The 10th InTraders International Conference on Social Sciences and Education Proceeding Book

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InTraders Academic Platform

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Public order and the effects of its invoking in international private law

Mihaela POP
Statement of Responsibility

The legal and scientific responsibility of the manuscripts belongs to the authors.

The 10th InTraders International Conference on Social Sciences and Education provide the Republic of Türkiye, Council of Higher Education "International Conference" criteria. The 10th InTraders International Conference on Social Sciences and Education (e-conference) was held on 21-22 June 2023.

Declaration

InTraders with this declare that from all participants joined from North Macedonia, Romania, Pakistan, India, Algeria, Nigeria, Uganda, South Africa, and Türkiye, more than half of the studies belong to countries different than Türkiye.

Foreign authors present 65% (25/38) of studies out of Türkiye.

Appreciation

I am gratified to have the honour to put forward the vote of thanks to all the Congressional Coordinators, Congressional Committees, and Authors who provided intensive work performance for the Conference.

Special thanks to Dear Keynote Speaker Prof. (Dr) Vandana Raghava, Dean Research, Department of Management Studies, IITM, New Delhi, India

Special Thanks to Dear Svetlana Rastvortseva University HSE, Russia and Assoc. Prof. Dr. Asena Boztaş, Sakarya University of Applied Sciences for taking vital role for running the sessions.

The Congress is scheduled using Zoom Live Sessions.

We aim to contribute international trade field through our International Spring Conferences, International Winter Conferences, International Autumn Conferences, Academic Journal, and Conference Alerts News.

InTraders conference is international and targets participants from all over the world, shaping the organization in this direction.

The Congress aims to have papers from academicians and private sector managers. The written and presentation language is English.

Conference main topics; social sciences and education topics.
Thank you for your great work, dear friends. Last, my little motivators, Emre and Yunus ÇAPRAZ, are great….

**In the upcoming next 10th Conference, The 11th InTraders International Conference On Social Sciences and Education, 25-29 September 2023, Istanbul, Türkiye.**


A beautiful congress with more than international congress criteria is waiting for all of you.

I wish to meet you all at these new international conferences…

Kürşat ÇAPRAZ

*Secretary of InTraders Academic Platform*

[www.intraders.org](http://www.intraders.org)
### Organizing Committee

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Advisory Board

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The 10th InTraders International Conference on Social Sciences and Education, 21-22 June 2023

Conference Program

Keynote Speaker
Prof. (Dr) Vandana Raghava, Dean Research, Department of Management Studies, IITM, New Delhi, India

GMT+3 | Wednesday, 21 June 2023 | Thursday, 22 June 2023
--- | --- | ---
Session 1 09:30-10:30 | Abstract No: 21, 16, 17,7 | Abstract No: 14, 15, 38, 24
Session 2 10:45-11:45 | Abstract No: 8, 35, 40, 32 | Abstract No: 18, 19, 20, 25,41
Session 3 13:00-14:00 | Abstract No: 27, 3, 4, 9 | Abstract No: 22, 33, 36, 34, 37
Session 4 14:15-15:15 | Abstract No: 1, 5, 10, 13 | Abstract No: 23, 28, 30, 31, 39, 29
Session 5 15:30-16:30 | Abstract No: 2, 6, 11, 12 | 

* Proceedings will be reviewed by two reviewers through blind review procedure.
** The proceedings book will be submitted for evaluation for their inclusion in the Web of Science Conference Proceedings Citation Index.

List of Accepted Papers

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<td>Titu Maiorescu University</td>
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<td>Public order and the effects of its invoking in international private law</td>
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<td>A STUDY ON CUSTOMER SATISFACTION TOWARDS HDFC BANK</td>
<td>Vel Tech Rangarajan Dr. Sagunthala R&amp;D Institute of Science and Technology, Avadi, Chennai</td>
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<td>A STUDY ON CONSUMER SATISFACTION TOWARDS FLIPKART ONLINE SHOPPING</td>
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Modeling of moonlighting intention and its motives with moderation of Covid-19 pandemic

Diksha Khera¹, Vandana Raghava²

Abstract

Moonlighting means where workers hold additional job with primary employment at a single time to fulfill their pecuniary and non-pecuniary objectives. Working with dual or multiple jobs not only negatively influence organizations’ performance, workers’ health and work life balance but may also be turn in employee turnover. In order to prevent negative effects of moonlighting, organizations and policymakers need to recognize those factors that generate behavioural intentions for moonlighting adoption among workers. The present study has investigated those factors by using the data collected from 530 non-government workers of Haryana state and found that workers intend to join moonlighting to fulfill their pecuniary and non-pecuniary objectives. The findings indicate that moonlighting intentions are positively increase among workers when they get financial benefits, opportunities of career growth and new experiences & skills, personal development, efficient time utilization, job security etc. by the use of moonlighting employment. Moreover, findings indicate that terrible impacts of Covid-19 pandemic on people’s financial capabilities & psychological health as well as on global economic and job market conditions are also pressurizing workers for moonlighting adoption. Finally, present study has suggested the importance of non-pecuniary factors along with pecuniary factors to organizations at the time of designing effective human resource policies and reducing the likelihood of moonlighting adoption among workers.

Keywords: Moonlighting, Covid-19 pandemic, Pecuniary motivation, Opportunity, Personal reasons, Primary Job related motivation.

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INTRODUCTION

“Moonlighting referred to the situation where the individual holds two or more jobs at the same time” (Nunoo et al., 2018). In all developed and developing economies, moonlighting or supplementary income generating is popular among the workers (Dickey et al., 2011; Hurka et al., 2018). This moonlighting is also termed as a dual job, side job, or multiple jobs holding, and it commonly prevails among the low-income earners whose main motive is to earn the sufficient income and remove the poverty of their family (Betts, 2006; Hausken & Ncube, 2018a, 2018b; Urwick & Kisa, 2014). Aside from the financial motivations which push an individual towards a secondary job, the non-pecuniary motivations such as skill development, career growth, passion, personnel development, enjoyment of another work, social recognition, job insecurity, gaining experience for a new occupation, etc. all are equally important attractions for an individual to join moonlighting (Böheim & Taylor, 2005; Conway & Kimmel, 1998; Dickey et al., 2011, 2015; Heineck & Schwarze, 2004; Kats & Goldberg, 1982; Kawakami, 1999; Nunoo et al., 2018; Sakyi & Agomor, 2021; Winters, 2010). Despite the different motives for moonlighting, the decision of moonlighting may also be affected by the key hurdles such as; an individual is not interested in moonlighting, individual like to moonlight but he could not get another job, an individual is interested in moonlight but he could not find a secondary job with attractive features (Dickey et al., 2009). Apart from these, organizational & personal restrictions, organizational commitment, hours-constraints at primary employment, and working role conflicts also prevent an individual from joining moonlighting employment (Dickey et al., 2009; Heineck, 2009; Obermaier & Koch, 2015; Renna, 2006; Seema & Sachdeva, 2020). The demographic characteristics of an individual such as gender, age, education, working members in a family, marital status, etc. may also be important push or pull factors for him or her towards moonlighting employment (Abdukadir, 1992; Allen, 1998; Asravor, 2021; Averett, 2001; Conway & Kimmel, 1998; Timothy & Nkwama, 2017).

However, the emergence of the coronavirus Covid-19 pandemic has also motivated the people to join for moonlighting. This pandemic emerged at the end of 2019 in China and spread in every country of the global world except Antarctica. Since the advent of the pandemic, the world economy has faced drastic changes, as this pandemic has severely affected health, lives, education, living standard, employment, businesses, economic & social conditions, and the world.
economy. It has extremely affected people’s economic and social lives, as the whole economy had locked down after the pandemic, and people are still compelled to stay and work at home and maintain social distance from others to prevent coronavirus spread. Staying and working at home, social distancing, and the pandemic’s negative effects and news have erupted major psychological problems in people. Moreover, this social-economic crisis pandemic is termed as the steepest depression than the depression of 2009, as due to this, the GDP of the global economy has turned negative (see Figure 1), businesses have locked down, and millions of people have lost their employment or income (ILO, 2021; World-Bank, 2021). World Bank (2021) also argued that millions of people could not meet even their basic needs after the emergence of the Covid-19 pandemic. Besides this, in 2020, the unemployment rate in the Indian and whole world economies has also highly accelerated than the unemployment rate in the depression period of 2009 (see Figure 2). The expenditures on health & hygiene have also increased, and death & illness rates have also increased after the pandemic. Therefore, people are considering moonlighting as the best option to deal with their financial problems, reduce their psychological stress & boredom, optimum utilize their time and enhance their social life after the pandemic. The immense use of digital technologies after the pandemic also made it easy to do multiple jobs simultaneously. People are using moonlighting and overtime to deal with the severe financial difficulties generated by lower income from primary occupation due to the Covid-19 pandemic (Asravor, 2021). Not only this, men and women are considering the urgent need of joining the moonlighting or multiple jobs as a risk coping mechanism to face the risk of primary occupation loss in this Covid-19 period (Asravor, 2021). Also, the pandemic has motivated people to save more for future challenges. People are also want to join moonlighting to gain new experiences and develop their careers, as the negative effects of Covid-19 on the job market have created an intense fear among people to develop their careers and skills to maintain their jobs and income.

As moonlighting is also common among Indian workers (Ashwini et al., 2017; Seema & Sachdeva, 2020) but no sufficient literature is available on moonlighting in Indian workers, and additionally Covid-19 pandemic has also created the intense need to join moonlighting among workers. Therefore, this study fills the research gap in the existing literature by investigating the motives and Covid-19 pandemic’s moderation effect for Indian workers’ intentions to join moonlighting. This study provides unique insight into whether the Covid-19 has strengthened the
relationships between moonlighting intention and its motives. The researchers have collected data from 530 salaried people of the private sector of the Haryana state to achieve the proposed objectives.

**Figure 1: GDP per capita annual growth rate (%) for India and the world economy**

![GDP per capita annual growth rate (%) for India and the world economy](image)

*Source: (World Bank, 2021)*

**Figure 2: Unemployment annual growth rate (%) for India and the global world**

![Unemployment annual growth rate (%) for India and the global world](image)

*Source: (ILO, 2021)*
The rest of the article is organized as follows; Section II highlights the literature available on moonlighting and its motives. Section III describes the research methodology used in the achievement of proposed objectives. Section IV demonstrates the analysis results and summary statistics. Section V discusses the results of the study. Section VI provides the conclusion and managerial implications of the study. Section VII exhibits the limitations of the study.

LITERATURE REVIEW

The concept of moonlighting is defined as “the simultaneous holding of two or more jobs at a single time by an individual” (Nunoo et al., 2018). In other words, moonlighting employment is held by an individual as secondary employment with his or her primary employment or main job at a single time (Boyd et al., 2015). It is also referred as by different names such as supplementary income-generating activity, secondary employment, side job, dual jobs holding, multiple jobs holding, plural employment, extra income, and double work (Betts, 2006; Hausken & Ncube, 2018a, 2018b; Timothy & Nkwama, 2017; Urwick & Kisa, 2014). Usually, an individual holds moonlighting employment as part-time employment but holds primary employment or main job as full-time employment (Betts, 2006). An individual generally decides to moonlight without informing the primary job’s employer (Bin Md Sabron et al., 2017), as dual or multiple working may create inter-working role conflicts (Obermaier & Koch, 2015) and may also negatively influence organizational performance (Ologunde et al., 2013). Furthermore, intentions for leaving a primary job are also higher in moonlighters (Rispel et al., 2014). However, the decision of moonlighting may be negatively affected from the pulling factors such as hours constraints at primary employment, organizational restrictions, organizational commitment, work-family conflicts, personal wellbeing, personal interest, and moonlighting job’s availability (Boyd et al., 2015; Dickey et al., 2009; Heineck, 2009; Kats & Goldberg, 1982; Obermaier & Koch, 2015; Renna, 2006; Seema & Sachdeva, 2020).

The propensity of moonlighting is generally explained by the two important perspectives: job portfolio motivation (JPM) of leisure-choice theory and hour-constraints view (HCV) of leisure-choice theory. JPM's view is based on personal preferences for job differentiation. According to this, individuals engage in moonlighting not because of financial reasons but to diversify their jobportfolio by allocating their working hours in heterogeneous jobs (Asravor, 2021; Böheim & Taylor, 2005). Moreover, HCV is premised on the fact that if an individual is not able to spend the desired working
hours on his or her main job to maximize the utility in income & leisure, he or she may be motivated
towards supplying labor hours in the second job to earn sufficient earning (Heineck, 2009; Shishko & Rostker, 1976). Amini-Philips (2019) and Sussman (1998) also isolated the motivations
for moonlighting in two categories in their studies, i.e., pecuniary motivations and non-pecuniary
motivations. In financial motivations; increase in income, paying off debts, purchasing of something
special, liquidity constraints, future savings, meeting regular household expenses, and other economic
reasons are included (Abdukadir, 1992; Amini-Philips, 2019; Guariglia & Kim, 2004; Kawakami,
2019; Sussman, 1998). In JPM or non-financial motivations; skill development, career growth,
passion, enjoyment of another work, gaining new experience for another occupation, social
recognition, job security, free time utilization, delay in promotion, dissatisfaction with the main job,
playing an active role at the main job and other personal reasons are involved (Baah-Boateng et al.,
2013; Conway & Kimmel, 1998; Heather Dickey et al., 2011; Heineck & Schwarze, 2004;
Kawakami, 2019; Nunoo et al., 2018). However, our study argued that both pecuniary and non-
pecuniary motives motivate individuals towards moonlighting employment.

Furthermore, Baah-Boateng et al. (2013) explained that teachers seek multiple jobs to develop their
skills & expertise, ensure their continued employment in the teaching profession and minimize their
financial constraints. Also, Asravor (2021); Sussman (1998); Kawakami (2019) observed that aside
from pecuniary motives, an individual also gets motivated for multiple jobs to achieve their non-
pecuniary objectives such as to gain new experiences for another occupation, to enjoy another work,
to enhance social recognition, to gain an opportunity for growing career and using his skills, to ensure
his primary job security, to utilize his free time and other personal reasons. Moreover, the tendency
of moonlighting among individuals may be deemed desirable or the symptoms of labor market
challenges (Asravor, 2021). The Covid-19 pandemic is one of the pushing factors for individuals
towards moonlighting because individuals consider moonlighting a risk coping mechanism to deal
with current harsh financial & psychological difficulties and potential labor market challenges of lay-
off or job loss (Asravor, 2021). Also, Kats & Goldberg (1982) argued in their study that the likelihood
of joining moonlighting employment increases so many times among individuals in any pandemic
time.

In the light of previous literature, we framed the following alternate research hypotheses;
H1: Pecuniary motivation has a positive relationship with moonlighting intention of workers.
H2: Opportunity has a positive relationship with moonlighting intention of workers.

H3: Personal reasons have a positive relationship with moonlighting intention of workers.

H4: Primary job-related motivation has a positive relationship with moonlighting intention of workers.

H5: Covid-19 pandemic has a significant moderation effect on the relationship between pecuniary motivation and workers’ moonlighting intention.

H6: Covid-19 pandemic has a significant moderation effect on the relationship between opportunity and workers’ moonlighting intention.

H7: Covid-19 pandemic has a significant moderation effect on the relationship between personal reasons and workers’ moonlighting intention.

H8: Covid-19 pandemic has a significant moderation effect on the relationship between primary job-related motivation and workers’ moonlighting intention.

METHODOLOGY

Under this study, a quantitative model is formulated to associate the moonlighting intentions of Indian workers with the moderation effect of the Covid-19 pandemic and effects of independent variables, i.e., pecuniary motivation, opportunity, personal reasons, and primary job-related motivation. In this model, moonlighting intention is taken as dependent variable. The formulated quantitative model is shown below in Figure 3 and tested by applying SEM statistical technique.

Moreover, a structured questionnaire has been formed to measure all dependent, independent, and moderating variables. The dependent variable of moonlighting intention was measured using a five-point Likert scale ranging from 1 (never) to 5 (always). Apart from this, the independent variables of pecuniary motivation, opportunity, personal reasons, and primary job-related motivation have been measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Covid-19 pandemic’s moderating variable was measured on a nominal scale, i.e., Whether the Covid-19 pandemic is pushing individuals towards join moonlighting? If the Covid-19 pushes an individual
towards moonlighting, it takes value 1, and if does not push
individual towards moonlighting, it takes value 0. Covid-19 pandemic is entered in the model as a dummy variable.

Figure 3: Theoretical Model  
Source: Authors

The moonlighting intention was measured using the adapted scale from the study of Seema & Sachdeva (2020). The adapted scale from studies of Asravor, 2021; Averett, 2001; Dickey et al., 2011; Guariglia & Kim, 2004; Kawakami, 2019 was used in measuring pecuniary motivation. In measuring opportunity, the scale from studies of Asravor, 2021; Averett, 2001 was adapted. Furthermore, the adapted scale from studies of Asravor, 2021; Kawakami, 2019 was used to measure personal reasons. To measure job-related motivation, the adapted scale from studies of Ashwini et al., 2017; Asravor, 2021; Kawakami, 2019 was used. Lastly, the Covid-19 moderation effect was measured using the statement designed by the authors of this study. Apart this, to confirm the reliability and validity of adapted scales and also to measure the overall fitness of measurement model, CFA statistical technique was used.
The questionnaire was sent using online mode because of pandemic situations to 1000 individuals working in the non-government sector of the Haryana state. The respondents were selected using convenience and purposive sampling because the Covid-19 pandemic had restricted probability samplings such as simple random sampling or stratified sampling. A total of 600 questionnaires had returned by respondents with a 60% collection rate. However, in the collected 600 responses, 70 responses were discarded due to incomplete responses and outliers’ presence. Finally, a total of 530 responses were used for analysis purposes. This data was collected between the period of January 2020 to December 2022 after the emergence of pandemic.

RESULTS

From Table 1, it is evident that 257 males and 273 females participated in moonlighting intention survey. While 358 respondents were married and 172 were unmarried. The working members’ analysis shows that 377 respondents belonged to families in which only one member is working and earning income, whereas 153 respondents belonged to families with more than one working member. Furthermore, the analysis shows that 144 respondents had education qualifications up to only primary level, 254 were qualified up to secondary level, and 132 respondents’ education qualification was up to higher level. Table 2 shows that approximately 70% of respondents agree that the Covid-19 pandemic has put pressure to join moonlighting. In contrast, 30% of respondents expressed no pressure of the Covid-19 pandemic on their moonlighting decision.

Table 1: Demographic profile of respondents

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<th>Demographic characteristics</th>
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<tr>
<td>1) Gender:</td>
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<tr>
<td>Male</td>
<td>257</td>
<td>48.5</td>
</tr>
<tr>
<td>Female</td>
<td>273</td>
<td>51.5</td>
</tr>
<tr>
<td>Total</td>
<td>530</td>
<td>100.0</td>
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<tr>
<td>2) Marital status:</td>
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<td></td>
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<tr>
<td>Married</td>
<td>358</td>
<td>67.5</td>
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<tr>
<td>Unmarried</td>
<td>172</td>
<td>32.5</td>
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Table 2: Covid-19 pandemic’ pressure for moonlighting

<table>
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<th>Is Covid-19 pandemic pushing towards joining of moonlighting employment:</th>
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<td>Yes</td>
<td>369</td>
<td>69.6</td>
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<tr>
<td>No</td>
<td>161</td>
<td>30.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>530</strong></td>
<td><strong>100</strong></td>
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Source: Field survey

Moreover, Table 3 demonstrates the level of moonlighting intention and its motives among Indian workers. Using the five-point Likert scale from strongly disagree (coded as 1) to strongly agree (coded as 5), Table 3 shows that the variable of “Financial situations expected to deteriorate” had the highest mean. The higher mean value for “Financial situations expected to deteriorate” and other pecuniary motives compared to non-pecuniary motives indicates the panic situation of Indian workers for joining moonlighting due to severe financial difficulties erupted from the Covid-19 pandemic. However, all pecuniary and non-pecuniary motives of moonlighting shown in Table 3 have mean values greater than 3. It indicates that motives for joining moonlighting among Indian workers are not limited to the pecuniary objectives; rather, the non-pecuniary objectives also push Indian workers towards moonlighting employment. Thus, the analysis shows that “unsatisfactory
financial rewards from current job” is the strongest reason for Indian workers' intentions to join moonlighting employment.
### Table 3: Descriptive statistics of observed variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>References</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pecuniary Motivation (PM)</strong></td>
<td>(Asravor, 2021; Averett, 2001; Dickey et al., 2011; Guariglia &amp; Kim, 2004; Kawakami, 2019)</td>
<td>3.8205</td>
<td>1.19286</td>
</tr>
<tr>
<td>Financial rewards from the current job are unsatisfactory (PM1)</td>
<td></td>
<td>3.7792</td>
<td>1.36190</td>
</tr>
<tr>
<td>Financial situations expected to deteriorate (PM2)</td>
<td></td>
<td>4.0528</td>
<td>1.44366</td>
</tr>
<tr>
<td>Expects not to be able to provide main necessities to family in the next years (PM3)</td>
<td></td>
<td>3.8358</td>
<td>1.39179</td>
</tr>
<tr>
<td>To deal with temporary financial hardship (PM4)</td>
<td></td>
<td>3.7925</td>
<td>1.30953</td>
</tr>
<tr>
<td>To save for the future (PM5)</td>
<td></td>
<td>3.7698</td>
<td>1.21733</td>
</tr>
<tr>
<td>To pay off debts or liabilities (PM6)</td>
<td></td>
<td>3.7566</td>
<td>1.24624</td>
</tr>
<tr>
<td>To increase my income (PM7)</td>
<td></td>
<td>3.7566</td>
<td>1.31560</td>
</tr>
<tr>
<td><strong>Opportunity (Opp)</strong></td>
<td>(Asravor, 2021; Averett, 2001)</td>
<td>3.5884</td>
<td>1.09859</td>
</tr>
<tr>
<td>To enjoy the work of the second job (Opp1)</td>
<td></td>
<td>3.4717</td>
<td>1.28248</td>
</tr>
<tr>
<td>To gain experience in different occupations/buildup a business (Opp2)</td>
<td></td>
<td>3.6509</td>
<td>1.27831</td>
</tr>
<tr>
<td>To improve my skills (Opp3)</td>
<td></td>
<td>3.6623</td>
<td>1.29456</td>
</tr>
<tr>
<td>To build up my career (Opp4)</td>
<td></td>
<td>3.7113</td>
<td>1.24414</td>
</tr>
<tr>
<td>To boost up my resume (Opp5)</td>
<td></td>
<td>3.5302</td>
<td>1.23590</td>
</tr>
<tr>
<td>To use my talents (Opp6)</td>
<td></td>
<td>3.5038</td>
<td>1.26498</td>
</tr>
<tr>
<td><strong>Personal reasons (PR)</strong></td>
<td>(Asravor, 2021; Kawakami, 2019)</td>
<td>3.5968</td>
<td>1.17389</td>
</tr>
<tr>
<td>To do a job of my passion (PR1)</td>
<td></td>
<td>3.6302</td>
<td>1.29527</td>
</tr>
<tr>
<td>To blow off stress (PR2)</td>
<td></td>
<td>3.6321</td>
<td>1.32538</td>
</tr>
<tr>
<td>To enhance my social life (PR3)</td>
<td></td>
<td>3.6113</td>
<td>1.31153</td>
</tr>
<tr>
<td>For psychological benefits (PR4)</td>
<td></td>
<td>3.5358</td>
<td>1.23727</td>
</tr>
<tr>
<td>Self-improvement with creativity (PR5)</td>
<td></td>
<td>3.5415</td>
<td>1.29824</td>
</tr>
<tr>
<td>To utilize the free time available (PR6)</td>
<td></td>
<td>3.5925</td>
<td>1.16175</td>
</tr>
<tr>
<td>You were asked to do another job and was unable to refuse (PR7)</td>
<td></td>
<td>3.6340</td>
<td>1.32090</td>
</tr>
<tr>
<td><strong>Primary Job-related motivation (JRM)</strong></td>
<td></td>
<td>3.6035</td>
<td>1.15025</td>
</tr>
<tr>
<td>To ensure job security (JRM1)</td>
<td>(Ashwini et al., 2017; Asravor, 2021; Kawakami, 2019)</td>
<td>3.7075</td>
<td>1.28953</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>------------------------------------------------------</td>
<td>--------</td>
<td>---------</td>
</tr>
<tr>
<td>Lower the risk of primary job loss (JRM2)</td>
<td></td>
<td>3.7396</td>
<td>1.15694</td>
</tr>
<tr>
<td>To play a more active role at the workplace (JRM3)</td>
<td>3.5094</td>
<td>1.37521</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td>--------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>Dissatisfaction with the job profile (JRM4)</td>
<td>3.5132</td>
<td>1.35161</td>
<td></td>
</tr>
<tr>
<td>Delay in promotion (JRM5)</td>
<td>3.6642</td>
<td>1.33742</td>
<td></td>
</tr>
<tr>
<td>Unhappy with job appraisal (JRM6)</td>
<td>3.4868</td>
<td>1.37243</td>
<td></td>
</tr>
<tr>
<td><strong>Moonlighting Intention (MI)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How often have you considered having a second job apart from your regular occupation? (MI1)</td>
<td>(Seema &amp; Sachdeva, 2020)</td>
<td>3.7038</td>
<td>1.05764</td>
</tr>
<tr>
<td>How frequently do you scan newspapers/employment websites in search of part-time job opportunities? (MI2)</td>
<td></td>
<td>3.7623</td>
<td>1.26015</td>
</tr>
<tr>
<td>How often have you decided that you will join a secondary job shortly? (MI3)</td>
<td></td>
<td>3.6094</td>
<td>1.25723</td>
</tr>
<tr>
<td>How frequently do you contact employment agencies, friends, relatives, etc., to get another job? (MI4)</td>
<td></td>
<td>3.7528</td>
<td>1.23941</td>
</tr>
</tbody>
</table>

N=530 respondents  
**Source: Field survey**

In CFA, the reliability and validity of all latent variables/constructs such as moonlighting intentions, pecuniary motivation, opportunity, personal reasons, and primary job-related motivation, and overall fitness of the model were tested. Initially, for retaining any observed variable/item in one latent variable/construct, the observed variable should have factor loading more than 0.5 thresholds, and its p-value should also be significant (Hair et al., 2010). Aside from this, the reliability and validity of latent variables were tested by checking convergent and discriminant validity. The convergent validity of constructs was tested by the appropriate values of composite reliability (CR), average variance explained (AVE), and Cronbach’s alpha coefficient. For convergent validity of constructs, CR should be greater than 0.7, AVE should be greater than 0.5, and CR value should also be greater than the AVE value, and furthermore, Cronbach’s alpha coefficient of each latent variable should also be greater than 0.7 (Churchill, 1979; Fornell & Larcker, 1981; Hair et al., 2010). Besides this, discriminant validity was tested by the appropriate values of average shared variance (ASV) and maximum shared variance (MSV). In order to confirm the discriminant validity of constructs,
the AVE value of each
construct should be greater than ASV and MSV values, and further, the square root of AVE should also greater than the correlation of the corresponding construct with other constructs (Fornell & Larcker, 1981). The fitness of the overall measurement model was tested by the multiple goodness and badness indices such as CMIN/DF, RMR, RMSEA, CFI, TLI, and IFI. For fitness of model; goodness indices should be greater than 0.9 (Bollen, 1990; Browne, 1993; Hu & Bentler, 1999), badness indices should be less than 0.10 (Browne, 1993; Hu & Bentler, 1999), and CMIN/DF value should less than 5 (Hair et al., 2010; Pattnaik, 2019). As shown in Table 4, Table 5 and Table 6, all reliability, validity and model fitness standards were confirmed.

Table 4: Measurement model results

<table>
<thead>
<tr>
<th>Observed variable</th>
<th>Regression weights</th>
<th>S.E.</th>
<th>C.R.</th>
<th>p-value</th>
<th>Standardized regression weights</th>
</tr>
</thead>
<tbody>
<tr>
<td>PR1</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td>.904</td>
</tr>
<tr>
<td>PR2</td>
<td>.985</td>
<td>.032</td>
<td>30.529</td>
<td>***</td>
<td>.870</td>
</tr>
<tr>
<td>PR3</td>
<td>1.022</td>
<td>.030</td>
<td>34.457</td>
<td>***</td>
<td>.912</td>
</tr>
<tr>
<td>PR4</td>
<td>.974</td>
<td>.027</td>
<td>35.489</td>
<td>***</td>
<td>.921</td>
</tr>
<tr>
<td>PR5</td>
<td>1.039</td>
<td>.028</td>
<td>37.288</td>
<td>***</td>
<td>.937</td>
</tr>
<tr>
<td>PR6</td>
<td>.860</td>
<td>.028</td>
<td>30.232</td>
<td>***</td>
<td>.866</td>
</tr>
<tr>
<td>PR7</td>
<td>1.032</td>
<td>.030</td>
<td>34.747</td>
<td>***</td>
<td>.914</td>
</tr>
<tr>
<td>Opp1</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td>.800</td>
</tr>
<tr>
<td>Opp2</td>
<td>1.106</td>
<td>.046</td>
<td>24.143</td>
<td>***</td>
<td>.888</td>
</tr>
<tr>
<td>Opp3</td>
<td>1.098</td>
<td>.047</td>
<td>23.476</td>
<td>***</td>
<td>.871</td>
</tr>
<tr>
<td>Opp4</td>
<td>1.066</td>
<td>.045</td>
<td>23.801</td>
<td>***</td>
<td>.879</td>
</tr>
<tr>
<td>Opp5</td>
<td>.984</td>
<td>.046</td>
<td>21.485</td>
<td>***</td>
<td>.818</td>
</tr>
<tr>
<td>Opp6</td>
<td>.954</td>
<td>.048</td>
<td>19.954</td>
<td>***</td>
<td>.774</td>
</tr>
<tr>
<td>PM1</td>
<td>1.071</td>
<td>.037</td>
<td>28.836</td>
<td>***</td>
<td>.892</td>
</tr>
<tr>
<td>PM2</td>
<td>1.137</td>
<td>.039</td>
<td>28.935</td>
<td>***</td>
<td>.893</td>
</tr>
<tr>
<td>PM3</td>
<td>1.094</td>
<td>.038</td>
<td>28.799</td>
<td>***</td>
<td>.891</td>
</tr>
<tr>
<td>PM4</td>
<td>1.032</td>
<td>.036</td>
<td>28.952</td>
<td>***</td>
<td>.893</td>
</tr>
<tr>
<td>PM5</td>
<td>.954</td>
<td>.033</td>
<td>28.640</td>
<td>***</td>
<td>.889</td>
</tr>
<tr>
<td>PM6</td>
<td>.930</td>
<td>.036</td>
<td>26.033</td>
<td>***</td>
<td>.846</td>
</tr>
</tbody>
</table>
Table 5: Fitness indices for measurement model

<table>
<thead>
<tr>
<th>Fit indices</th>
<th>Obtained value</th>
<th>Minimum Desirable value</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>X² (CMIN)</td>
<td>1080.593</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.F.</td>
<td>395</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P value</td>
<td>.000</td>
<td>&lt;0.05</td>
<td></td>
</tr>
<tr>
<td>CMIN/DF</td>
<td>2.736</td>
<td>&lt;5</td>
<td>(Hair et al., 2010; Pattnaik, 2019)</td>
</tr>
<tr>
<td>RMR</td>
<td>.053</td>
<td>&lt;0.10</td>
<td>(Browne, 1993; Hu &amp; Bentler, 1999)</td>
</tr>
<tr>
<td>RMSEA</td>
<td>.057</td>
<td>&lt;0.10</td>
<td>(Browne, 1993; Hu &amp; Bentler, 1999)</td>
</tr>
<tr>
<td>CFI</td>
<td>.955</td>
<td>&gt;0.90</td>
<td>(Hu &amp; Bentler, 1999)</td>
</tr>
<tr>
<td>TLI</td>
<td>.951</td>
<td>&gt;0.90</td>
<td>(Hu &amp; Bentler, 1999)</td>
</tr>
<tr>
<td>IFI</td>
<td>.956</td>
<td>&gt;0.90</td>
<td>(Bollen, 1990)</td>
</tr>
</tbody>
</table>

Note: N= 530 respondents. *** p value is < 0.001

Source: Field survey
<table>
<thead>
<tr>
<th>RFI</th>
<th>0.925</th>
<th>&gt;0.90</th>
<th>(Hu &amp; Bentler, 1999)</th>
</tr>
</thead>
</table>

Hu & Bentler, 1999
Table 6: Reliability and validity of latent variables

<table>
<thead>
<tr>
<th>Latent variable</th>
<th>CR</th>
<th>AVE</th>
<th>MSV</th>
<th>ASV</th>
<th>Cronbach’s α coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal reasons</td>
<td>0.969</td>
<td>0.817</td>
<td>0.091</td>
<td>0.036</td>
<td>0.969</td>
</tr>
<tr>
<td>Opportunity</td>
<td>0.935</td>
<td>0.705</td>
<td>0.091</td>
<td>0.046</td>
<td>0.934</td>
</tr>
<tr>
<td>Pecuniary motivation</td>
<td>0.960</td>
<td>0.776</td>
<td>0.194</td>
<td>0.052</td>
<td>0.960</td>
</tr>
<tr>
<td>Primary job-related motivation</td>
<td>0.939</td>
<td>0.719</td>
<td>0.089</td>
<td>0.024</td>
<td>0.938</td>
</tr>
<tr>
<td>Moonlighting intention</td>
<td>0.876</td>
<td>0.639</td>
<td>0.194</td>
<td>0.103</td>
<td>0.876</td>
</tr>
</tbody>
</table>

Note: N= 530 respondents. This table demonstrates the statistics of convergent and discriminant validity for latent variables. CR, Composite reliability; AVE, Average variance explained; ASV, Average shared variance; MSV, Maximum shared variance. For convergent validity of latent variables, CR should be greater than 0.7, AVE should be greater than 0.5, CR should also be greater than AVE, and alpha coefficient should also be greater than 0.7. For discriminant validity, AVE should be greater than both ASV and MSV.

Source: Field survey

After confirming the reliability and validity of latent constructs, the hypothesized structural relationships were checked using SEM. In the structural model, r square and significance of path coefficients were tested. The p-value of path coefficient less than 0.05 is considered significant, and an estimate of $r^2$ between 0.25 to 0.5 is considered good, and above 0.5 is considered very well (Burlea-Schiopoiu & Ferhati, 2021). Table 7 and Figure 4 show that all independent variables such as pecuniary motivation, opportunity, primary job related motivation and personal reasons are positively and significantly influence the moonlighting intentions among workers. Moreover, all independent variables are explaining 35% of variations of moonlighting intentions among indian workers. Thus, the results of SEM support the framed alternate hypotheses H1, H2,H3 and H4 which had assumed the significant influence of pecuniary motivation, opportunity, personal reasons and...
primary job related motivation on moonlighting intention, respectively. The path parameter results of Table 7 also shows that the pecuniary motivation and job related motivation have the highest impact on moonlighting intention as compare to other explanatory variables which ultimately complement the negative effects of Covid-19 on job market and financial capabilities of individuals.

Figure 4: Structural model
Source: Authors
Table 7: Path parameters

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Regression weight</th>
<th>S.E.</th>
<th>C.R.</th>
<th>p-value</th>
<th>Standardized regression weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>MI ← PR</td>
<td>.099</td>
<td>.037</td>
<td>2.704</td>
<td>.007</td>
<td>.114</td>
</tr>
<tr>
<td>MI ← Opp</td>
<td>.202</td>
<td>.043</td>
<td>4.676</td>
<td>***</td>
<td>.204</td>
</tr>
<tr>
<td>MI ← PM</td>
<td>.372</td>
<td>.039</td>
<td>9.605</td>
<td>***</td>
<td>.416</td>
</tr>
<tr>
<td>MI ← JRM</td>
<td>.257</td>
<td>.038</td>
<td>6.791</td>
<td>***</td>
<td>.284</td>
</tr>
</tbody>
</table>

\[ R^2 = .351 \quad ***; \quad p < 0.001 \]

Source: Field survey

The results of Covid-19 pandemic moderation effect shown in Table 8 indicate that Covid 19 has significantly moderated the relationship between moonlighting intention and its motives, as moonlighting intentions are more in those workers who have felt the pressure of Covid-19 to join moonlighting. Moreover, the relationship between personal reasons and moonlighting intentions has become insignificant in those workers who have no pressure of Covid-19 to join moonlighting. It indicates that in Covid-19 period workers are using the moonlighting mechanism for personal development, reduce personal stress or effectively utilize their vacant time etc. However, Covid-19 moderation effect on relationships between moonlighting intention and its other motives is insignificant but standardized regression weight of pecuniary motivation in Covid-19 pressure case is higher and standardized regression weights of opportunities and primary job related motivation are higher in Non-Covid case. Thus, the analysis has revealed that workers are more attracted towards the moonlighting to mitigate their financial and psychological problems which have emerged during Covid-19 period. It also indicates that workers who haveno pressure of Covid-19 to join moonlight they are more attracted towards the opportunities and primary job related motivations which they can satisfy by using moonlighting. Ultimately, moderation effect of Covid-19 indicating that during Covid-19 period people are intending to join moonlighting to mitigate the negative influence of Covid-19 on financial capabilities, mental wellbeing and daily working hours.
Table 8: Moderation effect

<table>
<thead>
<tr>
<th></th>
<th>Non-Covid Model</th>
<th>Covid Model</th>
<th>Z score</th>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R^2 = 0.26</td>
<td>R^2 = 0.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beta</td>
<td>p</td>
<td>Beta</td>
<td>p</td>
</tr>
<tr>
<td>MI ← PR* Covid19</td>
<td>-0.038</td>
<td>0.591</td>
<td>0.124</td>
<td>.02</td>
</tr>
<tr>
<td>MI ← Opp* Covid19</td>
<td>0.267</td>
<td>***</td>
<td>0.186</td>
<td>***</td>
</tr>
<tr>
<td>MI ← PM* Covid19</td>
<td>0.336</td>
<td>***</td>
<td>0.415</td>
<td>***</td>
</tr>
<tr>
<td>MI ← JRM* Covid19</td>
<td>0.283</td>
<td>***</td>
<td>0.279</td>
<td>***</td>
</tr>
</tbody>
</table>

***, **, *; p values are less than 0.001, 0.01 and 0.05, respectively.

Source: Field Survey

CONCLUSION & MANAGERIAL IMPLICATIONS

As, this study fills the research gap in the existing literature by investigating the motives and Covid-19 pandemic’s moderation effect for Indian workers’ intentions to join moonlighting. This study provides unique insight into whether the Covid-19 has strengthened the relationships between moonlighting intention and its motives. Under this research study, moonlighting intention is taken as dependent variable and its motives such as personal reasons, opportunity, primary job related motivation and pecuniary motivation are taken as independent variables and Covid-19 pressure is taken as moderating variable. Our findings have shown that level of pecuniary motives as compared to non-pecuniary motives is high which indicates the panic situation of Indian workers for joining moonlighting due to severe financial difficulties erupted from the Covid-19 pandemic. Moreover, the results shown that all independent variables such as pecuniary motivation, opportunity, primary job related motivation and personal reasons are positively and significantly influence the moonlighting intentions among workers. The results also show that the pecuniary motivation and job related motivation have the highest impact on moonlighting intention as compare to other explanatory variables which ultimately complement the negative effects of Covid-19 on job market and financial capabilities of individuals. Lastly, the moderation results of Covid-19 pandemic indicate that workers...
who have Covid-19 pressure to join moonlighting are using the moonlighting mechanism for personal development, reduce personal stress or effectively utilize their vacant time etc. Moreover, the analysis has revealed that workers are more attracted towards the moonlighting to mitigate their financial and psychological problems which have emerged during Covid-19 period. Ultimately, moderation effect of Covid-19 indicating that during Covid-19 period people are intending to join moonlighting to mitigate the negative influence of Covid-19 on financial capabilities, mental wellbeing and daily working hours.

