Examining the Relationship of Hungarian Students with Agile Approaches

Istvan Mark Toth
Obuda University

Agnes Csiszarik-Kocsir
Obuda University

Abstract: A number of abilities and skills may be required to perform the tasks of a given job efficiently, effectively, and successfully. However, there is one trait that has been appearing in more and more job advertisements in recent years, and across a wider spectrum, as a requirement or at least an advantage: agility. Whether a job applicant is truly agile - and not just claiming to be - usually only becomes apparent later, when they have proven themselves through their work and attitude. However, whether someone is familiar with the basics of the agile approach or is able to identify with them without specific knowledge, can be determined relatively quickly. In the research that forms the basis of this study, we attempted the latter: we examined Hungarian university students' identification with the four pillars and values of the Agile Manifesto, which was originally created in the world of software development in 2001 but is now much more widely known. Our main goal was to gain a better understanding of the relationship between future employees and the agile approach, and to gain insight into whether agility is rather distant from them or whether working according to the agile approach is unlikely to cause them any particular difficulty.

Keywords: Agility, Agile approaches, Agile manifesto, Hungarian students

Introduction

Effective changes in management, flexibility, and adaptability have become more important than ever before in today's customer-centric world and in the age of digitalization, both for organizations and individuals. This is what the software developers who drafted the Agile Manifesto in 2001 wanted to find a solution for, and today it is a widely accepted basis for the agile approach worldwide. Its authors and first signatories defined four pillars and values: individuals and personal communication between them, working software, customer collaboration, and effective change management (Beck et al., 2001). Nowadays, science, business, and society are all interested in minimizing the negative consequences of unexpected events, which is why organizational agility is becoming increasingly popular (Sahoo et al., 2023). Research has shown that agile projects are four times more likely to succeed and one-third less likely to fail than projects implemented using the classic waterfall model (Serrador & Pinto, 2015, Mergel et al., 2020).

Agility must be integrated into the mindset, structure, and culture of the entire organization. This will enable them to understand their environment and identify opportunities, thereby enabling them to adapt and respond to unexpected situations and difficult circumstances (Dalcher, 2021). The introduction of an agile approach requires significant preparation on the part of organizations (Abidin, 2017): the possibilities and necessity of transforming strategy, organizational structure, and organizational culture must be considered in advance (Dang et al., 2024). It may well be that rather than considering a large-scale agile transformation, it would be more practical to implement it in stages (Kucharska et al., 2024). There is no single recipe: different methods and tools may be appropriate for different organizational structures and cultures (Bunyakiati & Surachaikulwattana, 2016). Blaskovics and his co-authors examine how the use of agile tools affects team collaboration, innovation

capabilities and efficiency. According to them, agile methodology supports continuous development and promotes the successful implementation of projects in the Hungarian IT environment (Blaskovics et al., 2023). Mészáros (2024) examines the impact of agile methodology on competitiveness, particularly in an economic and technological environment characterised by rapid change. The application of an agile approach enables organisations to be flexible and adapt more effectively to market demands. Agility promotes the acceleration of innovation and improves internal operational efficiency, thereby supporting competitive performance.

A supportive, accepting environment is extremely important when applying agile values: if this is lacking, it can cause tension (Horlach & Drechsler, 2020). Leaders who possess agile characteristics – such as adaptability, flexibility, and effective decision-making – contribute significantly to increasing the agility of an organization (Arifin & Purwanti, 2023). Among other things, the agile approach helps individuals take responsibility and facilitates the integration of new team members (Wayant, 2022). However, developing an agile mindset in individuals often encounters difficulties (Ozkan et al., 2023). Therefore, it matters whether someone is receptive to learning this mindset or not. Agility briefly means nimbleness, flexibility, versatility, adaptability, and resilience (Dalcher, 2021). Some say it is a concept of how companies should operate in today's world in order to be successful (Denning, 2018). It is a new type of management model in which companies focus on exploring opportunities and finding solutions as quickly as possible through rapid experimentation (Denning, 2017). Agile operation and thinking now extend beyond the classic IT framework. Balogh and Varga's (2024) article examines the development of modern digital services, known as superapps, through an agile lens, which take user experience and innovation management to a new level. Agility plays a key role in integrating customer focus and innovation, which are sources of competitive advantage in the digital age.

