Agnieszka Ogonowska[1]
ORCID: 0000-0001-6469-9242
Bożena Jaskowska[2]
ORCID: 0000-0002-7484-3161
Media Studies Center IPF, University of the National Education Commission in Krakow

Main Project: Digital Competence and Well-being among Young Adults: A Comparison of Poland, Spain and Slovakia

Comparative Report (pilot studies): An International Cross-Sectional and Correlational Comparative Study

1. Theoretical background

The study presented in the report is grounded in three complementary perspectives: a functional-relational approach to media and digital competences, the European DigComp 3.0 framework, and Martin Seligman's PERMA model, which provides the foundation for the authorial concept of Positive Media Education 4.0. The functional-relational perspective understands media use as closely connected with individuals' needs, motivations, emotions, resources, and social positions. Media competence is therefore understood not merely as a set of technical skills, but as the ability to use media consciously, purposefully, and strategically to support important personal, social, and professional goals.

DigComp 3.0 provides a systematic European framework for understanding digital competence as a combination of knowledge, skills, and attitudes enabling the confident, critical, and responsible use of and engagement with digital technologies in learning, work, and participation in society. The framework covers five core competence areas: information search, evaluation and management; communication and collaboration; digital content creation; safety, well-being and responsible use; and problem identification and solving. DigComp 3.0 also places particular emphasis on competences related to artificial intelligence, cybersecurity, misinformation and disinformation, digital rights and responsibilities, and well-being and inclusion in digital environments.

The PERMA model complements this perspective by introducing a psychological and well-being dimension through five components: Positive Emotion, Engagement, Relationships, Meaning, and Accomplishment. The integration of the functional-relational understanding of media, the competence-based framework of DigComp 3.0, and the PERMA model makes it possible to conceptualise media education not only as a mechanism for protection against digital risks, but primarily as a space for developing critical thinking, reflection, self-regulation, creativity, responsibility, and individual resources that support digital well-being and meaningful participation in digital culture.

2. Executive Summary

[1] agnieszka.ogonowska@uken.krakow.pl
[2] bozena.jaskowska@uken.krakow.pl

The study included 267 young adults: 140 from Poland, 54 from Spain, and 73 from Slovakia. The overall comparative picture is one of substantial similarity rather than sharply differentiated national profiles, although meaningful differences emerge in particular digital practices and experiences. Online communication and problem solving received the highest competence ratings, whereas content creation and self-regulation—especially control over time spent online—were weaker. Within PERMA, Meaning received the highest score in the full sample (M=3.87), while Positive Emotion received the lowest (M=3.63). The strongest overall association between digital competences and PERMA was observed in Spain (ρ=0.65), followed by Poland (ρ=0.54) and Slovakia (ρ=0.48). The results are based on self-reported assessments and correlational analyses and should not be interpreted causally.