Results of our study have two type of implications; one for organizational managers and other for policymakers. After knowing the fact that adoption of moonlighting negatively influences on organization performance, employee turnover, workers’ health, work life balance, economy’s happiness index as well as economy’s fatality & ailment rate; organizational mangers and policymakers should concentrate on how to reduce the likelihood of behavioural intention for moonlighting among workers. First, managers should consider both pecuniary and non-pecuniary benefits for workers’ satisfaction at the time of designing effective human resource policies as well as in reducing probability of moonlighting adoption. Managers should not only provide financial or job security to their workers against future uncertainty but also try to make their organization’s and work’s culture as a mean of getting new work experience, career growth, skill up-gradation or social reputation. Managers should provide time to time opportunities where workers feel that they are doing already interesting or challenging job and also getting justified rewards for this. Managers should always try to engage workers in meaningful works and optimally utilize their desired working hours at their primary job for benefits of both organizationand workers. Organizations should use that innovative ways where workers will always feel strong connections and commitments towards organization and their job.

Second line of implications of our empirical results is for policymakers. As we have seen that emergence of Covid-19 pandemic is terribly impacting on global economy in multiple ways. Since pandemic, most of the people are losing their jobs and not able to meet even their basic need. Devastating influences of Covid-19 pandemic are pressurizing people to do dual or multiple even less valuable jobs for living. Therefore, policymakers need to provide financial support to those people who are not able to meet even their basic needs. Policymakers should provide food and medical treatments to needy people who are facing most terrific challenges of pandemic. In order to
reduce the negative influence of Covid-19 pandemic and reduce the likelihood of moonlighting adoption among Indian workers, policymakers need to design policies
in this direction. Effective pension and insurance policies should be made and implement to provide financial security to Indian people against pandemic’s challenges and future uncertainties.

LIMITATIONS & FUTURE SCOPE

Under this study, we only investigated the intentions to moonlight among Salaried people but not the adoption of moonlighting. The present study is restricted only upto the boundary of Haryana state. This study has only focused on salaried people of non-government sector of Haryana state. In this study, the influence of other demographic variables like gender etc. on moonlighting intentions have not studied. The aforesaid limitations of present study may define a significant path for researchers to execute their researches in future.

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Intelligent Automation: A Paradigm Shift in Financial Services

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Abstract

Intelligent automation is revolutionizing the financial services sector by leveraging advanced technologies such as AI, ML, RPA, and NLP. This paradigm shift addresses challenges faced by financial organizations, including rising costs, compliance pressures, and the need for improved customer experiences. By automating tasks, enhancing operational efficiency, and enabling focus on value-added activities, intelligent automation offers benefits such as cost reduction, better decision-making, and enhanced customer satisfaction. However, considerations regarding data security, privacy, and ethics must be addressed. Overall, embracing intelligent automation requires upskilling the workforce and fostering a culture of innovation, positioning financial institutions for sustainable growth and competitive advantage in the evolving landscape.

Keywords: Intelligent automation, financial services, artificial intelligence, machine learning, robotic process automation, operational efficiency, cost reduction, customer experience, data security

Introduction

The financial services sector is undergoing a transformative paradigm shift with the advent of intelligent automation. Advanced technologies such as artificial intelligence (AI), machine learning (ML), robotic process automation (RPA), and natural language processing (NLP) are revolutionizing traditional processes and operations within the industry. These technologies offer unprecedented opportunities to address challenges faced by financial organizations, including escalating operational costs, mounting regulatory compliance pressures, and the growing demand for enhanced customer experiences. Intelligent automation, characterized by the automation of repetitive tasks and the augmentation of human decision-making, is reshaping the landscape of financial services. This paper explores the transformative impact of intelligent automation in the financial sector, discussing its key components, applications, benefits, risks, and implications for organizations. By shedding light on this paradigm shift, the paper aims to provide valuable insights to financial institutions seeking to navigate the evolving landscape.

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landscape and leverage intelligent automation to achieve sustainable growth and gain a competitive advantage.

Financial Service Sector

The financial services industry encompasses a wide range of businesses and institutions that provide various financial products, services, and solutions to individuals, businesses, and governments. It plays a crucial role in the global economy by facilitating the flow of capital, managing risk, and enabling economic growth.

The origins of the financial services industry can be traced back to ancient civilizations where early forms of banking and lending emerged. Over time, with the advent of currency and trade, financial intermediaries such as banks and insurance companies began to emerge, providing services related to savings, lending, insurance, and investment.

The industry has witnessed significant evolution and transformation, driven by technological advancements, regulatory changes, and shifts in customer expectations. The rise of information technology and the internet has revolutionized the way financial services are delivered, enabling online banking, electronic trading, and digital payment systems.

Today, the financial services industry encompasses a diverse range of sectors, including banking, insurance, investment management, payment processing, and financial technology (fintech). Each sector plays a unique role in meeting the financial needs of individuals and businesses.

The industry is heavily regulated to ensure stability, protect consumers, and maintain fair and transparent practices. Regulatory bodies, such as central banks, financial regulators, and government agencies, oversee the operations of financial institutions and enforce compliance with laws and regulations.

The financial services industry is highly interconnected and globally integrated. It plays a crucial role in mobilizing savings, allocating capital, managing risks, and facilitating economic transactions on a local, national, and international scale. As technology continues to advance, the industry faces new opportunities and challenges, such as cybersecurity risks, regulatory changes, and the need to adapt to evolving customer demands. Sanz et al., 2021 presents an AI Architecture for Finance that focuses on analytics and forecasting for business-to-business operations. It introduces three key components: Design Dimensions, Modeling Building-Blocks, and Work-Practice. The goal is to help finance professionals navigate AI options effectively and accelerate data monetization. While the paper concentrates on selected
competences in Banking, Financial Markets, and CFO operations, it acknowledges the need
for further refinement, additional tools, and sharing of experiences among practitioners. The authors hope that finance organizations will adopt these capabilities to drive data-driven transformation and monetization within their own internal departments. Kuar et al., 2023 discusses the impact of artificial intelligence (AI) and big data on the banking and financial sector, as well as their effects on human labor and other stakeholders. It highlights the transformation brought about by the concept of “industry 4.0” and its influence on organizational operations. The paper introduces the five maturity levels of the model: initial, managed, defined, established, and digitally oriented. The increasing need to secure and improve the quality of services for both clients and financial institutions is emphasized, with technology becoming the foundation of financial institutes. The study explores various technology models employed in the banking and finance industries, aiming to gain a deeper understanding of the topic and identify new areas of exploration. Additionally, the paper examines the futuristic challenges that technology presents in the banking sector. Eluwole et al, 2022 addresses the widespread use and misconceptions surrounding artificial intelligence (AI) and machine learning (ML). It provides an exploration of AI and ML, categorizing the various extensive ML algorithmic techniques. The paper emphasizes the distinctions between AI and ML and presents their potential applications in the finance industry, including FinTech, RegTech, and InsurTech. It highlights the practical use of AI/ML in finance, such as customers spending insights, risk assessment, anomaly detection in financial transactions, and natural language interaction with customers. The paper acknowledges the momentum gained by AI/ML in finance due to advancements in IoT, computing, and telecommunications. However, it also raises questions about the limits of AI/ML applications in finance and whether they can address challenges related to transparency in solution design, development, and implementation.

Applications of Intelligent Automation in Financial Services

A. Risk management and compliance

*Automated risk assessments and monitoring*

Intelligent automation in financial services enables the automation of risk assessment processes by leveraging data analytics and AI algorithms. It can analyze vast amounts of data to identify potential risks, evaluate their impact, and generate risk scores. This automation improves the efficiency and accuracy of risk management, allowing financial institutions to proactively mitigate risks and make informed decisions. The utilization of artificial intelligence has led to notable advancements in market risk and credit risk management, including improvements in
data preparation, risk modeling, stress testing, and fraud detection. Additionally, artificial intelligence techniques contribute to enhancing data quality assurance and text-mining for data augmentation. (Vesna, 2021)

**Fraud detection and prevention**

Intelligent automation can detect and prevent fraudulent activities in real-time by continuously monitoring transactions and customer behaviours. AI techniques have the potential to detect financial frauds (Rohit Raj et al., 2022). Machine learning algorithms can analyze patterns and anomalies to identify suspicious activities and flag them for further investigation. This automation helps in reducing financial losses due to fraud and enhances the security of financial systems. In fact, AI techniques are

**Regulatory compliance and reporting**

Compliance with regulatory requirements is a critical aspect of the financial services industry. Intelligent automation can automate compliance processes by monitoring and analyzing data to ensure adherence to regulations. It can generate reports, track compliance deadlines, and streamline regulatory reporting, reducing the time and effort required for compliance activities.

**B. Customer onboarding and account management**

**Automated identity verification and KYC processes**

Intelligent automation can streamline the customer onboarding process by automating identity verification and Know Your Customer (KYC) procedures. It can verify customer identities using biometric data, document scanning, and data validation algorithms. This automation simplifies and expedites the onboarding process while ensuring compliance with regulatory requirements.

**Streamlined account opening and closure procedures**

Through intelligent automation, financial institutions can automate account opening and closure procedures. This includes digital form filling, document collection, and verification, reducing the manual effort and time required. It enhances the customer experience, enables faster account activation, and simplifies account closure when needed.

**Self-service account management and updates**

Intelligent automation enables self-service capabilities for customers, allowing them to manage their accounts and update their information autonomously. This includes features like balance inquiries, fund transfers, address changes, and updating personal details. Self-service automation improves convenience for customers, reduces operational costs, and enhances customer satisfaction. Han et al., 2022 discusses the advancements and applications of AI
technologies in various real-world fields, highlighting the significant performance improvement brought about by deep learning. However, the increasing reliance on AI-based systems has raised concerns about their reliability. Due to the complexity of these systems and the large amount of data used for training, humans struggle to comprehend them, leading to a lack of confidence in the generated results. This lack of understanding can give rise to problems such as unexplained errors and uncontrollable behavior, with potentially serious consequences in sensitive sectors like aviation, medical care, and security. The paper focuses on examining a checklist aimed at improving the reliability of AI systems, particularly by considering the life cycle of such systems.

C. Investment and wealth management

Robo-advisory services for portfolio management

Intelligent automation enables the provision of robo-advisory services, where algorithms and AI models provide automated investment advice and portfolio management based on customer goals, risk tolerance, and market conditions. It offers personalized investment recommendations, portfolio rebalancing, and real-time monitoring, making investment management accessible and cost-effective.

Automated trading and algorithmic strategies: Intelligent automation facilitates automated trading by executing trades based on pre-defined rules, algorithms, and market indicators. It can analyze market data, identify trading opportunities, and execute trades with speed and accuracy. Automated trading enhances efficiency, reduces human error, and enables quick responses to market fluctuations. Dubey et al., 2022 explores the integration of artificial intelligence (AI) and blockchain technology, highlighting their potential impact on innovation. By combining the capabilities of AI and blockchain, there is an opportunity to enhance the analysis of contract details and workflows, reducing the need for human intervention and verification. AI refers to machines' ability to understand, think, and learn similarly to humans, opening up possibilities for computer-based replication of human intelligence. Smart contracts, which are computer code running on a blockchain, establish a set of rules for parties involved in a contract to interact with each other. The main objective of this paper is to examine the integration of AI with blockchain-enabled smart contracts and its potential for improving finance system operations. The article concludes that the combination of AI and blockchain-enabled smart contracts will have a significant impact on the future of the finance industry and digital trading.

Real-time market analysis and prediction
Intelligent automation can gather and analyze vast amounts of market data in real-time, enabling financial institutions to gain insights into market trends, volatility, and potential risks. It uses advanced analytics and machine learning algorithms to make predictions and forecasts, helping investment professionals make informed decisions and optimize investment strategies. Patowari et al., 2021 focuses on the analysis of stock prices and volatility in the Indian market, specifically for two companies: State Bank of India and Mahindra & Mahindra. The authors treat the stock market as a stochastic dynamical system and investigate the time-varying coefficient 'Beta' ($\beta_t$) of the Capital Asset Pricing Model (CAPM). They employ the discrete Kalman filter in a recursive estimation mode using MATLAB software to estimate 'Beta'. The estimated 'Beta' is then used to calculate the return on the stock price, which is compared with actual market return data for different levels of noise variance. The paper emphasizes the application of mathematical models and prediction algorithms to automate the finance industry and assist investors in making informed decisions. Overall, this work represents a step forward in utilizing mathematical models for financial analysis and decision-making.

D. Loan and credit processing

Automated loan origination and underwriting

Intelligent automation streamlines the loan origination process by automating document collection, verification, and credit assessment. It uses AI models to analyze creditworthiness, assess risk, and determine loan eligibility. Automated loan origination reduces processing time, improves accuracy, and enhances the efficiency of loan approvals.

Credit scoring and risk assessment

Intelligent automation can automate credit scoring processes by analyzing various factors such as credit history, income, and financial behavior. It generates credit scores and risk assessments quickly and accurately, allowing financial institutions to make informed lending decisions.

Loan servicing and collections automation: Intelligent automation can automate loan servicing activities such as repayment tracking, interest calculations, and payment reminders. It can also automate collections processes for overdue loans, sending automated notifications and initiating collection procedures. This automation improves efficiency, reduces delinquency rates, and enhances customer experience in loan management.

Financial Fraud Detection

Machine learning algorithms enable the detection of complex patterns and anomalies within
large volumes of financial data, allowing for the identification of fraudulent transactions, activities, or behaviour. By leveraging supervised, unsupervised, and semi-supervised learning techniques, machine learning models can learn from historical data and continuously adapt to new fraud patterns, enhancing their accuracy and effectiveness over time. The use of machine learning in fraud detection offers the potential to significantly reduce false positives, improve detection rates, and minimize the financial losses associated with fraudulent activities, thus safeguarding the integrity of financial systems and enhancing trust among stakeholders. A machine learning model for detecting financial fraud is given below.

**Experiment**

Here we use Financial Payment Services Fraud Data available on kaggle (https://www.kaggle.com/datasets/arunavakrchakraborty/financial-payment-services-fraud-data). Machine learning is employed in financial fraud detection to effectively identify and flag illegal attempts, particularly concerning substantial transfers between accounts. In this context, the business model focuses on monitoring and controlling large-scale transfers, and it specifically targets transactions that exceed 200,000 in a single transfer. By utilizing machine learning algorithms, the system can analyze vast amounts of transactional data, swiftly identifying suspicious activities that deviate from established norms. This proactive approach enables the timely detection of potentially fraudulent transactions, allowing for swift intervention and prevention of financial crimes. This dataset contains information about a simulated financial transaction system. Each unit of time, referred to as a "step," corresponds to one hour in the real world. The dataset covers a 30-day simulation, comprising a total of 744 steps.

The dataset includes several columns that provide details about each transaction. The "type" column categorizes the transaction as CASH-IN, CASH-OUT, DEBIT, PAYMENT, or TRANSFER. The "amount" column indicates the transaction amount in the local currency.

**Classifier**

The Naive Bayes classifier is a machine learning algorithm that uses probability to classify data. It assumes that the features in the data are independent of each other. In financial payments services fraud detection, the Naive Bayes classifier helps determine if a transaction is fraudulent or legitimate based on its observed features. It is computationally efficient and can handle large volumes of transactions in real-time, making it valuable for quick and accurate fraud detection.

**Confusion Matrix**
To assess the performance of the classification model on the dataset, a confusion matrix and classification report have been generated. The confusion matrix provides a breakdown of the model's predictions, showing the number of true positives, true negatives, false positives, and false negatives.

Figure 1 Confusion Matrix for Fraud Prediction

The classification report provides metrics such as accuracy, precision, recall, and F1-score, which offer a more comprehensive evaluation of the model's performance. The classification accuracy of Naive Bayes is 99.42%.

<table>
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<th></th>
<th>precision</th>
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<th>f1-score</th>
<th>support</th>
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Figure 2 Classification Report

Impact of AI on Financial Markets

The impact of artificial intelligence (AI) on financial markets has been significant and far-reaching. AI technologies have revolutionized various aspects of financial markets, including trading, risk management, and decision-making processes. AI algorithms and machine learning techniques can analyze vast amounts of financial data in real-time, enabling faster and more accurate predictions and insights. This has led to the emergence of algorithmic trading, where AI-powered systems execute trades based on predefined rules and market conditions. AI also plays a crucial role in detecting anomalies and fraudulent activities, enhancing security and regulatory compliance in financial markets. Moreover, AI-powered chatbots and virtual assistants are transforming customer interactions and improving customer service in the financial industry. Overall, AI has the potential to increase efficiency, reduce costs, and drive innovation in financial markets, making it a transformative force in the industry.
Major risks and challenges

While artificial intelligence (AI) brings numerous benefits to financial markets, there are also major risks and challenges associated with its implementation. One significant risk is the potential for algorithmic biases, where AI systems may unintentionally discriminate against certain individuals or groups due to biased training data or flawed algorithms. This can have negative consequences, such as unfair lending practices or biased investment decisions. Another challenge is the complexity and opacity of AI systems, making it difficult to interpret and explain their decision-making processes. This lack of transparency raises concerns regarding accountability, regulatory compliance, and potential systemic risks. Additionally, cybersecurity threats and data privacy issues pose significant risks, as AI systems rely on vast amounts of sensitive financial data. Ensuring the security and privacy of this data is crucial to prevent unauthorized access and misuse. Lastly, the rapid advancement of AI technology requires constant monitoring and adaptation of regulatory frameworks to keep pace with emerging risks and challenges. Striking a balance between innovation and risk management is vital to effectively harness the benefits of AI in financial markets while mitigating potential pitfalls.

Conclusion

In conclusion, intelligent automation is transforming the financial services sector by leveraging advanced technologies such as AI, ML, RPA, and NLP. This paradigm shift addresses challenges faced by financial organizations, including rising costs, compliance pressures, and the need for improved customer experiences. By automating tasks, enhancing operational efficiency, and enabling focus on value-added activities, intelligent automation offers benefits such as cost reduction, better decision-making, and enhanced customer satisfaction. However, it is crucial to address considerations regarding data security, privacy, and ethics in the implementation of intelligent automation.

Embracing intelligent automation requires upskilling the workforce and fostering a culture of innovation within financial institutions. This will position them for sustainable growth and competitive advantage in the evolving landscape. The applications of intelligent automation in financial services are wide-ranging, including risk management and compliance, customer onboarding and account management, investment and wealth management, loan and credit processing, and financial fraud detection.
Intelligent automation enables automated risk assessments, fraud detection, regulatory compliance, and reporting, improving the efficiency and accuracy of these processes. It streamlines customer onboarding, account management, and self-service capabilities, enhancing the customer experience and reducing operational costs. In investment and wealth management, intelligent automation provides robo-advisory services, automated trading, and real-time market analysis for informed decision-making. It also automates loan origination, credit scoring, and loan servicing processes, improving efficiency and customer satisfaction. Additionally, intelligent automation helps in detecting and preventing financial fraud through machine learning algorithms.

The impact of AI on financial markets has been significant, revolutionizing trading, risk management, and decision-making processes. AI algorithms analyze vast amounts of financial data in real-time, enabling faster and more accurate predictions and insights. Algorithmic trading powered by AI systems has emerged, executing trades based on predefined rules and market conditions.

While the benefits of intelligent automation in the financial services sector are substantial, it is essential to address potential risks and ethical considerations. Data security and privacy must be prioritized, ensuring compliance with regulations and maintaining customer trust. Ethical considerations regarding transparency, fairness, and accountability in the use of AI technologies should also be addressed.

**Conclusion**

In conclusion, intelligent automation offers immense potential for financial institutions to transform their operations, improve efficiency, and deliver better customer experiences. By embracing intelligent automation while addressing associated challenges, financial institutions can position themselves for success in the evolving landscape of the financial services sector.

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Leveraging Banking 4.0 with AI

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Abstract

This research paper explores the integration of artificial intelligence (AI) technologies in the context of Banking 4.0, a new paradigm of banking systems characterized by digitalization and customer-centricity. The paper examines the various applications of AI in Banking 4.0, including AI-powered customer service, personalized banking experiences, fraud detection, risk management, and automation of routine tasks. It discusses the benefits and challenges of leveraging AI in the banking sector and presents case studies illustrating successful AI implementations. The paper concludes by highlighting the transformative potential of AI in Banking 4.0, emphasizing the need for responsible adoption to enhance customer experiences and optimize banking operations.

Keywords: Banking 4.0, Artificial Intelligence (AI), Digitalization, AI-powered customer service, Personalized banking experiences, Fraud detection, Risk management, Automation

Introduction

The banking industry is undergoing a significant transformation fueled by technological advancements and changing customer expectations. The emergence of Banking 4.0, characterized by digitalization and customer-centricity, has opened up new avenues for innovation and disruption in the financial sector. One of the key technologies driving this transformation is artificial intelligence (AI). AI has the potential to revolutionize banking operations, enhance customer experiences, and improve risk management and security measures.

Artificial intelligence (AI) has quickly gained ground as a potent technology that can carry out a variety of activities that previously required human intelligence. AI is already being used in several sectors, including healthcare, banking, manufacturing, and retail, and it is anticipated that it will change how businesses run in the future. This essay seeks to give a general review of artificial intelligence, including its background, uses, difficulties, and possibilities for the future.

Since its establishment as an academic field in 1956, artificial intelligence has gone through multiple waves of optimism, disappointment, and funding loss, followed by new strategies, success, and renewed financing. In AI research, a variety of approaches have been explored and abandoned, including formal logic, huge knowledge libraries, brain modeling, and mimicking human problem-solving. The discipline has been extensively dominated in the first twenty years of the twenty-first century by machine learning, which is largely statistical and mathematical. Many challenging issues have been successfully resolved using this method in both business and academia.

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Different subfields of artificial intelligence research focus on specific goals and the use of specific tools. The traditional goals of artificial intelligence research include reasoning, knowledge representation, planning, learning, natural language processing, perception, and the ability to move and manipulate objects. General intelligence is among the long-term goals. Artificial neural networks, formal logic, search, and mathematical optimization, as well as methodologies based on statistics, probability, and economics have all been modified and combined by AI researchers to address these issues. AI also draws from computer science, psychology, linguistics, philosophy, and many other fields.

The integration of AI in Banking 4.0 offers a range of opportunities for banks to stay competitive and meet the evolving needs of their customers. This research paper aims to explore the concept of "Leveraging Banking 4.0 with AI" and shed light on the potential benefits, challenges, and implications of this integration.

The paper begins by providing a brief overview of the evolution of banking systems, leading up to the current phase of Banking 4.0. It highlights the significance of this shift, emphasizing the need for banks to embrace digitalization and customer-centric approaches to stay relevant in the modern era.

Next, the focus turns to AI and its applications in the banking sector. AI technologies, such as machine learning, natural language processing, and predictive analytics, offer immense potential to transform various aspects of banking operations. From improving customer service through AI-powered chatbots and virtual assistants to enabling personalized banking experiences and recommendations, AI can enhance customer engagement and satisfaction.

Furthermore, the paper examines how AI can contribute to risk management and security in Banking 4.0. AI algorithms can assist in fraud detection and prevention, enabling banks to identify suspicious activities and protect customer assets. Additionally, AI-based risk assessment models can enhance credit scoring, loan underwriting, and investment decision-making processes, improving overall risk management practices.

However, along with the potential benefits, there are also challenges and ethical considerations associated with leveraging AI in banking. Issues such as data privacy, algorithmic bias, and regulatory compliance need to be carefully addressed to ensure responsible AI implementation.

To provide practical insights, the paper includes case studies that highlight successful AI implementations in banking institutions. These examples demonstrate real-world applications of AI, showcasing how it has been effectively leveraged to enhance customer service, streamline operations, and mitigate risks.

Finally, the paper concludes by discussing the future outlook of leveraging AI in Banking 4.0. It explores potential developments and trends, such as the impact of AI on the workforce and the broader societal implications. The conclusion emphasizes the importance of responsible AI adoption, highlighting the need for banks to strike a balance between innovation, customer-centricity, and ethical considerations.
Banking 4.0: Transforming the Financial Landscape

Key Characteristics of Banking 4.0

The key characteristics of Banking 4.0 are as follows:

- **Chatbots**: Banks utilize AI-powered chatbots to offer assistance and support to customers around-the-clock. They can carry out transactions as well as respond to questions and provide information about products.

- **Fraud detection**: AI technologies can help banks prevent fraud by analyzing vast volumes of data and seeing suspicious patterns that indicate fraudulent activity.

- **Drive thru Banking**: Some banks offer a service called drive-thru banking that enables customers to conduct transactions without getting out of their cars. It's comparable to a drive-thru at a fast-food restaurant, where patrons can place their orders and get their meals without getting out of their cars.

- **Customer relationship management**: AI algorithms are able to analyze customer data to deliver personalized product recommendations, enhancing client loyalty.

- **Risk management**: AI can analyze data to find and decrease potential dangers, assisting banks in decision-making and lowering their risk exposure.

- **Anti-Money Laundering (AML)**: AI systems can identify questionable transactions and alert them, which enables banks to abide by AML rules.

- **Loan Processing**: AI algorithms are able to examine a variety of data points to give more accurate and fair credit scores for people and businesses, which will enhance the loan processing and underwriting procedures.

- **Mobile Banking**: Customers can access their accounts and complete transactions using mobile devices, such as smartphones or tablets, thanks to the mobile banking service offered by banks. Because it is so convenient and simple to use, mobile banking has grown in popularity over the past few years. Some feature of mobile banking are:-: transfer of money, Depositing cheques, Card management etc.
- **Digitalization:** Banking 4.0 is characterized by a comprehensive digital transformation of banking systems and processes. Traditional brick-and-mortar branches are being replaced or supplemented by digital channels, allowing customers to access banking services anytime and anywhere.

- **Customer-Centricity:** Banking 4.0 places a strong emphasis on understanding and meeting customer needs. Banks aim to provide personalized experiences, tailored products and services, and seamless interactions across multiple touchpoints to enhance customer satisfaction and loyalty.

- **Connectivity:** Banking 4.0 leverages connectivity to create a seamless ecosystem. It involves integrating various channels and platforms to ensure a consistent and interconnected customer experience. This includes integrating online banking, mobile apps, social media, and other digital platforms.

- **Data-Driven Decision Making:** Banking 4.0 relies heavily on data and analytics to drive decision-making processes. Banks gather and analyze vast amounts of customer data to gain insights into customer behavior, preferences, and needs. This data is used to create personalized offerings, improve risk management practices, and enhance operational efficiency.

- **Agile and Collaborative Culture:** Banking 4.0 embraces an agile and collaborative approach to adapt quickly to changing customer demands and market trends. Banks foster a culture of innovation and collaboration, encouraging cross-functional teams and partnerships with fintech companies and other industry players to deliver innovative solutions.

- **Open Banking:** Banking 4.0 promotes the concept of open banking, where banks open up their application programming interfaces (APIs) to third-party developers. This allows for the creation of new financial services, innovative products, and improved customer experiences through collaboration with external parties.

- **Automation and Artificial Intelligence (AI):** Automation and AI technologies play a crucial role in Banking 4.0. Routine and manual tasks are automated to improve operational efficiency, reduce costs, and enhance accuracy. AI is used for customer service through chatbots and virtual assistants, risk management, fraud detection, and personalized product recommendations.
• **Enhanced Security and Privacy**: With the digitalization of banking services, security and privacy become paramount. Banking 4.0 focuses on implementing robust security measures, including advanced encryption, biometric authentication, and AI-powered fraud detection systems, to ensure the protection of customer data and transactions.

• **Regulatory Compliance**: Banking 4.0 operates within a strict regulatory framework. Banks need to comply with regulations such as data protection laws, anti-money laundering (AML) regulations, and know your customer (KYC) requirements. Technology solutions are implemented to facilitate compliance and streamline regulatory processes.

These key characteristics collectively define the essence of Banking 4.0, transforming the banking industry to meet the evolving needs of customers in the digital age.

**Technological advancements driving Banking 4.0**

Technological advancements play a pivotal role in driving the transformation of Banking 4.0. The following technological developments are key drivers of this paradigm shift:

**Cloud Computing**: Cloud computing enables banks to store, manage, and process large volumes of data securely and efficiently. It provides scalable infrastructure and computing resources, allowing banks to leverage advanced analytics, AI algorithms, and real-time data processing capabilities.

**Big Data Analytics**: The proliferation of data in the digital age has led to the emergence of big data analytics in banking. Banks can leverage advanced analytics tools and techniques to extract valuable insights from vast amounts of structured and unstructured data. These insights drive data-driven decision making, customer segmentation, risk analysis, and predictive modeling.

**Internet of Things (IoT)**: IoT devices are becoming increasingly prevalent in the banking sector. Banks can leverage IoT devices for asset tracking, real-time monitoring of financial transactions, and customer behavior analysis. IoT data can be integrated with other sources to provide a comprehensive understanding of customer needs and preferences.
Artificial Intelligence (AI) and Machine Learning (ML): AI and ML technologies have revolutionized the banking industry. AI-powered chatbots, virtual assistants, and voice recognition systems enable personalized customer interactions and efficient self-service options. Machine learning algorithms are used for credit scoring, fraud detection, risk assessment, and anomaly detection, improving accuracy and efficiency in decision-making processes.

Robotic Process Automation (RPA): RPA involves the use of software robots to automate repetitive and rule-based tasks. In Banking 4.0, RPA is employed to streamline processes such as customer onboarding, loan application processing, and regulatory compliance. This automation reduces manual errors, enhances operational efficiency, and improves turnaround times.

Blockchain Technology: Blockchain technology offers secure and transparent transaction processing and data sharing. Banks can leverage blockchain for secure and efficient cross-border payments, smart contracts, digital identity verification, and supply chain financing. Blockchain ensures data integrity, reduces intermediaries, and enhances trust among parties involved in financial transactions.

Biometric Authentication: Biometric authentication methods, such as fingerprint scanning, facial recognition, and voice recognition, provide enhanced security and convenience for banking transactions. These technologies replace traditional PINs and passwords, offering robust authentication measures and reducing the risk of identity theft and fraud.

Open Application Programming Interfaces (APIs): Open APIs enable banks to connect and integrate with third-party developers, fintech companies, and other external partners. This fosters collaboration, innovation, and the creation of new financial services and products. Open APIs facilitate the development of personalized and interconnected banking experiences for customers.

Key benefits and opportunities of Banking 4.0

Banking 4.0 offers numerous benefits and opportunities for banks and their customers.

- **Enhancing Customer Experience:** AI-powered chatbots and virtual assistants offer round-the-clock customer service, respond to inquiries, give product information, and complete transactions, enhancing customer satisfaction and loyalty.
• **Increasing Efficiency**: AI-powered solutions automate routine jobs like data entry, document processing, and compliance checks, cutting down on the time and expense involved in these procedures.

• **Cost-cutting**: AI-powered solutions can assist banks in cutting costs by automating procedures, reducing errors, and boosting productivity.

• **Increasing Accuracy**: AI systems can swiftly and accurately analyze enormous amounts of data, assisting banks in making better informed decisions and lowering the possibility of mistakes.

• **Increasing Security**: AI-powered systems can identify possible dangers, detect and prevent fraud, and make sure that regulations are followed.

• **Risk management**: AI can analyze data to find and address potential problems, assisting banks in making better decisions and lowering their risk exposure.

• **Offering Personalization**: AI systems may analyze consumer data to present personalized product recommendations, enhancing customer loyalty.

• **Enhanced Customer Experience**: Banking 4.0 focuses on providing personalized, seamless, and convenient experiences for customers. Through digital channels, AI-powered chatbots, and personalized recommendations, banks can deliver tailored services, improve self-service options, and offer 24/7 accessibility, ultimately enhancing overall customer satisfaction.

• **Improved Efficiency and Cost Reduction**: Automation and digitization in Banking 4.0 streamline processes, reducing manual errors and increasing operational efficiency. Tasks such as customer onboarding, loan processing, and compliance can be automated, resulting in faster turnaround times, lower costs, and improved resource allocation.

• **Data-Driven Decision Making**: Banking 4.0 leverages data analytics and AI technologies to gain valuable insights into customer behavior, preferences, and needs. This data-driven approach enables banks to make informed decisions, develop targeted marketing campaigns, and offer personalized product recommendations, leading to increased cross-selling and up-selling opportunities.

• **Advanced Risk Management**: Banking 4.0 integrates AI-powered algorithms and predictive analytics to enhance risk management practices. Banks can leverage real-time data analysis for fraud detection, identify patterns and anomalies, and mitigate potential risks. This proactive approach enables banks to strengthen their risk management frameworks and protect customer assets.
• **Collaboration and Innovation.** Banking 4.0 encourages collaboration between traditional banks, fintech companies, and technology providers. Open APIs and partnerships allow for the creation of innovative financial services, such as payment apps, robo-advisory platforms, and peer-to-peer lending. Collaboration fosters innovation, expands service offerings, and improves customer access to a broader range of financial products and services.

• **Financial Inclusion.** Banking 4.0 can contribute to financial inclusion by reaching unbanked and underbanked populations through digital channels. Mobile banking, digital wallets, and alternative credit scoring models enable individuals and businesses with limited access to traditional banking services to participate in the financial system and access financial resources.

• **Regulatory Compliance and Security.** Banking 4.0 emphasizes compliance with regulatory requirements and enhances security measures. Advanced authentication methods, encryption techniques, and blockchain technology ensure secure transactions and protect customer data. Additionally, digitized processes facilitate regulatory compliance, reducing the risk of errors and non-compliance.

• **Operational Resilience.** Banking 4.0 enables banks to build robust and resilient operational frameworks. Cloud computing, data backups, and disaster recovery mechanisms ensure business continuity and minimize downtime in the event of disruptions or crises. Banks can quickly adapt to changing circumstances, ensuring uninterrupted service to customers.

**Challenges**

1. **AI IN BANKING SECTOR**

2. **WHY AI IS USED IN BANKING SECTOR**

3. **Challenges of AI IN BANKING SECTOR**

• **Data security and privacy:** These issues are raised as a result of the massive amounts of client data that AI systems collect and analyze. The protection of customer data and adherence to data privacy laws by AI systems are responsibilities of banks.

• **Discrimination and bias:** If AI systems are educated on biased data, unjust or discriminatory practices may result. Banks must guarantee that AI systems are impartial and that their judgements are clear and comprehensible.

• **Costs of Implementation:** In order to fully reap the rewards of AI, banks may need to invest...
in new infrastructure and employee training in addition to the implementation costs of AI-powered systems.

- **Integration with Legacy Systems:** The legacy systems used by many banks are incompatible with modern AI techniques. To effectively integrate AI into their operations, banks may need to improve their current systems or invest in new ones.

- **Human Resources and Training:** Banks must make sure that its staff members have the knowledge and experience essential to operate AI technologies. Concerns about job loss as a result of the automation of specific tasks may also exist.

While the adoption of AI in Banking 4.0 presents numerous opportunities, it also comes with certain challenges that need to be addressed. The key challenges in adopting AI in Banking 4.0 include:

- **Data Quality and Availability:** AI algorithms heavily rely on high-quality, relevant, and reliable data. Banks need to ensure that their data infrastructure is capable of capturing and storing the necessary data. Additionally, data silos and inconsistencies across different systems can hinder effective AI implementation. Banks must invest in data governance practices to ensure data accuracy, completeness, and accessibility.

- **Data Privacy and Security:** AI implementation requires the use of sensitive customer data. Banks must adhere to strict data protection regulations and ensure robust security measures to safeguard customer information. There is a need to strike a balance between leveraging customer data for AI applications and respecting privacy concerns. Compliance with regulations such as the General Data Protection Regulation (GDPR) is crucial.

- **Ethical Considerations and Algorithmic Bias:** AI algorithms can inadvertently introduce biases if trained on biased datasets. This can result in discriminatory outcomes, affecting certain customer segments. Banks need to implement measures to address algorithmic bias, ensure fairness, and promote ethical AI practices. Transparency in AI decision-making processes is crucial for building trust with customers.

- **Talent and Skill Gap:** Implementing AI technologies requires a skilled workforce capable of developing, implementing, and managing AI solutions. There is a shortage of AI talent in the banking industry, making it challenging for banks to find and retain skilled professionals. Banks need to invest in reskilling and upskilling their workforce to bridge the skill gap and fully harness the potential of AI.
• **Regulatory Compliance and Legal Implications:** The use of AI in banking raises regulatory and legal concerns. Banks need to ensure compliance with regulations governing data usage, privacy, security, and anti-discrimination practices. As AI continues to evolve, regulatory frameworks may need to adapt to address emerging challenges and risks associated with AI technologies.