In our study, we focus on today's university students, who, according to generational theory, are members of Generation Z, as they were born in the late 1990s or early 2000s (Törőcsik et al., 2014). They are the "digital natives" (Prensky, 2001), who have access to computers, mobile phones, and the internet from an early age (Tar, 2011), and they are the ones who generally prefer podcasts and streaming services over television, radio, and print media. At the same time, their shopping habits are also completely different: they do most of their shopping online, which they consider safer than the real world (Csiszárik-Kocsir et al., 2021). In addition, they are the ones who are now approaching the labor market.

Method

We conducted a non-representative survey using questionnaires to examine Hungarian university students' attitudes toward agile thinking. The survey was conducted online using a pre-tested, complex, standardized questionnaire. The sample consisted of Hungarian university students who were studying at Óbuda University in the spring of 2025. A total of 144 students participated in the research: we filtered out those who belonged to Generation Z based on their date of birth, resulting in a total of 137 valid responses. The questions examined the presence of certain competencies, skills, and abilities related to the values of the Agile Manifesto: respondents could choose on a Lickert scale from 1 to 6 how much a given trait characterized them, where 1 was not at all and 6 was completely. We examined a total of seventeen characteristics that, in our opinion and based on our experience to date, are or may be related to the agile approach. These are summarized in Figure 1.
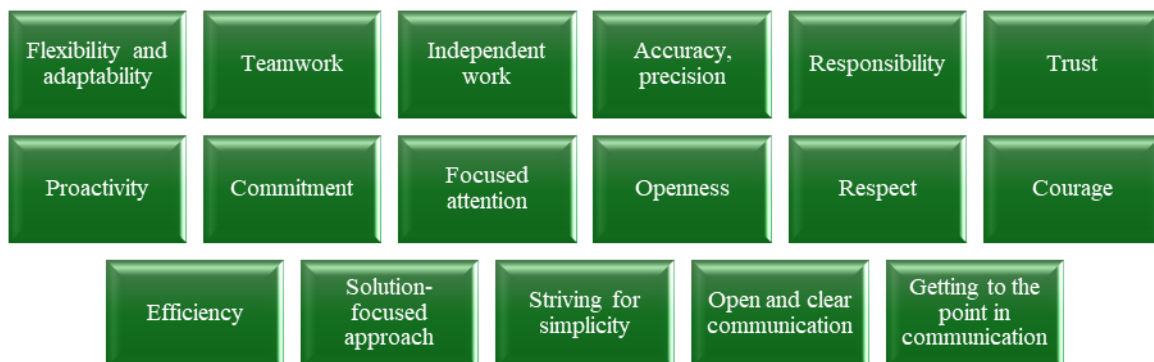

Figure 1. Competencies, skills, and abilities examined in the study

In this study, we focus on the four characteristics that, in our opinion, best cover the four values listed in the Agile Manifesto:

- open and honest communication – as a manifestation of the value of individuals and personal communication between them;
- solution-oriented thinking – as one of the most important characteristics necessary to achieve the goal of working software (or, more generally, a working end result);
- teamwork – as the key to cooperation with the customer;
- flexibility and adaptability – as the hallmarks of effective change management.

Results and Discussion

Regarding open and clear communication – as a manifestation of the value of individuals and personal communication between them – 87% of respondents (119 people) chose a value of 5 or 6 on a scale of 1 to 6, meaning that they agreed somewhat or completely, and 58% (80 people) considered it to be completely true for themselves, i.e., they chose the maximum value. This is shown in Figure 2.
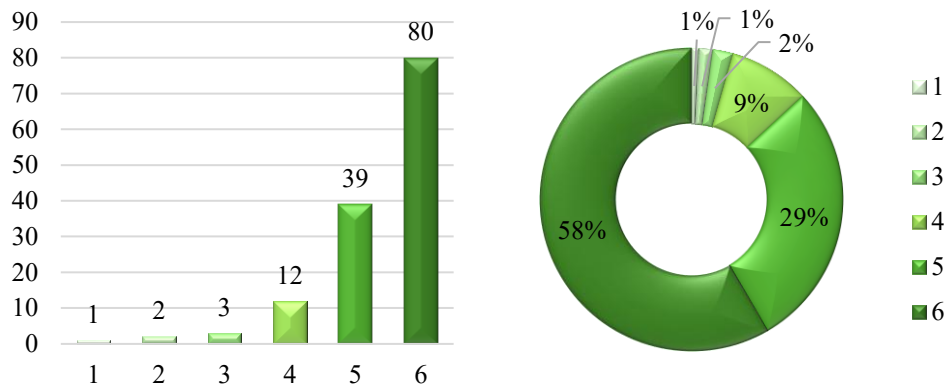