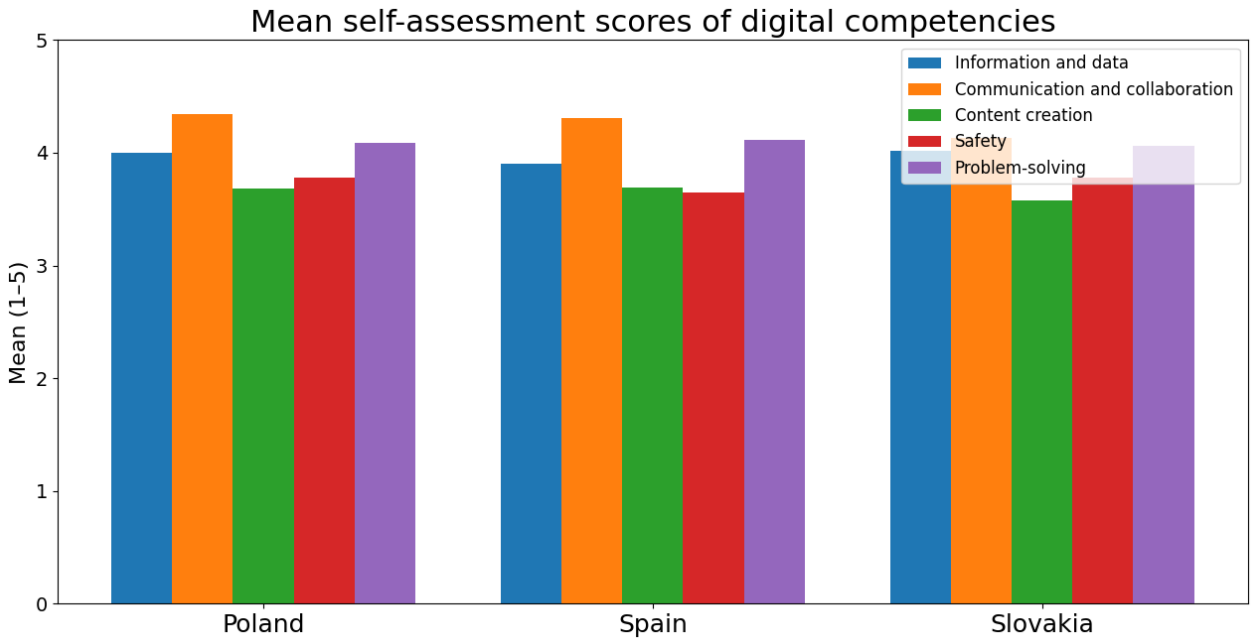

Figure 1. Mean scores across the five areas of digital competences. Source: authors' own analysis

3. Aim, Methodology and Sample Characteristics

The aim of the study was to compare self-reported digital competences and digital well-being among young adults studying in Poland, Spain and Slovakia, and to examine how different dimensions of digital competence are associated with the five components of well-being defined by the PERMA model. Particular attention was paid to similarities and differences between the three national samples and to the role of active, reflective and self-regulatory forms of technology use.

The study employed a comparative cross-sectional design and was conducted in May–June 2026 using a purpose-designed online questionnaire comprising 44 statements rated on a 1–5 Likert scale. The instrument was informed by the DigComp framework and the PERMA model and also included items addressing self-regulation and resilience in the digital environment. For analysis, questionnaire items were grouped into five digital competence areas corresponding to DigComp, while self-regulation and digital resilience were treated as additional cross-cutting dimensions. Composite scores were calculated for the digital competence areas and the five PERMA dimensions, and their associations were examined using Spearman's rank correlations.

Participants were young adults studying fields related to social communication and media.

Group	N	Share of sample	Women	Study level – Bachelor's
Poland	140	52.4%	77.9%	73.6%
Spain	54	20.2%	64.8%	98.1%
Slovakia	73	27.3%	79.5%	83.6%
Total	267	100%	75.7%	—

Source: own research. Values refer to sample structure and recruitment.

The unequal size of the national samples is an important limitation. Poland contributed the largest sample and Spain the smallest. Comparisons of mean scores are therefore useful primarily for describing patterns within this study and should not be treated automatically as evidence of population-level differences.

Key Principle of Interpretation

The questionnaire primarily measured self-reported declarations and self-assessments. A high score should not be equated with objectively measured proficiency, and a correlation should not be interpreted as evidence of causation.

4. Digital Competences – Similarities and Differences

DigComp area	Poland	Spain	Slovakia	Highest score
Information and data	4.00	3.90	4.02	Slovakia
Communication and collaboration	4.34	4.31	4.13	Poland
Content creation	3.68	3.69	3.58	Spain
Safety	3.78	3.65	3.78	Poland and Slovakia
Problem-solving	4.09	4.11	4.06	Spain

