Mixed Methods and Off/On-line Research. A Case Study. Fitness, Smartphone and Devices, and Well-Being

(Article begins on next page)

23 September 2024

Mixed Methods and Off/On-line Research. A Case Study.
Fitness, Smartphone and Devices, and Well-Being.

Eugenio Bagnini and Giovanna Russo[1]

University of Bologna, Italy

ABSTRACT

The chapter proposes a methodological consideration on the use of mixed methods and the social opportunities of digital technologies in sports and wellness practices. The research carried out tries to answer the following question: what are the social repercussions and body care practices allowed by digital technologies in the field of sports and physical activities for well-being?
The contribution investigates the relationship that is established between practitioners of individual fitness and wellness sports activities, mainly in gyms, and the changes attributable to HTI (human technology interactions) with digital devices (apps and participation in online groups). Through a qualitative-quantitative methodology approach, the multifunctionality of the aforementioned digital tools (on a mediatic, playful and technological level) were observed, in order to verify whether the convergence between digital and sports social worlds is an instrument of only subjective well-being, or may indeed prove as a new collective way of sharing, participating in, and adopting healthy practices.

Keywords: Mixed Methods, Digital Ethnography, Fitness, Smartphone and Apps, Wellbeing

INTRODUCTION: DIGITAL SOCIETY AND SPORTING BODY

The debate on the status of bodies on the web is very heated today: in the face of the complexity and quality of information, it appears intimidated by the speed, precision and power of new technologies. The most current visual features of the body are the result of the objective transformation that biomedical technologies have introduced in the last decades, accompanied more and more often by bioethics, as well as by the much more consolidated and widespread practices of bodybuilding, fitness, body art and cosmetic surgery.

However, according to the most recent research developments in this field, the training and exercise of the body are still the subject of radical experiments in performance as well as a setting for observing innovative experiences through the use of personal digital devices (smartphones, specific apps or wearable device) in the health sector (Maturo, 2012) and in sports.

---

[1] The chapter is conceived by both authors; E. Bagnini is author of par. 2 (Epistemology …), 3 (Findings …) ; G. Russo wrote Introduction, par. 3.1 and Conclusion.

In both cases, the idea that is reinforced is that of the body as an object, resulting from choices and options (Giddens, 1991: 8) towards an ideal image of well-being, which considers sport and physical activity to be the privileged tools for a healthier life -- both from a psychophysical point of view, and from a relationship with others and with the environment.

The construction of one's body today is considered as a reflective project, a real task on oneself, argues Zygmunt Bauman (Bauman, 1999: 127-149) who, in the triumph of everyday life, sees in this personal project an absolute concern, as well as the most important pastime of the "post"-modern individual. The extraordinary diffusion of services for body care (cosmetics, surgery, dietary regimes, gym activities) is the most evident confirmation of this, so much so that nowadays it is the exercised, athletic body that is configured as a universal canon of beauty and harmony. The image of the sports body has become the subject of dreams that come true, of projects that translate into activities and exercises that give physical shape to the ideal. But also, as a place of transformation of these same ideals.

The "fit" body therefore appears as a universal ideal and allows for a double glance. From within the sport field, it is useful for reading the transformations made in physical activity practices; from the outside, it identifies – among the various emerging practices – those that characterize the web society (Cipolla, 2015) expressing both a generalized attention to the concept of wellness culture (Russo, 2018) and the growing diffusion of a model of social behavior which refers to the contemporary ideal of sporty man (Bausinger, 2008).

The social implications related to the use of digital devices and social media networks in the world of individual sports practices of body building, fitness and wellness are therefore the subject of these reflections.

In the context of the digital society in its offline and online multi-life dimensions (Boccia Artieri, 2012) we have tried to understand the cultural artefacts' nature of digital technologies in the field of sporting health practices (Lupton, 2014). The aim was to observe the many effects that these tools have not only in terms of body discipline and "behavior changing techniques" (Yang, Maher, & Conroy, 2015) of the single individual, but also in terms of virtual social spaces and the forms of relationality that they explore.

The role of digital media has been observed in various aspects in the evolution of fitness culture, trying to realize how technologies contribute to developing the social, cultural and economic contexts in which they operate. As Manuel Castells (Castells, 2002) argued, from the 1990s onwards, the computers and the use of the Internet have created a real techno-cultural revolution of communication. As a virtual place, social space and cultural artefact, it is in fact able to model the production and sharing of contents of "produser" individuals, that is users-producers (Bruns, 2008) for the activity of contemporary and shared participation both to the same communication rule and in the production and validation of personal content. This is what characterizes apps and wearable devices. As Deborah Lupton affirms, they are "digital objects produced by human decision-making wills, supported by tacit hypotheses, norms and discourses already circulating in the social and cultural contexts in which they are generated, marketed and used for specific purposes" (Lupton, 2014: 606).

In the field of physical activities, care and improvement of the body, the now widespread use of these devices is to enrich individual and social experiences of sport, health and well-being. Following the mobile-ization process (Rainie & Wellman, 2013), fitness and wellness activities are also affected by the presence and continuous influence of digital technologies, which, associated with the evolution of software (apps) and devices (sensors and wearable devices), enter the daily life of each individual, shaping their activities, social relationships, even the ways of understanding reality. In a cultural context that rewards private and individualistic needs (Beck, 2000) and while the speed of progress is imposed as a value, personal apps and devices combine these principles, giving the user the opportunity to independently pursue personal goals.

Furthermore, these tools, if understood as sociocultural artifacts (Lupton, 2014: 606), are capable of influencing and developing the reorganization skills of individuals in daily action, creating an efficient model of physical and health practices – a sort of disciplining techniques of the body. Through controlled diets, structured training protocols, continuous monitoring of users' performance (*self-tracking*) or augmented reality services, apps can emulate the presence of actual professionals from the sports sector

while offering detailed information to all those who use them. In this way they increase self-consciousness and self-improvement, enhancing the efficiency of their physical activity through the analysis of their data gathered and visualized by the smart devices. Antonio Maturo (Maturo, 2014: 62) affirms that self-tracking coincides with a very extensive series of self-measurements that can be carried out through a smartphone, a tablet or other devices equipped with sensors. Various types of such data include sports performance, current physiological states, behaviors, feelings, vices; finally, these data are processed, compared and evaluated in order to improve one's own life and athletic achievements.

Many studies also testify to the positive combination of the use of apps and devices – namely, an increased participation in physical activities and an improvement in people's health. In particular, the effect noted is that of fitness apps helping users increase motivation to practice sports by modifying their behavior in everyday life through the use of fun and/or gamification, the involvement of their social relationships, or other specific supports (e.g. virtual coach, food diary). To simplify, the fulcrum of these tools lies in the ability to influence personal motivation for physical activity and forced control of one's body. The possession of smart objects and the use of apps, through personalization and flexibility, can produce and encourage a culture of movement and health (Brabazon, 2015), as well as develop motivational dynamics aimed at greater commitment towards oneself on one hand, and towards others in sharing activities in specific communities on the other. Therefore, fitness is increasingly social, since the practice of sharing personal data strengthens personal goals, while the informally taken social commitment (Lupton, 2017: 615) also broadens the perspective of wellness culture when it presupposes involvement of the community and the environment.

The analysis reported here therefore develops along this continuum, which attempts to answer the following research question: what are the social repercussions and body care practices allowed by digital technologies in the field of sports and movement activities for well-being?

