

Students' Research Conference 2024
Book of Abstracts

“Knowledge in Action”



**Faculty of
Mathematics
and Informatics**



**Faculty of
Philology**

WEEK 1	4
THE IMPACT OF INTERNET-DRIVEN PROCRASTINATION ON MINDFULNESS AND ACADEMIC PERFORMANCE AMONG LITHUANIAN STUDENTS. .	4
URBAN GARDENING AND ITS IMPACT ON HEALTH.....	5
THE INFLUENCE OF BACKGROUND MUSIC ON MENTALLY DEMANDING TASK PERFORMANCE	6
COMPARISON OF LITHUANIAN STUDENTS' FINANCIAL LITERACY WITH OTHER EUROPEAN COUNTRIES.....	7
THE IMPACT OF REMOTE WORK ON IT EMPLOYEE PRODUCTIVITY	8
CYBER SECURITY THREATS IN THE ERA OF REMOTE WORK	9
VARIATION IN SUPERMARKET PRICES.....	10
THE ROLE OF SLEEP IN OPTIMIZING ATHLETIC PERFORMANCE AND RECOVERY	11
EFFECT OF MUSIC ON WORK AND STUDY EFFICIENCY	12
SOCIAL MEDIA'S IMPACT ON PUBLIC OPINION.....	13
INVESTIGATING THE BEST MODES OF TRANSPORTATION TO VILNIUS UNIVERSITY FOR STUDENTS.....	14
PERCEPTION OF HACKERS IN SOCIETY	15
THE IMPACT OF ROMANTIC RELATIONSHIPS ON STUDENTS' ACADEMIC PERFORMANCE	16
COMPARISON OF STUDY METHODS - STUDYING ALONE AND IN A GROUP	17
THE COMPARISON OF DAILY NUTRITIONAL CONTENT CONSUMED BY VU MIF STUDENTS LIVING IN DORMITORIES VERSUS LIVING WITH PARENTS AT HOME.	18
AN ANALYSIS OF SCHOOLWORK AUTOMATION WITH AI TOOLS	19
MODERN ROUTER SAFETY.....	20
ADOPTION OF 5G TECHNOLOGIES.....	21
WHICH GYM IS THE BEST OPTION IN VILNIUS (GYM+, LEMONGYM, SPORTGATES, IMPULS).....	22
COMPARING THE COST, SPEED, EFFICIENCY, AND EFFECTIVENESS OF ORDERING FOOD VIA DELIVERY SERVICES, COOKING AT HOME, AND DINING OUT IN VILNIUS.....	23
DANGERS NUCLEAR POWER, OR LACK THEREOF	24
ENVIRONMENTAL IMPACT OF ELECTRIC VEHICLES (EVs) AND INTERNAL COMBUSTION ENGINE (ICE) CARS.....	25
THE POWER OF EARLY INVESTING IN ETFs (EXCHANGE-TRADED FUNDS)	26
THE IMPACT OF AI ON SOCIAL MEDIA.....	28
GREEN ENERGY SOURCES IMPACT ON ANIMALS AND THEIR HABITATS.....	29
FINDING THE BEST ARTIFICIAL INTELLIGENCE MODEL FOR PROGRAMMERS.....	30
IMPACT OF VIDEO GAMES ON CHILDREN'S MINDS	31
WEEK 2	32
VEGETARIAN VS OMNIVORE DIET.....	32
USING AI TOOLS TO IMPROVE LEARNING	33
EXAMINING THE IMPACT OF PRE-SLEEP SCREEN TIME ON SLEEP QUALITY AND PHYSICAL WELL-BEING OF STUDENTS IN LITHUANIA	34
BILINGUALISM AND COGNITIVE DEVELOPMENT	35
CONSUMERISM IN MODERN AGE - MASS MEDIA AND CONSUMPTION PATTERNS	36
INTERACTIVE VS TRADITIONAL LEARNING. STUDENTS' PREFERENCE AND IMPACT ON ACADEMICAL PERFORMANCE.....	37
THE IMPACT OF SOCIAL MEDIA ON BUYING HABITS.....	38
HOW MUCH DOES THE PRICE DIFFER BETWEEN PRE-MADE FOOD AND SEPARATE PRODUCTS IN DIFFERENT SUPERMARKET CHAINS	39
TIKTOK AS A NEW SEARCH ENGINE FOR GENERATION Z.....	40
THE ROLE OF BEER IN DISEASE PREVENTION AND HEALTH IMPROVEMENT BETWEEN MEN AND WOMEN	41
HACKING AS SEEN BY SOCIETY VS REALITY	42
LINK BETWEEN NUTRITION AND MENTAL HEALTH IN YOUNG ADULTS	43
THE IMPACT OF REMOTE WORK ON EMPLOYEE PRODUCTIVITY	44
GENDER DYNAMICS AND ONLINE DATING BEHAVIORS	45
LIVING COST OF STUDENTS IN LITHUANIA COMPARED TO ANY OTHER EU COUNTRY - WITH SIMILAR GDP.....	46
UNIVERSITY STUDENTS' SHOPPING HABITS: ONLINE VS. IN-STORE CHOICES	47
TEXTING AND ITS EFFECT ON TEEN LITERACY	48

TAKEOUT VS COOKING AT HOME	49
THE IMPACT OF SOCIAL MEDIA USE ON YOUTHS' SOCIAL INTERACTIONS.....	50
THE EMOTIONAL WELL-BEING OF VU MIF STUDENTS	51
WHAT IMPORTANCE DOES BREAKFAST POSE IN STUDENTS' ACADEMIC ACHIEVEMENT AND MOTIVATION?	52
THE IMPACT OF AI ON TEACHING.....	53
INTERNET CENSORSHIP AND FREEDOM OF SPEECH IN THE AGE OF DIGITAL AUTHORITARIANISM	54
CORRELATION BETWEEN DIGITAL CONSUMPTION AND MENTAL WELL-BEING	55
EFFECTS OF ONLINE LEARNING ON STUDENTS	56
WHICH TYPE OF VEHICLE IS MORE ENVIRONMENTALLY FRIENDLY: GAS CARS OR ELECTRIC CARS	57

Week 1

The Impact of Internet-Driven Procrastination on Mindfulness and Academic Performance Among Lithuanian Students

Rokas Kancius, Emilija Sankauskaitė

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Internet-driven procrastination, Social media overuse, Academic performance, Internet addiction, Digital distraction

In the recent years, concerns arose regarding the impact of technologies on student's focus and academic results. While said issue has received considerable attention, this study focuses on Lithuanian students from various academic fields to enhance the generalizability of the findings. For this research, an experiment was conducted, during which participants were instructed to use the internet solely for academic purposes for a 5-day period. Data was collected using semi-structured interviews. Preliminary findings show that limiting internet use to academic purposes boosts focus and productivity. This research is significant for developing strategies to improve academic performance.

References:

Liu, F., Xu, Y., Yang, T., Li, Z., Dong, Y., Chen, L., & Sun, X. (2022). The mediating roles of time management and learning strategic approach in the relationship between smartphone addiction and academic procrastination. *Psychology Research and Behavior Management*, 2639-2648.

Hayat, A. A., Kojuri, J., & Mitra Amini, M. D. (2020). Academic procrastination of medical students: The role of Internet addiction. *Journal of advances in medical education & professionalism*, 8(2), 83.

Chen, I. H., Lee, Z. H., Dong, X. Y., Gamble, J. H., & Feng, H. W. (2020). The influence of parenting style and time management tendency on internet gaming disorder among adolescents. *International Journal of Environmental Research and Public Health*, 17(23), 9120.

Urban Gardening and its Impact on Health

Audrius Duoblys, Jonas Grubliauskas, Greta Mazuraitytė

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Mental health, Urban, Gardening, Well-being, Quality of life

With an ever-increasing urban population, promoting public health and well-being in towns and cities is a major challenge. Many studies focus on the effects of urban gardening on various aspects of mental health. However, there is a need for more comprehensive analyses that account for variables such as gender, age, and other demographic factors. Therefore, this research focuses on the effects of urban gardening concerning these variables. This research was conducted by analysing and comparing statistical data from research articles that utilized quantitative methods. Preliminary findings indicate that urban gardening positively impacts self-reported mental health. The aim of this study is to demonstrate that urban gardening can have a beneficial impact on mental health across diverse populations.

References:

Yang, Y., Ro, E., Lee, T. J., An, B. C., Hong, K. P., Yun, H. J., ... & Choi, K. H. (2022). The multi-sites trial on the effects of therapeutic gardening on mental health and well-being. *International journal of environmental research and public health*, 19(13), 8046.

Soga, M., Cox, D. T., Yamaura, Y., Gaston, K. J., Kurisu, K., & Hanaki, K. (2017). Health benefits of urban allotment gardening: Improved physical and psychological well-being and social integration. *International journal of environmental research and public health*, 14(1), 71.

Harding, D., Lukman, K. M., Jingga, M., Uchiyama, Y., Quevedo, J. M. D., & Kohsaka, R. (2022). Urban gardening and wellbeing in pandemic era: Preliminary results from a socio-environmental factors approach. *Land*, 11(4), 492.

The Influence of Background Music on Mentally Demanding Task Performance

Lukas Baranovas, Ignotas Džiovėnas, Ugnius Teišerskis

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Productivity, Music, Focus, Music tempo, Music genre

The ever-increasing tempo of life requires sustained attention and focus to succeed in daily tasks. This study examines the effects of background music on task performance requiring focus. A questionnaire has been used to collect data from 15 participants using the 5-point Likert scale, as well as a binary survey about the effect listening to various background music on cognitive performance. Several different genres of music have been used to cover a variety of tempos. The findings of this research may be used to inform personalized playlists that enhance concentration and aid in performing mentally demanding tasks.

References:

Kiss, L., & Linnell, K. J. (2021). The effect of preferred background music on task-focus in sustained attention. *Psychological research*, 85(6), 2313-2325.

Goltz, F., & Sadakata, M. (2021). Do you listen to music while studying? A portrait of how people use music to optimize their cognitive performance. *Acta psychologica*, 220, 103417.

Kirk, U., Ngnoumen, C., Clausel, A., & Purvis, C. K. (2022). Effects of three genres of focus music on heart rate variability and sustained attention. *Journal of Cognitive Enhancement*, 6(2), 143-158.

