, useful and helpful.

## Discussion and Conclusion

In this section, we summarize our findings derived from the field study, which we think are sociologically significant for future research. These findings demonstrate the dualistic characteristics embedded in the smartwatch use among our respondents. We argue that each of these findings, a focal point in its own right, necessitates additional research and deeper focus so that we can have a more comprehensive picture of the existing dualisms. The dualisms deserve further academic attention where we can make sense of complex structures through which self-optimization operates. The different responses, attributions and interactions of

users with wearable technologies are an essential topic that can help us comprehend the dualities embedded in self-optimization. This may also be a symptom that self-optimization processes identified by biomedical realm are not really self-optimized.

We argue that the ways the interviewees evaluated the smartwatch and the ways they understood the generated data need to be studied in more detail. Two different but related reasons seemed to explain their motivations to use the smartwatch. The first one was about the attributed function of the data. The users changed their routines, practices, and habits in light of the data provided by the smartwatch. That is, they perpetually worked on and improved themselves (Tikkanen et al., 2023) and wore new routines (Gilmore, 2016). The second was about the surveillance effect. That is, they changed their routines because they were under the surveillance of a wearable technology. They were gradually integrated into yet another part of surveillance culture, self-tracking culture (Ajana, 2017; Lupton, 2014). Although this paper focused more on the users' changing routines and habits based on the concepts of quantified self and governance of self, the research results disclosed that the smartwatch could sometimes turn into a surveillance mechanism that demotivated and demoralized the person.

Our initial argument was that the smartwatch, as a tool of quantification, encouraged and motivated the respondents to monitor themselves in order to be responsible individuals for their own health. These actions of responsible monitoring are meaningful within the ideology of healthism (Sharon, 2017). The interviewees governed and constructed their selves by continuously redefining their health. This process of self-construction was realized within the realm of self-tracking culture. So healthism (Sharon, 2017) and self-tracking culture (Lupton, 2014) support each other. However, this process was not straightforward. It displayed at least three dualistic dimensions. First, the users did not always collaborate with the smartwatch or did interpret its use in the way they wanted to use. Second, they sometimes disregarded the data produced by the smartwatch and did not follow the paths signalled by it. Third, the users interpreted notifications in different ways, sometimes with positive meanings and sometimes with negative attributions.

Although the smartwatch can be seen as a tool of monitoring meaningful within a self-tracking culture, its different connotations must also be understood in its specific relation to the users. Self-tracking mechanisms are expected to produce users with the concern of self-optimization. Nevertheless, the meaning of self-optimization, and so that of the smartwatch, is not the same for all the users. There may be cases where individuals are not willing to track or to critical examine their self as Ajana (2017) or Lupton (2016) assume. Furthermore, the ideology of healthism (Sharon, 2017) may not fulfil its promises in their anticipated ways.

With all its dualistic characteristics, self-optimization operating within a self-tracking culture became the way our respondents related to and understood themselves. This way reflected the characteristics of surveillance relations as the dominant forms of cultural practices today. In general, the use of a smartwatch revealed a certain ideal type as a user. Smartwatch users were people who could easily organize their lives, follow their goals, and display their performances. They were responsible for their own health, for decreasing health risks and increasing life chances after accidents. They knew the limits and reactions of their bodies in various situations like sports, sleep, or under stress. Thus, they were conscious of their body and health. They were continuously learning and realizing the requirements of a healthy life. They could compare themselves with the people who had similar demographic characteristics. Smartwatch users saw their watches not only as a health product but also as a cultural product with an economic and image value. In other words, our respondents were continuously redefining themselves as healthy subjects with an awareness of self-responsibility and equipped with the necessary tools of definition, which were smartwatches.