This contribution investigates the relationship that is established between practitioners of individual fitness and wellness sports activities, mainly in gyms, and the changes attributable to HTI (human technology interactions) with digital devices (apps and participation in online groups). To reach this goal, mixed methods have been considered and used in field work to gather different type of data. In specific, through a qualitative-quantitative research carried out in 2019 (in Emilia Romagna region – Italy - and online through social media networks), the multifunctionality of the aforementioned digital affordances were observed, in order to verify whether the convergence between digital and sports social worlds is an instrument of only subjective well-being, or may prove to be a new collective way of participating and sharing healthy practices.

In this sense, the results of the survey reveal that the use of digital technologies in fitness/wellness practices is a vehicle for dual intentions between "intimacy" and "estimacy" (Bauman & Lyon, 2015). On the one hand, the use of such devices can produce a "narrative" and "interactive" discourse concerning the users themselves; on the other, practices of narcissism and self-esteem may emerge (Tisseron, 2008), aimed at the ideal representation of one's person, appropriately constructed through digital tools and a specific selection of shared contents.

This means that the pursuit of personal fitness goals, self-discipline and knowledge of objective data of one's own body are accompanied by practices of sharing and participation in communities, in search of an increasingly social fitness oriented towards health and well-being goals (Russo, 2013, 2018).

Following Deborah Lupton (2017), we can talk about social fitness when the sharing of personal data makes it easier to achieve both individual goals and allow the user to fit in the community as an ideal citizen who guides the private interest of its own fitness and wellness activities with the public good of health.

EPISTEMOLOGY, QUESTIONS AND MIXED METHODS APPLIED TO A CASE STUDY

This research was born in order to deepen the role of digital media in sports culture and individual practices of fitness, health and well-being, while trying to study their influences and social repercussions, the conversation they create and the sharing of personal information and content on social media networks.

Specifically, we wanted to investigate the relationship and opportunities related to the use of digital devices from the users of digital technologies and devices in fitness and wellness practices. The intent was to understand whether the convergence between social worlds and sports worlds could prove to be a new collective way of participating and sharing good health practices with communities of interest such as ones with healthy lifestyles and well-being oriented, digitally reconstructed.

The aim of exploratory research and bottom up approach, i.e. inductive starting from the data obtained, is to analyze and delineate the phenomenon through an open method, which helps to understand human behaviors, relationships and the different types of empirical information as well as to provide an explanation as faithful as possible to reality.

We opted for a combination of qualitative and quantitative methods at an epistemological and methodological level (Creswell, 2003), after considering the appropriateness of the choice of this method for a case study (Mauceri, 2017) in which we can identify a complex and multidimensional research object – digital devices and social media, body discipline and related social dynamics – as well as the population of enthusiasts without well-defined sociologically boundaries. In addition, we considered the importance of the relationship between sport and wellness, as well as the relationship between digital technology and the "online world", the present sociological research has been based not only on the combination of qualitative and quantitative methods, but also on integration of digital methods (Lupton, 2015; Marres, 2017) with the ethnographic (Kozinets, 2010; Varis, 2014) and traditional sociological approach, in order to access both cultural, textual and multimedia contents shared by users of social media networks, and in order to expand the reference set through a survey using web tools.

"Mixed Methods" alludes to an arising research approach that advances the orderly combination, or "mixing" of quantitative and qualitative information inside a structured research program (Wisdom & Creswell, 2013: 13). This method is a supplement to, rather than a substitute for, quantitative and qualitative research methods (Johnson & Onwuegbuzie, 2004), and the goal is the creation of a single study that answers questions about the relationship between the qualitative assets of the phenomenon and the quantifiable factors from the perspective of the participants (Amaturo & Punziano, 2016).

Particularly, the Mixed Methods approach is guided by a complementary, constitutive and pragmatic intent of the methods in research, such that "the set of strategies for combining quality and quantity should be considered a possible tool to improve methodological rigor and theoretical scope and/or pragmatics of results" (Mauceri, 2017: 42). The choice of this approach in the case study analyzed focuses on the intention to provide a more complete description and a deeper understanding of the motivations and behaviors of all social figures that can be identified in the population considered, overcoming the limits and the most fundamentalist positions of the single different approaches and, at the same time, facing problems and difficulties of an integrated approach (Amaturo & Punziano, 2016).

In this work, the qualitative data (face-to-face interviews and digital ethnography) were collected based on having information about issues on topics such as fitness, technology and sports, and then they were investigated through a quantitative method (survey) to demonstrate the numerous information and to extend or generalize it to a broader and sociologically relevant set of people.

Moriarty (Moriarty, 2011) argues that qualitative research is beneficial to social care because it studies social phenomena from the perspective of participants. We chose the qualitative methods (observation and use of mobile Apps, in-depth interviews, interviews, and finally analysis of online user-generated contents on social media networks) in order to show the experiences and the strong feelings of the fitness practitioners on proper relations with technology and well-being practices.

On the other hand, quantitative methods aim to obtain accurate and reliable measurement data to quantify information and apply it to statistical analysis to support or deny "alternative knowledge assertions" (Creswell, 2003: 153). Looking for explanations that will affect other people, the authors' goal is to "establish, confirm, or validate correlations, as well as build generalizations that add to theory" (Leedy & Ormrod, 2001: 102). Creswell (Creswell, 2003) explains how to use this hybrid strategy to meet various

needs. For example, case studies and grounded theories research investigative processes and activities, while ethnographic research examines broad cultural sharing behaviors of individuals or groups. Both quantitative and qualitative methods are then designed to answer research questions, and both analyze different sociological characteristics. The qualitative approach allowed the researchers to comprehend the complexity of digital and social fitness, whereas the quantitative method gave them an objective evaluation of reality (Williams, 2007: 70).

Given the strong relationship with digital technologies, we also chose to carry out the research phases both through direct interactions and through computer-mediated communications.

It should be remembered that the quality of the information collected through social media networks, computers and smartphones is of an inorganic nature. Moreover, the web, by "hiding" users behind various second screens, makes the differences in behavior on the part of the users lawful. Nonetheless, digital data is a cultural product with its own significant social dimension, especially in online groups and social media networks; this is because the internet is no longer perceived as a channel, but essentially as an inhabited social space capable of hosting typical practices and even cultures capable of increasing the possibilities of sociality of individuals.

Observing textual and audiovisual content online can therefore lead to opinions or personal productions that meet the needs of voyeurism, esteem, hedonism or marketing; in these digital and natural data, in any case, we can recognize the cultural attitude and ethos of a group and of the individuals who are part of it.

This research method, in our case, is particularly suitable for analyzing and deepening the theme of the relationship between fitness, digital technologies and well-being, and its social consequences in terms of sharing, participation and dissemination of the well-being practices supported – or practiced through – by Apps, devices and social media networks.

The integration of traditional methods with digital methods took place in the ethnographic and qualitative phase (Padricelli, Punziano, & Saracino, 2020), while in the quantitative phase of the research it was decided to administer questionnaires through an instrumental use of digital technologies and social media networks, therefore through a transposition of traditional methods in the digital context.

