Research Agenda Digitalisation and Wellbeing 2025-2026

Expertise Centre for Digitalisation and Wellbeing
Trimbos Institute - Netherlands Institute of Mental Health and Addiction

Focus areas and research questions within research on the relationship between 7 digital technologies and 8 wellbeing domains.

Introduction

Digital technologies are increasingly woven into our daily lives. Important research is being conducted on many aspects of digitalisation and its impact on wellbeing; from games and smart voice assistants to ethical guidelines for AI development. However, a comprehensive overview of the current state of scientific affairs is still lacking.

The Research Agenda Digitalisation and Wellbeing 2025-2026 provides a structured and evidence-based framework for future research into the interaction between digital technologies and human wellbeing.

Dynamic Character

The Research Agenda Digitalisation and Wellbeing 2025-2026 opens the path to future work that will span multiple years; research work that can deliver the in-depth insights needed takes time.

This first edition of the research agenda therefore provides a glimpse of the research questions that will need to be addressed in the coming years.

That being said, the landscape of digitalisation and wellbeing is developing at a rapid pace. The research agenda therefore will be updated with new insights when those arise. This iterative process enables the field to stay informed about and respond to new developments.

Structure: Lens of the Expertise Centre

To do justice to the breadth of the digitalisation and wellbeing landscape, we use a structured approach in the research agenda. Knowledge gaps and research questions are addressed per technological category of the Expertise Centre's Lens (see Figure 1), which also encompasses eight scientifically grounded wellbeing domains. In some cases, however, needs for new knowledge transcend a specific type of technology. Therefore, this research agenda starts with technology-transcending questions that deserve attention in the coming years.

Methodology

This research agenda has been assembled using both a top-down and bottom-up approach.

First, the agenda is built on existing literature and scientific insights. For this purpose, an extensive review of academic publications was conducted per technological category.

Second, we surveyed organisations and experts in the relevant fields within the Netherlands to identify the knowledge gaps they experience. This input from relevant stakeholders is integrated into the research agenda and can be found in the "According to the Field..." boxes.

Finally, each section of this research agenda contains a brief overview of the most striking knowledge questions that are currently unanswered or insufficiently answered. More extensive methodological information (including a complete
reference list of included studies) about how this research agenda was developed is publicly accessible (in Dutch) and can be found on the Open Science Framework database (https://osf.io/und8x) of the Expertise Centre for Digitalisation and Wellbeing.

With this research agenda as a roadmap, scientists and professionals can work together in a targeted manner on a digital future that strengthens rather than threatens people's wellbeing.

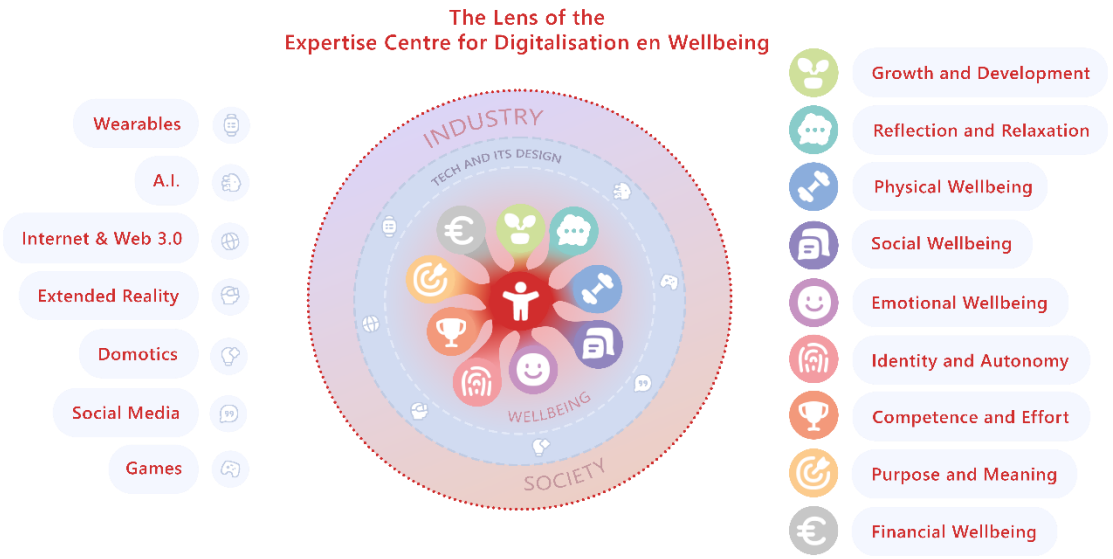

Figure 1. *The Lens of the Expertise Centre for Digitalisation and Wellbeing. The figure shows a circular diagram with eight wellbeing domains around the perimeter: Growth and Development, Reflection and Relaxation, Physical Wellbeing, Social Relations, Emotional Wellbeing, Identity and Autonomy, Competence and Achievement, and Purpose and Meaning. In the centre are seven technology categories: Wearables, AI, Internet & Web 3.0, Extended Reality, Domotics, Social Media, and Games.*

Digital Technology and Wellbeing

The research agenda is structured in such a way as to shed light on the various technologies that the Dutch population regularly encounters. However, the literature review showed that there are several priority themes that are technology-transcending. These are covered in this section.

What do we know already?

