10th Higher Education Institutions Conference

22-23 September, 2022, Dubrovnik (Croatia)

STRATEGIES, CHALLENGES, AND OPPORTUNITIES
FOR SUSTAINABILITY IN UNCERTAIN ENVIRONMENT

PROCEEDINGS

Double-Blind Peer Reviewed

Edited by: Karmela Aleksić-Maslać

ZSEM Zagreb School of Economics and Management

LSB Luxembourg School of Business

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Content

Welcome Note

Dear guests and friends,

on behalf of Zagreb School of Economics and Management, Croatia's first AACSB accredited business school which is among the top 5% best business schools in the world since, I'm proud to wish you all a warm welcome to our tenth consecutive Higher Education Institutions Conference – HEIC 2022. „Strategies, Challenges and Opportunities for Sustainability in Uncertain Environment" is our vision for this year's topic of this unique conference which has been inspiring the academic community for ten years, and has become a synonym for excellence, educational trends, and growth. We are delighted that after two online conferences, we are finally meeting in person in our beautiful Dubrovnik. The HEIC conference was held in many stunning Croatian cities like Split, Zadar, Opatija, however, this year we are back in Dubrovnik, where it all started, for our jubilee tenth conference. Last year, HEIC2021 set the standards for opinion-makers in the educational industry to discuss the latest trends and we hope to do the same this year. Constantly proving the worth of talent combined with hard work in order to achieve brilliance is a direction we chose for HEIC2022, even in these challenging times. Zagreb School of Economics and Management as a trendsetter among Croatian higher education institutions continues to educate young people who will be leaders of tomorrow for the last twenty years, despite all challenges. Furthermore, it is crucial to talk about challenges and opportunities, now more than ever, and it is essential that academic society recognizes the need for inventive activities that will upgrade higher education standards while the contemporary world faces many crises. We are those who should provoke true development in our countries and our task is to work together, to discuss, learn from each other, and contribute to higher education improvement with our experience and knowledge. We hope to stay open-minded and prepared for all demanding tests in this turbulent era which questions our capability for implementing ingenious solutions in higher education and inventing smart trends that will lead the next generations.

Best regards,
Mato Njavro, PhD
Dean, Zagreb School of
Economics and Management

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Keynote speakers

Robert Kennedy, PhD

Robert E. Kennedy is the former Dean at Nanyang Business School and assumed office on January 1, 2018. He came to NTU from the Ivey Business School in Canada, where he was Dean and the Tapp Chaired Professor since 2013. Under his leadership, the school increased research output by more than 30% per faculty member and improved its global rankings. The school was twice ranked as the top "international" program in the BusinessWeek MBA rankings (2014 and 2015), and improved its FT Research rank from 44th to 26th. Kennedy is a well-known scholar, speaker, and educator. His research focuses on business strategy and policy issues in developing countries and has been widely published in leading economics and strategy journals. He has authored more than 120 articles, chapters, notes, and case studies on emerging market issues. From 2002-2016, his teaching materials were used at every one of Business Week's top 25 U.S. business schools. Prior to Ivey, Kennedy was the Tom Lantos Professor of Business Administration at the University of Michigan's Ross School of Business – where he led the school's international programs. He was also Executive Director of the William Davidson Institute. Prior to Ross, he was an Assistant, and then an Associate, Professor at Harvard Business School. Prior to his academic career, Kennedy worked as both a strategy consultant (late 1980s), and as a partner in a Private Equity firm in Poland (1991 – 1995). He holds BA degrees in Economics and Political Science from Stanford University, an MSM in Management from MIT, and a PhD in Business Economics from Harvard University.

Zvonimir Ratkovski, CFA

Zvonimir Ratkovski is a Head of Unit at the European Investment Fund (EIF), in charge of design, promotion and roll-out of financial instruments (portfolio guarantees) which aim to support access to finance in the areas of skills and education as well as culture and creative sectors. He spent seven years in the EIF, working with financial institutions, national promotional players and alternative lenders to deliver financing to SMEs with a pan-European geographic focus and across policy areas such as innovation and digitalization. Prior to joining the EIF, Zvonimir was providing valuation, financial modeling and project finance advisory services in one the Big Four advisory firms.

Romana Stanciukaite, MSc

Romana Stanciukaite is a Transaction and Relationship Officer responsible for implementing EIF portfolio guarantee products across various policy thematics in all EU countries. Her primary focus is promoting and advising both financial institutions and alternative lenders on the guarantee products targeted at skills and education as well as cultural and creative sectors. Romana holds an MSc Political Economy degree from LSE. Prior joining EIF she was working in horizontal banking supervision at the European Central Bank.

Monika Blodgett, MA

Monika Blodgett is the Programme Manager on EIT Manufacturing's Education team for EIT's HEI Initiative, which aims to strengthen innovation and entrepreneurial capacities in higher education institutions (HEIs) while also improving their integration into the Knowledge Triangle. She holds a Master of Arts in Higher and Post Secondary Education from the University of Columbia in the city of New York. Monika has over 7+ years of experience in the field of higher education with previous roles at Columbia University and UNESCO's International Institute of Education Planning (IIEP). Her overall professional emphasis is in the construction and execution of multi-dimensional international higher education projects.

Panelists 2022

1. Sustainability in Higher Education System

Moderator:	Mato Njavro, PhD

Mato Njavro, PhD is the dean of the Zagreb School of Economics and Management, where he teaches financial courses. Mato Njavro is also a professor at the Luxembourg School of Business and a lecturer at the University of St. Gallen and Singapore Management University where he teaches the Chinese Economy course.

From 2016 to 2020, Mato resided in Singapore where he worked at the Institute of Management of the University of St.Gallen in Asia (SGI-HSG) and Singapore Management University. Before moving to Singapore, Mato spent a year as a postdoctoral fellow at Harvard University. His research interests are focused on financial markets, public policy and economic development. He is the author and co-author of several scientific papers and studies, including the Harvard Business School case: "Atlantic Group" on one of the largest M&A transactions in the CEE region.

He is the founder and academic director of the New Europe Business Forum, an interdisciplinary event that brings together world leaders from various fields once a year to discuss topics of great importance to our society as a whole such as entrepreneurship, leadership, scientific innovation and economic policy.

He completed his undergraduate and graduate studies at the Bocconi University in Milan in the field of economics and finance, and received his PhD from the University of St. Gallen in Switzerland in the field of finance. Before earning his PhD, he gained work experience in London working for Lehman Brothers and Nomura, in the investment banking sector.

Panelist: **Dolly Predović, Ph.D.**

Dolly Predović is the founder and CEO of Career Paths, an Italian consulting company operating in the field of education.

After 20 years as Professor of Corporate Finance at Bocconi University, she ended her academic career as the Director of the Master programe in Corporate Finance. In 1990 she was instrumental in the planning and realization of Bocconi University's first international MBA, which then opened the doors to the internationalization of the university. She later held the positions of Director of the International Executive Education Division and Professor of Corporate Finance and Valuation for the MBA. She has published a number of papers and books, in particular on topics of valuation with a focus on brand valuation.

Panelist: **Robert E. Kennedy, Ph.D.**

Robert E. Kennedy is the former Dean at Nanyang Business School and assumed office on January 1, 2018. He came to NTU from the Ivey Business School in Canada, where he was Dean and the Tapp Chaired Professor since 2013. Under his leadership, the school increased research output by more than 30% per faculty member and improved its global rankings. The school was twice ranked as the top "international" program in the BusinessWeek MBA rankings (2014 and 2015), and improved its FT Research rank from 44th to 26th. Kennedy is a well-known scholar, speaker, and educator. His research focuses on business strategy and policy issues in developing countries and has been widely published in leading economics and strategy journals. He has authored more than 120 articles, chapters, notes, and case studies on emerging market issues. From 2002-2016, his teaching materials were used at every one of Business Week's top 25 U.S. business schools. Prior to Ivey, Kennedy was the Tom Lantos Professor of Business Administration at the University of Michigan's Ross School of Business – where he led the school's international programs. He was also Executive Director

of the William Davidson Institute. Prior to Ross, he was an Assistant, and then an Associate, Professor at Harvard Business School. Prior to his academic career, Kennedy worked as both a strategy consultant (late 1980s), and as a partner in a Private Equity firm in Poland (1991 – 1995). He holds BA degrees in Economics and Political Science from Stanford University, an MSM in Management from MIT, and a PhD in Business Economics from Harvard University.

Panelist: **Iva Vukina, M. Eng.**

After her undergraduate studies at the University of North Carolina at Chapel Hill, Iva graduated from Cornell University. She gained great experience in the financial sector by working at Wachovia Bank, Citi Group, and Goldman Sachs in New York. She currently holds the position of Managing director at Goldman Sachs in New York. She is a board member of the Grace Institute of New York, whose organization aims to provide free training for women to enter the job market. Throughout the 20th and 21st centuries, over 100,000 women at Grace Institute have learned skills needed to successfully enter the workforce.

2. Higher Education Quality Methods and Policies

Moderator:	Zoran Barac, PhD

Zoran Barac, PhD is the Managing Director of the Zagreb School of Economics and Management (ZSEM) where he is also the Head of the Finance and Accounting Department. Dr. Barac received his Ph.D. in Management at the University of St. Gallen in Switzerland and his M.Sc. in International Economics at the University of Zagreb, Faculty of Economics and Business. Currently he teaches the course: Corporate Governance. Before joining the Zagreb School of Economics and Management, Dr. Barac held several senior executive and board positions in the corporate sector such as a finance director of the regional media company and CFO of a pharmaceutical distribution company. Before entering the corporate sector, Zoran Barac was the President of the management board of the Croatian Pension Investment Company. Dr. Barac also served as a Governing Board member of the Croatian Pension Supervisory Authority in the period from 2000 to 2005. Dr. Barac currently serves as the President of the Supervisory board of Platinum Invest, an Investment Funds Management Company. He also serves as a Supervisory board member of the ZSEM Business Academy and a member of the Supervisory board of Croatia Airlines. As an experienced coach and sports official he serves as the President of the Croatian Wushu Federation, a national sports organization that governs Croatian Wushu, which is the collective term for the martial art practices and sports which originated and developed in China. Also as a National Wushu team coach, he coached medal winning athletes in national and international competitions. Dr. Barac also served as a member of the Governing Council of the Croatian Agency for the Supervision of Pension Funds in the period between 2000 and 2005.

Panelist: **Stefan Baldi, Ph.D.**

Prof. Dr. Stefan Baldi is an experienced academic university manager. He has been Dean of Munich Business School, one of the oldest German private universities, for more than 20 years. After completing his studies in Computer Science at the Karlsruhe Institute of Technology and earning a doctorate in Business Administration at TU Ilmenau, he worked as an independent consultant in the field of information systems as well as a research associate at EBS University in Oestrich-Winkel.

Author of a number of papers and conference presentations in the field of quality assurance.

Panelist: **Vesna Dodiković-Jurković, Ph.D.**

Deputy Director of the Croatian Agency for Science and Higher Education; quality assurance expert and ISO 9001 lead auditor. Previous employments include University of Zagreb and Ministry of Science, Education and Sports, Directorate for Science. Contributor to the development of ASHE audit model; panel member in a number of ASHE audits in Croatia and abroad. Work on dissemination of good practice and promotion of quality culture among HEIs at the national level. Initialized the establishment of the Croatian National Network of Quality Assurance Units at HEIs (CroQAnet), a platform for dissemination of good practice and quality culture between HEIs. Cooperation with the Croatian Society for Quality and other European and international agencies and networks active in theory and practice of higher education quality assurance.

Author of a number of papers and conference presentations in the field of quality assurance.

3. EIT HEI

Moderator: **Dubravka Kovačević, PhD**

Dubravka Kovačević, PhD earned her MSc. in Marketing at the Faculty of Economics and Business of the University of Zagreb. Additional MSc. and Ph.D. in the field of world economy – international business was awarded by the Faculty of Commerce of the University of Economics in Bratislava, Slovakia. Dr. Kovačević is experienced in research but also as an educator and administrator in the field of international relations. Her experience extends to the banking sector, too, where she worked for 10 years. Dr. Kovačević' s research is focused mostly to the topics concerning the European Union. She is also fluent in English and Slovak with good knowledge of German and Czeck, and basic knowledge of Italian. Dr. Kovačević joined the ZSEM team in January this year where she, besides teaching, works on developing international cooperation, Erasmuss programmers and most of all EU projects.

Panelist: **Konstantina Tsigkou, Ph.D.**

Konstantina Tsigkou, PhD is a Post-doctoral Researcher at the Department of Chemical Engineering at University of Patras, while she additionally teaches at the Department of Chemical engineering, at University of Western Macedonia (2021-2022). She holds a BSc in Chemistry (University of Patras, 2014), an MSc in Green Chemistry and Clean Technologies (University of Patras, 2016) and a PhD on Chemical Engineering (University of Patras, 2021). The waste/wastewater valorization via the anaerobic digestion process and the production of added-value products through sustainable approaches in the context of circular economy are her main research fields. She has participated in more than 20 biotechnology and waste/wastewater treatment/valorization conferences, where she was awarded twice, while she is a co-author in 28 scientific papers and 1 patent. Finally, she has participated in 6 EU research projects mainly related to the implementation of circular economy model on waste and wastewater valorization, co-funded by EU and national sources.

Panelist:	Adrian Solomon, Ph.D.

Dr Adrian Solomon is the Director of Helixconnect Europe. He is an experienced knowledge & technology transfer manager with expertise in environmentally sustainable and resilient organizations and digital transformation. Higher education reforms, the development of regional innovation ecosystems and digitalization are among the core capacities from his current portfolio. So far, he has successfully acquired and managed +31 projects amounting to more than 31.2 million Euros. In the past he has served as the Chairman of the External Grants Committee at the Triple Helix Association (University of Stanford-initiated technology transfer association); Consultant at Drees & Sommer; Project manager at the Advanced Resource Efficiency Centre (United Kingdom), a hub focusing on environmental sustainability technology commercialization; Associate Professor in Digital Transformation and Sustainability at the University of Sheffield; Deputy Director of the South East European Research Centre; and Co-founder of a World Bank Working Group on Law and Technology.

New Approaches to Knowledge Building

SESSION CHAIR

Karmela Aleksić-Maslać

The Impact of the U.S. Presidential Elections on the Stock Markets

Shab Hundal[1] and Tatyana Kauppinen[2]

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[2]JAMK University of Applied Sciences, Finland

Abstract

The US presidential elections have a history of making financial markets volatile, and unpredictable before and after the elections in comparison to other times. The current study investigates if any systematic association exists between risk and return of corporate sector during the U.S. presidential elections. The secondary data have been collected from 50 U.S. publicly listed companies for the four election periods: 2004, 2008, 2012 and 2016. The empirical findings show that higher returns are accompanied by higher risks and the US presidential elections do make significant impact on stock markets' risk - return dynamics.

