

6-18-2022

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Recommended Citation

Wolff, Bastian; Kelter, Lukas; Schlagwein, Daniel; and Schoder, Detlef, "Is Information Systems Research Concerned with Societal Grand Challenges?" (2022). *ECIS 2022 Research-in-Progress Papers*. 11.
https://aisel.aisnet.org/ecis2022_rip/11

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IS INFORMATION SYSTEMS RESEARCH CONCERNED WITH SOCIETAL GRAND CHALLENGES?

Research in Progress

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Abstract

“Grand challenges” can provide an important orientation regarding whether research deals with societally relevant problems. Yet, many IS scholars have claimed that IS research is often dealing with issues that are of rather little relevance to societal grand challenges. In this “research-in-progress” study, we examine to which degree IS research is concerned with societal grand challenges. We approach this question by thus far analyzing 329 papers published in the leading AIS ‘Basket of Eight’ (AIS 8) IS journals in the year 2020. Using coding analysis rooted in justification theory to clarify why IS research was performed, we map the justifications given in those papers against the grand challenges as set out in the United Nations (UN) Sustainable Development Goals. The findings indicate that IS research seems to be contributing to some societal challenges (e.g., industrial innovation, economic growth or health), while neglecting many others (e.g., societal equality, environmental sustainability and challenges in developing countries).

Keywords: Grand Challenges, Research Legitimacy, Justification Theory, Information Systems Research, UN Sustainable Development Goals, Literature Review.

1 Introduction

This paper is concerned with the question of the *causa finalis*, the ultimate purpose, of academic research in information systems (IS). The issues of research legitimacy (i.e., why and for which societal, basic-scientific or other purpose research is valuable) and research justification (i.e., the answer provided to these questions) are as old as academia itself. Researchers have discussed the question of legitimacy from general, philosophical perspectives (Weber, 1930, Shils, 1974, Fuller, 2003) as well as dedicated IS perspectives (Benbasat and Zmud, 1999, DeSanctis, 2003, Agarwal and Lucas Jr, 2005), often with varying views regarding how and when research is legitimized. Yet, across all academic disciplines, approaching so-called “grand challenges” can provide overarching legitimacy in the eyes of relevant societal stakeholders such as political institutions, NGOs, affected people or academics themselves.

Grand challenges refer to fundamental societal problems that have “the potential to significantly impact [...] community, national, or international concerns” (Winter and Butler, 2011, p.100). Well-articulated sets of societal grand challenges – such as the United Nations (UN) Sustainable Development Goals (UN, 2015) – are widely accepted across nations and research fields. They are framing what social and environmental challenges humankind faces and provide a clear reference point to assess the societal relevance of research. Since grand challenges are inter-disciplinary due to their complex nature (Maxwell and Benneworth, 2018), they provide reason, cause and legitimacy for research in various fields. If taken seriously, grand challenges define and outline the major issues a field of research should approach.

Considering that – in times of growing societal complexity – transdisciplinary efforts are needed to approach the big problems of humankind, the call for academia and other societal stakeholders to leave their ivory towers and deal with topics of societal relevance is raised with accelerating intensity and monetary efforts (White House, 2013, Leith and Meinke, 2015, European Union, 2020). Ultimately, the formation of truly united societies (see also the mission statement of this conference) demands a wide-scale approach to the relevant societal challenges of the 21st century – requiring the actions of all societal players. Certainly, this key relevance of societal grand challenges and transdisciplinary societal problems extends to the ever-expanding IS field. Since information systems are deeply embedded into human, organizational and institutional existence (Tarafdar and Davison, 2018), IS research has the potential to provide valuable contributions when it comes to transdisciplinary societal problems (Majchrzak et al., 2016), contributing to united societies. Three exemplary contemporary societal challenges illustrate that particularly in the IS field the debate about grand challenges is more topical than ever: First, while the societal and organizational implications of the Covid-19 pandemic have strong impacts on IS (Kamal, 2020), the question arises how – in turn – IS research can approach and provide solutions to these ramifications (Pan and Zhang, 2020). Second, environmental sustainability has risen as a key research field during the previous decades with regard to the question, how (Green) IS and Design Science Research can contribute to solving environmental challenges (Dedrick, 2010, vom Brocke and Seidel, 2012, vom Brocke et al., 2013, Seidel et al., 2013) – a development being represented among others by SIGGreen (AIS special interest group on green information systems) (Seidel et al., 2017). Third – considering the current geopolitical, economic and societal disruptions – IS research can approach accompanying phenomena such as fake news (JMIS, 2021), cyber security threats (Liu et al., 2020) or crisis management in general (Mirbabaie et al., 2020).