Considering the context of the discovery in which this research has operated, the objective of the quantitative phase was to deepen and support what emerged through the qualitative phase (Mauceri, 2017: 49), in particular the consequences and social repercussions of the uses of digital technologies in daily fitness and wellness activities. The set of empirical "digital users-fitness enthusiasts" interviewed here was based on election criteria including: knowledge and practice of sports activities, attendance of fitness centers or spaces dedicated to physical activities or wellness, use of smartphones, knowledge of digital technological devices for sport (not necessarily used) and social media networks.

The data collected through interviews and questionnaires were finally processed through the use of software (Nvivo, Spss and R) or the lexical analysis of the contents and correspondences, carrying out a study of the profiles of the recorded cases, with the aim of understanding the social dynamics and cultural in the world of fitness/health and the use of digital technology between virtual and real spaces.

The research of this case study was carried out during January and February of 2019, according to the following 4 phases:

1. **Observation and Study of Apps and wearable devices in the Fitness and Health field**

   16 Apps[2] were considered and studied, chosen among the top choices in the online market of smartphone apps. At the same time, several of the most popular wearable devices on the market for fitness tracking were also observed.

   The analysis of apps and wearable devices for fitness and wellness highlights the following features: *self-tracking, life logging* and *social support activities*. Collectively these allow users to monitor, record and manually enter personal physiological data and parameters, foods consumed

---

[2] MyFitnessPal, Endomondo, Under Armour Record, Runtastic Running&Fitness, Runtastic Results Corpo Libero, Nike+ Run Club, Nike+ Training Club, Strava GPS Correre Ciclismo, Sworkit, Sfida Fitness 30 giorni, 7-Minutes, Google Fit, FitBit, Sports Tracker, Conta-passi e Perdita Peso, Samsung Health. The Apps were observed in December 2018.

and physical activities performed, as well as to geolocate and carry out the same activities together with other people. It is also possible to share information and personal content with users of the same app or through social media networks and thematic groups. Alongside these main activities, there are other accessory functions: *coaching, gamification* and *ludification*, or the possibility of having a trainer/digital expert able to provide advice, create activity protocols, with game modes through virtual challenges and awards if the expected result is achieved.

The multiple functions related to the use of these devices were investigated at all stages of the research to understand the opportunities and social effects on the concept of active well-being specific to *wellness culture* (Russo, 2018).

2. **Investigation through in-depth interviews and semi-structured *face-to-face* interviews.**

Eight significant witnesses were chosen for the in-depth interviews; specifically: 4 personal trainers and 2 sports doctors working in Bologna (Italy), and 2 professionals (one from Milan and one from Pisa) in the field of App development for Sport and Health. The interviews were aimed at probing the following areas of investigation:
   - Uses and social effects of the web and social media on fitness/wellness;
   - Uses and social effects of smartphones and mobile devices;
   - Social interactions between off/on-line practitioners;
   - Changes in fitness/wellness and opportunities for social fitness.

Subsequently, 20 semi-structured interviews were carried out with expert fitness and wellness practitioners in Emilia Romagna, at the same time users of apps and social media networks for these motor activities. The interview outline covered these topics of discussion:
   - Fitness/wellness activities practiced;
   - Use of smartphones/wearable devices, websites and social media for fitness/wellness activities;
   - Sharing activities and off/online social interactions;
   - Fitness and wellness changes.

3. **Digital ethnographic research through social media networks.**

This further phase of qualitative investigation, of a digital and exploratory ethnographic nature, involved the use of personal computers and the observation of contents on social media networks (Facebook, Instagram and YouTube), thematic groups and user profiles characterized by frequency of gym visits, fitness and wellness activities, use of digital technologies and apps.

Specifically, user generated content was analyzed, i.e. posts with personal contents, discussions of the aforementioned topics, sharing of multimedia content with particular attention to quantifying self-activities and wellness practices in order to show a continuous balance between online and offline, as well as the culture shared among many of the fitness/wellness practitioners.

4. **Quantitative online survey for "sports digital practitioners"**

In this phase, carried out by administering web surveys through Facebook, Instagram and WhatsApp, virtual data (Padricelli, Punziano, & Saracino, 2020) were collected on a significant set of users, whose elective characteristics were knowledge and use of digital technologies, social media and the practice of sports and wellness activities. The questionnaire outline was aimed at exploring the following topics:
   - Sport, fitness and wellness: general information relating to the practices carried out by the respondents.
   - Use of digital technologies: attention to the use or lack of digital apps and devices for physical wellness practices; collection of data and information obtained from the app and self-tracking.
   - Activities and sharing with friends: interest in group activities and sharing or lack of information and personal contents.
   - Activities on social media networks and communities: focus on activities carried out by respondents on personal profiles and in groups / communities through Facebook and dedicated sites.
   - Socio-demographic information of the interviewees.

FINDINGS: OPINIONS AND BEHAVIORS OF THE FITNESS COMMUNITY -- BETWEEN TECHNOLOGY AND WELLNESS

.1 The experts' points of view

During the background analysis we proceeded to bring out the point of view of 8 experts – personal trainers, sports physicians and developers of dedicated apps – who highlighted relevant aspects in the use of specific technological devices for motor activities and self-care.

First of all, doctors and trainers use and advise apps in a moderate and marginal way with respect to their field of action, relegating them mainly to supplementary utility programs to better complete the activities and guarantee the customer a tool to use independently, while following a protocol (health, medical or training) structured by an expert. The features with the greatest interest were the aforementioned *self-tracking* and *life-logging* (food diary, pedometer, heart rate monitor and calorie counter), but also support and coaching, as well as pop ups and reminders of physical activities to be carried out or personalized training protocols.

According to most experts, users can increase their skills through the use of devices and the analysis of personal data obtained. The group unanimously agrees that most people generally have few skills in fitness, health and wellness. Rather, a presumption of knowledge emerges which is also corroborated by the use of the App and the use of content found through the Internet. In this way, however, the role of professionals in the sector is made less authoritative.

> *The user who goes to search on the internet searches "at random" and finds what he finds and decides that it is true, while the user who relies on the Facebook page of a professional, at that point, has more possibilities, if the professional is a trustworthy person, to find content. [Expert 1, personal trainer, F]*

An influential aspect of the phenomenon investigated is the perception of free time together with the need to maximize efficiency - both typical characteristics of the current individualistic model of self-care. According to experts, the apps are chosen mainly for their ability to empower users, making motor activities possible at any occasion of free time, significantly reducing costs compared to the requests for services of professionals in the sector.

> *[Mainly interested in] the fact that they are in quotes at no cost, so the fact of saying "I can" or even the fact that I can do it from home, because many apps also give you activities that you say "you can do at home without Go to the gym". [Expert 4, personal trainer, M]*

On the other hand, the relevance of the concepts of well-being, health and athleticism are increasingly changing the perception of sport, physical activity and self-care, alongside a model of commitment and "self-entrepreneurship" of the subjects that also pervades leisure. The social presentation of the self is thus an immediately appreciable result, a visible expression of one's body or sharing of one's activities for the purpose of socially awaited approval (Salisci, 2016) and governed by established aesthetic standards. These acts of "estimacy" (Tisseron, 2008) also partly justify "social" practices, when people are posting images, statements and opinions in the guise of repeated controlled displays, presentations of the self and testimonies of their individuality, as if responding to the mottos "seen, ergo sum" (Bauman & Lyon, 2015) and "share, ergo sum" (Turkle, 2011).

According to the interviewees, it is possible to combine the opportunities provided by digital tools and enrich one's *social speech* through the dissemination of personal content - *user generated content* - produced during fitness and wellness activities.