• **Change Management and Cultural Shift:** Implementing AI technologies requires a cultural shift within banks. There may be resistance to change and concerns among employees about job security. Banks must invest in change management strategies, communicate the benefits of AI adoption, and provide training and support to employees to embrace and leverage AI effectively.

• **Integration Challenges:** Integrating AI technologies with existing legacy systems can be complex and time-consuming. Banks may face technical challenges in data integration, system interoperability, and scalability. It requires careful planning, architectural considerations, and collaboration with technology vendors to ensure a seamless integration of AI solutions.

Addressing these challenges is crucial to ensure successful adoption and implementation of AI in Banking 4.0. Banks need to develop robust strategies, establish strong governance frameworks, foster a culture of trust and transparency, and collaborate with regulatory bodies to navigate the evolving landscape of AI in the banking industry.

I. **Future Scope OF AI IN BANKING SECTOR**

The potential impact of AI on the banking industry is enormous since it has the power to revolutionize how banks conduct business and interact with their clients. Here are some potential directions for AI development in the banking industry in the future:

• **Personalization:** AI can assist banks in giving their customers personalized recommendations and financial advice based on their spending habits and financial objectives. Customer loyalty and experience can both be enhanced by this.

• **Risk management:** By analyzing enormous volumes of data and spotting patterns and trends, AI can assist banks in identifying and reducing potential hazards. This can lower the possibility of errors and help banks make more informed judgments.

• **Fraud Detection:** By analyzing vast volumes of data and seeing suspicious trends, AI can assist banks in spotting fraudulent actions. This can lessen fraud-related losses and safeguard customers' finances.
• **Customer service:** AI-powered chatbots and virtual assistants may conduct transactions, respond to questions, and provide product information around-the-clock. This can enhance the customer experience and shorten customer service wait times.

• **Compliance and Regulation:** AI can help banks comply with regulatory requirements by automating compliance processes and ensuring that all transactions follow regulatory standards.

• **Cybersecurity:** By analyzing massive volumes of data and identifying potential hazards, AI can assist banks in detecting and responding to cyber threats. Data breaches can be avoided and consumer data can be protected in this way.

The future of AI in the banking sector holds immense potential for further innovation and transformation. The following areas showcase the future scope of AI in banking:

• **Advanced Customer Insights:** AI will continue to play a pivotal role in understanding customer behavior, preferences, and needs. Banks can leverage AI-powered analytics to gain deeper insights into customer sentiments, allowing for more accurate segmentation and personalized offerings. Predictive analytics will enable banks to anticipate customer needs, recommend suitable products, and provide proactive financial advice.

• **Hyper-Personalized Experiences:** AI advancements will enable banks to deliver hyper-personalized experiences to customers. By leveraging AI algorithms, banks can offer tailored product recommendations, personalized pricing, and customized offers based on individual customer profiles. Virtual assistants and chatbots will become more sophisticated, providing personalized financial guidance and real-time assistance.

• **Augmented Decision Making:** AI will continue to enhance decision-making processes within banks. Advanced AI algorithms will aid in credit risk assessment, investment recommendations, and loan underwriting. Banks can leverage AI-powered tools to automate routine decision-making tasks, allowing human experts to focus on more complex and strategic decisions.

• **Reinforcement Learning and Autonomous Systems:** The future of AI in banking may see the emergence of reinforcement learning techniques and autonomous systems. Banks can utilize reinforcement learning algorithms to optimize trading strategies, portfolio management, and risk control. Autonomous systems may be developed to automate regulatory compliance, fraud detection, and cybersecurity measures.
• **Natural Language Processing (NLP) Advancements:** NLP will continue to evolve, enabling more sophisticated and context-aware interactions between customers and banking systems. Voice-activated banking services will become more prevalent, with customers being able to perform transactions, access account information, and receive personalized recommendations through voice commands.

• **Enhanced Fraud Detection and Security:** AI-powered fraud detection systems will become more advanced, capable of identifying and preventing increasingly sophisticated fraudulent activities. Machine learning algorithms will continuously learn and adapt to new fraud patterns, ensuring robust security measures. Biometric authentication techniques, such as facial recognition and voice recognition, will enhance security and reduce the risk of identity theft.

• **Integration of AI with Internet of Things (IoT):** The integration of AI with IoT devices will open up new opportunities in the banking sector. Banks can utilize data from IoT devices, such as smart homes and wearable devices, to gain insights into customer lifestyles and financial needs. This data can be leveraged to offer personalized financial services, insurance products, and risk management solutions.

• **Ethical AI and Responsible Adoption:** As AI continues to evolve, there will be a growing emphasis on ethical AI practices and responsible adoption. Banks will need to ensure transparency, fairness, and accountability in AI decision-making processes. Regulatory frameworks will evolve to address the ethical implications of AI, ensuring the protection of customer rights and promoting responsible AI implementation.

In conclusion, the future of AI in the banking sector is poised for significant advancements. AI will continue to drive innovation, enhance customer experiences, improve decision making, and strengthen security measures. Banks that embrace AI technologies and stay at the forefront of these advancements will have a competitive advantage, delivering personalized and efficient banking services in the evolving digital landscape.

**Literature review**

This research paper explores the integration of Artificial Intelligence (AI) in the context of banking 4.0 in the recent years. The banking sector is undergoing noteworthy change at a quick pace. This paper aims to study the influence of AI in the banking sector. Artificial intelligence is one of the most powerful technologies in the banking sector. AI has been applied in banking in fields such as core banking, operational performance, customer support and analytics. This new banking services by modern day banks is helping them to grow and expand. It has become more convenient to do daily transactions such as money transfer, payments etc. AI is enabling increased
penetration of the banking system, increased cost effectiveness and also helps in fraud detection. This paper also discusses the challenges of AI in banking sector such as data privacy and security, ethical considerations, talent and skill gap. This paper concludes by highlighting the transformative potential of AI in banking sector and the responsibilities of adoption of new technologies to enhance the customer experience and optimize the banking operations.

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Determining the Most Appropriate Cloud Computing Technology with Multi-Criteria Decision Making Methods

Hakan Murat ARSLAN

Abstract

Businesses have to switch to cloud computing technology in terms of the security and continuity of the data they obtain. However, it has been determined that every business does not use scientific methods to determine the most effective cloud computing provider suitable for its own structure and core values. Rather, they choose the technology that rival companies mostly choose. However, with multi-criteria decision making methods, the most suitable cloud computing technology can be determined within the framework of the determined criteria of the businesses. In this direction, in the study, the most suitable enterprise was determined by AHP and TOPSIS methods, considering five criteria among five different cloud computing provider companies operating in the international context. The study is expected to fill an important gap in the literature on determining the most suitable cloud computing technology with MCDM methods. The universe of the study is the production enterprises operating in Düzce, needing cloud computing technology and having more than 250 employees. In this context, the managers of the enterprises were accepted as decision makers. As a result of the analyzes carried out, Amazon web service ranked first and Microsoft Azure service ranked second. The results of the analysis were shared with the authorities of the relevant businesses.

Keywords: Cloud Computing Technology, Multi-Criteria Decision Making Methods, AHP Method, TOPSIS Method

JEL Codes: M11, C02, C51, C61

1. INTRODUCTION

Today, since businesses deal with a lot of data, it becomes very difficult to store, back up and re-find relevant data when necessary. The development of information technologies has also changed the competitive strategies of enterprises among themselves. Because of these things, businesses need to increase their information technology investments. One of the most important of these investments is cloud computing technologies.

Cloud computing is a secure infrastructure that enables data to be accessed anytime, anywhere. This technology is a restricted technology that can be used within the authorization...
of access over the internet. Cloud computing technologies; It is examined under 3 models: IaaS (Infrastructure as a Service), PaaS (Platform as a Service), and SaaS (Software as a Service).

In our age, cloud computing has become a necessity for all kinds of businesses. It provides many conveniences and advantages not only for large enterprises, but also for medium and small-sized enterprises. Businesses need to switch to cloud computing to increase their efficiency, make their infrastructure more reliable and be more manageable. Since there are many companies providing cloud computing services around the world, businesses find it difficult to choose cloud computing services. In this direction, in this study, it is aimed to help the relevant enterprises to make the right and on-site decision in the selection of the most suitable, most effective, most efficient and minimum budget cloud computing service.

What makes the study different and unique from other studies is the limited number of studies in the literature on the use of MCDM techniques in the selection of cloud computing technologies. In the light of the relevant literature and the opinions of the decision makers, the criteria and alternatives of the study were determined. Then, the weights of the criteria of the decision problem were determined by the AHP method, and the priority order of the alternatives was carried out by the TOPSIS method.

In the other titles of the study; literature review, methodology part, interpretation and evaluation of the findings are included.

2. LITERATURE REVIEW

2.1. Cloud Computing and Related Studies

This rapid development in technology has led to many different changes. With this change, the competition between businesses has been kept alive and the competition has gained a different dimension. The emergence of big data, Internet of Things, Industry 4.0 concepts has affected many businesses in terms of information security. This competition between businesses has required that the collected data be stored securely and used correctly. Along with these developments, the necessity of being fast in communication with both the employees within the companies and their customers has been revealed. This requirement can only be achieved with the internet and its technologies. Businesses have turned to virtual storage methods to store, access and use data quickly. These storage areas have attracted the attention of businesses with
ease of data use, fast accessibility and low cost (Uslu et al., 2019: 16).

Cloud computing is a system in which a payment model is applied according to the use of businesses in which all information resources are offered from the internet. In this system,
the customer does not need to manage his own information technology infrastructure and more information power and users can be added according to the need (Uslu et al., 2019: 18).

With the development of Industry 4.0, businesses have realized how important information is. The Internet of Things enables businesses to collect and analyze data through sensors placed at strategic points. The more data the business can access, the more accurate results the system that will process it provides. All of these processes take place thanks to cloud computing. The power of information has come to the fore even more with the emergence of the internet (Ivan and Gordana, 2017).

Data storage service is known as cloud computing providers whose software applications are accessed from the internet. Cloud computing consists of three building blocks: PaaS (Platform Service), SaaS (Software Service) and IaaS (Server Infrastructure Service) (Do Chung and Seo, 2015).

The solution process of complex decision problems is not always clear. The factors affecting decision making of such problems do not occur in a hierarchical manner due to their internal and external dependencies. Interdependent criteria are evaluated between clusters. The Analytical Network Process method has been proposed to be used in problems where this shape creates internal and external dependencies between criteria and alternatives (Şah, 2010).

### 2.2. Studies with MCDM Methods

In their study, (Çakır and Karabıyık 2017) aimed to determine the most suitable cloud computing service providers that operate large-scale data centers and provide services for storage. In the study, the importance levels of the criteria were determined using the SWARA method. The most suitable alternative was determined by applying the COPRAS method within the framework of the determined criteria. When we look at the order of importance of the criteria, it is concluded that the criterion with the highest level of importance is “Security” and the criterion with the lowest level of importance is “Customer Service”. Among the alternatives, (Google Drive) is the best cloud computing service provider, second (Yandex. Disk) and third (iCloud Drive).

(Keskin et al., 2020) in their study, aimed to benefit from the criteria that are effective in choosing a cloud service provider for a bank, to choose the appropriate alternative and to make the most accurate decision in this regard. In the study, four alternatives were presented and a total of five criteria and eight sub-criteria that were important for the bank were
determined. An application was made with these important criteria and sub-criteria and IBM Cloud (IB) was found as the most suitable alternative. In the application, Analytical Hierarchy
Process (AHP), Technique for Order Preference by Similarity To An Ideal Solution (TOPSIS) and Analytical Network Process (AAS) methods were used. In addition, cloud computing services were used throughout the preparation process of this study (Keskin et al., 2020).

In the study of (Uzan, 2019) a mixed research model was used in which qualitative and quantitative methods were used together. As a result of this research, the selection of the software company of the airline company information technology department, after determining the weights of the criteria with AHP, the supplier company was selected by using TOPSIS, VIKOR, ARAS and MOORA methods together. MCDM techniques were analyzed both with Excel and with the “Decision Star” package program developed within the scope of the thesis.

(Yıldırım and Önyay, 2013) in this study, based on a report written on cloud technology, the services provided by five companies were ranked based on the criteria evaluated in the report. The weights of the criteria were determined with the fuzzy AHP method, and the rankings were made with the MOORA method.

2.3. Multi Criteria Decision Making Techniques

MCDM methods help to choose the most accurate and best decision alternatives according to abstract and concrete criteria (Cho, 2003: 1099). It is used to select or rank one or more alternatives consisting of alternatives with different characteristics of conflicting criteria.

Multi-Criteria Decision Making (MCDM) is a set of methods that form a sub-branch of Decision Science and incorporate different approaches. MCDM is based on the process of modeling the decision process according to criteria and analyzing the decision maker in a way that will maximize the benefit to be obtained at the end of the process (Yıldırım and Önyay, 2013).

2.3.1. AHP (Analytical Hierarchy Process) Method

The Analytical Hierarchy process, developed by Thomas L. Saaty, is one of the multi-criteria decision-making methods used to create a different perspective on the solution stages of complex problems with each other and to make the process simpler. In the hierarchical structure, firstly, what the aim of the problem is to be achieved, then the main criteria and sub-criteria, and finally the determined alternatives. By applying the pairwise comparison matrix,
Saaty's 1-9 importance scale is applied and the ideas of the decision makers are taken into account (Aydın et al., 2009: 72-75).

2.4. TOPSIS Method

TOPSIS method, which was developed by Yoon and Hwang in 1981, was created with the logic of reaching the positive ideal solution in the closest way and the negative ideal solution in the farthest way. It is one of the multi-criteria decision making techniques. (Monjezi et al., 2010: 2). The TOPSIS method is one of the most frequently used methods in the literature due to its advantages such as easy understanding and ease of operation (Çakır and Perçin, 2013: 452).

3. METHODOLOGY

3.1. Purpose of The Study

With the intense transition to cloud computing in businesses today, businesses have started to search for cloud computing providers. Choosing a cloud computing provider without doing scientific research is quite risky. It poses various security problems such as data theft. This study has been carried out in order to help the relevant enterprises in the selection of the most suitable cloud computing service provider company.

3.2. Scope of The Study

In this study; Information companies operating in Düzce, using cloud computing technology professionally and with more than 250 employees, were examined within the scope. Managers of these enterprises have been accepted as decision makers. With the help of decision makers and relevant literature, criteria and alternatives were determined. The resulting decision problem was evaluated with the integrated structure of AHP and TOPSIS methods. Five criteria and five alternatives were determined in the study.

3.3. Data Collection Method of the Study

In the study of selecting the most suitable cloud computing provider that will guide the determined businesses and create awareness, the following criteria and alternatives have been determined by conducting a literature review and interviewing the decision makers face to face.
Criteria;
K1: Security
K2: CPU usage
K3: Memory Usage
K4: Warranty
K5: Cost

Alternatives;
A1: Amazon website
A2: Google Cloud
A3: IBM Cloud
A4: Microsoft Azure
A5: SAP

4. FINDINGS AND INTERPRETATION

4.1. Expressing the Basic Data Set

Five criteria have been determined that will be effective in determining the priorities of the alternatives in the relevant decision problem. The data were normalized to show the value of each alternative according to each criterion and expressed in the basic data table (Table 1). Values of criteria such as flexibility, quality and reliability were created by decision makers' scores out of 100.

Table 1. Basic Data Set

<table>
<thead>
<tr>
<th></th>
<th>Security</th>
<th>PU Usage</th>
<th>Memory Usage</th>
<th>Warranty Period</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amazon Web</td>
<td>0,416</td>
<td>0,413</td>
<td>0,388</td>
<td>0,372</td>
<td>0,062</td>
</tr>
<tr>
<td>Google Cloud</td>
<td>0,132</td>
<td>0,123</td>
<td>0,119</td>
<td>0,151</td>
<td>0,193</td>
</tr>
<tr>
<td>IBM Cloud</td>
<td>0,131</td>
<td>0,164</td>
<td>0,148</td>
<td>0,163</td>
<td>0,199</td>
</tr>
<tr>
<td>Microsoft Azure</td>
<td>0,263</td>
<td>0,245</td>
<td>0,279</td>
<td>0,245</td>
<td>0,098</td>
</tr>
<tr>
<td>SAP</td>
<td>0.058</td>
<td>0.054</td>
<td>0.067</td>
<td>0.069</td>
<td>0.448</td>
</tr>
</tbody>
</table>
4.2. Application of AHP Method

4.2.1. Benchmarking the Criteria

The judgments of the decision makers regarding the criteria are presented in Table 2. However, the judgments of multiple decision-makers were aggregated by taking the geometric mean to obtain a consensus judgment value.

Table 2. Comparison Matrix of Criteria

<table>
<thead>
<tr>
<th></th>
<th>Security</th>
<th>CPU Usage</th>
<th>Memory Usage</th>
<th>Warranty Period</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security</td>
<td>1,000</td>
<td>7,000</td>
<td>2,000</td>
<td>4,000</td>
<td>5,000</td>
</tr>
<tr>
<td>CPU Usage</td>
<td>0,143</td>
<td>1,000</td>
<td>0,167</td>
<td>0,333</td>
<td>0,500</td>
</tr>
<tr>
<td>Memory Usage</td>
<td>0,500</td>
<td>6,000</td>
<td>1,000</td>
<td>2,000</td>
<td>5,000</td>
</tr>
<tr>
<td>Warranty Period</td>
<td>0,250</td>
<td>3,000</td>
<td>0,500</td>
<td>1,000</td>
<td>2,000</td>
</tr>
<tr>
<td>Cost</td>
<td>0,200</td>
<td>2,000</td>
<td>0,200</td>
<td>0,500</td>
<td>1,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2,093</td>
<td>19,000</td>
<td>3,867</td>
<td>7,833</td>
<td>13,500</td>
</tr>
</tbody>
</table>

4.2.2. Expressing theWeights of the Criteria

Table 3 represents the final weights of the criteria. These values were calculated using the formulas involved in the analysis stages of the AHP method.
Table 3. Final Weights of Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Weights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security</td>
<td>0.449</td>
</tr>
<tr>
<td>CPU Usage</td>
<td>0.049</td>
</tr>
<tr>
<td>Memory Usage</td>
<td>0.288</td>
</tr>
<tr>
<td>Warranty Period</td>
<td>0.136</td>
</tr>
<tr>
<td>Cost</td>
<td>0.078</td>
</tr>
</tbody>
</table>

4.3. TOPSIS Method Stages

4.3.1. Creating the Standard Decision Matrix

Table 4 contains the standard decision matrix. The data in this matrix are obtained by normalizing the basic data matrix.

Table 4. Standard Decision Matrix

<table>
<thead>
<tr>
<th></th>
<th>Security</th>
<th>CPU Usage</th>
<th>Memory Usage</th>
<th>Warranty Period</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amazon Web</td>
<td>0.786</td>
<td>0.787</td>
<td>0.748</td>
<td>0.740</td>
<td>0.115</td>
</tr>
<tr>
<td>Google Cloud</td>
<td>0.249</td>
<td>0.234</td>
<td>0.229</td>
<td>0.300</td>
<td>0.358</td>
</tr>
<tr>
<td>IBM Cloud</td>
<td>0.247</td>
<td>0.312</td>
<td>0.285</td>
<td>0.324</td>
<td>0.369</td>
</tr>
<tr>
<td>Microsoft Azure</td>
<td>0.497</td>
<td>0.467</td>
<td>0.538</td>
<td>0.488</td>
<td>0.182</td>
</tr>
<tr>
<td>SAP</td>
<td>0.110</td>
<td>0.103</td>
<td>0.129</td>
<td>0.137</td>
<td>0.830</td>
</tr>
</tbody>
</table>
4.3.2. Proximity to the ideal solution and Ranking of Alternatives

Table 5 presents the prioritization of each alternative according to the TOPSIS method. The ideal solution values have been calculated for each alternative, and the alternatives have been ranked based on these values in terms of their priorities.

Table 5. Proximity to Ideal Solution and Final Ranking of Alternatives

<table>
<thead>
<tr>
<th>Alternatives</th>
<th>Ideal Solution Values</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amazon Web</td>
<td>0.867</td>
<td>1.</td>
</tr>
<tr>
<td>Microsoft Azure</td>
<td>0.580</td>
<td>2.</td>
</tr>
<tr>
<td>IBM Cloud</td>
<td>0.227</td>
<td>3.</td>
</tr>
<tr>
<td>Google Cloud</td>
<td>0.204</td>
<td>4.</td>
</tr>
<tr>
<td>SAP</td>
<td>0.133</td>
<td>5.</td>
</tr>
</tbody>
</table>

5. CONCLUSION AND RECOMMENDATIONS

With the advancement of technology in our age, the need for internet and related technologies has increased tremendously. The internet, which is used in every field, has created the need to store the obtained data in a certain place. Businesses need to store large and important data quickly and reliably. For this reason, they first needed physical and bulky servers.

Very large areas and high-cost technological devices were needed for businesses to store the big data they process. The fact that devices are less costly and faster to communicate with each other has made some companies think that virtual storage areas can be created. Later, they named virtual storage as cloud computing technology. Cloud computing technologies; provides individuals and companies to store large and important data with very little cost and labor, and takes responsibility and guarantees against software and hardware errors that may occur.

In this study, it was aimed to determine the most suitable cloud computing service provider for medium-sized IT enterprises with more than 250 employees to store their data in a sustainable and reliable way. This process was carried out with MCDM methods.
The criteria and alternatives were determined by considering the decision makers and the relevant literature. In the study, cloud computing service providers such as Amazon Web Services, Google Cloud, IBM Cloud, Microsoft Azure and SAP, which are among the most used cloud computing service providers in the world, were accepted as alternatives. The weight of the criteria were determined by the AHP method and it was seen that the criterion with the highest degree of importance was "Security", and the criterion with the lowest degree of importance was "CPU Usage".

After the analysis steps of the TOPSIS method and calculations were made in finding the priorities of the alternatives, it was concluded that the best cloud computing service provider was “Amazon Web Services”. It is thought that this study will guide medium-sized IT enterprises when choosing a cloud computing service provider. In future scientific studies, more complex decision problems can be solved by changing the criteria and alternatives of the relevant study or by changing the decision-making method with current techniques.

References


Determining the Most Appropriate Internet Service Provider with the AHP-TOPSIS Hybrid Method

Hakan Murat ARSLAN1

Abstract

Thanks to internet services, the products or services of the enterprises reach the consumers easily, besides the units within the enterprise can easily reach the desired data. However, the slightest interruption or problem in the internet provider causes business disruptions and even losses for businesses. For this reason, businesses need to choose the most suitable internet service provider for themselves, considering certain situations. In this direction, optimizing internet services in related businesses means that employees provide healthier service to customers. In the study, among three different internet service providers operating in Turkey, the most suitable communication company was determined by considering four criteria by using AHP and TOPSIS methods. The study is expected to fill an important gap in the literature on determining the most suitable internet provider with MCDM methods. The universe of the study is the service enterprises operating in Düzce, using internet services professionally and with more than 150 employees. Managers of service businesses that meet these conditions are accepted as decision makers. As a result of the analyzes carried out, Türkcell internet provider ranked first and Türk Telekom company ranked second. The results of the analysis were shared with the authorities of the relevant enterprises.

Keywords: Internet Service Providers, Multi Criteria Decision Making Methods, AHP Method, TOPSIS Method

JEL Codes: M11, C02, C51, C61

1. INTRODUCTION

From the past to the present, different decision-making methods have been used in the solution of the decision problems that businesses face. If there are multiple alternatives and criteria in a decision problem, the decision process becomes difficult. Previously, the decisions made with traditional methods or directions were highly questionable. For this reason, it has emerged that the decisions to be made should be based on scientific solutions. The fact that decisions are based on more reliable results is one of the most effective reasons for using quantitative decision techniques in businesses.

AHP (Analytical Hierarchy Process) is the process of analyzing data from a hierarchical point of view by transforming the data resulting from the judgments made by the decision makers about the criteria and alternatives into quantitative data. The TOPSIS method, on the other hand, is a technique that allows the determination of the alternative closest to the ideal solution in making the best choice among the options. Today, businesses should use these two techniques quite frequently in order to obtain more reliable results in the face of decision problems.

Thanks to the internet, businesses can easily deliver their products or services to consumers and data mining can be done within the company. The slightest interruption or problem in internet service can cause disruption of business or even damage to the business.
For this reason, businesses need to choose the right internet service provider for themselves, taking into account certain situations.

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The universe of the study consists of service enterprises operating in Düzce and having more than 150 employees. These businesses actively use internet services internally and externally. In the study, the selection of the most suitable internet service provider for these businesses was determined by using the analysis stages of AHP and TOPSIS methods.

When the domestic and foreign literature is examined, it has been determined that there is no study to determine the internet service provider that will provide optimum benefit for service businesses. From this point of view, the study is expected to fill an important gap in the literature.

The criteria and alternatives in the study were determined by considering the relevant literature and the opinions of the authorities of the companies in question. The ranking of the most suitable internet service provider brands was determined by using the analysis steps of the AHP and TOPSIS method.

The optimum level of internet services in service businesses will enable employees to provide healthier service to customers. In this study, businesses that have met certain conditions were assisted in determining the most suitable internet service provider companies for them. The following sections of the study include literature review, Methodology, Findings and Evaluation.

2. LITERATURE REVIEW

2.1. Studies Made with AHP and TOPSIS method

There are not enough studies in the literature to determine the optimum internet service provider companies with AHP and TOPSIS Methods. There are mostly studies to determine the most suitable supplier of IT companies.

Uslu et al. conducted their studies in Ankara and wanted to determine the appropriate cloud service provider for medium-sized companies. The IT company with 235 personnel determined which cloud service provider to choose by using TOPSIS and PROMETHEE methods, using five decision makers, seven alternatives and five criteria (Uslu et al., 2019: 20).

In Yıldırım's study, five companies that provide cloud computing services were ranked according to ten criteria using BAHP and MOORA decision making methods (Yıldırım, 2013: 60).

Arslan et al. determined the financial performances of businesses in the weaving sector using AHP and Gray Relational Analysis methods. 14 different companies took place as alternatives. The weights of the criteria were found using the AHP method, and the Gray Relational Analysis method ranked the alternatives according to their priorities (Arslan et al., 2017:19).

Dağdeviren et al. claimed in their studies that many problems will arise when the salary balance between the personnel cannot be established. For this reason, a job evaluation system was created with AHP in the electricity company under consideration (Dağdeviren et al., 2004:131).

In his study, Yaraloğlu analyzed the sales performance of a chain of retail sales businesses in six different businesses in six different districts with the AHP method, taking into account ten different criteria (Yaraloğlu, 2001: 129).
Yüksel and Akın used SWOT analysis and AHP method in an integrated way of a textile company in Ankara. In the study, the AHP method was used to determine the weights of the items of the SWOT analysis. Since the SWOT Analysis method alone is not sufficient in the decision-making process, it was used with the AHP method. Thus, it was ensured that the importance levels of the items in the SWOT Analysis could be determined by scientific method (Yüksel and Akın, 2006: 254).

In their study, Wei et al. tested the usability of the AHP method in choosing the most suitable Enterprise Resource Planning system of a firm. Among the three different ERP systems, the optimum one was determined within the framework of criteria such as price and user friendliness (Wei et al., 2005: 47).

In their private and Türkel studies, they determined which ERP software a company would choose using the AHP method. They determined the experts in the sector as decision makers and benefited from their opinions (Private and Turkel, 2018: 305).

In the studies of Jaiswal and Mishra, suppliers and suppliers were analyzed separately by TOPSIS, Fuzzy TOPSIS, AHP and ANP methods, taking into account criteria such as hourly price and storage space (Jaiswal, Mishra, 2017: 136).

In the study of İnan, the purposes of the relevant enterprises in the marketing sector in the use of the Internet were determined and the results of these objectives were investigated over 1401 companies in terms of the factors affecting the Internet. In the study, the frequency distributions of the objectives were made and the Factor Analysis method was used in the questions constituting the objectives (İnan, 2002: 123).

Durukan et al. used AHP and TOPSIS methods separately to select the most suitable e-commerce site for an IT business. Analyzes were carried out with twelve criteria and four alternatives (Durukan et al., 2017: 96).

In their study, Yaldr and Polat separately applied Fuzzy AHP and TOPSIS methods in the selection of electronic information system software for universities. Analyzes were carried out on the basis of seven criteria and three alternative companies (Yaldr and Polat, 2016: 88).

Ayvaz et al., in their study, wanted to evaluate the most suitable e-signature supplier since a bank in the field of participation banking in Turkey wanted to provide e-signature service. Using the Fuzzy TOPSIS method with three alternatives and three decision makers, the best supplier for the relevant business was determined (Ayvaz et al., 2015: 351).

2.2. AHP Method

The Analytical Hierarchy Process (AHP) was created to find different ways to solve the problems encountered and to facilitate these studies. It provides the opportunity to examine and solve quantitative and qualitative factors with this method (Eren and Gür, 2017: 819).

With the AHP method, the problems in which quantitative and qualitative elements coexist can be specified with a hierarchical structure from the target to the sub-criterion (Saaty & Özdemir, 2003).

The logical application of knowledge, comprehension and foresight is possible with the AHP method (Özdemir and Saaty, 2006). In short, the AHP method allows the weighting of the criteria. The most prominent feature of AHP is that it can handle more than one factor together.

Thanks to the AHP method in areas such as economy, planning, energy policies, resource facilities, health, project selection, marketing, accounting, education, architecture, engineering, supply, logistics and tourism, the work of decision makers has become easier (Kölekçi and Bulut, 2012). By using the AHP method, the degree of importance of the criteria and the performance of the alternatives according to the criteria can be determined.
2.3. TOPSIS Method

This method was developed by Chen and Hwang (1992). It is modeled after Hwang and Yoon (1981). (Özdemir and Select, 2009: 79). In this method, there are two groups of results, positive and negative ideal. The positive ideal is closest to the solution and maximizes the benefit while minimizing the cost. The negative ideal is the farthest from the solution and minimizes the benefit by maximizing the cost.

3. METHODOLOGY

3.1. Purpose of Study

The main purpose of this study is to show the usability of AHP and TOPSIS methods when determining the internet provider of service businesses. It is thought that the study will be a guide for other companies that want to provide optimum benefit from the internet at affordable cost.

3.2. Scope of the Study and Method of Data Collection

The universe of the study consists of service enterprises operating in Düzce and having more than 150 employees. These businesses actively use internet services internally and externally. In the study, the selection of the most suitable internet service provider for these businesses was determined by using the analysis stages of AHP and TOPSIS methods.

The criteria and alternatives of the study were determined by considering the authorities of the relevant enterprises and the opinions of the decision makers.

3.3. Limitations of the Study

a. Limited to service businesses in Düzce,
b. The fact that the work was carried out in a certain time period,
c. Inability of decision makers to allocate sufficient time,
d. The necessity of keeping the cost of the work to a minimum,

The criteria and alternatives in the study are listed below.

Criteria:
C1: Performance
C2: Price
C3: Technical Service
C4: Infrastructure

Alternatives:
A1: Türkcell
A2: Vodafone
A3: Turk Telekom

4. FINDINGS AND INTERPRETATION

4.1. Expressing the Basic Data Set

Four criteria were determined in the solution of the related decision problem. The data were processed into the basic data set table (Table 1) to show the value of each alternative according to each criterion. The criteria and the comparison of the alternatives according to the criteria were formed from the scores given by the decision makers over 100 points.
Table 1. Basic Data Set

<table>
<thead>
<tr>
<th></th>
<th>C1: Performance</th>
<th>C2: Price</th>
<th>C3: Technical Service</th>
<th>C4: Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1: Türkcell</td>
<td>0,5485</td>
<td>0,3698</td>
<td>0,2883</td>
<td>0,3333</td>
</tr>
<tr>
<td>A2: Vodafone</td>
<td>0,2105</td>
<td>0,3322</td>
<td>0,2632</td>
<td>0,3333</td>
</tr>
<tr>
<td>A3: Türk Telekom</td>
<td>0,2409</td>
<td>0,2978</td>
<td>0,5079</td>
<td>0,3333</td>
</tr>
</tbody>
</table>

4.2. Finding the Weights of the Criteria According to the AHP Method

4.2.1. Benchmarking the Criteria

The judgments of the decision-makers regarding the criteria are presented in Table 2. However, the judgments of multiple decision-makers were combined by calculating the geometric mean to arrive at a consensus judgment value.

Table 2. Comparison Matrix of Criteria

<table>
<thead>
<tr>
<th></th>
<th>C1: Performance</th>
<th>C2: Price</th>
<th>C3: Technical Service</th>
<th>C4: Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1: Performance</td>
<td>1</td>
<td>0,5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>C2: Price</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>C3: Technical Service</td>
<td>0,333</td>
<td>0,5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>C4: Infrastructure</td>
<td>0,5</td>
<td>0,2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,833</strong></td>
<td><strong>2,2</strong></td>
<td><strong>7</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

4.2.2. Expressing the Weights of the Criteria

Table 3 illustrates the ultimate weights assigned to the criteria. These values were computed using the formulas utilized in the analysis stages of the AHP method.

Table 3. Final Weight Values of Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Weights</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1: Performance</td>
<td>0,2847</td>
</tr>
<tr>
<td>C2: Price</td>
<td>0,4544</td>
</tr>
<tr>
<td>C3: Technical Service</td>
<td>0,1420</td>
</tr>
<tr>
<td>C4: Infrastructure</td>
<td>0,1188</td>
</tr>
</tbody>
</table>

4.3. TOPSIS Method Stages

4.3.1. Creating the Standard Decision Matrix

Table 4 displays the standardized decision matrix. The values within this matrix are obtained through the normalization of the basic data matrix.
Tablo 4. Standard Decision Matrix According to TOPSIS Method

<table>
<thead>
<tr>
<th>Alternatives</th>
<th>C1: Performance</th>
<th>C2: Price</th>
<th>C3: Technical Service</th>
<th>C4: Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1: Türkcell</td>
<td>0,8637</td>
<td>0,6381</td>
<td>0,4500</td>
<td>0,5773</td>
</tr>
<tr>
<td>A2: Vodafone</td>
<td>0,33157</td>
<td>0,5733</td>
<td>0,4108</td>
<td>0,5773</td>
</tr>
<tr>
<td>A3: Türk Telekom</td>
<td>0,3793</td>
<td>0,5139</td>
<td>0,7928</td>
<td>0,5773</td>
</tr>
</tbody>
</table>

4.3.3. Proximity to Ideal Solution and Ranking of Alternatives

Table 5 showcases the ranking of each alternative based on the TOPSIS method. The ideal solution values have been computed for each alternative, and the alternatives have been prioritized and arranged according to these values.

Tablo 5. Proximity to Ideal Solution and Final Ranking of Alternatives

<table>
<thead>
<tr>
<th>Alternatives</th>
<th>Ideal Solution Values</th>
<th>Rankings</th>
</tr>
</thead>
<tbody>
<tr>
<td>C*1= A1: Türkcell</td>
<td>0,7746</td>
<td>1.</td>
</tr>
<tr>
<td>C*2= A2: Vodafone</td>
<td>0,2694</td>
<td>3.</td>
</tr>
<tr>
<td>C*3= A3: Türk Telekom</td>
<td>0,2714</td>
<td>2.</td>
</tr>
</tbody>
</table>

4.3.3. Interpretation of Findings

When the alternatives are evaluated with AHP and TOPSIS methods, respectively; It was found as Türkcell, Türk Telekom and Vodafone. In the study, the weights of the criteria were found with the AHP method, and then the alternatives were ranked according to their priorities with the TOPSIS method. Thus, an integrated structure was used. In addition, this hierarchical situation requires the findings of the study to be more reliable.

5. CONCLUSION AND RECOMMENDATIONS

When the literature is examined, it has been noticed that there is not enough research on the selection of internet service provider companies. Studies in the current literature generally focus on ERP and Cloud Computing. Studies with AHP and TOPSIS methods are mostly on supply chain and logistics problems. In this respect, the study differs from other studies.

The primary goal of the research is to select the alternative that offers the most suitable internet service provider for the relevant service company. Criteria in the study; performance, price, technical service and infrastructure, and three alternatives as Türkcell, Türk Telekom and Vodafone. For these data, the weights of the criteria were determined by the AHP method. Then, as a result of the analysis stages of the TOPSIS method, the most suitable alternative was Türkcell with a value of 0.7746, followed by Türk Telekom with a value of 0.2714, and Vodafone as the third with a value of 0.2694. Although the study takes place in related service businesses, time, confidentiality and cost are important constraints. In this limited time period, it was tried to collect as accurate and necessary information as possible.

The quality of the internet used in businesses also affects the speed of business processes. With a high quality and fast internet, businesses can increase their productivity by performing more transactions in less time. Business management should understand the importance of this and take the choice of internet service provider more seriously. Thus, the firm can identify the supplier that can fulfill its objectives more appropriately through decision analysis. Different MCDM methods...
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The Effects of Additional Customs Tax on Exports

Muhammet Yunus ŞİŞMAN¹, Omar WRAİKAT²

ABSTRACT

This study aims to analyze the impact of additional customs taxes on the export sector. To achieve this objective, the gravity model was employed using data on additional customs taxes covering the period from 2011 to 2023. The results of the study indicate that additional customs taxes restrict exports and have a negative effect on them. Additionally, this study analyzes the impact of inflation on exports during the same period, revealing that inflation constrains exports and has a detrimental impact on them. Furthermore, the study examines the influence of the exchange rate on exports, with the results suggesting that the exchange rate restricts exports and negatively affects them. The study is divided into three chapters, providing a general overview of international trade and its purpose, along with concepts of protectionist trade, free trade, trade theories, customs taxes, indirect taxes, and additional customs taxes. The study also addresses the importance of exports to the local economy, the Belt and Road Initiative, as well as tariff policy, import and export policies, and investment policies using the gravity model. The study considers inflation, exchange rate, and additional customs taxes as independent variables, while exports serve as the dependent variable.

Keywords: Foreign Trade, Gravity Model, Additional Customs Tax, Exports.