Hence, this “research-in-progress” study investigates the justification(s) of IS research and their (non-) alignment with societal grand challenges. It seeks to answer the research question (RQ) “*To which degree is IS research concerned with societal grand challenges?*”. Answering the RQ then opens new paths to discussing wider and normative questions on IS research.

We approached the RQ by analyzing all 329 papers published in the AIS ‘Basket of Eight’ (AIS 8) journals in 2020 – being considered the central and leading outlets of our field by the AIS as well as various schools, ranking and grant-awarding bodies. Using a well-established framework as a conceptual foundation, we coded the justifications given in the papers using a coding scheme based on the seven “orders of worth” (values implicitly or explicitly used for justifying something to an audience) derived from justification theory (Boltanski and Thévenot, 2006). We mapped the “bottom up” coding analysis of the 2020 AIS 8 paper to the “top down” 17 UN Sustainable Development Goals (UN, 2015). The findings of the analysis provide a foundation regarding the consideration of societal grand challenges in IS research. Overall, the research-in-progress study contributes to a better comprehension of the current state of IS research, particularly when it comes to research justifications and consideration of the UN Sustainable Development Goals by IS research as evident in the published studies. The analysis is hoped to provide thought, arguments and guidance towards orientation, legitimization, and justification of IS research (for each individual future study, and the IS field as a whole).

2 IS Research and Societal Grand Challenges

Observing the discussion about grand challenges and research legitimacy within IS research, a specific perception conflict can be observed. On the one hand, many IS researchers derive research legitimacy from approaching grand challenges within their own research field. Since the 1980s, IS research has identified grand challenges specifically related to IS management, providing insights and observations of grand challenges as well as comparisons over time (Dickson et al., 1984, Brancheau and Wetherbe, 1987, Brancheau et al., 1996). On the other hand, the previous decades brought a stronger emphasis on connecting research legitimacy with the contribution to the overarching social interest. Answering the paper of Benbasat and Zmud (1999) who emphasize practical usability as key to research legitimacy, DeSanctis (2003) proposes to extend the boundaries of the IS field in order to approach research questions of social interest. Consequently, vom Brocke et al. (2015) identify a set of societal grand challenges, emphasizing the importance and responsibility of IS for providing practical solutions. Based

on the qualitative input of academics, also Becker et al. (2015) identify 21 IS research challenges which can be grouped into meta challenges and overarching societal themes. Perceiving IS research legitimacy from this societal perspective, the overarching legitimacy of IS research depends on its ability to conduct research approaching grand challenges, particularly since we deal with a – historically – tendentially praxis-oriented research field (Hirschheim and Klein, 2012). However, despite this praxis-orientation, the impression occurs that IS research often lacks the reference to an overarching societal grand challenge – an impression shared by IS researchers such as Winter and Butler (2011) who point out that IS researchers engage in large-scale transdisciplinary efforts only rarely. On the contrary, it appears that IS research rather focuses on projects of limited scale and impact within its own discipline. Also, Tarafdar and Davison (2018) emphasize that most of IS research’s knowledge contribution is intradisciplinary. Formulating it more directly, Becker et al. (2015, p.377) state that the “scholarly IS discipline is still much concerned with itself”.