Keywords: *Financial risks, risk - return, stock market dynamics, stock bubble, systematic risk, unsystematic risk.*

1. Introduction

The U.S. presidential elections are reckoned as significant event not only for the U.S. but also for the entire world as the U.S. is the world's largest economy and the U.S. presidential elections can change the direction of the global social-politico-economic developments. The current study is based on the premise that the stock markets cannot remain unaffected by the political developments and the U.S. presidential elections can have a significant impact on the U.S. and global stock exchanges [1, 2]. The principal research problem of the current study is if there are any associations between the U.S. presidential elections and the risk and return dynamics of the companies. The U.S elections are often accompanied by controversies on the political, economic, and business frontiers in U.S. and elsewhere. Political mudslinging in the media including allegations and counter-allegations made by politicians against each other, before the presidential election, during and even after can have a stronger influence on stock prices. "Every time Presidential-elect Donald Trump tweets, the markets listen. Since his election victory he has sent shares in companies such as Boeing, Lockheed Martin, Toyota and Pfizer reeling into the red, shaving off billions of dollars from their market value in minutes", [3].

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The principal this research objective is to find out any connection, association between U.S. presidential elections and the type of political ideology of the party which comes in power. The study addresses the following research questions: (i) does the risk-return dynamics of the U.S. firms experience any change during the US presidential elections? (iii) does the risk-return dynamics of the U.S. firms experience any specific change when a certain political party comes into power?

To answer the research questions four U.S. presidential election periods have been selected-2004, 2008, 2012 and 2016. Each period includes pre, during and post-elections years. The quantitative data analyses are based on the fifty biggest publicly listed U.S. companies, belonging to different sectors, taken from the S&P databases. The empirical findings show that there is a strong relationship between the U.S. presidential election and sock return fluctuations. Interestingly, the unsystematic risk has affected the sample companies' risk adjusted return inversely, whereas the systematic risk has been found to be positively associated with both annualized return and risk adjusted annualized return. Overall, the current study concludes that higher returns are accompanied by higher risks and the US presidential elections do make significant impact on stock markets' risk - return dynamics.

Section two is the literature review of core theoretical concepts and empirical studies. Section three includes research design, data, and methods. Section four highlights the findings of the study. The last section focuses on the discussion, conclusions, and implications of the study.

2. Literature Review

Wisniewski et al. [4] underline the importance of political events, such as the U.S. presidential elections, and their impact on financial markets, however, there is a paucity of empirical research in this filed. There are several studies which have attempted to explore the association between the U.S. presidential election and stock market fluctuation, however, there is a lack of consensus in terms of findings. Blanchard et al. [5] apply the Gordon Growth Model (GGM) and find that the dividend ratio decreased from the time of the election until the end of 2017 implying that either the expected dividends growth increased and / or that the stock premium decreased during the abovementioned time. The study further finds that tax concessions announced by political parties during election years can raise expectations for future dividends and as a result stock prices start increasing.

In another study Behl & Sethi [6] aimed to explore the impact of the U.S. presidential elections, that have taken place from 1980 to 2010, on the stock market performance for eight different industries. The study analyzed the stock market abnormal return in reference to the corporate tax policy of the state during election year as well as pre, and post-election years. The study finds that stock market reaction is not homogeneous with respect to the certain political party's victory in the elections. Democratic party's victory impacts the stock return negatively but in case of Republican party's victory the results are inconclusive. The study also finds a positive association between abnormal stock price and firms' marginal tax rate during the election period. Similarly, the reaction of investors also varies across different industries,

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for example manufacturing and mining industries has reacted significantly negative to the elections when compared to remaining six industries. Furthermore, there has been a negative reaction of stock market after and before the election, whenever a Democratic candidate of Democratic party wins. However, the same is not true when the wining candidate belongs to the Republican party. Similarly, a change in the government causes stronger effect on the stock market in compression to the situation when the same party is getting a re-elected. A change in the ruling party affects the market sentiments and raises the expectations of the market players in terms of policy reforms which fluctuate the stock market. Similarly, it has been found that abnormality in the stock price returns can be caused by uncertain tax policy, approximated by marginal tax rate.

Niederhoffer et al. [7] have investigated the movements in Dow Jones Industrial Average (DJI) before and after the US presidential elections. In this study, eighteen US presidential periods have been investigated during 1900 - 1968. The study finds that the pattern of stock market performances has not shown any systematic difference whether the US is ruled by Republican or Democratic administrations. Allvine and O'Neil [8] have explored interconnection between politics and stock market. Their study shows that stock markets in the USA generally follow a four-year business cycle that corresponds to the US presidential election cycle. Riley and Luksetich [9] have explored the investors' preference between Republicans and Demarcates. Huang [10] has found out that there have been higher average returns during Democratic administrations, in contrast of the widely held belief that the Republican Party is preferred by stock markets. In a similar vein, Santa-Clara and Valkanov [11], based on their investigation for the period between 1927 to 1998, conclude that the excess return in the stock markets is higher under Democratic rule than under Republican rule. Similarly, Johnson et al. [12] have found that investors earn higher returns on small-cap stocks during Democratic administrations.

Bouman and Jacobsen [13] have given an hypothesis that investors, both individual and institutional, have strong reasons to go short in May and not to take long position until November of the same year. They show significant differences in average monthly returns for May-October vs November-April of the same year. Waggle and Agrrawal [14] find that the *sell-in-May* adage observed in the US stock market is actually applicable to an election-year effect. There are significant seasonal differences seen in the US stock markets in terms of returns in the given election year. Waggle and Agrrawal [14] find that most of the strongly positive November-April returns occur immediately following an election. However, there is no significant difference between the May-October and November-April returns of non-election years. Therefore, it is not a wise move on the part of investors to follow the *sell-in-May* adage blindly, especially in non-election years.

Oehler et al. [15] do not find any systematic pattern in industry-wise returns when comparing the effect of election victories Democratic and Republican for the period 1980-2008. However, the extent of the stock market reaction is not homogeneous across industries. For example, stock return of mining and manufacturing industries mainly react adversely to presidential elections, while construction and the financial sectors are less influenced. The victory of a Democratic candidate emits a negative stock market reaction both before and after the election, whereas the results are rather mixed when the winning candidate is

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Republican. Interestingly, a change in presidency from either the Democratic party to the Republican party or vice-versa causes stronger stock market effects than re-election of a president from the same party. This result indicates that the *change of guard* contains more relevant information for market participants than the continuation of a political approach and supports the notion that markets actually react to changes in the political landscape as induced by presidential election Similarly, the firms' marginal tax rate is recognized as an important determinant that affects abnormal stock price returns and both variables are positively correlated around the election day.

Colón-De-Armas et al. [16] examine the relationship between political events and the stock market, particularly shifts in investor sentiment around the seven US presidential elections for the period 1988-2012. The investor sentiment is measured by changes in discounts in the closed-end funds. The study shows that discounts significantly diminish starting from two weeks before the election to a week before the election, and persist until the week after the election, suggesting an increase in investors' optimism during that period. The study shows that the sentiment of individual investors is a function of political uncertainty. Investors' optimism increases when the level of uncertainty regarding the election's outcome is resolved the week before the election. It can be so as investors realize which presidential candidate is the clear favorite to win. The increase in investor's optimism is stronger before and after a Democrat is elected president, which is consistent with the extensive literature documenting higher stock market returns during Democratic as opposed to Republican US presidencies. When a Republican is elected, an initial increase in optimism also is observed two weeks before the election. That optimism, however, begins to disappear perhaps when it becomes more likely that a Republican will be elected, and is completely reversed when that election is confirmed. Goodell and Vähämaa [17] find similar results too. Similarly, more than a particular party prevailing, investors are more interested in avoiding the entrenchment of power since the results suggest that they become optimistic when a change in the ruling party takes place but become pessimistic when there is power continuity in the White House.

Ajjoub et al. [18] discuss the impact of social media activities of political leaders that can cause stir in the stock market. Precisely, the study explores the influence of US President Donald Trump's tweets on stock prices. The findings underline that the positive tweets about media firms positively influence abnormal returns, and such tweets are more impactful on investors' mind than negative and neutral tweets. Moreover, the influence of positive tweets on the stock prices of media firms appears to significantly stronger after President Trump's election than the similar impact before his election as the US president. Notably for non-media firms, the study underpins even more pronounced impact of tweets on stock prices, particularly when a tweet has a negative connotation and investors sentiment is adverse. Specifically, negative tweets cause negative abnormal returns which are more influential on the first day than neutral and positive tweets, however, this effect partially reverses the next day, possibly due to the self-correcting mechanism of the stock market for an initial overreaction. Furthermore, whenever the President posts a tweet carrying a negative sentiment about a non-media firm in which he reiterates news about the firm that was previously made public, the negative abnormal return appears to be ignited not only by the content of information

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contained in the news release, but also by the President's attitude towards the issue or hatred towards the firm.

Goodell and Bodey [19] underline that as the likely winning candidate in the US elections becomes obvious, the uncertainty diminishes. However, markets react unfavourably, and stocks become undervalued (lower P/E ratio). In another study, Goodell and Vähämaa [17] have identified developing of certain patterns of investors' expectations amidst market uncertainties regarding future macroeconomic policy under the new US government.

Based on the above review of literature, the following two hypotheses have been formed:

H1: The victory of Republicans in the US presidential elections impact on stock market risk - return dynamics.

H2: The victory of Democrats in the US presidential elections impact on stock market risk - return dynamics.

3. Research Design

The current study research is based on the secondary data analysis. The historical data of changes in companies stock prices and the dynamics of the market index has been taken from S&P 500 database and annual reports of top fifty biggest U.S. companies belonging to different industrial sectors of economy. All secondary data was taken for four previous periods of presidential election in U.S. The time scale of collected data is starting from 2003 till 2017 having an interval of one year between each of the four election periods. Therefore, each one of those four periods have been divided as: the year of pre-election campaign; the election year; and the post-election year period.

This data four periods are: First period (2003, 2004, 2005); Second period (2007, 2008, 2009); Third period (2011, 2012, 2013); and Fourth period (2015, 2016, 2017).

Multivariate ordinary least square regression analysis models have been applied for the analysis purpose.

$$Y_{it} = \alpha_{it} + \beta_{it}\Sigma X_{it} + €_{it}$$

Y = Predicted variable, X=predicting variable, α = Intercept term, €= Stochastic error term, t=one year time, and i=sample firm (unit of analysis).

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Table 1. Description of Variables description

Variable	Label	Formula/Definition	Variable	Label	Formula/Definition
Annualized Firm Stock Return	AnnulRetFirm	(1+Daily Stock Return)^{365} -1	Annualized Market Return	MarktAnnualRET	(1+Daily Market Return)^{365} -1
Systematic Risk	ToTSysRisk	Beta times annualized market risk	Annualized Market Risk	TOTRISKMark	Daily market risk times square root of 365 days
Unsystematic Risk	ToTUnsysRisk	Total annualized risk minus total systematic risk	Jensen's Alpha	JenAlpha	Relative performance of firm stock return in comparison to the minimum expected return.
Risk Adjusted Annualized Return	RETToRISKFirm	Return on investment earned per unit of risk taken.	Market Return to Risk Rate	RETtoRISKMark	Return on index per unit of risk taken.
Effective Corporate Tax	ETR	The ratio of actual amount of corporate tax paid by a company by the profit before tax, each year.	Debt Tax Shield	NLDTS	Potential addition to the firm value by leverage.
Unlevered Return	UnleverRet	Implied rate of return a company expects to earn on its assets, without the effect of debt.	Total Debt	NLofDebt	Natural logarithm of total debt
Return on Capital Employed	ROCE	Financial ratio measuring profitability and efficiency of capital employed.	Return on Equity	ROE	Financial ratio measuring profitability and efficiency of capital employed.
Total Asset	NLASSETS	Natural logarithm of total assets			

4. Research Findings

Table 2 highlights *First period (2003, 2004, 2005)* of elections won by the Republicans. As the Market Annualized Return increases, the Annualized Return *(AnnulRetFirm)* of firms rises too, however, Risk Adjusted Annualized Return *(RETToRISKFirm)* is affected negatively. Similarly, Jensen's Alpha *(JenAlpha)*, measuring over/under-performance in comparison

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to the minimum expected return, affects both predicted variables- *AnnulRetFirm* and *RETToRISKFirm* positively. *RETtoRISKMark*, measuring risk adjusted market return, positively impacts both predicted variables. Interestingly, *TOTRISKMark* and *ToTSysRisk* affects both dependent variables positively, whereas *ToTUnsysRisk* and *UnleverRet* have the negative impact on the same variables. Firms having higher level of leverage *(NLofDebt)* negatively impacts *AnnulRetFirm*.

Table 2. Effect of Predicting variables on 'Annualized Return' and 'Risk Adjusted Annualized Return' for the 'First period' (2003, 2004, 2005) of US Presidential election won by the Republican Party

Dependent Variable	Annualized Return (AnnulRetFirm)	Risk Adjusted Annualized Return (RETToRISKFirm)
(Constant)	-0.248 (-0.328)	-0.247 (-0.266)
MarktAnnualRET	4.931 ** (2.179)	-4.018* (-1.489)
CJenAlpha	2.533 *** (36.572)	2.565 *** (32.656)
RETtoRISKMark	1.361 *** (3.385)	1.173 ** (2.377)
TOTRISKMark	9.286 ** (2.122)	8.911 * (1.534)
ToTSysRisk	3.836 ** (2.117)	3.586 * (1.467)
ToTUnsysRisk	-5.792 *** (-6.674)	-5.701 *** (-5.422)
UnleverRet	-1.962 ** (-2.045)	-1.758 *(-1.557)
D2E	-0.001 (-0.782)	-0.005 * (-1.464)
NLofDebt	-0.068 ** (-2.231)	-0.021 (-0.204)
ROE	0.023 (0.627)	0.426 *(1.373)
ROCE	1.09 (1.194)	0.270 (0.232)
ETR	-0.019 (-0.234)	0.028 (0.198)
NLDTS	-0.061 * (-1.87)	0.000 (0.656)
NLAssets	0.000 (0.916)	-0.045 (-0.435)
R-Square	0.939	0.928
Durbin-Watson Test	1.863	1.714
Number of Observations	150	150

Significance level *** p<0.01; ** p<0.05; p* <0.10.

