ABSTRACTS
IN ACCORDANCE WITH ART. 76 OF INTERNAL REGULATIONS OF PLOVDIV UNIVERSITY

of materials submitted by Assoc. Prof. Stanimir Ivanov Kabiavanov, PhD applying for the academic position of „Professor"

24 August 2020

1. Markovska, V., Kabaivanov, S., Making a difference: Accounting for the impact of management decisions in environmental management, Scientific Annals of Economics and Business (SAEB), 66 (2), 131-139, 2019, DOI: 10.2478/saeb-2019-0014, http://dx.doi.org/10.2478/saeb-2019-0014

https://www.scopus.com/authid/detail.uri?authorId=57190937695

Abstract:

Management decisions are typically meant to be making a lasting impact, or at least bringing us one step closer to a long-term goal. Yet there are situations where it is hard to link decisions made and results achieved. The problem gets more complex when comparing different backgrounds, as management quality is often assessed either in specific organizational context (Ghoshal and Bartlett, 1994; Coggburn and Schneider, 2003) or in a finite number of case-studies. These methods have been successfully used for a long time in corporate environment (Gong et al., 2018) and for public sector decisions (Eller et al., 2018), but their application is not as easy when facing problems that are affected by multiple economy-wide factors, and/or by variables that are not directly observable. We study the long term impact on management decisions in environmental management by using market information on different instruments used to manage and control environmental pollution and risk. The core reason for choosing this approach is that market data is able to account for economic reasons and capture changes that go beyond the scope of an individual corporation or a public agency.

2. Desev K., Kabaivanov S., Desev D., Forecasting cryptocurrency markets through the use of time series models, (2019) BUSINESS AND ECONOMIC HORIZONS, Vol. 15, Issue 2, pp. 242 – 253, DOI: 10.15208/beh.2019.14,

http://apps.webofknowledge.com/full_record.do?product=WOS&search_mode=GeneralSearch&qid=1&SID=D4VYRnjjnucS8TeHD3Q&page=1&doc=4

Abstract:

This paper analyses the efficiency of cryptocurrency markets by applying econometric models to different short-term investment horizons. A number of experiments are carried out to demonstrate that small training sets can still be used to build efficient and useful forecasts, which in turn can be transformed into straightforward investment strategies. It also compares the application of selected models on cryptocurrency and mature stock markets. The forecasting accuracy of the models is explored using different error metrics and different horizons. The results suggest that the variation of the error estimates doesn't appear to be tightly related to the maturity of the markets, but rather depends on the intrinsic characteristics of the analyzed time series.

3. Kovacheva S., Kabaivanov S., Popivanov B., "Getting out from the shell of fear"? Forms of youth political engagement and the impact of social inequalities in the MENA countries, (2019) In: YOUTH AT THE MARGINS: PERSPECTIVES ON ARAB MEDITERRANEAN YOUTH, pp. 125 – 143, eds. Sanchez

Abstract:

The events in 2011 which spread as a wave of change from Morocco to Egypt and beyond opened up political opportunity structures for youth participation in politics. The 20 February Movement in Morocco empowered thousands of young people to take to the streets. In Egypt the protests gathered both marginalised and well-educated, middle-class "Facebook" and "Twitter" youth (Palencia, 2015), unorganised individuals and organised groups such as the Youth of the Muslim Brotherhood, the Youth of Kefaya, the Front of Coptic Youth and young people from the Tomorrow Party, the Democratic Party, the Labour Party, and the Wafd Party (Durac, 2015; Korany, 2014). Not only the physical spaces in Arab cities but also the virtual spaces of the new social media became "discursive territories" (Christensen and Christensen, 2013) for youth self-expression, identity formation and political communication. Young people's posts on Facebook, Twitter, YouTube and blogs influenced political debates in the region, communicated political messages, and were used as tools for organising gatherings and other protest actions (Khalil, 2012; AlSayyad and Guvenc, 2013; Markham, 2014). While the interplay between traditional and new media fostered the creation of an agreed symbolic meaning of the events, it did not reach all young people in the Middle East and North Africa (MENA) region, nor all public spaces and geographical territories in the countries starting the protests. The youth and other protest movements remained separate, often acting in competition with one another, prone to internal fracturing without clear ideological inclinations (Sika, 2012). These features of the Arab uprisings of 2011 prompted scholars to question the utility of using social movement theory (Durac, 2015) or named them "non-movements" (Bayat, 2010).

4. Roberts K., Kovacheva S., Kabaivanov S., Arab Mediterranean youth Religion and politics (2019) In: YOUTH AT THE MARGINS: PERSPECTIVES ON ARAB MEDITERRANEAN YOUTH, pp. 107 – 124, eds. Sanchez Montijano, E, Garcia, JS., Routledge, DOI: 10.4324/9780429398988, ISBN: 978-0-42939-898-8; 978-1-85743-966-3, DOI: 10.4324/9780429398988 *[студия по БДС]*

Abstract:

On 14 January 2011 sustained demonstrations in Tunisia in which young people were prominent led to the resignation and flight of Zine El Abidine Ben Ali who had been de facto president of this single-party state since 1988. This success in Tunisia encouraged demonstrators in Cairo, and on 11 February 2011 Egypt's President Mubarak resigned. Subsequently the "Arab Spring" spread across North Africa and into the Middle East. In all countries where elections were held in 2011 or 2012 (Egypt, Libya and Tunisia), the winner was an Islamic party. None won an absolute majority of votes cast or seats in elected assemblies,

but Islamic parties and candidates always won more votes and seats than any other parties and thereby became their countries' government formers. After seven years, in 2018, we can affirm that in 2011–12 the international community, its politicians and journalists, and most academics, misread the events that they were witnessing. Many envisaged a repeat of "the events of 1989" when popular revolutions in Eastern Europe toppled the region's communist rulers, led to the spread of Western-type representative democracy, and subsequent social and economic transformations. Idealistic pro-democracy Arab youth were supposed to be triggering similar developments across North Africa and the Middle East. Nevertheless, now, the striking feature about the region is how little has changed in all the countries except Syria and Libya where civil wars are unresolved. A main legacy of "the events of 2011" had been the emergence of Daesh, a new umbrella organisation for violent Islamist jihadism.