To approach the question of to which degree IS research is concerned with societal grand challenges, the question arises which set of grand challenges represents a holistic and acknowledged picture of overarching societal issues. While IS researchers have used different approaches and focus points to identify grand challenges, also acknowledged political entities have identified contemporary societal grand challenges. As one of the most politically and academically acclaimed examples, in 2015, the United Nations (UN) defined 17 ‘Sustainable Development Goals’ (SDG) that represent global resilience and sustainability challenges (UN, 2015). The SDG represent a “globally agreed holistic approach”, covering broad parts of what the international community would define as societal grand challenges (Sachs, 2015, p.56). While ‘Nature’ emphasizes the SDG when it comes to the question of how research can contribute to societal challenges (Nature, 2021), the SDG are specifically addressed when it comes to certain IS-related calls for papers with relation to society-relevant areas (Wiley, 2021). Hence, we utilize the 17 UN SDG to investigate grand challenges in an IS context. Table 1 provides a brief overview of the SDG:

[1] No Poverty	[2] Zero Hunger	[3] Good Health and Well-Being
[4] Quality Education	[5] Gender Equality	[6] Clean Water and Sanitation
[7] Affordable and Clean Energy	[8] Decent Work and Economic Growth	[9] Industry, Innovation and Infrastructure
[10] Reduced Inequalities	[11] Sustainable Cities and Communities	[12] Responsible Consumption and Production
[13] Climate Action	[14] Life Below Water	[15] Life on Land
[16] Peace, Justice and Strong Institutions	[17] Partnerships for the Goals	-

Table 1. Grand Challenges – UN Sustainable Development Goals (SDG) (UN, 2015).

While these grand challenges can provide an orientation for wider research legitimacy, the question arises if the justification of research is considering them. Approaching research legitimacy from this justification perspective, IS researchers usually conduct normative value statements about the purpose of the respective studies, being ultimately manifested in the formulated research justifications (Parsons, 1960, Constantinides et al., 2012). Accordingly, research articles in IS and other disciplines utilize their written problem framings, research questions or contributions as a communication tool to indicate the legitimacy of their research (Sarker et al., 2018). At this, the theory of justification provided by Boltanski and Thévenot (2006) can help in order to allow a mapping of research with a holistic set of overarching societal values, which then can be connected to the overarching grand challenges. Theory of justification relies on the fundamental idea that value statements are connected to higher principles called “orders of worth”. These orders of worth represent a holistic, socially accepted value system that lays the foundation for (among others) academic justification. Different societal actors and stakeholders can make use of these orders of worth to justify their actions and gain or maintain legitimacy (Patriotta et al., 2011). Framing the connection between justification theory and IS research, IS researchers are acting as such societal stakeholders when they justify their respective research – giving indications about the

causa finalis of their research. At this, Spindeldreher et al. (2020) have shown that the application of justification theory on IS research can provide valuable insights regarding which overarching themes IS research is approaching.

Overall, Boltanski and Thévenot (2006) introduce seven orders of worth: In the market order, goods and services are evaluated based on their price, cost or economic value. The worth of a good or service can be justified by its competitiveness and its short-term profitability. The industrial order shows a rather long-term focus with an emphasis on efficiency, reliability, sophisticated planning or technical competency. In the domestic order, justification is particularly based on hierarchy, tradition and locality. The worth of a person or an object is often strongly connected to personal ties in coherence with reputation and trustworthiness. Justification in the civic order is based on equality and solidarity in order to reach collective welfare, fundamental rights or serve a common good. In the inspired order, justification is based on people's passion, emotion, enthusiasm, motivation or inspiration. In the fame order, justification is based on fame, renown as well as public opinion and recognition. In the green order, justification is based on environmental friendliness and sustainability. Hence, the green order is much concerned with protecting the planet's ecosystem for current and future generations.