Wellbeing Domains

Viewed across all technologies, we see that there is much attention being paid to some wellbeing domains, while relatively little attention has been paid to other wellbeing domains. For example, the domains of Emotional Wellbeing, Social Relations, and Physical Wellbeing are generally well-covered, see Figure 2.

In contrast, within the field of digitalisation and wellbeing, there is still relatively little research that focuses on wellbeing domains like Reflection and Relaxation, Competence and Achievement, Growth and Development, and Purpose and Meaning. This is a reflection of the emphasis we see in societal discussions and clearly shows that there are still many opportunities for innovative research to delve into underemphasized aspects of human wellbeing.

Screen Time

Furthermore, we have found that research focuses mainly on general use, for which various terms are used. It is notable that no good conceptualization and delineation of the construct of screen time seems to exist. Scientific research on screen time and wellbeing also focuses mainly on the younger target group of children and adolescents. Adults and elderly are included in some studies of the general population, but research usually does not specifically focus on these age groups.

Most studies look at both the advantages and disadvantages of screen time on various wellbeing domains and no strong emphasis is placed on one or the other. Sometimes there is a specifically negative focus, mainly when articles focus entirely on the influence of excessive and/or problematic screen use. This mainly concerns the relationship with negative mental health outcomes such as internalizing problems (e.g., anxiety and depression), externalizing problems (e.g., aggression and antisocial behaviour), experiencing negative emotions, and less life satisfaction.

Studies on screen time and wellbeing often show inconsistent outcomes. The majority of studies find no or at most a very small (usually correlational) relationship, both for positive and negative effects. The research gives an indication that the relationship between screen time and wellbeing follows an inverted U-shape: both excessive and a lack of screen time is related to more negative wellbeing outcomes, while average use is related to more positive outcomes.

Figure 2. *General picture of attention to wellbeing domains across different technologies. This figure shows a radar plot with eight wellbeing domains, where Emotional Wellbeing, Social Relations, and Physical Wellbeing show high coverage, while other domains like Reflection and Relaxation, Growth and Development, Purpose and Meaning, and Competence and Achievement show lower coverage.*

Area of Attention 1 – Underemphasized Wellbeing Domains

It is concerning that a large part of research on digital technology and wellbeing seems to focus mainly on two to three domains of wellbeing. Therefore, significantly less is known about the relationship between digital technologies and, for example, Reflection and Relaxation, Growth and Development, Purpose and Meaning, and Competence and Achievement.

These domains are often less visible and harder to measure but are essential for overall wellbeing due to their underlying nature. Future research should therefore map out

what risks and opportunities digital technologies offer for the underemphasized wellbeing domains.

Area of Attention 2 – Screen Time Outdated

Many studies concern screen time, but researchers indicate that this concept has lost most of its informational value. Screen time can be informative when it comes to displacement of other activities (such as sleep). However, we now know not necessarily the amount (time) of screen use, but the content and context surrounding screen use determine whether a negative or positive relationship with wellbeing can occur.

Area of Attention 3 – Insufficient Attention to All Target Groups

In research, insufficient attention is being paid to the effects on adults and elderly populations, despite the fact that they too can experience a wide range of advantages and disadvantages of digital technologies. Additionally, relatively little mind is being paid in research to parts of the population that may be more vulnerable to the negative effects of screen time, such as people with lower socio-economic status, people with a background of migration, or neurodiverse people.

Area of Attention 4 – Lack of Objective Data

A methodological problem that plagues a significant portion of research on screen use and digital technologies is the (over)reliance on questionnaires and self-reporting. Questionnaires are still often used at times when objective data about technology use would be a better, more reliable source of information. This need for objective data in research is great and, in many cases, requires the cooperation of technology companies. Significant work remains to be done in this domain, to make access to the relevant and necessary data commonplace.

According to the Field...

Professionals in the field indicate that research on digital technology and wellbeing should focus on digital inclusion for vulnerable groups, and consequences of digital technologies for loneliness and societal participation. Additionally, psychological effects on identity development, mental wellbeing, and addiction risks deserve more attention, according to the field. Additionally, there is a need for greater insight into the effects of constant connectivity versus 'boredom'.

The role of large tech companies, their algorithms and (manipulative) design choices also require further research. Finally, positive applications of digital technologies are

important according to the field: how can digitalisation contribute to improved wellbeing for different groups of the population, and how do we ensure that tech-for-wellbeing is available and affordable for vulnerable groups?

Ethics and Design of Digital Technologies

Finally, a fair portion of the general literature on digitalisation and wellbeing focuses on ethical aspects of products and their design. We see that, for example, various societal domains have been defined, within which ethical questions around technology play a role: from healthcare and work to education and entertainment.

It also appears that much of the discourse around ethics in technology is focused on A.I. and its associated algorithms (which also play a role in other technologies). For example, research on personalization through algorithms shows both risks and opportunities. Algorithms could, for example, also be used to combat harmful phenomena such as polarization.

Area of Attention 5 – More Focus Needed on Technology Developers

Many studies that look at digital wellbeing focus on what the user can do (differently), and not on what developers and designers of digital technologies do. There is a need for studies that provide insight into the work processes of tech developers, so that clear points of change can be defined for this sector.

Area of Attention 6 – Need for Ethical, Human-Centred Design

Limited research is being done on undesirable and manipulative design features – also called 'dark patterns'. Little is known about why some design features can be addictive, and the ways in which users could deal with them. Furthermore, we see that there are still few studies that provide practical tools for how ethical technology design can be shaped. Such work is essential to ensure wellbeing-oriented design in the future.