> *Everyone likes to brag or otherwise show others how good we are, how strong we are or if we have improved, if we have set a new record in an exercise rather than a run, so yes, surely sharing is important. Some of my clients want or even ask me to be filmed during training!*
> And what do they do with the movies next?
> *Ah, they share them on their social media networks, they send them to their girlfriend, to their boyfriend, they show that they are working in the gym; just as one publishes the photo of the day at the beach on Facebook, they also publish training in the gym. [Expert 2, personal trainer, F]*

> *An experience lived alone does not make sense, basically, so if you enjoy doing certain things, you also enjoy sharing them. [Expert 7, app developer, M]*

Sharing with one's own friends is a sort of extension of the single experience aimed at satisfying the natural human predisposition to social interactions. In this way, people observe themselves and observe others at the same time, confirming shared relational contents. Social media networks used in fitness therefore become an additional tool in the hands of users who are content curators of themselves, expressing how in a society of individuals each must be an individual (Bauman, 2008: 4) distinct and similar to the others.

These aspects also emerge from the perspective of the interviewees, who see the possibility of sharing activities and personal data as an essential specificity for the diffusion of technologies, as well as for fitness and wellness activities.

> *The places of socialization are certainly changing because now [...] Facebook is part of everyday life and part of the relationship, in the sense that there are entire communities that live on Facebook and that maybe in everyday life they don't even know each other. [Expert 3, personal trainer, M]*

> *Before, maybe you were alone in a gym where you did your workout, you talked to the people around but you weren't with them, and instead with social media you can share the workout with someone else who is not in the same place where you are, but it does the same things. [Expert 7, app developer, M]*

At the same time, opportunities for gamified activities are highlighted as relevant aspects of "social fitness". Gamification occurs when physical activity is organized by the apps in a sort of game/competition (with the App itself or with other users or friends), or it is aimed at obtaining support or responding to publicly made commitments. The competitive spirit and the desire to obtain support is accompanied, albeit in a contained manner, by the desire to promote health practices with the aim of encouraging forms of *social fitness* and collective well-being.

For some individuals the intention of promotion and dissemination of information for their own sake are modest, but these increase considerably when they are associated with the desire to exercise social influence, to show oneself or, above all, to promote personal commercial activities.

> *Few trainers do it for others, to stimulate others, unless ... they do it only, in my opinion, for a marketing aspect or to show that they are the best. [Expert 4, personal trainer, M]*

> *[This] has become the only possible line of healthy marketing that leads to the sharing of good content. [Expert 1, personal trainer, F]*

It is clear that in order to utilize the multiple opportunities offered by technologies and social media, the interviewed group remains critical of their unchallenged use, confirming instead the need to consult serious professionals for body care and for carrying out healthy activities.

.2 The point of view of practicing users

The interviews carried out with the 20 users, practicing physical and health activities and with knowledge of the technological possibilities, revealed the complexity of meanings and the individual experiences related to the instrumental use (minimum or maximum) of devices. In the face of highly differentiated opinions and uses, it is possible to think of a continuum that goes from a minimum and instrumental use of digital technologies, to a maximum and fundamental one for carrying out physical activity.

> *I have good interactions with people who train with me, sometimes we do the same things and in any case we spend a lot of time chatting and joking, otherwise training would also be less enjoyable. If I have to do the math, I almost always train when I know there are friends too. [User 1, M]*

> *Smartphones have changed interactions a bit, because it is easy to establish them through the social media network after you have met briefly live, because you break the shyness, you often talk in chat, you can see photos and personal information without asking and immediately having an idea of the person you talk to. [User 2, F]*

Almost all the users interviewed make intensive use of social media networks and the web to search above all for information and content of a health, food or sports nature. Secondly, to share contents. On the other hand, when they find themselves evaluating the contributions of other users, they manifest a highly critical propensity, particularly towards forms of protagonism or in the presence of incorrect, irrelevant, or strictly personal information.

With respect to digital devices, almost the entire interviewed group expresses itself in two ways: on the one hand, functionality is appreciated, on the other a critical vision emerges, linked to the consideration of "fashionable" gadgets, therefore tools not strictly necessary for sports.

With regard to the technical functionalities of apps and devices, most of the interviewees believe these tools are useful for increasing the knowledge and consistency of users, qualities that never replace the experts in the sector. This increases the awareness of users about their own body and offers the possibility to carry out analyzes and discuss their data with other people (*Quantified Self*) live or in online groups, both for technical purposes and for playful/interactive purposes.

> *It is useful, as it can help even the less experienced; it is, however, also dangerous for those who cannot use it with the right precautions: it is useless to use an application to train and which provides any type of card, where, however, the user does not know the correct execution of the exercises. [User 5, M]*

> *I read the data that the device and the app gives me carefully, I keep a history of my workouts and I also make statistics with the past years to see how my training changes and how my body's response changes; I definitely feel more experienced, because I give exact numbers and values to my feelings and my results, so that I can then try to understand what influences my performance the most. I definitely feel more complete, and when I talk to my trainer about this data he gives me his opinion and together we decide how to improve training and nutrition. [User 7, M]*

For most of the users interviewed, however, the possibility of providing and obtaining immediate social support remains fundamental. If the request for support and motivation relates to the individual egoistic dimension, it may happen that the effects (by direct will or as a side effect) also translate into social and collective promotion.

We motivate each other, we give each other strength especially in my sport where it is not immediate to see results. Personally, I also need moments for myself during training. [User 4, F]

Photos and videos are useful not so much to identify with other people, but to get ideas and stimuli from them to increase your physical and health status. The sharing of one's results and activities, although I rarely practice it, could be a stimulus both for themselves and for others, who could be pushed to do more. [User 8, M]

Finally, the interviewees underline how the use of social media networks is an expression of a non-community sociality, often characterized by narcissism and voyeurism (Jin & Muqaddam, 2017). As Di Gregorio argues, the single individual, today, in the age of the smartphone, participates and, in some ways undergoes, a complex and multilateral interaction in which this interaction is promoted to satisfy a need to appear and be a protagonist (Di Gregorio, 2017: 15). This sometimes also happens for groups and online communities based on common interests. The health and sports orientation does not escape these dynamics, even when it manages to create interpersonal relationships, sharing content and information oriented to wellness practices through social media.

When I train with my friends we often take selfies together for fun and then we post them on Instagram and even Facebook. Sometimes we take selfies even by ourselves and we challenge ourselves to see how many likes they put in. [User 15, F]

.3 The points of view of users through personal contents on social media networks

Seeing the boundaries between the virtual and real blur, the testimony on social media networks of health and wellness activities carried out in daily life becomes an important element, not only in the processes of sharing and building understanding, but also of personal identities.

The netnographic analysis of the *posts* on social media networks was carried out by the manual collection and analysis of speeches in thematic Facebook groups (in particular, Malati di Palestra Gruppo Ufficiale) or through hashtag searching on Facebook and Instagram (#fitness or #quantifiedself, for example), both in Italian and English language. This analysis revealed the experience of people and the culture expressed in places of informal interaction – such as gyms or outdoor spaces – where sports or physical activity are practiced. If it is true that in social media the risk of excess advertising of intimate capital appears high, it is also true that the virtual space that characterizes it shows itself to be a "natural" habitat, thus necessary for the presentation and narration of the Self. These activities are developed in order to acquire, share information and develop social relationships starting from the physical activities carried out by the participants.