5. Roberts K., Kovacheva S., Kabaivanov S., Transformation or reproduction? Trends with age in gender and class divisions in young single adults' uses of free time in south and east Mediterranean countries since "the events of 2011"* (2019) World Leisure Journal, pp. 1-15, https://doi.org/10.1080/16078055.2019.1663975

https://www.tandfonline.com/doi/abs/10.1080/16078055.2019.1663975?journalCode=rwle20

Abstract:

This paper urges resetting research into youth and leisure to match recent extensions of the life stage. It also proposes that the special mission of sociology within studies of youth and leisure should be to focus on "Big Leisure", all of it, rather than a series of "little leisures". These proposals are applied in analysing the findings from surveys of nationally representative samples totalling approximately 2000, 15–29-year-olds in each of five South and East Mediterranean countries (Algeria, Egypt, Lebanon, Morocco and Tunisia). The results show gender differences in uses of free time widening, and differences by social class origins weakening but remaining influential throughout the extended youth life stage, while the influence on leisure of levels of educational attainment and labour force experience assist the reproduction of existing social class formations. It is argued that the failure of the "Arab Spring" to trigger wider social and economic transformations in the region is mirrored in young people's uses of leisure which are helping to perpetuate existing divisions, thereby tending to stabilize rather than undermine the region's Arab-Islamic version of modernity.

6. Kovacheva, S., Kabaivanov, S., Roberts, K. Interrogating waithood: family and housing life stage transitions among young adults in North-West Africa countries* (2018) International Journal of Adolescence and Youth, pp. 1-16. DOI: 10.1080/02673843.2018.1430595

https://www.scopus.com/inward/record.uri?eid=2-s2.0-85041589234&doi=10.1080%2f02673843.2018.1430595&partnerID=40&md5=f576104e3c588151c0254c440d918186

Abstract:

The term 'waithood' has become increasingly used to describe the situations of 20-something males and females throughout the Middle East and North Africa (MENA). The suggestion is that, following a youth

life stage, young adults' lives stall due to males' inability to obtain sufficiently stable and salaried employment to enable them to head new family forming households, which leaves young women, most of whom do not enter the labour market, unable to marry. We use quantitative and qualitative evidence from research in three North-West Africa countries (Algeria, Morocco and Tunisia) to argue that the situation is more nuanced. We conclude that youth life stage transitions in present-day MENA exhibit a region-specific combination of features. The combination is atypical globally, but neither intolerable for young people in MENA nor unsustainable societally.

7. Roberts, K., Kovacheva, S., Kabaivanov, S. Arab Mediterranean youth: Political and religious participation [Juventud árabe mediterránea: Participación política y religiosa] (2018) Revista CIDOB d'Afers Internacionals, (118), pp. 103-126. DOI: 10.24241/rcai.2018.118.1.103 *[студия по БДС]*

Abstract:

Using data from the SAHWA Youth Survey 2016 (2017), this paper presents a study of the degree and types of political and religious participation – as well as the links that connect one to the other – among the youth of five Arab Mediterranean countries (Morocco, Algeria, Tunisia, Egypt and Lebanon). In politics, four types of participation are distinguished: official, everyday, community and protest. Between 5% and 17% of those surveyed could be considered hyperactivists, in that they participate in three or four of these types; in around a third, there was no participation at all. On the other hand, the majority of the young people considered themselves to be highly religious and, in three of the countries, a third attended the mosque at least three times a week. But the levels of religiosity did not influence political participation, as even the majority of the highly religious supported separating politics from religion.

8. Kovacheva, S., Kabaivanov, S., Popivanov, B. Political participation and inequalities among Arab Mediterranean youth [Participación política y desigualdades entre la juventud árabe mediterránea] (2018) Revista CIDOB d'Afers Internacionals, (118), pp. 127-151. DOI: 10.24241/rcai.2018.118.1.127 *[студия по БДС]*

Abstract:

After the mobilisations of the socalled Arab Spring, in which the young were the main players, the current political situation in the region remains unfavourable to the participation of youth in institutional politics. The young seem uninterested in politics, are reluctant to vote in elections and distrust the political parties;

in general they practice other forms of less visible and more informal participation. This article – based on the results of the SAHWA project – examines the attitudes of the Arab Mediterranean youth to participation and political engagement in the public sphere, as well as their perceptions of the opportunities and obstacles that influence their futures and those of their countries. To do this, the characteristic features of this generation are addressed along with the importance of the social differences and inequalities within it.