Wellbeing-oriented technology design places a holistic, eudaimonic understanding of wellbeing at its core. This means that wellbeing is truly achieved when there is not only happiness and pleasure but also a sense of fulfilment and personal growth.

To be able to build eudaimonia into new technologies, however, more research is required into the ways in which current digital technologies do or do not support holistic wellbeing. For example, it is known that eHealth games use game mechanisms

to motivate the player, but where lies the line between motivating and manipulative design? This too is an area of research that requires further cultivation.

General Knowledge Questions

1. What impact do digital technologies have on underemphasized wellbeing domains?
2. What advantages and disadvantages do older target groups such as adults and elderly experience from smartphone use and screen time?
3. How are more vulnerable groups, such as people with lower SES, migration background, or neurodiversity experience positively and negatively affected by digital technology use?
4. What mediating and moderating factors influence the experienced positive and negative wellbeing effects of smartphone use and screen time?
5. How can we ensure that new digital technologies are designed with wellbeing as a priority? And what practical tools are available for this?
6. What are the effects of 'dark patterns' on user wellbeing?

Wearables and Wellbeing

Wearables are smart devices that can be worn on the user's body. Examples include smart watches, glasses, and jewellery. Wearables can play a supporting role in the user's daily life by providing personal information and insights. Additionally, wearables can serve as a tool for communication, productivity, and entertainment.

What do we know already?

In the research literature, a strong emphasis is placed on experimental research on the effectiveness of wearables – particularly smartwatches – in detecting stress. By measuring and analysing biometric data such as heart rate variability, wearables can signal physical signs of stress. Although measurement accuracy is still developing, wearables appear to be effective and promising as tools for stress detection.

The influence of wearing wearables on users' physical activity has also been extensively researched through experimental research. These studies show that wearables can reduce sedentary behaviour in users by motivating them to be more active through real-time personalized feedback. Based on these findings, it can be concluded that the use of wearables can have a positive effect on mental and physical health. However, the effectiveness of wearables depends not only on the technology itself, but also on how users interact with the technology and interpret the feedback that wearables provide. This is an aspect that we do not know a whole lot about yet and that would require further research.

Overall, the scientific literature suggests that wearables show promise in supporting mental and physical health by detecting stress and discouraging sedentary behaviour. We also see this reflected in Figure 3, which clearly shows that mainly Emotional Wellbeing and Physical Wellbeing domains receive a lot of attention in the scientific literature. In contrast, relatively little attention is paid to the other wellbeing domains.

Figure 3. *Radar plot of attention to wellbeing areas within literature on wearables. The figure shows a radar plot where Emotional Wellbeing and Physical Wellbeing have high scores, while other domains like Growth and Development, Purpose and Meaning, Reflection and Relaxation, Competence and Achievement, Identity and Autonomy, and Social Relations have much lower scores.*

Area of Attention 1 – Long-term Effect Unknown

There is a lack of longitudinal research on the physiological and psychosocial outcomes of wearable use. Many studies focus on short-term measurements of only a limited number of wellbeing indicators. This makes it difficult to properly understand the long-term effects of wearables on wellbeing.

Area of Attention 2 – Interaction Between User and Wearable

The effectiveness of wearables depends not only on the technology itself, but also on how users interact with wearables. This aspect is underemphasized in the literature. There is insufficient knowledge about how users interpret wearable feedback and what behavioural changes result from this.

Area of Attention 3 – Broader Spectrum of Wellbeing Effects

Many studies focus on the effectiveness of wearables for stress detection and encouragement of physical activity, but pay little attention to other aspects of wellbeing such as autonomy, social connection, and broader emotional wellbeing.

This is particularly unfortunate because it seems likely that wearables do affect those domains. For example, wearables may strengthen autonomy by providing insight and control over one's own behaviour. On the other hand, excessive use or dependence on wearables may reduce social connection and emotional wellbeing by contributing to digital addiction and obsessive behaviour. There is therefore a need for holistic research that takes a broader spectrum of wellbeing outcomes into account.

According to the Field...

There is a need in the field for more insight into the functions of wearables, for example in how wearables can actively stimulate movement and how data can be used to gain better insight into movement behaviour.

At the same time, professionals have expressed concerns about the possible side effects of wearables, such as fuelling obsessive monitoring behaviour in certain groups.

According to the field, more insight is also needed into which subgroups are sensitive to these effects, and how risk of adverse effects on wellbeing can be minimized. The question is raised how sensor data can be used valuably, while keeping the chance of adverse side effects as small as possible.

Knowledge Questions Wearables

1. To what extent do wearables contribute to long-term behavioural change on physical and psychosocial wellbeing domains, and which factors moderate this process?

2. How does the interaction between users and wearables influence the effectiveness of the technology?

3. How do wearables influence users' decisions about health and wellbeing?

4. What factors and mechanisms contribute to variation in wearable effects on users?

5. How does the use of wearables influence a broader range of wellbeing indicators and the relationships between them?

6. What psychological, social, and demographic factors can play a role in the sensitivity of certain subgroups to the potential negative side effects of wearables?

AI and Wellbeing

Artificial intelligence, commonly referred to as AI, is a collective term for technologies that exhibit human-like (learning) capabilities. AI systems can, for example, make decisions or, like ChatGPT and Midjourney, generate text, images, and videos. Other examples of AI are chatbots and algorithms that determine what we see on social media.

