

CHARACTERISTICS OF A LEADERSHIP DEVELOPMENT PROGRAM PILOT RESEARCH AT A HUNGARIAN SME OPERATING IN THE ICT SECTOR

Judit TÖRÖK-KMOSKÓ¹, Krisztina DAJNOKI²

¹PhD student, University of Debrecen, Faculty of Economics and Business, Károly Ihrig Doctoral School of Management and Business, Debrecen, Hungary

²PhD, University Professor, University of Debrecen, Faculty of Economics and Business, Debrecen, Hungary

judit@kmosko.eu

dajnoki.krisztina@econ.unideb.hu

Abstract: *The current research reports on a pilot study that was conducted to test the feasibility of a larger study exploring a leadership development program at a small and medium-sized enterprise (SME) in the ICT (Infocommunications) sector in Hungary. The study employed a mixed-methods approach to data collection, which included literature review, document analysis, and structured interviews with various participants involved in the leadership development program. The literature review focused on the history, current state, existing gaps and limitations, and theoretical frameworks and concepts related to the research topic. The document analysis aimed to gain an in-depth understanding of the research topic and complement the findings from the literature review. The structured interviews were designed to be consistent and standardized, with a pre-determined set of questions asked to each participant. The interviews were conducted with a diverse group of participants, including the CEO, People Development Manager, Hiring managers, Domain Engineering Leads, the Human Resources team, and participants of the leadership development program.*

The current research is a smaller-scale version of a full-scale study (also called a “feasibility” study), as well as the pre-testing of a particular research instrument, in our case, document analysis and interview schedule. Pilot researches are a crucial element of a good study design, as it does not guarantee success in the main study, but it does increase the likelihood of success. (Polit et al., 2001, Teijlingen et al., 2001)

The paper also discusses the importance of leadership in the ICT sector, citing a survey of Society for Information Management members that identified leadership as the most important soft skill for employees in the sector. The article notes that understanding the preferences of different generations at the workplace is essential to create an effective leadership development program. Out of the total number of employees, 52 currently work in the company's software development division, and the preferences and motivations of these employees will be a critical factor in designing a successful program.

The paper concludes by stressing the importance of pilot studies in research and how they increase the likelihood of success in the main study. The study's authors hope that the results

of this pilot study will provide insight into the characteristics of a leadership development program and assist in developing a more extensive study on the topic.

Keywords: *Pilot; Leadership development; SME; Generation Y, Generation Z, interview, document analysis*

Introduction to the pilot research

A pilot research is a small feasibility study designed to test various aspects of the methods planned for a larger, more rigorous, or confirmatory investigation. (Arain et al., 2010)

IT continues to increase in importance as a context for organizational behavior research as IT firms establish large industries as well as accounting for significant recurring and discretionary expenditure in other organizations. (Hickman et al., 2018) The current pilot study is part of an ongoing research of a leadership development program, conducted at a Budapest, Hungary-based SME (small and medium-sized enterprise), working in the ICT sector.

In this paper, our aim is to present the goal setting, preparation and launch phases of the program and the research itself, as well as presenting a relevant literature review on the topic of the research.

The present research constitutes a pilot study and feasibility analysis of a larger-scale investigation. This preliminary study aims to test the efficacy of the research instrument, specifically the interview schedule and document analysis, before implementation in the main study. In research design, pilot studies are indispensable as they improve the probability of success for the primary investigation, albeit without guaranteeing it. In other words, while pilot studies do not assure favorable outcomes, they do help to increase the chances of achieving them. This is in accordance with the recommendations of Polit et al. (2001) and Teijlingen et al. (2001).

Material and methods

ICF Tech Hungary, an SME operating in Budapest, has been established in 2019, as a subsidiary of Accretive Technology Group operating in Seattle, WA, since 1997, with the mission to expand the business in Europe and as such, be able to scale the company. The company is working in the ICT sector developing web-based technology platforms and websites catering to millions of users every day. One of

their most important development projects is currently in the top 10 most visited websites in the World.

ICF Tech Hungary has 72 employees today and is intensely scaling up. The growth is mainly focused on the software development areas of the company, out of 40 new employees hired in 2022, 30 employees are working in these departments, while the rest are in support functions.