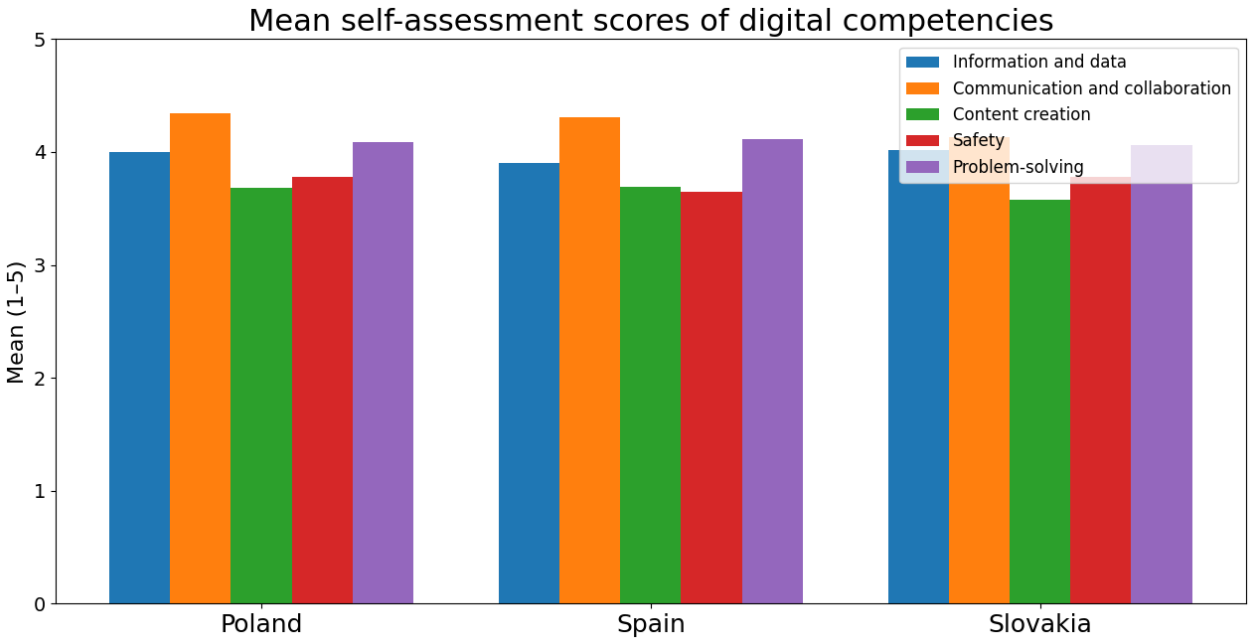

Figure 2. Comparison of mean digital competency scores (1–5). Source: authors' own analysis

The most similar profile appears in problem solving, with means ranging from 4.06 to 4.11. Communication is also rated highly across all three groups, with Poland highest (M=4.34) and Slovakia lowest (M=4.13). Content creation is the weakest of the five areas, although national differences remain small. The largest contrasts occur at the level of individual information and safety competences rather than across entire competence domains.

From an interpretive perspective, the common denominator is strong confidence in functional digital tasks: finding information, communicating, and solving problems. At the same time, more reflective practices—verification, critical evaluation, content creation, and time management—are reported less confidently. The resulting profile is therefore not one of low digital competence, but of uneven competence development.

4.1. Information and Data – From Searching to Critical Evaluation

Competency	Poland	Spain	Slovakia
Quick information search	4.39	4.35	4.23
Identifying reliable sources	3.88	3.93	4.05
Verification across multiple sources	3.75	3.65	3.79
Critical evaluation of information	3.59	3.74	3.82
Understanding algorithms	4.40	3.83	4.21

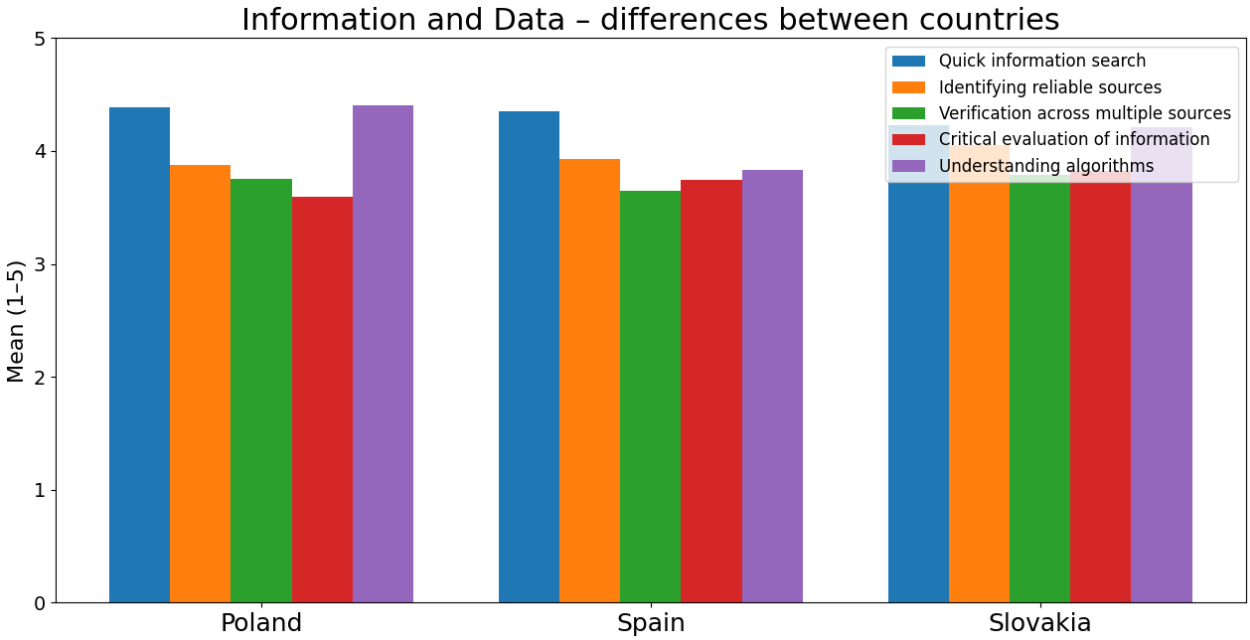

Figure 3. Information competency profile. Source: authors' own analysis

Across all three groups, self-reported proficiency in quickly finding information is high, while scores decline when tasks require systematic verification and critical evaluation. Poland records the highest self-assessment of understanding algorithms (M=4.40), whereas Slovakia records the highest scores for identifying reliable sources (M=4.05) and critically evaluating information (M=3.82). Spain occupies an intermediate position on these measures.