Comparison of Lithuanian Students' Financial Literacy with Other European Countries

Rokas Bomblauskas, Nojus Savukynas, Kasijus Viteika

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Financial literacy, Financial behavior, University students

Financial literacy is essential for university students, enabling them to make complex financial decisions and have economic stability in their lives. The purpose of this project is to evaluate the financial literacy of Lithuanian university students compared with their peers in other European countries. A questionnaire was used to collect data from Lithuanian university students to define their financial literacy and then compare it against existing datasets from studies conducted in other European countries. Preliminary results show that Lithuanian students score lower in financial literacy than students in Western Europe but perform similarly to those in other Eastern European countries. This study highlights the importance of targeted financial education to promote students' economic stability and informed decision-making.

References:

Sarabando, P., Rio Matias, R., Vasconcelos, P., & Miguel, T. (2023). Financial literacy of Portuguese undergraduate students in polytechnics: does the area of the course influence financial literacy?. *Journal of Economic Analysis*, 2(2), 96-113.

Happ, R., Hahn, J., Jang, K., & Rüter, I. (2022). Financial knowledge of university students in Korea and Germany. *Research in Comparative and International Education*, 17(2), 301-327.

OECD (2024), PISA 2022 Results (Volume IV): How Financially Smart Are Students?, PISA, OECD Publishing, Paris.

The Impact of Remote Work on IT Employee Productivity

Povilas Gečas, Roberta Tamaševskytė

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Remote work, Productivity, Flexibility, Work environment, Work-life balance

Working remotely is spreading wildly as an option for people in various fields, especially IT. Such flexibility is often linked to better performance and personal well-being. This study aims to analyse how working remotely impacts productivity of people working in IT fields. Data collection methods include surveys assessing the productivity of IT professionals, along with carefully analysed data from existing studies. The results show that remote work can improve concentration and motivation, reduce travel stress and provide more flexibility and better work-life balance. Overall, this research suggests that remote work positively impacts employee's productivity and provides a good alternative to traditional office settings.

References:

Anakpo, G., Nqwayibana, Z., & Mishi, S. (2023). The impact of work-from-home on employee performance and productivity: a systematic review. *Sustainability*, 15(5), 4529.

Beno, M., & Hvorecky, J. (2021). Data on an Austrian company's productivity in the pre-Covid-19 era, during the lockdown and after its easing: to work remotely or not? *Frontiers in communication*, 6, 641199.

Rañeses, M. S., Bacason, E. S., & Martir, S. (2022). Investigating the Impact of Remote Working on Employee Productivity and Work-life Balance: A Study on the Business Consultancy Industry in Dubai, UAE. *International Journal of Business & Administrative Studies*, 8(2).

Cyber Security Threats in the Era of Remote Work

Domas Bernikas, Klaidas Blandis, Domas Valentinas

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Cyber security, Threats, Remote Work, Ransomware, Covid-19

Covid-19 has given rise to work from home, and the trend has continued even after the pandemic. There has been an increase in cyber security threats in the recent years, as more and more employees tend to work from home. This project explores cyber hazards, focusing on phishing attacks, ransomware, and vulnerabilities in virtual private networks (VPNs). Information will be obtained from research articles and other scientific literature from several different time periods. Additionally, before and after the start of covid situations will be compared. The findings of this study will provide information on cyber-attacks and help companies and workers in addressing and preventing further threats.

References:

Hijji, M., & Alam, G. (2022). Cybersecurity Awareness and Training (CAT) framework for remote working employees. *Sensors*, 22(22), 8663.

Variation in Supermarket Prices

Marijus Baužys, Ervinas Gasperovič, Saulė Trumpickaitė

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Consumer price index (CPI), Food prices, Food retail, Pricing behavior, Retail behavior

This study explores the variation in prices of essential goods across different supermarket chains to examine potential correlations between the size of the chain and its pricing strategies. The research focuses on a range of commonly purchased items, such as bread, milk, eggs, and vegetables, across multiple supermarket chains with varying store sizes. Data was collected by conducting price surveys at stores located in the city of Vilnius. The analysis aims to determine whether larger supermarket chains, which benefit from economies of scale, offer lower prices on essential goods compared to smaller competitors. This research also considers factors such as geographic location and competition in local markets. The findings will provide insights into how supermarket size influences pricing structures, helping consumers and policymakers better understand the dynamics of grocery pricing.

References:

Volpe III, R. J., Tedjasaputra, N., Jackson, O., & Provost, R. (2021). Supermarket pricing and promotional behavior: Evidence from the San Luis Obispo market. *Journal of Food Distribution Research*, 52(2), 24-50.

Chua, C. L., & Tsiaplias, S. (2024). The influence of supermarket prices on consumer inflation expectations. *Journal of Economic Behavior & Organization*, 219, 414-433.

Niu, J., Jin, S., Chen, G., & Geng, X. (2024). How Can Price Promotions Make Consumers More Interested? An Empirical Study from a Chinese Supermarket. *Sustainability*, 16(6), 2512.

The Role of Sleep in Optimizing Athletic Performance and Recovery

Edvinas Bagdonas, Jonas Grybė, Gustas Snetkovas

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Sleep quality, Athletic recovery, Performance, Mental health, Hormonal regulation

Sleep is vital for any individual interested in fitness. However, most of the mainstream media ignores its significance and focuses on expensive supplements and training routines. It was based on our personal interest in fitness that our team was motivated to do more on this topic in light of pointing out the importance of sleep to athletes. We chose to analyze secondary data from the works of Grandner et al. (2020), Doherty et al. (2021) and Ochoa-Lácar et al. (2022). It showed how sleep helps in the process of muscle repair, cognitive clarity and minimizing various injuries.

References:

Grandner, J., & Charest, J. (2020). Sleep and Athletic Performance: Impacts on Physical and Mental Health. *Sleep Medicine Clinics*, 15(1), 41-57.

Doherty, R., & Ellis, J. (2021). The Sleep and Recovery Practices of Athletes. *Nutrients*, 13(4), 1330.

Ochoa-Lácar, J., et al. (2022). How Sleep Affects Recovery and Performance in Basketball: A Systematic Review. *Brain Sciences*, 12(11), 1570.

Effect of Music on Work and Study Efficiency

Robertas Šatkevič, Aurimas Vižinis

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Concentration, Productivity, Music Frequency, Cognitive Performance

Studying and working, whether in school, university, or professional settings, require sustained concentration, which can be challenging to maintain. Music is often perceived as a relaxation tool that may also promote attentiveness, but its actual impact on high-level cognitive performance remains unclear. This project explores whether listening to music can enhance concentration and productivity during cognitively demanding tasks. To investigate this, qualitative data will be collected from experiments in which we perform challenging cognitive tasks while listening to various types of music. Our performance and task completion times will be analyzed to assess the impact of music on efficiency. Additionally, existing literature will be reviewed to determine if our findings align with broader research trends or reveal unique patterns. From the data we have collected, we can already see a positive outcome and a boost of effectiveness in performing high-level cognitive tasks in some cases. The findings of this research could provide insights into the way background music affects concentration and motivation to study or to work on difficult tasks, providing people in need an alternative solution to stress and overwhelmingness.

References:

De Witte, M., Pinho, A. D. S., Stams, G. J., Moonen, X., Bos, A. E., & Van Hooren, S. (2022). Music therapy for stress reduction: a systematic review and meta-analysis. *Health psychology review*, 16(1), 134-159.

Mao, N. (2022). The role of music therapy in the emotional regulation and psychological stress relief of employees in the workplace. *Journal of healthcare engineering*, 2022(1), 4260904.

Li, F., & Hu, X. (2023). Background music for studying: A naturalistic experiment on music characteristics and user perception. *IEEE MultiMedia*, 30(1), 62-72.

Social Media's Impact on Public Opinion

Pijus Čepaitis, Ugnė Pacevičiūtė, Emilija Rimšelytė

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Fake news, Detection, Social media, Impact, Misinformation, Public trust

Information sharing has been revolutionized by social media which amplified fake news, affecting public trust and opinion globally. This study explores how users encounter, identify, and verify misinformation on social media platforms such as Facebook and Instagram and what impact do echo chambers have on the spread of fake news. This research analyzed survey data on participants' social media habits, exposure to fake news, and verification strategies used to assess content. Presentation shares preliminary findings that fake news is most prevalent in political and health-related content. Many struggle with detection, relying on trusted sources and cross-checking practices. These preliminary findings provide a clear picture, that it is necessary to enhance news literacy and fact-checking habits to combat misinformation and foster informed public discourse.

References:

Kožuh, I., & Čakš, P. (2023, October). Social media fact-checking: The effects of news literacy and news trust on the intent to verify health-related information. In *Healthcare* (Vol. 11, No. 20, p. 2796). MDPI.

Olan, F., Jayawickrama, U., Arakpogun, E. O., Suklan, J., & Liu, S. (2024). Fake news on social media: the impact on society. *Information Systems Frontiers*, 26(2), 443-458.

Goswami, M. P. (2018). Fake News and Cyber Propaganda: A study of manipulation and abuses on Social Media. *Mediascape in 21st Century: Emerging Perspectives*, 535-544.

Investigating the Best Modes of Transportation to Vilnius University for Students

Justas Andruškevičius, Augustė Tumaitė, Justė Vaitkevičiūtė

Vilnius University | Faculty of Mathematics and Informatics

Key words: Transportation, Eco-friendliness, Time consumption, Commuting, Students

With students at universities increasingly being more considerate of things like eco-friendliness, cost, and efficiency in their daily commutes, understanding transportation choices has become vital for improving student well-being and urban transport systems. This study examines the transport modes used by students to travel to university, focusing on the categories of eco-friendliness, cost, time consumption, and reliability. The research used a questionnaire, which was given to the students at Vilnius University, as the primary data collection method. The questionnaire consisted of close-ended questions designed to prove or deny the hypothesis that public transportation is a better means of transport for students in terms of cost and eco-friendliness, but not time consumption or reliability. Additionally, three secondary sources were analysed to see the tendencies of transportation modes among students. This presentation shares the preliminary findings that suggest that while public transport is more eco-friendly and budget-friendly, it ranks lower in terms of time efficiency and reliability. Despite the small scope of the research, the findings may be beneficial for students looking for the best transportation mode as well as for the Vilnius city municipality to improve the existing public transportation system.