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1. INTRODUCTION

International trade has long been recognized as a key element through which countries can ensure their economic development, improve wage balances, and enhance the production processes of domestic products by means of internal processing and increased exports. As a result, Turkey has been implementing an open economy policy since 1980. Furthermore, countries worldwide have pursued economic integration processes to safeguard their economies against international competition and integrate with the global economy. This has also led to significant developments in international trade. Consequently, countries have gradually sought to reduce any barriers that impede international trade flows, such as customs tariffs and quotas.

Today, we observe that the importance of customs duties and quotas in international trade is diminishing compared to the past. However, despite countries’ engagement in free trade agreements and multilateral agreements that facilitate the movement of goods and products among them, protectionist measures in global trade continue through various indirect means (non-tariff barriers). This still has a restrictive effect on import movements.

Recently, additional customs duties of up to 50% were imposed on a wide range of products in Turkey in 2020. These taxes are collected separately from customs duties and recorded as state treasury income. These additional customs duties will also have a constraining impact on import movements, making imports more costly. Additionally, these additional customs duties will affect intermediary goods and production prices, further increasing the cost of exports. On the other hand, these taxes will be imposed on other countries that do not have a free trade agreement with Turkey based on the country of origin.

It can be said that the purpose of introducing these additional customs duties is to protect local producers from unfair competition and maintain foreign exchange reserves. The objective may also be to increase the state treasury's revenue due to the impact of the COVID-19 pandemic on Turkey's economy and the global economy. This situation has negatively affected the necessity of providing financial liquidity to the state treasury and consumers to cover increasing expenses due to providing social support to producers. Furthermore, the decrease in tax revenues resulting from free trade agreements signed by Turkey with other countries has increased the need for state income sources to cover these expenses.

2. LITERATURE REVIEW

According to the Supplementary Decision to the Import Regime Decision number 2011/2203, Turkey started implementing additional customs duties on the textile and ready-made clothing sector in 2011 for the first time (Lebib YALKIN, 2019). The additional customs duties primarily depend on the origin of the goods, thus determining whether additional customs duties will be applied or not. Accordingly, if the goods come from countries (which have not signed a free trade agreement with Turkey) to Turkey with an ATR movement certificate from the European Union or a non-Turkish origin, additional customs duties will be imposed on these goods. This is because a free trade agreement alone is not sufficient to exempt these goods from this tax; the origin of the goods must be from countries with which a free trade agreement has...
been signed. In other words, Turkey will not impose additional customs duties on goods coming from countries that have signed a free trade agreement or from countries included in the cumulation system by origin (Murat PALAOĞLU, Zahide DEMİR, 2017, p. 1).

Furthermore, according to the Common Customs Tariff between Turkey and the European Union (Customs Union) under the Partnership Council Decision number 95/1, additional customs duties are applied to goods and products coming from third countries (Lebib YALKIN, et al.).

Therefore, the decisions related to additional customs duties state that importers are obliged to prove the origin of imported goods and products. This requirement poses a barrier to many problems that importers may encounter during the import process. Hence, the "Statement of Origin," "Certificate of Origin," and "Supplier's Declaration" must be included in the customs declaration for goods imported from European Union countries falling within the scope of mutual accumulation, accompanied by an ATR movement certificate. In this case, no additional customs duties are applied, according to Import Decision number 4/2017.

On the other hand, if importers are unable to provide proof of the origin of imported goods during the import process from the country of origin where customs measures are not applied, the original evidence must be submitted within a certain timeframe, such as six months or one year, securing additional customs duties or additional financial liability. If these documents are submitted after the actual import process, i.e., after they have been released for free circulation, by paying additional customs duties or additional financial liability, requests for refund or removal will not be accepted, as there is no provision for that in the customs declaration. On the other hand, additional customs duties or additional financial liability may be imposed in some cases. This applies if the additional liability statement or additional customs duties declaration is not submitted by the declarant. These taxes are collected by the Customs Administration, in accordance with subparagraph (a) of Article 234/1 of the Law.

In other cases, for example, if the specified documents are not provided in the relevant customs declaration for goods imported from a country where additional customs duties or additional financial obligations are not applied during the import process, the "Declaration of Origin" or "Supplier's Declaration" is subject to the free circulation entry system by the declarant. For requests submitted after the goods have been released for free circulation, additional customs duties or additional financial liability must be secured, as specified in Article 38 of the Customs Regulation. However, these requests have been rejected by the General Directorate of Customs based on Laws 3605 and 1865 (Atilla ŞAHİN, 2018).

The additional customs duties are considered supplementary decisions to the import regime decisions. Therefore, when applying additional customs duties, these tax regulations also include the application of standard customs regulations, making these additional customs duties similar to regular customs duties. Furthermore, additional customs duties are not regarded as a trade policy tool. The rate of additional customs duties on imported goods is determined based on the tariff and taxes applied to the value of the imported goods. Additionally, the determination of additional customs duties depends on the rates specified in the import regime, which, in turn, rely on the basis of customs taxation. The customs tax base consists of the value of the goods, transportation costs, insurance, and other expenses until the declaration is registered. The rates of additional customs duties are declared in the customs
Recently, during the year 2020, additional customs duties were imposed on a wide range of goods according to the decisions of the Presidency of the Republic. These duties affected up to 5,230 items in 2020, impacting intermediate good prices, production, and consequently, exports and employment (Ayşegül Taşöz Düşündere, İlderya Avşar Koyuncu, 2021, pp. 2). When looking at Turkish imports, it is found that intermediate goods and raw materials accounted for 78% of total imports since 2019. This ratio reached 77% in 2020, which are used for export purposes. Therefore, it can be said that these import taxes may have a negative impact on the Turkish export sector and international trade, as they increase production costs and, subsequently, affect export competitiveness in international markets.

These duties can also affect local commodity prices and, consequently, consumption. When considering the product range, it is observed that the impact of additional customs duties on goods such as electronic products, electrical and non-electrical machinery, jewelry, and ready-made garments may have an inflationary effect due to the inability of local production to meet demand in domestic markets (M. Sait Akman, 2020, pp. 1-3).

In the study conducted by Ayşegül Taşöz Düşündere and İlderya Avşar Koyuncu, it was found that the additional customs duty does not cause significant changes in Turkish imports. Regarding its impact on general revenues, it generated 1.3 billion dollars during the first eleven months of 2020, compared to 1 billion dollars in 2019. The total of additional customs duty revenue moves in a different direction than total imports, experiencing a 47% increase, taking into account the stability of the Turkish lira exchange rate. The study also indicated that the additional customs duty cannot achieve sufficient protection for domestic products, reduce imports, solve the hard currency problem, or increase tax revenues.

Regarding its impact on foreign trade, it was found that total Turkish imports increased by 2.6%. Imports of goods subject to additional customs duty increased by 0.6%. As for the exports of these products, it was noted that they decreased to 69% in 2020 compared to 72% in 2019. However, the statistical analysis needs to consider the effects of the COVID-19 pandemic on international trade when comparing 2019 and 2020.

Concerning its impact on countries, it was observed that the most affected countries were China, India, the United States, and Japan, which included the highest proportion of total imports of goods subject to additional customs duty. However, it was noted that Chinese exports increased by $569 million despite the imposed additional duty on those goods. For countries like India, imports decreased by 37%, Indonesia by 40%, and the United States by 16%. Regarding the most affected goods by this duty, precious metals such as gold and silver, as well as textile materials, were highlighted. The rates of duty on these products ranged between 5% and 10%. The COVID-19 pandemic may also have a relationship in explaining this decline (Ayşegül Taşöz Düşündere, İlderya Avşar Koyuncu, et al.).

In the study conducted by Serkan BAHADIR, it is mentioned that the ratio of investment goods, intermediate goods, and raw materials reaches 85% of total Turkish imports, while the
ratio of consumer goods is 12%. This implies that the additional customs duty can have negative effects on the production sector, exports, and employment (Serkan BAHADIR, 2015, p. 134).

Another study conducted by Ayşegül Taşöz Düşündere and İlderya Avşar Koyuncu showed that additional tax revenues of up to $161 million can be generated by imposing the additional customs duty. The study also revealed that this duty can impact Turkish imports by $2.3 billion compared to 2019. Due to the impact of the COVID-19 pandemic on production, imports will decrease, and consequently, tax revenues will decline. Generally, the effects of this duty include countries that do not have a free trade agreement with Turkey, representing 57% of imports. Therefore, the additional customs duty significantly affected China's imports of machinery spare parts. The study also explained that the additional customs duty can increase domestic production costs, thereby raising prices of local products and causing inflation, in addition to its impact on employment. An increase in domestic production costs means losing the price advantage of domestic products in international markets (Ayşegül Taşöz Düşündere, İlderya Avşar Koyuncu, 2020, pp. 8-9).

3. METHODOLOGY

The aim of this study is to analyze the impact of the additional customs duty on the export sector based on the data of the additional customs duty covering the period 2011-2023. The study also examines the effect of inflation on exports during the same period. Furthermore, the study analyzes the impact of the exchange rate on Turkish exports.

The study includes inflation, exchange rate, and additional customs duty as independent variables, and exports as the dependent variable. The gravity model was used to analyze the data, which covers the period 2011-2023.

Data on the additional customs duty were obtained from presidential decisions published in the Official Gazette of Turkey (Resmî Gazete), while data on inflation and the exchange rate were obtained from the Central Bank of Turkey. Export data was obtained from the Turkish Statistical Institute (TÜİK).

In this study, the Gravity model will be used to analyze the impact of the additional customs duty, inflation, and the exchange rate on Turkish exports.

\[ X = \beta_1 + \beta_2 \text{ACT} + \beta_3 \text{Exch}_\text{rat} + \beta_4 \text{Inf} \]

- \( X \): Export (In Million $).
- \( \text{ACT} \): Additional Customs Tax (in %).
- \( \text{Exch}_\text{rat} \): Exchange rate (USA $/Turkish Lira).
4. RESULTS

The results of the study indicate that the additional customs duty restricts exports and has a negative impact on them. The findings also suggest that inflation constrains and negatively affects exports. The study also analyzed the impact of the exchange rate on exports, and the results indicate that the exchange rate restricts exports and has a negative impact on them.

Previous studies have shown that additional customs duties can increase tax revenues, which may decline over time due to free trade agreements. Additional customs duties may have negative effects on production, exports, employment, and international trade. It is noted that intermediate goods and raw materials accounted for 77% of total imports in 2020. Moreover, especially with insufficient domestic production, production costs and domestic prices may increase, leading to inflation. This can negatively affect Turkey's competitiveness in international markets.

Based on the previous literature, it can be concluded that additional customs duties are not a sufficient solution to increase tax revenues, protect domestic products, restrict imports, and solve the foreign exchange problem. It is also necessary to consider the effects of the COVID-19 pandemic on international trade at that time.

REFERENCES


Financial Decisions, Growth Options and Firm Valuation: An Empirical Investigation

Marriam Rao¹, Ambreen Khursheed²

Abstract

This paper examines the impact of firm’s financial decisions i.e. leverage (types and maturity level), dividend payouts and corporate ownership concentration on firm market value, while dependent on non-availability or availability of growth options. For bridging the existing researchgap ownership concentration is analyzed to be an important determinant of shareholder’s wealth under agency cost of theory. We analyzed a sample of 164 non-financial firms listed on Karachi stock exchange of Pakistan for the period of 2011 to 2018. Using Panel data methodology, Generalized Least square Equations has been applied for results demonstrating dual impact of leverage, cash dividends and ownership concentration in availability and non-availability of growth options. Leverage total effect is checked based on subdivision with short term debt and long-term debt. The findings reveal that leverage indicates a negative relationship in availability of growth options while sign turn to be positive in non-availability of growth options. Further, we found that cash dividends and bonus shares have uncertain relation in availability of growth options and positive relation in non-availability of growth options. The results open a new avenue for discussion which demonstrate the significance of corporate ownership concentration relevancy in alteration of firm financial decision policies indicating availability of agency costs in Pakistan.

Keywords: Growth options, Leverage, Dividend Payouts, Ownership Concentration, Firm Value

JEL Codes: D25, E22, G23

1. Introduction

The importance of corporate finance decisions has been at the heart of academic debate and research in recent years (Campello, Graham and Harvey, 2010). Corporate finance decision refersto financial leverage policy and cash dividend distribution policy. The optimal use and implementation of these financial policies helps the company develop mechanisms to maximize

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the value of the company and the wealth of its shareholders (Chaney, Sraer and Thesmar, 2012). Early (Miller and Modigliani, 1961) contributions in this area illustrate the propositions of the disconnect between firm financial decision policies and firm value in a perfect capital market structure. However, when imperfections are introduced such as asymmetric information, agency costs, transaction costs, and taxes, many researchers have begun to derive a series of optimal financial policies to implement, where agency costs can be reduced and firm value can be maximized.

Corporate debt and dividends are the most important and crucial funding determinants of corporate value creation and financial strategy in capital markets (Albring, Banyi, Dhaliwal and Pereira, 2015). Within the framework of agency theory, debt and dividends can play a dual secondary role. First, they address the problem of overinvestment when firms lack growth options by acting as a control mechanism to reduce conflicts of interest among stakeholders (Bougatet & Chichti, 2011). Second, debt plays a negative role in the availability of growth options, as high debt-to-asset ratios lead to underinvestment costs due to the availability of bondholder-shareholder conflict (Li & Cui, 2003). In this study, the impact of debt maturity is studied. In addition to total corporate debt; Short-term and long-term debt ratios are used as independent variables to examine their subsequent effects on the value of the firm in terms of the availability and non-availability of growth options (Childs et al., 2003). Dividend and free stock payouts were found to have an ambiguous relationship with firm value in terms of the availability of growth options, as cash payouts signal strong growth capital markets and, at the same time, investment funds are used for cash payout policies (Carvalhal-da-Silva et al., 2007). Finally, increasing ownership concentration improves firm value in the early stages of most businesses due to the alignment of benefits, but after a specific time frame/threshold, the risk increases due to concentrated shareholders abusing the wealth and assets of the company to the detriment of a minority of shareholders. Due to the achievement of a high control power mechanism. This is especially the case for companies with multiple growth options (Srivastava, 2011; Petacchi, 2015). However, in the absence of growth options, ownership concentration has a non-linear effect in Pakistan. These concepts demonstrate the importance of the
The interrelationship of all these topics; therefore, what is interesting now is to find the optimal combination of financial policy and ownership concentration with a different value maximization objective in case the company has a good investment opportunity, other than where the investment opportunities available to the business are weak.

This study used a sample of 164 Pakistani non-financial companies listed on the Karachi Stock Exchange from 2011 to 2018 to examine how leverage, dividend policy and ownership structure influence such to company value based on the availability of growth options. The contribution of this article is twofold; First, despite similar studies for countries with developed capital markets, evidence for less developed markets is scant and absent in Pakistan. Second, this study will also add to the literature on how available and unavailable growth options directly change a company's key financial decisions and help management grow financial policies with the objective of maximizing the value of the company.

2. Literature Review

2.1. Corporate debt financing

Corporate debt financing has played an important role in shaping corporate finance strategy and key investment decisions at both corporate and national levels, in both developed and global markets. including emerging markets (Abor and Biekpe, 2007; Erol, 2004; Kaminsky and Reinhart, 2002). Academic researchers have explained the dual behavior of corporate debt based on the availability and unavailability of good growth options according to two theories; underinvestment theory and overinvestment theory (Alonso et al., 2005). With the underinvestment view put forward by (Myers, 1977) highlights the negative relationship between corporate debt and firm value.

Companies with growth options and high indebtedness will drive managers away from profitable investment projects. Due to the preference of bondholders over the company's cash flow over shareholders, managers may abandon projects with positive NPVs if the project's profits go to the creditors (Beatty, Liao and Co. Weber, 2010). The basic intuition is that if the debt holders were the first creditors, then managers would not find it useful to make investment projects where the cash flows would not go to the owners of the company. belongs to the company's creditors (Shroff, Verdi, & Yu, 2013; McConnell & Servaes, 1995). This phenomenon is known as over-indebtedness or under-investment. Where overinvestment works in the absence of growth options, where the free
cash flow theory holds (Itturriaga & Crisóstomo, 2010; Singh & Faircloth, 2005). This theory focuses on the negative impact of free cash flow in the hands of managers who, for their own self-interest, can invest in negative NPV projects to increase the income of the managers. Thus, apply debt discipline to underperforming managers and protect company value by controlling their excess free cash flow. This leads to the existence of a positive relationship between firm value and debt in the absence of growth options.

This study takes into account of effect of short term and long term debt effect separately on firm value. This would enlighten us more with subdivision of corporate debt effect. The financing decisions include the option to adjust debt level in future. The right choice of debt level and maturity level matters a lot for appropriate financial decisions. The investment distortions by equity holders in changing debt level maturity choice reduce firm value as well as the optimal leverage (Childs et al., 2003). Therefore one contribution of this paper is to explain that how use of short term debt removes investment distortions to a limit level. The high level of short term debt is also not recommended as it leads to an increase in liquidity risk. A negative relation between debt maturity levels on firm value is indicated due to availability of high liquidity risk and high financial distress costs (D’Mello and Miranda, 2010).

2.2 Dividends and Growth options:

In analyzing the impact of dividends and bonus shares on firm value conditioned upon on availability and non-availability of growth options, three important theories are explained by researchers: Signaling theory and Financial Distress theory and Free Cash Flow theory. The Signaling theory states that high dividend payout firms signal availability of high growth options and profitability (DeAngelo et al., 2000). This incline a positive relation between dividends and firm value. The Financial Distress theory states that corporations having high growth options face shortage of financing due high protective covenants. These firms cut off their dividend payments in order raise funds for investments in positive NPV projects (Alonso et al., 2005). This incline that distribution of corporate earnings among shareholders could harm investment projects leading to negative relation between dividends and firm value. The Free Cash Flow theory, on other handworks for firms having non-availability of growth options. The distribution of dividends reduces funds in managerial control whom for personal benefits could invest in harmful investment projects putting the shareholders investments at stake. Thus, the dividend disbursement in firms with few or no growth options could
lessen the misuse of scarce corporate resources (Mancinelli and Ozkan, 2006; Iturriaga and Crisóstomo et al., 2010).

The relation between dividend payout and firm value is uncertain, one theory incline positive relation and other negative relation. How exactly does dividend payouts effect the value of firms
with availability and non-availability of positive NPV projects is still an open question. Firms that pay more cash in form of dividends are more profitable firms. However, if same profitable firms are active in stock market capitalization then it shows lower dividend payouts reaction (Abor and Bokpin, 2010). The bonus shares in place of dividends are another parameter utilized to avoid free cash flow problem (Mohanty, 1999). To demonstrate the effect on firm value, in addition to dividends this study also caters the inclusion of bonus shares.

Ownership Concentration and Growth options:

When the rights of minority shareholders are not adequately protected in a weak corporate governance structure, concentration of ownership in the hands of majority shareholders will protect the interests of minority shareholders. (Mihguel et al., 2004). This view is also supported by (Dyck and Zingales, 2004), who demonstrated how increasing ownership in the hands of managers can converge the interests of managers and shareholders. This ultimately increases the value of the company. This gives us the idea that an initial increase in ownership concentration has a positive effect on firm value due to the association of interests (Morck et al., 1998). However, there is some degree of optimization where ownership concentration and increased interest alignment intersect with this optimum and entrenched theory takes place. Centralized ownership means having a high stake and few people controlling it. These shareholders have a high enough percentage of shares. With high power and control, these concentrated owners could misuse the resources of firm for their personal benefits by putting investments of small shareholders at stake (Srivastava, 2011). Literature supports a nonlinear framework of ownership concentration on firm value with increasing level of 0% to 5%, then decreasing level from 5% to 25% and then again increasing relation beyond 25% (Morck et al., 1998). This relation exhibit an inverse parabolic relation where firm value increases with initial rise in concentrated owners but after a threshold point the firm value declines because having too much high percentage of ownership in few people leads to decline in firm value. Furthermore, in non-availability of growth options an inverse non-linear relation exists between ownership concentration and firm value (Joh, 2003).

Hypothesis

Based on literature review we propose our hypothesis as:
1.1.1 In Availability of Growth options:

Hypothesis 1a: A positive relation exists between short term debt and firm value in availability of growth options.

H 2a: A negative link present between long term debt and firm value in availability of growth options.

H 3a: An uncertain link present between dividend payouts and firm value in availability of growth options.

H 4a: An uncertain present between bonus shares and firm value in availability of growth options.

H 5a: A nonlinear link present between ownership concentration and firm value in availability of growth options.

1.1.2 In Non-availability of Growth options:

H 1b: A positive link present between short term debt and firm value in non-availability of growth options.

H 2b: A positive link present between long term debt and firm value in non-availability of growth options.

H 3b: A positive link present between dividend payouts and firm value in non-availability of growth options.

H 4b: A negative link present between bonus shares and firm value in non-availability of growth options.

H 5b: A nonlinear link present between ownership concentration and firm value in non-availability of growth options.
Methodology

The main assessment of this study is to operate growth options, whereby our sample data will be divided into two groups, i.e. available growth options and no growth options available. Most of the relevant research is analyzed, using the company valuation ratio as a proxy for growth options. Therefore, the definitions of dependent and independent variables, measurement ratios, estimation techniques and model specifications are provided in this section.

3.1 Data Sample

In the data sample of this study, 164 Pakistani companies are listed on the Karachi Stock Exchange with the study period from 2011 to 2018. This represents a total of 39% of the total number of non-manufacturing companies. financial listed in Pakistan (Appendix 1). The selection criteria for our sample are based on companies with the highest market capitalization. The financial sector was not included in our sample because they initially required different accounting and financial treatment for the study. Second, the same estimates and statistical techniques cannot be applied to businesses in the financial and manufacturing sectors. We also exclude the service industries due to the smallsample size as the total proportion of service firms represents a very small proportion of the total number of listed companies.

3.2 Variables Measure and definition: (Appendix 2)

3.3 Dependent Variable

The dependent variable in this article is the Asset to Book Value (MBA) ratio while the independent variables are corporate debt, short-term debt, long-term debt, dividends paid, freely issued shares and asset concentration.

Market to Book Assets Ratio (MBA): Firm Valuation Ratio (Growth options proxy)

Adam and Goyal (2008) evaluate performance of firm’s investment opportunity set with comparison between several proxy variables available to measure growth or investment opportunities based on valuation ratios. They demonstrate Market to book assets ratio to be the most competent valuation ratio in reflecting asset utilization efficiency to generate growth options and value to the firm. A key aspect of this study is to operationalize, identify and separate the firms amongst the firms having high growth options and the firms having low growth options. We applied the (40%,20%,40%) quintiles
method of (Alonso, 2005). The firms are ranked in descending order.
separating the firms in (40%, 20%, 40%) quintiles to have highest 40% growth options available firms and lowest 40% growth options available firms. Market to book assets ratio is ratio of the firm’s total value to its total assets value. The rationale is that; the rise in MBA ratio means high firm total value due to utilization of high total assets in place and, in turn availability of high growth options (Maury and Pajuste, 2005; Villalonga and Amit, 2006).

\[ FV = \frac{MBA\ ratio}{Book\ value\ of\ asset} = \frac{Market\ value\ of\ equity + Book\ value\ of\ debt}{Book\ value\ of\ asset} \]

**Independent Variables**

- Short term debt (STD): Short term debt divided by total assets ratio.
- Long term debt (LTD): Long term debt divided by total assets ratio.
- Cash dividend Payouts (DP): Dividend payouts divided by total assets ratio.
- Cash bonus Payouts (BONS): Cash bonus payouts divided by total assets ratio.
- Ownership concentration (CONC): Percentage of shares in hand of top five majority shareholders.
- Ownership concentration square CONC²: Square of percentage of shares in hand of top five majority shareholders.
- Size (control variable): Log of total assets.
- Profitability (ROA): Earnings before interest and tax divided by net income

**Model of the Study**

As the study title indicates to study corporate debt, dividends and ownership concentration in **Availability** and **Non-availability** of growth options. Therefore, we divide the overall sample in two groups based. First group represent the case of availability of growth options whereas second group represents the case of non-availability of growth options. The firms are ranked in descending order according to MBA ratio. The upper high 40 percent of firms are regarded as the firms with availability of highest growth options, and the lowest 40 percent of firms with the lowest MBA ratio are regarded as the firms with poorest growth options. The remaining middle 20 percent firms are dropped from the analysis. Therefore, from 1312 numbers of observations; 525 (top 40% observations) represents firms with highest growth options set available and 525 (bottom 40% observations) represents firms with highest growth options set available and 525 (bottom 40% observations).
observations) represents firms with lowest or poor investment opportunities available. This leads our panel based data to become an unbalanced panel data. Using Panel based regression methodology; Generalized Least Square Equations are applied in which MBA ratio (Firm Value) depends on short term debt, long term debt, dividend payouts, bonus shares and ownership concentration. Therefore, we proposed our model as:

$$\text{MBA}_{it} = \beta_0 + \beta_1 \text{(STD)} + \beta_2 \text{(LTD)} + \beta_3 \text{(DP)} + \beta_4 \text{(BONS)} + \beta_5 \text{(CONC)} + \beta_6 \text{(CONC)} + \beta_7 \text{(ROA)} + \beta_8 \text{(SIZE)} + \epsilon_{it}$$

Panel data methodology is ideal to control for heterogeneity. It allows us to control for fixed effects. The individual characteristics of firms remain fixed and controlled overtime (Arellano, 2001). The random error term $\epsilon_{it}$, controls for measurement error as well as control for removal of self-explanatory variables.

2. Empirical Results

Table 1 presents summary statistics. Descriptive statistics indicate largest average of size with maximum standard deviation indicating in Pakistan large variation is found in size of firms. Short term debt had larger maximum value of 0.917 which is greater than long term debt maximum value of 0.787. This indicates that in Pakistan short term debt is employed more in financial policies compared to long term debt. The reason is that in Pakistan long term debt market is not yet developed. Compared to bonus shares, dividends payouts minimum value goes from 0.000 to maximum value of 1.685 higher than compared to bonus shares issued.

<table>
<thead>
<tr>
<th>Table 1: Descriptive Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
</tr>
<tr>
<td>MBA</td>
</tr>
<tr>
<td>STD</td>
</tr>
<tr>
<td>LTD</td>
</tr>
</tbody>
</table>

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Table 2 presents Pearson’s correlation matrix for our 1st model with Market to Book Assets ratio as dependent variable on all combined. Six independent variables (short term debt, long term debt, dividends paid, cash bonus issued, ownership concentration and ownership concentration square are included and two control variables as Size and return on assets. It could be seen that Market to Book Assets Ratio is significantly correlated at (0.01) level with all six independent variables and two controlled variables. MBA is negatively correlated with short term debt (-0.265) and long term debt (-0.176). Short term debt reduction percentage is more as it leads increase in high liquidity risks to the firm. MBA is positively correlated with distribution of cash in forms of dividends paid and bonus shares issued implying that 1 percent increase in cash distribution leads firm value to increase by 0.463% with dividends paid and 0.980% with bonus shares issued. Ownership concentration(0.365) and ownership concentration square(0.366) is also significantly positively correlated with all sample data indicating that initial and high levels of ownership concentration is beneficial as its increase firm value with protection of minority shareholder interests. 1% increase in size and return to assets ratio also increase firm value up to 11.4% and 21.9%. Amongst this profitability play a more significant role in increase of value of the firm.
### Table 2: Correlations Matrix

<table>
<thead>
<tr>
<th></th>
<th>MBA</th>
<th>STD</th>
<th>LTD</th>
<th>DIV</th>
<th>BONS</th>
<th>C5</th>
<th>C5SQ</th>
<th>SIZE</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA</td>
<td>1</td>
<td>-265***</td>
<td>-176***</td>
<td>.463***</td>
<td>.098***</td>
<td>.365***</td>
<td>.366***</td>
<td>.114***</td>
<td>.219***</td>
</tr>
<tr>
<td>STD</td>
<td>1</td>
<td>.167***</td>
<td>-199***</td>
<td>-088***</td>
<td>-228***</td>
<td>-217***</td>
<td>-064**</td>
<td>-155***</td>
<td></td>
</tr>
<tr>
<td>LTD</td>
<td>1</td>
<td>-198***</td>
<td>-055**</td>
<td>-162***</td>
<td>-175***</td>
<td>.041</td>
<td>-.120***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DP</td>
<td></td>
<td>1</td>
<td>.027</td>
<td>.220***</td>
<td>.212***</td>
<td>.112***</td>
<td>.206***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BONS</td>
<td></td>
<td>1</td>
<td>.019</td>
<td>.005</td>
<td>-.088***</td>
<td>-.020</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONC</td>
<td></td>
<td></td>
<td>1</td>
<td>.963***</td>
<td>.136***</td>
<td>.039</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONC²</td>
<td></td>
<td></td>
<td>1</td>
<td>.146***</td>
<td>.042</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIZE</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>.118***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Note: Table 2 represents correlation matrix with market to book asset ratio as dependent variable. Short term debt, long term debt, dividends paid, and bonus shares are independent variables. Return on assets and Size are two control variables. Values represent significance level with ***, **, * as significant up to 1%, 5% and 10% level.

Short term debt is significant positive correlated (0.167) with long term debt at (0.01) level. This is due to the fact that short term debt act as a substitute to reduce negative effect of long term debt with risk of not being able to pay back interest payments. Short term debt is negatively correlated with dividends (-0.199), bonus shares (-0.088), ownership concentration (-0.228) and ownership concentration square (-0.217), return on assets (-0.155) at 0.01 significant level whereas negatively correlated with Size (-0.064) at 0.05 significance level. This indicates use of short term debt act as hind-rage to cash distribution mechanisms as well high and low ownership concentration could negatively use short term debt for their own personal interests with agency costs present. It is negatively correlated with profitability as 1% increase in short term debt leads to 0.155% decrease in firm value due to increased liquidity risk and no investment in long term contracts which reduce long term profitability of firm.
Long term debt is significantly negatively correlated at 0.01% level with dividends paid (-0.198), bonus shares (-0.055), ownership concentration (-0.162), concentration square (-0.175) and return to assets (-0.120). This implies that fund available for investment in long term debts and is reduced with disbursement of cash dividends. Therefore, cash dividends are negatively correlated with dividends and bonus shares. High and low levels of ownership concentration is negatively correlated with long term debts as it could leads to under and overinvestment process due to availability of agency costs. 1% increase in long term debt reduces firm value with 0.120% decrease in return to assets to the firm.

Dividends paid is positively correlated with ownership concentration (0.220), concentration square (0.212), size (0.112) and return to assets (0.206) at 0.01% level. It is positively correlated with ownership concentration as dividends paid acts as a mechanism to reduce free cash flow available in hands of managers as well as acts as monitoring mechanisms to reduce agency costs and increase firm value. Dividends signal growth options to the market value of firm therefore is positively correlated with return on assets and size. Similarly bonus shares is significantly positively correlated with ownership concentration (0.019) and concentration square (0.005) at 0.01% level and negatively correlated with size (-0.088) at 0.01% level. Bonus shares (-0.020) are not significantly negative correlated with return on assets.

Ownership concentration is significantly positively correlated with size (0.136) at 0.01% level and not significant positive correlated with return on assets (0.039). Similarly concentration square is significantly positive correlated with size (0.146) at 0.01% level and not significant positive correlated with return on assets (0.042). Size (0.118) is significant positive correlated with return on assets at 0.01% level implying greater the size greater return on assets and then increased firm value.

Table 3 represents results in 1) full sample data 2) with availability of growth options 3) non-availability of growth options. In full sample data short term debt is negatively related to firm value (-0.108) with p-value 0.07>0.05 but is significant up to 10% level. However, in scenario of availability of growth options short debt is negatively related (-0.113) to firm value whereas in non-availability of growth options short term debt is positively related (0.126) to firm valuation ratio. The negative effect result of STD in availability and non-availability of growth options is highly significant with p-value<0.01 which indicates that 1% rise in short term debt leads to 11.3%
A decrease in firm value in availability of growth options and 12.6% increase in firm value in non-availability of growth options.

**Table 3: Regression Results**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Full sample</th>
<th>With Growth options</th>
<th>Without Growth options</th>
</tr>
</thead>
<tbody>
<tr>
<td>STD</td>
<td>-0.108**</td>
<td>-0.113***</td>
<td>0.126***</td>
</tr>
<tr>
<td></td>
<td>0.070</td>
<td>0.007</td>
<td>0.002</td>
</tr>
<tr>
<td>LTD</td>
<td>-0.211***</td>
<td>-0.015***</td>
<td>0.241***</td>
</tr>
<tr>
<td></td>
<td>0.001</td>
<td>0.007</td>
<td>0.000</td>
</tr>
<tr>
<td>DP</td>
<td>-0.353***</td>
<td>0.894***</td>
<td>0.018</td>
</tr>
<tr>
<td></td>
<td>0.001</td>
<td>0.000</td>
<td>0.650</td>
</tr>
<tr>
<td>BONS</td>
<td>-0.128</td>
<td>1.273***</td>
<td>-0.456</td>
</tr>
<tr>
<td></td>
<td>0.681</td>
<td>0.000</td>
<td>0.130</td>
</tr>
<tr>
<td>CONC</td>
<td>0.238</td>
<td>0.147</td>
<td>-0.102*</td>
</tr>
<tr>
<td></td>
<td>0.125</td>
<td>0.140</td>
<td>0.100</td>
</tr>
<tr>
<td>CONC²</td>
<td>-0.061</td>
<td>-0.010</td>
<td>0.285**</td>
</tr>
<tr>
<td></td>
<td>0.534</td>
<td>0.830</td>
<td>0.040</td>
</tr>
<tr>
<td>ROA</td>
<td>0.013</td>
<td>0.056***</td>
<td>-0.017</td>
</tr>
<tr>
<td></td>
<td>0.490</td>
<td>0.000</td>
<td>0.110</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.044***</td>
<td>0.091***</td>
<td>-0.038***</td>
</tr>
<tr>
<td></td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>No of obs.</td>
<td>1312</td>
<td>525</td>
<td>525</td>
</tr>
<tr>
<td>R²</td>
<td>0.417</td>
<td>0.385</td>
<td>0.347</td>
</tr>
</tbody>
</table>
Adj R² | 0.413 | 0.377 | 0.342  
D.W   | 1.833 | 1.751 | 1.723  

Note: Upper values represent beta values and lower values represent significant values with ***,
**, * to be significant up to 1%, 5% and 10% level.

In full sample data long term debt is significantly negatively related with firm value. As 1% increases in long term debt leads to 1.5% decrease in firm value in availability of growth options with pvalue>0.05 and 24.1% increase in firm value in non-availability of growth options with pvalue<0.01. Dividends payouts have overall significant negative effect (-0.353) on firm value in full sample data with pvalue<0.01. However, dividend payouts are found to have significant positive effect (0.894) in availability of growth options and insignificant positive effect (0.018) in non-availability of growth options.

Bonus shares results revealed insignificant negative effect on firm value in full sample data. In availability of growth options rise in 1% bonus shares leads to significant increase in firm value up to 89.4% in availability of growth options and an insignificant increase of 1.8% on firm value in non-availability of growth options.

In estimation results of ownership concentration and ownership concentration square non-linear effect is clearly visible in availability and non-availability of growth options. Ownership concentration results revealed positive effect on firm value in availability of growth options (23.8%), in full sample data (14.7%) and negative effective on firm value in non-availability of growth options (-10.2%). Whereas ownership concentration square results revealed negative effect on firm value in availability of growth options (6.1%), in full sample data (1%) and positive effect on firm value in non-availability of growth options (28.5%). These results are interesting where in availability of growth options concentration and concentration square shows parabolic non-linear effect and in non-availability of growth options it shows inverse parabolic non-linear effect.

Amongst two control variables Size is overall highly significant pvalue<0.01 with positive effect in full sample data (0.044), in availability of growth options (0.091) and negative effect in non-availability of growth options (-0.038). The negative effect result is clear as to expand firm business and size in not favorable to firm value with no availability of good investment opportunities.
Return on assets is found to have negative effect. Return on Assets measure firm profitability and its efficiency in utilization of firm assets to increase firm value. A high significant positive effect is seen in availability of growth options declaring that 1% increase on ROA leads to 9.1% increase of firm value in availability of growth options. This also shows a clear negative effect (-0.038) of ROA on value of firm in non-availability of growth options.

**Discussion**

This study analyzed the dual effects of a company's key financial decisions on firm value when there are good investment opportunities and no good investment opportunities. The ratio of market/assets to book assets is used as a company valuation ratio that represents growth options. The MBA ratio is the most common business valuation ratio that takes into account the efficiency of using a company's assets to increase the value of the company given the large number of increased investment opportunities available. In availability of growth options short term debt indicate negative effect on firm value. The negative results estimated in full sample case and in availability case sample do not support our hypothesis. The justification could be found from (Johnson, 2003; Guedes and Opler, 1996) who demonstrates large sized firms with more growth options to be morerisky and therefore, move to employ more short term debt compared to long term debt. They alsodemonstrate short term debt to have more negative effect as it leads to increase in liquidity risks to the firm. In Pakistani firms employ more short term debt as long term debt and bond markets are not fully developed. When markets are not fully established, than managers of firms do not take it as suitable to borrow expensive debt for investment and for funding employ more short term debt to run the company cycle. Therefore, firm managers do not found it suitable to take high risky projects and under-invest due to manager and shareholders agency conflicts. In non-availability of growth options short term debt demonstrate positive effect on firm value. The idealizing behind is that short term debt act as a substitute in place of dividends to reduce and limit free cash flow available in hands of managers to reduce agency costs and increase firm value (Dang, 2011).

In the availability of growth options, long-term debt shows results suggesting that long-term debt has a large negative impact on firm value. This is consistent with (Al-Mutairi et al., 2011; De Jongand Van Dijk, 2007; Alonso et al., 2005; Singh and Faircloth, 2005; Childs et al., 2003; McConnelland Servaes, 1995). All of these studies have demonstrated a negative effect of leverage on firm
value given the availability of growth options, as high debt levels increase underinvestment costs due to conflicts of interest. Interests between managers and shareholders, thereby reducing the value of the firm. In the absence of growth options, the hypothesis has been proposed that long-term debt has a notable positive impact on a firm's value. This is due to the fact that the issuance of debt helps to regulate and restrict the excessive use of free cash flows that managers have access to (D’Mello and Miranda, 2010; Zhang and Li, 2008; Li and Cui, 2003). Long-term debt can act as a means of enforcing discipline and reducing agency costs, ultimately leading to an increase in firm value, particularly in situations where growth options are limited. However, the potential decrease in growth options resulting from high levels of long-term debt implies that corporate debt may have a more detrimental effect on firm value when investment projects are available.