A survey of Society for Information Management members indicated that leadership is the most important soft skill for employees working in the ICT sector. (Hickman et al., 2018, Kappelman et al., 2016) Our research focuses on the leadership development program of the company's software development division.

This study adopts a mixed-methods approach to gathering and analyzing data, utilizing both qualitative and quantitative data collection methods. The research methodology consists of three main components: a comprehensive literature review, a detailed analysis of relevant documents, and a set of structured interviews. Together, these elements allow for a thorough exploration of the research questions at hand. The research has been conducted between Q1 2022 and Q2 2023.

The literature review is a critical component of this study as it provides a comprehensive understanding of the existing research and literature related to the research topic. A systematic approach was employed to search for relevant literature using various databases and search engines, including Google Scholar, Scopus, and Web of Science. The literature review is focused on the following key areas: the history and evolution of the topic, the current state of the research, the existing gaps and limitations, and the theoretical frameworks and concepts related to the topic.

The document analysis method is used to collect and analyze data from various sources, including documentation related to the learning and development processes of the company. The purpose of the document analysis is to gain an in-depth understanding of the research topic. The data collected through document analysis is used to support and complement the findings from the literature review.

Structured interviews are used to collect primary data from participants who have relevant experience and knowledge related to the research topic. The structured interviews are designed to be consistent and standardized, with a pre-determined set of questions asked to each participant. The purpose of structured interviews is to gain an understanding of the participants' perspectives, opinions, and experiences related to the research topic. The interviews were conducted with a diverse group of participants, including the CEO, People Development Manager, Hiring managers, Domain Engineering Leads, the Human Resources team, and participants of the leadership development program. All together 1 CEO, 1 People Development Manager, 4 Domain Engineering Leads and 5 members of the Human Resources

team took part in the program implementation and the selection process (the selection committee). All together 10 members of the software development team took part in the selection process of the leadership development program as candidates and 9 of them were selected to enter the program. The remaining 1 candidate did not meet the criteria of the skill-matrix and this candidate was lacking professional knowledge as well. The candidates were asked to write cover letters as part of the selection, in which they expressed their motivation to join the development program. This allowed members of the selection committee to perform in-depth personal interviews with the candidates about the role and focus on their measurable skills, abilities, personality traits, along with their technical skills - as demonstrated on the skill matrix. A loyal, highly skilled employee makes a significant contribution to organizational success through competencies, experience, and skills. (Szondi, 2020)

Small and medium-sized enterprises operating in the ICT (Infocommunications) sector in Hungary

Between 2013 and 2017, the number of small and medium-sized enterprises operating in the ICT sector increased dynamically, by an average of 6,3% per year in Hungary. By 2017 the number of companies operating in the sector increased by 28% compared to 2013. (KSH, 2019)

The share of small and medium-sized enterprises within the sector did not change during the five years examined (99%). Their economic weight is much more modest than this, but their role in the labor market is significant. In 2017, 48% of those participating in the sector's activities and 39% of employees belonged to SMEs. Personal expenditures increased by an average of 8.5% per year during the period under review, in 2017 their proportion was 29% within the sector. (KSH, 2019). For the relevance of the current research, companies with increasing personal expenditures are more likely to spend on training and development as well.

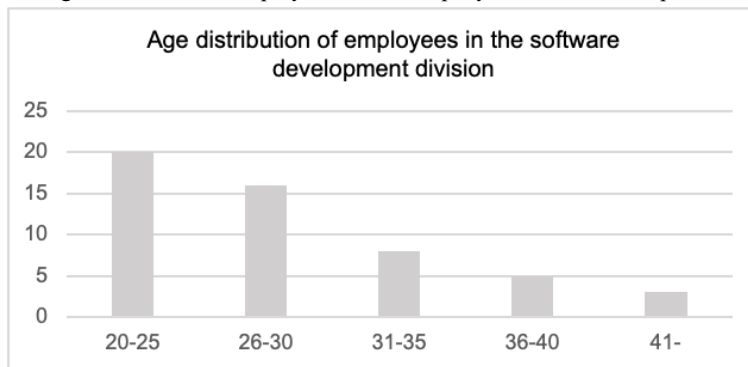
Results and discussion

Generations at the workplace

As preferences of work and workplace are different for different generations, it is vital to understand these preferences (Gaidhani et al., 2019) to be able to assess motivation factors and create an effective leadership development program. Out of the total number of employees, 52 currently work in the company's software development division, which is 69 percent of all staff, we assessed the generational composition of these employees.