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Table 3 highlights *Second period (2007, 2008, 2009)* of elections won by the Democrats. Similarly, Jensen's Alpha *(JenAlpha)*, measuring over/under-performance in comparison to the minimum expected return, affects both predicted variables- *AnnulRetFirm* and *RETToRISKFirm* positively. *ToTUnsysRisk* and *NLAssets* affect *RETToRISKFirm* negatively and positively, respectively.

Table 3. Effect of Predicting variables on 'Annualized Return' and 'Risk Adjusted Annualized Return' for the 'Second period' (2007, 2008, 2009) of US Presidential election won by the Democratic Party

Dependent Variable	Annualized Return (AnnulRetFirm)	Risk Adjusted Annualized Return (RETToRISKFirm)
(Constant)	0.006(0.025)	0.409(0.687)
MarktAnnualRET	0.001(0.013)	1.822(1.373)
JenAlpha	0.247*** (32.781)	1.693*** (23.685)
RETtoRISKMark	0.001(0.031)	-0.323(-0.643)
TOTRISKMark	0.001(0.016)	-0.798(-1.267)
ToTSysRisk	0.000(0.001)	-0.231(-0.511)
ToTUnsysRisk	-0.000(-0.016)	-1.221*(-1.598)
UnleverRet	-0.002(-0.085)	-0.291(-0.707)
D2E	0.013(0.234)	-0.002(-0.242)
NLofDebt	0.002(0.119)	-0.233(-0.779)
ROE	-0.013(-0.113)	0.070(0.309)
ROCE	0.006(0.213)	-0.795(-0.731)
ETR	-0.004(-0.113)	0.250(0.319)
NLAssets	-0.00(-0.026)	0.318*(1.616)
NLDTS	-0.000(-0.011)	-0.071(-0.341)
R-Square	0.756	0.894
Durbin-Watson Test	1.821	1.846
Number of Observations	150	150

Significance level *** p<0.01; ** p<0.05; p* <0.10.

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Table 4 highlights *Third period' (2011, 2012, 2013)* of elections won by the Democrats. As the MarktAnnualRET, JenAlpha and RETtoRISKMark increase, the Annualized Return *(AnnulRetFirm)* and Risk Adjusted Annualized Return *(RETToRISKFirm)* of firms rise too. Similarly, *TOTRISKMark* affect both predicted variables positively. *ToTSysRisk* and *ToTUnsysRisk* affect *AnnulRetFirm* positively. However, *ToTUnsysRisk* affects *RETToRISKFirm negatively.*

Table 4. Effect of Predicting variables on 'Annualized Return' and 'Risk Adjusted Annualized Return' for the 'Third period' (2011, 2012, 2013) of US Presidential election won by the Democratic Party

Dependent Variable	Annualized Return (AnnulRetFirm)	Risk Adjusted Annualized Return (RETToRISKFirm)
(Constant)	0.006 (0.011)	0.328 (0.792)
MarktAnnualRET	2.111*** (2.051)	1.838** (1.953)
JenAlpha	2.111*** (34.123)	3.175*** (30.802)
RETtoRISKMark	0.983*** (6.195)	0.158** (0.805)
TOTRISKMark	0.451** (2.071)	1.77** (2.215)
ToTSysRisk	0.012** (2.042)	-0.386 (-0.728)
ToTUnsysRisk	0.211*** (8.021)	-5.851*** (-7.037)
UnleverRet	0.021** (2.032)	-0.161* (-1.311)
D2E	-0.211*** (-12.025)	-0.121** (-2.277)
NLofDebt	0.001 (0.011)	-0.441* (-1.574)
ROE	-0.003 (-0.019)	-0.293 (-1.161)
ROCE	-0.005 (-0.058)	0.684*** (4.628)
ETR	0.000 (0.147)	0.036* (1.318)
NLASSETS	0.036** (2.021)	0.307*** (8.474)
NLDTS	-0.001 (-0.121)	0.107* (1.407)
R-Square	0.861	0.779
Durbin-Watson Test	1.981	2.021
Number of Observations	150	150

Significance level *** p<0.01; ** p<0.05; p* <0.10

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Table 5 highlights *Fourth period (2015, 2016, 2017)* of elections won by the Republicans. The JenAlpha affect the Annualized Return *(AnnulRetFirm)* and Risk Adjusted Annualized Return *(RETToRISKFirm)* of firms positively. Similarly, *RETtoRISKMark* affects *RETToRISKFirm* positively. *ToTUnsysRisk* affects *RETToRISKFirm* negatively. However, *TOTRISKMark*, *ToTSysRisk*, *UnleverRet*, *D2E*, *and NLofDebt* affect neither of the predicted variables significantly.

Table 5. Effect of Predicting variables on 'Annualized Return' and 'Risk Adjusted Annualized Return' for the 'Fourth period' (2015, 2016, 2017) of US Presidential election won by the Republican Party

Dependent Variable	Annualized Return (AnnulRetFirm)	Risk Adjusted Annualized Return (RETToRISKFirm)
(Constant)	0.000(0.001)	0.902(0.936)
MarktAnnualRET	0.000(0.001)	-0.692(-0.514)
JenAlpha	2.345*** (52.221)	1.832*** (32.372)
RETtoRISKMark	0.001(0.018)	0.353**(2.022)
TOTRISKMark	0.000(0.011)	-2.557(-0.556)
ToTSysRisk	0.002(0.071)	1.028(1.114)
ToTUnsysRisk	0.002(0.083)	-2.194*** (-3.005)
UnleverRet	-0.021(-0.116)	0.03(0.358)
D2E	0.021(0.814)	-0.009(-0.843)
NLofDebt	0.022(1.011)	-0.101(-0.412)
ROE	-0.034(-1.221)	0.122(0.754)
ROCE	-0.01(-0.016)	-2.121*(-1.548)
ETR	-0.002(-0.029)	-0.349(-0.809)
NLAssets	-0.001(-0.018)	0.039(0.222)
NLDTS	0.000(0.002)	0.065(0.388)
R-Square	0.871	0.823
Durbin-Watson Test	1.981	2.021
Number of Observations	150	150

Significance level *** p<0.01; ** p<0.05; p* <0.10

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5. Conclusion

The current study aims to investigate if there are any associations between association the U.S. presidential elections and the stock market reactions and if the election of the certain political party affects the risk-return dynamics in the USA. The study finds that there is a strong relationship between the U.S. presidential election and sock return fluctuations, in general. Interestingly, the unsystematic risk has affected the sample companies' risk adjusted return inversely, whereas the systematic risk has been found to be positively associated with both annualized return and risk adjusted annualized return. Overall, the current study concludes that higher returns are accompanied by higher risks and the US presidential elections do make significant impact on stock markets' risk - return dynamics.

The study concludes that whenever the Republicans come in power, stock returns, adjusted as well as unadjusted by risk, improve as the firms over-perform in comparison to the minimum expected return and overall risk in the market increases. However, as the market return increases, the unadjusted firm returns increase however the risk adjusted returns decline. Interestingly, both total risk and market risk influence both risk adjusted as well as risk unadjusted returns positively, however, the firm specific risk affect both types of returns negatively.

Similarly, the study concludes that whenever the Democrats come in power, the market return related variables have almost same positive effects on both risk adjusted as well as risk unadjusted returns, however, the unsystematic risk, unlike in the case of Republicans, affects both risk adjusted as well as risk unadjusted returns positively.

References

[1]Bajpai, P. (2020). The 5 largest economies in the world and their growth in 2020. Retrieved, January 22, 2020, from https://www.nasdaq.com/articles/the-5-largest-economies-in-the-world-and-their-growth-in-2020-2020-01-222020.

[2] Surz, C. R. (n.d.). *U.S. Stock Market Is Biggest & Most Expensive In World, But U.S. Economy Is Not The Most Productive*. Www.nasdaq.com. https://www.nasdaq.com/articles/us-stock-market-biggest-most-expensive-world-us-economy-not-most-productive-2018-04-02

[3] Rodionova, Z. (2017). *Donald Trump: New mobile app will alert investors to the President-elect's market-moving tweets.* Independent. Business News. Retrieved January 10, 2020, from Independent, Business News site https://www.independent.co.uk/news/business/news/donald-trump-twitter-app-alerts-stock-market-drop-boeing-general-motors-toyota-a7526216.html

[4] Wisniewski, T. P., Lightfoot, G., & Lilley, S. (2009). Speculating on presidential success: exploring the link between the price–earnings ratio and approval ratings. *Journal of Economics and Finance*, *36*(1), 106–122. https://doi.org/10.1007/s12197-009-9116-0

[5] Blanchard, O., Collins, C. G., Jahan-Parvar, M. R., Pellet, T., & Wilson, B. A. (2018). A year of rising dangerously? The U.S. stock market performance in the aftermath of the

ISBN 978-953-246-505-1

presidential election. Journal of Policy Modeling, 40(3), 489-502. https://doi.org/10.1016/j.jpolmod.2018.03.004

[6] Behl, A., & Sethi, S. (2016). Impact of elections on stock price graph: A case of US elections. International Journal of Management Practice, 9(3), 238. https://doi.org/10.1504/ijmp.2016.077817

[7] Niederhoffer, V., Gibbs, S., & Bullock, J. (1970). Presidential Elections and the Stock Market. *Financial Analysts Journal*, *26*(2), 111–113. https://www.jstor.org/stable/4470664

[8] Allvine, F. C., & O'Neill, D. E. (1980). Stock market returns and the presidential election cycle: Implications for market efficiency. Financial Analysts Journal, 36(5), 49-56. https://doi.org/10.2469/faj.v36.n5.49

[9] Riley, W. B., & Luksetich, W. A. (1980). The Market Prefers Republicans: Myth or Reality. *The Journal of Financial and Quantitative Analysis*, 15(3), 541. https://doi.org/10.2307/2330399

[10] Huang, R. D. (1985). Common stock returns and presidential elections. *Financial Analysts Journal*, 41(2), 58-61. http://www.jstor.org/stable/4478822

[11] Santa-Clara, P., & Valkanov, R. (2003). The presidential puzzle: Political cycles and the stock market. *The Journal of Finance*, 58(5), 1841-1872. https://doi.org/10.1111/1540-6261.00590

[12] Johnson, R. R., Chittenden, W. T., & Jensen, G. R. (1999). Presidential Politics, Stocks, Bonds, Bills, and Inflation. *The Journal of Portfolio Management*, 26(1), 27–31. https://doi.org/10.3905/jpm.1999.319771

[13] Bouman, S., & Jacobsen, B. (2002). The Halloween indicator, 'sell in May and go away': another Puzzle. American Economic Review, 92(5), 1618-1635.

[14] Waggle, D., & Agrrawal, P. (2018). Is the "sell in May and go away" adage the result of an election-year effect? Managerial Finance, 44(9), 1070-1082.

[15] Oehler, A., Walker, T. J., & Wendt, S. (2013). Managerial Finance, 39(8), 714-736.

[16] Colón-De-Armas, C., Rodriguez, J., & Romero, H. (2017). Investor sentiment and US presidential elections. Review of Behavioral Finance, 9(3), 227-241.

[17] Goodell, J.W., & Vähämaa, S. (2013). US presidential elections and implied volatility: the role of political uncertainty. Journal of Banking and Finance, 37(3), 1108-1117.

[18] Ajjoub, C., Walker, T., & Zhao, Y. (2021). Social media posts and stock returns: The Trump factor. International Journal of Managerial Finance, 17(2), 185-213.

[19] Goodell, J. W., & Bodey, R. A. (2012). Price-earnings changes during US presidential election cycles: voter uncertainty and other determinants. *Public Choice*, 150(3/4), 633–650. https://www.jstor.org/stable/41406901?seq=1

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Advantages of using Integrated Business Planning in HEIs

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Abstract

Higher education institutions have been operating in quite stable environment for centuries, and that allowed for more traditional governance models to be used. The more responsive higher education governance models, call for proactive approach, that call for a structured decision-making process. New approaches are needs, as the educational environment changes, competition intensifies, focus shifts on internationalisation and student mobility, etc. Integrated business planning has been well received and appreciated in numerous companies. The paper explores the use of integrated business planning process planning, and its applicability to managing higher education institutions. The benefits of integrated business planning are illustrated on the example of a Croatian manufacturing company.

Keywords: *Integrated Business Planning, Strategy, HEI.*

1. Introduction

This paper is an attempt to examine the importance of using long-term planning process in HEIs, to meet various stakeholder expectations. Today, both companies and HEIs need to adapt to various demand situations, changes, global impact of the competition, financial crisis, etc. To understand what these situations mean for a company and how the company will adapt, long-term planning process is crucial. In practice, the Integrated Business Planning (IBP) process helps the companies translate company strategy into long-term goals, to balance between demand and supply, while considering various potential vulnerabilities and opportunities. Additionally, it is helping companies to understand possible gaps, perform gap closing scenario and help understand when capital investment should be triggered. The aforementioned should help companies to achieve their long-term goals and strategy. Traditionally the HEIs did not utilize IBP since their environment was thought to be more inert. With the accelerated rate of change in recent years, IBP just might be necessity for HEIs.

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The aim of this paper is to understand if HEIs need a process like Integrated Business Planning for long-term planning. The effects of IBP will be studies on a real company, and its effects on profitability, cost optimization, strategy implementation, etc.

1.1. Transitioning from S&OP to IBP

Aligning daily operations with the company strategy is challenging task for most companies. Widely used tool for that purpose is Sales and operations planning (S&OP), which balances demand and supply, by creating a unique, one set of numbers for all operational plans [1]. Advantages of a proper S&OP include more accurate information and forecasts, shorter reaction time, better decision making, etc. [2]. Optimization is often left out of Sales and Operations planning process as it is purely a process of balancing demand and supply. Therefore, an advanced Sales and Operations planning process would be required for large organizations which includes product portfolio review, as well as scenario planning, vulnerabilities and opportunities and overall business review. An example of advanced S&OP is Integrated Business Planning, which typically yields to higher operating margins, higher efficiency, and revenue growth [2].

1.2. Integrated Business Planning

While Sales and Operations planning process is short-term focused on demand and supply balancing, Integrated business planning process (IBP) is focused on overall integrated view of the future horizon of the company and understand how this process outcome aligns to company vision, mission, and strategy. According to Palmatier (2013), Integrated Business Planning process is a consensus on one set of operating numbers that the members of the executive team hold themselves accountable to execute. It includes an updated sales plan, production and inventory plan, customer lead time, backlog plan, new product development plan, strategic initiative plan and financial plan [3]. Integrated business planning is about being roughly right, not precisely wrong in the business planning horizon.