References:

Riahi, Y., & Ramatillah, I. (2020). Digital skills, social mobility, and digital entrepreneurship: A perspective on the role of digital skills in fostering entrepreneurship and social equity. *Technology in Society*, 63, 101366.

Rahardjo, A., Nugroho, I., Gunawan, D. S., & Sulistiyani, S. (2022). Sustainable ecotourism development: A study on strategic policies in Indonesia. *Sustainability*, 14(11336)

Trček, B., & Mesarec, B. (2022). Pathways to Alternative Transport Mode Choices among University Students and Staff—Commuting to the University of Maribor since 2010. *Sustainability*, 14(18), 11336. <https://doi.org/10.3390/su141811336>

Perception of Hackers in Society

Vanesa Balsytė, Neda Davidavičiūtė, Andrius Rakauskas

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Cybersecurity, Hackers, Ethical Hacking, Public perception

With the ever-increasing concern for cybersecurity and evolving media portrayals, the perception of hackers has been forever shifting. This has in turn affected the efficacy of hackers, white hat and black hat alike, how organizations and even countries approach issues in cyberspace. By identifying the underlying factors influencing these views, the research seeks to fill the gap in understanding how societal perception of hackers impacts public trust, cybersecurity practices, and policy development. This research employed quantitative survey research to investigate the experiences of a wide variety of Vilnius residents with different backgrounds. The research shares preliminary findings that people with lower digital literacy, typically older and mainstream media consumers, have a more negative perception of hackers. Regardless of the limited scope of the research, the findings indicate a need for targeted educational initiatives and more nuanced media representations to shift public perception and improve cybersecurity strategies.

References:

Staggs, S., McMichael, S. L., & Kwan, V. S. Y. (2020). Wishing to be like the character on screen: Media exposure and perception of hacking behavior. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 14(1). <https://doi.org/10.5817/CP2020-1-4>

Shandler, R., Kostyuk, N., & Oppenheimer, H. (2023). Public opinion and cyberterrorism. *Public Opinion Quarterly*, 87(1), 92–119. <https://doi.org/10.1093/poq/nfad006>

The Impact of Romantic Relationships on Students' Academic Performance

Augustas Nacevičius, Mikas Tsodikov, Povilas Voveris

Vilnius University, Faculty of Mathematics and Informatics

Keywords: Romantic relationships, Academic achievements, Time management

Abstract: University students often struggle to balance romantic relationships with academic responsibilities, which can negatively affect their grades. Research in various countries shows that having a romantic partner or dating can reduce academic results (Bishop et al, 2023). This study aims to explore this topic in Lithuania, specifically at Vilnius University. Data will be collected via surveys from first- and second-year students, focusing on how relationships impact academic performance. The data will be analyzed using Microsoft Excel, comparing the academic scores of students in relationships, those actively searching for relationships, and those who are single. The hypothesis is that students who are in relationships or are actively searching for one will have lower grades than students who are single. This research will provide VU students with some perspective on what they should focus on and dedicate their time, during their first years of university.

References:

Kasagga, U., & Nakijoba, S. Effect of Romantic Relationship on Undergraduate Students' Academic Performance: A Case Study of Islamic University in Uganda.

DeLuca Bishop, H. K., Baker, E. A., & van Dulmen, M. H. (2023). The role of friends and romantic partners in college-attending emerging adults' engagement and GPA. *Emerging Adulthood*, 11(1), 221-233.

Ryjova, Y., Kelleghan, A., Badaly, D., Duong, M., & Schwartz, D. (2021). The relationship between dating status and academic and social functioning in middle adolescence. *Journal of Youth and Adolescence*, 50, 1268-1280.

Comparison of Study Methods - Studying Alone and in a Group

Meda Adomaitytė, Augustė Venčkauskaitė

Vilnius University, Faculty of Mathematics and Informatics

Keywords: Studying, Individual study, Group study, Motivation, Productivity

Our research examines how study environments, individual versus group study, impact students. By analyzing the advantages and disadvantages of individual and collaborative learning we aim to provide insight for university students and optimize their studying experience. Our data collection includes survey responses from students on their study habits, preferences, and opinions on each method. The preliminary findings show that both methods have their own advantages: individual work promotes productivity and focus, while group study helps with motivation, however, mainly individual study is preferred. Our research could assist students in choosing the most suitable way of studying.

References:

Babić, T., Kolar, L., & Miličević, M. (2021, September). Individual, cooperative and collaborative learning and students' perceptions of their impact on their own study performance. In 2021 44th International Convention on Information, Communication and Electronic Technology (MIPRO) (pp. 864-869). IEEE.

Ozkara, B. O., & Cakir, H. (2020). Comparison of Collaborative and Individual Learning in Online Learning. *Turkish Online Journal of Educational Technology-TOJET*, 19(4), 66-74.

The Comparison of Daily Nutritional Content Consumed by VU MIF Students Living in Dormitories Versus Living with Parents at Home

Aaron Gandžumian, Mindaugas Kalvinskas, Artūras Timofejevas
Vilnius University | Faculty of Mathematics and Informatics

Keywords: Nutritional needs, Dormitory, Macronutrients, Micronutrients

Proper nourishment is crucial for supporting students' health, however maintaining a healthy diet can often be tough when studying in university. This study aims to figure out differences between VU MIF students' diets based on their living arrangements. VU MIF students were asked to provide what food and drinks they have consumed over the course of 24 hours. The data was then compared to healthy nutritional standards as well as between both groups. The results show that students living with their families tend to have a more balanced diet overall than their counterparts living in dormitories, however, they have still appeared to not meet healthy standards. Despite the limited scope of this research, the findings provide insight into students' nutritional needs and can help inform interventions for improving their dietary behaviors.

References:

- Biberoğlu, F. M., Güven, S., & Yenipınar, Z. G. (2024). Determining the relationship between physical activity and intuitive eating and mindful eating in university students. *International Journal of Agriculture Environment and Food Sciences*, 8(2), 301-314.
- Rizwan, A. A. M., Anwar, A., Khan, M. R., Jahan, N. N., Banik, S. K., & Huda, M. S. (2023). The nutrient intake spectrum: Analyzing the impact of gender and living arrangements in student's diets. *International Journal of Science and Research Archive*, 10(2), 296-302.
- Lambert, L. G., Mann, G., Partacz, M., & Jurss, M. A. (2022). Measuring university students' beliefs toward healthy snack selection. *Journal of American College Health*, 70(1), 191-198.

An Analysis of Schoolwork Automation with AI Tools

Adomas Bieliūnas, Aistė Matelytė

Vilnius University | Faculty of Mathematics and Informatics

Keywords: AI, AI tools, Students, ChatGPT, Assistance, Efficiency, School work, Academia, Work intensification, Learning, Academic achievement, Cognition

Schoolwork automation with AI tools has been increasingly more prevalent in academic environments. Previous research has found that individuals with greater executive functioning challenges find AI more helpful, however, no significant link was found between academic achievement and AI usage or usefulness. This study, however, focused on younger individuals in shorter time frames. We will solely focus on university students and assess data in a wider timescale. Our findings indicate that somewhat contrary to previous results, a majority of students prefer AI tools, find them useful in certain contexts and use them oftenly. Our study aims to better understand how AI is used among students for task optimization to give a better opportunity to improve teaching methods. These findings will be useful for enhancing learning outcomes and improving AI literacy for future students.

References:

Klarin, J., Hoff, E. V., Larsson, A., & Daukantaitė, D. (2024). Adolescents' Use and Perceived Usefulness of Generative AI for Schoolwork: Exploring Their Relationships with Executive Functioning and Academic Achievement. *Frontiers in Artificial Intelligence*, 7, 1415782.

Watermeyer, R., Phipps, L., Lanclos, D., & Knight, C. (2024). Generative AI and the Automating of Academia. *Postdigital Science and Education*, 6(2), 446-466.

Modern Router Safety

Justas Buinevičius, Rojus Klyvis, Karolis Ribačonka

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Router, Wi-Fi network, DDoS attack, Exploitation, Configurations

In the 21st century almost two thirds of the world have access to the internet. To go online at home most people connect their device to a Wi-Fi network of their router. This project aims to identify how such home devices and networks can be exploited and how can an individual protect themselves from certain attacks such as DDoS. Information will be obtained from secondary sources such as research articles about certain router configurations and safety issues. Additionally, data will be examined about certain Wi-Fi network attacks and how a person can protect themselves from such exploitations and certain vulnerabilities.

References:

S. M. Sajjad, M. Yousaf, H. Afzal and M. R. Mufti, "eMUD: Enhanced Manufacturer Usage Description for IoT Botnets Prevention on Home WiFi Routers," in *IEEE Access*, vol. 8, pp. 164200-164213, 2020

Taha Albakour, Oliver Gasser, Robert Beverly, and Georgios Smaragdakis. 2021. Third time's not a charm: exploiting SNMPv3 for router fingerprinting. In *Proceedings of the 21st ACM Internet Measurement Conference (IMC '21)*. Association for Computing Machinery, New York, NY, USA, 150–164.

Adoption of 5G Technologies

Jonas Balzarevičius, Paulius Kvasnickis, Jonas Žilys

Vilnius University | Faculty of Mathematics and Informatics

Keywords: 5G technology, 5G infrastructure, 5G coverage, 5G adoption

Global deployment of 5G accelerates with mid-frequency bands boosting its performance and high-frequency bands enabling faster speeds with low latency. The challenges are increased infrastructure needs for higher frequencies, given the limits in their range, such that small cells have to be installed to make up for it. In Indonesia and Britain, barriers to rollout include frequency allocation, infrastructure gaps, and inequity between urban and rural areas. Frequency band integration and infrastructure sharing are two such decisions in policy and investment that will drive cost-effective expansion of coverage, particularly in rural areas. Works highlight the need for the balance of user demands with costs and spectrum availability toward widespread 5G access, crucial to ensure digital connectivity in industries and smart technologies.

References:

A. Wulandari, M. Hasan and A. Hikmaturokhman, "Private 5G Network Capacity and Coverage Deployment for Vertical Industries: Case Study in Indonesia," 2022 IEEE International Conference on Communication, Networks and Satellite (COMNETSAT), Solo, Indonesia, 2022, pp. 317-322

E. J. Oughton and Z. Frias, "The cost, coverage and rollout implications of 5G infrastructure in Britain," Telecommunications Policy, vol. 42, no. 8, pp. 636-652, 2018.