3 Research Method

Under the assumption that the majority of published research papers' justifications (besides methodological, theory-driven or state-of-research publications) can be mapped to the introduced orders of worth, a framework which also considers grand challenges (UN SDG) will allow both an understanding which orders and topics are approached by research justifications and whether grand challenges are represented by these orders. Hence, an appraisal of the overall state of IS research is enabled, while simultaneously revealing the smaller proportion of the publications which refer to grand challenges. Justification theory provides a holistic framework – including clear semantic descriptors – how to approach and code research justifications. Since the UN SDG themselves do not allow a clear assignment of all IS publications (some IS publications might not approach grand challenges at all), we decided for a mapping approach. We applied the content and descriptions of the UN SDG (UN, 2015) to the values represented by the orders of worth. As further orientation point, we utilized the semantic descriptors as indication for the mapping. Since the mapped SDG are covering only specific parts of the orders of worth, we clearly point out which parts are covered when it comes to the findings (chapter 4.1) and the mapping results (chapter 4.2). Doing so, we take over the approach of Spindeldreher et al. (2020) and extend it with the association to Grand Challenges. Table 2 illustrates the mapping:

Orders of Worth	Semantic Descriptors (Indicators)	UN SDG (see Table 1)	Mapping Justification
Market	Money, price, cost, profit, revenue, competition	[8], [9]	When it comes to seizing and enabling new business models, growth or innovation, the market order approaches SDG [8] and [9].
Industrial	Efficiency, reliability, infrastructure, planning, technical objects, project	[8], [9]	The industrial order focuses on comparable SDG like the market order; however, with a different emphasis. SDG [8] and [9] are approached from an industrial, long-term and infrastructural perspective.
Domestic	Hierarchy, trust, reputation, honesty, identity, community, locality	[11], [16]	The domestic order with its focus on locality, identity and hierarchy approaches SDG [11] and [16], with a focus on communities, cities or institutional hierarchy.
Civic	Collective welfare, common good, solidarity, equality	[1], [2], [3], [4], [5], [6], [7], [8], [10], [11], [12], [16], [17]	The civic order approaches SDG which stand in the tradition of societal-relevant values such as equality, solidarity, social welfare, and the common good (including health).

Inspired	Inspiration, creativity, passion, motivation, emotions	[8]	The inspired order approaches SDG [8] when it comes to people’s motivation and its contribution towards a positive work experience.
Fame	Public image, public opinion, recognition, (social) media	–	Since fame and recognition are typically not related to aims of sustainability, no SDG are mapped to this order.
Green	Environmental friendliness, ecological sustainability	[6], [7], [11], [12], [13], [14], [15]	The green order approaches all SDG with a direct or indirect environmental or ecological emphasis.

Table 2. Mapping of Orders of Worth and UN SDG

The paper makes use of a systematic literature review (Boell and Cecez-Kecmanovic, 2015), considering recent IS publications in order to present a contemporary picture of IS research. We investigate the publications of the AIS ‘Basket of Eight’ (AIS 8) journals from the year 2020, including regular issues, special issues as well as opinion and discussion papers, but excluding introductory ‘Editorials’. Overall, this includes 329 publications. The choice for the respective journals relates to relevance: The AIS 8 are broadly considered to be eight of the most acknowledged IS journals (AIS, 2011) and have been before the representatives of studies dealing with the state of the IS discipline (e.g., Liu and Myers, 2011). These predefined publications are coded in an N-to-N relation with the introduced seven orders of worth, enabling clustering of the investigated literature concerning the question of which orders are strongly connected to IS research and serve as foundation for research justification. While certain papers allow unambiguous coding (one paper coded to one order of worth), other papers are mapped to more than one order (e.g., in the case of transdisciplinary research or multifaceted justifications). The consequences for the mapped grand challenges are then derived from the utilized justifications. The complete NVIVO coding was peer-reviewed by a second author to sustain the coding’s quality. Overall, the systematic literature review enables us to assess the most recent IS publications in order to present a contemporary picture of IS research – including the coverage of societal grand challenges.

Journal	Abbr.	Frequency	2020 Publications (QTY)
European Journal of Information Systems	EJIS	Bi-monthly	38
Information Systems Journal	ISJ	Bi-monthly	31
Information Systems Research	ISR	Quarterly	72
Journal of the Association for Information Systems	JAIS	Bi-monthly	48
Journal of Information Technology	JIT	Quarterly	18
Journal of Management Information Systems	JMIS	Quarterly	40
Journal of Strategic Information Systems	JSIS	Quarterly	20
Management Information Systems Quarterly	MISQ	Quarterly	62

Table 3. Investigated AIS 8 Journals.