A properly implemented Integrated Business Planning process reviews the business performance starting with a review of strategy, updated product portfolio changes, customer demand, supply and resulting financial effects [3]. The leadership and management re-plan on a monthly level the whole cycle again through a rolling 24+ month horizon.

Integrated Business Planning process includes commitment to process, and active, disciplined, routine participation from all the executive staff. Likewise, from the middle management layers – demand, supply, product portfolio, strategic initiatives, finance and integrated reconciliation. All these steps are performed prior to the final step, MBR – Management Business Review, which is the final review of the entire business operations.

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Picture below represents a proven path to IBP implementation.

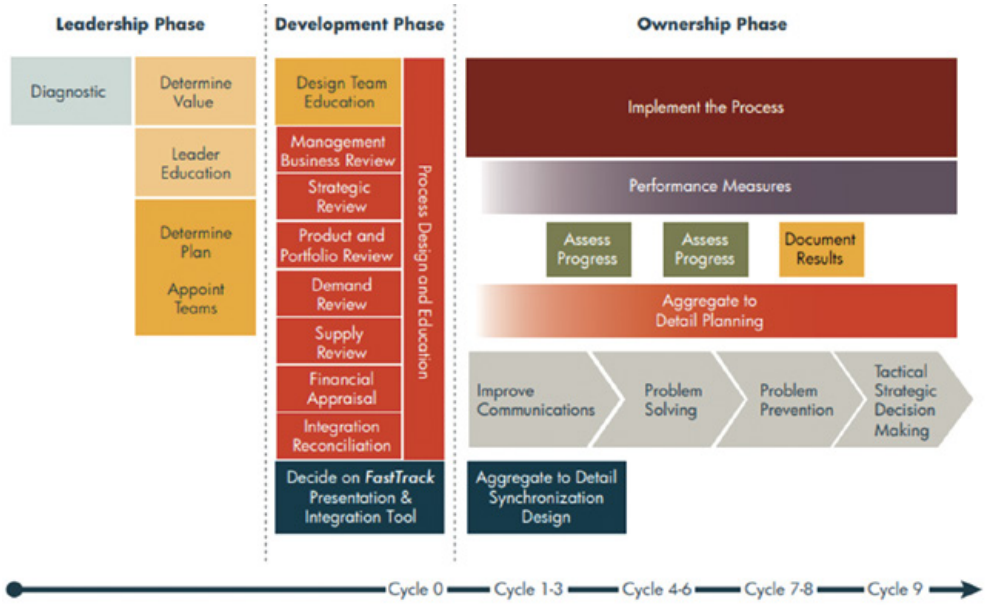

Figure 1. Proven Path to IBP/S&OP. Palmatier et al., 2013

As the picture is showing, the first and most important phase is leadership phase, where diagnostics, value determination and leadership education is the first step. Once this is done, a buy-in from top leadership is needed, the process owner needs to be fully aligned with Integrated business planning process. Further, plan is determined, and teams are appointed. At this stage, leadership phase is done, and development phase can begin. In development phase, team education is designed through the whole Integrated business planning process – demand review, supply review, product, and portfolio review, strategic review, financial appraisal, integrated reconciliation, and management business review. In this phase presentation and integration tool is also decided on. In the final phase, the ownership phase, a process of Integrated business planning is implemented, performance is being measured while the progress is being assessed on certain elements of IBP process. At this stage it is crucial to improve communication between process owners, work on problem solving, prevention and tactical and strategic decision-making process. The four stages of Integrated business planning implementation are shown below in figure 2.

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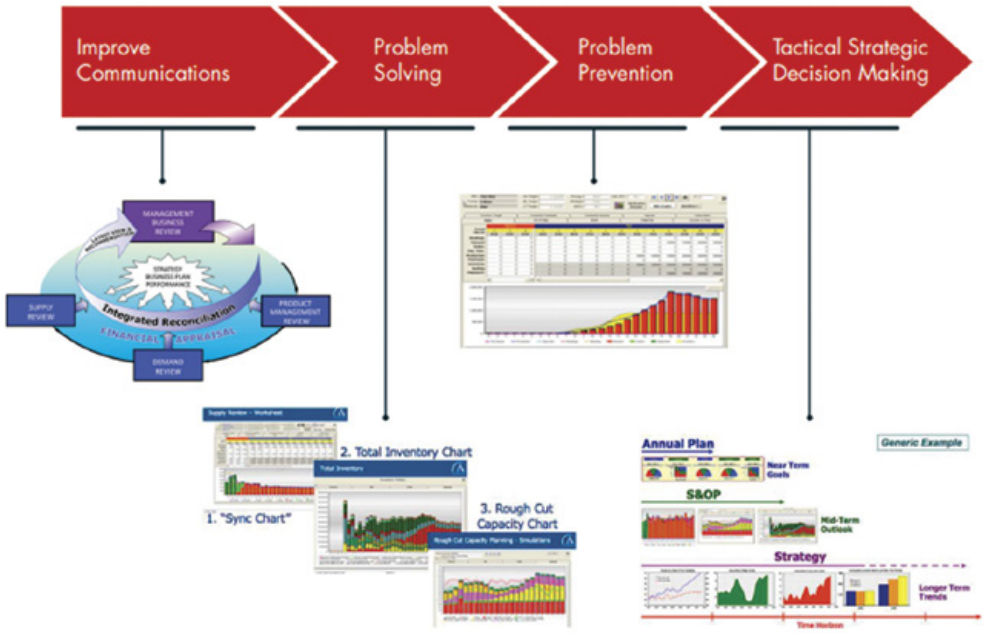

Figure 2. Four stages of IBP implementation. Palmatier et al., 2017

The main differences between IBP and S&OP are presented below in the figure 3.

S&OP	IBP
Supply-and-demand focused	Involves the entire business in the planning process
Meetings-heavy and output focused	Monthly planning focuses on optimizing results and leverages scenario planning as a tool. The result is a more agile organization
Short-term plans to drive supply and output	Long-term view to inform decision-making
Traditional, static budgeting practices	Comprehensive and "living" financial plan with a range of associated KPIs

Figure 3. S&OP vs. IBP. Ali, 2021.

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2. Integrated Business Planning process within LPT d.o.o.

LPT, Limited Liability Company is located in Croatia, Prelog, Međimurje County and was founded in 2000 by Leggett and Platt, INC, a US Missouri based diversified manufacturer. Leggett and Platt was founded in 1883 by two brothers-in-law J.P. Leggett and C.B. Platt who had the idea of manufacture spring unit cores for mattresses. Today, Leggett and Platt is a diversified manufacturer that designs and produces a broad variety of engineered components and products that can be found in most homes and automobiles. The Croatian subsidiary which started in 2000 as a small manufacturer of innerspring units for mattresses has grown in 2021 to a 90 million dollars business. Beside innerspring mattress units' production, LPT d.o.o. is drawing its own wire for innerspring units' production, as well as having its´ own R&D department and machine building branch.

The company started IBP implementation in 2012 as it realised the planning process and running the business has not been fully structured and integrated.

2.1. Benefits of Integrated Business Planning

The outcome of Integrated Business Planning process at LPT, llc. is a clear overview of 24-month horizon of doing business across multiple locations. All the reviews – Product Portfolio review, Demand review, Supply review, Integrated reconciliation review and Management Business review are followed by a meeting minutes.

In preparation for any of the meetings, an information package (Infopack) is distributed prior to the meeting with a standard Integrated Business Planning agenda. After the meeting is discussed, concluded and decisions being made, a Meeting minutes are distributed to process team members. Typical meeting minutes, with details on discussion contain further notes on:

A. Decisions being made:
B. Items for Elevation to Integrated reconciliation review:
C. Items for Other Process Steps:
D. Tasks (Person, Due Date: Task):

Decisions being made are delivered to other processes to understand what needs to be done further. Items which have not been resolved and were not resolved during the review, are elevated further to other process steps. Items which are discussed and have been approved during the review are distributed as needed. Any tasks that need to be done are assigned with person responsible, due date and are then used as input for next monthly cycle of the process.

With running the whole cycle of Integrated Business Planning process, a company gets an overview of the business from all perspectives – New products, Demand, Supply, Finance, Human resources. It is a way of running the business on a 24-month horizon, identifying gaps, making gap closing scenario, understanding which production capacity is needed (human, machine, space), understanding customer behaviour to forecast demand trends,

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understand the market, timing and impact of launching new products and development. The outcome of the process is holistic and Integrated view of the business.

2.2. Leading the LPT through Integrated Business Planning

While the business was growing exponentially from 2012, it has come to attention the need for an overall business view throughout all the processes of the company. A disconnected view of the business in a growing environment and complex markets delivering current and new products screamed for an integrated overview. Starting with Sales and Operations Planning, which is more Demand and Supply balancing, LPT has transitioned through period to full Integrated Business Planning process and is today running the business with help of this process. Use of one set of numbers across the organization and processes has helped Integrated Business Planning keep the holistic view, while at the same time all plans are aligned across the organization.

Understanding the products which markets need, develop and deliver the products with help of Product portfolio review, understanding Demand movement and using assumptions to understand what customer needs in a specific time with help of Demand review, understanding what resources are needed from Supply side (material, human, machinery, space), integrating all of the plans through financial overview, and finally elevating gap closing scenario, recommendations to Management Business review as the culmination of Integrated Business planning process helps run the business smoothly, transparently on a long-term horizon, while helping to understand if the company´s vision, mission strategic and financial goals are met.

The effectiveness of running the process itself has helped the organization to grow in maturity, while having accountability from Integrated Business Planning team members.

3. Evolving Environment of Higher Education

Higher education institutions still utilize the Balanced Scorecard, not only to measure but manage their business [5] [6]. This approach has limits even in stable environments, mainly regards to metrics and benchmarking [7].

Furthermore, higher education institutions are becoming increasingly competitive for students and other sources of revenue. A striving for internationalization of HEI, application to different sources of funding, better responsiveness to business community needs, digitalization and online programs, are just some of the priorities. In this hectic new environment, the HEIs do not have a luxury to plan on yearly basis, but have to be more responsive.

Even the most responsive HEI governance models, like entrepreneurial (market) model, call for strong executive body [8].

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4. Conclusion

The benefits of Integrated Business Planning have been proven many times in the industry, as evident from the LPT example presented in this study. This paper hypothesizes that applying IBP process to HEIs would be beneficial as a main managing approach. Exploratory research would be a next logical step, and the authors hope to continue within their own institutions.

References

[1] Jacobs, F. R., Chase, R. B., and Lummus, R. R. (2014). " Sales and Operations Planning", *Operations and supply chain management*. New York, NY: McGraw-Hill/Irwin., pg. 487-513, 2014.

[2] Deloitte, Integrated Business Planning plus, 2018. Retrieved from https://www2.deloitte.com/content/dam/Deloitte/ de/Documents/operations/Deloitte_Integrated-Business-Planning.pdf, on August 24, 2022.

[3] Palmatier, G. E., and Crum, C. (2013). "Transition from sales and operations planning to Integrated Business Planning: Moving from fundamental demand and supply balancing to strategic management". *Oliver Wight International,* pg. 40-56, 2013.

[4] Ali, R. "What Is Integrated Business Planning and Why Is It Important?" *Oracle NetSuit,* March 16, 2021. Retrieved from https://www.netsuite.com/portal/resource/articles/business-strategy/integrated-business-planning.shtml?mc 24943=v0, on August 22, 2022.

[5] Kaplan, R.S. and Norton, D.P. (2005), "The balanced score card: measures that drive performance", Harvard Business Review, Vol. 8 No. 3, pp. 174-180.

[6] Kaplan, R.S. and Norton, D.P. (2007), "Using balanced score card as a strategic management system", Harvard Business Review, Vol. 87 Nos 7-8, pp. 150-161.

[7] Chinta, Ravi, Mansureh Kebritchi, and Janelle Ellias. "A conceptual framework for evaluating higher education institutions." *International Journal of Educational Management*, 2016.

[8] Barac, Zoran. "Effective direction and control of higher education institutions; An empirical case study of the Croatian private business school". Diss. Doctoral Dissertation, University of St. Gallen, Switzerland). Retrieved from https://www1. unisg. ch/www/edis. nsf/SysLkpByIdentifier/4393/$ FILE/dis4393. pdf, 2015, on August 24, 2022.

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TAKING RESPONSIBILITY FOR THE FUTURE OF TYROL
Learnings from a Regional Foresight Study for Responsible Management Education

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Abstract

In times of numerous crises, the question of how to sustain economic, environmental and social well-being in the future is more important than ever, but the question of how to achieve sustainability goals remains. Initiatives such as the Principles for Responsible Management Education (PRME) aim to train decision makers to meet this challenge. Foresight and futures literacy help to systematically examine the future and thus support managers in bringing about the change required for sustainable development. The results of the foresight study for the Alpine region of Tyrol show how sustainable development goals can be operationalized at the regional level. However, the unrealistic targets indicate a lack of futures literacy among current decision-makers. We therefore propose to integrate future literacy that promotes participatory and systemic thinking more strongly into management education and to focus attention on current change makers who play a key role in regional systems and thus for sustainable development globally.

Keywords: *Sustainable development, sustainability goals, regional systems, foresight, Real-Time Delphi.*

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New Teaching and Assessment Methods in HE

SESSION CHAIR

Karmela Aleksić-Maslać

Managing the COVID Pandemic: Experience of an Institution of Higher Learning

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Abstract

In early 2020, the government health authorities issued an ordinance to close all schools and non-essential businesses due to the spread of the COVID-10 virus. Consequently, the International University in Geneva developed an emergency plan to manage the institution during the pandemic enabling the students to continue their education. This emergency plan called for improved communication throughout the institution. Moreover, management anticipation of the upcoming closure and strong leadership enabled it to react swiftly to the new conditions.

Keywords: *COVID-19, communications, emergency leadership, emergency management, online teaching Post-COVID*

1. Background to the COVID-19 Pandemic

Following the rapid spread of the virus throughout Europe, on 28th February 2020, the Swiss authorities (the Federal Council Ordinance, Article 2) announced the closing of its borders as well as all non- essential businesses and schools[1]. Furthermore, the population had to wear masks, clean their hands with a gel, distancing in public and premises ventilated. Furthermore, meetings were limited, first to a maximum of 1,000 and finally up to 5 persons. In March 2020, the University closed its campus and switched to distance teaching. As the pandemic came under control due in part to the new vaccine, the health authorities allowed business and schools to reopen. In 2020, University reopened, introduced hybrid teaching and eventually returned to campus teaching. The frequent changes in decisions from the government reflecting the evolution of the pandemic disrupted the University management. To face the crisis, management adopted a proactive mind-set by setting up communications to inform all stakeholders of the upcoming changes, invested in hardware and software and provided guidance to the faculty on distance teaching. By April 2022, all remaining restrictions were removed allowing teaching to resume on campus [2].