Ahamed, M. M., & Faruque, S. (2021). 5G Network Coverage Planning and Analysis of the Deployment Challenges. Sensors, 21(19), 6608.

Which Gym is the Best Option in Vilnius (Gym+, LemonGym, Sportgates, Impuls)

Mykolas Adomaitis, Tomas Grigonis, Ainis Augustas Laurinavičius
Vilnius University | Faculty of Mathematics and Informatics

Keywords: Muscle group, Recovery facilities, Pricing, Average busyness, Accessibility

This research aims to determine, which major training facility corporation (Gym+, LemonGym, Sportgates, Impuls) offers the most for your money in Vilnius. Our research aims to collect the data from all of the gyms from each corporate brand. After the data is collected, the study will look into, which gym is the most worth relative to its price, busyness, amount of training equipment, its distribution across the city, inclusion of recovery facilities, parking locations and other perks that might be offered. While existing studies focus on comparing gyms based on equipment quality, this study aims to identify other critical factors that contribute to an optimal training environment.

References:

Freitas, A. L. P., & Lacerda, T. S. (2019). Fitness centers: what are the most important attributes in this sector?. *International Journal for Quality Research*, 13(1), 177.

Sukys, S., Cesnaitiene, V. J., Grajauskas, L., & Kreivyte, R. (2016). EXERCISE SERVICES AVAILABILITY ASSOCIATION WITH YOUNG ADULTS'LEISURE TIME PHYSICAL ACTIVITY AND PERSONAL HEALTH. *Transformations in business & economics*, 15(2B), 38B.

Polyakova, O., & Ramchandani, G. (2023). Perceived service quality among regular users of gyms in public sports centres in the UK. *Managing Sport and Leisure*, 28(1), 35-54.

Comparing the Cost, Speed, Efficiency, and Effectiveness of Ordering Food via Delivery Services, Cooking at Home, and Dining Out in Vilnius

Emilija Novikova, Nerijus Ponomariovas, Dominyka Vaškūnaitė

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Food consumption, Delivery services, Efficiency, Speed, Effectiveness, Consumer behavior

The following paper will compare the cost, speed, efficiency, and effectiveness of three widely used meal consumption methods within Vilnius: ordering food through delivery services, cooking at home, and dining out. Based on data collection and survey-based methodology, this project will appraise the pros and cons of each method in order to present an all-spectrum understanding of how each method affects consumers in terms of time, finances, and satisfaction. Key factors considered are monetary expenses, time investments, health benefits, and convenience. Results are expected to advise consumers in Vilnius on how to make wiser choices of meals according to their needs and liking, while also gaining insight into general trends in food consumption in an urban setting.

References:

Osaili, T. M., Al-Nabulsi, A. A., Taybeh, A. O., Cheikh Ismail, L., & Saleh, S. T. (2023). Healthy food and determinants of food choice on online food delivery applications. *Plos one*, 18(10), e0293004.

Tandon, A., Kaur, P., Bhatt, Y., Mäntymäki, M., & Dhir, A. (2021). Why do people purchase from food delivery apps? A consumer value perspective. *Journal of Retailing and Consumer Services*, 63, 102667.

Keeble, M., Adams, J., Sacks, G., Vanderlee, L., White, C. M., Hammond, D., & Burgoine, T. (2020). Use of online food delivery services to order food prepared away-from-home and associated sociodemographic characteristics: a cross-sectional, multi-country analysis. *International journal of environmental research and public health*, 17(14), 5190.

Dangers Nuclear Power, or Lack thereof

Mantas Binkis, Deividas Petrovskis, Vilius Zinkevičius

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Nuclear energy, Nuclear safety, Nuclear pollution, Nuclear development

Nuclear energy is often depicted as being dangerous and frightening in modern media which leads to fear in the minds of the masses. This promotes humanity's dependency on more polluting energy sources such as fossil fuels and other sources alike. The goal of this research is to survey a broad audience and try to figure out how their age, level of education, nationality and sources of information affect their opinions on the safety and efficiency of nuclear power plants. This presentation outlines our findings, that show that young people's opinions on nuclear energy are largely divided and provides valuable factual information to assess the accuracy of people's opinions. Regardless of the limited pool of participants, it is still possible to draw conclusions on the necessity of proper education and need to promote credible information sources to fight misinformation and encourage nuclear energy development in the future.

References:

Zohuri, B. (2024). Advanced applications of AI and ML in nuclear reactor control systems.

Cetina, I. (2023). Nuclear waste management: Recycling and long-term safe storage. KUI-20/2024, 10.15255/KUI.2023.035.

Wu, Y., & Wang, Z. (Year). Progress in ionizing radiation shielding materials. Advanced Engineering Materials, Issue 2400855, page range.

Environmental Impact of Electric Vehicles (EVs) and Internal Combustion Engine (ICE) Cars

Jokūbas Triškus, Ramūnas Vilius

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Environmental impact, Electric vehicles, Internal combustion engine cars, Sustainability, Consumer behavior

The following paper compares the environmental impact of electric vehicles (EVs) and internal combustion engine (ICE) cars, analyzing their benefits and drawbacks for environment using a survey-based methodology, the study evaluates factors such as greenhouse gas emissions, energy consumption, resource usage, car lifetime and environmental costs. This project aims to provide a clear understanding of which vehicle type presents more environment friendly option when looking at factors such as production processes, the fuel source, and the end of life part recycling. Results will help people make environmentally responsible choices in vehicle purchase and provide insights for Administrators on urban transportation trends while highlighting the environmental effects of changing vehicle choices.

References:

Riven, H., & Kenny, S. (2023, April). Cradle-to-grave life cycle assessment of electric vehicles compared to internal combustion engine vehicles. EnergySage.

Smith, J., & Taylor, R. (2022, March). Electric vs. Diesel and Petrol Cars: A Detailed Analysis of CO2 Emissions. Transport & Environment.

The Power of Early Investing in ETFs (Exchange-Traded Funds)

Gustas Audickas, Nikas Kurbatovas

Vilnius University | Faculty of Mathematics and Informatics

Keywords: ETFs, Financial literacy, Early investing

Exchange-Traded Funds, or ETFs for short, are a type of investment fund that pools money to invest in a diversified portfolio of assets, such as stocks or bonds, and trades on stock exchanges like a regular stock. The aim of this study is to examine the effectiveness of ETF investing and determine whether it is a viable option for beginner investors, as well as showing the benefits of investing early as opposed to delaying it. Methodology includes analyzing former research about the topic, as well as quantitative data from a public survey. Our hope is that these findings will encourage young individuals to learn more about investing and improve their financial literacy.

References:

Lusardi, A., & Messy, F. A. (2023). The importance of financial literacy and its impact on financial wellbeing. *Journal of Financial Literacy and Wellbeing*, 1(1), 1-11.

Joshi, G., & Dash, R. K. (2024). Exchange-traded funds and the future of passive investments: a bibliometric review and future research agenda. *Future Business Journal*, 10(1), 17.

Region of Coffee Origin Impact on Extraction Time

Kamilė Anančenko and Emilija Ksavera Žilinskaitė

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Coffee origin, Extraction time, Environmental impact, Coffee machine

Our goal is to explore the influence of coffee origin on the extraction time to make it more accessible for people and companies to switch to a coffee machine. This will allow people to become more environmental friendly and save their time and Earth. Studies show that the coffee extraction time deeply depends on environmental conditions and the region where the beans were grown. In order to identify the impact of harvesting region, we conducted an experiment on various coffee beans. Our experiment shows that not only the region of the coffee has an impact on extraction time but also the coffee machine itself. This research highlights how the coffee's region and coffee machine affect extraction time, offering useful insights for coffee drinkers and local coffee shops.

References:

Jeremy, 2016, Exploring the Impact of Particles on Espresso Extraction

Brian G. Yust , 2023, Variables Affecting the Extraction of Antioxidants in Cold and Hot Brew Coffee: A Review

Alexia N. Gloess, 2013, Comparison of nine common coffee extraction methods: instrumental and sensory analysis

Kevin M. Moroney, 2019, Analysing extraction uniformity from porous coffee beds using mathematical modelling and computational fluid dynamics approaches

Nancy Cordoba , 2020, Coffee extraction: A review of parameters and their influence on the physicochemical characteristics and flavour of coffee brews

The Impact of AI on Social Media

Rokas Petrikas, Ugnė Rupšytė, Dovydas Valantiejus

Vilnius University | Faculty of Mathematics and Informatics

Keywords: AI, Social media, Algorithms, Bots, Deep fakes

Artificial Intelligence has emerged as one of the most influential technologies of our time. The exponential growth of AI-facilitated technologies is rapidly transforming the online world; however, it raises the question: what are the risks of integrating Artificial Intelligence into social media? This study aims to examine the possible outcomes regarding misguided use of AI in the digital world. Through the analysis of research articles published by scientific institutions, this project aims to draw the conclusion whether AI imposes a real threat to the way social media users perceive the world. The findings suggest that AI is partly responsible for the spread of misinformation and hinders authenticity, therefore, this research serves as a suggestion of AI regulations.

References:

To, B. (2024). Analysis of AI-generated content and deepfakes in social media.

Kang, H., & Lou, C. (2022). AI agency vs. human agency: understanding human–AI interactions on TikTok and their implications for user engagement. *Journal of Computer-Mediated Communication*, 27(5), zmac014.

Panait, C., & Ashraf, C. (2021). AI Algorithms–(re) shaping public opinions through interfering with access to information in the online environment. *Europuls Policy Journal*, 1(1), 46-64.

Green Energy Sources Impact on Animals and Their Habitats

Emilis Juknevičius, Matas Matulionis, Lukas Stavaris

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Green energy sources, Animals, Habitats

Green energy sources can have a significant impact on the local habitats by unintended consequences like toxification, flooding, eutrophication, dried up rivers, deforestation etc. A study by Rahman, Farrok, and Haque (2022) aimed to assess the environmental implications. However, the study doesn't talk about how each type of green energy source affects the environment - it generalizes the idea of harm rather than looking into the individual effects. This presentation shares preliminary findings of what influence wind turbines, hydroelectric power plants and solar panels have on the local plants, animals and their habitats. Comparing the three can help us better understand how we can best utilize green energy sources while minimizing the harm done. Despite the limited scope of the research, analyzing more research articles, measuring the consequences and recognizing the real issues can help us curb climate change without disrupting wildlife.