9. Kabaivanov S., Markovska V., Modelling environment changes for pricing weather derivatives, SCIENVIR IASI / Scientific Annals of Economic and Business (SAEB), 64 (4), 2017, https://doi.org/10.1515/saeb-2017-0031

https://www.degruyter.com/view/j/saeb.2017.64.issue-4/saeb-2017-0031/saeb-2017-0031.xml

Abstract :

This paper focuses on modelling environment changes in a way that allows to price weather derivatives in a flexible and efficient way. Applications and importance of climate and weather contracts extends beyond financial markets and hedging as they can be used as complementary tools for risk assessment. In addition, option-based approach toward resource management can offer very special insights on rare events and allow to reuse derivative pricing methods to improve natural resources management. To demonstrate this general concept, we use Monte Carlo and stochastic modelling of temperatures to evaluate weather options. Research results are accompanied by R and Python code.

10. Konsulov, V., Kabaivanov, S. The consequences of rising Bulgarian government debt and the search of growth in Eastern Europe (2018) AIP Conference Proceedings, 2048, art. no. 020009, DOI: 10.1063/1.5082027

https://www.scopus.com/inward/record.uri?eid=2-s2.0-85058781329&doi=10.1063%2f1.5082027&partnerID=40&md5=c7f8fb2b34ed1c8d38639c190f0090f4

Abstract:

In this paper we analyze the dynamics of Bulgarian government debt and its effect on national economy and growth projections. Historically increase of debt has been seen as a fast lane toward higher economic growth. Short term results in Bulgaria however indicate that increasing the debt ratio does not lead to significant rise in GDP and is not supporting a sustainable economic growth. We use stochastic processes to simulate debt changes in order to demonstrate differences in debt policies and stress on short- and long-term effects of budget deficits.

11. Atanasov, P., Kabaivanov, S., Modelling the innovative potential of companies in the pharmaceutical industry in Bulgaria (2018) AIP Conference Proceedings, 2048, art. no. 020010, DOI: 10.1063/1.5082028

Abstract:

Purpose: Pharmaceutical industry is one of the most R&D intensive industries in the world - based on innovation and generates a high added value, while at the same time is subject to strict regulation. Bulgarian pharmaceutical companies have one distinct feature – they are producing mostly generic drugs, thus missing the opportunity to take part in creating brand-name drugs with higher profit margins. We build a model measuring risks and opportunities that follow development of new drugs. It is then calibrated against actual financial data of Bulgarian pharma companies and used to check their ability to finance and develop new products. We have used publicly available data with in-depth financial research and real options analysis (ROA) to create a five-step genuine model for brand drug development, able to capture scale of operation and R&D potential of the pharma companies in the country. Numerical results, including Monte Carlo simulations are used to assess the expected gains and optimal development path as well as risks and to decide what would be the optimal sources for financing the innovation.

12. Kabaivanov, S., Milev, M., Koleva-Petkova, D., Vladev, V. Efficient option valuation of single and double barrier options (2017) AIP Conference Proceedings, 1910, art. no. 020002, DOI: 10.1063/1.5013939

Abstract:

In this paper we present an implementation of pricing algorithm for single and double barrier options using Mellin transformation with Maximum Entropy Inversion and its suitability for real-world applications. A detailed analysis of the applied algorithm is accompanied by implementation in C++ that is then compared to existing solutions in terms of efficiency and computational power. We then compare the applied method with existing closed-form solutions and well-known methods of pricing barrier options that are based on finite differences.

13. Roberts, K., Kovacheva S., Kabaivanov S., Title: Still Troubled: Tunisia's Youth During and Since the Revolution of 2011, SOCIETIES Volume: 7 Issue: 4 Article Number: 29 DOI: 10.3390/soc7040029 Published: DEC 2017, ISSN: 2075-4698

Abstract:

Thispaperpresentsevidencefrominterviewsin2015–2016withanationallyrepresentative sample of Tunisia's 15–29 year olds. We focus on the sample's political participation and orientations during the revolution of

2011 and subsequently. We find that just 6.6 percent of those aged 15–24 at the time played any direct part in the 'events of 2011'. Political engagement then and subsequently is shown to have been influenced most strongly by a university education and growing up in a politically engaged family. In 2015–2016, young people were overwhelmingly pro-democracy, supported equal opportunities and status for the sexes, and endorsed values of self-expression, but attached equal importance to economic security and betterment, felt that their country's traditions should be maintained and respected, and were personally religious, though three-quarters wanted religion to be kept out of politics and government. Although Tunisia is the sole Arab Spring country to emerge with a still functioning (in2017) multi-party democracy, we find that in2015–2016, the majority of young people did not trust their elected politicians. Our survey findings suggest explanations for the paradox between young Tunisians' overwhelming support for democracy alongside intense disappointment with the outcomes.

14. Ivanov, I., Kabaivanov, S., Bogdanova, B., Stock market recovery from the 2008 financial crisis: The differences across Europe (2016) Research in International Business and Finance, 37, pp. 360-374. DOI: 10.1016/j.ribaf.2016.01.006

https://www.scopus.com/inward/record.uri?eid=2-s2.0-84954493297&doi=10.1016%2fj.ribaf.2016.01.006&partnerID=40&md5=f4ef5bddf7f95de31cdc4f171abeebcb

15. Kabaivanov S., Malechkova A., Marchev A., Milev M., Markovska V., Nikolova K, A step beyond the Monte Carlo method in economics: Application of multivariate normal distribution, AIP Conference Proceedings, AMEE'15, Volume 1690, 2015, https://doi.org/10.1063/1.4936693

http://aip.scitation.org/doi/abs/10.1063/1.4936693

Abstract:

In this paper we discuss the numerical algorithm of Milev-Tagliani [25] used for pricing of discrete double barrier options. The problem can be reduced to accurate valuation of an n-dimensional path integral with probability density function of a multivariate normal distribution. The efficient solution of this problem with the Milev-Tagliani algorithm is a step beyond the classical application of Monte Carlo for option pricing. We explore continuous and discrete monitoring of asset path pricing, compare the error of frequently applied quantitative methods such as the Monte Carlo method and finally analyze the accuracy of the Milev-Tagliani algorithm by presenting the profound research and important results of Y. Honga, S. Leeb and T. Li [16].