4 Findings

4.1 Justifications in IS Research

The coding analysis of the 329 published papers revealed which types of justifications are used in IS research (in the year of analysis, 2020). Table 4 shows sample quotes and the coding’s distribution:

Orders of Worth	Sample Quote	% of Public.
Market	“Service innovation is critical to firms’ competitive advantage” (Ye and Kankanhalli, 2020, p.292).	46% (N=151)

Industrial	“These incidents create increased levels of uncertainty about the availability and reliability of IT services” (Kotlarsky et al., 2020, p.95).	26% (N=84)
Domestic	“Policy makers must be armed with knowledge to design strategies for encouraging mass tracing app acceptance” (Trang et al., 2020, p.415).	25% (N=83)
Civic	“It is especially important in the humanitarian context where organisational efficiency leads to saving more lives” (Holzer et al., 2020, p.153).	19% (N=61)
Inspired	“Crowd workers are not only motivated extrinsically by financial rewards but also by intrinsic motivation such as the task itself” (Durward et al., 2020, p.67).	10% (N=32)
Fame	“For instance, when British Airways waited eight hours to respond to a dissatisfied customer, the customer’s tweet went viral” (Mousavi et al., 2020, p.340).	4% (N=14)
Green	“It draws attention to ecological feedback loops” (Hafermalz et al., 2020, p.764).	1% (N=4)
No Applicable Order	“There are only a few methodologies that provide guidance on how to build and present new IS theory” (Müller et al., 2020, p.23).	9% (N=30)

Table 4. Justification of Published IS Research – Examples.

Papers in the **market order** (N=151) justify their research with positive impacts regarding sales and pricing (Tan et al., 2020, Sun et al., 2020), value creation (Goh and Arenas, 2020, Mandrella et al., 2020), competitive advantage (Park and Mithas, 2020), new business models and innovation (Wiener et al., 2020, Soh and Grover, 2020) or costs, revenues and profits (Bouayad et al., 2020, Qi and Han, 2020). When it comes to the connected grand challenges in this order, particularly publications with a focus on creating value and seizing new business models or innovations approach the mapped SDG [8] ‘Decent Work and Economic Growth’ and [9] ‘Industry, Innovation and Infrastructure’, with special regard to their contribution to economic growth and IT-related innovation.

Papers in the **industrial order** (N=84) strive for reliability or long-term performance of IT infrastructure, systems, functions and processes in an organizational and public context (Kotlarsky et al., 2020). This happens often in the context of improving service and technical quality, risk management or IT security (Kang et al., 2020, Liu et al., 2020). Moreover, papers aim to improve efficiency, effectiveness or fail-avoidance of IT-related implementation and development projects (Lauterbach et al., 2020, Hornyak et al., 2020). The connected SDG [8] ‘Decent Work and Economic Growth’ and [9] ‘Industry, Innovation and Infrastructure’ are approached through the contribution to growth and innovation via thoughtful planning and design as well as reliable IT infrastructure.

Papers in the **domestic order** (N=83) justify research in various ways: In an organizational context, papers aim to enlighten respectively improve hierarchy, power distribution or local work culture and norms in outsourcing agreements as well as between involved stakeholders (Dale and Scheepers, 2020, Malaurent and Karanasios, 2020). In a non-organizational context, publications aim at societal trust (McKnight et al., 2020), social or IT identity (Ogbanufe and Gerhart, 2020, Carter et al., 2020) respectively governmental and societal control (for example, regarding policies or citizen tracking) (Riemer et al., 2020). Approached grand challenges in this order are the SDG [16] ‘Peace, Justice and Strong Institutions’, with a particular focus on the role of governments as strong institutions, as well as [11] ‘Sustainable Cities and Communities’, particularly when it comes to the contribution of societal trust and identity on community building.