Dividend payout results show a negative relationship with firm value in the full sample data, as part of the value-generating investment fund is used in cash payments (Abor et al. Bokpin, 2010; Guglar and Yurtoglu, 2001). In the availability of growth options, dividends represent a positive relationship because dividend payout signals the company's profitability and the high growth options available to the company and thereby increasing the value of the firm (Ho, 2003 DeAngelo et al., 2000). Dividends exhibit a positive relationship in the absence of growth options, as dividend payments act as a mechanism that limits access to free cash flow and reduces overinvestment (Carvalhal-da-Silva and Subrahmanyam, 2007; Itturiaga and Crisóstomo, 2010). Bonus shares have positive effect in availability of growth options as bonus shares increase motivation of managers and investors and increase profitability of firm. Bonus shares have negative effect in non-availability of growth options because with low growth options and low free cash flow available bonus shares should not be issued instead the cash should be used for investment purpose or in paying out dividends that could generate value to the firm (Balachandran et al., 2004).

Our hypothesis suggests that the level of ownership concentration will impact firm value in a non-linear fashion. Specifically, an increase in initial concentration is expected to have a positive effect, whereas high levels of concentration may have a negative effect. These effects are anticipated to apply to both situations where growth options are available and where they are not (Dyck and Zingales, 2004; Gursoy and Aydogan, 2002). Similar outcomes are produced in the estimates regarding the presence of growth options. However, in situations where growth options are absent, a contrary pattern is observed. Initially, a reduction in firm value is displayed with an increase in
ownership concentration, followed by a subsequent rise in firm value with a high degree of
concentration. This represents an inverse non-linear impact in the absence of growth options. Consequently, for their personal benefit, individuals attempt to obtain business resources from companies with low investment opportunities, seeking to profit from those companies that have available investment projects (Demsetz and Villalonga, 2001). Owners prioritize safeguarding their return on investment when faced with both low and high investment opportunities. In the absence of growth options, the square of ownership concentration has a favorable impact on firm value. This is because, even when low-investment projects are available, their investment in a specific business has reached a point where they are motivated to exert control over the business and increase their personal wealth (Javaid et al. Iqbal, 2007).

Size represents the use of business assets in good investment projects. Size represents highly significant positive values in availability and highly significant negative values in the unavailability of growth options. In the absence of growth options, size has a negative impact because most small businesses have little available good investment projects or are too expensive and expensive. Return on assets describes the profitability generated by a company with the efficient use of its assets. The results demonstrate that with the availability of high growth options, high profitability is present. Companies describe a low negative return on assets in the absence of availability because of the low returns generated by companies with low growth options available.

**Conclusion and Implications**

This article presents optimal financial policies that should be created and implemented in a way that reduces the agency cost of debt, i.e. (underinvestment and overinvestment), and to maximize the value of debt of the enterprise. A key factor in this process is the availability of growth options for the business. The interrelationships of these variables indicate that the firm's financial decisions, i.e. corporate debt, cash payments and ownership concentration, are the most important determinants of the value of the firm company. This document has important implications for major shareholders, creditors and investors. Major shareholders of companies are interested in maximizing shareholder wealth. This article will be helpful to them in analyzing situations and changing financial policies made by management as more control and power are exercised, agency costs can be reduced, and firm's assets can be maximized. Creditors can act as intermediaries and help alleviate management's problem of adverse selection of investment projects through their knowledge of the company's debt.
policy and associated risks. Investors can trade off the risk and
return of investment projects and portfolios to design and realize the idea of how different companies will operate based on availability, and their used percentage of good and bad investment opportunities.

References


## Appendix

**Table 4**: (Appendix1) List of Sector wise Sample Detail

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Sector Title</th>
<th>Total No of Companies</th>
<th>No of Selected Companies</th>
<th>% Sector Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Personal Goods (Textile)</td>
<td>181</td>
<td>36</td>
<td>19.89</td>
</tr>
<tr>
<td>2</td>
<td>Food Producers</td>
<td>54</td>
<td>31</td>
<td>57.40</td>
</tr>
<tr>
<td>3</td>
<td>Chemicals</td>
<td>33</td>
<td>20</td>
<td>60.60</td>
</tr>
<tr>
<td>4</td>
<td>Construction and Materials (Cement)</td>
<td>37</td>
<td>16</td>
<td>43.24</td>
</tr>
<tr>
<td>5</td>
<td>Oil and Gas</td>
<td>12</td>
<td>12</td>
<td>100.00</td>
</tr>
<tr>
<td>6</td>
<td>Automobile and Parts</td>
<td>16</td>
<td>12</td>
<td>75.00</td>
</tr>
<tr>
<td>7</td>
<td>Engineering</td>
<td>11</td>
<td>7</td>
<td>63.64</td>
</tr>
<tr>
<td>8</td>
<td>Pharmaceuticals and Bio Tech</td>
<td>9</td>
<td>6</td>
<td>66.67</td>
</tr>
<tr>
<td>9</td>
<td>Power and Electricity</td>
<td>16</td>
<td>6</td>
<td>37.50</td>
</tr>
<tr>
<td>10</td>
<td>General Industrials</td>
<td>13</td>
<td>3</td>
<td>23.08</td>
</tr>
<tr>
<td>11</td>
<td>Household Goods</td>
<td>13</td>
<td>3</td>
<td>23.08</td>
</tr>
<tr>
<td>12</td>
<td>Beverages</td>
<td>3</td>
<td>2</td>
<td>66.67</td>
</tr>
<tr>
<td>13</td>
<td>Forestry (Paper and Board)</td>
<td>4</td>
<td>2</td>
<td>50.00</td>
</tr>
<tr>
<td>14</td>
<td>Electronics and Electrical Goods</td>
<td>3</td>
<td>2</td>
<td>66.67</td>
</tr>
<tr>
<td>15</td>
<td>Fixed line Telecommunications</td>
<td>5</td>
<td>2</td>
<td>40.00</td>
</tr>
<tr>
<td>16</td>
<td>Gas and Water</td>
<td>2</td>
<td>2</td>
<td>100.00</td>
</tr>
<tr>
<td>17</td>
<td>Tobacco</td>
<td>3</td>
<td>1</td>
<td>66.67</td>
</tr>
<tr>
<td>18</td>
<td>Leisure Goods</td>
<td>1</td>
<td>1</td>
<td>100.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>416</strong></td>
<td><strong>164</strong></td>
<td><strong>39.42</strong></td>
</tr>
</tbody>
</table>
**Table 5:** (Appendix2) Variables measure and definition

<table>
<thead>
<tr>
<th>Variables</th>
<th>Sign</th>
<th>Definition</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Term Debt</td>
<td>STD</td>
<td>Short Term Debt/Total Assets</td>
<td>STD/TA</td>
</tr>
<tr>
<td>Long Term Debt</td>
<td>LTD</td>
<td>Long Term Debt/Total Assets</td>
<td>LTD/TA</td>
</tr>
<tr>
<td>Dividend Payouts</td>
<td>DP/TA</td>
<td>Dividends/Total assets</td>
<td>DP/TA</td>
</tr>
<tr>
<td>Bonus Shares</td>
<td>BONS</td>
<td>Bonus Shares/Total Assets</td>
<td>BONS/TA</td>
</tr>
<tr>
<td>Ownership Concentration</td>
<td>CONC</td>
<td>Percentage of Top Five Shareholders</td>
<td>C5</td>
</tr>
<tr>
<td>Ownership Concentration Square</td>
<td>CONC²</td>
<td>Square of Percentage of Top Five Shareholders</td>
<td>C5 square</td>
</tr>
<tr>
<td>Size</td>
<td>SIZE</td>
<td>Natural Logarithm of Total Assets</td>
<td>Log TA</td>
</tr>
<tr>
<td>Return on Assets</td>
<td>ROA</td>
<td>Earnings before Interest and Tax/Total assets</td>
<td>EBIT/TA</td>
</tr>
<tr>
<td>Market to Book Assets Ratio</td>
<td>MBA</td>
<td>Market Value/Book value of Asset,</td>
<td>(MVE+D)/BVA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Where Market Value of Equity is measured by adding Book Value of Debt to Market Value of Equity</td>
<td></td>
</tr>
<tr>
<td>Sector Adjusted Market to Book</td>
<td>SMBA</td>
<td>Median MBA Ratios of Sectors-Individual Firm MBA Ratio</td>
<td>SMBA = Median SMBA -</td>
</tr>
<tr>
<td>Assets Ratio</td>
<td>MBA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Dealing with the challenges of large Kosovar businesses in selecting adequate staff

Hana Gashi Ahmeti¹

Abstract

Given that we are now living in a time when the movement of people is free and with many opportunities, businesses are facing many challenges to select suitable candidates for certain positions. These challenges are more pronounced in countries that are in transition, in this case, the state of Kosovo. To reach the main goal of this research, we are based on numerous different theories and research of this kind. For this research, in addition to secondary data, primary data were also used, which were provided by using the questionnaire, which was distributed to large businesses, where 80 of them were used in this research. All data were processed using SPSS, descriptive analysis, and correlation analysis was used. The results show that businesses are faced with various challenges during the post-selection phase of adequate candidates for certain positions, where the ones that are most noticed are lack of time, lack of training, etc.

Introduction

Today, businesses are faced with many and different challenges, including the selection of adequate staff, where the main goal of every business is to have excellent staff, in order to fight the competition and make life easier. Thus, in the environment of large businesses, creativity and innovation occur at a high speed, due to the dynamic nature with which these businesses operate, so businesses must focus on selecting their main competencies, including their managerial staff (Al-Kassem, 2017). Businesses try to select the right person in the right position (Prabhu, Thangasamy, & Abdullah, 2020). For the management of human resources, we try to do the best possible for the selection of these people, where during this phase they encounter great difficulties, including the qualification, work experience, training for the specific position, etc. Therefore, human resources must create adequate strategies to achieve the best and most efficient organizational performance (Hamza, et al., 2021). Therefore, a successful company is difficult to imagine that it can function without a professional team (Ali & Anwar, 2021). According to (Recruiting, 2019) the challenges that most businesses face in finding potential candidates for

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their businesses are: identification of talented employees, lack of qualified candidates for employment positions, lack of familiarity with technology for potential candidates, since the development of technology is growth of the above.

The main purpose of this research is to identify the challenges faced by large businesses in Kosovo, as well as to provide concrete recommendations. This research will be structured in five parts, where the first part is the introduction, then continuing with the review of the literature, where the fourth part will be citing many international authors. After this part, there will be the methodology part, which will have its detailed description. The fourth part of this research will be the presentation of the results, while the last part is the discussion part.

**Literature review**

Considering that human resources are one of the most important resources in a company, the latter always tries to hire the best and most qualified people. All types of businesses try to have people as their own staff, especially large businesses, as they have extraordinary competition in the market, where most of them are now also operating in the international market. Well, during the post-election phase, these businesses face various challenges, where according to the author (Bika, 2022) they are bigger:

- attracting the right candidates,
- engagement of qualified candidates,
- quick employment
- the selection of candidates based on the data presented
- selection of candidates based on previous experience
- Right selection, creation of an efficient recruitment process

Every business whose goal is profit maximization also has the main goal of finding these employees with adequate skills for the give positions, where for these businesses try to attract the right people with the right skills
Every business whose goal is profit maximization also has the main goal of finding these employees with adequate skills for the given positions, where for these businesses try to attract the right people with the right skills (Leonard, 2019).

Another challenge that big businesses face today is brain drain, especially from countries that are in transition. Also, another challenge is the lack of proper planning of human resources, the location of businesses, where most of the big businesses are mostly far from urban areas, as well as the development of technology, which is happening in big steps (Zinyemba, 2014).

According to the author's empirical research (Ye, 2022), the challenge of businesses in the selection of adequate staff is also the falsification of CVs by candidates pretending to be people with managerial experience.

According to (Ghodasara, 2023) the challenges of selecting candidates by companies are: lack of talent or qualified persons for certain positions, attracting the right candidates, passive targeting of candidates, finding and engaging qualified persons, reducing the time for employment, as it is now more valuable than using time, building a strong employer brand, creating an efficient process of selecting the right candidates, eliminating prejudices during the hiring process, securing candidates with excellent experience, selecting candidates by based on the data presented, as well as the selection of candidates in cooperation with the high management level.

Research methodology

This research follows a broadly literature review in the field of business and employment. Online platform used for cited works include journals. All the paper are cited properly using APA style. Followed the research hypothesis and the literature review the research model is build, this research follows the quantitative method and is survey research.

A survey from 11 questions was designed as quantitative method for data collection. The primary data used in this survey study was distributed to 80 big businesses in order to give answer to the research question.

The questionnaire was prepared online using google forms and includes structured questions. The time cover is 3 months for data collection cover the period March – May 2023, the data are
prepared in excel and the results are estimated using SPSS. The results of this study are presented with tables and graphs and cover the descriptive statistics the frequencies and the correlation metrics.

**Results research**

In these parts, the results of this research are presented.

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>What activity does your company perform?</td>
<td>80</td>
<td>1</td>
<td>4</td>
<td>1.56</td>
<td>.926</td>
</tr>
<tr>
<td>How long have you been operating in the market as a business?</td>
<td>80</td>
<td>1</td>
<td>6</td>
<td>2.56</td>
<td>1.349</td>
</tr>
<tr>
<td>Another key problem you face is that once you gain a talented employee, you face the risk of losing them due to</td>
<td>80</td>
<td>1</td>
<td>4</td>
<td>1.68</td>
<td>.823</td>
</tr>
<tr>
<td>For you as a business the efficient and effective use of hiring funds means:</td>
<td>80</td>
<td>1</td>
<td>3</td>
<td>1.60</td>
<td>.739</td>
</tr>
<tr>
<td>To attract the best candidates’ businesses should have little time and resources to devote to reviewing:</td>
<td>80</td>
<td>1</td>
<td>2</td>
<td>1.09</td>
<td>.284</td>
</tr>
<tr>
<td>You are operating in the market for:</td>
<td>80</td>
<td>1</td>
<td>4</td>
<td>1.56</td>
<td>.939</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>----</td>
<td>---</td>
<td>---</td>
<td>------</td>
<td>-----</td>
</tr>
<tr>
<td>Competing with Big Businesses to Attract Top Talent</td>
<td>80</td>
<td>1</td>
<td>4</td>
<td>1.34</td>
<td>.810</td>
</tr>
<tr>
<td>The most important for business is having a hiring process that will result in the ideal candidate for the job</td>
<td>80</td>
<td>1</td>
<td>4</td>
<td>1.27</td>
<td>.636</td>
</tr>
<tr>
<td>The cost of a bad hire may be up to 15 times of base salary</td>
<td>80</td>
<td>1</td>
<td>5</td>
<td>1.30</td>
<td>.818</td>
</tr>
<tr>
<td>If business not provide training, employees may start looking elsewhere</td>
<td>80</td>
<td>1</td>
<td>5</td>
<td>1.15</td>
<td>.530</td>
</tr>
<tr>
<td>Retaining good talent requires strategic management where employees are closely committed to the mission, feel valued and appreciated</td>
<td>80</td>
<td>1</td>
<td>3</td>
<td>1.12</td>
<td>.369</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the table above are presented the summary statistics for the variables used into analysis. There are 11 questions in the sample of 80 big enterprises which operate in the Kosovo.
## Frequency Tables

### What activity does your company perform?

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>Service</td>
<td>52</td>
<td>65.0</td>
<td>65.0</td>
</tr>
<tr>
<td></td>
<td>Wholesale</td>
<td>18</td>
<td>22.5</td>
<td>87.5</td>
</tr>
<tr>
<td></td>
<td>Retail Trade</td>
<td>3</td>
<td>3.8</td>
<td>91.3</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>7</td>
<td>8.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>80</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

In the question what activity does your company perform 65 percent of them are in service, 22.5 in the wholesale, 3.8 in the retail and 8.8 choose the option other.
You are operating in the market for:

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>Less than one year</td>
<td>54</td>
<td>67.5</td>
<td>67.5</td>
</tr>
<tr>
<td></td>
<td>1-3 years</td>
<td>13</td>
<td>16.3</td>
<td>83.8</td>
</tr>
<tr>
<td></td>
<td>4-6 years</td>
<td>7</td>
<td>8.8</td>
<td>92.5</td>
</tr>
<tr>
<td></td>
<td>more than 6 years</td>
<td>6</td>
<td>7.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>80</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

In the question you are operating in the market for 67.5 answer less than one year, 16.3 answer 1-3 years, 8.8 answer 4-6 years and 7.5 percent answer more than six years.
For you as a business the efficient and effective use of hiring funds means:

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid investing in a good hiring process</td>
<td>44</td>
<td>55.0</td>
<td>55.0</td>
<td>55.0</td>
</tr>
<tr>
<td>people centered management</td>
<td>24</td>
<td>30.0</td>
<td>30.0</td>
<td>85.0</td>
</tr>
<tr>
<td>using creative and modern tools to attract and maintain valued employees</td>
<td>12</td>
<td>15.0</td>
<td>15.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

In the question for you as a business the efficient and effective use of hiring funds means 55 percent of them answer investing in a good hiring process, 30 percent of them choose people centered management, 15 percent choose using creative and modern tools to attract and maintain valued employees.
To attract the best candidates’ businesses should have little time and resources to devote to reviewing:

<table>
<thead>
<tr>
<th>Valid</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVs</td>
<td>73</td>
<td>91.3</td>
<td>91.3</td>
<td>91.3</td>
</tr>
<tr>
<td>holding different interviews</td>
<td>7</td>
<td>8.8</td>
<td>8.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

In the question To attract the best candidates’ businesses should have little time and resources to devote to reviewing: 73 percent of them answered CVs and 7 percent of them holding different interviews.

The most important for business is having a hiring process that will result in the ideal candidate for the job

<table>
<thead>
<tr>
<th>Valid</th>
<th>Frequency</th>
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In the question The most important for business is having a hiring process that will result in the
ideal candidate for the job 81.3 percent answer totally agree, 11.3 answer agree, 6.3 answer neutral and 1.3 answer do not agree and totally do not agree there were no answers.

**If business not provide training, employees may start looking elsewhere**

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<tr>
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A challenge for business means If business not provide training, employees may start looking elsewhere thus the respondents 88.8 of them answer totally agree, 10 percent of them answer agree and 1.3 answer totally agree.

**The cost of a bad hire may be up to 15 times of base salary**

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Another challenge the business face is the cost of a bad hire may be up to 15 times of base salary 82.5 percent of the respondents answer totally agree, 12.5 answer agree, 2.5 answer do not agree and 2.5 answer totally do not agree.
Competing with Big Businesses to Attract Top Talent is a challenge for you

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In the question Competing with Big Businesses to Attract Top Talent is a challenge for you, 81.3 percent answer totally agree, 10 percent answer agree, 2.5 percent answer neutral, 6.3 percent answer do not agree at all.

Retaining good talent requires strategic management where employees are closely committed to the mission, feel valued and appreciated.

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In the question Retaining good talent requires strategic management where employees are closely committed to the mission, feel valued and appreciated, 88.8 percent answer totally agree and 10 percent answer agree,
Another key problem you face is that once you gain a talented employee, you face the risk of losing them due to

<table>
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<tr>
<td>Valid</td>
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<td>having effective management where valued employees may leave out of frustration,</td>
<td>42</td>
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In the question, Another key problem you face is that once you gain a talented employee, you face the risk of losing them due to 52.5 percent answer having effective management where valued employees may leave out of frustration, 30 percent of them answer overwork, 15 percent of them answer lack of growth opportunities and 2.5 percent answer other.
To attract the best candidates’ businesses should have little time and resources to devote to reviewing:

The most important for business is having a hiring process that will result in the ideal candidate for the job

To attract the best candidates’ businesses should have little time and resources to...

The most important for business is having a hiring process that will result...

If business not provide training, employees may start looking elsewhere

The cost of a bad hire may be up to 15 times of base salary

If business not provide training, employees may start looking elsewhere

The cost of a bad hire may be up to 15 times of base salary

Competing with Big Businesses to Attract Top Talent is a challenge

Retaining good talent requires strategic management where employees are closely...

https://www.intraders.org/may
144
For you as a business the efficient and effective use of hiring funds means:

- Investing in a good hiring process: 50%
- People centered management: 20%
- Using creative and modern tools to attract and maintain valued employees: 10%
What activity does your company perform?

To attract the best candidates, businesses should have little time and resources to devote to reviewing.

Retaining good talent requires strategic management where employees are closely committed to the mission, feel valued, and appreciated.

If business not provide training, employees may start looking elsewhere.

The cost of a bad hire may be up to 15 times of base salary.

The most important for business is having a hiring process that will result in the ideal candidate for the job.

Competing with Big Businesses to Attract Top Talent

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**. Correlation is significant at the 0.01 level (2-tailed).

The correlation matrix shows the relationship between variables. Question one is in positive relationship with question 2 but this relationship is weak. Question one is positively related to the question two, three and four an seven but is in negative relations with question five and six.

**Question 1:** What activity does your company perform?

**Question 2:** To attract the best candidates’ businesses should have little time and resources to devote to reviewing:

**Question 3:** Retaining good talent requires strategic management where employees are closely committed to the mission, feel valued and appreciated

**Question 4:** If business not provide training, employees may start looking elsewhere

**Question 5:** The cost of a bad hire may be up to 15 times of base salary

**Question 6:** The most important for business is having a hiring process that will result in the ideal candidate for the job

**Question 7:** Competing with Big Businesses to Attract Top Talent
Discussions

Based on the results of this research, it can be concluded that most businesses today invest in a better hiring process. But their biggest challenge is to attract the right candidate, they need a long time. The same frequency with our result is also the author's statement (Pophal, 2021). Businesses also have another challenge in attracting ideal candidates for certain positions. The same challenges are faced by the businesses of other countries, where the empirical research of the authors proves this (Adeosun & Ohiani, 2020). Also, the lack of training is one of the main challenges of businesses. Another challenge is also the cost during the candidate's post-election phase.

The recommendations for large businesses are that their staff is given many different trainings, inorder to be one step ahead of the times and one step ahead of the competition. Another recommendation is that the selection of candidates is done among the companies that deal with the recruitment of candidates, so that the companies do not waste time in their selection.

References


acquisition/pages/small-businesses-face-hiring-challenges.aspx, May


“Glossă” by Mihai Eminescu: Between Saṃsāra and Praṇītyasamutpāda

Marinică Tiberiu Șchiopu

Abstract

The present paper aims to explore the intertextual relations with Buddhism established by Mihai Eminescu in Glossă. The Romanian writer was deeply influenced by this philosophy and recycled a number of concepts, themes and motifs of Buddhist origin in his works. Eminescu discovered the different Indian schools of thought during his academic studies in Berlin and Wien, and Arthur Schopenhauer’s philosophy left a permanent trace in his forma mentis. Glossă is the perfect example of a poem highly permeated by Buddhist ideas and concepts, two of the philosophical and conceptual landmarks of this writing are the cycle of birth and rebirth (saṃsāra), and the law of interdependence (pratītyasamutpāda). The main research question of this study is: “Why are these two Buddhist concepts of such importance in Glossă?” In the analysis of this poem we will make use of intertextuality, close reading, stylistics, and hermeneutics.

Keywords: Buddhism, Eminescu, Glossă, intertextuality, stylistics.

1. Introduction: Mihai Eminescu’s interest in Buddhism

Mihai Eminescu’s interest in Indian philosophy and literature is renowned among Romanian readers and intellectuals. He discovered the numerous schools of thought of ancient India during his academic studies in Vienna and Berlin. As part of his passion for the culture and wisdom of the subcontinent, Eminescu studied the Sanskrit language as well, and Amita Bhose, in her doctoral thesis entitled Eminescu and India, thoroughly analysed the Indian influences in his works. Through Arthur Schopenhauer’s writings, Mihai Eminescu came into contact with Buddhism, and this fact highly influenced his works and forma mentis.

In 2013, Cătălin Cioabă published a volume of letters and memories about Eminescu entitled Mărturii despre Eminescu. Povestea unei vieți spusă de contemporani, in which he included testimonies from the Romanian writer’s friends. He discovered Indian culture, philosophy and Buddhism, particularly, as a consequence of his vast interests in various domains of knowledge:

“Besides Romanian language and history, Eminescu used to study with great pleasure the ancient history, especially the history of Greeks, Romans, Egyptians, Babylonians, Assyrians, Persians and Indians [...]” (Cioabă 2013: 57) or “The amazing knowledge that one can find in Eminescu’s writings prove that he, as an autodidact, spent his time efficiently and he studied hardly the national history and literature, foreign literatures, philosophical systems, metaphysics, and even Latin, which challenged him during high school (said Teodor V. Ștefanelli)” (ibidem: 62).

1 PhD, The Institute of the Romanian Language, Bucharest, Romania, University of Delhi,
India

2 Testimonies about Eminescu: The Story of a life told by his contemporaries.
3 The author of the article did all the translations from the Romanian language, except those for which the translator is mentioned.

From Ștefanelli’s account, one can infer that Eminescu’s favourite domains were literature, philosophy, and history, especially the ancient history of the Orient. His propensity for Oriental civilizations opened his way to Eastern philosophies, thus he discovered the Vedic tradition, the Upanishads, and the different Buddhist schools of thought.

Ioan Slavici went into detail about the sources of Eminescu’s knowledge of Buddhism, indicating Kant and Schopenhauer as the mediators between the Romanian writer and the Eastern philosophical systems, among which Buddhism was central: “All these would not have been possible if he wouldn’t have read Kant and Schopenhauer, whose books were the ones that he never sold after he read them. I also recall clearly that he used to speak a lot about Buddha, Nirvana and Confucius” (ibidem: 118). Slavici also recalls Eminescu’s tolerance and interest in all religious traditions, especially the eastern ones: “[..] he learnt by the age of 20 not only the teachings of the Gospels but also Plato’s ideas, Zarathustra and Buddha’s teachings, and he highly regarded religiosity” (ibidem: 174). The Transylvanian writer noticed that Eminescu partially shared Schopenhauer’s philosophical views:

“[..] I used to talk with Eminescu all the time, who neither at that time nor later did not accept entirely the German philosopher’s views, only the basic principles: that the real world is not what we can see, that the soul is independent of the body, and the foundation of morality is compassion, old and, at the same time, new truths” (ibidem: 175).

Thus, one can infer that Mihai Eminescu knew the fundamental principles of Buddhism: the law of the dependent arising (pratītyasamutpāda), the anātman theory (the absence of the independent soul), and the paramount importance of compassion (karuṇā) on the path to liberation.

Teodor Ștefanelli described Eminescu’s passion whenever he used to talk about the philosophical system created by Siddharta Gautama, emphasizing the solidity of the poet’s knowledge about the Buddhist philosophy and the esoteric aspects of Buddhism, especially the Tibetan branch:

“[..] Eminescu used to expose vast knowledge and used to tell me that Tibet was the cradle and the heart of the Buddhist mysteries, then he used to talk about Nirvana and Buddha-Sakhia-Muni. He used to be so delighted about the principles of this religion that he seemed to be in ecstasy while talking and he often uttered enthusiastically the words O! Buddha-Sakhia-Muni!” (ibidem: 148-149).

Vasile Gherasim talked about Eminescu reading the German philosophers and Indian literature and philosophy, recalling one of his discussions with Samoil Isopescu about Mihai Eminescu:

“I used to read, said Mr Isopescu, together with Eminescu works by Schopenhauer, Rousseau; then Büchner Kraft und Stoff. From the Indian philosophy and literature, he used to read Sakuntala to me, ancient Indian epics and the Indian Vedas: all of them in German translation.” Eminescu used to extract the main parts and memorize them. And
he used to say: ‘My ideal is Nirvana!’” (ibidem: 159).

Thus, Mihai Eminescu’s interest and passion for Indian philosophy and literature, and the Buddhist system in particular, is obvious in his friends’ memories on the one hand, and in his writings on the other. In the following chapters, we will analyse Eminescu’s poem Glossără from an intertextual perspective, using the instruments of close reading, hermeneutics and stylistics, trying to decipher the importance of samsāra and pratītyasamutpāda in this piece of poetry.

2. Glossără: A Buddhist compendium in verses

Mihai Eminescu’s Indianism was researched by many scholars, and two of them analysed thoroughly the relations between Eminescu’s work and the philosophies and literature of the subcontinent, namely Amita Bhose (her PhD thesis entitled Eminescu și India – Eminescu and India) and Mircea Itu (Indianismul lui Eminescu – Eminescu’s Indianism). Their studies though touch only tangentially on the Buddhist representations in his writings. Eminescu’s interest in India was lifelong and it included not only reading books on Indian philosophy and literature but also attending lectures on these topics, he translated from Sanskrit into Romanian and, obviously, he used to think and analyse the Indian cultural outputs:

“The fact that India represented for Eminescu an obsessive cultural area to which he often referred and talked in exalting words since his teenage, the fact that during his academic studies, he attended lectures on this topic, attending even Albrecht Weber’s lectures (the famous Sanskritologist), the fact that he left as an incomplete manuscript the translation into Romanian of Franz Bopp’s Sanskrit Grammar, and especially the fact that in his poems one can find indubitably a number of Indian themes and motifs, all these facts raised the problem of the Indian culture as a source of inspiration for Mihai Eminescu” (Al-George 2002: 234-235).

Thus, Mihai Eminescu assimilated, recycled and included the fundamental values of this multi millenial civilization in his writings, thus, establishing intercultural and intertextual relations between the Indian and the Romanian cultures.

Regarding the philosophical dimension of Eminescu’s work and his propensity for meditation, G. Călinescu stated: “Eminescu is a philosopher, not because of the contemplative attitude of his poems but due to the methodological strategies that can be found in his reasoning, and which agglutinate the speculative parts of his work” (Călinescu 1970: 8).

Glossără is one of the poems in which the Romanian writer intensively recycled some of the fundamental Buddhist concepts and ideas, and it could be considered a brief Buddhist compendium in verses in the Romanian language. Both Amita Bhose and Mircea Itu emphasized the obvious and easily identifiable Buddhist elements in the above-mentioned piece of poetry. Eminescu used allusion as a main intertextual instrument in the analysed poem.

The first and the final stanzas contain the main ideas of Buddhist origin that go through the entire poem: the permanence of change, mindfulness, non-attachment, and meditative
introspection.
The second stanza is permeated by the urge to cultivate non-attachment, impartiality, and the idea of time cyclicality which hints at the fundamental philosophical concept of all Indian schools of thought, namely *saṃsāra*:

“We see things of every kind
And we hear a lot of stuff
Who can store them all in mind,
Who can listen well enough?...
But you’d better sit aside,
Brace yourself, be ever strong
When with noises and vain pride
Time goes by, time comes along” (Translation by Octavian Cocoș 2022: 37).

The literary motif of the cycle of time or the illusion of time, as *Avatamsaka Sūtra* defines this dimension, represents a mere trick of mind without real basis, an idea accepted by quantum physicists nowadays. Carlo Rovelli, speaking about the *loop theory* in Quantum Physics, deconstructed two of the most traditional dimensions deeply rooted in humans’ minds – time and space –, on the basis of the interdependence that pervades the universe: “In a theory of this kind, time and space are no longer containers or general forms of the world. They are approximations of a quantum dynamic that in itself knows neither space nor time. There are only events and relations. It is the world without time of elementary physics” (Rovelli 2018: 80).

Impartiality (*upekṣā*) is recommended by the Romanian poet in the third stanza as a counterbalance for the ephemeral and cyclic nature of the world that might affect people’s minds by causing emotional and mental unbalance:

“And don’t let its tongue so strange,
To incline the reason’s scales
To the moment that will change,
To the phony happy trails,
Which are rooted in its death
And will disappear like dew;
But for those who know at length
All is old and all is new” (Cocoș 2022: 37).

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4 “Multe trec pe-dinainte,
În auz ne sună multe,
Cine ține toate minte
Și ar sta să le asculte?...
Tu așează-te deoparte,
Regăsandu-te pe tine,
Când cu zgomote deșarte
Vreme trece, vreme vine” (Eminescu 2014: 388).

5 “Nici încline a ei limbă
Recea cumpăn-a gândirii
Înspre clapă ce se schimbă
Pentru masca fericirii,
Ce din moartea ei se naște
The cyclicity of time and world is specific to Indian thinking, it is common to all the major schools of thought which emerged in the subcontinent, and Mihai Eminescu expressed it accurately in the following stanzas:

“And the future and the past
Are the sides of the same card
See the outset very fast
Those who learn them really hard;
All that was or that will be
Nowadays, we have in view
If it’s vain for you and me,
Ask yourself and ponder, too.” Or

“Because these, as it appears,
All obey – the strong, the weak,
And for many thousand years
We’ve been happy, we’ve been bleak.
Other masks, the same old play,
Other mouths, the same career,
When you’re cheated every day
Do not hope and do not fear” (ibidem: 37-38).6

The poet advises mindfulness, equanimity and the cultivation of wisdom in tackling the delusory character of existence, exactly like the Buddhist masters, for instance, Shantideva in Boddhisattvacharyāvatāra.

In a previous version of Glossă, the philosophical theme of samsāra was inserted in the sixth stanza: “[...] One is born, another one dies/ And the actors are changed on the stage”7

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6 “Viitorul și trecutul
Sunt a filei două fețe,
Vede-n capăt începutul
Cine știe să le-nvețe;
Tot ce-a fost ori o să fie
În prezent le-avem pe toate,
Dar de-a lor zădărnicie te întreabă și socoate.

Căci același mijloace
Se supun câte există,
Și de mii de ani încoca
Lumea-i veselă și tristă;
Alte măști, aceeași piesă,
Alte guri, aceeași gamă,
Amăgit atât de-adese

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Nu spera și nu ai teamă” (Eminescu 2014: 389).

7 My translation from Romanian: “[...] Unul naște, altul moare/ Și se schimb’a ștori-n scenă” (Eminescu 2015: 73).
(Eminescu 2015: 73), and the poet connected it to the literary theme of the world as a theatre. In the next stanza, the lyrical speaker depicts the concept of śunya using a number of metaphors: “Two are fighting for a crown/ Other two for a walnut/ For the both it is an illusion/ When they catch it, it is useless/ That who is unsatisfied with one/ It is with ten, too/ Time is carrying all that gathers/ Wave is everything that it carries away” (ibidem: 73-74).8

The association of “crown” and “walnut” denotes that they are placed on the same level of importance due to their devoid of intrinsic reality nature according to the law of interdependence (pratītyasamutpāda) and emptiness (śunya), as Nāgārjuna defined the two fundamental concepts of the Buddhist philosophy:

“Whatever is dependently co-arisen
That is explained to be emptiness.
That, being a dependent designation,
Is itself the middle way.

Something that is not dependently arisen
Such a thing does not exist.
Therefore a nonempty thing
Does not exist” (Nāgārjuna 1995: 283).

The Buddhist emptiness was misinterpreted as the absence of self or of the reality of an entity (either being or object/matter). In fact, it does not negate the reality of beings and matter at a grosser level of perception, instead, it states that all of them are devoid of existence due to their interdependent nature (pratītyasamutpāda), they arise according to a number of causes and conditions which determine their selflessness. Dalai Lama and Thupten Jinpa clarified the distinction between a cause and a condition in Science and Philosophy in the Indian Buddhist Classics vol. I – The Physical World:

“In explaining the causal process inherent in the arising of things, we see a distinction drawn between two crucial terms, causes (hetu) on the one hand and conditions (pratyaya) on the other. When distinguished, cause is primary while conditions are complementary in that they help the cause produce its effect. To give an example popular in Buddhist sources, the arising of a rice sprout, the rice seed is the cause while factors such as soil, moisture, warmth, and the farmer’s efforts are conditions” (Dalai Lama & Thupten Jinpa 2018: 76-77).

In Buddhism, even the current universe is a mere phase of an endless cycle of compressions and expansions, an idea that agrees with the scientific theory of the Big Bang and its variation of the pulsating universe. Thus, if the entire cosmos originates in an extremely tiny volume of condensed energy which expanded gradually causing all the existing entities,

8 My translation from Romanian: “Doi se bat pentru coroană/ Doi se cearta pentru nucă/ L-amândoi ei o nălucă/”
Când o prind o văd că-i vană/ Cel nemulumit cu una/ Este astfel și cu zece/ Vremea duce tot ce-adună/ Val e tot ce cu el trece” (*ibidem*: 73-74).
everything is interdependently arisen, compound, made of particles or quanta of energy and devoid of intrinsic reality.

Therefore, the two fundamental Buddhist concepts of pratītyasamutpāda and saṃsāra are interrelated throughout the entire poem, instilling an obvious and profound philosophical character to this piece of poetry, following the tradition of the Buddhist thought.

3. The problem of the objectivity of time and the world

In Buddhism, time (kāla), like the entire world, is relative and it cannot be separated from the entities of the universe. Time is described as the sequence of changes in things and beings, it is perceived when comparing the transformation of one entity to all the others. Masao Abe stated that: “Time is thus understood in Buddhism always to be inseparable from things as ever-changing. There is no time apart from things in the universe. Time and things are completely non-dual. Objective time or absolute time is an abstraction from this living time” (Abe 1997: 164).

When explaining the insubstantiality of time, Nāgārjuna uses the concept of trikāla (the division of time into past, present and future):

“If the present and the future/ Depend on the past,/ Then the present and the future/ Would have existed in the past./ If the present and the future/ Did not exist there/ How could the present and the future/ Be dependent upon it?/ If they are not dependent on the past,/ Neither of the two would be established./ Therefore neither the present nor the future/ Would exist” (Nāgārjuna 1995: 237-238).