The pandemic evolution in Switzerland went through 4 phases as described below[2]:

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1. This initial phase ranged from March 16 2020 to June 2020 when the Swiss authorities mandatedrestrictions on the movement of people and the closing of non-essential businesses and universities.
2. Phase two covered the period June 2020 to September 2020 when several restrictive measures wererelaxed. At that time, the University introduced online teaching
3. Phase three ranged from October 2020 to January 2021 when a second wave of the pandemic appeared.
4. A national vaccination campaign and the easing of restrictions including the reopening of restaurants, indoor sports and cultural events characterize phase four spanned from January 2021 to April 2021.

2. Setting a Crisis Management Team

As the pandemic started to affect the lives of citizens and businesses, management set up a task force to meet the new conditions concerning the closing and reopening of institutions of higher learning. It is now time to look back at how much management has changed, new teaching tools developed and knowledge gained.

To begin with, management closely followed the recommendations of the government concerning the conditions for institutions to remain open, their closing and eventually reopening. At first, students and faculty had to wear masks, clean their hands and desks with a disinfectant gel after each session and seats spaced between students. As the situation worsened, the government announced the closing of all the institutions. This situation led management to establish a crisis management team to ensure the institution can continue operating while observing mandatory regulations.

3. From teaching to online to hybrid and back to classroom teaching

Due to mandatory closing of schools, management decided to switch to online teaching. This meant reviewingand updating all the institution hardware and software, training the faculty in distance teaching and communicating to the students the new learning mode. The transition went well thanks to the management anticipation of upcoming changes and having a plan B ready for implementation. For example, the IT team worked overtime to ensure all the equipment was functioning and new equipment purchased. This required a search for suppliers as many schools were in the market for similar equipment. At the same time, communication with the students about the situation increased concerning the switch to distance learning.

Faculty and students were connected in a learning platform that allowed for increased communications. Attimes, communications were personalized when necessary.

In the early part of 2020, the institution closed, however, teaching continued on line and the administration worked from home. Senior management kept in touch with the administration to ensure smooth transition as illustrated in Fig.1 below:

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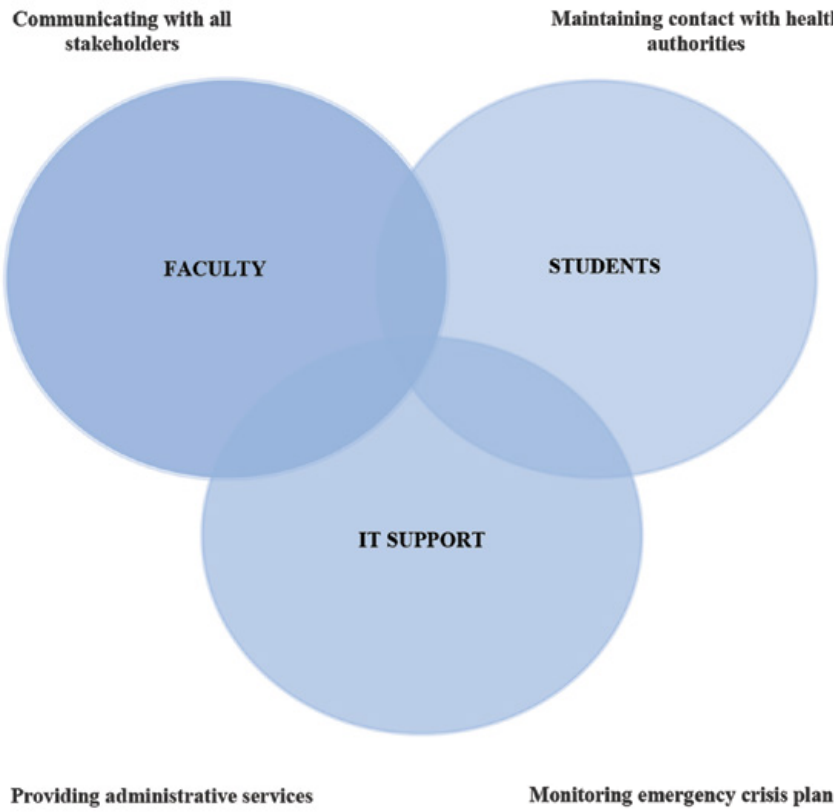

Figure 1. COVID Emergency Chart

When health authorities relaxed restrictions, the University introduced a hybrid mode of teaching and eventually returned to classroom teaching in 2021.

During the pandemic, all administrative staff and faculty were required to have the necessary vaccination. Some members did contract the virus but since it was a mild one, hospitalization was not necessary.

During the closing, the administration staff continued to work from home while maintaining contact with each other online. In addition, the administrative staff held regular meetings that were highly appreciated as they created a special bond among the members. This bond continues to be present contributing to improved workingrelations and boosting the morale and motivation among the administrative staff and management. This positive atmosphere has had a similar impact on the student body as well.

Concerning students, management made sure that each student remained in contact with their professors. By late2021, when students returned to campus, a satisfaction survey revealed that they missed the interaction with other students as well as being part of a social group. Due to the confinement, students realized the value of attending classes by suggesting more group projects, teamwork and greater interaction among themselves. In other words, they

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enjoyed classroom teaching but wanted more involvement in their learning and networking with their classmates and appreciated new teaching experiences after months of isolation.

Another characteristic observed among the students was their mental health. Some felt ambiguous loss, generalized anxiety, losing interest in learning, distracted behaviour[3]and the sense of loneliness to help ease the situation. Management increased the flow of communication with them to maintain contact and inform them of the latest COVID situation.

The closing of schools contributed to a reduction of studying time that led to a reduction of about 10 hours per week[5]. The average loss was greater among undergraduate students than graduate ones.

4. Resuming classroom teaching

By resuming classes on campus, most students returned to their previous study patterns. However, some students having difficulty readjusting to classroom teaching, the University decided to hire a psychologist to accompany students towards the transition period. The fact that many students came from different countries, living in student housing, and isolation became difficult to manage. Being away from home and unable to travel increase.

As far as the faculty is concerned, all of them had to switch to distance learning. Surprisingly all of them were able to meet the challenge that required developing new teaching modes and most found the exercise more demanding particularly hybrid teaching. By now, these new experiences have been transferred to classroom teaching including greater engagement of students in their learning. According to the Federal Council, experience of Swiss universities show that face-to-face teaching remains the most important mode of teachings[6].

5. Post- COVID

From September 2022, all classes will be held on campus, however, management is ready to move quickly to a distance mode of teaching or hybrid should the situation deteriorate. This will require training new faculty members and informing the student body.

Furthermore, it will be necessary to continue developing virtual methods of learning and teaching as well as updating IT equipment, including new learning platforms. Management expects the faculty to utilize these innovative teaching tools in their classes.

By being ready to switch to distance or hybrid teaching, the University is confident it can continue to provide quality teaching to the student body. In doing so, it allows students to complete their studies within the regular timeframe.

Throughout the COVID pandemic, senior management instilled confidence among all the institution stakeholders. In conclusion, the COVID was a real life test for senior management to deliver the institution's mission, which is to develop young professionals to serve a sustainable society.

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6. Key lessons learned by Management

- Needs to communicate on a regular basis with students, faculty and administrative staff on the latest status of latest pandemic restrictions and the introduction of new teaching modes.
- Anticipate; be flexible and quick in reacting to changes in health regulations.
- Finding out on how on-line teaching affected students and the institution operations.
- Boost the morale of all stakeholders throughout the pandemic.
- Maintain online software and hardware in working conditions.
- Train and assist faculty in distance teaching.
- Provide guidance/counseling to students feeling distressed or losing interest in their studies.
- Avoid whenever possible hybrid teaching particularly in classes when interaction and group work is required
- Continue analyzing the long-term impact of COVID on students at other institutions of higher learning.

References

[1] Federal Council (2020) Coronavirus: *Federal Council adopts emergency ordinance on granting of credits with joint and several Federal guarantees*. Press release 25.3.2020. https://www.admin.ch/gov/en/start/documentation/media-releases.msg-id-78572.html

[2] Coronavirus: the situation in Switzerland https://www.swissinfo.ch/eng/covid-19_coronavirus--the-situation-in-switzerland/45592192?utm_campaign=tea ser-in-channel&utm_medium=display&utm_content=o&utm_source=swissinfoch

[3] Do COVID-19 containment measures work? Evidence from Switzerland https://sjes.springeropen.com/track/pdf/10.1186/s41937-022-00083-7.pdf

[4] Covid school closures: is the Swiss way sustainable? https://www.swissinfo.ch/eng/covid-school-closures--is-the-swiss-way-sustainable-/47162956

[5] Glatz, M. and Lipps, O. (2020). Large Loss is studying during the closure ofSchools in Switzerland, Elsevier. https://serval.unil.ch/resource/serval:BIB_8A0CE856F827.P001/REF

[6] Swissuniversities Coronavirus https://www.swissuniversities.ch/en/topics/coronavirus

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Obtaining and Interpreting Students' Attitudes – Some Methodological Considerations and a Case Study

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Abstract

Obtaining students' attitudes, opinions, feedback, etc., plays an essential role in the higher educational process because it makes it more bidirectional and engaging for the students. Including larger populations in surveys often calls for informational structuring/ standardization for subsequent statistical post-processing. Moreover, it brings along some well-known methodological issues (e.g., the central tendency in Likert scale-based surveys). Here we build upon a relatively large student survey case previously presented more extensively in [1]. That survey was devoted to various aspects of economics and business-related education offered on an elective basis to electrical engineering and computer science students. Here we focus on the interference between the intrinsic information (that is, the "true type" student responses) and the processing method that, if not designed carefully, can increase incentives for students to conceal their true type and recourse to the neutral ("central") answers. We also discuss our new practical approach currently tested in a similar population.

Keywords: *Student surveys, data processing, central tendency bias.*

1. Introduction

[1]Universities play a critical role in developing the intellectual capabilities of students and providing the educational foundation necessary for economic development in knowledge-intensive societies [2,3]. For students to make the most of the opportunities provided by university education, professors and programs attempt to offer courses that capture

[1] This section benefited from the authors' previous literature review and analysis [1].

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student attitudes and interests as motivational variables that promote positive attitudes and performance in the classroom [4]. In the case of engineering students, promoting a greater interest in business can help ensure that students not only understand the technical skills needed to acquire and build a career but that they also learn about business and the economic context in which they apply those skills. Students who find relevance and interest in a subject are often seen to develop greater mastery in their chosen field. This has been demonstrated in studies examining the technological literacy of students [5]. Thus, understanding student preferences and the factors that distinguish those preferences allow professors and programs to not only promote certain courses, but also student success.

To proceed with the main topic of this article, first, it is necessary to briefly explain the Case Study it is based on. For more details, please refer to [1], while the complete set of relevant (anonymized) data and analyses can be obtained from the corresponding author.

The survey sampled students from the Faculty of Electrical Engineering and Computing (abbrev. FER; https://www.fer.unizg.hr/en), which is a part of the University of Zagreb, Croatia (http://www.unizg.hr/homepage/). FER offers research-oriented undergraduate, graduate, and post-graduate programs (specializations and doctoral) in electrical engineering and computer science/engineering. Although the programs at FER are concentrated on engineering/computing topics, the students must take, each semester, at least one of the elective, so-called "transversal courses," outside the school's mainstream. Within the undergraduate programs, there are currently three economics and/or business-oriented elective courses called Management in Engineering (2nd and 4th semester), Engineering Economics 1 (3rd and 5th semester), and Engineering Economics 2 (4th and 6th semester). The latter is also offered to the graduate students (2nd and 4th semester). The basic contents of these courses can be found at the following web addresses: https://www.fer.unizg.hr/en/course/mui_a (Mgmt. in Eng.), https://www.fer.unizg.hr/en/course/engeco1 (Eng. Econ. 1), and https://www.fer.unizg.hr/en/course/engeco2 (Engineering Economics 2). The survey was organized in June 2020 for the students enrolled in Engineering Economics 2.

Besides these courses, the students at FER are offered numerous other optional business-related activity-based contents, such as regular weekly business workshops (meetings with prominent business people and academia members), a startup incubator established as an organizational unit of the FER, massive events with meeting opportunities with prospective employers, etc. Furthermore, recognizing the importance of early exposure of STEM students to the local business eco-system and educational content, FER has developed a variety of side activities available to the interested students over time. However, students' feedback, attitudes, and opinions related to the business topics are essential to make everything more meaningful and efficient. Therefore, the surveying initiatives, which may or may not be (and certainly do not need to be) planned much in advance or structured in a formalized framework, can be viewed as a part of continuing organizational learning and adapting.

Considering that, the *quality* of information gathered through surveys is very relevant.

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The survey in our Case Study had the following main parts:

- A brief introductory letter from teachers to students.
- Quick instructions on how to fill out the form.
- A set of 53 questions out of which only the first 32 were analyzed for the purpose of this study:
  - Q01 – Q02: General demographic information (age and whether they were previously enrolled in the course Engineering Economics 1).
  - Q03 – Q17: Student's previous knowledge and experience in finance, economics, business, and similar.
  - Q18 – Q32: Students' attitudes about Engineering Economics, similar courses, and related additional learning resources.

The detailed table of questions was omitted here for brevity. The survey was offered to 197 students (81.73% male, 18,27% female). The participation rate was very high (92.55% male, 100% female), so 185 completed surveys were received and processed. The multiple-choice answers offered to students were organized on a standard Likert scale [6] with 5 points. The obtained data set was analyzed using the following methods and techniques:

- Computing basic descriptive statistics across questions and students (mean, standard deviation, skewness, kurtosis, median, adjusted median[2], and other selected relations between these parameters).
- Statistical analysis of gender differences in answers to all the questions and their interpretation.