The following graph represents the age distribution of employees in the software development division of the company. The x-axis displays different age groups, and the y-axis shows the number of employees falling into each group. The graph shows that the largest group of employees (20 individuals) is between the ages of 20 and 25, followed by 16 individuals in the 26-30 age range. The number of employees gradually decreases with increasing age, with only 2 individuals in the 36-40 age range and 3 individuals above the age of 41. This information was used to assess the age diversity within the software development division of the company.

Table 1. Age distribution of employees in the company's software development division



Source: Own editing based on the document analysis of the researched company

The following table illustrates the age ranges typically associated with "Generation Y" and "Generation Z", as identified in the literature review. It is not a traditional graph with axes and numerical values, but rather a visual representation of age ranges associated with each generation. This information was used to contextualize research findings or to better understand the characteristics and behaviors of different generational cohorts.

Table 2. Generation Y and Generation Z age in 2023

Name of generation	Date of birth	Age in 2023
Generation Y	1981-1995	42-28 years old
Generation Z	1996-2010	27-13 years old

Source: Own editing based on the literature review

The following graph shows the distribution of employees in the company's software development division based on their generational cohort. The X-axis indicates the generational cohorts being compared, specifically "Generation Z" and "Generation Y". The Y-axis shows the number of employees in each cohort. This information was used for analyzing the demographics of the company's workforce. Based on the

literature review and document analysis, as shown on the graph, the majority of employees in the software development division, except for 2 employees, are between 20-30 years old, and as such, they fall in the Gen Z and Gen Y categories. Most of them are Gen Z employees.

Table 3. Generation Z and Generation Y employee distribution in the software development division



Source: Own editing based on the document analysis of the researched company

Gen Z - Gen Y motivation at the workplace

Career development is a process of increasing individual employability to achieve the desired career. Niati et al. (2021) proved their hypothesis in their research, that training can improve employee work performance which in turn can improve the employee's career development as well. However, there is no uniform strategy for organizational advancement, and career systems develop differently in each company based on resources, external and internal factors. (Szondi, 2020)

Employers should provide a supportive environment with clear structures and unambiguous reward and development indicators when recruiting a younger generation like Generation Y or Generation Z. A well-coordinated career management system always starts with the process of selection, but the next steps are based on finding the balance between the employee's career goal and the company's interest. (Szondi et al. 2019) Baum (2019) also suggests "giving voice" to Generation Y and engaging them in conversation.

It is valuable to understand workplace motivation variations amongst different generations of employees. (Cennamo et al., 2008) To engage employees in conversation, the company conducts a detailed, anonymous engagement survey every year to measure satisfaction, engagement and to be able to address any issues within the company. The survey has been conducted in Q1 2022 and Q1 2023 at the

company, using Likert scale questionnaires and free-form text questionnaires, in an online format.

Based on the results of the first engagement survey, conducted in Q1 2022, we found that:

- 50% of employees indicated that they would like to see more career opportunities within the company.
- 45% of employees indicated that they would like to see more development and training opportunities within the company.

The same questionnaire was used in the follow-up engagement survey, one year later, in order to be able to compare the results. Based on the results of the second engagement survey, conducted in Q1 2023, we found that:

- 25% of employees indicated that they would like to see more career opportunities within the company. This shows a significant improvement within the area, as a direct result of the company leadership program.
- 30% of employees indicated that they would like to see more development and training opportunities within the company. This is also an improvement, however as not all employees participate in the leadership program and the company is expecting them to attend other trainings in the future, this decrease is less significant than the previous answer.