Figure 2. Distribution of responses to open and honest communication

The average value of the responses was 5.38, with a standard deviation of 0.93. As Figure 3 shows, solution-focusedness – which we considered to be one of the most important characteristics for achieving a successful end result – was considered even more characteristic by the respondents: 64% (87 people) considered themselves to be completely solution-oriented, i.e., they gave themselves the maximum score, and a total of 91% (125 people) chose a score of 5 or 6, i.e., they felt it was somewhat or completely characteristic of them.
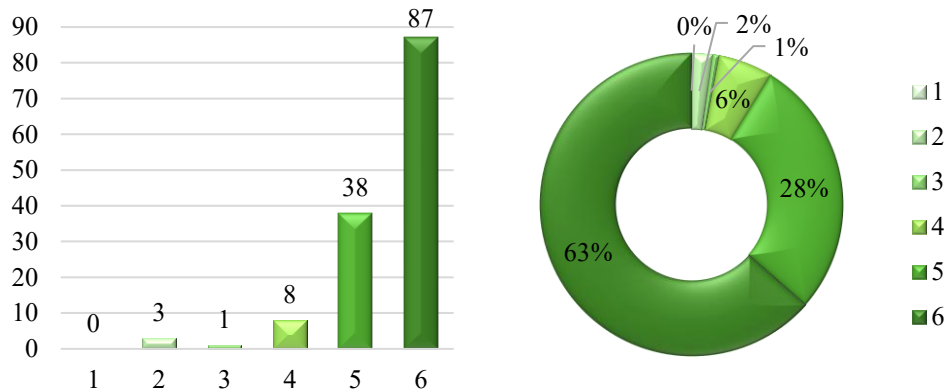

Figure 3. Distribution of responses regarding solution-focusedness

Here, the average was 5.5, with a standard deviation of 0.82. In teamwork, the responses were slightly more evenly distributed, as shown in Figure 4. Only 37% (51 people) felt they were complete team players, i.e., they marked the maximum value, and a total of 73% (100 people) felt they were rather or completely strong in this area, i.e., they chose at least a value of 5.
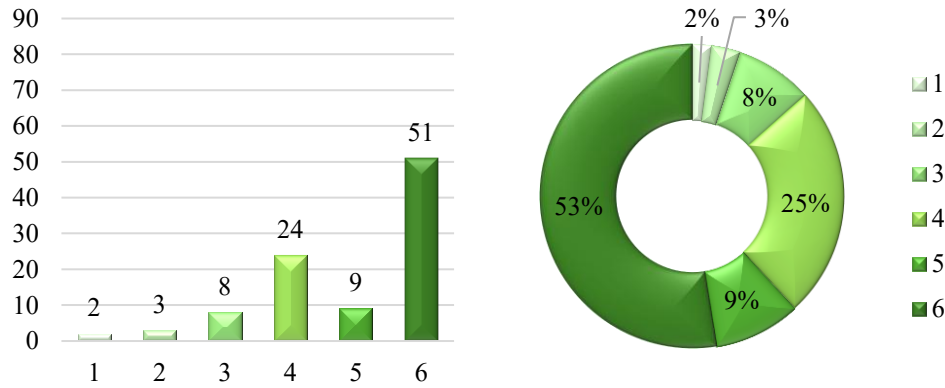
Figure 4. Distribution of responses regarding teamwork