The answers to most of the survey questions were distributed non-symmetrically and non-normally. In most cases, they could not be regarded as similar enough to the Gaussian distribution, nor to any other standard one. Therefore, the usual parametric tests for the equality of means could not have been used. In general, the reasons for non-normality can be sought in either too small samples (probably not the case here), the non-Gaussian nature of the responses, or both. The student's answers to each question were tested for equality of medians using the Mann-Whitney *U*-test for two independent groups [7-10]. As it is not our intention to comment on the same results here (for that, please refer to [1]), we shall only comment that, perhaps contrary to usual expectations, we did not find important gender differences in the responses. However, we did notice that, in general, the female participation

[2] Because of the coarse raster of answers offered in the Likert scale, the median can take only five discrete values. However, as the number of participants was pretty high, the median could be too rough a measure of the group response. Thus, the notion of "adjusted median" was devised in the following way: Suppose that the median obtained from the population responses equals 4 and that the answer 4 was returned by *R* responders out of the total of *N*. Next, say that *L* responders returned a valuation lower than 4. Let "adjusted mean" be somewhere between 3.50 and 4.50 so that the value 3.50 is assigned to the ordinal number of *L*, and 4.50 is assigned to the ordinal number of *L*+*R*. The "adjusted mean" then simply equals 3.50 + [(*N*/2) – *L*]/*R*. For example, if the sample size *N* was 137, the response 4 was given by *R* = 32 people, and the response lower than 4 was returned by *L* = 43 persons, the adjusted median would equal 4.30, which is higher than the actual value of 4. That indicates that the true median position is considerably closer to the next-higher class than to the next-lower one, giving a *somewhat better* signal of the average response. The details and the rationale are available from the authors upon request.

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in business-related activities was considerably lower and that the central tendency bias is more prominent in the female part of the population. Both effects must be connected with cultural preferences and deserve further and more deliberate investigation.

2. Methodological considerations

One of the most frequently used tools for gathering responses in surveys is the Likert scale [6]. With it comes the common problem of *central tendency bias* – the occurrence of response grouping around the most neutral degree of the scale, which is usually the middle. For instance, if the degree of supporting a specific assertion in a survey can be expressed in five steps, from 1 (strongly disagree) to 5 (strongly agree), a commonplace answer may turn out to be the 3 (neither agree, nor disagree). If the central tendency were especially (or unexpectedly) prominent, one would naturally suspect the truthfulness of many of the responders. There can be many reasons for that, for example (not listed in any particular order):

- The responders actually express their *true type*, which happens to be neutral. – In this case, it is *not* the central tendency. Still, *we often cannot know that for sure, so the suspicion may stay if we cannot* identify the reason (perhaps a poorly formulated survey question).
    - As a variation on the above theme – when a question has an obviously "correct" answer (e.g., "I would never embezzle money from the company I manage.") – everyone in the right mind would answer that with "Strongly agree," even if having a diametrically opposite intention/opinion.
- The responders fear that someone could learn their preference and that it could harm their interests (for example, if the students express criticism towards the professors while anonymity is not guaranteed or trusted).
- The responders try to guess what the "right answer" could be but cannot do it, so they pick the safe option.
- The cultural prejudice induces the responders to be neutral (e.g., polite or not confronting).
- The responders share a widely accepted "common wisdom" that the "truth must be lying somewhere in the middle."
- The entire survey, or some parts, is made in a way that suggests insufficient preparation or even incompetence of the survey designer to a degree where the respondents can notice that.
- The responders are "lazy" and/or not motivated and do not want to spend more time on the survey than they have to (in which case, the easiest and safest way is to mark the neutral answer). – This can be the case, e.g., with students that must fill out a survey as a requirement, but (fill that they) get nothing as a reward for the effort.

Douven [11] offers a Bayesian perspective on the central tendency bias, explaining it as a natural outcome of participants providing point estimates of probability distributions over

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the items on a Likert scale. The bias would still exist even if the questionnaire was indisputably correct and well thought out. Therefore, it is a question of interpreting it rather than trying to eliminate it. This finding, however, should not give rise to recklessness in designing the Likert scales because a bad design will undoubtedly inflate the problem.

One could list more possible explanations of the phenomenon. There have been discussions, for example, on using or not the midpoint in the scale. The initial idea was that the even number of answering options would not allow for choosing the central option. As Chyung et al. [12] put in a short sentence, "*Respondents may use a midpoint as a dumping ground when they are responding to survey items that are unfamiliar to them or to items that are ambiguous or socially undesirable*. "They also argue that "*The potential misuse of a midpoint as an "N/A proxy" or "dumping ground" can be reduced by first improving the clarity of survey items and presenting other options such as* Not applicable*,* I don't know*, or* It depends*.* "Further, their research led to the conclusion that the missing midpoint lead to a great increase in non-answered questions, while the other "centrally oriented" responders apparently picked one of the neighboring options at random. Thus, it is more to the overall quality of a survey than the appearance.

In our approach, when designing the survey questionnaires, we were not primarily interested in dwelling over theory but rather coming up with an *ad hoc* practical solution that would *incentivize students* to at least think more carefully about the answers they choose.

In the Case Study mentioned above with FER students, one can note a large number of questions to answer: 53. Yet, we obtained an excellent participation rate. The reason for that was that the students were promised to get 5 points for this extra-curricular activity regardless of the answers they gave, as long as they filled out correctly the entire form. That way, they could obtain 5% of the total possible points, which probably seemed quite attractive as the end of the semester was approaching. However, it obviously could have led to the central tendency bias because there were no associated risks. To cope with that, we tried the approach by using many questions as a "distraction." Additionally, the students were motivated by an explanation that their answers would be valuable for improving the teaching quality, so it would be appreciated if they approached seriously. The survey questions were grouped in three macro-groups, as explained above in Sec. 1, but within those groups, they were not listed in any particular order. Moreover, we deliberately randomized the order of questions that were very diverse in the overall importance of the topics they covered.

Question #53, unlike the others, called students to write, if they wanted, their opinions in a free form on whatever topics from the previous questions or anything else they deemed necessary. It was used as a "control question" to establish who was "mentally present and engaged" enough to "bother" with writing an additional piece of text. Surprisingly, as much as 30% of the students did write down their thoughts, although everyone knew that it would not get any benefit in terms of additional points.

The initial idea was that we would be able to spot the individuals who found this kind of survey too heavy or tiresome and chose mainly midpoint answers just to get their 5 points and simply rule them out of our statistical analysis. However, after the entire population, and then only the subgroup of those who did not respond to question #53, were analyzed,

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we could not find any *hard proof* of central tendency (which, of course, does not mean that there was not any). Note that the central tendency bias can be very different across that many diverse questions.

2.1. A methodological discussion on group sizes and central tendency in the Case Study

In the Case Study described in [1], at least two methodological concerns – one technical and one more fundamental – had relevance. First, suppose a significant number of students did not reveal their true type in their answers but just succumbed to the dare of a swift run through the web form. The number of those could not be known because there was still a possibility that some of the students who did reveal their true types happened to have very neutral attitudes.

The technical concern would be: Given the unknown number of faked types in each survey question, could it have happened that the relevant groups were, in fact, smaller than 8 so that the normal distribution of *U*-test statistic could not have been applied? However, given the relatively big groups (36 women and 149 men), it was assessed that this was probably not the issue, so the *z*-tests were applied.

The fundamental concern is: to what extent does a notable existence of central tendency distort the results? On the one hand, since the number of students who revealed their true types is smaller than the total number, the groups appear to be more representative than they genuinely are. But, on the other hand, in the presence of a potentially significant number of faked types, concentrated about the neutral position in the Likert scale, the overall deviation is dimmed so that any differences in answers among the gender groups are presumably harder to detect from the available observations.

Therefore, it seems safe to conclude that in the cases where the null hypothesis of the non-existence of gender differences was rejected with particular statistical significance, this rejection was, in reality, *even more, justified* because the *central tendency phenomenon partially shadowed the actual information*. It is quite possible that there would be more survey questions with observed gender differences if the "non-honest" answers were somehow recognized and removed. For that reason, it was decided to report in [1] the survey questions in which the null hypothesis was rejected with 5% significance and 10%, too. The latter could be possible candidates for rejection (in another, more detailed research) now hidden in the shadow of the central tendency problem.

3. Further ideas about reducing the central tendency bias in student surveys

In the continuation of our work, we wanted to analyze the student attitudes about quite a few topics from the critical area of business ethics. To that end, we devised a set of questions to be answered by various groups of students to perform a comparative analysis of their prevalent ethical points of view while they are still at the "innocence" stage in their professional

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development. At the same time, they do have some "blurred" information about what goes on in the "real business world." This time our approach was to construct something that resembles the Likert scale questionnaire but systematically reduces possibilities to exhibit the central tendency. We relied more on the design of the survey questions and the rules of engagement than on the very form.

We believed that the system of balanced, proper, and just incentives for students was essential to attract their attention to this new research. Therefore, besides classical motivation by the teacher, the plan was to give additional points for the extra activity they are to perform. Consequently, they were offered to get:

- 5 points only if they submit the *correctly and fully filled form* consisting of 15 complex questions, regardless of the answers they give,
- some more points if they write down in a *meaningful* (*non-trivial, coherent, etc.*) *way* reasoning behind their answers to the 15 questions mentioned above, whereby each meaningful explanation brings 1 point. Still, the total number of those points cannot exceed 5.

Thus, a student who provided answers to all 15 questions could get 5 points, and up to 5 more for the reasoned explanations.

This point-awarding scheme may vary from school to school, subject to the local rules. Some kind of a *real, tangible* incentive scheme should be there, though, to attract a sufficient number of students.

As regards the very survey questions, they were formulated in the following way:

Each of the questions was comprised of two obligatory parts to answer:

1. Five statements that students must rank uniquely and exclusively (without repetitions of the same rank). Each statement briefly describes a business practice that *almost everyone deems unethical*. The task is to rank those five statements by the perceived degree of unethicality so that rank 1 means the least unethical practice, and rank 5 represents the most unethical practice.
2. An assessment of the overall severity of the group of the five unethical practices in three stages: A: Not particularly problematic. B: Moderately to sincerely problematic. C: Heavily or extremely harmful. (Naturally, all five statements belonged to the same "type" of business-unethical behavior.)

The optional third part of each question was the above-mentioned free-style explanation of the ranking. Table 1 gives an example of the first two parts of the survey questions.

As one can observe, the statements to be ranked in relative terms are not really simple, and the students would have to think them through. Then, there is a risk of filling out the form incorrectly because, according to the rules, any entry with repeated ranks would automatically be dismissed as irregular, and the student would lose all the points. Possible automatic repetition of the same rank sequence (for example, 1 2 3 4 5 in each question) would be easily detected, too. Choose always the same answer to the Part 2 would also be easily spotted.

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Therefore, we assessed that the risks are high enough to induce students to take due care of the process. Since they already have to pay attention, why not just fill out the form honestly? Namely, inventing fake sequences not easy to detect would (hopefully) require as much time and effort as simply giving the true-type answers. Last but not least, in this particular case, we thought we could count on the young people's general sensibility for ethical topics.

Before completing this article, the survey was already carried out at FER. Of 316 enrolled in the Engineering Economics 2, 231 complete forms were received, all entirely correct as required by the rules[3]. The plan is to extend the same (or similar, adequately improved) survey to the students at other institutions in the international context.

Table 1. An example of a two-part question in our new survey designed to reduce the central tendency bias.

Question #12, Part 1 **Unethical practice in making decisions on the senior level of management in a business organization**			**Degree of unethicality (1-5)**
Meddling with the technical or commercial conditions for procuring strategic materials or raw products so that the job goes to a predetermined vendor, otherwise reliable and with quality goods, but somewhat more expensive than the other competitors.			
Adjusting the accounting practices so that the financial reports send better-looking signals about the company's financial condition, that can be good for the stock price and hence for the shareholders.			
Making a decision on a very large and risky investment without prior detailed investment studies of the project and the possibilities to hedge against the project-associated risks.			
Meddling with the technical or commercial conditions for the procurement of strategic materials or raw products so that the job goes to a predetermined vendor in exchange for a monetary kickback, a small fraction of the total procurement value.			
Diminishing the significance of possible environmental pollution from the newly planned factory so that the necessary consent and permits from the local community where the factory is to be built.			
Question #12, Part 2	**Your assessment of the overall severity of the group of the above five unethical practices (mark one of the answers)**		
	A	B	C

4. Conclusion

We analyzed in more depth the methodological issues encountered in our research published in [1], where the effects of central tendency bias, connected with the use of the Likert scale in student surveys, were noticed. As obtaining the attitudes, opinions, and feedback from

[3] The data could not be retrieved and processed in such a short time. However, we may have at least preliminary results available for the presentation and discussion at the conference.

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students is gaining importance from the standpoint of quality and relevance of the education process in business-related areas, methods to reduce the extent and negative consequences of central tendency are worth investigating. Here we propose yet another possible method (please refer to Sec. 3) with a combination of incentives for students and a design of survey questions that could lead to better avoidance of bias.

References

[1] M. Beran Samuelson, D. Sabolić and M. Magzan, "Electrical Engineering Students' Attitudes About Elective Economics/Business Related Courses – A case study", *Proceedings of the Twenty-Ninth World Business Congress (Eds. Kaynak, E., Harcar, T.D.), International Management Development Association (IMDA), ISBN: 1-888624-19-1.* Jyvaskyla, Finland, June 12-16, 2022, pg. 1-7.

[2] P. Drucker, "The Age of Discontinuity: Guidelines to Our Changing Society", *New York: Harper and Row*, 1969.

[3] W.W. Powell, K. Snellman, "The knowledge economy", *Annual Review of Sociology,* 30, pg. 199-220, 2004.

[4] A. Krapp, M. Prenzel, "Research on interest in science: Theories, methods and findings", *International Journal of Science Education,* 33(1), pg. 27-50, 2011.

[5] J. Svenningsson, M. Hultén, J. Hallström," Understanding attitude measurement: exploring meaning and use of the PATT short questionnaire", *International Journal of Technology and Design Education,* 28, pg. 67–83, 2018.

[6] A. Joshi, K. Sakert, C. Satish, D.K. Pal, "Likert Scale: Explored and Explained". *British Journal of Applied Science & Technology*, 7(4), pg. 396-403, 2015.

[7] H.B. Mann, D.R. Whitney, "On a test of whether one of 2 random variables is stochastically larger than the other", *Annals of Mathematical Statistics*, 18, pg. 50–60, 1947.

[8] W.J. Conover, "Practical Nonparametric Statistics", 2nd Ed. pg. 225–226, *John Wiley & Sons*, 1980.

[9] N. Nachar, "The Mann–Whitney U: A Test for Assessing Whether Two Independent Samples Come from the Same Distribution", *Tutorials in Quantitative Methods for Psychology*, 4(1), pg. 13–20, 2008.

[10] D.S. Moore, G.P. McCabe, L.C. Alwan, B.A. Craig, W.M. Duckworth, "The Practice of Statistics for Business and Economics", *New York: W.H. Freeman and Company*, 2011.