Leadership Development Program

Employees are expected to take more responsibility for enhancing current skills and adding new ones to meet current job demands, prepare for leadership opportunities, and ensure their own employability to move and adapt within and between organizations as needed (Molloy et al., 2010) As the company is going through intense scale-up progress, focused on the software development divisions, the need for new teams and leaders started to emerge from the beginning of 2022. These complex business problems require long-term leadership development processes. (Day et al., 2014)

Data regarding the correlation between employee motivation and career opportunities have already been established by the engagement surveys, and as a result, management decided to fill leadership positions in-house, meaning they would promote employees already working for the company. Hickman's 2018 research offers several propositions for leadership development in Information Technology, from which *P1. IT units with formal mentorship programs will be better positioned to fill leadership positions with internal candidates* and *P2. Leadership*

development treated as a core business process rather than a series of isolated events will result in improved program outcomes - directly reflects the leadership development program of ICF Tech Hungary. The company established that in order to be able to promote leaders, they first need to determine the skills and competencies needed to be further developed throughout the program. The company used findings of the interviews with the CEO, People Development Manager, Hiring managers, Domain Engineering Leads, and the Human Resources team to determine these leadership skills and competencies, summarizing and measuring them using the scorecard method. (Smart et al., 2008, Boudlaie et al., 2020) Within the company framework, employees with special abilities and excellent competencies can be identified along the created talent dimensions. (Szondi et al. 2019) At the beginning of planning, the leadership team created objectives (goals) for the leadership development program, to ensure that the program is planned in its entirety and that it covers all areas needed to be able to promote the new leadership team, as shown in Table 6. They set short term goals for the first quarter of the program, mid term goals for the second quarter and long term goals for the last 6 months (covering two quarters) of the program.

In this context, *short term goals* - as shown in Table 4. - represent the planning phase of the program, from identifying training needs, to conducting engagement surveys, creating a skill matrix and a formal training plan for the program.

Mid term goals reflect on the communication of the program to internal candidates, conducting interviews with said internal candidates, with the end goal of launching the program and trainings for the quarter.

Long term goals reflect on the continuation and finalization of trainings for participants, with the ultimate goal of being able to promote them into new team lead positions. The company would like to ensure that the success of the program is properly measured, and in order to do so, KPI's were set and monitored throughout the program.

The company set its desirable turnover rate at below 15% for the entirety of the program, as based on the findings of the engagement survey, it is proved that retention is in strong correlation with employee career paths and motivation. The company uses this KPI (key performance indicator) data to cross-reference the results of the engagement survey.

Table 4. Objectives of the Leadership Development Program Planning

SHORT TERM OBJECTIVES		
	Short term objectives (3 months, Q3 of 2022)	Key results for short term objectives
Training needs	Identify training needs	Identify and align the objectives of the leadership development program with the overall business objectives
Employee motivation	Identify the motivation of current employees in order to commit long-term at the company	Engagement survey (every 12 months) and regular (biweekly) employee 1/1 discussions. Questionnaire during the interviews about motivation for new employees
Skill-matrix	Create skill matrix for internal selection and training plan purposes	Use the scorecard-method for skill-matrix creation, with the involvement of the People Development and Hiring Managers
Training plan	Create a thorough and detailed training plan for the program based on employee motivation and overall program goals	The HR team has learning&development expertise, and with the help of the newly hired People Development Managers, create a thorough and transparent training plan for selected employees to participate in
Retention	Ensure employee retention for participants, keep turnover rate below 15%	Communicate the program on all internal platforms and ensure training and development needs and career aspirations of participants are met
MID TERM OBJECTIVES		
	Mid term objectives (3 months, Q4 of 2022)	Key results for mid term objectives
Program communication	Identify employees interested in becoming leaders and team leads	Create a transparent communication material about the leadership development program and collecting applications (cover letters by employees where they express their interest in participating in the program)
Interviews	Conduct interviews for the selection of internal applicants	At the interviews conducted with employees wishing to participate in the program, HR and the selected hiring managers used the scorecard method for selection
Launch the program	Launch the leadership development program	Ensure that participating employees have proper time and support allocated for the program
Trainings	Technical and soft skill trainings for participants	Participating employees take part in various technical and soft skill trainings
Retention	Ensure employee retention for participants, keep turnover rate below 15%	By launching the program, the expected turnover is low, as employees participating in the program are less open and willing to leave the company for a better offer/opportunity
LONG TERM OBJECTIVES		
	Long term objectives (6 months, Q1-Q2 of 2023)	Key results for long term objectives
Trainings	Technical and soft skill trainings for participants	Participating employees take part in various technical and soft skill trainings
Retention	Ensure employee retention, keep turnover rate below 15%	By promoting new leaders, the expected turnover is low, as the program caters to the motivational needs of the participating employees
Promotions	Promote participating employees into leadership and team lead roles	After completing the program, new leaders and team leads are being permanently promoted
Follow-up & Measurement	Follow up the training program by measuring the success	6 months after the promotion of new leaders and team leads, HR will conduct surveys from participants and their teams, conduct 1/1 discussions and measure satisfaction and engagement before launching the next leadership development program