Mihai Eminescu deconstructed time in the manner of the Mādhyamakas stating that the future and the past are equivalent, and everything from the past or the future can be found in the present: “And the future and the past/ Are the sides of the same card […] All that was or that will be/ Nowadays, we have in view/ If it’s vain for you and me./ Ask yourself and ponder, too” (Cocoș 2022: 37). The Romanian poet connected the illusion of time to the ephemeral character of all the entities of the universe, establishing a direct link between pratītyasamutpāda, śunya, and saṃsāra. A universe without independent time and space is described by Quantum Physics:

“A novel image of the world is taking shape: a world without space and without time. The space where the world ‘inhabits’ and the time ‘along which’ things evolve might soon disappear from our fundamental description of the physical world, in the same manner in which notions such as ‘the centre of the universe’ have disappeared in the past”(Rovelli 2017: 41).
The absence of absolute/independent time is observable at a subtle level. The image of the world without a flowing time is not that novel, it was proposed in nuce in the Antiquity. The problem of time has always been important in Buddhist philosophy, and there are different views among the Buddhist schools of thought regarding time, testifying to the scientific thinking of their masters.

Modern Physics even proposed a new concept – *spacetime* – to describe the super-entity in which everything happens: “Theories that are ‘relativistic’ share a common picture of the nature of space and time, one in which the physical world is described by events happening in a single unified ‘spacetime’” (Carroll 2019: 282-283).

The interrelatedness of time and space, or *spacetime*, could be considered an aspect of the law of the universal interdependence or the dependent origination (*pratītyasamutpāda*), in Buddhist terms, and this physical/philosophical law rules the entire universe, an idea accepted by Eminescu in *Glossă*: “Because these, as it appears,/ All obey – the strong, the weak” (Cocoș 2022: 38). The metaphor “a mermaid song” could be an allusion to the way all things arise and change in the universe: “With a mermaid song, / The world throws shiny nets/ To change the actors on the stage, / It lures you into swirls”. Eminescu observed and illustrated the parallel between the illusory operational processes of the world and society. The universe is depicted as a deceiving entity, and the metaphor of “nets” might refer to the Indian concept of *mâyā* (*illusion* in Sanskrit). This is agreed by modern physicists who admit that the deeper level of reality is not what we can perceive directly by our senses, but it is found only after a thorough investigation and analysis. In the Indian philosophical traditions, there are two types of meditation: analytical and single-pointed. *Vipassanā*, insight or analytical meditation, and *śamatha*, tranquillity or single-pointed meditation, are “described as the two wings of Buddhist meditative cultivation (*bhāvanā*)” (Buswell & Lopez 2014: 978). These two methods of analysing reality represent the main tools of Buddhist and Non-Buddhist Indian philosophies to understand the world.

Nicolae Manolescu noticed that “in *Glossă* the Schopenhauerian philosophy is lyricized” (Manolescu 2008: 390). Schopenhauer is, as we showed at the beginning of the study, a *nexus* between Eminescu and the philosophy of Siddharta Gautama. The Romanian poet had a propensity for meditation, reasoning, and gaining insight into reality, intellectual features that determined him to embrace this particular philosophy. Mircea Scarlat described Eminescu’s poetry as being oriented towards “reflection, searching for general truths and, at the same time, towards lapidary and memorable statements. The extreme case, almost mnemonic, one can find in *Glossă*” (Scarlat 1984: 102).

Thus, after identifying the complex intertextual relations of *Glossă* with Buddhism, one can state that *pratītyasamutpāda* and *samsāra* represent the main philosophical and logical ideas that Mihai Eminescu recycled in this piece of poetry, initiating the Romanian readers into Buddhist thinking.
Conclusions

The philosophical poems of Mihai Eminescu were highly influenced by different Indian schools of thought, among them Buddhism. The Romanian poet discovered Buddhist knowledge during his studies in Berlin and Vienna when he attended courses and lectures on different topics related to the Orient and India in particular. The Schopenhauerian philosophy of Buddhist inspiration represented the indirect way for Eminescu to enter the vast and complex territory of the numerous schools of thought originating in Siddharta Gautama’s perspective on life, the world and reality. In his philosophical poetry, the Romanian writer established intertextual relations with the Indian thinking in general, and with Buddhism in particular. Glossă is the most eloquent example in this respect, due to the significant number of allusions to different Buddhist philosophical concepts and ideas. Among them, pratītyasamutpāda and saṃsāra have special importance for the entire text, illustrating the compound and interdependent nature of reality on a deep level, and the endless cycle of life and suffering on a grosser and social level of analysis. These two ideas (the interdependency of all the entities in the universe and the unceasing suffering during the continuous circle of death and rebirth) are encapsulated in the first and the last stanzas (the last one consists of the same verses as the first one but the order is opposite) of the poem. Another crucial concept that the Romanian poet recycled in this text is śūnya or the theory of emptiness (understood on the basis of interdependence, not as unexistence). The scientific character of the Buddhist philosophy and of Eminescu’s poem is proved by the fact that modern scientists agree with the ancient views and perspectives of thinkers such as Nāgārjuna, Śāntideva or Dharmakīrti on life and the nature of the universe.

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References


Expansion of Administrative Solutions in Turkish Tax Law

Ali EROL

Abstract

The tax assignment, which is a constitutional duty, requires various obligations to be fulfilled by both the taxpayer and the administration. If there are any deviations by the taxpayer who owes taxes or by the state as a tax creditor in terms of authority, form, reason, subject, or purpose during the taxation process, a tax dispute arises. The legislator has regulated two ways of resolving disputes in tax law, administrative and judicial. Parties can apply to either of these dispute resolution methods. As in other legal disciplines, it is not necessary to complete the administrative resolution process in tax law. If the parties cannot obtain the result they expect from the administrative resolution method, they can resort to the judicial resolution method. The judicial resolution is a legal process that begins with tax courts and ends at the Council of State, and this process produces definite results. Administrative dispute resolution methods have many advantages compared to judicial dispute resolution methods. Firstly, time saving is one of them. Secondly, since the general aim in the administrative resolution method is to find a middle ground, it yields more positive results for both parties. Although their number and impact have increased in Turkish tax law in recent years, administrative dispute resolution methods can be listed as correction of mistakes, reconciliation, regret and correction, reduction of penalties, invitation to explain, and waiver of legal recourse. All of these administrative dispute resolution methods help to resolve tax issues between the taxpayer and the administration at the least cost and provide benefits to both parties. In this study, what these dispute resolution methods are, their effectiveness in practice and the problems encountered, and how much they reduce the burden in tax case have been examined with various examples.

Keywords: Tax, Tax Administration Solutions, Turkish Tax Law

Jel Codes: H20, H29, K34.

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1. Introduction

Economies can be divided into private and public. The special needs of households and firms are met by the market. Goods and services that meet these needs are called private goods. For example, bread is a special good. On the other hand, there are goods and services that arise from the collective life of individuals, that cannot be produced by companies, that are produced and presented through the state mechanism. These are called public goods. Goods and services produced to meet public needs will have a cost. This is called public expenditure and the financing of these expenditures is provided by public revenues.

Today, the most important source of public income in modern states is taxes. In the historical process, the tax, which was taken within the framework of various names and purposes, has gained its modern form and definition today. Tax is the cash share taken from individuals and institutions in proportion to their solvency by the sovereign public authority in order to finance public services and realize other non-financial purposes.

The state seizes the purse or coffers of individuals and institutions through taxation. In other words, the state creates a burden through taxation. There is a taxpayer on the side that wants to get rid of this burden or to reduce it. On the other hand, there are millions of citizens, thousands of companies and the tax administration, which has to monitor, audit and carry out taxation processes in countless financial events.

Various disputes occur between the taxpayer and the state, which are the parties to the tax, before, during and at the end of the taxation process. The main reason for this conflict is the obligation of one party to pay taxes and the tendency of the other not to pay taxes.

When a tax dispute arises, it must be resolved as in other branches of law. When both sides of the tax dispute arise, there are two ways in front of him. The first is to enter the administrative solution. In the administrative solution, which is more advantageous in terms of both time and money, the parties actually have relatively better intentions. He is on a diet of finding the middle ground for the resolution of the conflict. There are various ways of dispute in Turkish tax law. With one of these ways, the conflict can be resolved in a short time.

The parties may not resort to the administrative solution, but may apply directly to the judicial solution. In addition, when the parties to the tax cannot find the result they expect after applying to administrative remedies, they can resort to judicial remedies.

The subject of the study is administrative solutions in Turkish tax law and their expansion. Over time, administrative solutions have been expanded in Turkish tax law. Thus, the parties to the tax have become able to reach a solution in a shorter time. On the other hand, excessive burden in tax proceedings is prevented.

The state that uses its taxation authority should use it in accordance with the laws and international tax treaties, especially the Constitution. In the fulfillment of the tax duty, which is a duty to the administration besides the taxpayer, problems arise in terms of subject, form, reason, time and purpose. The easiest way to resolve these disputes, which is the subject of this study, is administrative resolution.
2. Tax Disputes and Solution

Disagreement is the disagreement of at least two parties on an issue. In terms of tax law, tax disputes are the disputes that occur between the taxpayer, who is a tax debtor, and the state, which is a tax creditor, about the essential elements of the tax. These are related to what the taxable event is, who the taxpayer is, the subject of the tax, its rate and other taxation procedures (Kızıloğlu, 2008: 50). The reasons for tax disputes can be listed as follows: Frequent changes in tax laws due to following the economy, differences in interpretation during the implementation of tax laws, pro-treasury approach of the tax administration, the taxpayer's tendency to pay as little tax as possible (Oktar, 2022:511).

The general tax disputes occur in the administrative transactions of taxation and in the subjects of imposition, notification, accrual and collection. However, the existence of a tax is not necessary for a tax dispute to occur. Disputes may arise before or after the taxation process (Yardımcıoğlu, & Kütküçü, 2014: 3). In law, a dispute can be defined as a conflict situation in which the claim and demand of one of the parties regarding a fact or rule is met with objection, counter-claim and denial of the other party (Ceylan, 2007:66).

Within the framework of various provisions of the Constitution, the taxpayer has the right to request the resolution of disputes that arise about himself. The taxpayer, who believes that there is no taxation within the framework of various constitutional principles such as taxation according to financial power, may request a solution by applying administrative or judicial means. (Gözler & Demir, 2015: 29).

3. Administrative Solutions and Ways in Tax Disputes

Administrative resolution of tax disputes is the resolution of the tax dispute at the administrative stage without sending it to the judicial authority. The parties can also apply to the judiciary without resorting to any administrative solution or if they do not get the result they expect. Administrative solutions in Turkish tax law are as follows: Correction and rejection of tax errors, reconciliation, repentance and improvement, effective repentance in smuggling crimes, reduction in tax loss, irregularity and special irregularity penalties, invitation to explanation and abandonment of legal remedy (Oktar, 2022:517). In addition to these solutions in tax laws, there are also various solutions arising from the general law. One of the most important of these is mediation. Mediation is a person who does not have any power in the resolution of tax disputes. However, it can play an important role as a third eye between the taxpayer and the tax administration (Gülşen, 2019:271).

Administrative remedies are valid for both the original tax and tax penalties. Administrative solutions envisage the settlement of disputes between taxpayers and the tax administration by peaceful means and by agreement. If the taxpayer does not get what he wants regarding this solution, he applies to the more contentious judicial remedy. (Öncel, Kumrulu & Çağan, 2015:171). The reason why administrative solutions are called peaceful means is that the dispute is not taken to the judiciary. In other words, it is the termination of the dispute between the taxpayer and the administration. (Karakoç, 2014: 729).
3.1. Correction in Tax Errors

In taxation transactions, the taxpayer may be unfairly charged excessive taxes by making mistakes in the tax calculations. In such a case, the solution of this tax dispute, whose solution is simple, is done by the administration (Oktar, 2022: 517).

Tax errors are regulated in Article 116 of the Tax Procedure Law and the following. According to this: Tax errors are divided into two as calculation errors and taxation errors. In the tax base, error in the amount of tax, duplication of tax, error in the person of the taxpayer, error in the subject, error in the taxation period or exemption period may occur. According to the law, tax errors can be revealed by the tax officer, during the inspection of the superior officer, during the inspection or at the request of the taxpayer.

Error correction is an administrative solution. Because not every error can be corrected. Error correction can be requested or fulfilled by the administration only within the framework of the above-mentioned provisions of the Tax Procedure Law. (Karakoç, 2014: 758).

3.2. Compromise

Compromise, which means peace in terms of the word, peaceful resolution of the emerging disputes, means that the administration and the taxpayer come to an agreement by bargaining on the amounts of taxes and penalties imposed by the administration, ex officio and supplementation in Tax Law. In cases where an agreement is mentioned, it is undisputed that a legal contract will occur. Although there is a consensus on the point that the reconciliation institution regulated in the Tax Law is a contract between the tax administration and the taxpayer or the person who is penalized, both in the literature and in some Council of State decisions, there are different opinions about the legal nature of this contract (Yılmaz, 2009: 326).

Compromise entered Turkish tax law in 1963. The main purpose of reconciliation is to resolve the tax dispute as soon as possible and to ensure that the tax receivable is sent to the treasury as soon as possible (Öncel, Kumruşlu & Çağıan, 2015: 171). Compromise institution has been adopted from German tax law as it is in general Turkish tax law. (Karakoç, 2014: 729).

The differences of opinion and practice that arise from time to time between the tax administration and the taxpayers, the tax officer or the participant, the promoter, the assistant, the person who is subject to the penalty, are called tax disputes. Often such disputes; The taxable event arises from whether the tax is collected or paid or not, or a small amount is wanted to be paid, which brings the parties face to face during the taxation, taxation and penalty (Armağan, 2007: 161).

According to the Tax Procedure Law, reconciliation is the deletion of some of the taxes levied by the administration and some of the tax penalties imposed on them, within the conditions specified in the law. There are various reconciliation commissions according to the size of each city and county. Commissions and authorization amounts differ according to the amount of settlement. The taxpayer requesting reconciliation cannot file a tax lawsuit. Waits for the reconciliation process to be completed.
If the taxpayer applies both for reconciliation and to the court at the same time, the trial process does not work. When a compromise cannot be reached, the litigation process starts automatically. (Erden, 2012: 58).

3.3. Regret and Correction

Regret and correction are regulated in article 371 of the Tax Procedure Law. Accordingly, if taxpayers who commit acts that require the penalty of tax loss in taxes based on declaration and other persons who participate in the processing of these, inform the relevant authorities of their illegal acts with a petition, no tax penalty is imposed on them under the terms and conditions written below.

1. The fact that before the date the taxpayer informs about the situation, no notification has been made by an informant to any official authority with a petition or by documenting his verbal statement in a minute.

2. The notification petition was given before the day when a tax investigation regarding the tax type related to the event notified by the authorized officers to the taxpayer was started or the event and the tax type it was related to was submitted to the valuation commission (before the determination of the committing of the acts constituting the crime of smuggling) and recorded in the official records.

3. The submission of the tax returns that have never been submitted, within fifteen days starting from the date of the notification petition of the taxpayer.

4. Completion or correction of incomplete or incorrect tax declaration within fifteen days starting from the date of notification of the taxpayer's condition.

5. Payment of the taxes, which are notified by the taxpayer and whose payment period has passed, together with an increase at the rate specified in Article 51 of the Law No.

The most important criterion for regret is the taxpayer's self-report to the administration of his or her tax misdemeanor. While remorse provides the taxpayer to get rid of the emergence of a tax debt and punishment; It will ensure that a tax issue that cannot be determined in any way from the point of view of the state is included in the tax circle. (Şenyüz, 2012: 315).

3.4. Effective Repentance in Smuggling Crimes

In the event that a tax offense is caused by smuggling acts, if the taxpayer convinces the tax administration that he/she is effectively repenting for this crime, the tax penalty to be deducted can be reduced at various rates. In this state, effective repentance in smuggling crimes constitutes one of the administrative solutions for disputes in tax law.
3.5. Discount on Fines

In cases of tax loss, irregularity and special irregularity misdemeanors, tax penalties are reduced if a reduction is requested before the dispute is brought to the fore. In this state, reduction in penalties constitutes another administrative solution of tax law (Oktar, 2022: 519).

3.6. Invitation to Clarification

Taxpayers may be invited to explain the preliminary determinations made by the competent authorities that there are signs indicating tax loss before the tax examination is started or referred to the valuation commission, provided that no notification is made until the determination date. Taxpayers who have been notified of an invitation to explanation cannot benefit from the provisions of regret in Article 371 of this Law, limited to the determination of the subject of the invitation. If an explanation is made within thirty days from the date of notification of the invitation letter, the explanation made is evaluated and the letter containing the evaluation result is notified to the taxpayer.

If it is understood by the administration that no tax loss has been caused as a result of the explanation made by the taxpayers, the taxpayers are not subject to tax inspection or referred to the valuation commission regarding the said determination. If the explanation made by the taxpayers is not sufficient, within thirty days from the date of notification of the letter containing the evaluation result; Provided that the tax returns that have never been filed, the completion or correction of the incomplete or incorrect tax declaration, and the payment of the overdue taxes for each month and fraction of the payment is delayed, at the same time as the delay increase to be applied at the rate specified in Article 51 of the Law No. 6183. The penalty for loss is deducted at the rate of 20% over the tax incurred. This situation does not prevent the tax inspection and, if necessary, the replenishment of the assessment.

In case the preliminary determinations made pursuant to paragraph A are related to the fact that the tax may have been lost due to the acts specified in Article 359 of this Law, taxpayers within this scope are not invited to explain. In so far, in the preliminary determinations that the act of using forged or misleading documents due to their content may have been committed, the amount of the forged or misleading document in terms of content shall not exceed 100 thousand (320,000 TL) Turkish lira in a calendar year, or even if it exceeds the total amount of goods and services in the relevant year. Taxpayers who do not exceed 5% of their service purchases may be notified of the letter regarding the preliminary determination. Within thirty days from the date of notification of the letter regarding the preliminary determination made by the taxpayers; Provided that the tax returns that have never been filed, the completion or correction of the incomplete or incorrect tax declaration, and the payment of the overdue taxes for each month and fraction of the payment is delayed, at the same time as the delay increase to be applied at the rate specified in Article 51 of the Law No. 6183. The penalty for loss is deducted at the rate of 20% over the tax incurred. This situation does not prevent the tax inspection and, if necessary, the replenishment of the assessment. Taxpayers, to whom a letter regarding the preliminary determination has been notified within the scope of this paragraph, cannot benefit from the provisions of regret in Article 371 of this Law, limited to the determination. The amount in this paragraph is applied by increasing it every year at the revaluation rate determined in accordance
with this Law in relation to the previous year. c) Ministry of Treasury and Finance pursuant to this article, the authority to make preliminary determination and/or invitation to explanation and evaluate the explanation, the form and scope of the preliminary determination and/or invitation to explanation, the invitation to be made, the evaluation period of the explanation made, the information and documents to be used in the explanation made. is authorized to determine the procedures and principles regarding the implementation.

With the introduction of the Invitation to Clarification institution into our legal system, one of the most important issues to be stated is the establishment of a legal basis for an existing practice regarding the use of false or misleading documents. Because; In practice, a report was prepared stating that the taxpayer did not have any intention in using forged documents below a certain amount or misleading in terms of content. With the Invitation to Disclosure, taxpayers can now be directly invited to explain and this illegal practice will be terminated (Uzunöner, 2019:3).

The aim of the invitation to explanation, which is the newest administrative solution, is to reduce the tax compliance cost by increasing the taxpayer's voluntary compliance with the tax. (Bati, 2022: 210).

3.7. Withdrawal from Legal Recourse

Withdrawal from legal action is a solution based on a contract between the taxpayer and the administration, which eliminates the tax liability and tax penalty (Oktar, 2022: 520).

The logic in the general of administrative solutions is also dominant in this solution. The parties can use withdrawal rather than resorting to long and tedious legal and judicial remedies.

4. Conclusion

Tax disputes are disputes between the taxpayer and the tax administration. The basis of this dispute is that the taxpayer does not want to pay tax or wants to pay as little tax as possible. On the contrary, it is the aim of the tax administration to obtain as much tax revenue as possible with a treasury approach. A tax dispute between the parties must be resolved. It should not remain as a problem, should not be ignored. Because the resolution of tax dispute is a right for the taxpayer and a duty for the tax administration.

According to Turkish tax law, it is optional to resort to administrative remedies in resolving a dispute. In other words, there is no obligation to resort to administrative remedies and be consumed. If the taxpayer applies for an administrative solution and cannot find the solution he expects, he can apply for a judicial solution if it is resolved against himself. The main court in Turkish tax proceedings is the tax courts. Regional Administrative Courts are responsible for appealing against the decisions of these courts. The final decision-maker is the Council of State. Local courts must comply with the decision of the Council of State on an administrative issue.

The solutions in Turkish tax law have increased over time. Both in terms of number and effect. The main reason for this is to reduce the burden on the tax jurisdiction. Because the basis
of administrative solution is compromise. The taxpayer and the administration, which are the parties to the tax dispute, aim to find a common point when they apply for administrative solutions. This aim raises the expected success from administrative solutions.

The basis of administrative solutions is the taxpayer's goodwill and a solution accordingly. The taxpayer will be able to take advantage of administrative solutions if he says that he will not repeat the tax misdemeanor or tax offense or that he will not make the dispute more subject.

The most important criticism brought about administrative solutions in tax law is the violation of the principle of legality of tax. According to the 1982 Constitution, taxes are set, changed and abolished by law. If a new tax is to be introduced, modified or repealed under this express provision, it must be done by the legislature. However, the tax administration can eliminate it by reconciliation within the framework of the authority it receives from the tax laws, by reconciling the tax penalties and sometimes the tax originals. This situation can be interpreted as the executive branch putting itself in the place of the legislature. The tax administration is required to collect the tax in a timely and complete manner with a duty arising from the Constitution. Many opportunities are provided for him to fulfill this task. It has an organization and can get help from law enforcement when necessary. In addition to these, the state has various powers such as enforcement and punishment. However, the tax administration is unable to fulfill its duty by reconciliation and makes various concessions on taxation.

As a result, administrative solutions in tax law and the expansion of these ways are an important gain. It provides many benefits to both the taxpayer and the administration. In the future, these administrative solutions should be made more effective and new ones should be added.

What all these administrative solutions are, their conditions and the period of time they can be realized are regulated in tax laws. The administration cannot resolve a dispute in any way other than the provisions of the law.

Bibliography


Examining the Relationship Between Economic Growth, Trade Openness, Financial Development and CO2 in China

Hakan EYGU

Abstract

In recent years, globalization and international trade have increased significantly, leading to a substantial growth in the literature on financial development, technological advancements, and economic growth. These developments contribute to an increase in the worldwide trade of goods and services, investments, and economic efficiency. However, many of these issues also have negative impacts on the environment. Financial development can help accelerate economic development, particularly in low-income countries. However, increased economic activity that accompanies financial development can also increase negative impacts on the environment. For example, growth in the financial sector can lead to an increase in energy consumption and, therefore, carbon emissions. Similarly, trade openness can contribute to economic growth but also increase its environmental impacts. In particular, low-cost production countries tend to comply with less strict environmental protection guidelines to keep production costs low. Therefore, while trade openness contributes to economic growth, it can also lead to environmental pollution and carbon emissions. Finally, economic growth also has negative impacts on the environment. Rapid economic growth can lead to an increase in energy consumption and carbon emissions. However, the environmental impacts of economic growth differ from those of financial development and trade openness and can be controlled through policy changes focused on environmental factors. Therefore, research on the impacts of financial development, trade openness, and economic growth on the environment can provide guidance to policymakers for sustainable economic development. The aim of this study is to determine the stationarity of selected variables with structural break unit root tests. Upon examining the empirical results, it was found that carbon emissions, economic growth, trade openness, and financial development variables were stationary in their first differences according to the Dickey-Fuller unit root test. In a single-break unit root test, breaks were detected in the variables of trade openness and financial development in 1998 and 2000.

Keywords: CO2 emission, Trade openness, Economic growth, Breaking unit root test

JEL Code: C22, F14, Q43

1. Introduction

In recent years, there has been a significant increase in globalization and international trade, leading to extensive research on financial development, technological advancements, and economic growth. These developments have contributed to a surge in global trade, investments, and economic efficiency. However, it is important to recognize that many of these advancements also have negative implications for the environment.

Financial development plays a crucial role in accelerating economic growth, particularly in low-income countries. Nevertheless, the accompanying increase in economic activity can have adverse environmental effects. For instance, growth in the financial sector often leads to higher energy consumption and carbon emissions. Similarly, trade openness can foster...
economic growth but also exacerbate environmental impacts. Countries with lower production costs may prioritize economic gains over environmental protection, resulting in pollution and increased carbon emissions. Hence, while trade openness facilitates economic growth, it can simultaneously contribute to environmental degradation.

Moreover, economic growth itself poses environmental challenges. Rapid economic expansion tends to escalate energy consumption and carbon emissions. However, the environmental consequences of economic growth differ from those of financial development and trade openness, and they can be managed through policy changes that prioritize environmental factors.

In this paper, we empirically investigate the causal nexus between economic growth (GDP), CO₂ emissions, financial development, and trade openness using the breaking unit root test for a yearly China economy, during the period of study from 1980 to 2015. Consequently, research focusing on the effects of financial development, trade openness, and economic growth on the environment is crucial for guiding policymakers towards sustainable economic development. Empirical analysis of the subject revealed that carbon emissions, economic growth, trade openness, and financial development variables exhibited stationarity in their first differences based on the Dickey-Fuller unit root test. Additionally, breaks in the variables of trade openness and financial development were identified in 1998 and 2000 using a single-break unit root test.

2. Literature

The existing literature focuses on empirically examining the existence of a two-sided causal relationship among GDP, energy consumption, environmental degradation, financial sector development, and trade openness. In the study conducted by Lamel & Maktouf (2017), they identified bidirectional causality among CO₂, GDP, financial development, and trade openness in European economies. Regarding specific country studies, we present the research conducted by Ang (2008), Soytas & Sari (2009), and Fodha & Zaghdoud (2010) for the cases of Malaysia, Turkey, and Tunisia, respectively. These studies reveal the existence of bidirectional causality between GDP and environmental pollutants. On the other hand, Nasir & Rehman (2011), and Saboori et al. (2012) demonstrate an inverted U-shaped curve between GDP and environmental pollutants in the cases of France, China, Pakistan, and Malaysia, respectively. Moreover, according to Aydin and Turan (2020), they reached the conclusion that the EKC hypothesis is not applicable to BRICS countries. Additionally, they found that financial openness reduces emissions in India and South Africa, but it has an opposite effect in China, where it leads to an increase in emissions. Furthermore, trade openness contributes to environmental degradation in both China and India. Yilanci and Pata (2020) utilize Fourier ARDL and time-varying causality to examine the short and long-term relationships among economic growth, economic complexity index, energy consumption, and EFP (Environmental Footprint) in China. The study's findings affirm the presence of long-run associations among these variables. Moreover, the research highlights that energy consumption and economic complexity both contribute to the EFP in China. Furthermore, Dhakal (2009) investigates the correlation between urbanization and CO₂ emissions and discovers that a significant 40% of CO₂ emissions can be attributed to an 18% population increase in China's major cities (Shahbaz et al., 2013). Chang (2010) conducted a multivariate causality test to analyze the causal
relationship between economic growth, energy consumption, and CO₂ emissions using Chinese data. The study's findings indicate that economic growth has a Granger-causal effect on energy consumption, which in turn results in CO₂ emissions. Furthermore, Zhang and Liu (2015) employ the STRIPAT model to examine the impact of the ICT industry on CO₂ emissions across different regions of China (Park et al., 2018). Their findings indicate that the ICT sector plays a significant role in reducing CO₂ emissions. Additionally, it is important to note that economic growth and energy intensity contribute to environmental degradation through increased CO₂ emissions. Yuxiang and Chen (2010) reach the conclusion that the financial sector in China enables firms to adopt advanced technologies that effectively reduce CO₂ emissions while simultaneously boosting GDP. Moreover, in the case of the China, Saud and Chen (2018) investigated a similar relationship for China. In similar study (Usman et al., 2022), to emphasize the significant impact of the aforementioned variables, we employed structural break unit root tests and an ARDL-based bound cointegration testing approach. The study conducted by Cetin et al. (2018) investigates the empirical evidence from Turkey to analyze the effects of economic growth, energy consumption, trade openness, and financial development on carbon emissions. Its objective is to evaluate the relationship between these variables and their impact on carbon emissions within the Turkish context. This study shares similarities with the utilization of Lee and Strazicich (2004) unit root tests and structural break tests to examine the unit root and long-run characteristics of the variables. Therefore, we also use unit root test with one structural break (Cetin et al. 2018).

3. Method

3.1. Model and dataset

Annual data covering the period of 1980-2015 was utilized in the empirical section of the study. In this study, the single breaking unit root test results, which were theoretically examined, are compared by applying them to the series of carbon emissions, economic growth, trade openness, and financial development in China from 1980 to 2015. In the study, series were first examined using the Dickey-Fuller (DF) unit root test to determine their stationarity. Subsequently, the analysis proceeded with the Single Break Zivot & Andrews test.

3.2. Findings

The abbreviations and illustrations used in this study are shown in Table 1. We use the longest data set available in our study. The stationarity of the series included in the studies is determined using unit root tests.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Representation</th>
<th>Measurement</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon emission</td>
<td>CO₂</td>
<td>Ton of oil equivalent</td>
<td>BP (2021)</td>
</tr>
<tr>
<td>Economic growth</td>
<td>GDP</td>
<td>GDP per capita (constant 2010 US$)</td>
<td>World Bank (2023)</td>
</tr>
<tr>
<td>Trade openness</td>
<td>TO</td>
<td>Real trade openness per capita</td>
<td>World Bank (2023)</td>
</tr>
<tr>
<td>Financial development</td>
<td>FIN</td>
<td>%GDP</td>
<td>World Bank (2023)</td>
</tr>
</tbody>
</table>

In this paper, the variable CO₂ represents the carbon emissions (ton of oil equivalent), the variable GDP represents economic growth per capita (constant 2010 US$), the variable TO is real trade openness (in a million USD) per capita, the variable FIN shows the financial development.


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Descriptive statistics for all variables can be seen in Table 2.

Table 2. Descriptive statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>LCO₂</th>
<th>LGDP</th>
<th>LTO</th>
<th>LFIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>8.441</td>
<td>7.930</td>
<td>3.598</td>
<td>4.686</td>
</tr>
<tr>
<td>Median</td>
<td>8.327</td>
<td>7.891</td>
<td>3.617</td>
<td>4.701</td>
</tr>
<tr>
<td>Maximum</td>
<td>9.207</td>
<td>9.245</td>
<td>4.166</td>
<td>5.208</td>
</tr>
<tr>
<td>Minimum</td>
<td>7.507</td>
<td>6.502</td>
<td>2.951</td>
<td>4.179</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>0.591</td>
<td>0.880</td>
<td>0.349</td>
<td>0.263</td>
</tr>
<tr>
<td>Skewness</td>
<td>-0.022</td>
<td>-0.038</td>
<td>-0.253</td>
<td>0.015</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>1.419</td>
<td>1.679</td>
<td>2.166</td>
<td>2.160</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>3.748</td>
<td>2.622</td>
<td>1.427</td>
<td>1.057</td>
</tr>
</tbody>
</table>

Note: *, **, and *** define significance at the 1%, 5%, and 10% levels, respectively.

In the empirical analysis phase, we need to ensure that the degree of integration of the variables are \( I(0) \) or at most \( I(1) \). The hypotheses to be established in this direction are given below.

- **H₀**: The series is non-stationary (not contains a unit root).
- **H₁**: The series is stationary (contains a unit root).

Thence, in the first stage of the empirical analysis, we use Dickey-Fuller unit root test and single break Zivot & Andrews (ZA) unit root test with one structural break to investigate the unit root properties of the variables. These results are reported in Table 3.

Table 3. Unit root results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Test-stat.</th>
<th>Test-stat.</th>
<th>Break Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCO₂</td>
<td>-0.535 (0.596)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>LGDP</td>
<td>-0.874 (0.388)</td>
<td>-2.498*** (0.093)</td>
<td>2010</td>
</tr>
<tr>
<td>LTO</td>
<td>-1.008 (0.321)</td>
<td>-1.778*** (0.087)</td>
<td>2004</td>
</tr>
<tr>
<td>LFIN</td>
<td>0.572 (0.571)</td>
<td>-4.564* (0.002)</td>
<td>2000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>First differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \Delta \text{LCO₂} )</td>
</tr>
<tr>
<td>( \Delta \text{LGDP} )</td>
</tr>
<tr>
<td>( \Delta \text{LTO} )</td>
</tr>
<tr>
<td>( \Delta \text{LFIN} )</td>
</tr>
</tbody>
</table>

Note: *, **, and *** define significance at the 1%, 5%, and 10% levels, respectively.

According to the DF unit root test, all variables (LCO₂, LGDP, LTO, and LFIN) are not stationary at the level. When the first differences of the variables are taken, it is found that LGDP, LTO, and LFIN all become stationary. However, conventional unit root tests may lead to puzzling results in the case of a structural break in the series (Zivot & Andrews, 1992). This problem is addressed by the ZA test, which takes into account the presence of a single structural break as developed by ZA (1992). These results are reported in Table 3. In the presence of
structural break, we note that LCO2, LGDP, and LTO for China is found stationary at level. In addition, we observe that of TO and FIN the variables having unit roots are stationary in the first differences. According to DF and ZA test results, it is noted that the order of integration of the variables in China is mixed as $I(0)$ or $I(1)$.

Single break Zivot&Andrews test charts are given below.
When examining Figure 1, it can be observed that according to the Zivot and Andrews (1992) breakpoint unit root test, the GDP series is stationary. From here, it can be seen that the structural break in 2010 manifested itself as a significant change in the trend of the series. It is possible to say that China's economic growth are significantly affected. The impact of economic growth can be attributed to this year, as well as the influence of the 7.1 magnitude earthquake. Furthermore, the incidents of maritime security violations between China and Japan have caused tension between the two countries.

![Zivot-Andrew Breakpoints](image1.png)

**Fig. 1.** Breaking the GDP variable at the level.

![Zivot-Andrew Breakpoints](image2.png)

**Fig. 2.** Breaking the TO variable at the level.
**Fig. 3.** Breaking the FIN variable at the level.

**Fig. 4.** Breaking the TO variable at the first difference.
Fig. 5. Breaking the FIN variable at the first difference.
When examining the graphs other than Figure 1, it is observed that there is a break in the variables of trade openness and financial development both at the level and in the first difference. In this year, China's overall foreign trade balance has varied depending on numerous factors. For instance, factors such as international trade policies, economic growth, demand and supply dynamics, and exchange rates can influence the trade deficit. Moreover, this break can be explained as follows: before the year 2000, the Asian Financial Crisis began and had negative effects on China as well. The crisis was caused by factors such as financial speculation, high levels of debt, and currency issues. China implemented certain economic measures to cope with the crisis.

**Conclusion**

In this study, the analysis reveals a notable structural break in 2010, indicating a significant shift in the trend of the series. This break has had a considerable impact on China's economic growth, with multiple factors contributing to this effect. The year in question witnessed both the influence of economic growth and the occurrence of a 7.1 magnitude earthquake, which further shaped the economic landscape. Additionally, tensions between China and Japan were heightened due to incidents of maritime security violations, adding another layer of complexity to the situation. Collectively, these events have shaped the economic and geopolitical dynamics during that period, underscoring the interconnectedness between economic growth, natural disasters, and regional tensions. Moreover, this break in the year 2000 can be explained as follows: before the year 2000, the Asian Financial Crisis began and had negative effects on China as well. The crisis was caused by factors such as financial speculation, high levels of debt, and currency issues. China implemented certain economic measures to cope with the crisis.

In conclusion, the literature on financial development, trade openness, and economic growth has expanded due to the increased globalization and international trade in recent years. While these factors contribute to economic development and efficiency, they also have negative implications for the environment. Financial development and trade openness, although beneficial for economic growth, can lead to increased energy consumption, carbon emissions, and environmental pollution. Furthermore, rapid economic growth itself can exacerbate energy consumption and carbon emissions. However, through policy changes focused on environmental factors, the adverse environmental impacts of economic growth can be mitigated. The empirical analysis revealed breaks in the variables of trade openness and financial development in 1998 and 2000, highlighting the importance of considering these specific periods in studying their effects. Overall, research on the relationships between financial development, trade openness, economic growth, and environmental sustainability can offer valuable insights for policymakers striving for sustainable economic development.

**References**


Corporate governance and its impact on the investor in the stock market: Case study of the Iraqi stock market

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Haitham Naser Jasim³

Abstract

This study summarizes to shed light on the role of corporate governance in revitalizing the financial market of the company's shares to measure its performance and the extent of its impact on the Iraqi financial market, as this is applied to revitalizing the stock exchange and recognizing the real market value through a sample of companies whose shares are traded in the Iraqi Stock Exchange, from Through market value indicators to measure the performance of four non-financial sectors in the United Arab Emirates, where the Iraqi market is represented by (35) companies for the year 2021, which is an important indicator for developed markets, as it is used as an indicator to measure the total market size. This indicator aims at the performance of the financial market, and the appropriate measure of the market’s ability to move capital. This study recommended relying on value, as it is one of the most important criteria that the investor must take into account, before making an investment decision in the securities of companies listed in Iraq.

Keywords: corporate governance, corporate performance, financial market, market value

Introduction

Interest in the concept of Iraqi corporate governance has increased in many economies of developed and developing countries during the past few decades, especially in the wake of the economic collapse and financial crises of a number of countries in the world during the past century, especially after the crisis (Corona) and its impact on the global market, especially in the economy of developing countries, which it affected many global financial markets and led to the collapse of major international companies and the bankruptcy of many banks as a result of using
different accounting methods in managing their profits, by hiding their losses and manipulating

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the rights of stakeholders such as shareholders, lenders and suppliers. (Al-Dabbagh, and Ibrahim: 2014). The commitment of companies to the principle of transparency in management is reflected in the validity and accuracy of their data and financial statements, which results in increasing confidence in them and attracting local and foreign investors by increasing the attractiveness of the securities traded in the market and stimulating the trading movement and thus reaching a pricing for the securities Finance according to its true values (Ahmed, Madani and Maddah, 2017) Even with regard to strong economies, without the application of oversight and transparency and the absence of responsible boards of directors, it falls and fails due to the lack of confidence of investors (Al-Omari Samira, 2014).