What do we know already?

In the research literature, various types of AI have been studied so far, but the majority of studies seem to focus on algorithms, chatbots, and AI products in education and healthcare.

It is notable that with AI – unlike most other technology domains in this research agenda – its effects on wellbeing are not always examined. Instead, we see that a substantial part of the research we found tends to focus on describing the technology. This highlights that the research field of AI and wellbeing is still relatively young.

In those cases where studies do focus on the relationships between AI and wellbeing, we see that most attention is paid to the wellbeing domains of Identity and Autonomy, Social Relations, and Emotional Wellbeing (see Figure 4). Loneliness, privacy, autonomy, and pleasure play a central role in this body of work. It is also clear that research within this domain is more often focused on risks than on the potential benefits of AI for wellbeing.

On the side of opportunities and benefits of AI for wellbeing, we do find *some* examples. AI seems to have the potential to reduce loneliness (especially among elderly), can help reduce stress in education, and could contribute to healthy lifestyle choices through recommendations.

However, it is also clear that AI carries a number of risks for wellbeing: some studies suggest that excessive use of AI may come at the expense of human contact, and that there is still a great risk of biased decisions (i.e., bias) in AI. Furthermore, it seems that very little attention is being paid to ethical design of AI for wellbeing, and which conditions would need to be met for AI technologies to be considered wellbeing-centric.

Figure 4. *Radar plot of attention to wellbeing areas within literature on artificial intelligence (AI). The figure shows a radar plot where Identity and Autonomy, Social Relations, and Emotional Wellbeing have higher scores, while other domains like Growth and Development, Purpose and Meaning, Reflection and Relaxation, Competence and Achievement, and Physical Wellbeing have lower scores.*

Area of Attention 1 – Insufficient Transparency, Regulation, and Ethics

More research is needed on how AI decisions can be made more transparent to non-experts. The opacity of how AI algorithms arrive at their answers and recommendations makes it difficult to detect both errors and undesirable practices. Additionally, there is a need for more regulation and there is a lack of a practical evaluation system to assess AI applications on the extent to which they centre human values and needs.

Area of Attention 2 – Large-scale Effects on Wellbeing Unknown

Very little is known about both possible negative and positive (long-term) consequences of AI applications on wellbeing, at both individual and societal levels. For example, it is unknown what kinds of changes AI use brings about in human creativity, critical thinking, and ability to learn.

Given AI's potential to contribute to mis- and disinformation and polarization through generated images, texts or audio, it is becoming increasingly important to map what the impact of AI is on social processes on a larger scale.

Area of Attention 3 – AI in Everyday Use

Much attention is paid to the targeted use of AI in, for example, healthcare and educational domains. However, we increasingly encounter AI in daily life. This context seems to be underrepresented in scientific literature. For example, we still don't know what AI-driven tools people use, for which purposes, and what kinds of positive and negative consequences they experience from this. The number of young people and even children that use AI tools in everyday life is increasingly at a fast pace, and yet we know very little about the impact that these technologies may have on their wellbeing.

According to the Field...

The collected input from the field first of all mentions the importance of transparency in AI creations on social media to combat disinformation. There are also concerns about our future relationship with synthetic human-like 'agents' in work, in our relationships, and in education.

Furthermore, there is emphasis on developing digital tools for wellbeing, and the concern that AI tools (such as chatbots) should not (be able to) replace human contact. Professionals also have unanswered questions about home support, self-management of health data with privacy safeguards, and the potential of AI tools to signal in time that additional (human) professional help should be sought.

Knowledge Questions AI

1. What role and impact does AI have on underemphasized aspects of wellbeing such as creativity, work, and personal identity?
2. How does AI influence the wellbeing of individuals and communities on a larger scale?
3. How can decisions and advice from AI be made comprehensible and transparent for the average user?
4. How can we shape algorithms in a human-centred way, with attention to transparency, privacy, and data ownership?
5. Where is the balance in designing AI systems between convenience and autonomy?
6. What is the impact of AI on the wellbeing and daily experiences of children and young people?

Internet & Web 3.0

The worldwide web, or more commonly simply called the 'Internet', has existed for decades but is continuously evolving. The Internet as we now know it – with online stores, news pages, and streaming services – is in a transition phase. With the emergence of, for example, blockchain technology and decentralization of information, we see a new generation of the Internet emerging: Web 3.0.

What do we know already?

In the research literature, Web 3.0 is rarely addressed, which is most likely a reflection of the fact that Web 3.0 is still in its infancy. When we look at 'the Internet' in a more general sense (the broader spectrum of websites and online services), it appears that this is a comprehensive concept in many studies. In the research literature, we therefore see that this term often also includes smartphones, apps, or even specifically social media use, in addition to the actual Internet itself. This is understandable, since different forms of digital technology may overlap and flow into one another seamlessly in everyday life.

Unlike some other technologies, attention seems to be relatively evenly distributed across different age groups for the Internet: both young people, adults, and the elderly population groups are studied. It is notable that research on Internet and wellbeing also often focuses on Emotional Wellbeing and Social Relations (see Figure 5).

It is furthermore notable that in literature on Internet use, much of the focus lies on the (possible) negative relationships around problematic Internet use, such as its relation to lower life satisfaction and loneliness. 'Cyber incivility' – disrespectful, bullying, or disruptive behaviour on the Internet – is also being studied.