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## Genişletilmiş Özet

### Amaç

Akıllı saatler çoğunlukla sağlıkla ilgili veri üretmek amacıyla kullanılan giyilebilir teknolojilerdir. Bu makale akıllı saat kullanımını gözetim mekanizmaları açısından irdelemektedir. Makalede, akıllı saat örneği üzerinden kendilik denetiminde kullanılan giyilebilir teknolojilerin insan bedeninin normalleşmesinde etkisine odaklanıyoruz. Bu amaçla, kendini izleme kültürü, nicelleştirme, kendilik yönetimi ve optimizasyonu kavramlarını kullanan çeşitli bilimsel çalışmalara atıfta bulunuyoruz. Metodolojik kaynaklarımızı operasyonel olarak örgütleyebilmek adına araştırma sorumluluğumuzu üç boyutta incelemeyi uygun gördük: *niceliksel benlik, kendilik tanımları ve kendilik yönetimi*. Makale, bir nicelleştirme aracı olarak akıllı saatin, kullanıcıları kendi sağlıklarından sorumlu bireyler olmaları yönünde izlemeye teşvik ettiğini ileri sürmektedir. Bununla beraber, akıllı saat kullanımının kullanıcılar için doğrudan güçlendirici veya güçsüzleştirici sonuçlar üretmediğini de kabul ediyoruz. Akıllı saatin kullanımında daha ileri sosyolojik değerlendirmeler gerektiren ikili (dualistik) yönler vardır. Akıllı saat bir izleme aracı olarak görülse de farklı çağrışımlarının kullanıcılarla olan özel ilişkisi içinde anlaşılması gerekmektedir.

### Tasarım ve Yöntem

Araştırmanın tasarımı ve metotları 0020-ODTÜİAEK-2024 protokol numarası ile Orta Doğu Teknik Üniversitesi İnsan Araştırmaları Etik Kurulu tarafından 18 Ocak 2024 tarihinde onaylanmıştır. Temel veri kaynağını oluşturan mülakatlar 2024 Ocak ayının son 10 günü içinde tamamlanmıştır. Araştırmada operasyonel bir analiz oluşturmak için üç kavrama atıfta bulunuyoruz: niceliksel benlik, kendilik tanımları ve kendilik yönetimi. Bunlardan ilkinin, yani niceliksel benlik kavramını, Lupton'a (2016, s. 2) referansla kullandık. Bu kavram doğrultusunda görüşmecilerimize akıllı saat kullanma motivasyonlarını, akıllı saat kullandıktan sonra hayatlarındaki değişiklikleri ve akıllı saat örneğinde akıllılık (smartness) tanımlarını sorduk. İkinci kavram, kendilik tanımları, benliğin inşasının toplumdan ayrı düşünülmemeyeceğini vurgulamaktadır (Mead, 1934). Bu nedenle bu araştırmada kişilerin sağlıklarını iyileştirme ve kendilerini denetleme konusundaki görüşlerini dikkate alarak kendilerini tanımlamalarını istedik. Ayrıca kullanıcıların akıllı saat kullanımıyla birlikte kendilerini tanımlamalarının nasıl değiştiğini de sorduk. Son olarak katılımcıların akıllı saat kullanımının tetiklediği yeni düşüncelerini takip etmek istedik. Üçüncü kavramımız olan kendilik yönetimi Foucault'nun kendilik teknolojileri çözümlemelerini temel alıyor. Foucault'nun (1988, s. 18) tanımını takip edersek, bu teknolojiler "bireylerin bedenleri ve ruhları, düşünceleri, davranışları üzerinde belirli etkiler yaratmasına" ve "belirli bir mutluluk, saflık, bilgelik, mükemmellik veya ölümsüzlük durumuna ulaşmak için kendilerini dönüştürmelerine" olanak tanır. Katılımcılarımızın akıllı saat kullanarak günlük uygulamalarını nasıl dönüştürdüklerini takip etmek için benliğin yönetimini operasyonel hale getirmeye çalıştık. Bu alt başlık altında görüşmecilerimize sağlıklı beden tanımlarını ve akıllı saatin buna ulaşmadaki katkısını sorduk. Son olarak akıllı saat kullanımıyla birlikte yaşam rutinlerini ve alışkanlıklarını değiştirip değiştirmediklerini öğrenmek istedik. Çalışma kapsamında toplamda 13 kişiyle kartopu örnekleme yöntemiyle iletişime geçerek derinlemesine görüşmeler gerçekleştirdik. Görüşmelerin ortalama süresi 30 dakikaydı. Görüşmeleri katılımcıların izniyle kaydettik. Görüşülecek kişilerin seçiminde en önemli ölçüt, saati kullanma konusunda beş ay ve daha fazla deneyime sahip olmalarıydı. Görüşülen kişilerin tümü üniversite mezunuydu ve çoğunlukla beyaz yakalı olmak üzere gelir getirici bir meslek sahibiydi. Kişilerin yaş ortalaması 30'du.