16. Kabaivanov S., Markovska V., Milev M., Using real options analysis to support strategic management decisions, AIP Conference Proceedings 1570, 87 (2013);

https://doi.org/10.1063/1.4854746

http://aip.scitation.org/doi/abs/10.1063/1.4854746?journalCode=apc

Abstract:

Decision making is a complex process that requires taking into consideration multiple heterogeneous sources of uncertainty. Standard valuation and financial analysis techniques often fail to properly account for all these sources of risk as well as for all sources of additional flexibility. In this paper we explore applications of a modified binomial tree method for real options analysis (ROA) in an effort to improve decision making process. Usual cases of use of real options are analyzed with elaborate study on the applications and advantages that company management can derive from their application. A numeric results based on extending simple binomial tree approach for multiple sources of uncertainty are provided to demonstrate the improvement effects on management decisions.

17. Kabaivanov S., Markovska V., Hybrid deep-learning analysis for cyber anomaly detection, IOP Conference Series: Materials Science and Engineering, 2020, DOI: 10.1088/issn.1757-899X, IOP Conf. Ser.: Mater. Sci. Eng.878 012029

https://iopscience.iop.org/article/10.1088/1757-899X/878/1/012029

Abstract:

Cyber threats evolve continuously and so do the detection tools and algorithms. In this paper we analyse the efficiency of hybrid deep-learning analysis as a mean to detect anomalies in computer network traffic. Different deep-learning algorithms are tested against real network intrusion events in an attempt to assess their potential as an early warning system. We suggest a combination of algorithms and rule-based filters as a hybrid system that can improve efficiency and accuracy of cyber anomaly detection.

18. Markovska V., Kabaivanov S., Process mining in support of technological readiness level assessment, IOP Conference Series: Materials Science and Engineering, 2020, DOI: 10.1088/issn.1757-899X, IOP Conf. Ser.: Mater. Sci. Eng.878 012080

https://iopscience.iop.org/article/10.1088/1757-899X/878/1/012080

Abstract:

We develop a framework for assessing technological readiness level using available data on business processes. By constructing a network of actors and linking process steps together it is possible to estimate the complexity of organizational structure, examine the bottlenecks and analyse whether advantages of available technology are fully utilized. Using publicly available data on business event logs we also test an automated process mining procedure and suggest a measurement to link our results to the TRL.

19. Kabaivanov, S.; Roberts, K.; Kovacheva, S.; Machine learning assisted social system analysis: Youth transitions in five South and East Mediterranean countries, AMEE'20, AIP Proceedings [in print]

Abstract:

While youth transitions to adulthood have been subject to various social studies, it is often the case that statistical tools of choice are limited in terms of sophistication and flexibility. Our study uses information collected as part of the SAHWA project [1] with the primary goal being to verify if machine learning can help rule out inappropriate assumptions and improve transition to adulthood analysis by outlining youth groups, their common characteristics and outlier cases (as well as if they are significant). As data includes numeric, as well as categorical and nominal variables use of common algorithms like K-Means clustering is not possible. It's also not reasonable to build on Eucledian distances in this mixed space, ruling out other classification methods that rely on it. We split the clustering algorithm selection into: (1) selection of distance calculation function, (2) algorithm and (3) decision on number of groups. A valuable information about transition to adulthood is obtained without imposing restrictive theoretical framework.

20. Kabaivanov, S.; Markovska, V.; Artificial intelligence in real estate market analysis, AMEE'20, AIP Proceedings [in print]

Abstract:

Real estate has always been an important investment opportunity. With a diverse set of financial instruments linked to real estate assets, it is significant for both investors and intermediaries. In this paper we assess how artificial intelligence can be used to improve our understanding for the real estate market changes. We suggest and test a three-stage model in support for real estate valuation and market forecasting, that is able to account for global economic factors as well as for individual characteristics influencing property prices. Every stage provides for using different artificial intelligence and machine learning methods in order to automate processing of market data and assess how qualitative factors affect valuation. We conduct a survey on the accuracy of the model NAREIT and BGREIT index data.

21. Kabaivanov S., Problems accompanying VaR valuations of a securities portfolio, Scientific Research Papers of Faculty of Economics and Social Sciences, issue 10, Plovdiv, ISSN: 1313-227X, 2015, pp. 113 – 124

Abstract:

Adequate and timely risk assessment of investment alternatives is an issue of great significance. This paper focuses on the shortcomings and problems that accompany the processes of Value at Risk assessment - one of the commonly used indicators in practice. To illustrate the theoretical constructions, three different approaches have been deployed in order to get numerical results for a portfolio reproducing changes in the S&P 500 market index over the last 10 years.

22. Kabaivanov S., Milev M., Portable solutions for barrier option valuation, VSIM2015, Ravda, 2015 , ISSN-1314-0582

http://yp.ieee.bg/documents/follow-up_letter_en.pdf

Abstract:

While it seems straightforward to define a barrier event as "underlying trades at or above a given level," in reality it's not so simple. What if the underlying only trades at the level for a single trade? How big would that trade have to be? Would it have to be on an exchange or could it be between private parties? When barrier options were first introduced to options markets, many banks had legal trouble resulting from a mismatched understanding with their counterparties regarding exactly what constituted a barrier event. In this paper we present an approach for valuation of barrier options that is flexible and easy to apply in different scenarios. An iterative algorithm based on Mellin transform is suggested, implemented in C++ and tested against real valuation cases.