The central comparative pattern is therefore not a sharp national divide but a shared asymmetry: information is easier to find than to verify. This is one of the most consequential findings for media and digital education, as it highlights the need to move from information access towards critical judgement, source comparison, and reflective evaluation.

4.2. Communication, Content Creation and Agency

Area	Poland	Spain	Slovakia	Comparative interpretation
Communication and collaboration	4.34	4.31	4.13	high across all groups
Content creation	3.68	3.69	3.58	lowest level; small differences
Agency / problem-solving	4.09	4.11	4.06	most balanced profile

Online communication is one of the strongest resources across all three groups. Poland records the highest score, while Spain is almost identical; Slovakia is somewhat lower but remains above 4.0. Content creation is weaker, with means ranging from 3.58 to 3.69. This lower self-assessment should not automatically be interpreted as a deficit, since some users may primarily function as content recipients rather than producers.

The relationship between these patterns and well-being is particularly important. Digital agency shows a relatively strong association with Accomplishment, while content creation is associated with Meaning. The findings therefore suggest that, for well-being, it may matter not only whether people know how to use technology, but whether they can use it actively—to create, express themselves, pursue goals, and experience a sense of efficacy.

4.3. Safety and Self-Regulation – The Greatest Common Weakness

Indicator	Poland	Spain	Slovakia
Personal data protection	3.71	3.26	3.66
Online privacy practices	4.14	3.76	3.86
Online–offline balance	3.90	4.13	4.16
Threat recognition	4.04	3.93	4.14
Responding to difficult/dangerous situations	3.73	3.39	3.73
Control over time online	2.95	2.93	3.16
Recognizing burdensome media use	4.03	4.19	3.74

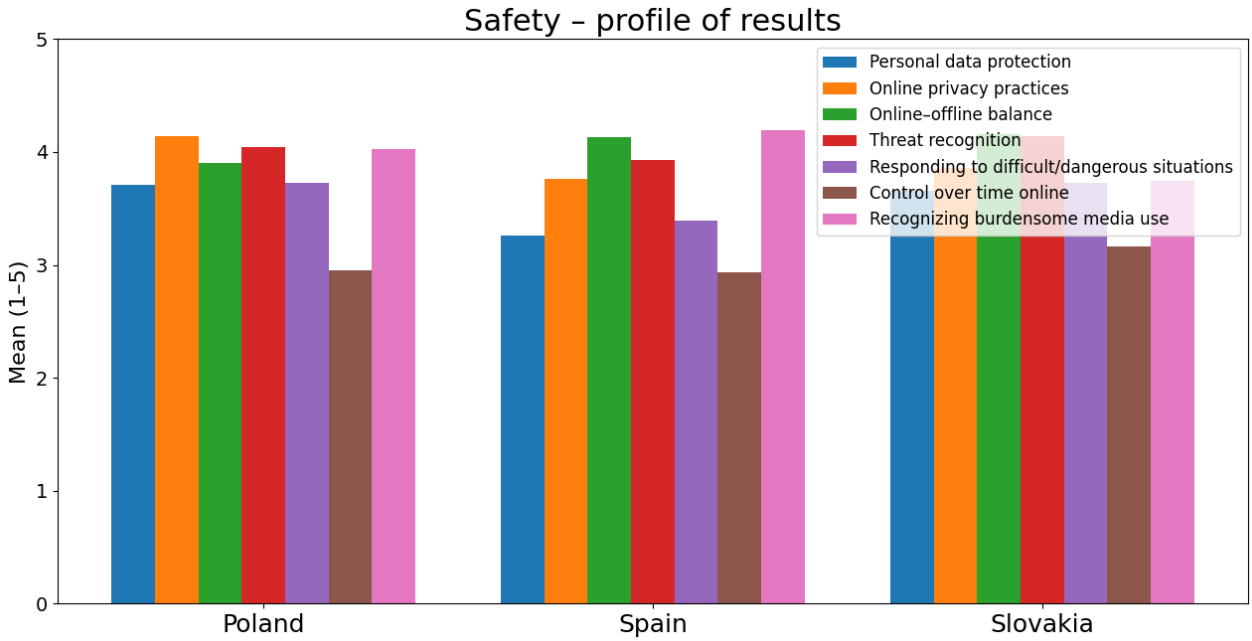

Figure 4. Safety and self-regulation – mean scores, 1–5. Source: authors' own analysis