References:

Rahman, A., Farrok, O., & Haque, M. M. (2022). Environmental impact of renewable energy source based electrical power plants: Solar, wind, hydroelectric, biomass, geothermal, tidal, ocean, and osmotic. *Renewable and Sustainable Energy Reviews*, 161, 112279.

Finding the Best Artificial Intelligence Model for Programmers

Aušra Gudabskaitė, Artūras Kovtun, Martynas Masionis.

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Artificial intelligence, Programming, Chatbot, Model, Efficiency

In the recent decade, artificial intelligence technologies, especially large language models, have exploded in popularity. Naturally, with the increase in interest in this technology, many competitors entered the race to become the most used and widely accepted AI assistant. There are many uses for artificial intelligence, but one of the biggest areas where chat models are used today is programming. Our researches goal was to find the best model for this specific niche. While research that delves into AI model comparisons for different applications is plentiful, there are very few sources that compare different chatbots and find which one is the best at helping programmers code. This research was conducted by comparing manually collected data on programming with the assistance of different AI models. The data was collected by feeding programming tasks to Chat-GPT, Gemini, and Co-pilot chatbots and comparing multiple measured variables. The time it took to generate responses, the amount of prompts needed to solve each problem, amount of code written, and the total time required for completion of the task. The presentation shares findings on which AI model is the best at following instructions, is most efficient, and provides the most direct and correct responses when it comes to solving small programming problems and helping the programmer find a solution. Despite the limited amount of data collected, it is clear that all chatbots have their own advantages. This work can help programmers decide which AI model is best suited for their needs.

References:

Vaithilingam, P., Zhang, T., & Glassman, E. L. (2022, April). Expectation vs. experience: Evaluating the usability of code generation tools powered by large language models. In Chi conference on human factors in computing systems extended abstracts (pp. 1-7).

Ma, Q., Wu, T., & Koedinger, K. (2023). Is ai the better programming partner? human-human pair programming vs. human-ai pair programming. arXiv preprint arXiv:2306.05153.

Liang, J. T., Yang, C., & Myers, B. A. (2024, February). A large-scale survey on the usability of ai programming assistants: Successes and challenges. In Proceedings of the 46th IEEE/ACM International Conference on Software Engineering (pp. 1-13).

Impact of Video Games on Children's Minds

Emilija Gegužytė, Aurėja Jasionytė

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Cognitive skills, Behavioral disorders, Addiction, Video games, Technology.

Over the recent decades video games have become increasingly more popular, thus many people have integrated video games into their lifestyle, especially the younger generation. This project aims to identify whether video games have an impact on children's mental health and if extensive amount of gaming, plays an important part in causing behavioral issues. In addition, we will also investigate potential positive sides of gaming, such as enhanced cognitive performance. To analyze this case from various perspectives, the data will be collected from numerous trusted sites and articles, which will later help to answer the raised questions. The findings of this research might aid in future clinical research regarding children's mental health and disorders caused by video games.

References:

Smirni, D., Garufo, E., Di Falco, L., & Lavanco, G. (2021). The playing brain. The impact of video games on cognition and behavior in pediatric age at the time of lockdown: A systematic review. *Pediatric reports*, 13(3), 401-415.

Lérida-Ayala, V., Aguilar-Parra, J. M., Collado-Soler, R., Alférez-Pastor, M., Fernandez-Campoy, J. M., & Luque-de la Rosa, A. (2022). Internet and video games: Causes of behavioral disorders in children and teenagers. *Children*, 10(1), 86.

Chaarani, B., Ortigara, J., Yuan, D., Loso, H., Potter, A., & Garavan, H. P. (2022). Association of video gaming with cognitive performance among children. *JAMA network open*, 5(10), e2235721-e2235721.

Week 2

Vegetarian vs Omnivore Diet

Nika Bukolovaitė, Astrida Jablonskytė, Monika Tamelytė

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Omnivore, Vegetarian, Environmental impact

Abstract: The dietary choices of omnivores and vegetarians significantly influence environmental sustainability and personal finances. This study examines the environmental impact and cost-effectiveness of vegetarian and omnivorous diets to inform dietary decisions. Using a comparative analysis of existing literature and data collected via survey, the research evaluates carbon, water and environmental footprint as well as implications on personal finances. Preliminary findings reveal that vegetarian diets consistently demonstrate lower environmental footprints compared to omnivorous diets. Additionally, while it may initially seem like vegetarian diets may be more expensive due to reliance on less common food items, they often prove to be more economical over time, as animal products require more resources to produce and are, therefore, more expensive. These insights highlight the dual benefits of vegetarian diets in promoting environmental sustainability and financial savings, making a compelling argument for people to adopt more plant-based eating habits.

References:

Kustar, A., & Patino-Echeverri, D. (2021, September 3). A review of environmental life cycle assessments of diets: Plant-based solutions are truly sustainable, even in the form of Fast Foods. MDPI.

Using AI Tools to Improve Learning

Adomas Lukoševičius, Martynas Simanavičius, Valentinas Šamatovicius

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Artificial intelligence, Education, Adaptive learning, Hybrid intelligence, Academic performance

The integration of artificial intelligence (AI) into education presents a transformative opportunity to enhance learning outcomes. This research explores the hypothesis that university students who utilize AI tools for learning develop a more profound understanding of class material compared to those who do not. Drawing on frameworks such as Molenaar's hybrid human-AI learning systems and Nguyen's categorization of AI applications in education, the study investigates the role of AI-powered adaptive learning platforms, intelligent tutoring systems, and recommendation engines. The methodology involves a comparative analysis of two student groups—one using AI tools and the other employing traditional methods—focusing on academic performance, engagement, and comprehension. The study leverages the detect-diagnose-act framework to analyze AI's influence on tailoring personalized learning experiences. Preliminary insights from literature suggest AI's potential to close knowledge gaps and improve self-regulation, paving the way for hybrid intelligence as an essential component of modern education.

References:

Molenaar, I. (2022, September 23). Towards hybrid human-ai learning technologie. Wiley Online Library. <https://onlinelibrary.wiley.com/doi/abs/10.1111/ejed.12527>

Nguyen, N. D. (2023, September 17). Exploring the role of AI in Education. London Journal of Social Sciences. <https://www.londonic.uk/js/index.php/ljbeh/article/view/108>

Zhai, X., Chu, X., Chai, C. S., Jong, M. S. Y., Istenic, A., Spector, M., Liu, J.-B., Yuan, J., & Li, Y. (2021, April 20). A review of Artificial Intelligence (AI) in Education from 2010 to 2020. Complexity. <https://www.hindawi.com/journals/complexity/2021/8812542/>

Examining the Impact of Pre-Sleep Screen Time on Sleep Quality and Physical Well-Being of Students in Lithuania

Benediktas Juozapaitis, Gabija Joana Kameneckaitė, Marijus Kuprys

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Screen time, Sleep quality, Physical well-being, Physical discomfort, Sleep restriction

Sleep time of students is notorious for being inconsistent. Previous studies have shown that even in schools, around 60% of students are sleep restricted due to device use before sleep. However, the previously done research doesn't consider the effect screen use before sleep has on Lithuanian university students. For this research, we used a 10-step online questionnaire, which contained general questions about sleep quality, physical well-being and screen time. Over the span of two weeks, we have collected a sample of 50 Vilnius University students (ages 18-25), 100% of which reported using a device within the hour before going to sleep. 46/50 (92%) of respondents complained about physical discomfort which they associated with screen use. Despite not meeting the original goals, the findings shine a spotlight on an issue of a way bigger scope than anticipated.

References:

Hartley, S., Royant-Parola, S., Zayoud, A., Gremy, I., & Matulonga, B. (2022). Do both timing and duration of screen use affect sleep patterns in adolescents?. *Plos one*, 17(10), e0276226.

Gruba, G., Kasiak, P. S., Gębarowska, J., Adamczyk, N., Sikora, Z., Jodczyk, A. M., ... & Śliż, D. (2021). PaLS study of sleep deprivation and mental health consequences of the COVID-19 pandemic among university students: a cross-sectional survey. *International Journal of Environmental Research and Public Health*, 18(18), 9581.

Gupta, P. C., Rana, M., Ratti, M., Duggal, M., Agarwal, A., Khurana, S., ... & Ram, J. (2022). Association of screen time, quality of sleep and dry eye in college-going women of Northern India. *Indian journal of ophthalmology*, 70(1), 51-58.

Bilingualism and Cognitive Development

Edvinas Balkys, Titas Stongvila

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Bilingualism, Multitasking, Cognitive skills, Language impact, Cognitive development

Bilingualism is often linked to better cognitive skills, including multitasking. This study looks at how speaking multiple languages affects multitasking abilities by analysing raw data from statistical departments in different countries and comparing it with data from recent research. The goal is to see if bilingual people perform better in multitasking than monolinguals. The results show a strong connection between bilingualism and improved multitasking, highlighting the cognitive benefits of knowing more than one language. These findings help us better understand how bilingualism supports mental skills and can influence education and work strategies.

References:

Pliatsikas, C., Meteyard, L., Veríssimo, J., DeLuca, V., Shattuck, K., & Ullman, M. T. (2020). The effect of bilingualism on brain development from early childhood to young adulthood. *Brain Structure and Function*, 225(6), 2131–2152.

Bialystok, E., & Craik, F. I. M. (2022). How does bilingualism modify cognitive function? Attention to the mechanism. *Psychonomic Bulletin & Review*, 29(4), 1246–1269.

Consumerism in Modern Age - Mass Media and Consumption Patterns

Gustas Cikanavičius, Kamilė Maleiškaitė, Arnas Vyšniauskas

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Consumerism, Mass media, Sustainable consumption, Media influence, Banal consumerism

Consumerism today is deeply influenced by mass media and evolving consumption habits. Media often promotes everyday materialism, known as banal consumerism, but it can also highlight sustainable alternatives. However, it has become evident that younger generations are increasingly shifting toward more sustainable consumption. To explore whether mass media significantly influences these behaviours, a survey was conducted and analysed using quantitative methods, and its data was compared with existing insights. The findings correlate with previous research, showing that Generation Z tries to prioritize sustainability and a balanced life over traditional materialism, however, barriers such as affordability and societal pressures continue to limit individual responsibility for mindful consumption. This highlights that media still plays a crucial role in forming consumption trends.