[11] I. Douven, "A Bayesian Perspective on Likert Scales and Central Tendency", *Psychon Bull Rev*, 25, pg.1203–1211, 2018.

[12] S.Y. Chyung, K. Roberts, I. Swanson, A. Hankinson, "Evidence-Based Survey Design: The Use of a Midpoint on the Likert Scale, *Performance Improvement*, 56(10), pg. 15-23, 2017.

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New era of teaching finance: using an inverted classroom teaching approach in the course personal finance

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Abstract

Modern classrooms require modern teaching methods. Aside from the classical teaching approach, one is called the inverted classroom teaching approach. In the academic year 2019/20 this method was implemented in the Personal Finance course at the Zagreb School of Economics and Management (ZSEM). How students have experienced this new way of teaching was studied through phenomenology, which has vastly influenced the established qualitative and interpretative perspectives. The uniqueness of this study comes from the fact that it revolves around the experiences of students who found themselves in a new situation and a new way of teaching in a quantitative course. The primary method used for conducting this study was in-depth, semi-structured phenomenological interviewing. Rising issues in this study came from the workload distribution, efficiency, communication and delegation issues and the problems associated with the start of the student project. The most positive experiences in the new teaching methodology within the project came from general participation and familiarity among students. Cooperation and communication were better in teams with more male students, while efficiency and effectiveness were strengths of female-dominated teams.

Keywords: *inverted classroom, flipped teaching, teaching methodology, team dynamics, leadership, communication*

[1] Note: this study is part of the final thesis by undergraduate Katarina Trojnar, bacc.oec.

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1. Introduction

If we compare classrooms today with classrooms from fifty years ago, we see very noticeable differences [1], [2]. The learning materials are different, and methods of teaching, classes and even students and professors are different. Even if this entirely depends on the country at hand. Some still have strict approaches, while others have a leisure approach to teaching. For the second type, students must have fun and time for themselves [3]–[5]. We can see how schools compete every year, which is better in terms of students' results, the opportunities they give students, and many other points [6]–[8]. Today's students are different from previous generations, and we have to adapt to that change, mainly because they now have limited attention spans from all the technology surrounding them.

Some university-level courses are considered more relaxed, and some as more challenging. However, that can also vary among individuals. People experience and see things differently. While some students opt to study art, architecture, or pharmacology, others choose to study finance or mathematics. Finance itself is usually not considered something easy to grasp for students. We have to consider many fields and aspects. Both theory and practice are pretty essential to understand the whole meaning of the field of finance. The question is: Is it possible to make a challenging course in finance easier to grasp for students by changing the way it is taught? It depends on students and how they experience things.

Aside from the classical teaching approach, one is called the inverted classroom teaching approach. In the academic year 2019/20 it was implemented in the Personal Finance course at Zagreb School of Economics and Management (ZSEM). How students have experienced this new way of teaching was studied through phenomenology, which has vastly influenced the established qualitative and interpretative perspectives [9], [10].

While some studies discussed a variety of phenomenological research conducted in fields such as education, business, and medicine, no research examines how students in university experienced the inverted classroom teaching approach as a method of teaching finance. The uniqueness of this study comes from the fact that it revolves around the experiences of students who found themselves in a new situation and a new way of teaching – the inverted classroom teaching approach.

2. Background

According to McLaughlin and Pomona (2013), today's undergraduate students are more involved in learning than any previous generation. They want to know how they did on an exam or project immediately [11]. Today's students are expert technology users and visual communicators. They are image-oriented, and thus, they do not want courses that are based on textbooks. They do not want to read because they would rather interact with others and work in groups using collaborative and cooperative learning methods. Today's students learn through discovery, again, hands-on. They can multitask and quickly shift their attention [12]. Since new generations of students grew up around rapidly evolving technology, they have shown a decreased tolerance for lecture-style distribution of class information [13].

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One way to combat this problem is by adopting inverted classrooms, also known as "flipped classrooms". This model proposes that various technologies should be used to prepare and post lectures for students, which they can access before class. Courses in which a lesson is primarily based on circulating information and in which students learn by applying instructions to complete an assignment are of particular relevance [13]. Still, the essential part of the inverted classroom is moving what would traditionally be considered lecture into the out-of-classroom hours and moving what used to be homework into the classroom. That way, the professor can supervise homework and group activity during what used to be lecture time, and students are expected to listen to the lecture outside of class time. Students are supposed to listen to a pre-recorded lecture before the class [14], [15]. Thus, time usually reserved for lectures can be utilized better for active learning. That way, there is more time for additional teacher-to-student mentoring and peer-to-peer collaboration. To prepare for class, the students should view the pre-recorded lecture, which is considered homework. Since the lecture is seen before the class, the class can be used for solving problems, developing skills, and gaining a better understanding of the lessons [13], [16]. During the inverted classroom, the professor can personalize instruction to each student, and the instructor can take the role of a "guide on the side" role. The result is that a classroom is more inclusive, active, and learner-centred than a traditional class [17].

Still, the question is what is happening then with the evaluation for students, as even if the classroom is inverted, the grades have to measure the student's efforts. One of the studies by Sureka and colleagues (2013) explained how they used a peer-evaluation-based system specifically developed for this new teaching approach. It measured how much individuals have contributed to a project done by a team. Students' project was graded based on peer evaluations and the quality of the outcome [18]. Clark and colleagues (2020) discussed guidelines for "peer evaluation such as attendance at team meetings, contribution level in terms of giving ideas and assigned tasks and the performance of an individual in meeting deadlines for the assigned tasks" [19]. Aside from the evaluation, understanding the topics taught must be emphasized. If professors want to foster understanding, they should move from making students memorize facts, known as "surface learning," toward "deep learning". That would be a smart move since, in "deep learning," understanding flourishes through "active and constructive processes" [20]. The students should be the centre of the course, not the teaching.

However, adopting the inverted classroom may not be possible in every course. Several studies are exploring that. Strayer (2012) conducted a comparative study to explore the differences between inverted and traditional classroom methods in the introductory statistics course. He found that students who participated in the inverted classroom were less pleased with the way the course was taught than those who took part in the traditional classroom. This was because students did not adjust quickly to the new way of teaching and doing things in a new and specific way. Since some students believed they should work alone, and others were accustomed to the traditional classroom, they did not take this profound change well [21]. However, some other studies noticed the advantages of the inverted classroom when they saw a change in students' participation in class. They started to ask better questions and

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tried to obtain a deeper understanding of the content throughout the academic year [13], [16], [22].

The inverted classroom is not without faults. It can be pretty time-consuming to create interactive content. Students may frequently feel like they are left to do and learn everything on their own, which entices the feeling of abandonment. It can also happen that students from different educational background could experience a culture shock at the inverted classroom and reject the study the method requires. Regardless of these potential drawbacks, this method has promising benefits, such as benefits for making university classrooms more interactive, inclusive, and valuable for all students [17]. Still, the crucial part of a course is what the student does, not what the teacher does. It is currently hard to say how effective an inverted classroom is since academic research on this topic is currently limited. Recent evidence suggests inverted classroom principle is more effective than a traditional class. At the University of California, an inverted classroom was adopted in introductory biology classes. After the switch from large-lecture classes, the student's scores showed an average increase of 21% on exams [23]. At Miami University in Ohio, students in a software engineering course showed high levels of engagement and more confidence in their abilities to write application software [24]. Still, there is some evidence of not supporting the flipped classroom principles. Jaster (2013) revealed in a study that most first-year algebra course students prefer a traditional lecture approach to an inverted classroom [25]. Butt (2014) also reported that, on average, students perceive that they learn most from performing an activity, followed by reading and listening being the least productive learning activity. But, because this form of teaching is relatively new in higher education, little-to-no research exists which would confirm its effectiveness [26]. According to Sureka and colleagues (2013), students in specific teams had issues related to peer evaluation. Those students reported problems such as collaboration, deliberately assigning low or high scores to fellow students, and project teammates not doing their fair share of work. The authors also discussed students' thoughts about the inverted classroom and peer evaluations. Most students (77.8%) that were part of large groups considered the peer evaluation positive. However, they also believe that it can be easily manipulated. Additionally, the results obtained by the survey have revealed that working on a project with many team members, members that are new to individual students and with which they did not work on previous projects, have caused several issues and difficulties for most students (72.2%) [18]. The inverted classroom can benefit students who miss classes because of sickness, athletics, or similar activities. If the professor is absent, the students can move on with the course content, and the course can proceed without unnecessary delays [13].

3. Methodology

With this phenomenological study, we wanted to explore how students experience the inverted classroom teaching approach of teaching in the mandatory course Personal Finance at ZSEM. Also, we wanted to know if there is something we need to improve and is this an adequate alternative method in teaching finance, but from the student's perspective. We must keep in mind that qualitative analysis is unavoidably a personal process, and this study

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itself is the interpretative work that the researcher does at each stage. Additionally, just select findings are presented as a study is exceptionally comprehensive at this stage.

3.1. Methods used and sample

Phenomenology is a fundamental philosophical methodology used to describe a particular phenomenon. Students are under the constant influence of many situational experiences in their personal lives and at university. Phenomenology approached the study of human beings different from the logical positivist model utilized in natural sciences. By using phenomenological research to explore students' lived experiences, we could enter into the inner world of each student in the sample because the goal of phenomenological research is to obtain an accurate understanding and description of experiences as they appear in the consciousness of individuals [28].

The primary method for conducting this study was an in-depth, semi-structured "phenomenological interviewing" [29]. According to Thompson and colleagues (1989), phenomenological interviews are "the most powerful means of attaining an in-depth understanding of another person's experiences" (1989, p. 138), or in other words, it is an open dialogue between two people, which allows the understanding of a phenomenon via language. These types of interviews help us attain a first-person description of some specific part of an experience and have similarities to the "depth interview" [30] and the "informal conversational" interview [31], [32] where questions arise from context and are asked in the course of things. The only structure that must be followed during the phenomenological interview is an opening question to begin a dialogue, such as: "How did you experience working with assigned teammates?" [33].

We conducted interviews at the university in a student room called the "Living room" to ensure the students felt comfortable and that it was practical for doing the interview. Questions asked during the interviews were focused on exploring sensory perceptions and mental phenomena (associations, thoughts, memories, and wishes), as well as individual interpretations [34]. The flexibility of this type of interview allowed us to engage in a dialogue with participants and react accordingly to their responses and themes, which may have appeared in their answers. For conducting interviews, we used a voice recorder to avoid leaving out anything meaningful about what the interviewed student had said. This has also allowed for the interview to run smoothly. Interviews were later transcribed and analyzed. In the margins of the transcript, the researchers made short notes to indicate potential problems, connections, and other valuable information. These brief notes later helped to create a more detailed analysis and better understand students' experiences in the Personal Finance course. In this case, we wanted to discover what students think about implementing the inverted classroom in teaching finance. This involved carefully going through each word, phrase, sentence, and paragraph in the interview transcripts to see how students experienced this new method of teaching finance and how they coped with it. The interviews provided a context for the emergence of particular meanings and events. From this, we could deduce the primary reasons the individual research participants behaved as they did. From this, we could represent why they said what they said and how these events unfolded in their lives as ZSEM

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students. The insight we received in this study provides a glimpse into what is happening in a person's mind, but without the certainty of a complete understanding of the same person. Besides, living experience is an attractive and trustworthy methodological path that leads us into an individual's consciousness and, thus, to insight into the process of human study [28].

According to phenomenology literature, participants are chosen with a purpose [27], [28], [34]. The subjects have volunteered, and so we have gained a defined group for whom the research problem is relevant and of personal significance. The homogeneity of the group depends on factors such as interpretative concerns ("degree of similarity or variation that can be contained in the analysis of a given phenomenon"), and pragmatic considerations ("ease or difficulty of contacting potential participants, the relative rarity of the phenomenon"). With the second factor, there were no issues. Still, in the first one, we have a great variety of students who can be assigned to several different groups based on their gender, grade, and study program [34]. To explore how students experienced the inverted classroom teaching approach in the course Personal Finance, we took a sample of 36 people: 8 were exchange students, 4 were full-time students studying at ZSEM in the English language, and the remaining 24 were also full-time students, but they are studying in Croatian; 53% male and 47% female. The exchange students contributed to diversity since they are from different universities all around the world, and most are in different years or stages of their studies. The average age of students in the sample was 22.7 years, with the significant outlier being ZSEM students studying English. This is because one of the male students is 35, while the rest of his colleagues are 22 years old.

3.2. Data analysis - IPA

The researchers tried to take the participants' points of view and understand their experiences. Even though it is sometimes hard for the participants to express their thoughts and feelings, the researcher had to interpret people's mental and emotional states from what they say. Interpretative phenomenological analysis (IPA) assumes that the researcher wants to learn about the interviewees' psychological world. It is crucial to capture the meaning and to attempt to understand the content and complexity of the senses instead of measuring their frequency [34]. This requires the interviewer to engage in an interpretative relationship with the transcript. Capturing the experiences and essence of participants is a long process that requires a sustained engagement of the researcher.

In the first phase of our analysis, we read each transcript three times to ensure we have not missed any valuable insights. We have commented on a different theme that came to light, similarities, and dissimilarities, as well as contradictions in students, were saying. An idiographic approach to analysis was followed since we went from gathering a specific example to making general categorizations or claims. It was our goal to make various connections within specific student interviews and across them because, that way, similar themes emerged as we went through the transcript. We put those emerging themes we listed on a sheet of paper, searched for connections between them, and recognized ways in which participants are similar or different. By analyzing each case as though it was the first and writing down notes and themes on the side, we were able to construct a table of

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themes for each question by using MS Excel, which then helped us conduct a further analysis including students' genders, grades, and groups they were from. That helped us make further conclusions and discoveries because new patterns in the data emerged.

4. Findings

While analyzing the phenomenological interviews, we found many answers, issues, and opinions. Some things arose more frequently, and some only seldom, with one or two individuals. It was interesting to discover differences among sexes, groups, and high and low-performing students, as well as between students who study in Croatian and those who study in English. Further findings in this paper show how students experienced teamwork with assigned teammates.