### Bulgular

Akıllı saatlerin en çok kullanılan özelliği bildirimlerdir. 13 katılımcının tamamı bu özelliği günlük yaşamlarında aktif olarak kullandıklarını vurgulamıştır. İkinci olarak katılımcıların yalnızca yedisi düzenli olarak spor yapmasına rağmen hepsi spor verilerini takip edebildiklerinin altını çizmiştir. Akıllı saatlerin en

çok kullanılan üçüncü özelliği sağlık verilerini takibidir. Katılımcılar ayrıca günlük aktivitelerinin takibi için de akıllı saatlerini kullanmaktadır. Neal-Joyce'un (2022) hatırlattığı üzere, akıllı saatler "günelik nicelleştirici" işlevi görmektedir. Bunun yanında saatler kendi kendini izleme kültürünün somut örnekleridir (Ajana, 2017; Lupton, 2014). Katılımcılar açısından gözetim kültürüne katılım yönünde motivasyon sağlarlar. Paralel olarak, akıllı saatlerin popüler ve simgesel değerleri gözetim kültürünü görünürlük boyutu açısından desteklemektedir. Süreç içinde görünürlük ve denetim işlevleri birbirlerini beslemektedir. Akıllı saatler ürettikleri niceliksel verilerle kullanıcıların rutinlerini (Gillmore, 2016) ve kendilerini yeniden tanımlamalarını yolunu açmıştır.

Katılımcılarımızın akıllı saate ilişkin tanımlarından dört ana temaya ulaştık. Bunlardan ilki, katılımcıların hayatını düzenlemek için rutinler ve hedefler belirlemektir. İkinci tema sağlıkla ilgili risklerin azaltılmasıdır. Üçüncüsü, katılımcıların tamamı akıllı saat sayesinde bedensel sınırlarını bildiklerini belirtti. Dördüncüsü, tüm katılımcılar akıllı saati kullandıktan sonra beden ve sağlık bilinçlerinin arttığının altını çizdi. Bu temalar bize, akıllı saat kullanımının görüşmecilerimizin bireysel sorumluluk duygusunu artırdığını ve onları zaman içinde "sağlıklı olma" (healthism) (Sharon, 2017) ideolojisi ile bütünleştirdiğini gösterdi. Bu doğrultuda katılımcılar dördüncü tema altında üç konuya dikkat çektiler. İlk olarak, sağlıklı yaşamın ayrıntılarını öğrendiklerini belirttiler. İkinci noktada, kendilerini diğer insanlarla karşılaştırabildiklerini ve sağlık açısından konularını daha iyi tespit ettiklerini söylediler. Son olarak, sürekli geri bildirim almanın önemini vurguladılar. Bütün bu süreci kendiliğın optimizasyonu olarak görebiliriz (Lupton, 2014).

Görüşüğümüz kişiler akıllı saat kullanımdan sonra yeni alışkanlıklar kazandıklarını ve bu alışkanlıkların saatin motive edici etkisiyle rutine dönüştüklerini ifade etti. Yeni rutinler arasında spor, hareket ve uyku süreçlerindeki değişiklikleri sayabiliriz. Çalışmamızdaki kullanıcılar, akıllı saatlerinin sağladığı sağlık verileri ve bildirimler sayesinde günlük rutinlerinin (egzersiz sıklığının artması, uyku kalitesinin artması, gün içinde daha sık hareket etme gibi) olumlu yönde değiştiğini vurguladı. Saatin katılımcılara yeni ve sağlıklı bir birey olabilmek için sağlıklarını optimize etmelerine ve kendilerini yönetmelerine yardımcı olduğunu iddia edebiliriz (Lupton, 2014).

### **Sınırlılıklar**

Araştırmanın ilk sınırlılığı akıllı saat kullanım sürelerinin farklı olmasıdır. Örneklem seçimimizde minimum kullanım süresini (beş ay) belirlememize rağmen süre 5 ay ile 7 yıl aralığında oldu. Dolayısıyla süreler hem farklılaştı hem de birbirlerine yakın değildi. İkinci sınırlama katılımcılarımızın farklı marka akıllı saatler kullanmasıdır. Görüşülen kişiler tarafından özellikle tanınmış popüler bir marka tercih edilmişti. Ancak farklı markalar ve bu markaların farklı özelliklere sahip farklı modellerinin de kullanılıyordu. Markalar ve modeller arasında benzerlikler bulunsa da, kullanıcıların belirli bir marka veya modelle farklı deneyimler yaşadığını belirmemiz gerekir. Bütün bu farklılıklar analizimize yansımada. Özetle, araştırmamız katılımcılar arasında benzer bir kullanım süresi olduğunu varsayımıştır. Ayrıca, benzer kullanıcı deneyimleri sunacağı düşünülen, farklılaşmamış bir marka veya bir modelin kullanıldığı varsayılmıştır.