23. Kovacheva S., Kabaivanov S., Differences and Inequalities in Civic Participation among Bulgarian Youth, Sociology and Anthropology, 4 (4), 228-240, April 2016, doi: 10.13189/sa.2016.040405

http://www.hrpub.org/journals/article_info.php?aid=3563

Abstract:

This paper addresses the question: what explains the differences in young Bulgarians' involvement in informal volunteering, participation in associations and civic protests twenty-five years after the regime change. The explanation is based on the results of a representative social survey with 1030 young people aged 14-27 in the summer of 2014, funded by the Friedrich Ebert Foundation. The data show that both attitudinal and behavioral measures of civic engagement are influenced, albeit in different degrees, by structural factors such as gender, education, family background, ethnicity, locality and socio-economic status. A very important intervening variable is trust which in this survey is measured towards a variety of social groups. In general, young people in the country tend to express high trust in family and friends and low trust in people outside their immediate milieu. This kind of social capital mobilizing closed horizontal ties ensures support in uncertain times but does not enable more enriching, even if uncertain, contacts with members of wider communities. It also influences the types of voluntary actions young people engage in: more often informal personal assistance for people they know or see directly and much less often formal involvement in NGO activities. Having higher education, middle to high socioeconomic status, living in large cities or the country's capital provide opportunities for the young to recognize the benefits of membership in civic associations.

24. Kovacheva S., Nanov P., Kabaivanov S., The recruitment of youth political elites during transformations in Central and Eastern Europe and Arab Mediterranean Countries: A comparative approach, CIDOB - SAHWA Papers, Nov. 2016, pp. 1-27

https://www.cidob.org/en/publications/publication_series/project_papers/sahwa_papers/scientific_paper/the_recruitment_of_youth_political_elites_during_transformations_in_central_and_eastern_europe_and_arab_mediterranean_countries_a_comparative_approach

Abstract:

This paper aims to describe and compare the mechanisms for the recruitment of youth political elites in Central and Eastern Europe (CEE) and the Arab Mediterranean countries (AMC) during and after the periods of social and political transformation that were the breakdown of the communist bloc in 1989 and the uprisings in the southern and eastern Mediterranean and the Middle East in 2011. While the early expectations were for a similar course of events in the two regions, at present it is the differences in the factors and consequences of the mass mobilisations that capture most scholarly attention.

The analysis in this paper is based on desk research and rich quantitative and qualitative datasets from five AMCs carried out in the framework of the SAHWA Project funded by the 7th FP of the EC. Young people's active engagement in institutional politics is the major channel for political recruitment into the politically relevant elite both in post-1989 CEE and in the AMCs after 2011. The official channels for youth elite recruitment, such as working in support of political parties, in election campaigns and specialised leadership training are often underpinned by young people's families' economic, social and cultural capital (in a more direct form in the AMCs and a more covert form in CEE). In CEE in 1989 and in the AMCs in 2011 mass mobilisations opened a window of opportunities for the replacement of the old elite and transformation of the political system. However, in the post-communist countries elite circulation reinforced by a stronger middle class and greater societal aspirations for accession to the EU went much further than in the AMCs after 2011. In the latter region the rejuvenation of the politically relevant elite was undermined by the crucial role of military and religious elites, weaker middle classes, insurmountable divisions among protesting groups and not least by society's distrust of the youth. Politically active young people aspiring to elite positions are most often found among those with higher education, in stable employment, living in urban areas and in families which discuss political issues. Civic engagement in NGOs and the creative arts are desired channels for self-expression but cannot compensate for the blocked channels to elite circulation and social transformation more generally.

25. Markovska V. Kabaivanov S., Flexible calibration of econometric models with artificial neural networks, VSIM'16, Ravda, 2016, ISSN 1314-0582

http://vsim-conf.info/2016/

Abstract:

Calibration of econometric models can be a complex and time-consuming task. Especially for complex, high dimensional case, this step may require a considerable amount of computational effort, thus rendering the use of a particular model impossible. In this paper we analyze application of neural networks for approximate estimation of economic model parameters in order to speed up the calibration process.

We compare the accuracy of pre-configured networks against different calibration methods to assess accuracy and performance of ANN approach.

26. Kabaivanov S., Markovska V., GPU Accelerated option valuation, VSIM'16, Ravda, 2016, ISSN 1314-0582

http://vsim-conf.info/2016/

Abstract:

Deep learning is getting more and more popular, but its common use is also limited by the computational resources required to train and use a system. In this paper we study different approaches to speed up the learning process by using GPU and parallel computation frameworks. In addition to experimenting with the boost with real-world data we also analyze the limitations of parallel computing using accessible software frameworks that are suitable for use without special equipment or infrastructure.

27. Roberts K., Kovacheva S., Kabaivanov S., Education to employment transitions in South and East Mediterranean countries, Young People and Social Change in South and East Mediterranean Countries, 2017, Plovdiv University, pp. 71-86, ISBN 978-619-202-277-8

Abstract:

We presend findings from surveys in 2015-16 among nationally representative samples young people in Morocco, Algeria, Tunisia, Egypt and Lebanon. Careers of males and females, from different family classes and with different education, in urban and rural areas are compared. We find that rates of youth unemployment are not 'massive' and are typically well below those recorded recently in Southern European countries. Job quality is identified as the major problem experienced by young people. In Current have appeared as a result of population growth and economic policies adopted since the 1990s. Labor market conditions are important but do not constitute societal crises.