The clearest common difficulty concerns control over time spent online: 2.95 in Poland, 2.93 in Spain, and 3.16 in Slovakia. At the same time, recognition of digital threats is rated highly (4.04, 3.93, and 4.14, respectively). The contrast points to a clear gap between awareness and action. Across the full sample, only 38.6% of respondents reported being able to control their time online, compared with 83.9% who reported being able to recognise threats (responses „rather yes" and „definitely yes" combined).

Spain stands out for lower self-assessments of personal data protection (3.26) and responding to difficult situations (3.39), while recording the highest score for recognising burdensome media use (4.19). Poland records the highest score for online privacy practices (4.14), whereas Slovakia reports the strongest online–offline balance (4.16).

These findings suggest that digital resilience should not be defined solely in terms of risk awareness. It also depends on the capacity to regulate attention, time, and behaviour, particularly when digital environments become demanding or distracting.

5. Digital Well-being – The PERMA Model

PERMA dimension	Poland	Spain	Slovakia	Total
P – Positive Emotion	3.73	3.46	3.55	3.63
E – Engagement	3.68	3.61	3.62	3.65
R – Relationships	3.88	3.49	3.52	3.70
M – Meaning	3.86	3.75	4.00	3.88
A – Accomplishment	3.85	3.79	3.77	3.82

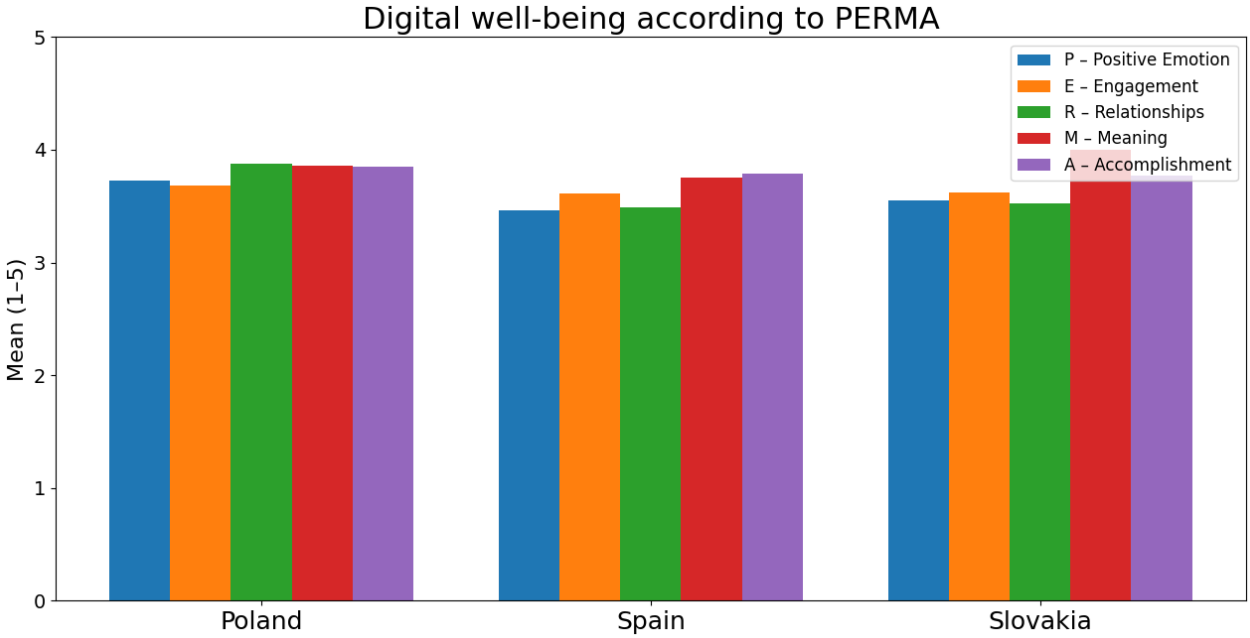

Figure 5. The five PERMA dimensions across the three countries. Source: authors' own analysis

Across the full sample, Meaning received the highest score (3.87), followed by Accomplishment (3.82), Relationships (3.70), Engagement (3.65), and Positive Emotion (3.63). Poland recorded the highest scores for Positive Emotion, Relationships, and Accomplishment, while Slovakia recorded the highest score for Meaning. Engagement was remarkably similar across the three groups.