This does not mean that the possible benefits of the Internet for wellbeing are not featured in the literature at all: research suggests that Internet use can also promote wellbeing through the possibilities for societal participation and social support it can provide. This seems to be particularly the case for elderly people, who find that the Internet helps them fulfil needs for information and connection.

Figure 5. *Radar plot of attention to wellbeing areas within literature on Internet and Web 3.0. The figure shows a radar plot where Emotional Wellbeing and Social Relations have the highest scores, with other domains like Growth and Development, Purpose and Meaning, Reflection and Relaxation, Competence and Achievement, Identity and Autonomy, and Physical Wellbeing having lower scores.*

Area of Attention 1 – Young Internet Users Underemphasized

Although young adults are regularly studied, young children and teenagers receive relatively little attention in this research field. This is remarkable, since the age of first Internet use has been steadily decreasing in recent years, largely due to the increased accessibility of the Internet. Internet use among the youngest generations needs to be studied further to gain a better understanding of the advantages and disadvantages they may be facing.

Area of Attention 2 – Risk Factors Unknown

Several studies point out that future research will need to identify which protective and risk factors are at play for Internet use. There is still too little insight into which personal, situational, or environmental factors play a mediating or moderating role in the relationship between problematic Internet use and wellbeing.

Area of Attention 3 – Too Broad of a Concept

From the definitions that studies use for 'the Internet', it becomes clear that 'the Internet' as a term is too comprehensive. Within Internet use, there are simply too many different activities and experiences to identify, each of which have their own unique characteristics and consequences. It is therefore important that future research creates

concrete and measurable content distinctions between different forms of Internet use.

According to the Field...

Almost no input was given by the field for research on the Internet and wellbeing. The only strongly perceived knowledge gap pertaining to the Internet is a lack of validated instruments to teach children and young people to navigate the Internet in a safe manner.

Knowledge Questions Internet/Web 3.0

1. What opportunities and risks does the Internet offer for wellbeing domains where little attention has been paid so far, such as Purpose and Meaning, Autonomy and Identity, and Competence and Achievement?

2. What does Internet use by young children (younger than 12 years) look like and what specific advantages and disadvantages do they experience in relation to their wellbeing?

3. What personal, situational, and/or environmental factors play a role in positive and negative wellbeing outcomes as a result of Internet use?

4. What unique aspects of 'the Internet' can be distinguished from other, more specific technologies? In what situations is research on 'the Internet' in a broad sense useful?

5. What opportunities and risks does Web 3.0 offer for wellbeing, and to what extent do the characteristics of Web 3.0 (such as decentralization of information) impact our Internet use and wellbeing?

6. What is the effectiveness of instruments and tools that support children and young people in safe and healthy Internet use?

Extended Reality and Wellbeing

Extended reality (XR) is a collective name for technologies that connect the physical and digital world. Take, for example, virtual reality (VR), where you use a VR headset to fully immerse yourself in a digital world while still being in the physical environment. Augmented reality (AR) and mixed reality (MR) are also forms of extended reality, in which digital elements are combined with the real world and can react interactively to the environment. The game Pokémon GO is a well-known example of such technologies, allowing players to encounter digital Pokémon in the physical environment.

What do we know already?

Research on XR focuses mainly on reducing stress and increasing positive emotions in adults and elderly, often through simulating a nature setting in VR or, in some cases, MR. It seems that nature settings in XR can improve emotional wellbeing by reducing stress and evoking emotions such as joy. People also feel more connected to nature. Use cases such as these can be especially valuable for people who have limited access to nature.

Furthermore, the literature shows that elderly – despite the seemingly futuristic nature of XR – are very open to using XR applications, provided that the design takes personal preferences into account and minimizes nausea. This latter point is, unsurprisingly, also important for other populations.

We also see that XR is used as a tool for meditation. Although XR does not seem more effective than traditional meditation for mindfulness, other studies show that VR treatments for mental problems and physical pain seem to work just as well as traditional methods, and often give faster results.

Some researchers are concerned about excessive use of VR headsets in children, especially because of the possible impact on physical development. Little research has been done on the use of XR technology by children due to ethical concerns. It is unclear whether use can be harmful to children, making such research potentially risky. It has been already speculated that excessive use can lead to nausea, excess body weight, visual complaints, and sleep problems.

Finally, it is notable that research focuses mainly on Emotional Wellbeing, while ignoring most other wellbeing domains (see Figure 6).

Figure 6. *Radar plot of attention to wellbeing areas within literature on extended reality technologies. The figure shows a radar plot where Emotional Wellbeing has by far the highest score, while all other domains (Growth and Development, Purpose and Meaning, Reflection and Relaxation, Competence and Achievement, Identity and Autonomy, Social Relations, and Physical Wellbeing) have much lower scores.*

Area of Attention 1 - Diverse Definitions and Outcome Measures

Various reviews mention that differences in definitions and concepts make it difficult to compare studies. Additionally, many studies use different types of XR technologies and outcome measures, such as psychological, physiological, and biochemical indicators. This makes it hard for researchers to build a solid scientific knowledge base, and makes it difficult to draw conclusions about the effects of XR use on wellbeing.

Area of Attention 2 – XR is Still Insufficiently Accessible

The impact of XR on wellbeing largely depends on the accessibility of this technology. None of the studies address the issues around purchasing, maintaining, or upgrading the technology or equipment. The financial and practical feasibility of deploying XR for wellbeing is therefore still unknown.