Students taking the Personal Finance course at ZSEM have been assigned randomly into groups of three to five people. Until then, students usually chose with whom they wanted to be in a team and do group work. This experience was entirely new to them, and their reactions were quite different. The most common issues with this way of working were that the beginning was quite rocky, that work was not equally distributed, that communication was inadequate, and that work delegation did not function. The first problem was mainly among male students. Many admitted that they did not do much and that the leader did most work. This was confirmed by the rest of their teammates, who indicated that the teammates in the group were making things difficult. The last three problems were caused by having unfamiliar teammates in the group. This was explicitly a common problem among female students who experienced communication issues. The worst communication problems occurred in predominantly female teams led by a female. It has been stated that these leaders have frequently been mean and had no understanding of others. On the other hand, teams with a lower ratio of females in the group or with a male leader experienced fewer of these problems. Even though one of the groups suffered severe communication problems, it managed to have one of the best grade point averages (GPA) among teams (Figure 1).

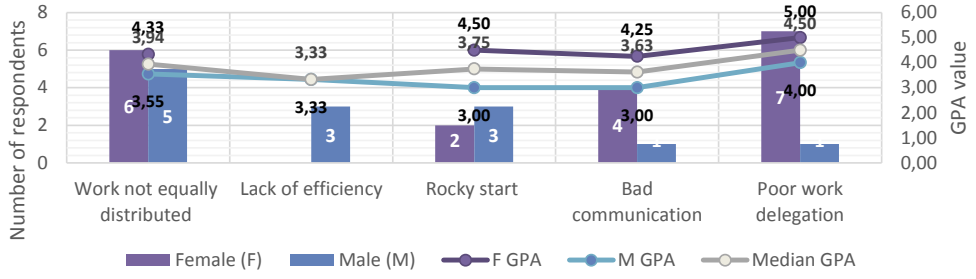

Figure 1. Negative student experiences with assigned teammates based on gender and GPA

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However, not all experiences with assigned teammates were negative. The most common explanation for their positive experience with these new colleagues was that they had worked with one or more students before. This was very important for high-performing Croatian students who had gone on an exchange semester in Asia and worked remotely. Students have also stated that communication and cooperation between team members were pleasant (Figure 2).

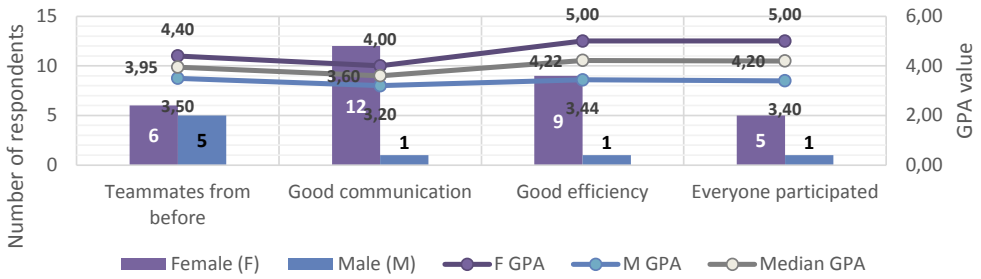

Figure 2. Positive student experiences with assigned teammates based on gender and GPA

Students have attributed it to good members and friends they previously worked with. This positive experience was mainly among male students. Besides, some students have also experienced excellent efficiency within the group. The most common reasons for this positive experience were the ability to work with friends, and female leaders, doing things together, and everyone doing their part. One interesting finding was that students participated more in teams where they worked with friends whom they respected and had previously worked with. A team with all or the most high-performing students also participated a lot.

5. Conclusion

Although some findings are positive and valuable arguments on why the inverted classroom teaching approach is the right way of teaching finance, there is still room for improvement. Due to the limitations of this conference paper size, we could only provide insights from the experiences of teamwork dynamics.

We believe that just by changing the group structure, we can make significant improvements to this extent. It was discovered that having four students creates stress and hostility within a group of five students, although they do an excellent job in the end. Moreover, there is fun and excellent communication in a group with four male students, but there is also chaos and inefficiency. That is why there should be up to 3 students of one sex and 2 of the other if the groups are of the size of five. That should provide better communication, efficiency, and overall experience with the course and teamwork. Having friends within groups also contributes to better functioning of the group, but when they work in a company one day, they will not be able to choose who they will work with, and neither should students for their benefit. This way, they will learn to function in different situations and communicate better

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with everyone. Regarding leadership, it is individual. While female students, acting as leaders, produce results and make the team more efficient, they can also cause tension in pursuing perfection and having things as they envisioned. Since the assignment of students was random, and there was a small number of excellent male students, it is difficult to conclude whether male students would do a better job as team leaders.

Furthermore, this research has shown us that there are also gaps between high- and low-performing students and between full-time and exchange students. We must find a way to close these gaps as much as possible to ensure the best experiences for students and to ensure that the students get a lot from this course, both in practical and theoretical knowledge. The gaps exist between exchange students and full-time students because some students from abroad did not study Corporate Finance, which is crucial knowledge to do this course task (project). These students had difficulties participating in the project and helping their colleagues, leading to decreased efficiency and lousy communication. There should be a requirement placed to take this course such that exchange students cannot participate without having already been involved in fundamental financial courses.

Due to the complexity and size of the project, it isn't easy to follow this course from outside the classroom. Suppose a ZSEM student is studying abroad as part of the student exchange program. In that case, it is highly challenging for them to follow the course and participate in the group, especially if more significant time differences are involved. In a randomly assigned group, it is usually challenging to determine who will help keep the students studying abroad in the loop. To avoid a decrease in efficiency, lousy communication, and bad feelings, there should be a person within a group assigned to help the exchange student know what and how things need to be done and when a specific part of the project needs to be submitted.

We also found that some students find it challenging to work on projects which revolved around a person from a different country than their own. A student from Asia stated that the way things are done in Asia and Europe is quite different and that working on this project was quite challenging for him. Although this makes things a little more complicated, it is still not impossible to do, and it just takes time and research. Students are from around the world, and it will be impossible to please everyone's wishes. Learning to cooperate, build the financial plan, and know how to do proper research is more important than placing a project in a study comfort zone.

Moreover, we must also solve the gaps between high- and low-performing students. They do not function the same and have the exact wishes, knowledge, and goals. While low performers had the best experiences with teamwork and assigned teammates, the high performers had minor good experiences. As they admitted themselves, the poor performers did not do much, and most of the work for the project was done by the leaders. This is one of the biggest reasons for such opposing opinions. Students who obtained lower grades were more about having fun and communicating with friends and colleagues, which has resulted in poor efficiency within the group and stress among better-performing students. The high performers work more and care more, which is why seeing something done without care, not on time or not at all, is so stressful for them. In the end, they take over the parts of low performers, freely relaxing while other members are doing their work. Even though this

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course had peer evaluations after each part of the project, we believe that is still not enough. We need to find some way to engage those low-performers so that the high-performers will have a better experience while going through this course. The peer evaluation "punishes" bad work or no work. Still, it does not provide an incentive to do it from the start and for lazier students to see it as something exciting and worth their attention.

Although it may be difficult to close all the gaps between these groups, it is necessary and manageable to close some of them, the ones that are crucial, through the course's structure, the structure of teams and getting the professor some extra help in grading, giving feedback and communicating with the students. With such large numbers of students and such extensive and detailed projects, it is not feasible for it to be done by just one professor. Students see great potential in the inverted classroom teaching approach, and most would like to have courses organized like this. This is an excellent opportunity for students, schools, and professors to grow and improve and create better future employees, entrepreneurs, leaders, and people.

This study, like many others, is not without its limitations. A small sample of exchange students and students studying in English compared to the sample of students studying in Croatian could have affected the complete accuracy of the study. There is also a relatively smaller number of high-performing male students than female and low-performing male students. If we had a more significant sample of those students, some of the themes discussed in this paper would have been clearer, and some conclusions could have had more weight. Nonetheless, the study gives us valuable insight into the thoughts and experiences of ZSEM students about applying the inverted classroom teaching approach to the Personal Finance course and, possibly, in the future, other courses. As many students have stated, this teaching approach makes a difficult course easy and more understandable. It is based on a hands-on approach, just like in jobs and other aspects of life. This teaching approach is a bridge between the university and the "real world" and will almost certainly make the transition easier.

References

[1] R. C. Itow, "Fostering valuable learning experiences by transforming current teaching practices: practical pedagogical approaches from online practitioners," *Information and Learning Sciences*, 2020.

[2] P. N. Stearns, P. Seixas, and S. Wineburg, *Knowing, teaching, and learning history: National and international perspectives*. NYU Press, 2000.

[3] K. T. Saunders, "Teaching methods and assessment techniques for the undergraduate introductory finance course: A national survey," *Journal of Applied Finance*, vol. 11, 2001.

[4] M. M. Lai, J. H. Kwan, H. A. Kadir, M. Abdullah, and V. C. Yap, "Effectiveness, teaching, and assessments: Survey evidence from finance courses," *Journal of Education for Business*, vol. 85, no. 1, pp. 21–29, 2009.

ISBN 978-953-246-505-1

[5] S. Guarino, E. Leopardi, S. Sorrenti, E. de Antoni, A. Catania, and S. Alagaratnam, "Internet-based versus traditional teaching and learning methods," *Clin Teach*, vol. 11, no. 6, pp. 449–453, 2014.

[6] B. Jessop, "A cultural political economy of competitiveness and its implications for higher education," in *Education and the knowledge-based economy in Europe*, Brill, 2008, pp. 11–39.

[7] L. M. Šimić and H. Štimac, "Competitiveness in higher education: A need for marketing orientation and service quality," *Economics and sociology*, vol. 5, pp. 23–34, 2012.

[8] N.-L. Sum and B. Jessop, "Competitiveness, the knowledge-based economy and higher education," *Journal of the Knowledge Economy*, vol. 4, no. 1, pp. 24–44, 2013.

[9] J. A. Smith and M. Osborn, *Interpretative Phenomenological Analysis*. Wiley Online Library, 2008. doi: 10.1002/9780470776278.ch10.

[10] J. A. Smith, P. Flowers, and M. Larkin, *Interpretative Phenomenological Analysis: Theory, Method and Research*. Sage Publications, 2009.

[11] E. J. McLaughlin and C. P. Pomona, "Teaching millennials: Bridging the schism between traditional instruction and active engagement of undergraduate students in a problem-based introductory finance class," *International Research Journal of Applied Finance*, vol. 4, no. 2, pp. 263–270, 2013.

[12] R. A. Berk, "Multimedia teaching with video clips: TV, movies, YouTube, and mtvU in the college classroom.," *International Journal of Technology in Teaching & Learning*, vol. 5, no. 1, 2009.

[13] A. Roehl, S. L. Reddy, and G. J. Shannon, "The flipped classroom: An opportunity to engage millennial students through active learning strategies," *J Fam Consum Sci*, vol. 105, no. 2, pp. 44–49, 2013.

[14] D. Psihountas, "Flipped Classrooms and Finance—Is this a Better Way to Learn?," *Journal of Financial Education*, vol. 44, no. 1, pp. 1–11, 2018.

[15] E. Craft and M. Linask, "Learning effects of the flipped classroom in a principles of microeconomics course," *J Econ Educ*, vol. 51, no. 1, pp. 1–18, 2020.

[16] J. Bergmann and A. Sams, *Flip your classroom: Reach every student in every class every day*. International society for technology in education, 2012.

[17] R. Talbert, "Inverted classroom," *Colleagues*, vol. 9, no. 1, p. 7, 2012.

[18] A. Sureka, M. Gupta, D. Sarkar, and V. Chaudhary, "A case-study on teaching undergraduate-level software engineering course using inverted-classroom, large-group, real-client and studio-based instruction model," *arXiv preprint arXiv:1309.0714*, 2013.

[19] R. M. Clark and A. Kaw, "Adaptive learning in a numerical methods course for engineers: Evaluation in blended and flipped classrooms," *Computer Applications in Engineering Education*, vol. 28, no. 1, pp. 62–79, 2020.

ISBN 978-953-246-505-1

[20] R. Ritchhart, M. Church, and K. Morrison, *Making thinking visible: How to promote engagement, understanding, and independence for all learners*. John Wiley & Sons, 2011.

[21] J. F. Strayer, "How learning in an inverted classroom influences cooperation, innovation and task orientation," *Learn Environ Res*, vol. 15, no. 2, pp. 171–193, 2012.

[22] B. Tucker, "The flipped classroom," *Education next*, vol. 12, no. 1, pp. 82–83, 2012.

[23] M. Moravec, A. Williams, N. Aguilar-Roca, and D. K. O'Dowd, "Learn before lecture: A strategy that improves learning outcomes in a large introductory biology class," *CBE—Life Sciences Education*, vol. 9, no. 4, pp. 473–481, 2010.

[24] G. C. Gannod, J. E. Burge, and M. T. Helmick, "Using the inverted classroom to teach software engineering," in *Proceedings of the 30th international conference on Software engineering*, 2008, pp. 777–786.

[25] R. W. Jaster, "Student and Instructor Perceptions of a Flipped College Algebra Classroom.," *International Journal of Teaching and Learning in Higher Education*, vol. 29, no. 1, pp. 1–16, 2017.

[26] A. Butt, "Student views on the use of a flipped classroom approach: Evidence from Australia," 2014.

[27] J. C. McPhail, "Phenomenology as philosophy and method: Applications to ways of doing special education," *Remedial and Special Education*, vol. 16, no. 3, pp. 159–165, 1995.

[28] O. Koopman, "Phenomenology as a potential methodology for subjective knowing in science education research," *Indo-Pacific Journal of Phenomenology*, vol. 15, no. 1, 2015.

[29] C. J. Thompson, W. B. Locander, and H. R. Pollio, "Putting consumer experience back into consumer research: The philosophy and method of existential-phenomenology," *Journal of consumer research*, vol. 16, no. 2, pp. 133–146, 1989.

[30] A. Jones, "A condensed history of the phenomenology: the first and second phases from Franz Brentano to Hans-Georg Gadamer," *Nurse Researcher (through 2013)*, vol. 8, no. 4, p. 65, 2001.

[31] M. Q. Patton, *Qualitative evaluation and research methods*. SAGE Publications, inc, 1990.

[32] M. Q. Patton, "Qualitative research and evaluation methods," *Qualitative Inquiry*, vol. 3rd, p. 598, 2002, doi: 10.2307/330063.

[33] J. Cope, "Researching entrepreneurship through phenomenological inquiry: Philosophical and methodological issues," *International Small Business Journal*, vol. 23, no. 2, pp. 163–189, Apr. 2005, doi: 10.1177/0266242605050511.

[34] I. Pietkiewicz and J. A. Smith, "A practical guide to using Interpretative Phenomenological Analysis in qualitative research psychology," *Czasopismo Psychologiczne Psychological Journal*, vol. 20, no. 1, pp. 361–369, 2014, doi: 10.14691/cppj.20.1.7.

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