Source: Own editing based on the document analysis of the researched company

Based on the research findings, the company identified measurable skills, abilities and personality traits - collectively called a ‘Skill Matrix’ for the leadership development program participants to be able to measure and further develop throughout the program, as shown in Table 5. This table outlines the key measurable skills, abilities, and personality traits that an ideal candidate for the leadership role should possess. The desired personality traits include being calm and collected, having proficient verbal and written English, being an excellent communicator with both stakeholders and team members, having an ambition for quality work, having professional curiosity, and having the ability to take feedback constructively. Technical skills listed include a deep understanding of company architecture, medior knowledge in at least one programming language, automated testing, architectural patterns, and monitoring software, as well as being comfortable with backend development. Additionally, the ideal candidate should have the ability to set clear objectives for the team, motivate team members, give constructive feedback, mediate conflicts between team members, and prioritize tasks effectively. In summary, this table serves as a guide to determine the essential skills and abilities required for the leadership position, providing a clear picture of the ideal candidate for the role.

Throughout the selection process, internal candidates received scores and notes for these competencies, to ensure everyone is trained based on their own needs and the program is focusing on individual levels as well.

Table 5. Identified skill matrix for participants of the Leadership Development Program

Measurable skills, abilities and personality traits
Calm and collected personality
Proficient use of English (verbal and written)
Excellent communicator – both with stakeholders and team members
Ambition for quality work, professional curiosity
Effectively implement feedback into their work
Precise with strong attention to detail (bugs, releases, etc.)
Independent problem solver, be able to prioritize between tasks and when it comes to delegating them
Takes responsibility
Setting clear objectives for the team and explaining why they matter
Motivating team members
Ability to give effective and constructive feedback to team members
Ability to mediate between team members in case of a conflict
Technical skills – expertise of the functions
Knowledge of the company architecture
Medior knowledge in one specific programming language
Medior knowledge in automated testing
Knowledge of architectural patterns
Knowledge of monitoring software
Comfortable with backend development

Source: Own editing based on the document analysis of the researched company

Based on the research findings, objectives were set for the participants of the program to ensure these are the goals they collaboratively need to achieve by the end of the program, as shown in Table 6. The table provides a list of key competencies and skills that are important for effective leadership. These competencies are grouped into four categories, each with its own set of abilities:

1. Drive Results: This category focuses on setting clear, challenging, and motivating targets for oneself and the team. It also emphasizes the ability to improve both individual and team performance.
2. Champion Change: This category involves the ability to recognize and communicate the need for change, as well as the ability to lead and take ownership of change within one's area of responsibility. It also emphasizes the importance of involving the team in identifying and

delivering change. A research conducted by Pierog and Dajnoki in 2020 about the expectations for managers concluded that the participants of their study ranked responsibility as the most important expectation. (Pierog - Dajnoki 2020) Responsibility as a trait is significant in our findings as well.

3. **Lead:** This category focuses on the ability to explain the vision and strategy of the organization in a way that is inspiring and motivating. It also involves spending time with the team to recognize and share good performance and behaviour, building the team's confidence to take responsibility, and supporting them to make decisions.
4. **Develop:** This category emphasizes the importance of developing the team's capabilities and supporting their career growth. This involves discussing aspirations, development, and career options with team members.
5. **Work Collaboratively:** This category highlights the ability to challenge constructively, build relationships across the organization, create an environment where best practices are shared, and encourage creativity to flourish.