The average value assigned to the responses was 4.96, with a standard deviation of 1.1. Finally, perhaps the most important characteristic of all, flexibility and adaptability, was considered to be completely true by 41% of respondents (56 people), while a total of 84% (115 people) considered it to be somewhat or completely true. This is shown in Figure 5.
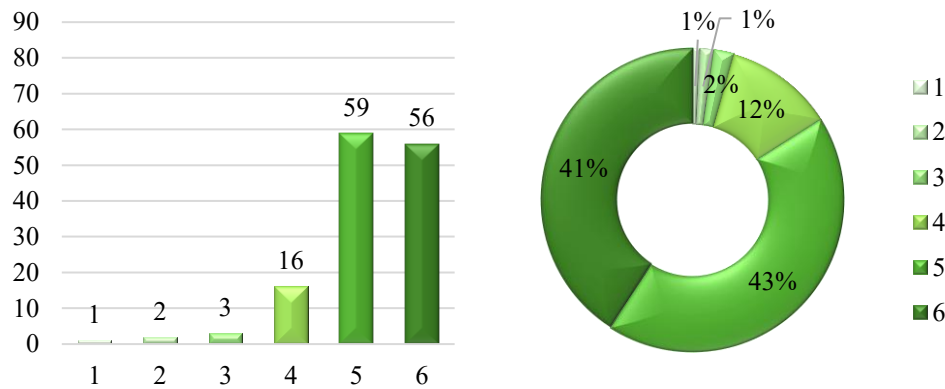

Figure 5. Distribution of responses regarding flexibility and adaptability

Here, the average was 5.18, with a standard deviation of 0.91. Comparing the responses to the four characteristics above, it can be seen that solution-focusedness received the highest average (5.5) and had the lowest standard deviation (0.82). This is illustrated in Figure 6.
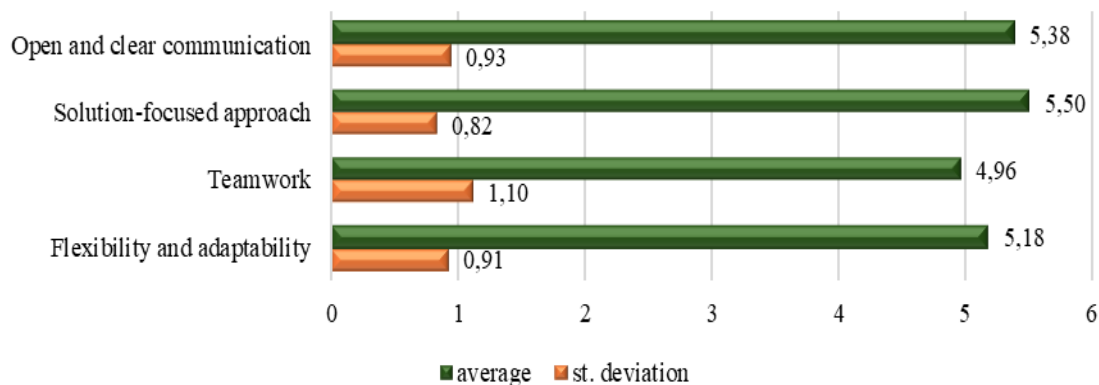

Figure 6. Averages and standard deviations of responses to the four attributes examined based on the Agile Manifesto

If we examine these four characteristics among all seventeen characteristics examined, we can say that solution-focusedness received the second highest average score (5.5), with only respect receiving a higher average score (5.61). Solution-focusedness had one of the lowest standard deviations, meaning that respondents relatively uniformly identified themselves as having a high level of this trait. The third highest average (5.42) (and the