Area of Attention 3 – Various Wellbeing Domains are Underemphasized

Various wellbeing domains, such as Growth and Development, currently remain unstudied (see Figure 6). This is unfortunate, because we foresee that those understudied wellbeing domains likely present many opportunities for the use of XR, for

example in education. Another example is the domain of Physical Wellbeing, in which many possibilities may lie for XR to make a positive contribution to rehabilitation and healthy movement.

According to the Field...

Professionals feel that there are various theories and studies on the impact of XR on wellbeing, but also that these scientific perspectives do not address the practical applicability of XR. Therefore, developers can do little with this information.

XR has much potential in care and education, but there is insufficient knowledge about practical implementation in those domains. Experts also feel that room is needed for experimentation. This is hampered by strict safety rules that are difficult to navigate, especially for small parties.

Too much focus is also placed on new products instead of collaborations between disciplines and building on existing knowledge. Safety and quickly informing stakeholders about new developments remain important challenges, as does setting up an effective ecosystem for XR in education.

Knowledge Questions XR

1. How do we precisely define what falls under XR technology, so that the field may move towards harmonization of methods?

2. What are the effects of XR on wellbeing within different environments, such as at home, at school, or in healthcare?

3. What are the effects of XR on wellbeing in different target groups, such as in different age groups or in people with mental complaints?

4. Is XR an effective means to promote cognitive development in education?

5. Is XR an effective means to promote rehabilitation and stimulate movement?

6. What is the most suitable intensity, duration, and frequency for using XR to promote wellbeing?

7. How can academic methods, practice-oriented knowledge, and artistic perspectives be combined in XR research?

Smart Home Technologies and Wellbeing

Smart home technologies (also referred to as 'domotics') is a category of digital technologies that is becoming increasingly common in Dutch households. Examples of such appliances include smart lamps, voice assistants like Google Nest and Alexa, and smart doorbells.

What do we know already?

It is notable that scientific research on the relationship between smart home technologies and wellbeing is mainly focused on the elderly population. There are many studies that look at ways in which smart home appliances could make life easier and safer for the elderly. We also see studies that show that smart home technologies can contribute to better cognitive functioning and can help elderly combat loneliness and feel more socially connected.

It is therefore not surprising that literature on smart home technologies and wellbeing focuses mainly on the wellbeing domain of Social Relations (see Figure 7), in addition to – to a lesser extent – Physical Wellbeing, Autonomy, Emotional Wellbeing, and Competence.

Overall, the impact of smart home technologies on wellbeing is viewed positively, but attention is also paid to risks, for example in the area of privacy and security. Although the impact of smart home appliances on physical wellbeing is not yet widely studied, this aspect of using smart home technologies is becoming increasingly important. It is conceivable that through smart lamps, smart kitchen appliances, smart heating systems, and televisions we ultimately move less through our homes than before. It is unclear what exactly the extent is of such effects on physical movement, and therefore presents an important avenue for future study.

Finally, increasing attention is also being paid to the possible negative impact that smart home technologies can have on our autonomy. When tasks and skills are offloaded to smart devices, does the risk arise that we lose agency? This, too, is an as of yet unexplored area within the field of smart home devices.

Figure 7. *Radar plot of attention to wellbeing areas within literature on Smart home technologies. The figure shows a radar plot where Social Relations has the highest score, followed by moderate scores for Identity and Autonomy, Emotional Wellbeing, Competence and Achievement, and Physical Wellbeing, while Growth and Development, Purpose and Meaning, and Reflection and Relaxation have lower scores.*

According to the Field...

No input was given by the field knowledge gaps surrounding smart home technologies and wellbeing. This scarcity clearly shows that much more attention needs to be paid to the potential impact of smart home appliances on our wellbeing, and that this is perhaps also insufficiently reflected upon in broader society.

Area of Attention 1 - Smart home technologies and Wellbeing Still Scarcely Researched

The attention that smart home appliances receive in the scientific literature on wellbeing is not yet proportional to the role these devices play in our daily lives. If nothing else, this shows that there are still many opportunities for research to dive into the relationship between smart home technologies and the many different aspects of our wellbeing.

Area of Attention 2 – Insufficient Focus on Population Groups Other Than the Elderly

Although it is very plausible that elderly can benefit from smart home appliances, it is important that the impact of smart home technologies is also studied in other populations. Smart home technologies have become part of many households, and it is important to map what the impact of this type of technology is on, for example, family life or the wellbeing of younger generations. At the moment, it is still completely unclear to what extent these other population groups use smart home technologies, as well as which advantages and disadvantages they experience from using this technology.

Knowledge Questions Smart home technologies

1. What harmful consequences can Smart home technologies have for wellbeing, for example on physical wellbeing or our autonomy?
2. Where is the balance in designing Smart home technologies between convenience and autonomy?
3. How do children, young people, and adults experience their relationship with Smart home technologies? Where do they experience advantages and disadvantages?

Social Media and Wellbeing

Social media are online platforms and applications where users can share messages, photos, and videos with each other. Examples of social media are Instagram, TikTok, and LinkedIn. Social media now play a central role in daily life for many, offering entertainment and connection with friends, family, and broader online communities.