References:

Grénman, M., Hakala, U., Mueller, B., & Uusitalo, O. (2024). Generation Z's perceptions of a good life beyond consumerism: Insights from the United States and Finland. *International Journal of Consumer Studies*, 48(1), e12994.

Parvatiyar, A., & Sheth, J. N. (2023). Confronting the deep problem of consumption: why individual responsibility for mindful consumption matters. *Journal of Consumer Affairs*, 57(2), 785-820.

Boréus, K., Bradley, K., & Tornhill, S. (2024). Breaking through banal consumerism? Representations of postconsumerist perspectives in mainstream press media. *Journal of Consumer Culture*, 24(1), 155-174.

Interactive vs Traditional Learning. Students' Preference and Impact on Academic Performance

Laimis Papinigis, Augustinas Pletkus, Daniel Sosna

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Traditional learning, Interactive learning, Educational environments, Student engagement, Academic performance

With the integration of technologies into education, interactive learning platforms are reshaping traditional teaching methods and offering innovative tools that enhance students' engagement and learning effectiveness. This project examines the effectiveness of traditional and interactive learning with respect to its impact on the engagement, understanding, and academic performance of students. The project adapts a quantitative approach in synthesizing the secondary data from various research articles that address different educational environments. The analysis of selected articles will show benefits and drawbacks of both learning approaches and probably identify which is the superior. The research provides actionable help for educators in matching teaching strategies to specific contexts and learners' needs.

References:

Ginting, D. A., & Ramadhan, S. (2024). The Impact of Interactive Learning Applications on EFL Students' Preferences and Academic Achievement. *TEM Journal*, 13(2).

Lane, N., & Barron, S. (2023). Understanding the importance of interactive learning and entrepreneurial education in furthering the innovation capacity of biotechnologists. *Journal of Commercial Biotechnology*, 28(4).

Abdel Meguid, E., & Collins, M. (2017). Students' perceptions of lecturing approaches: traditional versus interactive teaching. *Advances in medical education and practice*, 229-241.

The Impact of Social Media on Buying Habits

Kristina Noreikaitė, Ūla Valentinavičiūtė, Ieva Survilaitė

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Social media, Social media influencers, Buying habits, Marketing, Consumer

Social media has an influence on everyone. Whether it is their perception of the world or how they spend their money. This study explores the impact that social media has on a consumer's buying habits, especially amongst students. Data will be collected by surveying university students focusing on their use of social media and their buying habits. Once the data is collected, it will be analyzed and presented. Additionally, research articles will be reviewed to support our findings and provide relevant context for this study. The study's discoveries stand to shed some light on how social media affects students' buying behavior and how influencers shape their spending patterns.

References:

PHAM, Minh, et al. "The effects of online social influencers on purchasing behavior of generation z: An empirical study in Vietnam." *The Journal of Asian Finance, Economics and Business* 8.11 (2021): 179-190.

Kamaldeep, Singh. "Influencer marketing from a consumer perspective: how attitude, trust, and word of mouth affect buying behavior." *European Integration Studies* 15.1 (2021): 231-241.

Autio, Susanne. "The impact of social media on consumer purchasing behavior." (2020).

How Much Does the Price Differ between Pre-made Food and Separate Products in Different Supermarket Chains

Augustinas Bičkaitis, Kęstutis Karneckas, Eigintas Urbanavičius

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Food prices, Pre-made food, Food products, Supermarkets, Stores

Most bigger stores provide an assortment of in-store produced food; however, this convenience must come at a price. This research will focus on the price gaps between pre-prepared food items and the individual ingredients to prepare those very meals at various supermarket chains such as Maxima, Iki, Norfa, Lidl and Rimi. Using a comparative pricing approach, we have highlighted the variation between the two categories in the aforementioned stores. The goal is to provide information on how much more the consumer pays for convenience and should help make smarter shopping decisions for those who must balance cost with time and effort.

References:

Matthews, A. (2023). The recent experience of food price inflation. *Studies in Agricultural Economics*, 125, 60–68.

Golden, C. D., Koehn, J. Z., Shepon, A., Passarelli, S., Free, C. M., Viana, D., Matthey, H., Eurich, J. G., Gephart, J. A., Fluet-Chouinard, E., Nyboer, E. A., Lynch, A., Kjellevold, M., Bromage, S., Charlebois, P., Barange, M., Vannuccini, S., Cao, L., Kleisner, K., ... Thilsted, S. H. (2021). Aquatic foods to nourish nations. *Nature*, 598(7868), 315–320.

Caspi, C. E., Pelletier, J. E., Harnack, L. J., Erickson, D. J., Lenk, K., & Laska, M. N. (2017). Pricing of Staple Foods at Supermarkets versus Small Food Stores. *International journal of environmental research and public health*, 14(8), 915.

TikTok as a New Search Engine for Generation Z

Aidas Agejevas, Justinas Jarmalavičius, Ugnė Jurkšaitytė

Vilnius University | Faculty of Mathematics and Informatics

Keywords: TikTok, Search engines, Social media, Gen Z, Search preferences

TikTok has become a popular platform for Gen Z, serving as both an entertainment platform and a tool for information seeking. This study investigates its potential as a search engine, analysing user behaviour, content preferences, and credibility perceptions compared to Google, YouTube, Instagram, and Facebook. A survey of individuals aged 12–29 explored preferences for quick and in-depth searches, types of content sought, and trust factors. Findings show TikTok excels in lifestyle and entertainment searches due to its short-video format, while Google remains the top choice for detailed and educational queries. Insights from this research can help shape the evolution of search and content platforms, promoting more reliable and user-centric information ecosystems.

References:

Erenia, G.R., Faustino, D.M., & Morales, K. (2024). Search behavior of Gen Z on YouTube and TikTok. *International Journal of Science and Research Archive*, 12(1), 1023–1032. doi:10.30574/ijrsra.2024.12.1.0888.

Wang, M., & Lind, S. (2023). Exploring the search behavior of teenagers: A comparative study of social media and browser usage. *Journal of Student Research*, 12(4), 1–6.

Diaz, J.G., Garlitos, Y.M.C., Arsenal, C.D., et al. (2023). Examining the Perceived Popularity of TikTok Among Gen-Z Learners. *Psychology and Education: A Multidisciplinary Journal*, 15, 680–690. doi:10.5281/zenodo.10351811.

The Role of Beer in Disease Prevention and Health Improvement Between Men and Women

Rokas Danielius Didrikas, Edvinas Ryliškis

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Alcohol metabolism, Cardiovascular disease, Moderate alcohol consumption, Mortality risk consumption, Blood alcohol concentration

Beer, one of the oldest human-produced drinks, for an extended period has been viewed as an unhealthy drink by society. This study aims to explore the benefits and risks of moderate beer consumption on health, focusing on cardiovascular, metabolic benefits and disease prevention. Review literature and statistical analysis of health data were conducted to assess the impact of beer consumption on disease prevention across genders. Findings reveal that moderate consumption may contribute to disease prevention and longevity, though impact varies significantly between men and women. The results of this study will show the importance of understanding gender-specific differences in alcohol's health impacts and suggest that while beer can offer health benefits, careful consideration of consumption levels is crucial.

References:

Marcos, A., Serra-Majem, L., Pérez-Jiménez, F., Pascual, V., Tinahones, F. J., & Estruch, R. (2021). Moderate Consumption of Beer and Its Effects on Cardiovascular and Metabolic Health: An Updated Review of Recent Scientific Evidence. *Nutrients*, 13(3), 879.

"How Alcohol Affects Women Differently Than Men," Zinnia Health

Spaggiari G, Cignarelli A, Sansone A, Baldi M, Santi D (2020) To beer or not to beer: A meta analysis of the effects of beer consumption on cardiovascular health.

Ambra, R.; Pastore, G.; Lucchetti, S. The Role of Bioactive Phenolic Compounds on the Impact of Beer on Health. *Molecules* 2021, 26, 486.

Hacking as Seen by Society vs Reality

Gabija Janušauskaitė, Jokūbas Kisielius, Mantas Majauskas

Vilnius university | Faculty of Mathematics and Informatics

Keywords: Hacking, Internet, Cyber security, Cyber-crime, Misconceptions

For the past two decades, the amount of misinformation around hacking worldwide has been increasing exponentially. Our study examines the differences between social perception of hacking and what experts say about it. The data for this research has been gathered utilizing recent research articles that have been already published on this topic as well as a survey conducted on passersby. Gathered data suggests that society lacks knowledge about hacking. This study hopes to reduce the spread of misconception across society and shed light on the world of hacking, thus reducing the rates of cyber-crime.

References:

Ireland, L. (2024). We are all (not) Anonymous: Individual-and country-level correlates of support for and opposition to hacktivism. *New Media & Society*, 26(8), 4429-4453.

Sharevski, F., & Kessell, B. (2023). Fight fire with fire: hacktivists' take on social media misinformation. In *Nineteenth Symposium on Usable Privacy and Security (SOUPS 2023)* (pp. 19-36).

Yaacoub, J. P. A., Noura, H. N., Salman, O., & Chehab, A. (2023). Ethical hacking for IoT: Security issues, challenges, solutions and recommendations. *Internet of Things and Cyber-Physical Systems*, 3, 280-308.

Link between Nutrition and Mental Health in Young Adults

Alanas Benediktas Bistrickas, Tautvydas Danilevičius, Dominykas Ratkevičius, Gracijus Šiurna

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Mediterranean diet, Dietary fiber, Mental health

While diet impacts physical health, its influence on mental health remains overlooked. The issue of mental disorders among young adults is on the rise, thus the need to understand nutrition's role in it is crucial. This study focuses on the link between diet and mental health among young adults. We analyzed survey data from participants aged 18-25 and existing research in the literature on nutrition and mental health. The findings show that dietary choices directly affect a person's mental well-being, with those who eat better having fewer mental health problems. The study hopes to improve people's nutrition by educating them about its impact on mental health.

References:

Tuck, N. J., Farrow, C., & Thomas, J. M. (2019). Assessing the effects of vegetable consumption on the psychological health of healthy adults: a systematic review of prospective research. *The American journal of clinical nutrition*, 110(1), 196–211.