28. Markovska V., Kabaivanov S., Improving Alumni Network Efficiency With Machine Learning, Trakia Journal of Sciences, 15 (1), pp.115-119, 2017, ISSN 1313-7069

http://tru.uni-sz.bg/tsj/TJS_Suppl.1_Vol.15_2017/21.pdf

Abstract:

Universities tend to rely on alumni organizations for providing long-term support for the institution and keeping track of successful students. Powered by network connectivity and recent advance in the area of social network research it's custom to have these organizations operating mostly in internet thus evolving into a dedicated small social networks. In this paper we analyze how machine learning can be used to improve efficiency of alumni organizations. SVM and K-means clustering algorithms are examined as tools that can not only give valuable information about members of the organization but also improve the level of support provided to the university by targeting the most appropriate alumni members for a particular

event or project. Sample implementation is provided with demonstration on information from sample alumni networks.

29. Roberts K., Kovacheva S., Kabaivanov S., Modernization theory meets Tunisia's youth during and since the revolution of 2011, SAHWA Scientific Report ISSN 2564-9183, numero: doi.org/10.24241/swsp.2017; articulo: doi.org/10.24241/swsp.2017.3.1, pp. 1-31

https://www.cidob.org/en/publications/publication_series/project_papers/sahwa_papers/scientific_paper/modernisation_theory_meets_tunisia_s_youth_during_and_since_the_revolution_of_2011

Abstract:

This paper presents evidence from interviews in 2015-16 with a nationally representative sample of Tunisia's 15-29 year olds. We use modernisation theory as a prism to examine the sample's political participation and orientations during the 'revolution' of 2011 and subsequently. We find that just 6.6 percent of those aged 15-24 at the time played any direct part in the 'events of 2011'. Political engagement then and subsequently is shown to have been influenced most strongly by a university education and growing-up in a politically engaged family. In 2015-16 the young people were overwhelmingly pro-democracy, supported equal opportunities and status for the sexes, and endorsed self-expression values, but attached equal importance to economic security and betterment, felt that their country's traditions should be maintained and respected, and were personally religious though three-quarters wanted religion to be kept out of politics and government. We explain why Tunisia was the sole Arab Spring country to emerge with a still functioning (in 2016) multi-party democracy. This is despite the main parties having narrow and shallow support among the country's youth, most of whom do not trust their elected politicians. Our survey findings suggest explanations for the paradox between young Tunisians' overwhelming support for democracy alongside intense disappointment with the outcomes. These explanations include young Tunisians seeking a type of modernisation that does not map neatly onto Western versions of modernity, and which at present may not be realisable.

30. Ken Roberts, Siyka Kovacheva and Stanimir Kabaivanov (2017), 'Leisure and the life-cycle squeeze among young adults in North Africa countries', International Journal of the Sociology of Leisure, pp. 1–14, https://doi.org/10.1007/s41978-017-0002-6

https://link.springer.com/article/10.1007/s41978-017-0002-6

Abstract:

This paper presents quantitative evidence from surveys of nationally representative samples of approximately 2000 15–29 year olds in each of four North Africa countries (Algeria, Egypt, Morocco and Tunisia). The aim is to test whether the life cycle squeeze on leisure time, money and activities, recorded in successive Western investigations, operates in similar ways in contrasting economic (relatively poor) and Arab-Islamic cultural contexts. The results show that there is a life cycle squeeze in North Africa, and as in the West, it affects women's leisure more powerfully than men's. The findings add to previous knowledge in showing that in North Africa contexts it is marriage rather than housing transitions that is responsible for the greater part of the life cycle squeeze. Finally, it is also proposed the similar socio-

economic structures in modern and modernising societies will impose similar patterns (like the life cycle squeeze) on leisure in all such countries, but that the details of exactly how leisure is used will always be infused by traditional occidental, Arab-Islamic or Asian cultures.

31. S. Kovacheva, B. Popivanov, S. Kabaivanov, Youth policy in Arab Mediterranean countries in a comparative perspective, SAHWA Policy Report ISSN 2564-9159, numero: doi.org/10.24241/swpr.2017.6, articulo: doi.org/10.24241/swpr.2017.6.1, pp. 1-36

https://www.cidob.org/en/publications/publication_series/project_papers/sahwa_papers/policy_report/youth_policy_in_arab_mediterranean_countries_in_a_comparative_perspective

Abstract:

This report is a review of the youth policy in five Arab Mediterranean countries (AMCs): Morocco, Algeria, Tunisia, Egypt and Lebanon. It builds upon two main sources of information: official policy documents and qualitative data from focus groups with stakeholders conducted by local teams under the framework of the SAHWA project funded by the 7th FP of the EC.

Based on desk research it examines the definitions of youth and youth policy, institutional structure, legal regulations, resource allocation and forms of young people's involvement in policy making and implementation. Word cloud and thematic analyses provide a more in-depth look at the issues debated and positions taken by various groups of stakeholders in youth policy: policy makers, youth practitioners, managers in business associations and civil society organizations and young people in various locations throughout those countries. The report outlines common features of the youth policy in AMCs in which youth participation still remains a promise rather than a reality, the dominant image of youth is that of a problem and an expensive burden for society, strong centralization without much community and civil society engagement, the family as the main institution offering support for youth transitions, the emphasis placed on general education and sport while major social inequalities such as regional, gender and class disparities are not effectively addressed.