Papers in the **civic order** (N=61) justify their research based on the importance for health (including physical and mental health, chronic diseases, addiction and stress) and healthcare (Savoli et al., 2020, Bao et al., 2020), avoiding or dealing with crisis cases such as natural disasters or pandemics (Sakurai and Chughtai, 2020), improving working conditions (Hong et al., 2020) or contribution to appropriate education (Hatakka et al., 2020). Gender equality (Langer et al., 2020) and unemployment (Huang et al., 2020) are also approached. The approached Grand Challenges are the SDG [3] ‘Good Health and

Well-Being’, [4] ‘Quality Education’, [5] ‘Gender Equality’, [8] ‘Decent Work and Economic Growth’ and [10] ‘Reduced Inequalities’, with a strong focus on health and healthcare (SDG [3]).

Papers in the **inspired order** (N=32) strive for improving employee motivation (Silic and Lowry, 2020, Rahrovani and Pinsonneault, 2020) or encouraging users, crowds or customers (Guo et al., 2020, Pu et al., 2020), particularly in the context of IT solution usage or work exhaustion. The papers focusing on employee motivation can be associated with the SDG [8] ‘Decent Work and Economic Growth’, since giving employees positive encouragement for their work contributes to their perception of decent work.

Papers in the **fame order** (N=14) justify their research by pointing out the importance of public opinion when it comes to crisis events or managing social media (Mirbabaie et al., 2020, Mousavi et al., 2020). To a smaller extent, privacy and information disclosure, which could lead to backlashes regarding public image, is utilized as research justification (Wiener et al., 2020). Also, the phenomena of virality and artist fame on online platforms are emphasized (Han et al., 2020a, Krijestorac et al., 2020).

Papers in the **green order** (N=4) emphasize the direct implications of their research with regard to the reduction of CO₂ emissions, climate change and general environmental benefits. While the majority of the papers deal with research in mobility (Cheng et al., 2020, Hafermalz et al., 2020), one paper emphasizes the relevance of crowdsourcing when it comes to environmental challenges (Han et al., 2020b). Regarding the connected SDG, justifications are particularly connected to [13] ‘Climate Action’. Also, an indirect relation between the mobility and environmental focus of the papers to the goal [11] ‘Sustainable Cities and Communities’ can be derived.

Papers with **no applicable order** (N=30) often have a methodological focus (Østerlund et al., 2020), a theory-driven focus (Lukyanenko and Parsons, 2020), or discuss the current state within the IS field (Wynn Jr and Williams, 2020).

4.2 Mapping Results: Grand Challenges (Not) Addressed in IS Research

Mapping the above coding of justifications to the corresponding grand challenges, we found that the SDG [3] ‘Good Health and Well-Being’, [8] ‘Decent Work and Economic Growth’ and [9] ‘Industry, Innovation and Infrastructure’ have received a substantial amount of consideration in the analyzed IS research. Due to the strong market and industrial focus, particularly the grand challenges [8] and [9] are reflected in the publications’ justifications. According to our findings, many papers – coming from different research streams – root their justification in one of these two grand challenges. However, it should be considered that factors like economic growth, innovation or infrastructure are mainly approached from the perspective of organizations in industrialized countries, providing little food for thought on utilizing these contributions in less developed countries.

From a societal perspective, [3] ‘Good Health and Well-Being’ has received by far the most contributions, representing a large share of publications from the civic order. In particular, mental health and stress in both work and private life, as well as healthcare, chronic diseases and health IT with a focus on effective and efficient patient care receive strong consideration in IS research. In this context, it should also be considered that 2020 had certain AIS 8 special issues which might have contributed to the high number of ‘health’ papers, such as the MISQ (chronic diseases) or the EJIS (Covid-19). When it comes to decent work, publications from the inspired and civic order approach the topics employee motivation as well as mental stress in working environments, contributing to the first part of the SDG [8] ‘Decent Work and Economic Growth’. Again, the focus here is mainly on developed countries and sustaining decent working conditions rather than developing ideas to obtain and promote fair working conditions in less-developed countries.

Publications from the domestic order show an inconsistent picture when it comes to the coverage of mapped SDG: While the grand challenge [16] ‘Peace, Justice and Strong Institutions’ was generally approached with regard to the role of governments in, for instance, crisis scenarios (contributing to strong institutions), those parts of the SDG which are focused on inclusivity and stability of society and its institutions are not considered. Comparably, the grand challenge [11] ‘Sustainable Cities and Communities’ was approached with regard to the impact of societal trust and identity on community building. However, the municipal dimension of the SDG was widely neglected.