Theoretical introduction

Corporate governance

Corporate governance describes the processes, policies, customs, laws, and institutions that direct organizations and companies in the way they operate, manage and control their operations, work to achieve the goal of the organization, and manage the relationship between stakeholders, including the board of directors and shareholders, and dealing with the accountability of individuals through the mechanism that reduces From the problem of the main agent in the organization, and strong corporate governance is a basic criterion to create the amazing investment environment that companies need to compete and gain a strong position in the effective financial markets, and good corporate governance is essential for economies with a broad commercial background to facilitate the success of entrepreneurship. (2011. Humera Khan).

The Board of Directors and the supervisory committees, as they represent a complete and unspecified means of communication with officials and employees only, and they have the freedom to seek the assistance of consultants as they deem necessary for the purposes of preparing their meeting schedules. Within clear foundations in terms of fiduciary responsibility, transparency,
accountability and oversight within the required ethical environment. (Saeed Suleiman 2018)

The role of corporate governance in raising the efficiency of the financial market in light of financial disclosure

The presence of sound business companies that apply the rules of governance leads to the establishment of credible financial markets and the ability to mobilize savings and raise investment rates, as well as encouraging the government to grow the private sector, through its competitive capabilities, obtaining financing and increasing job opportunities, and for disclosure and transparency in light of governance Great importance in raising market efficiency and then achieving a fair share price, in companies that have high disclosures and accurate information as they have high share prices and achieve current and future profits and achieve a positive relationship between the cost of capital and shares and have greater confidence in the expectations of financial analysts, by disclosing transparently With financial information and the existence of effective control governance mechanisms that lead to an increase in investor confidence, stimulation of trading, and an increase in the attractiveness of traded securities and pricing them at their real value (Ahmed Madani and Maddah, 2017).
The relationship between corporate governance and the stock market

Transparency of financial information

The accuracy of the financial statements

Control governance mechanisms

Increase the attractiveness of traded securities

Trading activation

Increase investor confidence

Pricing securities at their real value

Figure (1) Relationships between the stock market and corporate governance
Principles of corporate governance

The establishment of principles for corporate governance came as a result of the interest of many international organizations and bodies and many countries and governments that were keen to establish the best principles of corporate governance that call for building institutions on sound foundations and aim to promote reforms and good and proper application of them. Corporate Governance (Ahmed Ali, 2012) The organizations that elaborate the principles of corporate governance are: (Organization for Economic Cooperation and Development), (Center for International Private Enterprise), (Basel Committee) and (The World Bank), Union of Arab Banks. These principles aim to promote reforms and their proper implementation (Al-Omari-Samira 2014). The principles of the Organization for Economic Co-operation and Development (OECD) for the year (2004) will be discussed here. The Organization for Economic Co-operation and Development (OECD) in 1999) put six principles, and as a result of the developments that took place, those principles were reformulated in the paper issued in (2004). These principles are as follows:

1- Ensuring that there is an effective framework foundation for corporate governance

The corporate governance framework must raise and enhance the level of transparency and efficiency of markets, and it must also be consistent with the provisions of the law, and clearly indicate the division of responsibilities among the supervisory and regulatory authorities and various executives.

2- Preserving the rights of shareholders and the main functions of the owners:

Include the right to share ownership and facilitate the active participation of shareholders when making decisions such as selecting members

The company's profits Review the financial statements and the right of shareholders to participate in the assembly

The Board of Directors Participation in the company's profits Reviewing the financial statements and the right of shareholders to participate in the General Assembly.

3- Equal treatment of shareholders: The corporate governance framework must guarantee fair
treatment for all shareholders, which means equality between shareholders within each category, as well as their right to defend their legal rights and protect them from acquisitions, mergers, or trading in internal information, as well as their right to view all transactions with board members or executives. The role of stakeholders in corporate governance: The corporate governance framework must work to ensure respect for the rights of legal stakeholders and compensation for the violation of those rights, as well as mechanisms to enhance their participation in the oversight of the company and their access to

4- The required information.
5 - Disclosure and transparency

The corporate governance framework must ensure the correct and timely disclosure, including the disclosure of information of importance, such as the financial or operational performance of the company, its objectives, important events and risk factors, so that all such information is disclosed in a timely manner without delay and with sufficient accuracy. -6- Responsibilities of the Board of Directors: The corporate governance framework must ensure the strategic direction and guidance of the company and guarantee the structure of the Board of Directors, its legal duties, how to select its members, its basic tasks, and its supervisory role over the executive management (Ahmed Ali, 2012)

From the foregoing, it is necessary to ascertain what makes investors or shareholders who intend to invest their money and savings in a company reassured that this company in which they have invested works in accordance with what is required by the interest and the main benefit and for the public interest of the company and that they will get in return for these money and savings that they invested a good income for their investments. And how true and credible are all the financial and non-financial reports announced by the company? And what gives them the sure guarantee of their decisions to invest in the company and predict its continuity in the long term? Do you live in the future? And what guarantees the state and society that this company works to keep pace with the rapid developments, and continues to appoint the employees it needs and continues to produce goods and provide services? And what guarantees them that it plays its effective, basic and important role in addressing financial and administrative corruption, working to generate profits, increase market value, and support and strengthen the economic situation in the state? Will all...
stakeholders get their rights and privileges in the company? It is corporate
governance through the correct application of all its principles and the work of its mechanisms in an effective and honest manner. Financial markets

Buying and selling are the markets in which securities are traded at the local and international levels, and investors or traders use these securities to reap the profits they see commensurate with the size of their investments, as the financial markets focus on buying, selling and possessing securities and financial instruments in their various forms, and the financial markets have expanded significantly very large over the past few years, and it is currently offering many types of financial instruments, and professional investors can decide to enter into investments or trade in securities depending on their own way and style of trading, and that financial markets have become the comprehensive engine of international trade and the global economy during the decades In the past, financial markets have become more complex

In terms of development and importance, global financial markets have become more dynamic and have begun to evolve and change rapidly. (The financial market investment plan 2019)

The concept of financial markets

The concept of the market is related to the public that it is a place to meet a specific need in exchange for paying a certain amount of money, and financial markets, like other markets, are based on responding to the needs of investors in them through the transfer of funds from the surplus units of those who have (money to the deficit units of those who want financing in exchange for certain securities Individuals and institutions participate in this market within special procedures regulating their work, and that the correct concept of the money market includes all intermediaries and the various financial institutions in addition to the money market, and this means that the money market consists of two main parts: the capital markets and the money market.
Figure (2) Demonstrates the conversion of savings into investments in various institutions taken from the markets

**Definition of financial market:**

**There are several definitions of the financial market, namely:**

1- The financial market is: the place where the supply of funds by savers meets the demand for them by investors. As it helps to convert part of the society’s savings into useful investments and thus helps to complete the process of capital financing, that is, the capital industry.” (Ali Abdullah Shaheen, 2015)

2- A system whereby sellers and buyers of a certain type of securities or a particular financial asset are brought together, whereby investors can buy and sell a number of stocks and bonds within the market, either through brokers or companies working in this field.” (Al-Mashhadani Khaled and Raed 2013)
3- The stock market is an organized market in which securities are traded from savers to investors with the aim of maximizing the market value of financial assets (Enas Zaidi, 2015). The mechanism that ensures the accumulation of savings and the provision of funds for economic activities through institutions

4- The finances included in the market. Ahlam Aknoush (2014)

**The importance of financial markets**

Saving is a means of preserving money or part of it, unlike investment, which involves some risk. Where the financial markets attract the surplus of saved capital, and transfer it from idle money to employed and effective money in the national economy and work to secure and provide the necessary resources to finance companies and support projects through offering and selling shares or bonds or repeat selling each of the shares and bonds issued by the company or For the project in advance, during which companies registered and listed in the financial markets are encouraged to follow up on the fluctuations and changes that occur in their share prices and push them to activate and develop their performance and increase their profits to improve the share prices of these companies, and it also works to provide effective incentives and motives for all investors for the purpose of attracting them towards Investing, by achieving a fair price for the securities traded in the stock market and protecting all mutual parties, and it helps in increasing the stages and limits of production by supporting investment opportunities that lead to raising and increasing levels of production and employment and providing employment opportunities at all levels and attracting competencies and securing better grades resources, whether at the level of individuals, society or the state.

The most important advantages of adopting the system of financial markets in the economy of a country is that it is a transparent tool for adopting the privatization system, as it reveals, once adopted and involved in it, the real situation, whether social, financial or administrative in each institution, and the reality of financial markets also reflects the state of health of the economy of the particular country Or the global giants...
With regard to the privatization system, it is not possible to imagine the establishment or adoption of financial markets in light of the state's sovereignty over the economy and the marginalization or absence of the private sector, or the freezing of privatization projects or the projects of waiving public companies affiliated with the state of shares of their capital to workers or citizens or to local or foreign bodies and opening capital. Its money is in front of the savers, which, if approved automatically, will lead to activating the savings process, which in turn leads to the establishment of financial markets.

**The goal of establishing financial markets**

Among the most important objectives for which financial markets were established are the following:

1. Allowing public and private sector institutions organized in companies with shares to open their capital to the public.
2. Evaluating these companies through the market.
3. Ensure financing through public savings.
4. Allowing the invested saving liquidity in the long run.

**Market value**

The size of the company is measured on the basis of the company's market value, which is the value of the company based on the value of all its shares traded. The market value is measured according to the following formula: traded shares x share value. The most developed stock markets provide a variety of products that reduce the cost of capital necessary for development, so it is measured by the size of the market, and the market is measured by the ratio of market value to GDP, and the market top is an important indicator of the developed market, as the stock market depends on Access for investors and companies to the market and access to companies with a high market value. (Pariyada) Sukcharoensin & Sorosart. 2013)

The market value is used as an indicator to measure the total market size, and it is considered one
of the financial market performance indicators and an appropriate measure of the market's ability to move capital. (Shihab Ahmed Siwan, 2016. The market value index was used to measure the performance of four non-financial sectors of the Iraqi market, represented by (35) companies for the year 2018 distributed as follows:

<table>
<thead>
<tr>
<th>Sector</th>
<th>Number of companies</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Services</td>
<td>7</td>
<td>20%</td>
</tr>
<tr>
<td>Hotels and tourism</td>
<td>9</td>
<td>25%</td>
</tr>
<tr>
<td>Industry</td>
<td>15</td>
<td>43%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>total</td>
<td>35</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table (1) of distribution of companies by sectors

The highest market value has been determined for the four sectors, as shown in the following table:

<table>
<thead>
<tr>
<th>Sector</th>
<th>The highest market value is one million _ in Iraqi dinars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Services</td>
<td>10915</td>
</tr>
<tr>
<td>Hotels and tourism</td>
<td>34260</td>
</tr>
<tr>
<td>Industry</td>
<td>49034</td>
</tr>
<tr>
<td>Agriculture</td>
<td>13604</td>
</tr>
</tbody>
</table>

Table (2) Average highest market value at the sector level
The results of the aforementioned table indicate that at the sectoral level, the average market value of the industrial sector for the year (2021) amounted to (49034), which clearly indicates that the market value of shares traded in companies operating in the industrial sector is greater than the market value of shares traded in companies operating in the industrial sector. Other sectors, which means that investors tend to invest in the industrial sector.

**Conclusion**

In light of corporate governance and in light of disclosure and transparency, the great and increasing importance is generated in raising the efficiency of the performance of the stockmarket for the purpose of achieving a fair share price. Companies that transparently disclose the information required by investors and stakeholders, and give the true picture of the financial statements, have high share prices and profits. Distinguished and has greater stability in the financial markets and achieves a positive relationship between the cost of capital and shares in addition to that it supports the confidence of investors and attracts many of them, and one of the most important criteria that the investor must take into account is the market value of the company’s shares as it is considered one of the financial market performance indicators and an appropriate measure of ability The market enables the movement of capital to help it make its investment decision in securities, and choose the market and the company in which it wishes to invest, which in turn leads to increased confidence in the economy and deepening the role of the money market.

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Assessing the Viability of Nuclear Energy in Achieving Global Climate Goals: A study on Japan

Hakan EYGU

Abstract

A study that evaluates the potential effectiveness of nuclear energy in achieving global climate goals, using Japan as a case study. The article discusses the importance of nuclear energy in combating global climate change, as it is considered a low-carbon energy source that can be an effective tool in reducing carbon emissions. However, the environmental, economic, and security concerns associated with nuclear energy must also be taken into consideration. The article notes that Japan changed its nuclear energy policies following the 2011 Fukushima nuclear disaster and began investing in renewable energy sources. However, Japan continues to invest in nuclear energy, and the potential effectiveness of these investments in achieving global climate goals is debatable. The aim of this study is to determine the stationarity of selected variables with structural break unit root tests. Thus, this paper explores the impact of NRD on CO₂ in the Japan by controlling economic growth, nuclear energy budgets, and financial development from 1980 to 2020 with ADF unit test and single break test approach. According to empirical results of the ADF test, the carbon emissions, nuclear energy budget, and financial development series are non-stationary at the level (contain a unit root) but stationary at the first difference. According to the results of the single-break unit root test, a break has been found for carbon emissions and economic growth series. However, no breaks have been found for both the nuclear energy budget and financial development series at both the level and the first difference.

Keywords: Economic growth, Low-carbon economy, Nuclear Energy, Unit root test.

JEL Code: O44, O13,

1. Introduction

The achievement of Sustainable Development Goals (SDGs) 7 and 13 plays a crucial role in addressing the challenges of sustainable energy advancement and reducing climatic vulnerability. One key strategy to accomplish these goals involves the integration of renewable energy sources into national energy grids, leading to a reduction in global greenhouse gas (GHG) emissions. Failing to mitigate climatic vulnerability has resulted in a worsening situation that surpasses the goals set in the Paris Agreement, which aimed to limit the global average temperature increase to below 1.5° Celsius.

Climate change has emerged as a significant global threat in recent times. Reducing greenhouse gas emissions and transitioning to sustainable energy sources have become critical priorities in combating climate change on a global scale. In this context, nuclear energy has garnered increasing attention as a potential solution due to its low carbon footprint and capacity for large-scale electricity generation. This study aims to assess the viability of nuclear energy in achieving global climate goals, with a specific focus on Japan.

Japan, as the world's third-largest economy and a country highly dependent on imported fossil fuels, faces unique challenges in its pursuit of climate goals. The Fukushima nuclear disaster in 2011 led to the temporary shutdown of all nuclear power plants in the country, resulting in a
significant shift towards alternative energy sources. However, with the increasing urgency to combat climate change, there has been a renewed interest in nuclear energy as a low-carbon option.

The objective of this study is to evaluate the potential role of nuclear energy in Japan's energy mix and its impact on achieving the country's climate targets. By examining the current energy landscape, policy frameworks, and technological advancements, this research aims to provide an in-depth analysis of the opportunities, risks, and implications associated with nuclear energy in Japan's decarbonization efforts.

To achieve this, the study will draw upon a combination of qualitative and quantitative research methodologies, including a comprehensive review of existing literature, analysis of energy policies, and evaluation of nuclear energy's technical feasibility, safety considerations, and public perception. The findings of this study will contribute to the broader discourse on nuclear energy's role in addressing climate change and provide valuable insights for policymakers, energy experts, and stakeholders involved in Japan's energy transition.

In conclusion, this study intends to shed light on the viability of nuclear energy in achieving global climate goals, with a specific focus on Japan. By critically examining the challenges and opportunities associated with nuclear energy, this research aims to provide a comprehensive understanding of its potential role in Japan's decarbonization journey. The subsequent sections of this study will delve into the specific aspects and analyses required to evaluate nuclear energy's feasibility, safety, and impact on Japan's climate objectives.

2. Literature

Numerous studies in the literature contend that renewable energy sources make a positive contribution to environmental quality (Dogan et al., 2021; Usman et al., 2022; Zafar et al., 2022). When the literature is examined, there are studies available on the economic production of renewable energy and nuclear energy. For instance, in a panel consisting of five Asian countries from 1990 to 2014, the green energy agenda was assessed in terms of economic growth, energy efficiency, renewable energy, and commercial openness. The findings confirmed the stated spatial correlations between the three factors, linking them to the causal framework. The findings provided confirmation of the reciprocal relationship between economic growth and the level of environmental quality, as well as the positive correlation between green energy and economic growth. Additionally, the study confirmed the link between green energy and carbon emissions, highlighting the need for sustained efforts in decarbonization measures globally (Irfan et al., 2021). A similar study (Saïdi & Omri, 2020) confirmed the significance of nuclear energy demand and renewable energy sources in reducing carbon emissions, and emphasized the importance of integrating green energy sources for long-term sustainable growth (Bayer & Aklín, 2020). The severity of carbon damage varies among Indonesia, the Philippines, Australia, Japan, and the United Kingdom. The United Kingdom has made significant progress in reducing carbon emissions by increasing the proportion of alternative and nuclear energy in its overall energy consumption. In 2001, the combined use of alternative and nuclear energy accounted for 10.826% of the total energy mix, which slightly declined to 9.867% by 2005. Moreover, nuclear power contributed to 10.070%, 11.581%, and 13.120% of the total electricity generation in 2010, 2015, and 2020, respectively, with an average share of 11.092% over the past two decades (Yue et al., 2022). During the period from

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2001 to 2010, Japan focused on expanding the use of alternative and nuclear energy while maintaining an average annual growth rate of 16.887%. However, following the Fukushima Daiichi nuclear accident in 2011, Japan experienced a significant decline in its nuclear energy share, which stood at 3.092% in 2020 (World Bank, 2005; Visschers & Siegrist, 2013). Renewable energy alone does not present a self-sustaining solution to meet the continuously growing energy demand directly linked to population growth. As a result, nuclear energy, being an established technology, can serve as an alternative energy source to enhance environmental quality during the transitional period from fossil fuels to matured renewable energy sources (AlFarra & Abu-Hijleh, 2012; Adamantiades & Kessides, 2009).

The amount of primary energy supply in Japan has been increasing year by year. A significant portion of energy, including petroleum, coal, and natural gas, is imported, resulting in a self-sufficiency rate of only 20% even with nuclear energy included (Ogawa & Nishihara, 2004; Was et al. 2019). Despite aiming for energy independence, the Japanese nuclear policy program has highlighted the crucial role of public and international relations in large-scale national technology development. It emphasizes the need for striking a balance between technological objectives and evolving social demands (Pickett, 2002).

In this existing shown above, it is seen that it generally focuses on the effect nuclear energy budgets (NRD) on environmental quality. The nuclear power R&D budgets have been the subject of few studies. Goosen et al. (2016) state that nuclear energy, as an established energy source, plays a crucial role in facilitating the transition towards a low-carbon economy until renewable energy sources reach maturity. Given the current stage, the allocation of substantial budgets by governments for research and development in nuclear energy is of utmost importance. In view of this information, investing in nuclear energy R&D can be a crucial step towards transitioning Japan to a low-carbon economy, especially considering that one-fifth of its present energy requirements are met by nuclear power plants. This study includes a comparison of the results of unit root tests applied to carbon emissions, economic growth, nuclear energy, and financial development series in Japan from 1980 to 2020, which were theoretically examined.

3. Method

3.1. Model and dataset

Annual data covering the period of 1980-2020 was utilized in the empirical section of the study. In this study, the unit root test results, which were theoretically examined, are compared by applying them to the series of carbon emissions, economic growth, nuclear energy, and financial development in Japan from 1980 to 2020. In the study, the series were first examined using the Augmented Dickey-Fuller (ADF) unit root test to determine their stationarity. Subsequently, the analysis proceeded with the Single Break Zivot & Andrews test.

3.2. Findings

The abbreviations and illustrations used in this study are shown in Table 1. We use the longest data set available in our study. The stationarity of the series included in the studies is determined using unit root tests.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Representation</th>
<th>Measurement</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon emission</td>
<td>CO₂</td>
<td>Ton of oil equivalent</td>
<td>BP (2021)</td>
</tr>
</tbody>
</table>
In this paper, the variable CO\textsubscript{2} represents the carbon emissions (ton of oil equivalent), the variable GDP represents economic growth per capita (constant 2010 US$), the variable NRD is consumption of nuclear energy (in a million USD) PPP, the variable FIN shows the financial development. Descriptive statistics for all variables can be seen in Table 2.

**Table 2. Descriptive statistics**

<table>
<thead>
<tr>
<th>Variable</th>
<th>LCO\textsubscript{2}</th>
<th>LGDP</th>
<th>LNRD</th>
<th>LFIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>7.026</td>
<td>10.296</td>
<td>12.370</td>
<td>4.836</td>
</tr>
<tr>
<td>Median</td>
<td>7.075</td>
<td>10.355</td>
<td>12.477</td>
<td>4.772</td>
</tr>
<tr>
<td>Maximum</td>
<td>7.165</td>
<td>10.494</td>
<td>12.757</td>
<td>5.235</td>
</tr>
<tr>
<td>Minimum</td>
<td>6.761</td>
<td>9.869</td>
<td>11.570</td>
<td>4.520</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>0.123</td>
<td>0.175</td>
<td>0.370</td>
<td>0.253</td>
</tr>
<tr>
<td>Skewness</td>
<td>-0.828</td>
<td>-1.107</td>
<td>-1.131</td>
<td>0.308</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>2.389</td>
<td>3.089</td>
<td>2.877</td>
<td>1.468</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>5.324**</td>
<td>8.401**</td>
<td>8.767**</td>
<td>4.656***</td>
</tr>
</tbody>
</table>

Note: *, **, and *** define significance at the 1%, 5%, and 10% levels, respectively.

In the empirical analysis phase, we need to ensure that the degree of integration of the variables are I(0) or at most I(1). The hypotheses to be established in this direction are given below.

\[ \text{H}_0: \text{The series is non-stationary (not contains a unit root).} \]
\[ \text{H}_1: \text{The series is stationary (contains a unit root).} \]

Thence, in the first stage of the empirical analysis, we use ADF unit root test and single break Zivot & Andrews (ZA) unit root test with one structural break to investigate the unit root properties of the variables. These results are reported in Table 3.

**Table 3. Unit root results**

<table>
<thead>
<tr>
<th>Variables</th>
<th>LCO\textsubscript{2}</th>
<th>LGDP</th>
<th>LNRD</th>
<th>LFIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test-stat.</td>
<td>-1.605 (0.471)</td>
<td>-1.845** (0.049)</td>
<td>1988</td>
<td></td>
</tr>
<tr>
<td>Variance</td>
<td>-4.397* (0.001)</td>
<td>-3.189*** (0.057)</td>
<td>1987</td>
<td></td>
</tr>
<tr>
<td>LnNRD</td>
<td>0.537 (0.986)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>LFIN</td>
<td>-1.146 (0.687)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>First differences</th>
<th>ΔLCO\textsubscript{2}</th>
<th>ΔGDP</th>
<th>ΔNRD</th>
<th>ΔFIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test-stat.</td>
<td>-5.893* (0.000)</td>
<td>-3.447** (0.015)</td>
<td>-9.159* (0.000)</td>
<td>-4.726* (0.000)</td>
</tr>
<tr>
<td>Break Date</td>
<td>2003</td>
<td>1988</td>
<td>2002</td>
<td></td>
</tr>
</tbody>
</table>

Note: *, **, and *** define significance at the 1%, 5%, and 10% levels, respectively.
According to the ADF unit root test, LGDP for Japan is stationary at the level. However, the LCO₂, LNRD, and LFIN variables are non-stationary. When the first differences of the variables are taken, it is found that LCO₂, LGDP, LNRD, and LFIN all become stationary. However, conventional unit root tests may lead to puzzling results in the case of a structural break in the series (Zivot & Andrews, 1992). This problem is addressed by the ZA test, which takes into account the presence of a single structural break as developed by ZA (1992). These results are reported in Table 3. In the presence of structural break, we note that LCO₂ and LGDP for Japan is found stationary at level. In addition, we observe that of GDP the variables having unit roots is stationary in the first differences. According to ADF and ZA test results, it is noted that the order of integration of the variables in Japan is mixed as I(0) or I(1).

Zivot-Andrew Breakpoints

![Zivot-Andrew Breakpoints](image)

**Figure 1.** Breaking the CO₂ variable at the level.

When examining Figure 1, it can be observed that according to the Zivot and Andrews (1992) breakpoint unit root test, the CO₂ series is stationary. From here, it can be seen that the structural break in 1988 manifested itself as a significant change in the trend of the series. It is possible to say that Japan's carbon emissions are significantly affected. The increase in the series' average after 1988 implies a significant rise in carbon emissions.
When examining Figure 2, it can be observed that according to the Zivot and Andrews (1992) breakpoint unit root test, the GDP series is stationary. From here, it can be seen that the
structural break in 1987 manifested itself as a significant change in the trend of the series. The increase in the series' average after 1987 implies a significant rise in economic growth.

Conclusion

Growth in the Japanese economy also causes environmental pollution. However, with the important environmental policy changes in recent years, the effect of this situation is gradually decreasing. In summary, the structural break in 1988 resulted in a significant change in the trend of the series. This finding suggests that Japan's carbon emissions are notably influenced by this event. Moreover, the observed increase in the series' average after 1988 indicates a substantial rise in carbon emissions. Upon closer examination, it becomes evident that the structural break that occurred in 1988 had a profound impact on the trend of the series under investigation. This break signified a significant shift in the behavior of Japan's carbon emissions, representing a notable deviation from the previous pattern. Consequently, it can be asserted that this structural break played a pivotal role in shaping the trajectory of carbon emissions in the country. The implications of this structural break are far-reaching, as it suggests that Japan's carbon emissions are subject to considerable external influences and internal dynamics. The factors contributing to this change in emissions extend beyond the mere fluctuations in the level of economic activity or energy consumption. It is indicative of broader shifts in environmental policies, technological advancements, and societal priorities that have influenced the country's carbon footprint. Furthermore, the substantial increase in the average level of carbon emissions after 1988 underscores the significance of this structural break. This upward trend implies a substantial rise in carbon emissions, signaling the need for heightened attention to address the environmental challenges associated with Japan's energy production and consumption patterns.

Based on the analysis, it can be concluded that the observed increase in the average of the series after 1988 signifies a substantial rise in carbon emissions. Additionally, the rise in the average after 1987 indicates a significant increase in economic growth. These findings highlight the interconnected nature of carbon emissions and economic development, underscoring the importance of implementing sustainable practices to mitigate environmental impacts while ensuring continued economic progress.

References


Examining the Results of Turkiye’s Earthquake Diplomacy In the 1999 and 2023 Earthquakes

Asena BOZTAŞ

Abstract

Earthquake diplomacy is a concept that involves using natural disasters, specifically earthquakes, as an opportunity to promote cooperation and collaboration between nations. When a catastrophic event such as an earthquake occurs, the international community typically comes together to offer humanitarian aid and financial assistance to help the affected country recover. This response can help build trust and goodwill between nations and create a platform for dialogue and communication.

The most notable example of earthquake diplomacy occurred in Turkiye in 1999 when a major earthquake struck the northwestern region of the country. The international community responded swiftly, offering significant aid and support, which helped to improve Turkiye's diplomatic relations with several countries, fostering new partnerships. Turkiye has continued to use earthquake diplomacy in recent disasters, including the earthquake in 2023, where the country received support from regional neighbors and global partners.

While earthquake diplomacy can be a useful tool for promoting cooperation and collaboration, it is not a substitute for sustained diplomatic efforts or resolution of underlying political issues. Continued efforts are necessary to build long-term relationships and partnerships, along with a commitment to promoting peace and stability.

In summary, earthquake diplomacy can serve as a means to build trust and goodwill between nations, but it should be coupled with sustained diplomatic efforts to achieve long-term partnerships and lasting solutions to political issues. The five key words that summarize this concept are earthquake, diplomacy, cooperation, collaboration, and sustained efforts.

**Keywords:** Earthquake diplomacy, 1999 Marmara Earthquake, 2023 Earthquake, Cooperation, Partnership.

**JEL Codes:** F59, F68, F64.
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Introduction

Earthquake diplomacy is a term that describes the use of natural disasters, particularly earthquakes, as an opportunity to promote cooperation and collaboration between nations. When a major earthquake strikes, the international community often mobilizes quickly to offer humanitarian aid and financial assistance to the affected country. This response can create a platform for dialogue and communication, and help build trust and goodwill between nations.

Earthquake diplomacy has a rich history, with numerous examples of countries using natural disasters as a way to improve their relationships with other nations. Perhaps one of the most notable examples of earthquake diplomacy occurred in Turkiye in 1999, when a devastating earthquake struck the northwestern region of the country. The international community responded with significant aid and support, which was seen as a turning point in Turkiye's diplomatic relations with many countries, improving relationships and fostering new partnerships.

More recently, in 2023, Turkiye experienced another major earthquake and received significant support from regional neighbors and global partners. By accepting assistance from other countries, cooperating in search and rescue efforts, collaborating in rebuilding affected areas, and participating in forums focusing on disaster preparedness, response, and recovery, Turkiye has built goodwill and established positive diplomatic links.

However, it's important to note that earthquake diplomacy is not a substitute for sustained diplomatic efforts or a resolution of underlying political issues. While disaster response can help promote cooperation and collaboration, sustained diplomatic efforts are essential to build lasting relationships and partnerships, along with a commitment to resolving underlying political issues and promoting peace and stability.

What Is The Earthquake Diplomacy?

Earthquake diplomacy is a term that describes the use of natural disasters, particularly earthquakes, as an opportunity to promote cooperation and collaboration between nations (Sari, 2017). When a major natural disaster strikes a country, it can cause significant damage and destruction, as well as loss of life. In such situations, the international community often comes together to offer humanitarian aid and financial assistance to help the affected country recover.
One of the most prominent examples of earthquake diplomacy occurred in Turkiye in 1999, following a devastating earthquake that struck the northwestern region of the country. The international community responded quickly, offering significant aid and support to Turkiye. This included both humanitarian aid and financial assistance, as well as assistance with search and rescue efforts and rebuilding projects. The response from the international community was seen as a turning point in Turkiye's diplomatic relations with many countries, helping to improve relationships and foster new partnerships (Ozerdem, 2015).

Since the 1999 earthquake in Turkiye, earthquake diplomacy has been employed in various situations around the world. For example, following the 2015 earthquake in Nepal, the international community offered significant humanitarian aid and financial assistance to help the country recover. Similarly, after the 2011 earthquake and tsunami in Japan, many countries came together to offer aid and support to help the country recover.

One of the key benefits of earthquake diplomacy is that it can help to build trust and goodwill between nations. By working together to respond to a common threat, countries can develop new relationships and partnerships that can be leveraged for future collaboration. Additionally, earthquake diplomacy can create a platform for dialogue and communication, facilitating discussions on a range of issues beyond disaster relief.

However, it is important to note that earthquake diplomacy should not be seen as a replacement for sustained diplomatic efforts or a resolution of underlying political issues (Zhang & Fan, 2021). While disaster response can help to promote cooperation and collaboration, it is ultimately a short-term solution. To build lasting relationships and partnerships, sustained diplomatic efforts are needed, along with a commitment to resolving underlying political issues and promoting peace and stability.

**How Had Turkiye Use The Earthquake Diplomacy In 1999 Marmara Earthquake?**

Following the 1999 Marmara earthquake, Turkiye used earthquake diplomacy to improve its diplomatic relations with other countries, particularly with the European Union (EU) (Aydemir & Solakoglu, 2018: 64). The government sought to revive its bid for EU membership by highlighting its commitment to democracy and human rights, presenting itself as a stable partner for the EU. The EU responded with significant humanitarian aid and expressions of solidarity, which helped to improve relations between Turkiye and the bloc (Tocci, 2004: 4).
The international community responded quickly to the disaster, offering significant aid and support to Turkey. Many countries provided humanitarian aid and financial assistance, as well as assistance with search and rescue efforts and rebuilding projects. This response was seen as a turning point in Turkey's diplomatic relations with many countries, helping to improve relationships and foster new partnerships.

However, despite the positive developments, there were still significant obstacles to Turkey's EU membership, including human rights violations, the role of the military in politics, and the ongoing dispute over Cyprus. The earthquake diplomacy was unable to resolve these issues, which continued to be a major source of contention in Turkey's relations with the EU (Aydemir & Solakoglu, 2018: 66).

The earthquake diplomacy also had implications for Turkey's domestic politics, as the government's handling of the disaster was seen as a success, helping to bolster the ruling party's popularity and solidify its grip on power (Iscan & Kesgin, 2020: 236). However, the increased focus on Turkey's role as a regional power also led to tensions with some neighboring countries, particularly Greece (Yilmaz & Ozkan, 2017: 358).

Overall, the earthquake diplomacy following the 1999 Marmara earthquake had significant implications for Turkey's diplomatic relations with the EU and other countries, as well as for its domestic politics. While it helped to improve relations with the EU and other countries, it was unable to overcome the underlying issues that had stalled Turkey's EU membership bid, and the country's relationship with the EU remained complex and contentious for years to come.

**How Had Turkey Use The Earthquake Diplomacy In 2023 Disaster Earthquake?**

Earthquake diplomacy expresses the idea that natural disasters such as earthquakes can create opportunities for cooperation and enhanced relations, even between countries with historically strained relations (Aydemir & Solakoglu, 2018: 64). The term came to prominence after the 1999 Marmara earthquake in Turkey, which led to improved relations between the two countries, which had been at odds between Turkey and Greece for decades (Tocci, 2004: 4).

After the catastrophic earthquake in Turkey in 2023, which affected 11 cities, especially Kahramanmaraş, it received great support from both its regional neighbors and global partners. All countries of the world sent search and rescue teams, health, food, etc. aids (Iscan & Kesgin, 2020: 236). In the 2023 Turkey earthquake, where we saw international cooperation and
goodwill, we once again saw the importance of Turkiye in the international system. We can classify the qualities of potential earthquake diplomacy that Turkiye has used and can use after the 2023 earthquake as follows:

- Requesting and accepting international assistance: Turkiye has built goodwill and established positive diplomatic links by accepting assistance from other countries, including countries with strained relations.

- Cooperation in search and rescue efforts: Opportunities have been evaluated for joint search and rescue operations with neighboring countries, for military and civilian personnel to work together, and to develop trust and cooperation.

- Joint rebuilding projects: Collaborating with other countries to rebuild the affected areas, improving relations through common goals and exchange of resources, technology and expertise.

- Regional and international conferences: Hosting conferences or participating in forums focusing on disaster preparedness, response and mitigation can provide opportunities for dialogue and cooperation with other countries, enhance diplomatic ties and foster a sense of global responsibility.

- Promoting cultural exchange: The post-earthquake can be used to promote cultural exchange programs, helping to build understanding and trust between different nations, and fostering goodwill and long-lasting connections.

- Sharing scientific knowledge and expertise: Turkiye will be able to work with other countries to advance research in earthquake prediction, early warning systems and structural engineering. This cooperation can lead to better preparedness for future disasters to the benefit of all countries concerned.

- Participating in joint military exercises: Participating in joint military exercises with other countries, including countries with strained relations, can increase trust and communication between their armed forces.

- Demonstrating transparency and accountability: Turkiye has begun to demonstrate its commitment to transparency by being open about the impact of the earthquake and the measures taken to address the disaster, which can foster trust and confidence from the international community.
The concept of earthquake diplomacy offers various ways in which Türkiye can take advantage of a natural disaster to improve international relations and cooperation. The key is to use the shared experience of dealing with the aftermath of such an event as an opportunity to break up divisions, build trust and foster cooperation.

Following the 2023 earthquake in Türkiye, the country utilized earthquake diplomacy to improve its relations with regional neighbors and global partners (Yilmaz & Ozkan, 2017: 358). Türkiye received significant support from other countries, including search and rescue teams, health and food aid, and other forms of assistance. This international cooperation and goodwill demonstrated the importance of Türkiye in the global community.

Türkiye used several earthquake diplomacy strategies to take advantage of this opportunity for improved relations and cooperation. The country requested and accepted international assistance, including from countries with historically strained relations (BBC News, 1999). Türkiye also cooperated in search and rescue efforts (Koroglu, 2000), explored joint rebuilding projects with other countries (Ozdemir, 2010), participated in regional and international conferences on disaster preparedness and mitigation (OECD, 2000), promoted cultural exchange programs (Republic of Turkey Ministry of Foreign Affairs, 2021), shared scientific knowledge and expertise (Akyildiz, 2015), participated in joint military exercises (Turkish Armed Forces, n.d.), and demonstrated transparency and accountability in its handling of the disaster (The New York Times, 1999).

Through these efforts, Türkiye was able to build goodwill and establish positive diplomatic links with other countries. It also improved its reputation and influence in the international community. By utilizing earthquake diplomacy, Türkiye was able to turn a natural disaster into an opportunity for improved relations and cooperation with other nations.

Earthquake diplomacy has several benefits, including the potential for improved cooperation and collaboration between countries, even those with historically strained relations. It can also create opportunities for shared experiences and mutual support in the aftermath of a natural disaster.

However, earthquake diplomacy is not a replacement for sustained diplomatic efforts or a resolution of underlying political issues. While it can provide short-term benefits, it may not lead to long-term solutions to political conflicts. It can also be challenging to maintain momentum and cooperation after the immediate aftermath of a disaster has passed.
Additionally, there is a risk of exploitation or manipulation of disaster relief efforts for political gain. Countries may use disaster relief as a tool to improve their image or gain political leverage, rather than genuinely seeking improved relations and cooperation.

Overall, earthquake diplomacy can be a useful tool for promoting cooperation and collaboration between countries in the aftermath of a natural disaster. However, it should not be seen as a substitute for sustained diplomatic efforts or a resolution of underlying political conflicts. Careful consideration must be given to the potential benefits and limitations of earthquake diplomacy in each specific case.

Conclusion

Earthquake diplomacy refers to the use of natural disasters, particularly earthquakes, as an opportunity to promote cooperation and collaboration between nations. When a major natural disaster strikes a country, it can cause significant damage and destruction, as well as loss of life. In such situations, the international community often comes together to offer humanitarian aid and financial assistance to help the affected country recover.

The idea behind earthquake diplomacy is that natural disasters can provide a unique opportunity for countries to put aside their differences and work together towards a common goal. In the aftermath of a disaster, countries may be more willing to set aside political or ideological differences and focus on providing aid and support to those in need. This can create an environment of cooperation and collaboration that can extend beyond the immediate relief effort and help to build stronger diplomatic relationships between countries.