32. Roberts K., Kovacheva S., Kabaivanov S., Class Reproduction and Re-Formation during Young People's Education to Employment Transitions in South and East Mediterranean Countries', Athens Journal of Mediterranean Studies, Vol. 4, No. 3, pp. 179-200.

https://www.athensjournals.gr/mediterranean/2018-4-3-1-Roberts.pdf

Abstract:

This paper uses evidence from surveys in 2015-16 of nationally representative samples comprising approximately 2000 15-29 year olds in each of five South and East Mediterranean countries. We focus on those aged 25-29 who had nearly all completed their education. We analyse the job characteristics of those in employment and identify four main employment classes. Just two of these, a business class and a salariat, are found to have survived since the careers of the samples' parents were constructed. These advantaged classes alone are found to possess demographic coherence: high probability of individuals remaining in their classes, distinctive life chances of children born into these classes, and characteristic

adult biographies of those who reach these class destinations. While sometimes acting as a channel for social mobility, education is also found to screen and render opaque the extent and processes whereby class advantages are transmitted inter-generationally.

33. Roberts, K., Kovacheva, S., Kabaivanov S., Uses of Free Time by Young Adults in Arab Mediterranean Countries: Exposing and Addressing Boundary Issues in Leisure Studies, International Journal of Humanities and Social Science Research, 2018, 4, 10-21, E-ISSN: 2371-1655/18

https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwii8Zz0tZrrAhXq-ioKHamWD2YQFjACegQIAhAB&url=https%3A%2F%2Fwww.lifescienceglobal.com%2Fpms%2Findex.php%2Fijhssr%2Farticle%2Fdownload%2F5459%2F3071&usg=AOvVaw0Lq_pWyyLu2RvcMPfkaLgS

Abstract:

Evidence on uses of free time in non-Western societies exposes and forces us to address several boundary problems in leisure studies. A combination of qualitative and quantitative evidence from nationally representative samples of 15-29 year olds in Algeria, Egypt, Lebanon, Morocco and Tunisia finds some familiar divisions in the age group's use of free time-by social class and gender. However, the evidence also reveals some region-specific features: namely that for many young people free time is less clearly separated from the rest of life than in Western societies, work and play are frequently fused, and religious and political participation are sometimes pivotal in young people's bundles of free time activities (youth sub-cultures).

34. Kovacheva S., Roberts K., Kabaivanov S., Education to employment transitions in south and east mediterranean countries, International Journal of Social Science and Economic Research, 03 (02), 2018, http://ijsser.org/more2018.php?id=38, ISSN: 2455-8834

http://ijsser.org/more2018.php?id=38

Abstract:

This paper presents findings from surveys in 2015-16 among nationally representative samples of 15-29 year olds in five South and East Mediterranean countries (Morocco, Algeria, Tunisia, Egypt and Lebanon). The labour market careers of males and females, from different family class backgrounds, and with different educational attainments, in urban and rural areas and in the different countries, are compared. It is argued that rates of youth unemployment are not 'massive' and are typically well below those recorded in Southern European countries in recent years. Job quality rather than job scarcity is identified as the major labour market problem experienced by all socio-demographic groups of young people. It is responsible for in-work poverty, inflating the numbers of young women who become inactive in the labour market, and extending the queues of higher education graduates who are waiting for commensurate jobs. We also argue that education is neither the source of nor an answer to the region's youth labour market problems. In conclusion, the paper argues that current youth labour market conditions are partly long-standing and customary, but have surged as a result of population growth combined with the neo-liberal economic and social policies that the region's governments have adopted since the 1990s. The paper

concludes that while labour market conditions are serious problems for the region's young people and their families, they do not as yet constitute societal crises.

35. Roberts K., Kovacheva S., Kabaivanov S., Youth in- and Out-of-Work in Arab Mediterranean Countries, International Journal of Youth Economy 2, No. 1, 51-66, http://dx.doi.org/10.18576/ijye/020105

http://www.naturalspublishing.com/Article.asp?ArtcID=14343

Abstract:

This paper presents evidence from quantitative surveys in 2015-16, using a fully structured and standardized questionnaire, among nationally representative samples of 15-29 year olds in five Arab Mediterranean countries (Algeria, Egypt, Lebanon, Morocco and Tunisia). We also use complementary evidence from in-depth interviews with 29 individuals from three contrasting regions in each of the five countries. The analysis disaggregates unemployment, employment and young people. It inserts this evidence into a youth transitions paradigm, and thereby shows how and why the combination of governments' neo-liberal social and economic policies and the region's Arabic and Islamic culture have prevented the demographic surge (the expansion of youth cohorts in the early 21st century) creating crises in the lives of majorities of the region's young people, or a socio-economic disaster.

36. Kovacheva S., Markovska V., Kabaivanov S., Individual factors for migration and migration channels, GEMM Report, Deliverable 4.3, pp. 2-15, February, 2018. http://gemm2020.eu/wp-content/uploads/2018/08/Comparative-report_individual-factors-for-migration-and-migration-channels.pdf

Abstract:

In this report we present results from the comparative analysis conducted within the framework of WP4 'The lived experiences of migration' of the GEMM Project (D4.3). The Growth, Equal Opportunities, Migration and Markets (GEMM) project as a whole examines the challenges and barriers that European countries face in managing the mobility of European citizens to achieve competitiveness and growth.

37. Markovska V., Kabaivanov S., Management practices optimization supported by stochastic processes, VSIM'18, Ravda, Bulgaria, 15.09.2018 г., ISSN 1314-0582, http://www.vsim-conf.info/

Abstract:

The application of modern management methods in a real environment need to consider three special factors - reporting of random events, problems with averaging assessments and assessing the stability of implemented practices. In this article, we propose a solution that resolves problems caused by these effects and uses random processes to analyze the performance of employees in a high-tech company.