Yet, the mapping results thus far reveal that many grand challenges are not substantially approached by IS research: Even though climate change and environmental sustainability are societal ‘hot topics’ – having pervasive impact on society and economy alike – contemporary IS research appears to not reflect this relevance. Only 1% of all publications included grand challenges out of the green order in their research justification, including [13] ‘Climate Action’. It is particularly striking that there are no publications in the area of [7] ‘Affordable and Clean Energy’, considering that information technology is perceived to provide major contributions to clean energy research (Ketter et al., 2020). Other connected SDG such as [6] ‘Clean Water and Sanitation’, [12] ‘Responsible Consumption and Production’, [14] ‘Life below Water’ or [15] ‘Life on Land’ are also not considered.

Besides environmental grand challenges, [1] ‘No Poverty’ and [2] ‘Zero Hunger’ are also not addressed by the analyzed IS publications, despite the fact that IS could play an important role in providing – for instance – smart and sustainable agricultural solutions (Lokuge et al., 2016). In general, the majority of IS papers use cases or investigations from developed countries in America, Asia or Europe; only a handful focus on any kind of issue in less-developed countries (e.g., Venkatesh et al., 2020, Hatakka et al., 2020). Other mentions of less-developed countries happen mostly in the context of sourcing or offshoring agreements (Malik and Nicholson, 2020, Zimmermann et al., 2020). Accordingly, the missing consideration of developing countries has a direct impact on the consideration of those SDG which refer to specific problems existing mainly in those countries.

While societal grand challenges such as [4] ‘Quality Education’, [5] ‘Gender Equality’ or [10] ‘Reduced Inequalities’ are approached by very few publications (mostly one publication per SDG), the low number does not allow us to conclude that IS research substantially deals with these SDG. Societal, digital or educational inequalities find very little consideration although IS research could contribute to addressing these inequalities (e.g., Langer et al., 2020).

5 Conclusion and Further Steps

This paper emphasizes that in order to achieve broader societal legitimacy, IS research should approach societal grand challenges. Based on these research-in-progress results, publications from the AIS 8 journals mainly refer to four orders of worth (Market, Industrial, Domestic and Civic). As tentative conclusion we can state that while IS research provides a reasonable number of studies when it comes to challenges in the areas of ‘Good Health and Well-Being’, ‘Decent Work and Economic Growth’ and ‘Industry, Innovation and Infrastructure’, many existing grand challenges in the areas of environmental sustainability or societal equality are widely neglected. In particular, the neglect of issues and cases from developing countries brings a concomitant neglect of grand challenges associated with these countries. Concurrently, these preliminary results amplify the call to the IS field to engage in meaningful research approaching and referencing grand challenges.

As our work is constructively critiquing the IS research field, we need to point out the delimitations and specifics of the approach taken in the study itself: First, due to reasons of feasibility, the study – as reported here – covers the AIS 8 publications only from 2020, creating certain distortions when it comes to the general state of IS research. The AIS 8, despite being among the most recognized IS journals, do not reflect the entirety of IS-related research. There are other IS and non-IS journals publishing IS research that might have a stronger relation to certain sub-fields and specific grand challenges. Second, the focus on a single year limits the possibility of recognizing temporal developments. Also, the one-year focus makes the results more susceptible to time-dependent effects and special issues. Third, the study considers particularly the overall number of publications and coverage of certain research areas. There is no evaluation of the quality and the impact of individual publications.

Going forward, we aim to put our findings into context when it comes to the state of IS research as a whole and to extend the scope of analysis. This includes a critical discussion of whether the low number of IS journal publications related to grand challenges is indeed a sign of neglect, or whether the IS research field faces the problem of losing existing (IS-related) research approaching grand challenges to other research fields and journals. Moreover, possible implications for editorial boards and IS researchers allow a nuanced derivation of a dedicated IS research agenda for societal grand challenges.

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