The largest difference concerns Relationships: 3.88 in Poland, compared with 3.49 in Spain and 3.52 in Slovakia. At the same time, a strong common element remains: respondents perceive online communication as a means of building and maintaining relationships. The contrast between high perceived communicative utility and the weaker correlation between competence and relational well-being is therefore particularly noteworthy.

For Meaning, Slovakia reached 4.00, partly reflecting the high value attached to self-expression through content creation and to opportunities for competence development. For Positive Emotion, Poland scored 3.73, Spain 3.46, and Slovakia 3.55. In all three countries, the sense of online safety was among the weaker elements of this dimension, indicating that positive digital experiences coexist with an incomplete sense of security.

6. Correlations: Are Digital Competences Associated with Well-being?

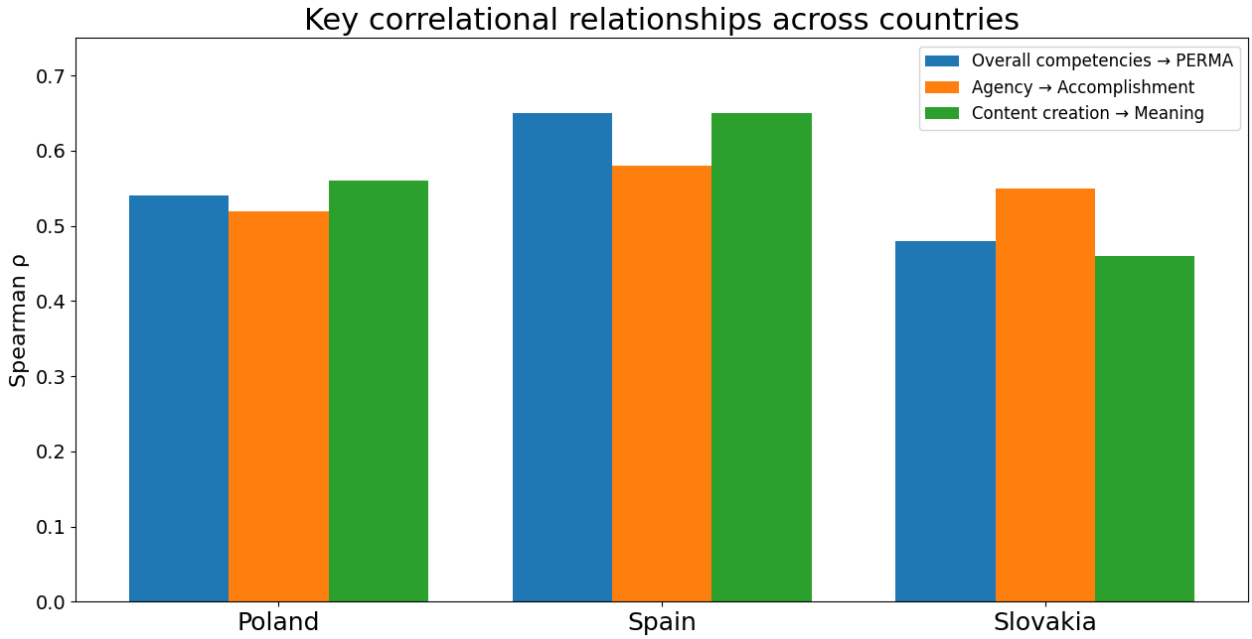

Figure 6. Three key correlational relationships. Source: authors' own analysis

Relationship	Poland	Spain	Slovakia	Pattern
Overall competences ↔ overall PERMA	0.54	0.65	0.48	positive in all countries
Agency ↔ Accomplishment	0.52	0.58	0.55	most stable pattern
Content creation ↔ Meaning	0.56	0.65	0.46	positive in all countries

Across the full sample, the overall digital competency score correlated positively with overall PERMA ($\rho=0.56$; $p<0.001$). The direction of the relationship was consistent across countries, although its strength varied: the association was strongest in Spain and weaker in Poland and Slovakia. The two most stable cross-country relationships were those between digital agency and Accomplishment and between content creation and Meaning.

It is equally important to consider what the correlations do not show. Information competences had relatively weak associations with well-being, while Relationships was the PERMA dimension least strongly associated with overall competence. This does not mean that information or relationships are unimportant; rather, within this sample, their self-reported levels were less strongly associated with overall subjective digital well-being.

Correlation coefficients describe the co-occurrence of variables. They do not establish that digital competences cause higher well-being, or that higher well-being causes stronger digital competences.