Saghafian, F., Sharif, N., Saneei, P., Keshteli, A. H., Hosseinzadeh-Attar, M. J., Afshar, H., Esmailzadeh, A., & Adibi, P. (2021). Consumption of Dietary Fiber in Relation to Psychological Disorders in Adults. *Frontiers in psychiatry*, 12, 587468.

Bayes, J., Schloss, J., & Sibbritt, D. (2022). The effect of a Mediterranean diet on the symptoms of depression in young males (the "AMMEND: A Mediterranean Diet in MEN with Depression" study): a randomized controlled trial. *The American journal of clinical nutrition*, 116(2), 572–580.

The Impact of Remote Work on Employee Productivity

Domas Barauskas, Gustas Geibaitis, Dominykas Nemanis

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Remote work, Employee productivity, Workplace structure, Work-life balance, Hybrid work models

Remote work is becoming a common occurrence in today's workplaces, likely due to global events such as the COVID-19 pandemic and advances in technology. Despite its widespread adoption, employees' self-esteem, work-life balance and the impact of remote work on their productivity is still a subject of debate. For example, research shows that on one hand, working remotely helps employees experience less stress, both psychological and physical, however, working exclusively remotely results in lesser productivity (Shimura, 2021). Our study attempts to explore how working remotely affects people's productivity, focusing on its benefits and challenges. The data was collected via surveys of professionals from many fields who have had experience not only with working remotely, but also office work. Participants answered questions regarding their productivity, focus, and ability to work in teams, the latter inquiring about the quality of communication between coworkers and workplace structure. Our survey findings show that a large portion of respondents, at the very least, have some experience with working remotely and that their productivity levels did not change significantly compared to traditional settings. The majority stated that their ability to focus was enhanced throughout the day and they experienced decreased distractions when working remotely. However, various challenges such as poor communication and lacking workplace structure were identified. This shows that the effect remote work has on productivity is more complex than it may seem. While remote work improves individual focus, organizations must address its limitations to fully harness the potential it has. These insights can guide employers and employees in designing better hybrid work models that balance flexibility and enhance communication as well as effective teamwork.

References:

Shimura, A., Yokoi, K., Ishibashi, Y., Akatsuka, Y., & Inoue, T. (2021). Remote work decreases psychological and physical stress responses, but full-remote work increases presenteeism. *Frontiers in psychology*, 12, 730969.

Gender Dynamics and Online Dating Behaviors

Daimonas Jocys, Augustinas Punis, Artūras Semenčiuk

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Online dating, Gender roles, Physical attractiveness, Financial stability, Dating norms

With the increasing popularity of dating apps, the ways in which individuals navigate romantic relationships have evolved, raising questions about the role of traditional gender expectations. The purpose of this project is to investigate the evolving dynamics of online dating and how gender influences partner selection. Using data from 150 survey respondents, it examines the age-old query: do women prefer financial stability, and do men truly favor appearance? The results indicate that stereotypes persist: women tended toward long-term compatibility and financial stability, while most men placed high value on physical appearance. However, 20% of respondents deviated from the norm, indicating that dating conventions are gradually changing. This study contributes to a discussion on the future of contemporary romance by illuminating the ways in which gender roles manifest in dating apps.

References:

Sobieraj, S., & Humphreys, L. (2021). Forced empowerment and the paradox of mobile dating apps. *Social Media+ Society*, 7(4), 20563051211068130.

Konings, F., Sumter, S. R., & Vandenbosch, L. (2024). Gender Roles and Mobile Dating Applications: Exploring Links Between User Characteristics and Traditional Gender Expressions in Self-Presentations. *Archives of Sexual Behavior*, 1-16.

Survey Data (2024). Findings from our team's research form on gender preferences in online dating.

Living Cost of Students in Lithuania Compared to Any Other EU Country - with Similar GDP

Nojus Girdžiūna, Julius Trukšinas, Liveta Ruškutė

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Living cost, Financial responsibility, Gross domestic product

Abstract: Financial responsibility is one of the many challenges students face. This research investigates the living costs of students in Lithuania and compares them to those in another EU country with a similar GDP. The study aims to assess how factors such as accommodation, food, transportation, and other living expenses impact student life in both countries. For this research, we used a 20-step questionnaire, asking about general expenditures. The preliminary findings suggest that living in Lithuania on average is more expensive compared to other countries. Ultimately, this research aims to inform policy recommendations for improving the affordability of student life in Lithuania and help students make informed decisions about studying abroad within the EU.

References:

Guzi, M. (2021). Cost of living, living wages, and minimum wages in EU-27 countries.

University Students' Shopping Habits: Online vs In-Store Choices

Saimonas Sudintas, Tėja Tupinytė, Julius Vilkanec

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Online shopping, In-store shopping, Purchasing decisions, Cost-effectiveness, Sustainability

Abstract: The 21st century has presented many outlets to choose from when making daily purchasing decisions - be it ordering from a dedicated online store, a multi-purpose application, or simply getting the goods in a physical location. As university life can sometimes pose an obstacle for students to efficiently budget and manage their time, it is essential to pick the most cost-effective and convenient option for their purchasing needs. This research aims to investigate the differences between online and in-store shopping by conducting a hands-on experiment and surveying Vilnius University students about their motivations for a preferred shopping style. The findings and previous research done on this topic will shed light on the positive and negative aspects of each option, and present the most optimal and sustainable shopping method for Vilnius University students.

References:

Černikovaitė, M., Karazijienė, Ž., Bivainienė, L., & Dambra, V. (2021). Assessing customer preferences for shopping centers: Effects of functional and communication factors. *Sustainability*, 13(6), 3254.

Daroch, B., Nagrath, G., & Gupta, A. (2021). A study on factors limiting online shopping behaviour of consumers. *Rajagiri Management Journal*, 15(1), 39-52.

Ylilehto, M., Komulainen, H., & Ulkuniemi, P. (2021). The critical factors shaping customer shopping experiences with innovative technologies. *Baltic Journal of Management*, 16(5), 661-680.

Texting and Its Effect on Teen Literacy

Edgaras Lialko, Rokas Mileris

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Texting, Teens, Literacy, Social media, Effect, Messages

Literacy levels among teenagers have shown a decline in recent years and we believe one of the main factors to this trend is the way teens text. While it is generally known that texting might have a negative effect on literacy, little conclusive evidence has been found to support it. The main methods used in this research are the analysis of preexisting research articles to gather data and gauge the broad effect of instant text messaging and grouping common trends in messaging into different categories to see how each of them impact today's youth. This presentation shares preliminary findings that texting has a negative effect on teen literacy, however this depends on the individual and their texting preferences. However limited, this research helps better gauge the effect instant text messaging has on teens.

References:

Aidanazima Abashah. (2024). Unveiling the Transformative Influence of Instant Short Message Prowess on Literacy Skills among UiTM's Students.

Hans Luyten. (2000-2018). Examining the relationship between online chatting and PISA reading literacy trends.

Hans Luyten. (2022). The global rise of online chatting and its adverse effect on reading literacy.

Takeout vs Cooking at Home

Faustas Avulis, Kipras Gudaitis, Arnas Tamošaitis

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Takeout, Cooking at home, Convenience, Money savings, Lack of time, Simplicity, Survey findings, Food habits

Nowadays takeout and cooking at home have become a competing choices. And as takeout is becoming more popular, less people are inclined to cook at home and choose takeout. There are many reasons why, and we want to find out what are the reasons between choosing takeout or cooking at home. One research shows that the simplicity of placing an order from home, especially with optimized apps, encourages more frequent use (Keeble et al., 2022). But simplicity is not only reason why and we want delve deeper into it. We employed quantitative research methodology and conducted survey to find out reasons why people choose cooking at home or take out. Our preliminary findings show that three quarters don't spend more than 25 euros a month on takeout. From the answers we can see that nine-tenths say they like the money savings and only half answered that lack of time was driving them to choose takeout. Despite the limited scope of our research, we can see most people choose cooking at home, but the lack of time and convenience is bit by bit making more people consider takeout.

References:

Keeble, M., Adams, J., & Burgoine, T. (2022). Investigating experiences of frequent online food delivery service use: A qualitative study in UK adults. *BMC Public Health*, 22(1), 1365. <https://doi.org/10.1186/s12889-022-13721-9>

The Impact of Social Media use on Youths' Social Interactions

Rokas Braidokas, Arnoldas Ivanauskas, Kostas Kasimovas,
Dominykas Pavlavičius

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Social media, Social interactions, Narcissism, Social isolation

Since the inception of the internet real social interactions have been getting replaced by social media. For some youth it has even completely replaced them. Hence, it is of interest how the individual person is affected by the conversion of real interactions to social media use. To accomplish this, we will do a research analysis review from more than numerous articles. Preliminary findings show that social media over-use has negative consequences such as depression or the development of narcissistic tendencies. This research informs the youth how they may be impacted by social media and promotes cautious and reasonable use of such outlets.

References:

Kolhar, M., Kazi, R. N. A., & Alameen, A. (2021). Effect of social media use on learning, social interactions, and sleep duration among university students. *Saudi journal of biological sciences*, 28(4), 2216-2222.

Azzaakiyyah, H. K. (2023). The Impact of Social Media Use on Social Interaction in Contemporary Society. *Technology and Society Perspectives (TACIT)*, 1(1), 1-9.

Iqbal, J., Asghar, M. Z., Ashraf, M. A., & Rafiq, M. (2022). Social media networking sites usage and depression among university students during the COVID-19 pandemic: The mediating roles of social anxiety and loneliness. *Social Media+ Society*, 8(3), 20563051221107633.

Azzaakiyyah, H. K. (2023). The Impact of Social Media Use on Social Interaction in Contemporary Society. *Technology and Society Perspectives (TACIT)*, 1(1), 1-9.

Abdullah, A., Tahir, Z., Yusoff, N. H., & Andrew, F. T. (2022). EFFECT OF SOCIAL MEDIA USAGE ON THE LIFESTYLES OF YOUTH. *e-BANGI Journal*, 19(4).

Khalaf, A. M., Alubied, A. A., Khalaf, A. M., & Rifaey, A. A. (2023). The impact of social media on the mental health of adolescents and young adults: a systematic review. *Cureus*, 15(8).