Overall, table 6. provides a useful framework for assessing leadership skills and identifying areas for improvement. By focusing on these key competencies, individuals can develop their leadership skills and enhance their ability to lead teams and drive organizational success.

Table 6. Objectives (goals) for participants of the Leadership Development Program

Objectives	
Drive results	Ability to aim higher by setting clear, stretching and motivating targets for yourself and the team
	Ability to improve both your and the team's performance
Champion Change	Ability to identify and communicate the need for change outside of your area whilst suggesting alternatives
	Ability to take ownership and lead change in your area, set a positive example through your response to change
	Ability to involve the team in identifying and delivering change
Lead	Ability to explain the vision and strategy in a way that is meaningful and motivating
	Drive to spend time with the team to spot good performance and behaviour to recognize and share with others
	Ability to build the confidence of the team to take responsibility and support them to take more decisions
Develop	Ability to develop the team's capabilities and support them in developing their career. Discuss aspirations, development and career options
Work collaboratively	Ability to challenge constructively, build beneficial relationships across the organization, create an environment where best practices are shared, and creativity can flourish

Source: Own editing based on the document analysis of the researched company

Learning and development framework of the Leadership Development Program

70:20:10 is a learning and development framework that sets out a rationale for how employees learn. It states that 70% of our learning comes from challenging assignments and on-the-job experiences. 20% of our learning is developed from our relationships with other people, our networks, and the feedback we receive. 10% of our learning is derived from formal training, such as courses and workshops. (Scott et al., 2016) ICF Tech Hungary decided to follow the 70/20/10 learning approach (Table 7.) because the skill sets and goals listed previously in this research are so specific, that people get the majority of the skills and knowledge they need to do their job from on-the-job learning experiences, rather than from classroom or course-based learning (Scott et al., 2016) and to build more resilient workforces and create cultures of continuous learning is a strategic goal of the company. (Arets, et al. 2016)

Table 7. 70/20/10 Framework at ICF Tech Hungary

70/20/10 learning approach	70% through experience	20% through relationships	10% through formal trainings and materials
I.) Leadership role, values and principles	Being involved in leaders' meetings, plannings, Kick-off events pre-works	1:1 with CEO,HR Director, Domain Leaders and People Development Manager	Leaders eat last training program
II.) Leadership tasks and tools	Shadowing Team Leaders, first attending and after leading team meetings	Team Lead Mentors, People Development Manager	Leadership group skill coaching sessions
III.) Domain/team specific and other personal development	Implement and experience in their everyday work	Formal training (e.g., English), Head of Education, People Development Manager, Domain Leadership	Technical or English courses, formal trainings, books, confluence pages, showcases and other formal materials

Source: Own editing based on the document analysis of the researched company

Research limitations and further research opportunities

This pilot study on a leadership development program at an SME in the ICT sector has provided valuable insights into the feasibility of a larger-scale study. However, there are limitations to the study that need to be acknowledged. Firstly, the study was conducted in only one company, limiting the generalizability of the findings to other organizations. Secondly, the sample size for the structured interviews was relatively small, with only a few key stakeholders being interviewed. This could limit the depth and breadth of insights gained from the interviews. Thirdly, the study was conducted in a specific cultural and geographical context, and the findings may not apply to other contexts.

Despite these limitations, this pilot study has provided useful insights into the leadership development program of the company's software development division. The literature review has identified several gaps in the current research, which provides ample opportunities for further research. Future studies could focus on a larger sample size, including multiple companies in different geographic and cultural contexts, to improve the generalizability of the findings.

Further research could also explore the effectiveness of different leadership development approaches, such as coaching or mentoring, in the ICT sector. Further research could also explore the impact of leadership development programs on employee performance and job satisfaction.

In conclusion, this pilot study has provided valuable insights into the leadership development program at an SME in the ICT sector. While there are limitations to the study, it has identified several opportunities for further research. Future studies could build on the findings of this pilot study to provide a more comprehensive understanding of leadership development in the ICT sector.