7. Synthesis of Similarities and Differences and Recommendations

Dimension	Most important similarity	Most important difference	Implication
Competences	high self-assessments of communication and problem-solving	Poland: highest communication; Spain: highest problem-solving	maintain functional competences
Information	easy information search	Poland: algorithms; Slovakia: critical evaluation	strengthen verification and critical thinking
Creation	lower scores across all countries	Slovakia lower overall, but higher in the meaning associated with creation	develop active creation
Safety	high threat recognition	Spain: lower data protection/responding	combine awareness with practice
Self-regulation	weak time control	Slovakia slightly higher	teach attention and time management
PERMA	similar engagement	Poland: Relationships/P/A; Slovakia: Meaning	programmes can be shared but context-sensitive
Correlations	positive association between competences and PERMA	strongest overall in Spain	emphasize agency and creativity

8. Limitations and Conclusion

Limitations of the Analysis

The analysis is based on self-assessments, unequal national samples, and data from three specific universities. Age was not recorded as a separate variable, and the questionnaire used selected elements of DigComp rather than a full operationalisation of all specific competences. These limitations mean that the findings should be read as evidence of patterns within the study sample rather than as direct estimates of national populations.

Conclusion

The central conclusion is that young adults in Poland, Spain, and Slovakia display a broadly shared pattern of digital functioning. Across countries, participants report relatively strong competence in basic and functional uses of technology, particularly communication, task performance, and problem solving. National differences are concentrated mainly in the intensity of particular competences and in the strength of their associations with well-being, rather than in fundamentally different profiles of digital functioning. The findings therefore point more towards a shared pattern across the three samples than towards three distinct national models.

At the same time, the findings show that digital competences do not contribute equally to well-being. Across the full sample (N=267), overall self-reported digital competence was positively associated with overall PERMA ($\rho=0.56$; $p<0.001$). The strongest associations concerned Accomplishment ($\rho=0.57$), Meaning ($\rho=0.52$), and Engagement ($\rho=0.50$), while Relationships showed the weakest association ($\rho=0.26$). In this sample, digital competence is therefore most closely related to effective action, goal attainment, engagement, and a sense of meaning.

The most consistent cross-country relationships involved active and agentic uses of technology. Digital agency was associated with Accomplishment at $\rho=0.52$ in Poland, $\rho=0.58$ in Spain, and $\rho=0.55$ in

Slovakia. Content creation was associated with Meaning at ρ=0.56, ρ=0.65, and ρ=0.46, respectively. The recurrence of these patterns suggests that digital well-being may depend less on access to technology or efficient information consumption than on opportunities to act, create, express oneself, pursue goals, and experience efficacy through technology.

The findings also point to an important distinction between functional and critical-reflective competences. Information competences, although essential for effective functioning in digital environments, showed relatively weak associations with overall PERMA: ρ=0.25 in Poland, ρ=0.08 in Spain, and ρ=0.17 in Slovakia. Self-reported proficiency in finding, evaluating, and processing information therefore does not translate straightforwardly into higher subjective well-being. This supports an educational shift from information proficiency alone towards critical evaluation, conscious decision-making, recognition of mechanisms of influence, and purposeful use of information.

The national samples also differed in the configuration of these relationships. The strongest correlation between overall digital competences and overall PERMA was observed in Spain (ρ=0.65), followed by Poland (ρ=0.54) and Slovakia (ρ=0.48). These differences should not be interpreted as statistically confirmed differences between countries, because no formal test of differences between correlation coefficients was conducted. The defensible conclusion is that the direction of the relationship is shared, while its strength varies across contexts.

The clearest cross-country contrasts concern safety and communication. In Spain, digital safety was relatively strongly associated with overall PERMA (ρ=0.51), compared with ρ=0.22 in Poland and ρ=0.16 in Slovakia. A similar pattern emerged for communication: ρ=0.44 in Spain, ρ=0.42 in Poland, and ρ=0.20 in Slovakia. Poland, meanwhile, stood out for high self-reported communication competence and agency, as well as a comparatively high level of relational digital well-being.

Relationships constitute a particularly interesting case. This is the PERMA dimension least strongly associated with digital competences, even though respondents regard online communication as an important tool for building and maintaining relationships. Across the full sample, overall digital competence correlated with Relationships at ρ=0.26, and in the Polish sample the association was only ρ=0.17. The findings suggest that technological or communicative proficiency alone does not guarantee higher relational well-being; the purpose, quality, and context of technology use may matter more than efficiency or frequency of communication.