38. Kabaivanov S., Markovska V., Deep Learning for Analyzing Anomalies in Financial Time Series AMEFFS'18, Tryavna, Bulgaria, www.dataconferences.org

Abstract:

Time series anomalies can be of great importance in financial markets, not only as a signal of market changes but also as a valuable tool for detecting structural breaks or deficiencies in the regulation ([1], [2]). In this paper we apply deep learning algorithms and in particular artificial neural networks to analyze rare events in financial time series. Detection rate and accuracy of the prosed approach are compared with existing methods like Generalized Additive Model (GAM [1]) and Generalized Multiplicative Model (GMM [2]). Computationally intensive algorithms are tested in two different ways – using standard programming techniques and using GPU-acceleration.

39. Kabaivanov S., Roberts K., Kovacheva S., Becoming adult in a fluid social context. Youth transitions in five South and East Mediterranean countries, AMEFFS'19, pp. 1-10 Sozopol, 2019

Abstract:

In this conference paper we examine the use of unsupervised classification methods to support decision making in social policy building. We use real data from SAHWA project to compare young people groups, as suggested by theoretical arguments with actual segments shaped by the unsupervised learning. This way it is possible to adjust recommended policies to better match actual young people needs. In this paper we also experiment with the use of different distance metrics and discuss potential problems with the classification output.

40. Markovska V., Kabaivanov S., Efficiency of Big Data analysis techniques in network intrusion detection, Applied Modeling in Economics, Finance and Social Sciences, 2019, pp. 1-8, ISBN: 978-619-201-232-8

Abstract:

In this conference paper and presentation, we examine the big data streaming analysis for network intrusion detection. Using common tools and data collected from actual network transactions we assess the accuracy and efficiency of basic methods that are able to detect abnormal use and activity.

41. Kabaivanov S., Desev K., Forecasting Accuracy Evaluation of Machine Learning Models Applied on Cryptocurrency and Equity Markets, ИКОНОМИЧЕСКАИСОЦИАЛНА (ДЕЗ)ИНТЕГРАЦИЯ, ПУ Паисий Хилендарски, 2019, https://uni-plovdiv.bg/uploads/site/za_sabitia/Conference_Program.pdf

Abstract:

In recent years, there has been a growing interest in the application of neural networks and other machine learning models on equity markets. In search of excessive returns, both practitioners and academicians apply different techniques to enhance the forecasting accuracy of the markets. Although precise market

forecasting is believed to be amongst the hardest things to predict, there are studies that report price change prediction accuracy more than 80%. Such results are usually achieved on a single market and using a concrete ML model. Though the right selection of models is important, the market that they are applied on is also of a great significance. In order to reveal whether applying ML on different markets will lead to a significant difference in forecasting accuracy, we use selected ML models to forecast the price of a couple of cryptocurrencies and market indices. The ARIMA model is used to compare the accuracy of the ML models. The results show that the forecasting accuracy is heavily dependent on the markets, which stands for the ARIMA and ML models used. In order to further approve these results, the study could be repeated using later time periods.

42. Roberts K., Kovacheva S., Kabaivanov S., Careers in Participant Sport and Other Free Time Activities during Youth and Young Adulthood in South and East Mediterranean Countries, Athens Journal of Sports 2020, 7: 1-16, https://doi.org/10.30958/ajspo.X-Y-Z

https://www.athensjournals.gr/sports/2020-7-2-2-Roberts.pdf

Abstract:

This paper presents evidence from surveys in 2015-16 of nationally representative samples of approximately 2000 15-29 year olds in each of five South and East Mediterranean countries (Algeria, Egypt, Lebanon, Morocco and Tunisia). The analysis examines the interactive effects of age, gender, family class origins (indicated by fathers' education), and whether respondents progressed through higher education and their current labour market positions, on participation rates in sport plus two social and three cultural free time activities. We find that each free time activity had its own profile in terms of the relationships between participation and the predictor variables, and that sport differed from all the other activities in the width of gender differences, the relatively steep decline in participation from age 15-19 to 20-24 then 25-29, and the strong and enduring influence of family class origins. A conclusion is that in South and East Mediterranean countries (and probably elsewhere), although sport participation may be boosted among adolescents by initiatives in school education and community associations, participation rates will then begin to sink back except when individuals have been reared in households with supportive family free time cultures.

43. Becquet, V., Kovacheva, S., Popivanov, B. & Kabaivanov, S. (2016) European discourses on youth participation and their national interpretation in the countries-members of the Partispace project. Working paper. PARTISPACE Deliverable 3.1. *[Студия по БДС]*

Abstract:

This deliverable is part of PARTISPACE project and focuses on discourses on youth participation. We compare the results and forms of participation across countries taking part in the project.

44. Kovacheva, S., Kabaivanov, S. Arıkan Akdağ, G. & Lüküslü, D. (2016) Commonalities and differences in the forms of youth participation in Europe. Working paper. PARTISPACE Deliverable 3.2.

Abstract:

Young people's participation in politics and wider social life is attracting a growing attention in present-day democracies. Public interest in youth engagement has been fed by recurring outbursts of youth mobilizations, as well as by the seeming absence of civic involvement in the more peaceful periods between protests. Normative assumptions about the 'good citizen' and the 'proper' forms and claims of youth movements and policy concerns with the 'civic deficit' serve to legitimate policy decision-making in the youth field by demanding that young people's voices are heard and represented in policy programs and measures.