If it is possible to recognize in this communication modality a social support and the promotion of benefits linked to sport – so as to talk about *social fitness* – on the other hand it is necessary to carefully evaluate the social risks associated with symbolic representations that emerge in environments without regulatory or control references. As mentioned by Zani, 1995, within the latter aspect there exist "naive theories, typical of common sense, [...] in which profane representations are privileged, produced by ordinary people, often distant or even in contrast with scientific representations, often spread easily" (Zani, 1995: 486-487). In that context, the role of *influencers* is gaining huge momentum - often considered worthy of authority solely on the basis of the number of *followers* and shared content.

Through apps and devices for sport, the world of fitness and wellness appears to take on an individualistic dimension. Through *self-tracking* and *life logging* practices, this trend is further configured by technologies that enable the building of the *Quantified Self*. In other words, this means giving one's body performance and physical activities numerical and objective measurements through the surveys, further increasing self-awareness.

> *Data confirms it, #SexIsGreat! Even if it cuts into some of my sleep time. In my case, it boosts wellness indicators, including HRV: the holy grail of wellness by 46%. Hmm, apparently, I need to optimize my stress level, too low at the moment so I'll get some "eustress" not "distress", so that means a good gym session is in order this morning! This surely will take me to #peak zone, where I need to be to tackle the long and exciting day ahead of me.   #BeYourOwnScientist #QuantifiedSelf #KnowThyself [Posted on Facebook, 23/05/2018]*

Although this is accompanied by a private and individualistic welfare model, on social media networks and online groups the phenomenon assumes connotations of dialogue and shared creation of knowledge, but also of competition, support and motivation.

> *In an unusual incident, a #FitnessTracker ended up saving the life of a 73-year-old woman with large blood clots in her lungs - by indicating a spike in heart rate which allowed her to call for help in time. [Posted on The Financial Express, Facebook, 09/04/2017]*

> *Back on with my misfit flash fitness tracker. Anyone have one and fancy being friends on it, let me know :) I need some fitness scores to keep me motivated. #fitness #healthy #fitnesstracker #healthylifestyle [Posted on Facebook, 05/10/2017]*

> *Omg [Oh my God] I can't believe I just found fitbit challenges. I am soooo competitive. I'll bet this is going to help me kick it into high gear like never before. Fun fun fun!! :) #gamifiedfitness. [Posted on Facebook, 27/01/2015]*

Here too, however, one should take into account a wide spectrum of risks, including: the testimony of a hedonistic and retributive sense present in many user comments; attempts to build social identity or participation in tribes of interests through the use of experiential goods.

> *Can't let the rain stop me doing my #10000steps! Hope you've managed yours today x x #faceoil @iamsairakhan #walk #running #fitness #fitbit   [Posted on Instagram, 05/06/2017]*
>
> *Power of will! -20kg from august to December 11th! special thanks to @maiullarinutrizionista from @strategicnutritioncenteritaly   who   help   me   with   my   nutrition   program   and   to @per4mnutrition_europe who provide me all the supplements that I need #per4m #per4mnutrition #strategicnutrition #gym #motivation #IFL2018   [Posted on Facebook, 12/12/2017]*

.4 The web-survey

The fourth phase of the study was aimed at investigating the insights that emerged in the qualitative research part, namely the multidimensionality of the phenomenon investigated in its meanings, practices, and rituals through the opinion of a significant number of users. In response to this need, a dissemination was prepared via e-mail, WhatsApp, Instagram and Facebook; a total of 321 valid questionnaires were collected.

The respondent group consisted of 170 females (53%) and 151 males (47%), with a mean age of 31 years. The subjects were generally distributed in the following age groups: 19 respondents (6%) were 50 or

older; 36 (11%) were between 40 and 49; 86 respondents were between 30 and 39 (27%)); 173 were between 20 and 29 (55%); and finally, only 7 were aged 19 or less (2%).

Among the interviewees, two main groups and two subgroups were distinguished in relation to the types of physical activities practiced: 27 people (8.4%) carried out team or competitive activities (9 also carried out individual activities in the gym), and 294 (91.6 %) carry out almost exclusively individual amateur activities. Of the latter, 121 (41.2% of amateurs) predominantly carried out outdoor activities individually or in small groups and 173 (58.8%) - in gyms, fitness and wellness centers, in the company of other people.

The major portion of the interviewees pointed out "attention to health" and "improvement of physical shape" as the leading motivation to carry out sports activities. It is important to note that the answer centered on "health" (in a question that included a maximum of 3 choices), was provided by all as the first option. This was aligned with the affirmation of "sports health", found in sector studies (Waddington & Smith, 2018), as well as in the European-wide surveys on the growing importance of sport and physical activity for health purposes.

As second and third choices, the answers "physical improvement" and "well-being" had the highest preferences, followed by "aesthetics" and "weight loss". This confirms the concept of health as a socially constructed notion: on the one hand, it is individually redefined on the basis of the canons of aesthetics and body tone typical of the fitness model; on the other, it is reinvigorated by the most recent wellness standards (Russo, 2011, 2018).

All respondents were familiar with digital devices (smartphones and wearable devices) and apps for Health and Fitness, but not all used these technologies during their body care activities. Within the research group in question, as many as 125 people (38.9% of the total) did not use devices or apps, preferring a more traditional routine in relation to fitness and wellness activities.

It is interesting to note that within this set, two groups were distinguished: a first sub-group, made up of 50 people (40% of the group, with an average age of 29), who also use smartphones during their activities, physical and well-being, mainly to listen to music, call, or write to their friends. The second, was made up of 75 people (60% of the group) that never use smartphones during their activities. The profile of this group was average age of 34 years (the highest of all the groups highlighted), with 9 people over 50.

51 people (15.9%) reported the use of a smart device, but not the apps; the group being distributed as follows: 25 females (average age 30 years) and 26 males (average age 32 years). When speaking of "devices", these participants referred to smartphone stopwatches, heart rate monitors or bracelets, used without a separate app and focused on monitoring heart rate, calories consumption, and training time.

Those who, on the other hand, used the apps but not the digital devices during their physical or wellness activities, were 16 people (5.0%) - 11 females and 5 males, whose average age is 30 years. Seven people did not use their smartphones at all, while 9 used them during their activities. The latter made manual entries of personal data (mainly in food diaries), used life logging services, or the app coaching services. They also enjoyed sports centered videos/images from social media, but they did not use smart services and self-tracking activities of wearable devices.

The remaining 129 respondents (40.2% of the total with an average age of 31) used both wearable devices and apps for Health and Fitness; only 21 users did not use the smartphone during training compared to 108 who, in contrast, used it.

Compared to the totality of respondents, 56.1% use digital devices, 45.2% use the App; to use both, however, is 40.2% of the reference set.

Within the investigation the relationship between physical activities and digital technologies, the macro group of those who use at least one digital tool (app or device), consisting of 196 people (61.1%), stood out from the group of non-traditionalists users of the same technologies (i.e. those who, at most, use their smartphone to make phone calls, for instant messaging services or to listen to music) of 125 people (38.9%).

To the question "How much do you think digital technologies useful", it was possible to see a double position of the interviewees: if a generally favorable opinion emerges for use in everyday life (82.3%), only 45.2% of respondents consider these devices useful or very useful for sport activities, while 54.8% consider them of little or no use. To back up this observation additionally, the testimonies given clarify the positions of some interviewees about the changes following the introduction of digital technologies and apps.