Social media also form a source of information by way of news and articles. Additionally, social media enable users to express their ideas, experiences, and identity through their profiles and the content they create and post.

At the same time, there are also characteristics of social media and the experiences that they produce that can cause users to experience risks or disadvantages, such as cyberbullying, disinformation, or loss of time and agency.

What do we know already?

In scientific research, the relationship between wellbeing and social media use has been studied extensively. Adolescents are often a highlighted group in this body of work. Especially the connection between adolescents' social media use and mental health outcomes, such as depressive symptoms, anxiety, and low self-confidence, are central to the scientific literature we have found.

In addition to a strong focus on Emotional Wellbeing, the effect of social media use on Social Relations and Identity and Autonomy also plays an important role in the research literature (see Figure 8).

However, a substantial part of the research on social media and wellbeing uses methods and conceptualizations that are not well suited to make clear statements about the effects of social media on wellbeing. It is clear that the relationship between social media and these wellbeing domains is complex: depending on the intensity with which and the way in which social media are used, they can have both positive and negative effects on their users.

On one hand, studies show that social media offer opportunities for social connection, self-expression, and identity formation. On the other hand, social media also bring risks of social pressure, comparison, and uncertainty for some. The substantial individual differences that exist between (young) users are of great importance here, as are the differences between social media platforms and the types of experience they offer.

For certain groups, such as the elderly and the LGBTQIA+ community, social media can be particularly valuable in providing a sense of community, support, and access to like-minded people, which these population groups might not experience outside of social media.

Figure 8. *Radar plot of attention to wellbeing areas within literature on social media. This figure shows a radar plot where Social Relations, Identity and Autonomy, and Emotional Wellbeing have the highest scores, while Growth and Development, Purpose and Meaning, Reflection and Relaxation, Competence and Achievement, and Physical Wellbeing have lower scores.*

Area of Attention 1 – Research Methods Not Always Appropriate

There is a significant gap in longitudinal research on the effect of social media use on wellbeing. Therefore – in combination with a lack of experimental research – no statements can be made about causality. Additionally, we have found that the literature is rife with an overreliance on self-reporting and questionnaire data. The need for more objective measures of social media use is evident and called for by numerous researchers in the field. Based on existing literature, it is currently most likely that the relationship between social media and wellbeing is a bidirectional one.

Area of Attention 2 – Definition and Delineation of Concepts is Unclear

Concepts such as 'social media use' and 'problematic social media use' are not clearly and consistently defined and delineated in the research literature. This makes it difficult

to compare conducted research. We now know that social media use can take various forms, and that these forms are important for determining any consequences for wellbeing.

Area of Attention 3 – Deficient Knowledge About Protective and Risk Factors

More attention ought to be paid to the specific characteristics that contribute to differences in relationships. Both platform-specific design features and personal characteristics of users play a role in the relationship between social media use and wellbeing. More research is required to understand and predict variation in the relationships between wellbeing and social media use.

According to the Field...

Organisations and professionals in the field signal a lack of knowledge about the impact of measures such as bans, age limits, and parental supervision. The perspectives of (neurodivergent) young people and other vulnerable groups also receive too little attention according to the field.

Additionally, identifying risk groups for problematic social media use and the adverse effects of social media has been highlighted as a knowledge gap. More attention also needs to be paid to the impact of design features such as 'likes' and lack of content moderation on psychological mechanisms such as social comparison and critical thinking.

Furthermore, research is needed on the influence of social media on lifestyle choices, susceptibility to dis- and misinformation, and the impact of hate and sexual violence via social media on wellbeing. Finally, there is a need for more research on effective preventive strategies and interventions to minimize any negative effects of social media on wellbeing, with special attention being paid to vulnerable groups.

Knowledge Questions Social Media

1. How can different forms of social media use be defined and operationalized in accurate, clear, and consistent ways, so that the effects on wellbeing can be better studied?

2. What characteristics and mechanisms of platforms contribute to wellbeing or hinder it?

3. How do user characteristics influence the relationship between social media use and wellbeing?

4. How can vulnerable groups be protected against the possible negative effects of social media use while also benefiting from the positive effects?

5. What factors contribute to the effectiveness of interventions in reducing the negative impact of social media on wellbeing?

Games and Wellbeing

Games (or video games) is software that is played offline or online on a digital device, such as a PC, game console, or tablet/smartphone. While video games were previously mainly seen as a somewhat stigmatized solo activity primarily enjoyed by boys, video games have now grown into a widespread activity that transcends demographic groups.

What do we know already?

Despite there being many different 'types of gamers' to distinguish, we see that research on games often focuses on the total group of 'gamers' without specifying more distinct target groups. That being said, one specific demographic within the pool of video game players does receive special attention in the scientific literature: (semi)professional players of games (eSports).

Overall, research on games focuses on both the advantages and disadvantages that playing games can have on wellbeing. There is a strong focus on the wellbeing domains of Physical Wellbeing, Social Relations, and Emotional Wellbeing (see also Figure 9). There is still little research on the influence that playing games has on other domains such as Personal Growth and Identity.

Furthermore, research on games focuses mainly on the amount of time spent gaming and the influence of this metric on wellbeing. Contexts or specific types of game play are rarely studied. So far, mainly short-term effects have been examined. Overall, no (strong) relationships are found between playing games and outcomes on various wellbeing domains.

Some studies specifically focus on the benefits of games; these studies tend to research the effects of playing active video games and their potential to stimulate physical movement.