lowest standard deviation) was given to striving for clarity in communication, which, although less directly related to the Agile Manifesto, can often be important in agile operations. This was followed by open and clear communication (5.38), which was also examined. All of these are illustrated in Figure 7 (the values of the four separately examined characteristics are marked in red).
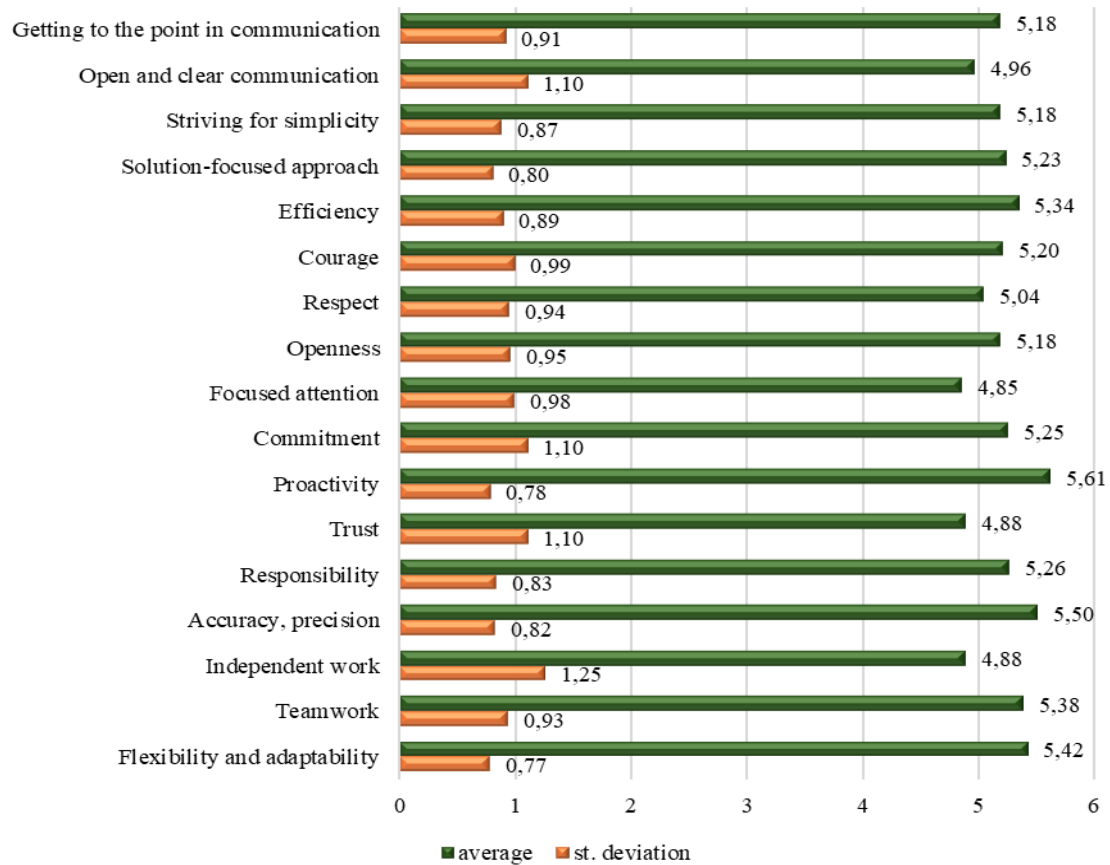

Figure 7. Means and standard deviations of responses for all characteristics examined

Conclusion

Based on the responses received and their evaluation, we concluded that the Hungarian university students surveyed are generally not far removed from the qualities required for the values set out in the agile manifesto. This was confirmed by the fact that the responses for the four main characteristics examined were clearly concentrated at the top of the scale, resulting in high average scores (around 5 or above 6 out of 6). Respondents considered solution-orientedness to be particularly true of themselves: it received one of the highest averages with one of the smallest standard deviations. Perhaps somewhat surprisingly, teamwork received one of the lowest averages and one of the highest standard deviations. This is probably due to the fact that they have not had much opportunity to practice this, or perhaps they do not have good experiences with it.

From all this, we conclude that the majority of future employees will be able to apply an agile approach to their work, thanks to their open and clear communication, solution-oriented mindset, teamwork, flexibility, and adaptability. Since the survey is not representative, no general conclusions can be drawn, but it may provide some insight into the attitude of future employees towards agile thinking and could form the basis for a later, more extensive study.

Scientific Ethics Declaration

* The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

Conflict of Interest

Funding

Acknowledgements or Notes

References

Abidin, F. A. Z. (2017). Agile transition model based on human factors. *International Journal of Innovative Computing, 7*(1), 23–32

Arifin, R., & Purwanti, H. (2023). Examining the influence of leadership agility, organizational culture, and motivation on organizational agility: A comprehensive analysis. *Golden Ratio of Human Resource Management, 3*(1), 33–54.

Balogh, A., & Varga, J. (2024). Superapps: At the crossroads of enhanced customer experience and innovation management theories. *Edelweiss Applied Science and Technology, 8*(4), 848–860.