They have made information and communication simple and quick at hand. [User 112, M]

Possibility for everyone, at low cost and with absolute simplicity and immediacy, to keep every possible parameter under control (obviously, with less accuracy than more professional tools / methods). [User 130, M]

People become more aware of what they are doing during a training session. They become "personal trainers" of themselves, in the case of individuals who know how to make the most of it. Also, greater involvement with other individuals. [User 144, F]

Many tend to replace the real figure of the graduate in motor science or in any case of the personal trainer with apps that calculate a training program that is not always correct on the basis of little data collected and with poor results in performance related to the lack of supervision by a professional. [User 179, M]

Greater control and monitoring of health. [User 255, F]

Overall, the interviewees paid specific attention to the essential functions of apps and devices, such as *self-tracking* and *self-awareness* tools (37.4%) - ones that are capable of providing support and facilitations in achieving their personal goals (20.7%).), as well as to allow access to additional information (13.8%). To give a negative or neutral opinion to these aspects among those who use them, are respectively 7.5% and 11.5% of respondents.

By eliminating from this analysis the group that didn't use devices or even apps, the frequency distributions changed: 87.3% consider digital devices useful or very useful during the activities of daily life, while 64.3% consider them useful or very useful during sports or wellness activities. In both cases, the share of those who do not consider them useful was reduced. People who reported to not use these technologies mainly refer to the use of smartphones, and the non-use of specific apps involves considerations simply related to daily life and non-direct knowledge. App users, on the other hand, express a different relationship with these technologies, which appear to be tools for daily support in the search for physical and active well-being.

The *e-coach* function constitutes an undoubted element of interest for users for their activities, but it raises important questions about its actual usefulness: 41.4% use it as a substitute for trainers or experts, while 58.6% use it as a supplement to expert knowledge. App and virtual training are also an important element of motivational support: 60.6% of respondents are "quite" or "very" happy after having completed the training set by the virtual trainer, with 54% of those responding that support satisfaction decreased if they fail to meet the established objectives.

90.4% of those who use apps and devices observe the data and the performance: it's a relevant answer, related to improvement, self-awareness and wellness activities, also comparable to the typical practices of professionals. Of those, who did not use digital technologies, only 31.7% kept track of their performance. All those who claimed to have attempted improving themselves autonomously in the future have provided this answer as a first choice: this confirms the value of the liberal individualistic model (Lupton, 2015) and of the *self-reflexivity* activities (Beck, 2011) such that it happens, through widespread technologies and knowledge, a re-invention of cultural and health practices (Elliott, 2013) typical of late modern culture.

The activities of *life logging* and comparison with previous data obtained a preference of about 1/4 by users, followed by the monitoring of data relating to health, nutrition and personal weight and the search for correlations (more typical of the Quantified Self model) between rest, nutrition and workouts. All these activities fall within the liberal individualistic model, while the practices of sharing personal data are carried out only by 7%, thus opening questions on the ability of devices to be socializing tools or directly beneficial to the community. This is based on the consideration that social utility is the result of an externality of the individualistic use of devices and social media networks.

In general, with regard to actual, perceived usefulness or simple motivational support, it emerges that those who use these technologies practice more physical activity (Table 1) and tend to have healthier habits, including controlled diets.

Table 1 – Frequency of physical activities in relation to the use of apps and devices

Use of Apps and devices – Sport and fitness activities	No	Yes
Less than 1 per week	5%	6%
1/2 per week	14%	10%
3/4 per week	14%	24%
5 or more per week	5%	12%
No answer	6%	4%

With a more specific reference to those who use apps and devices, it can be noted that the use of digital technologies is for the majority of those interviewed a relevant and decisive element for their improvement during the performance of physical health and wellness activities. It was also interesting to observe that there is a different percentage distribution in the items observed: with regard to constancy, as many as 7 out of 10 people have changed and improved the frequency of their activities through technologies, like those who have improved their perceived well-being. As for consistency, it is easy to see that there is a correspondence with the appearance of pop-up notifications from apps or the social pressure that is experienced through participation in groups and communities of interest. As regards the concept of well-being, there is greater difficulty in separating or evaluating the real improvement of one's well-being from external conditioning and remuneration forms, such as the pleasure of using specific and fashionable technologies, or participation in social activities and positively approved.

As regards the evaluation of performance and health, about 6 out of 10 have noticed an improvement: this is to be explained by a consideration regarding the meaning attributed to the terms and to the evaluation skills of the interviewees, since, if you do not have certain knowledge or previous experience in sports or health, people tend to underestimate or overestimate any progress and improvements. Furthermore, people may not be able to interpret the data that emerge from the use of the devices or to make the correct changes, especially if the use of such technologies replaces the advice of professionals and experts, relying on their previous habits and knowledge.

The appreciation of digital technologies focuses more on the technical functions (81.4%) and on the ability to carry out *self-tracking* and *self-monitoring* (89.0%) of their activities, while the explicit interest in sharing functions on social media networks or in communities (9.0%) and interest in pop-up recommendations and notifications (19.3%) is lower.

Here a further reflection is necessary: since the group was very varied but relevant in quantity, it was not possible to understand what the personal meaning of what each one attributes to the usefulness of the individual categories investigated was. Nevertheless, it emerges that each subject seeks technological answers to every need (material or not). Secondly, apart from a group of users, sharing through technical apps does not appear relevant either for a sense of personal satisfaction or for a desire for relational involvement in forms of health and well-being.

The sports and wellness activities carried out in groups by the interviewees reveal particular uses and activities, with a very interesting distinction considering the group of those who use apps or digital devices during the activities.

People prefer an individualistic use of their personal technological devices (7 out of 10 declare that they are not competitive); on the other hand, 4 out of 10 claim to confront each other and 6 out of 10 to give themselves support and motivation during training.

With regard to social caring, 4 out of 10 people promote (very often or frequently) good eating and physical activity practices, while only 1 in 10 favors the use of apps or devices. From the perspective of

this survey, it is clear that, for the purposes of promoting "*social fitness*" (Lupton, 2017), personal digital technologies are not decisive, while facilitating users in sharing, comparing and information on health practices.

At the same time it is useful to remember that social media networks, online communities and peer groups act as activators of self-observation mechanisms that allow the development of a medial-based reflective attitude (Boccia Artieri, 2012: 108) capable of contributing to orientation and development of innovative behaviors.

It is no coincidence that 67.6% of respondents declare that they are part of groups or communities, a share that grows to 73.5% if we exclude those who do not use apps and devices during sports and wellness activities. Furthermore, 40.1% of the interviewees participate in online groups and communities, whose main themes are fitness and wellness: excluding those who do not use apps and devices, the share rises to 52.8%.

The use of digital technologies therefore correlates with an increase in digital sociality through participation in collective online discussions related to *self-care*. This is mainly done through dedicated apps, computers, sharing their experiences or searching for information, contents and discussions of their own interest.

CONCLUSIONS

Observing the multiple uses and opportunities of digital technologies in the field of sports practices oriented to the health of individuals, in the context of a general *ludification* process of contemporary culture, contributes to the increasing knowledge and aspects of the increasingly widespread *wellness culture* (Russo, 2018).