Research that specifically focuses on the disadvantages of games tends to examine the potential development of a gaming disorder (also called 'Internet Gaming Disorder'). Studies find that gamers who meet the criteria of a gaming disorder experience more negative consequences from their gaming behaviour than gamers who do not have a gaming disorder.

Figure 9. *Radar plot of attention to wellbeing areas within literature on video games. The figure shows a radar plot where Physical Wellbeing, Social Relations, and Emotional Wellbeing have the highest scores, while Growth and Development, Purpose and Meaning, Reflection and Relaxation, Competence and Achievement, and Identity and Autonomy have lower scores.*

Area of Attention 1 – Long-term Effects Unknown

Research on games is mainly based on cross-sectional studies. Therefore, the effects – both (potentially) positive and negative – are hard to determine. Additionally, when studies do adopt an experimental design allowing for causal conclusions, this is generally with the use of short-term outcome measures. Long-term effects of video games on wellbeing are therefore largely unknown.

Area of Attention 2 – Context Missing from Research

In research on games, lots of attention has been paid to the time that gamers spend on their games. Future research will benefit from a stronger focus on the context in which gaming behaviour takes place (including why, what, when, and with whom is played), since these are the factors that are known to inform whether the relationship between gaming and wellbeing is a positive one or not.

Area of Attention 3 – Insufficient Attention to All Wellbeing Categories

Research on games focuses mainly on effects on physical, mental, and social wellbeing domains. Very little is known about how video games may influence, among other things, personal growth, identity development, sense of purpose, and meaning-making of

gamers.

According to the Field...

Professionals in the field indicate that it is insufficiently known for whom playing games has positive or negative effects. Research should focus more on the individual characteristics of the gamer and the context in which games are being played.

Additionally, organisations express a need for more knowledge about the longer-term effects, both positive and negative, of playing games on the wellbeing of gamers, and about how games can be used to positively contribute to wellbeing.

Knowledge Questions Games

1. Which factors contribute to the variation of experienced (positive and negative) effects? What is the role of individual characteristics in these effects?
2. What are the positive and negative effects of games on wellbeing in the longer term?
3. How does the context in which people play games influence the experienced positive and negative effects on their wellbeing?
4. How can games contribute to personal growth and (identity) development of gamers?
5. What is the impact of games on other wellbeing domains, such as Social Relations? For example, what is the influence of social interactions in (online) cooperative and competitive multiplayer games on the wellbeing of gamers?
6. How can games be created and implemented to promote wellbeing within all different wellbeing domains?

Conclusion

In this Research Agenda Digitalisation and Wellbeing 2025-2026, we have synthesised the existing scientific research on the relationship between various digital technologies and human wellbeing. Through a systematic analysis per technology domain, we have formulated knowledge gaps for future research.

From smart home appliances, video games, wearables, and XR to the Internet, social media, and AI, each domain offers both opportunities and challenges for the wellbeing of individuals and society as a whole.

Overarching Areas of Attention

Although each technology area has unique research questions, a number of broader Areas of Attention have featured repeatedly throughout:

The need for long-term and detailed research: Studies focus too little on the long-term effects of technology use. Additionally, too much attention is often paid to general use instead of the context in which technology use takes place, even though it is precisely that context that seems to determine impact on wellbeing. More insight is needed into the 'how' and 'when' of positive and negative wellbeing outcomes.

More focus on underemphasized target groups: Young adults often receive the most attention in digital technology and wellbeing research, but much less is known about the effects of digitalisation on very young children, adults, elderly, and vulnerable groups, such as immigrants or neurodivergent individuals.

Objective data and better measurement methods: Research still relies to a large extent on self-reports, while the need for objective and standardized measurement instruments is great. Collaboration with the tech industry in financially and interest-independent ways will prove essential to fill this gap.

Ethics and responsibility in technology design: Many studies focus on the user, but the role of developers and designers in promoting digital wellbeing receives very little attention in the scientific literature. There is a need for clear guidelines and regulations to shape technology in a responsible manner.

Digital inclusion and accessibility: Not everyone benefits equally from technological developments. Research on digital inequality is essential to ensure that technology remains a connecting rather than dividing factor in society. This applies especially to groups with limited digital literacy.

Balance between technology use and wellbeing: The impact of digital technology is not only dependent on what we use, but also on how often and in which ways we use it. There is a need for more research on healthy usage patterns and a balance between online and offline activities.

Collaboration between science and practice: The gap between scientific research and daily practice remains a challenge. To effectively deploy technologies for
the betterment of wellbeing, an interdisciplinary approach is needed in which scientists, policymakers, and developers work more closely together.

Final remarks

The digital world continues to develop at a rapid pace and requires continuous and interdisciplinary research. We call on researchers, policymakers, industry, and societal organizations to work together towards a digital future that promotes rather than threatens wellbeing. By addressing existing knowledge gaps and staying on top of technological developments, we can ensure that digitalisation is not only smart and efficient, but above all human-centred and responsible.

Colophon

Authors

Nastasia Griffioen (Trimbos Institute)

Vincent van der Rijst (Trimbos Institute)

Mijntje Meijer (Trimbos Institute)

Maartje Hamer (Trimbos Institute)

Anouk Tuijnman (Trimbos Institute)

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Trimbos Institute
P.O. Box 725
3500 AS Utrecht
T: 030-297 11 00

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