Beck, K., Beedle, M., van Bennekum, A., Cockburn, A., Cunningham, W., Fowler, M., Grenning, J., Highsmith, J., Hunt, A., Jeffries, R., Kern, J., Marick, B., Martin, R. C., Mellor, S., Schwaber, K., Sutherland, J., & Thomas, D. (2001). *Manifesto for agile software development*. Retrieved from https://www.agilemanifesto.org

Blaskovics, B., Czifra, G., Klimkó, Z., & Szontagh, D. (2023). Impact of the applied project management methodology on the perceived level of creativity. *Acta Polytechnica Hungarica, 20*(3), 101–120.

Bunyakiati, P., & Surachaikulwattana, P. (2016). Fit between agile practices and organizational cultures. In *Proceedings of the 13th International Joint Conference on Computer Science and Software Engineering (JCSSE)* (pp. 1–6). IEEE.

Csiszárik-Kocsir, Á., Garai-Fodor, M., & Varga, J. (2021). What has become important during the pandemic? Reassessing preferences and purchasing habits as an aftermath of the coronavirus epidemic through the eyes of different generations. *Acta Polytechnica Hungarica, 18*(11), 49–74.

Dalcher, D. (2021). Scaling up to business agility. *PM World Journal, 10*(5), 1–8.

Denning, S. (2017). The age of Agile. *Strategy & Leadership, 45*(1), 3–10. Denning, S. (2018). *The age of Agile: How smart companies are transforming the way work gets done*. AMACOM.

Dang, H., Dacre, N., Baxter, D., & Ceylan, S. (2024). What is agile project management? Developing a new definition following a systematic literature review. *Project Management Journal, 55*(4), 668–688.

Horlach, B., & Drechsler, A. (2020). It's not easy being agile: Unpacking paradoxes in agile environments. In *Agile processes in software engineering and extreme programming – Workshops* (pp. 182–189). Springer.

Kucharska, W., Kucharski, M., Balcerowski, T., & Jussila, J. J. (2024). Who is an agile leader? Technological vs. non-technological mindset employees' views. In *Proceedings of the European Conference on Management, Leadership and Governance* (Vol. 20, pp. 246–254).

Mergel, I., Ganapati, S., & Whitford, A. B. (2020). Agile: A new way of governing. *Public Administration Review, 81*(1), 161–165.

Mészáros, Á. (2024). Agile methodology for competitiveness. In A. Szakál (Ed.), *Proceedings of the IEEE 11th International Conference on Computational Cybernetics and Cyber-Medical Systems (ICCC 2024)* (pp. 197–200). IEEE.

Ozkan, N., Eilers, K., & Gok, M. S. (2023). Back to the essential: A literature-based review on agile mindset. In *Proceedings of the 18th Conference on Computer Science and Intelligence Systems* (pp. 201–211).

Prensky, M. (2001). Digital natives, digital immigrants. *On the Horizon, 9*(5), 1–6.

Sahoo, T., Sahoo, C. K., & Chaubey, A. (2023). Evolution of organizational agility research: A retrospective view. *Benchmarking: An International Journal, 31*(4), 1181–1224.

Serrador, P., & Pinto, J. K. (2015). Does agile work? A quantitative analysis of agile project success. *International Journal of Project Management, 33*(5), 1040–1051.

Tar, A. (2011). *Generation z*. Tericum.

Törőcsik, M., Szűcs, K., & Kehl, D. (2014). Thinking about generations: Lifestyle groups of generation Z and Y. *Marketing & Management, 2*, 3–15.

Wayant, N. M. (2022). *Adapting agile philosophies and tools for a research environment* (US Army Engineer Research and Development Center, TN-22-2).

Author(s) Information

István Márk Tóth	Ágnes Csiszárik-Kocsir
Obuda University	Prof. Dr.
Keleti Károly Faculty of Business and Management	Obuda University,
15. Tavaszmező street 1084 Budapest, Hungary	Keleti Károly Faculty of Business and Management
Contact e-mail: *toth.mark@uni-obuda.hu*	15. Tavaszmező street 1084 Budapest, Hungary

To cite this article:

Toth, I.M., & Csiszarik-Kocsir, A. (2025). Examining the relationship of Hungarian students with agile approaches. *The Eurasia Proceedings of Educational and Social Sciences (EPESS), 47,* 238-244.