The research path illustrated above, albeit with the limitations of the case, is an exploratory study of the relationship between health and individualism through apps and digital tools, an expression of a broader socio-cultural tendency to improve health, lifestyles and greater responsibility of the concept of well-being, as indicated for some time in the main directives of the World Health Organization of 2014.

Respectfully to these objectives, the use of digital technologies in the field of sociological research, as well as the combination of qualitative methods – in the first part of the research – and the quantitative survey – in the second part – exponentially increases the descriptive abilities of sociology with the aim of understanding cultural attitudes, social relationships and behaviors of specific social groups.

Considering the ambivalence of today's social life, that is a web society (Cipolla, 2015) with widespread boundaries that see forms of mediated communication and hybridization with technologies and virtual environments (Longo, 2005), the development of interpersonal relationships is oriented according to the channels of me-centered relations (Castells, 2006) and networked individualism (Rainie & Wellman, 2012). This network sociability, in particular for the social media networks, leads to a continuous production and sharing of personal content and constant participation by users (Porter, 2008). Often, however, the contents respond to the needs of self-presentation, fear of missing out (Reagle, 2015), narcissism, estimacy and the desire to show oneself (Tisseron, 2008).

Starting from the polysemy of the personal contents, their considerable deconstruction and the most diverse motivations for the expression of personal contents, the authors realized the need to integrate the interpretative qualitative approach with a descriptive statistical analysis of the reference set, before building an interpretative grid for content analysis. This need refers in particular to the context of digital ethnography applied to small or significant groups on social media networks, forums and online communities, or through the search for textual/visual content or key-words, hashtags, channels and thematic groups, which lack the possibility of generalizations and references to a wider population.

Supposing the online reference set produces spontaneously unstructured UgC (*User-generated Content*, such as images, videos, posts, etc., found on communities and social media networks), a sociographic survey of the set of people considered by the researcher is required in order to have a view of the population

and to search for any homogeneous subgroups, and then proceed to the analysis of the visual and textual contents. On the other hand, if the online reference set produces content on request (intrusive approach), it is necessary to support the investigation with a survey (sociographic and scaling of attitudes/opinions relating to the survey topic) in order to describe the population and segment it, aiming to understand and correctly evaluate the contents, or to eliminate any errors or viciousness.

At this point, an important method to reduce the errors of analysis and interpretation related to the data collected through digital and online tools – with particular reference to the content generated by users on social media networks (status, post, personal images, relink, etc.) – is to combine the analysis of the contents (textual and visual) with a statistical and sociographic analysis on attitudes/behaviors of the population. Furthermore, using a mixed method approach, it is possible to develop two important analyses:

- Analysis of the population in subgroups, through models of group aggregation (minimum intra group and maximum inter group variance) obtained by means of discrimination with the uniqueness of the answers to pre-established variables chosen by the researcher, which can thus allow a specific subdivision of the population in homogeneous groups and liken it to social reality.

- Correspondence analysis, in order to process descriptive information to capture any regularities in the groups and in the information (integrated through secondary variables obtained from the content analysis), with the creation of secondary data and factors typical as trends, characteristics of the group, particularities, etc.

This integrated method allows a more complete interpretation of the amount of quantitative data obtained in the digital research phase, as well as the correction of the interpretative grid or the elimination of improbable cases, unable to fit into a homogeneous group. Following this, therefore, it is possible to reduce the margin of error in the phase of analysis and re-elaboration of the information and to improve the quality of sociological information.

There are many studies that show a positive correlation between the use of apps and wearable devices, an increase in physical activity and an improvement in the global health and well-being of the population, since, in addition to greater observation and care of the body, these tools favor and enrich individual and social experiences in the fields of sport, fitness and health. In addition to supporting an ideal of a healthy and productive worker typical of the hyper-individualist project of modernity (Beck, 2000), these devices – through the logic of *interactivity, sharing, augmented experience*, etc. – actually support a program of social relationality. Precisely in free time practices such as sport and physical activity, they are transformed into places of conversation, of daily narration, of promotion of the individual, as well as areas of inclusion and socialization. This is how the Australian sociologist Deborah Lupton expresses herself in defining the renewal of fitness practices through the use of social media. In fact, with the term "social fitness" she refers to those practices of sharing personal data in order to facilitate motivation and the achievement of personal goals (Lupton, 2015: 8). Sharing, however, encourages individuals to unite with other people, maintaining the social commitment formally taken as apps and social media networks stimulate the individual to act, share and conform through online relationships (however unstable and temporary).

Such a social fallout of digital technologies therefore implies an increase in the perspective of *social wellness programs*, that is, the expansion to a collective form of a discourse of the ideal citizen that combines private objectives with the public good, the self with the community, configuring the ideal of a *socially fit citizen*, in a new and digitized form of *bio-citizenship* (Lupton, 2015: 14).

This means that the multiple devices used in sport today allow the development of a culture of participation (including civil), which finds its most innovative stage in physical-sporting practice. In particular, the use of digital technologies in the practice of fitness/wellness proves useful not only for personal well-being, but also by virtue of a collectively oriented goal. Therefore, a prerequisite for a global well-being that contributes to the construction of the health resource when personal choice is exercised in order to guarantee the collective good, and vice versa, personal satisfaction becomes an essential element for the collective good (Soper, 2007: 215).

REFERENCES

Amaturo, E., & Punziano, G. (2016). Blurry boundaries: Internet, Big-New Data and Mixed Methods Approach. In C. Lauro, E. Amaturo, M. G. Grassia, B. Aragona, & M. Marino, *Data Science and Social Research. Epistemology, Methods, Technology and.* Heidelberg: Springer-Verlag.

Amaturo, E., & Punziano, G. (2016). *I Mixed Methods nella ricerca sociale.* Roma: Carocci.

Arvidsson, A., & Caliandro, A. (2016). Brand, public. *Journal of Consumer Research, 42(5)*, 727-748.

Bauman, Z. (1999). *La società dell'incertezza.* Bologna: Il Mulino.

Bauman, Z. (2008). *Vita liquida.* Roma-Bari: Laterza.

Bauman, Z., & Lyon. D. (2015). *Sesto potere. La sorveglianza nella modernità liquida.* Roma-Bari: Laterza.

Bausinger, H. (2008). *La cultura dello sport.* Roma: Armando Editore.

Beck, U. (2000). *La società del rischio: verso una seconda modernità.* Roma: Carocci.

Beck, U. (2011). *Conditio humana: il rischio nell'età globale.* Roma Bari: Laterza.

Boccia Artieri, G. (2012). *Stati di connessione. Pubblici, cittadini e consumatori nella (Social) Network Society.* Milano: FrancoAngeli.

Brabazon, T. (2015). Digital fitness: Self-monitored fitness and the commodification of movement. *Communication, Politics and Culture. 48(2)*, 1-23.

Bruns, A. (2008). *Blogs, Wikipedia, Second Life, and Beyond. From Production to Produsage.* New York: Peter Lang Publishing.

Caliandro, A., & Gandini, A. (2016). *Qualitative research in digital environments: A research toolkit.* London: Taylor & Francis.

Castells, M. (2002). *La nascita della società in rete.* Milano: Università Bocconi Editore.

Cipolla, C. (2015). *Dalla relazione alla connessione nella Web Society.* Milano: FrancoAngeli.

Cipriani, R., Cipolla, C., & Losacco, G. (2013). *La ricerca qualitativa fra tecniche tradizionali ed emethods.* Milano: FrancoAngeli.