The comparison therefore points to a more precise interpretation: the central challenge is not a general lack of digital competence, but the uneven development of its dimensions and the gap between knowing how to use technology and knowing how to use it critically, purposefully, creatively, and in ways that support well-being. Participants possess the basic resources required for effective digital functioning, but further development should focus on critical evaluation, creative use, agency, self-regulation, attention and time management, and the pursuit of meaningful goals.

The most defensible educational approach is therefore neither to design three entirely separate national models nor to transfer a single universal programme unchanged. The findings support a shared competency core—critical evaluation of information, communication, content creation, safety, agency,

self-regulation, and responsible technology use—combined with local adaptation of examples, problems, and teaching practices. Such an approach reflects both the common patterns identified across the three countries and the contextual variation in the strength of particular relationships.

Ultimately, the study suggests that digital well-being is shaped not simply by the level of technological competence, but by how competences are activated in everyday life. The forms of technology use with the greatest apparent well-being potential are those that strengthen agency, enable creation and self-expression, support goal attainment, and give digital activity personal meaning. The implication for media and digital education is clear: its purpose should extend beyond technical proficiency to the development of conscious, critical, creative, self-regulated, and autonomous forms of technology use.

References

Council of the European Union. (2018). Council recommendation of 22 May 2018 on key competences for lifelong learning. Official Journal of the European Union, C 189, 1–13. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32018H0604(01)

Cosgrove, J., & Cachia, R. (2025). *DigComp 3.0: European Digital Competence Framework – Fifth Edition.* Publications Office of the European Union. https://doi.org/10.2760/0001149

Dyer, J. H., & Singh, H. (1998). The relational view: Cooperative strategy and sources of interorganizational competitive advantage. *Academy of Management Review*, 23(4), 660–679. https://doi.org/10.5465/amr.1998.1255632

Gaggioli, A., Villani, D., Serino, S., Baños, R., & Botella, C. (2019). Editorial: Positive technology: Designing e-experiences for positive change. *Frontiers in Psychology*, 10, Article 1571. https://doi.org/10.3389/fpsyg.2019.01571

Jenkins, H., Ito, M., & boyd, d. (2016). *Participatory culture in a networked era: A conversation on youth, learning, commerce, and politics*. Polity Press.

Ogonowska, A. (2017). Kompetencje cyfrowe we współczesnej cywilizacji medialnej. *Annales Universitatis Paedagogicae Cracoviensis. Studia de Cultura*, 8(2), 14–26. https://studiadecultura.uken.krakow.pl/article/view/3352

Ogonowska, A. (2019). Cyberpsychologia. Nowe perspektywy badania mediów i ich użytkowników. *Annales Universitatis Paedagogicae Cracoviensis. Studia de Cultura*, 10(4), 5–18. https://doi.org/10.24917/20837275.10.4.1

Ogonowska, A. (2022). Od intrygi i spisku do zagrożeń hybrydowych. Nowe kompetencje i edukacja medialna w cyberkulturze 3.0. *Annales Universitatis Paedagogicae Cracoviensis. Studia de Cultura*, 14(1), 7–22. https://doi.org/10.24917/20837275.14.1.1

Ogonowska, A. (2024). Kultury i narracje audialne w ujęciu neurokognitywno-rozwojowym i relacyjno-funkcjonalnym. W stronę użytkownika. *Annales Universitatis Paedagogicae Cracoviensis. Studia de Cultura*, 16(3), 5–15. https://doi.org/10.24917/20837275.16.3.1

Ogonowska, A. (2026). Edukacja medialna 4.0 w działaniu: Model SRF. W stronę medioznawstwa stosowanego oraz edukacji postcyfrowej. *Annales Universitatis Paedagogicae Cracoviensis. Studia de Cultura*, 18(1), 7–41. https://doi.org/10.24917/20837275.18.1.1

Reinecke, L., & Oliver, M. B. (Eds.). (2016). *The Routledge handbook of media use and well-being: International perspectives on theory and research on positive media effects*. Routledge. https://doi.org/10.4324/9781315714752

Riva, G., Baños, R. M., Botella, C., Wiederhold, B. K., & Gaggioli, A. (2012). Positive technology: Using interactive technologies to promote positive functioning. *Cyberpsychology, Behavior, and Social Networking*, 15(2), 69–77. https://doi.org/10.1089/cyber.2011.0139

Seligman, M. E. P. (2011). *Flourish: A visionary new understanding of happiness and well-being*. Free Press.

Waters, L., & Loton, D. (2021). Tracing the growth, gaps, and characteristics in positive education science: A long-term, large-scale review of the field. *Frontiers in Psychology*, 12, Article 774967. https://doi.org/10.3389/fpsyg.2021.774967