References

1. Arain M, Campbell MJ, Cooper CL, Lancaster GA 2010 'What is a pilot or feasibility study? A review of current practice and editorial policy' in *BMC Medical Research Methodology*, vol. 10
2. Arets J, Jennings C, Heijnen V 2016 '70:20:10 into action, 70 20 10 institute' viewed 1 April 2023.
3. Baum T 2019 'A changing world of work. What can we learn from the service sector about employing millennials (and Gen Z)?' in *Organizational Dynamics* DOI: 10.1016/j.orgdyn.2019.04.001.
4. Boudlaie H, Mahdiraj, HA, Shamsi S, Jafari-Sadeghi V, Garcia-Pereze A 2020 'Designing a human resource scorecard: An empirical stakeholder-based study with a company culture perspective.' in *Journal of Entrepreneurship, Management and Innovation*, 16(4), pp. 113-147.
5. Cennamo L., Macky K, Gardner D 2008 'Generational differences in work values, outcomes and person-organisation values fit' in *Journal of Managerial Psychology*, Vol. 23, pp. 891-906.
6. Day DV, Fleenor JW, Atwater LE, Sturm RE, McKee RA 2014 'Advances in leader and leadership development: a review of 25 years of research and theory' in *The Leadership Quarterly*, Vol. 25 No. 1, pp. 63-82, DOI: 10.1016/j.leaqua.2013.11.004.
7. Day DV 2001 'Leadership development: a review in context', in *The Leadership Quarterly*, Vol. 11 No. 4, pp. 581-613.

8. Gaidhani S, Arora L, Sharma BK 2019 ‘Understanding the attitude of generation Z towards workplace’ in *International Journal of Management, Technology and Engineering*, 9(1), pp. 2804-2812.
9. ICF Technology Hungary 2023, viewed 1 April 2023.
10. Hickman L, Akdere M 2018 ‘Effective leadership development in information technology: Building transformational and emergent leaders.’ in *Industrial and Commercial Training*, 50(1), pp. 1-9.
11. Kappelman L, Johnson V, McLean E, Torres R 2016 ‘The 2015 SI IT issues and trends study’ in *MIS Quarterly Executive*, Vol. 15 No. 1, pp. 55-83.
12. Központi Statisztikai Hivatal KSH 2019, Az infokommunikációs szektor helyzete, viewed 1 April 2023.
13. Molloy JC, Noe RA 2010 ‘Learning” a living: Continuous learning for survival in today's talent market’ in S. W. J. Kozlowski, & E. Salas (Eds.). *Learning, training, and development in organizations* pp. 333–361.
14. Niati DR, Siregar ZME, Prayoga Y 2021 ‘The Effect of Training on Work Performance and Career Development: The Role of Motivation as Intervening Variable’ in *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 4(2), pp. 2385-2393.
15. Pierog A, Dajnoki K 2020 ‘Property expectations for managers’ *Farkas Ferenc II. Nemzetközi Tudományos Konferencia*, 2020.
16. Priyono CT, Ariana S 2016 ‘Influence of work environment, motivation and career development on the work achievement on a timeless gift PT. Aligned sidoarjo.’ in *International Journal of Applied Business and Economic Research*, 14(3), pp. 2113–2131.
17. Polit DF, Beck CT, Hungler BP 2001 ‘Essentials of Nursing Research: Methods, Appraisal and Utilization’. in *5th Ed., Philadelphia: Lippincott Williams & Wilkins*
18. Scott S, Ferguson O 2016 ‘New perspectives on 70: 20: 10. A good practice research paper’ viewed 1 April 2023.
19. Smart G, Street E 2008 ‘Who: The A Method for Hiring’ New York S.I: Ballantine Books ; ghSMART.
20. Szondi R 2020 ‘A globális karriermenedzsment funkciói’. *Metszetek-Társadalomtudományi folyóirat*, 9(1), pp. 49-64.
21. Szondi R, Gergely É 2019 ‘Karriertervezés és megtartás - Nagyvállalatok gyakorlatai az IT szektorban’ *TAYLOR*. 11, 1. (jún. 2019), pp. 107–115.
22. Van Teijlingen E, Hundley V 2001 ‘The importance of pilot studies’ in *Social research update*, (35), pp. 1-4.