### **Öneriler**

Çalışmamız her ne kadar gözetim kültürünün bağlamsal etkisine vurgu yapıyor olsa da akıllı saat kullanıcılarının bu bağlamın pasif üreticileri olmadığını da göstermiştir. Kullanıcılar ve akıllı saatler arasındaki ilişki tek yönlü veya tek boyutlu değildir. Dinamik ve öngörülemeyen unsurları da içeren bir etkileşim söz konusudur. Akıllı saatlerin üretmesi beklenen etki etkileşim içinde açığa çıkmak zorunda olduğu için, ilişkinin farklı niteliklerine göre farklı görünüm kazanabilir. Akıllı saat ve kullanıcı arasında bir tür müzakere söz konusudur. Müzakerenin sonucu saatin potansiyellerine olduğu kadar kullanıcının bu potansiyellere vereceği cevaplara da bağlıdır. Bu anlamda, sonuçlar kimileri için olumlu kimileri için de olumsuz çıktılar içerebilir. Benzer şekilde aynı kullanıcı hem olumlu hem de olumsuz yorumlara varabilir. Örneğin, rutinleri yenilemeye

ve düzenlemeye yardım eden akıllı saatler, aynı zamanda yeni bağımlılıklar yaratabilir. Bir ideal kullanıcı tipi varsayan bu saatler, bu ideal tipe yaklaşmakta zorlanan kullanıcıyı motive etmek yerine onun cesaretini kırabilir (Baker, 2020). Akıllı saatler kullanımında ortaya çıkan ikiliklerden hareketle insan ve teknoloji arasındaki ilişkinin hem kuramsal hem de metodolojik açılımlara izin verecek şekilde incelenmesi gerektiğini söyleyebiliriz. Kuramlar da belli bir bağlam içinde ortaya çıkan teknolojiler de ilişkilere yön tayin eden toplumsal ürünlerdir. Fakat ilişkinin somut halleri salt işaret edilen yönler doğru hareket etmezler. Makalemiz akıllı saatler teknolojisi ve kendilik yönetimi yaklaşımının etkileşimi örneğinde toplumsal alanın farklı olasılıklara daima açık olduğunu göstermiştir.

### **Özgün Değer**

Makale akıllı saatlerin ilişkisel karakterini (Lupton, 2017) açığa çıkarmıştır. Bu saatler popüler kültür ve gözetim kültürünün kesişimi bağlamında anlam kazanmaktadır. Saatin simgesel görünürlük değeri sağlık verisi üreten gözetim değeri ile birleşmektedir. Araştırmamız, akıllı saatler gibi giyilebilir teknolojilerin anlamının kesişen bağlamlar çerçevesinde anlamlandırılması gerektiğini göstermiştir. Çalışmamız aynı zamanda akıllı saat kullanımının bir kullanıcı ideal tipini oluşturduğunu açığa çıkarmıştır. Bu ideal tip gözetim kültürü içinde anlam kazanan, kendi sağlığından sorumlu, rutinlerinin farkında, beden bilincine sahip, sınırlarının ayırıcısında, kendini sağlıklı bireyler olarak sürekli üretmeye odaklı bireye işaret etmektedir. Akıllı saat bu karmaşık ilişki ağının kristalize olduğu odak olarak değerlendirilebilir. Makale bu ağın pürüzsüz işlemediğini de açıklamaktadır. İdeal tip kavramının ima ettiği üzere, akıllı saat kullanıcıları saatin aklının işaret ettiği ideallikte kişiler olmayıp, somut ilişkiler ve ikilik içeren etkileşimler içinde hareket etmektedir. Makalenin en önemli özgün değerinin bu ikiliklerin kaçınılmaz varlığına işaret etmek olduğunu söyleyebiliriz.

**Araştırmacı Katkısı:** M. Dilara CILIZOĞLU (%50), Çağatay TOPAL (%50).