Creswell, J. W. (1999). Mixed method research: Introduction and application. In G. J. Cizek, *Handbook of educational policy.* San Diego, CA: Academic Press.

Creswell, J. W. (2003). *Research design: qualitative, quantitative, and mixed methods approaches.* Thousand Oaks: Sage.

Creswell, J. W., & Clark, V. L. (2017). *Designing and conducting mixed methods research.* London: Sage publications.

Di Gregorio, L. (2017). *La società dei selfie. Narcisismo e sentimento di sé nell'epoca dello smartphone.* Milano: FrancoAngeli.

Elliott, A. (2013). *Reinvention.* London: Routledge.

Gerlitz, C. (2016). What Counts? Reflections on the Multivalence of Social Media Data. *Digital Culture & Society, 2(2)*, 19-38.

Giddens, A. (1991). *Modernity and Self-Identity: Self and Society in the Late Modern Age.* Cambridge: Polity Press.

Hesse-Biber, S., & Johnson, R. B. (2013). Coming at Things Differently: Future Directions of. *Journal of Mixed Methods Research, 7(2)*, 103-109.

Hine, C. (2005). *Virtual methods: Issues in social research on the Internet.* Oxford: Berg Publishers.

Hogan, B. (2010). The Presentation of Self in the Age of Social Media: Distinguishing Performances and Exhibitions Online. *Bulletin of Science, Technology & Society, 30(6)*, 377-386.

Jin, S. V., & Muqaddam, A. (2017). "Narcissism 2.0! Would narcissists follow fellow narcissists on Instagram?" The mediating effects of narcissists personality similarity and envy, and the moderating effects of popularity. *Computers in Human Behavior, 81*.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational researcher. 33(7)*, 14-26.

Kadushin, C. (2012). *Understanding Social media networks: Theories, Concepts and Findings.* Oxford: Oxford University Press.

Kozinets, R. V. (2010). *Netnography. Doing Ethnographic Research Online.* London: Sage.

Krippendorf, K. (2018). *Content analysis: An introduction to its methodology.* London: Sage.

Leedy, P., & Ormrod, J. (2001). *Practical Research: Planning and Design.* Upper Saddle River, NJ and Thousand Oaks, CA: Merrill Prentice Hall and SAGE Publications.

Longo, G. O. (2005), *Homo Technologicus*, Roma: Meltemi.

Lupton, D. (2012). *Digital Sociology: An Introduction.* Sidney: University of Sidney Press.

Lupton, D. (2013). Quantifying the Body: Monitoring and Measuring Health in the Age of mHealth Technologies. *Critical Public Health, 23(4)*, 393-403.

Lupton, D. (2014). Apps as Artefacts: Towards a Critical Perspective on Mobile Health and Medical Apps. *Societies, (4)*, 606-622.

Lupton, D. (2014). Self-Tracking Cultures: Towards a Sociology of Personal Informatics. *Proceedings of the 26th Australian Computer-Human Interaction Conference (OzCHI '14)* (p. 77-86). New York: ACM Press.

Lupton, D. (2015). Health promotion in the digital era: a critical commentary. *Health Promotion International*, 174-183.

Marres, N. (2017). *Digital Sociology. The reinvention of social research.* Hoboken: John Wiley & Sons.

Maturo, A. F. (2012). *La società bionica. Saremo sempre più belli, felici e artificiali?* Milano: FrancoAngeli.

Maturo, A. F. (2014). Fatism, Self-Monitoring and the Pursuit of Healthiness in the Time of Technological Solutionism. *Italian Sociological Review, 4*, 157-171.

Maturo, A. F. (2014). M-Health e Quantified Self: sviluppi, potenzialità e rischi. *Salute e Società, 13(3)*, 161-170.

Mauceri, S. (2017). L'avvento dell'era dei mixed methods. Nuovo paradigma o deadline di un dibattito? *Sociologia e ricerca sociale*, 113, 39-61.

Moriarty, J. (2011). *Qualitative methods overview.* London: NIHR School for Social Care Research.

Padricelli, G. M., Punziano, G., & Saracino, B. (2020). Virtual vs Digital: Examples of Netnography and Digital Ethnography in Tourism Studies for a Comparison between Methods. *Athens Journal of Social Sciences. 8*, 1-20.

Porter, J. (2008), *Designing for the Social Web*, Berkeley: New Riders.

Rainie, L., & Wellman, B. (2012). *Networked: The New Social Operating System.* Cambridge: MIT Press.

Rogers, R. (2013). *Digital methods.* Cambridge: MIT Press.

Reagle J. (2015), Following the Joneses: FOMO and conspicuous sociality, *First Monday, 20(10)*.

Russo, G. (2011). *La società della wellness. Corpi sportivi al traguardo della salute.* Milano: FrancoAngeli.

Russo, G. (2013). *Questioni di ben-essere. Pratiche emergenti di cultura, sport, consumo.* Milano: FrancoAngeli.

Russo, G. (. (2018). *Charting the wellness society in Europe. Social Transformations in sport, health and consumption.* Milano: FrancoAngeli.

Salisci, M. (2016). *Un corpo educato.* Milano: FrancoAngeli.

Selke, S. (2016). *Lifelogging. Digital self-tracking and Lifelogging – Between disruptive technology and cultural transformation.* Wiesbaden: Springer VS.

Soper, K. (2007). Re-thinking the "Good Life": The citizenship dimension of consumer disaffection with consumerism. *Journal of Consumer Culture. 7*, 205-228.

Teddlie, C., & Tashakkori, A. (2011). Mixed methods research. In N. K. Denzin, & Y. S. Lincoln, *The Sage handbook of qualitative research.* London: Sage.

Tisseron, S. (2008). Guardatemi. Dal desiderio di intimità a quello di estimità. *Psicologia Contemporanea, 209*.

Turkle, S. (2011). *Alone together. Why we expect more from technology and less from each other.* New York: Basic Books.

Van Dijk, E. T., & Ijsselsteijn, W. A. (2016). Design Beyond the Numbers: Sharing, Comparing, Storytelling and the Need for a Quantified Us. *Interaction Design and Architecture(s) Journal, 29*, 121-135.

Van Este, R. (2014). *Intimate technology: The battle for our body and behaviour.* Den Haag: Rathenau Instituut Press.

Varis, P. (2014). *Digital Ethnography.* Tilburg: Tilburg University Press.

Waddington, I., & Smith, A. (2018). Physical Activity, Exercise, Sport and Health: What Is the Appropriate Public Health Message? In G. Russo, *Charting the Wellness Society in Europe. Social transformation in sport, health, consumption* (p. 33-48). Milano: FrancoAngeli.

Williams, C. (2007). Research Methods. *Journal of Business & Economic Research. (5)*, 65-72.

Wisdom, J., & Creswell, J. W. (2013). *Mixed Methods: Integrating Quantitative and Qualitative Data Collection and Analysis While Studying Patient-Centered Medical Home Models.* Rockville, MD: Agency for Healthcare Research and Quality.

Yang, C.-H., Maher, J. P., & Conroy, D. E. (2015). Implementation of Behavior Change Techniques in Mobile Applications for Physical Activity. *American Journal of Preventive Medicine. 4.*

Zani, B. (1995). Salute, malattia e processi psicosociali. In L. Arcuri, *Manuale di psicologia sociale.* Bologna: Il Mulino.