Astuti, M. W., Jefri, R., & Novia, L. (2022). The Impacts Of Social Media On The Youth's Interpersonal Communication. *Jurnal Humanipreneur*, 2(1).

Noori, N., Sayes, A., & Anwari, G. (2023). The Negative Impact of Social Media on Youth's Social Lives. *International Journal of Humanities Education and Social Sciences*, 3(1).

The Emotional Well-being of VU MIF Students

Rugilė Alkovaitė, Deimantė Davidavičiūtė, Airida Liškauskaitė

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Academic performance, Emotional well-being, Academic success

When students transition from high school to university, they face a significant change in their environment. Many express concerns about the workload and exhaustion of higher education. Such challenges can lead to declining academic performance and psychological struggles. This study explores the emotional state of university students by reviewing relevant research articles and conducting a survey of VU MIF students to assess their well-being, coping strategies, and perceived support systems. Preliminary findings reveal a strong negative correlation between difficulty in managing academic stress and overall mental health. Additionally, effective coping strategies positively influence emotional well-being, while family support has a minimal direct effect. This study will offer a clearer understanding of how VU MIF students perceive university life, counseling services, and the changes they believe could enhance their academic success if implemented.

References:

Moreno-Montero, E., Ferradás, M. D. M., & Freire, C. (2024). Personal Resources for Psychological Well-Being in University Students: The Roles of Psychological Capital and Coping Strategies. *European Journal of Investigation in Health, Psychology and Education*, 14(10), 2686-2701.

Brett, C. E., Mathieson, M. L., & Rowley, A. M. (2023). Determinants of wellbeing in university students: The role of residential status, stress, loneliness, resilience, and sense of coherence. *Current Psychology*, 42(23), 19699-19708.

Chaudhry, S., Tandon, A., Shinde, S., & Bhattacharya, A. (2024). Student psychological well-being in higher education: The role of internal team environment, institutional, friends and family support and academic engagement. *Plos one*, 19(1), e0297508.

What Importance Does Breakfast Pose in Students' Academic Achievement and Motivation?

Šarūnas Sinkevičius, Karolis Šeštokas

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Breakfast, Academic achievement, Motivation, Cognitive functioning, Mental activity

Despite breakfast being frequently regarded as the most significant meal of the day and an essential part of a healthy lifestyle, people still tend to undervalue its importance on their mental activity. Fortunately, not only does our research discover the correlation between breakfast eating and students' academic achievement, but their overall motivation to study as well. Accumulated data through an online survey was thoroughly analyzed by grouping answers to certain questions and finding a relation between them. The results show that there is a linear correspondence to the frequency of having breakfast and both students' academic achievement, as well as their motivation to study. Despite the limited scope of the research, not only do our findings provide an insight to the public, but the collected results could also serve as a background for future inquiries.

References:

Martin, A. J., Bostwick, K. C., Burns, E. C., Munro-Smith, V., George, T., Kennett, R., & Pearson, J. (2024). A healthy breakfast each and every day is important for students' motivation and achievement. *Journal of School Psychology*, 104, 101298.

Ling, M. H. (2024). Systematic Review of PubMed Articles Prior to 2023 on Effects of Breakfast on School Performance. *Medicon Medical Sciences*, 6, 11-25.

Gao, C. L., Zhao, N., & Shu, P. (2021). Breakfast consumption and academic achievement among Chinese adolescents: A moderated mediation model. *Frontiers in Psychology*, 12, 700989.

The Impact of AI on Teaching

Jevgenij Čistiakov, Nikita Michailov

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Artificial intelligence, Education, Adaptive learning, Teaching tools, Teacher-AI collaboration

Nowadays, Artificial Intelligence (AI) is beginning to be actively used in various fields to perform certain tasks. Among other things, AI is gradually being incorporated into education, providing the opportunity to personalise the learning process for both university students and high school students. This technology is also automating routine tasks and providing new teaching tools. Our research project explores the gradual integration of AI into the teaching process, finding both positive and negative aspects of its use. Problems such as imperfect algorithms of neural networks like ChatGPT and Gemini are also discussed. This research concludes that while AI offers significant benefits, it cannot completely replace humans in education due to the lack of personal connection and understanding. Therefore, human supervision is still necessary to ensure educational equity and effectiveness. Our findings also suggest that teachers occasionally struggle to find the most effective approach to explain material to achieve the best results.

References:

AI in STEM education: The relationship between teacher perceptions and ChatGPT use (Maik Beege, Christopher Hug , Josef Nerb)

AI in education: Comparative perspectives from STEM and Non-STEM instructors (Muhammed Parviz)

Internet Censorship and Freedom of Speech in the Age of Digital Authoritarianism

Mantas Delgiado, Aleksandra Nikitkova, Stasys Veitas

Vilnius university | Faculty of Mathematics and Informatics

Keywords: Internet, Censorship, Freedom of speech, Authoritarianism, Regulation

Censorship has always been a part of human societies and recently it has transformed as the internet was introduced and governments started censoring social media content. The aim of this study is to investigate how governments, especially authoritarian regimes, utilize digital technologies to suppress dissent, regulate information, and restrict freedom of speech. By analyzing data from research articles and internet censorship measurement platforms, the research will explore how authoritarian systems use censorship tools to limit individual freedom, speech, and data flow in the digital world. The findings aim to raise people's awareness about the topic of digital authoritarianism and prevent the rise of it in the future.

References:

Master, A., & Garman, C. (2023). A Worldwide View of Nation-state Internet Censorship. *Free and Open Communications on the Internet*.

Pearson, J. S. (2024). Defining Digital Authoritarianism. *Philosophy & Technology*, 37(2), 73.

Schlumberger, O., Edel, M., Maati, A., & Saglam, K. (2024). How authoritarianism transforms: A framework for the study of digital dictatorship. *Government and Opposition*, 59(3), 761-783.

Correlation between Digital Consumption and Mental Well-being

Gabrielius Butkus, Tomas Čivilis, Ugnius Palubinskas

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Digital consumption, Mental well-being, Screen-time, Mental health

The ever-increasing digital consumption has plagued every generation since the dawn of television. From playing video games until the sunrise to scrolling through social media while on the toilet, everyone has their preferred way of getting bombarded with dopaminergic content. It is a universal guilty pleasure, but where does this guilt stem from? Little research has been conducted on the correlation between digital consumption and mental well-being or the use of digital detox to minimize the overwhelming digital content. Which is why this research employs a survey of Vilnius University students to answer the relatively new question of how digital consumption affects mental well-being and would digital detox be of any help? The preliminary findings suggest that over 90% of students spend more than four hours daily on their screens, with about 90% of that time dedicated to social media. Many students acknowledge that this excessive screen time negatively impacts their mental health, leading to feelings of anxiety, emotional exhaustion, and reduced social interaction. However, most students who have attempted a screen detox report at least modest improvements in their mental well-being. These findings will shed some light on the negative side-effects of digital consumption and give people workable protocols for minimising this damage. / These findings suggest the unexpected conclusion that in general digital consumption does little harm to mental well-being and as a result digital detox is a niche solution for individuals who need to briefly escape digital content.

References:

Tang, S., Werner-Seidler, A., Torok, M., Mackinnon, A. J., & Christensen, H. (2021). The relationship between screen time and mental health in young people: A systematic review of longitudinal studies. *Clinical psychology review*, 86, 102021.

Ostic, D., Qalati, S. A., Barbosa, B., Shah, S. M. M., Galvan Vela, E., Herzallah, A. M., & Liu, F. (2021). Effects of social media use on psychological well-being: a mediated model. *Frontiers in psychology*, 12, 678766.

Radtke, T., Apel, T., Schenkel, K., Keller, J., & von Lindern, E. (2022). Digital detox: An effective solution in the smartphone era? A systematic literature review. *Mobile Media & Communication*, 10(2), 190-215.

Effects of Online Learning on Students

Mantas Kalvinskas, Kipras Spirgys

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Learning loss, Academic performance, Student achievement, Online learning

The COVID-19 pandemic caused students to shift from traditional learning to online learning. This research aims to find out the impact online learning had on students' academic performance during the pandemic and after, with a focus on identifying instances of learning loss and recovery. Quantitative data, including academic scores and effect size analyses were extracted from research articles and databases. The results reveal that overall, the majority of students experienced a decline in academic performance during online learning, however younger students showed a faster recovery from learning loss than older students. This research benefits the world by providing insight into the long-term impacts of online learning on education.

References:

Hammerstein, S., König, C., Dreisörner, T., & Frey, A. (2021). Effects of COVID-19-related school closures on student achievement-a systematic review. *Frontiers in psychology*, 12, 746289.

Donnelly, R., & Patrinos, H. A. (2022). Learning loss during Covid-19: An early systematic review. *Prospects*, 51(4), 601-609.

Which Type of Vehicle is More Environmentally Friendly: Gas Cars or Electric Cars

Matas Čechanavičius, Raimundas Naujikas Karolis Paškevičius

Vilnius University | Faculty of Mathematics and Informatics

Keywords: Battery electric vehicle, Internal combustion engine, Environment preservation, Environmentally friendly

The environment preservation topic is becoming increasingly more relevant as the world combats climate change. It is particularly important to find more environmentally friendly options between battery electric vehicles and internal combustion engine vehicles. Our hypothesis suggests that there is no convenient or environmentally friendly way to replace internal combustion engine vehicles with battery electric vehicles. Our research focuses on quantitative research analysis, statistical data collection, real-world examples, solutions and alternatives to EV related problems. Our preliminary findings agree with our hypothesis. Hopefully, the findings of our research will help to shed light that there is no environmentally friendly way to replace internal combustion engine vehicles with battery electric vehicles.

References:

Santos, N. D. S. A., Roso, V. R., Malaquias, A. C. T., & Baeta, J. G. C. (2021). Internal combustion engines and biofuels: Examining why this robust combination should not be ignored for future sustainable transportation. *Renewable and Sustainable Energy Reviews*, 148, 111292.

Canelas, J., & Carvalho, A. (2023). The dark side of the energy transition: Extractivist violence, energy (in) justice and lithium mining in Portugal. *Energy Research & Social Science*, 100, 103096.

Sendek-Matysiak, E., Lewicki, W., Łosiewicz, Z., & Homik, W. (2023). Assessment of knowledge of young users and their views on e-mobility. *Transport Problems*, 18.