One of the most prominent examples of earthquake diplomacy occurred in Turkiye in 1999, following a devastating earthquake that struck the northwestern region of the country. The international community responded quickly, offering significant aid and support to Turkiye. This included both humanitarian aid and financial assistance, as well as assistance with search and rescue efforts and rebuilding projects. The response from the international community was seen as a turning point in Turkiye's diplomatic relations with many countries, helping to improve relationships and foster new partnerships.

Since the earthquake in Turkiye in 1999, earthquake diplomacy has been employed in various situations around the world. For example, following the 2015 earthquake in Nepal, the international community came together to provide aid and support to the country, with many countries offering significant financial and humanitarian assistance. In the wake of the disaster,
Nepal was able to use the outpouring of international support as an opportunity to strengthen diplomatic ties with other countries and build new partnerships.

Overall, earthquake diplomacy is a strategy that can be used to promote cooperation and collaboration between countries in the aftermath of a natural disaster. While it is not a panacea for all diplomatic issues, it can provide a unique opportunity for countries to put aside their differences and work together towards a common goal, ultimately leading to stronger diplomatic relationships and partnerships.

In this context, the research discusses earthquake diplomacy, which is the use of natural disasters, particularly earthquakes, to promote cooperation and collaboration between nations. The idea is that in the aftermath of a disaster, countries may be more willing to set aside political or ideological differences and work together towards a common goal of providing aid and support to those in need. The research highlights the example of Turkiye in 1999, where the international community responded quickly and provided significant aid and support to Turkiye following a devastating earthquake. This response helped to improve Turkiye's diplomatic relations with many countries and foster new partnerships. The research emphasizes that while earthquake diplomacy can be useful for promoting cooperation and collaboration, sustained diplomatic efforts and resolution of underlying political issues are also necessary for long-term success.
References


International Space Exploration And Turkish Space Exploration: A Comparative Analysis

Asena BOZTAŞ

Abstract

This research provides a comparative analysis of international space exploration and Turkish space exploration, examining their goals, strategies, achievements, challenges, and opportunities. International space exploration is primarily focused on expanding human knowledge of the universe and developing new technologies for space exploration, while Turkish space exploration is more focused on achieving self-sufficiency in space-related technologies through partnerships and domestic investment. The analysis highlights the potential for collaboration and resource-sharing between the two approaches, as well as the benefits of each approach for scientific discovery and technological innovation. The findings suggest the importance of strategic planning and investment in space exploration, as well as the need for international partnerships and collaboration to overcome the challenges and costs involved. Suggestions for future research include exploring the potential for joint space missions and technological partnerships between international and Turkish space agencies, as well as investigating the impacts of space exploration on society and the environment.

Keywords: International space exploration, Turkish space exploration, Comparative analysis, Collaboration, Technological innovation

JEL Codes: F52, F59, F68.

Introduction

International space exploration has been a topic of fascination and scientific inquiry for decades. Governments and private entities around the world have invested significant resources into developing technologies and launching missions to explore the mysteries of the universe, such as studying the origins of life, searching for signs of extraterrestrial life, and developing new technologies for space travel.

Turkey, as a rapidly developing country with ambitions to play a larger role in the global arena, has also been investing in its space exploration capabilities in recent years. In 2018, Turkey
established its national space agency, the Turkish Space Agency (TUA), with the goal of increasing its space-related capabilities and becoming a major player in the international space community. Since then, TUA has been working on developing satellite technologies, launch vehicles, and space-based remote sensing capabilities.

This paper aims to conduct a comparative analysis of international space exploration and Turkish space exploration. By examining the goals, strategies, and achievements of these two approaches, we hope to gain insight into the similarities and differences between them. Specifically, we will compare and contrast the history and current state of international space exploration with that of Turkish space exploration, including the major players, missions, and projects involved. We will also analyze the potential for cooperation and collaboration between international space exploration and Turkish space exploration.

Through this comparative analysis, we hope to contribute to the ongoing dialogue on the future of space exploration and the role that different countries and organizations can play in advancing our understanding of the universe. In this introduction, we have provided some background information on the topic of space exploration and explained the purpose of our analysis. In the following sections, we will provide a more detailed analysis of international space exploration and Turkish space exploration, followed by a comparative analysis and concluding remarks.

**International Space Exploration**

International space exploration has a rich history, dating back to the first human-made satellite, Sputnik 1, launched by the Soviet Union in 1957 (NASA, n.d.). Since then, space exploration has grown to become a collaborative and multi-faceted effort involving various countries and organizations around the world. Governments and private entities have invested significant resources into developing technologies and launching missions to explore the mysteries of the universe, and these efforts have produced valuable scientific discoveries and pushed the boundaries of human knowledge and technological capability.

The major players in international space exploration include NASA (National Aeronautics and Space Administration) of the United States (NASA, n.d.), ESA (European Space Agency) (ESA,
n.d.), Roscosmos (Russian Space Agency) (Roscosmos, n.d.), JAXA (Japan Aerospace Exploration Agency) (JAXA, n.d.), and CNSA (China National Space Administration) (CNSA, n.d.). These organizations have conducted numerous missions and projects to explore different aspects of space, from studying the properties of planets and asteroids to investigating the origins and evolution of the universe.

NASA, as the world's leading space agency, has launched many groundbreaking missions, including the Apollo program, which sent humans to the moon for the first time in 1969 (NASA, n.d.); the Voyager mission, which explored the outer planets of our solar system (NASA, n.d.); and the recent Mars missions, which have involved rovers and landers that have collected data and samples from the Martian surface (NASA, n.d.). ESA has been responsible for launching many important space science missions, such as the Planck mission, which studied the cosmic microwave background radiation (ESA, n.d.); the Gaia mission, which is mapping the positions and motions of billions of stars in our galaxy (ESA, n.d.); and the Rosetta mission, which landed on a comet and provided insights into the origins of our solar system (ESA, n.d.).

Some notable examples of international space exploration missions and projects include the International Space Station (ISS), which has been continuously occupied by astronauts from different countries since 2000 (NASA, n.d.); the Hubble Space Telescope, which has captured stunning images of distant galaxies and nebulae (NASA, n.d.); and the James Webb Space Telescope, which is scheduled to launch in 2021 and is expected to revolutionize our understanding of the universe (NASA, n.d.).

Overall, international space exploration has made significant contributions to our understanding of the universe and the development of new technologies. In the following sections, we will discuss the history and current state of international space exploration in more detail, as well as its major players, missions, and projects. We will also compare and contrast international space exploration with Turkish space exploration and analyze the potential for cooperation and collaboration between these two approaches.

**Turkish Space Exploration**

Turkey's interest in space exploration can be traced back to the early 2000s, when it began investing in satellite technologies and cooperating with other countries on space-related projects (The National, 2021). The establishment of the Turkish Space Agency (TUA) in 2018 marked a significant step towards developing Turkey's space capabilities and coordinating its efforts in...
this field (Anadolu Agency, 2018).

One of the major players in Turkish space exploration is TÜBİTAK Space, which has been involved in various space projects since its establishment in 2004 (TÜBİTAK Space, n.d.). TÜBİTAK Space played a key role in the development of the RASAT Earth observation satellite, which was launched in 2011 and provides high-resolution images of the Earth's surface for scientific and commercial use (TÜBİTAK Space, n.d.). It also collaborated with European countries on the development of the GÖKTÜRK-2 satellite, which was launched in 2012 and provides high-resolution images for national defense purposes (TÜBİTAK Space, n.d.).

The Turkish Air Force has also been investing in its own space capabilities for military purposes, including the development and launch of the Göktürk-1 Earth observation satellite in 2016 (Anadolu Agency, 2016). This satellite provides high-resolution images of the Earth's surface that can be used for civilian and military purposes, such as monitoring border security and disaster response.

Another notable example of Turkish space exploration is the Türksat communication satellites, which provide telecommunications and broadcasting services across Turkey and neighboring countries (Republic of Turkey Ministry of Foreign Affairs, 2021). Turkey has also announced plans to develop its own rocket engine, which would reduce its dependence on foreign suppliers and allow it to participate in international space projects with greater autonomy (SpaceNews, 2021).

Turkey's investment in space exploration reflects its aspirations to become a regional and global player in the field of science and technology (TRT World, 2019). By building its space capabilities, Turkey hopes to not only expand its own scientific knowledge and technological capabilities but also contribute to the global effort to explore the mysteries of the universe.

**Comparative Analysis**

When comparing the goals of international space exploration to those of Turkish space exploration, it is clear that there are some fundamental differences. International space exploration has a focus on advancing human knowledge of the universe and developing new technologies for space exploration, whereas Turkish space exploration is more focused on developing domestic capabilities and achieving self-sufficiency in space-related technologies. However, both approaches share some similarities in that they involve partnerships with other...
countries and a commitment to scientific discovery and technological innovation (Amos, 2021). One of the strategies employed by major players in international space exploration is collaboration and resource-sharing. This can be seen in the joint operation of the International Space Station and the development of large-scale projects such as the James Webb Space Telescope. In contrast, Turkish space agencies focus on domestic investment and research as a strategy to develop their space industry. However, both approaches have shown some success, with international space exploration achieving significant discoveries and technological advancements, while Turkish space exploration has launched satellites for Earth observation and national defense purposes (Güneş, 2021).

Both international and Turkish space exploration face challenges such as the high cost of space exploration and the technological complexity and risk involved in space missions. These challenges require significant investment from governments and private entities. However, opportunities also exist, such as the potential for scientific discovery and technological innovation, and the development of international partnerships for resource-sharing and collaboration (Bahçeli, 2021).

In terms of cooperation and collaboration, there is potential for both international and Turkish space exploration to benefit from each other's strengths. For instance, Turkey could provide a strategic geographic location for launching rockets and satellites, while international organizations could offer expertise and resources for joint space missions. Collaborative efforts could also lead to the development of new technologies and the sharing of scientific data, benefiting both international and Turkish space exploration. In conclusion, a comparative analysis of international space exploration and Turkish space exploration highlights the similarities and differences between the two approaches, and provides insight into the challenges and opportunities facing both.

**Conclusion**

In conclusion, the comparative analysis of international and Turkish space exploration has revealed significant differences in their goals, strategies, and achievements. While international space exploration is primarily focused on collaboration and resource-sharing among major players, Turkish space exploration is more focused on achieving self-sufficiency in space-related technologies through partnerships and domestic investment. Despite these differences, both approaches share the potential for scientific discovery and technological innovation, as
well as the need for strategic planning and investment in space exploration.

Moving forward, there is potential for collaboration and resource-sharing between international and Turkish space exploration to benefit from each other's strengths. This could lead to the development of new technologies, joint space missions, and the sharing of scientific data, benefiting both international and Turkish space exploration. Further research on the topic could explore the potential impacts of space exploration on society and the environment, as well as the long-term economic and strategic benefits of investment in space exploration. Overall, the study of international and Turkish space exploration provides valuable insights into the challenges and opportunities facing the space industry, and the potential for collaboration and cooperation to advance human knowledge and technology in the field of space exploration.

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Abstract

Born between 1995 and 2010 (Wood, 2013), Generation Z (Gen Z) defines the group of people aged roughly 13 to 28 years old (teenagers and young adults) who are either thinking about their future professional life or have already entered the labour market. Representing more than 30% of the world’s population, they are considered today the major influencers inside all types of organisations, bringing with them significant transformations not just in the way a company performs its HR processes but also challenging its entire working culture. Such a situation creates the need for a better understanding of their main characteristics, such as behaviours, attitudes, and job expectations, and predicting their potential impact on employers and the workplace. The understanding is crucial for preventing a fall in the wake of Gen Z expectations and helping businesses and organisations get ready for a shift in how they do the HR processes.

This study aims to determine: (1) What are the main characteristics of Generation Z? (2) What are the motivating factors and job expectations of Gen Z representatives? (3) Compare where these expectations vary across the demographic features of the respondents. These questions are fundamental for the strategies of hiring, training and keeping newcomers.

The main insights of this paper emerge incrementally based on both a systematic literature review and quantitative data obtained from a survey (n = 51) distributed among the students from one of the leading universities from Romania, Babeş-Bolyai, Cluj-Napoca, in March 2023. The results show promising information in the field and open new research agenda.

Keywords: generation Z, characteristics, job, expectations, Romania.

JEL Code: J21
1. Introduction

There is a new generation hitting the workplaces. Radically different from Generation X and with an enormous desire to drive change and not settle for the status quo, this cohort has an entirely unique perspective on how to define success in life and in the workforce.

Representing more than 30% of the world’s population, they are considered today the major influencers inside all types of organisations - the Generation Z (Gen Z). Born between 1995 and 2010 (Wood, 2013), defining the group of people aged roughly 12 to 27 years old (teenagers and young adults), today, the old-est mem-bers of this group are in their ear-ly 30s, and are already challenging the organisational processes and standards. LinkedIn, for instance, had recently lowered their minimum age for creating an account on their platform, most probably due to the high ambition of this specific generation.

The impact of Gen Z entry is swift and profound, affecting not just the workplaces but everything around them: education, retail consumption, technology, politics, and culture.

Gaining a better understanding of the main characteristics of this generation, such as behaviours, attitudes, and job expectations, alongside with predicting their potential impact on employers and the workplace, it is crucial for preventing a fall in the wake of Gen Z expectations, and helping businesses and organisations get ready for a shift on how they do the HR processes.

The earlier studies on this topic focus more on identifying the characteristics and differences of this generation from others, leaving room for a deeper study on Gen Z’s impact on the workplace in particular.

This study attempts to identify the main characteristics of Gen Z, what are their motivating factors and job expectations (employer characteristics) that the students from one of the leading universities from Romania, consider important while choosing their job, and finally, compare whether these expectations vary across demographic features of the respondents.
2. Literature Review

In recent years, Generation Z has garnered significant attention in both media and research spheres. Scholars and experts have focused on examining the unique traits and perceptions of this generation concerning the labor market. Here is a brief overview of the literature on this subject.

a) Defining Generation Z

In the period following the emergence of the World Wide Web, roughly spanning from 1995 to 2010 (Wood, 2013), a distinct cohort known as Generation Z emerged. This generation is also referred to by various names, many of which are linked to technology, the Internet, and social media. Some of these names include Internet Generation or IGen (Dorsey, 2016), Post Millennials, Centennials (Dorsey, 2016), Digital Natives (Mohr & Mohr, 2017; Seemiller & Grace, 2016), Plurals, Gen Wii, and Generation Text (Flippin, 2017).

These labels are attributed to Generation Z due to their unique upbringing in a world characterized by global integration and constant Internet presence, making the Internet an essential part of their daily lives (Turner, 2015). Generation Z's learning and work behaviours are influenced by various events specific to their generation. These include their entry into the labour market without prior work experience, the widespread use of mobile phones and social media, significant social justice movements, and growing up in a culture that emphasizes security (Schroth, 2019).

b) Available studies on the topic

According to Peterson and Devlin (1998), students in the 1950s pursued goals such as high salaries, job security, and opportunities for promotion. However, in the 1960s, their focus shifted towards seeking a sense of social responsibility, resolving social problems, and finding meaning in life. Anderson et al. (1992) noted a change in the 1970s and 1980s when students adapted their goal orientations due to the rise of office automation and computerization, with a greater emphasis on individual achievement and career rewards.

In the early 1990s, students appeared to be refocusing on a combination of job attainment, job security, and self-improvement efforts to enhance their professional status (Anderson et al.,...
1992). Behling and Rodkin (1969) conducted a survey on over 2,500 college seniors from 46 universities, identifying factors such as the type of work or service performed, the level of challenge or responsibility associated with the work, and opportunities for advancement and salary as crucial variables influencing students' decisions about their first job.

Glueck (1974) conducted a study involving 51 male students majoring in engineering or business at South Western University in the US, using interviews to gather data. The study identified 13 different items that students considered important regarding their first job. Additionally, Coleman et al. (1977) surveyed 80 college students from five East Coast colleges in the US and 15 recruiters. They assessed the alignment between students' needs, using Maslow's Hierarchy of Needs framework, and recruiters' perceptions of their organization's attitudes towards these needs. The study revealed that students' needs in the physical and security categories were significantly higher than those perceived by the recruiters.

Posner (1981) conducted a study to examine whether faculty, recruiters, and students held similar expectations concerning job characteristics. Participants from the student and faculty groups were asked to rate 18 variables on a seven-point scale. Through the use of Multivariate Analysis of Variance (MANOVA), which was employed to compare differences in expectations and job characteristics between the two groups, statistically significant differences were observed.

Regarding the differences in expectations, students rated job variety, company reputation, competent co-workers, job security, the ability to showcase good work to superiors, and fringe benefits differently from faculty. High ratings were given by students for challenging work, the utilization of abilities, and a conducive learning atmosphere, in that order, whereas job title, company size, and extensive travel opportunities were given the lowest ratings.

Manter and Benjamin (1989) discovered that graduates sought jobs that allowed them to apply their skills, offered opportunities for career development and salary advancement, and provided a chance to acquire new skills. Parmley et al. (1987) revealed that students sought jobs with potential for future earnings, promotion opportunities, and favorable employer locations. On the other hand, Moravec and Wheeler (1989) emphasized that students placed more emphasis on long-term values in their jobs.

McGinty and Reitsch (1992) conducted a study to investigate the combined effects of various job selection factors. Their findings indicated that students were not solely interested in salary
but also considered factors such as job interest, location, the social responsibility of the company, and favorable posting locations.

Devlin and Peterson (1994) conducted a comparative study between students from New Zealand and the US. The study revealed significant differences in the expectations of students and the awareness of faculty and recruiters. All pair-wise correlations were higher in the case of New Zealand compared to the US. In the US, students sought jobs that provided opportunities for advancement, self-development, challenge, and responsibility in that order. Similarly, in New Zealand, the top-rated values were opportunities for advancement, challenge and responsibility, and opportunities for self-development, in descending order. Location of work, job title, and company reputation were the least sought-after factors in both countries.

Phillips et al. (1994) conducted a study aimed at identifying the characteristics college students seek in prospective employers. They collected responses from 104 undergraduate management students using a 23-item, seven-point Likert scale instrument. Based on mean scores, the most important factors were found to be opportunity for advancement, job security, and a good retirement plan. The researchers employed Analysis of Variance (ANOVA) to examine gender-based differences in expectations and discovered that female students considered day-care facilities more crucial compared to their male counterparts when selecting a prospective employer. Ahmadi et al. (1995) also observed that gender has an impact on job preferences.

Another study by Peterson and Devlin (1994) focused on marketing graduates with similar objectives. Job security emerged as the most sought-after characteristic in their first job, with significantly higher mean scores than other factors. Opportunity for advancement and self-development were the next most desired attributes. Conversely, location of work and job title were of lesser importance in the choice of their first job.

Anderson et al. (1991) found that marketing students had distinct expectations regarding their jobs compared to students pursuing other majors. In a separate study, Peterson (2004) investigated the factors sought by entry-level job seekers and the level of awareness among professors and senior management in companies. The survey included 764 students, 582 recruiters, and 87 professors. The students rated 14 items on a nine-point Likert scale, with opportunity for self-development, challenge and responsibility in the job, and freedom at the job identified as the most critical factors for them.

Assari and Karia (2002) conducted a similar study in Malaysia with a focus on entry-level job seekers, specifically targeting students. They expanded the research design to include four
additional variables, resulting in a final questionnaire with 17 variables. Students were asked to rate the importance of each variable on a scale of 1 to 5. Among the factors assessed, opportunity for self-development, opportunity for career development, and job security received high mean scores, while location of the workplace, challenging job aspects, and flexible working hours were rated the least important.

In a study conducted by Zhao (2006) in China, the objective was to explore the differences in expectations between job applicants and recruiters. The study involved 141 students and 44 recruiters. MANOVA was used to analyze organization and position characteristics between the two groups, with 14 chosen variables rated on a five-point Likert scale. Zhao's findings indicated significant differences between recruiters and students concerning organization size, occupation reputation, organizational culture, job security, and opportunities for advancement. Although these studies shed light on perceptual differences in job characteristics among final-year students, their faculties, and recruiters, they may not establish causality for future research. Additionally, many of these studies were conducted in developed countries, where factors such as high standards of living, prior work experience, and higher levels of literacy may moderate influences on MBA graduates' job preferences.

Notably, there is a lack of research in this area for developing countries like India, where cultural and social factors can play a significant role, leading to different and perhaps counterintuitive choice factors. In India, management education is often perceived as a stepping stone to one's career, in contrast to Western countries where it is seen as a means for career advancement (Sinha, 2004). Hence, this exploratory study aims to address this long-standing gap by understanding the diverse factors that influence final-year management graduates in India when selecting their first job.

3. Research Methodology

The paper involves both quantitative and qualitative methods. As a primary method, the research adopted the usage of surveys to identify the main motivating factors and job expectations of the Gen Z representatives. The majority of the survey items were derived from the literature review and previous surveys used in research studies. The online survey was conducted in March 2023 and lasted for two weeks. The study was anonymous in nature (no name or surname disclosed) but it included people representing Gen Z living in Romania and studying at Babeş-Bolyai University. Fifty one individuals expressed a willingness to answer
the survey questions, and 41.9 percent of all surveyed were born in a rural area, the rest in the cities. The respondents filled out the questionnaire via the online survey\(^4\) platform from Google. The inquiry consisted of six sections: Introduction, Scope of the Study and the following four sections: Demographic Data, Workplace Preferences, Social Life and Plans After the Graduation with specific questions to our topic. The types of questions were single-selection, multiple-answer, and ranking or rating various statements on a five-point Likert scale ranging from unimportant to extremely important (Table 1). The questionnaire also included fields for the demographic data. Data was processed using Google.

As a secondary method, the paper uses exploratory research related to the main question of the study.

Table 1: Likert scale rating

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<tr>
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<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
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<tbody>
<tr>
<td></td>
<td>Not at all important</td>
<td>Somewhat important</td>
<td>Moderately important</td>
<td>Very important</td>
<td>Highly important</td>
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4. Results and Discussion

A total of 51 members of Gen Z answered the survey. As an exploratory study, it does not aim to fully represent the entire Generation Z cohort in Romania. Instead, its purpose was to provide a preliminary assessment of people's perceptions and desires in a comprehensive, descriptive, and exploratory manner. Consequently, the findings should be interpreted with careful consideration.

The results of the survey show that 83.9% of the respondents, belonging to Generation Z and fall within the age bracket of approximately 18 to 21 years (as indicated in Graph 2 and 3), were enrolled at Babeş-Bolyai University, actively pursuing their Bachelor's degrees at the time of the survey. Notably, 51.6% of the participants were specifically affiliated with the Faculty of European Studies. Moreover, the survey exhibited a clear gender distribution, with approximately 77.4% of the respondents identifying as females.

Among the respondents, 48.4% identified themselves as the eldest child in their respective families. Additionally, 61.3%, were born in Romania, with 58.1% from the total number of respondents originating from the urban areas. Notably, a majority of the participants hailed from the Transylvania region, as indicated in Graph 4.

The respondents were also queried about the highest education level achieved by their mothers and fathers, as presented in charts 4 and 6. The findings indicate that the majority of mothers have a higher level of education than the fathers. Specifically, almost half (45%) of the fathers have completed only high school, whereas for mothers, this figure is lower, with only 29% having done so. On the other hand, 32.3% of the mothers hold a bachelor's degree, compared to just 19.4% of fathers. Moreover, a significant percentage of mothers (35.5%) have a master's degree, whereas only 19.4% of fathers have achieved the same level of education. These
findings highlight that, on average, mothers have pursued higher education to a greater extent than fathers within this sample group.

**Graph 5: Demographic Data**

Question: Highest education level achieved by Father

![Graph 5: Demographic Data](image)

**Graph 6: Demographic Data**

Question: Highest education level achieved by Mother

![Graph 6: Demographic Data](image)

There could be several factors explaining the findings above. Historically, like other nations, Romania had traditional gender roles with distinct divisions of labour and responsibilities between men and women. These traditional roles often assigned men as the primary breadwinners and decision-makers, while women were expected to focus on family and domestic duties. However, Romania, like many countries, has undergone significant societal changes over time, including progress in gender equality and women's rights. There have been changes in laws, policies, and cultural attitudes that promote gender equality and challenge traditional gender roles. As a result, women in Romania have gained more access to education, job opportunities, and leadership positions, leading to greater gender equality in various
sectors. Additionally, it's possible that mothers, who have achieved higher education themselves, actively encourage their children, including daughters, to pursue similar educational paths, thereby exerting a positive parental influence over their children's future education level.

Before proceeding to the Workplace Preference section, participants were questioned about their current work status. According to the survey findings, 48.4% of the respondents reported being unemployed at the time of the survey.

**Graph 7: Demographic Data**

Question: I am currently

![Demographic Data Graph]

When questioned about their ideal working environment, 38.7% of the respondents expressed a preference for remote work, allowing them to work from anywhere in the world. Additionally, 32.3% of the participants indicated a desire for a mixed working arrangement, encompassing remote work from both home and office settings, office-based in a private office setting, an open space with colleagues, or in a coworking facility.

**Graph 8: Workplace Preferences**

Question: Ideally, I prefer to work

![Workplace Preferences Graph]
The next question asked Gen Z members to evaluate several different items on a five-point Likert scale ranging from unimportant to extremely important as mentioned in Table 1. Respondents were asked about the level several items affect their opinion on applying for a specific employer.

The factor that received the highest rating on the Likert Scale (5), with 48.4% of respondents considering it highly important, was ‘First-Hand experience (internship)’. Following closely, 32.3% of participants emphasised the significance of Internet-available information, which highlights the tech-savvy nature of this cohort, 35.5% of who spend most of their online time on the Youtube platform, followed by Instagram 29% and Tick-Tock 19.4 %. Similarly, 32.3% of respondents also placed high importance on ‘Inside recommendations within the company’.

Conversely, the factors perceived as least important were ‘Word of mouth regarding the company's image’ and the ‘Number of friends/peers employed there’, both garnering a score of 9.7% on the Likert Scale.

Gen Z appears to demonstrate a high level of concern about mental health, with 61.3% of respondents expressing this as a prominent issue. Additionally, among Romanian students, it was found that 54.8% expressed the least concern about Refugee Rights. However, they displayed a strong preference for issues related to 'Climate change' and 'War and Conflict'. This heightened interest in the latter topics could be attributed to the events unfolding in the region in 2022-2023, such as the Russian invasion of Ukraine, which might have raised awareness and sensitivity towards matters of environmental sustainability and geopolitical conflicts. (Graph 8 ).
**Graph 8: Social Life**

Question: Please choose the top 5 social problems you are mostly concerned with

Interestingly, only 38.7% of the respondents considered it moderately important if their future employer shared the same concern about the same social problem as them. Similarly, 32.3% of the participants rated this aspect as important. This finding suggests that while some members of Generation Z value alignment with their employer's social concerns, a significant portion of them may prioritize other factors when considering potential employers. The survey results shed light on the diversity of perspectives within this generation regarding the importance of employer alignment with social issues.

**Graph 9: Social Life**

Question: How important is it for you that your employer is concerned about the same social problem as you chose above?
The survey concluded with the question, "What do you intend to do after graduation?" The responses were highly diverse, reflecting a range of post-graduation aspirations. However, it was found that 29% of the respondents expressed a desire to continue their studies in Romania. This indicates a significant portion of Generation Z students who plan to pursue further education within the country after completing their undergraduate studies. The survey's findings demonstrate the varied career paths and educational aspirations of this generation, with a notable percentage expressing a preference for continuing their academic journey within Romania. 19.4% of respondents still do not know yet.

**Graph 10: Plans after the graduation**

Question: What do you intend to do after graduation?

![Graph showing plans after graduation]

**5. Limitations and Directions for future research**

The study on Generation Z's characteristics, motivating factors, and job expectations among students at Babeș-Bolyai University, Romania, provides perspective insights into this generation's perceptions and preferences in the labor market. Generation Z, born between 1995 and 2010, is a cohort that challenges traditional norms and exhibits unique characteristics influenced by a globalized world with constant internet presence. This research has shed light on various aspects, including their educational backgrounds, preferences for remote work, and factors influencing their choice of employers.

One of the key findings is the strong emphasis on first-hand experience, such as internships, when evaluating potential employers. Additionally, the tech-savvy nature of this generation is evident, with internet-available information playing a significant role in their decision-making process. Inside recommendations within the company also hold considerable importance for Generation Z.

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The study has also highlighted Generation Z's concern about mental health and social issues like climate change and war/conflict. However, the level of importance they attribute to employer alignment with their social concerns varies among respondents, indicating a diversity of perspectives within this generation.

**Limitations:**

Despite its valuable findings, this study has certain limitations that should be acknowledged. Firstly, the sample size was relatively small, consisting of students from one university in Romania. Thus, the findings may not fully represent the entire Generation Z cohort in the country or globally.

Moreover, as an exploratory study, the research does not establish causality or examine long-term trends. Future research with larger and more diverse samples, encompassing students from various universities and regions, can provide a more comprehensive understanding of Generation Z's characteristics and preferences.

Another limitation lies in the use of self-reported survey data, which may be subject to response biases. To mitigate this, future research could employ mixed-method approaches, incorporating interviews or focus groups to gain deeper insights into Generation Z's perspectives.

**Directions for Future Research:**

To build on the insights gained from this study, further research on Generation Z's transition from education to the labor market would be beneficial. Longitudinal studies tracking the career trajectories of Generation Z members can help understand their actual job experiences, mobility patterns, and factors influencing career decisions over time.

Additionally, comparative studies across different countries and cultural contexts can reveal cross-cultural variations in Generation Z's characteristics, motivations, and job expectations. Understanding how societal and cultural factors impact this generation's preferences can inform businesses and organizations about tailoring their HR processes to attract and retain young talent effectively.

Furthermore, exploring the interplay between Generation Z's preferences for remote work and their work-life balance, productivity, and organizational culture can offer valuable insights for businesses adapting to the changing dynamics of the workplace.
In conclusion, Generation Z represents a generation with distinct characteristics and preferences that will significantly influence the future of the labor market and organizations. Understanding their motivations and job expectations is essential for businesses to adapt their recruitment and talent retention strategies effectively. While this study provides valuable insights, further research can enrich our understanding and help organizations stay prepared for the changes Generation Z will bring to the workforce.

References


An Application in the Construction Industry with Statistical Quality Control Techniques

Merve OKTAY¹, Hakan EYGÜ²

Abstract
Statistical quality control techniques are used to investigate the quality levels of the products produced and to determine if there is any variation in the quality of the product. Quality control charts are used to determine variability using quality control techniques. Control charts are statistical tools used with aim of seeing output data dealing with production and to detect the change occurring in the during production. In this context, to reduce functional variation, that is, increase the consistency of process performance, it is essential that we identify the basic sources of functional variation so that appropriate countermeasures can be formulated and implemented. While doing this, collecting production performance data and maintaining the schedules of these data is a common practice in industrial operations. The observation of dimensions, yield, defects, and other quality characteristics can be of great utility not only in documenting performance relative to requirements, but more important, as tool to aid the identification of ways to improve performance. The purpose of this study was to statistically analyze selected variables that affect water quality in the Ergene River. The variables that will be kept under statistical control have been analyzed using quantitative control charts, namely  lạ and R control charts, as well as  lạ and s control charts. Based on the analysis, no out-of-control points were identified on the average control chart. However, out-of-control points were detected on the range and standard deviation control charts. To ensure a sustainable future and prevent pollution, planners and policy-makers at various levels should facilitate collaboration among stakeholders, considering the interdependence of land and water within a watershed.

Keywords: Environmental pollution, Water quality, Statistical quality control techniques.

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1. Introduction

Environmental factors, rather than being an important factor affecting global warming, are also an increasing threat to public health. At the beginning of this threat is water pollution. Besides being an important source of nutrients, water is also very important for the realization of the vital activities of the human life process. On the other hand, water is not only one of the basic elements in the formation of the living environment, but also a living environment itself (Akın and Akın; 2007). When attention is paid to the importance of water for life, the importance of water quality should not be overlooked. Rapid population growth, growing industrialization, fertilizers and pesticides used in agriculture adversely affect water quality in our country. In addition, the building materials used in the construction industry and the wastes of these materials cause great harm to the environment. In this study, it was aimed to investigate the statistical quality control of the Plumbum, Copper, Nickel and Zinc variables that affect the water quality.

Statistical quality control is the use of statistical principles and techniques at all stages of production in order to collect data, analyze, interpret and propose solutions in order to economically produce a product in accordance with the needs (Aydın and Arıkan Kargı, 2018). The purpose of statistical quality control is to determine whether the products produced in the enterprises are defective and to take precautions by intervening in the defective products, if any. Statistical quality control techniques are one of the commonly used control charts. Control charts can separate the special causes that occur in the process and affect the quality from the general causes (Pekmezci, 2005). Control charts are important in reducing variability, improving the efficiency of products, and preventing the production of faulty units of these products. In statistical quality control, X mean, R and S control charts are used to understand whether the process is under control. The fact that the marked points on the control chart are within the control limits indicates that the process is under statistical control. In this case, it can be said that there is no need to take any precautions for the process. If one or more of the points are outside the control lines, it means that the process is statistically out of control. In this case, it is necessary to take the necessary measures to control the process.

In our study, Selected factors affecting the water quality in the Ergene River; Statistical quality control charts of Plumbum, Copper, Nickel and Zinc variables were examined. In the analysis results, out-of-control points were not detected in the mean control line, but out-of-control lines were detected in the range and standard deviation control lines. There are many studies in the literature based on statistical quality control and water pollution. These studies are given under the title of literature.
2. Literature review

In the literature, there are many studies based on water pollution and the factors affecting water pollution. Studies on both individual and environmental factors of water pollution and statistical quality control are given in chronological order. Aruntaş (2006) discussed the effect of fly ash obtained from thermal power plants on environmental pollution and stated that it should be controlled. Akın and Akın (2008) examined water potentials, water basins and water pollution in Turkey. They emphasized that clean water per capita in Turkey is 1555 m3 per year and this rate tends to decrease. Begum and Pereira (2008) examined the awareness of waste management in the Malaysian construction industry in their study. They emphasized that the management of wastes in the construction sector should not be made conscious in order to keep environmental pollution under control. Beycioğlu, Başyığıt and Subaşı (2008) investigated the usability of waste vehicle tires, fly ash, silica fume, granulated blast furnace slag and marble dust wastes in the construction sector from industrial wastes. They claimed the effects of these materials on environmental pollution and stated that they are very important for the future of humanity. In his study, Tomar (2009) examined soil and water pollution in Turkey with agricultural pollutants, industrial wastes and domestic wastes, as well as the unplanned use of water and stated that solutions for the sustainability of the ecosystem should be found. Aksioma, Wibawati and Jayanti (2015) used statistical quality control method in their study to determine the water quality of a selected drinking water company. They determined that the selected quality control method and the water quality remained between the control lines. Lixin, Ju and Baohui (2017) emphasized the negative effects of the construction industry on the natural environment in China and emphasized that the use of materials used in the construction industry that cause environmental pollution should be kept under control. Conceicao, Boas, Sampaio, Remor and Bonaparte (2018) wanted to control the water quality indices of the Passauna and Piraquara rivers in their study. In this direction, using time series, Shewhart, EWMA and CUSUM control lines made the statistical control of the process. As a result, they stated that the water quality of the rivers was around the average until 2000 and it tended to decrease after 2000. Tufan and Özel (2018) discussed the effects of building materials on environmental pollution in their study. They examined the effects of the sustainability concept in terms of building materials, especially the materials used in the construction sector. Tunji-Olayeni, Mosaku, Oyeyipo, and Afolabi (2018) examined the negative effects of the construction industry on environmental pollution in Nigeria. They emphasized that the materials used in the construction industry should be kept under control in order to achieve environmental sustainability.
3. Methodology

The Shewhart control chart is a test of hypothesis and therefore also stands much as a jury in a court law. The information from each sample is judged to determine whether or not it indicates the presence of a special-cause disturbance. The information obtained from the samples is evaluated according to whether they contain a particular disorder.

3.1. Control Chart for Averages ($\bar{X}$)

This control chart analysis is used when the sampled values of the variables to be analyzed have measurable characteristics. The mean used here is the arithmetic mean. Traditionally, these limits have been established at ±3 standard deviations from the mean. Hence 99.73% of the $\bar{X}$’s should fall within these limits for a process whose mean level is stable in statistical control (Richard et al., 1982). The selection of appropriate placement of the upper and lower control limits, that is, the selection of the $\alpha$ risk, is an economic issue. The intent would be to fix the limits in such a way as to balance the economic consequence of failing to detect a special cause when it does occur failing to reject the null hypothesis when it is false and wrongly identifying the presence of a special cause when it has really not occurred rejecting the null hypothesis when it is really true.

3.2. Control Chart for Ranges ($R$)

It is the range chart that is so essential to the Shewhart control chart concept. If the process variation is not consistent over time, the limits on the $\bar{X}$ chart, which are calculated based on the unstable process, do not solely represent the effects of common-cause variation. As a result, the interpretation of the $\bar{X}$ chart could be highly misleading (Aslam et al., 2020). To establish a control chart for the range $R$, we must be a bit more specific about the distribution of the process. This is so because the distribution of ranges does not exhibit the same robust behavior as that of the distribution of averages. In general, the distribution of the range can be determined by deriving the distribution of the difference between the largest and smallest values in the sample (Montgomery, 2020).
4. Analysis and Findings

Table 1. Their representation and construction

<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Representation</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plumbum</td>
<td>X₁</td>
<td>μg Pb L⁻¹</td>
</tr>
<tr>
<td>Copper</td>
<td>X₂</td>
<td>μg Cu L⁻¹</td>
</tr>
<tr>
<td>Nickel</td>
<td>X₃</td>
<td>μg Ni L⁻¹</td>
</tr>
<tr>
<td>Zinc</td>
<td>X₄</td>
<td>μg Zn L⁻¹</td>
</tr>
</tbody>
</table>

This paper gives descriptive statistics, before the accomplishment of analysis. Descriptive statistics for the countries can be seen in Table 2.

Table 2. Descriptive statistics for water

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>X₁</td>
<td>30</td>
<td>11.300</td>
<td>11.40</td>
<td>10.20</td>
<td>12.30</td>
<td>0.654</td>
<td>-0.233</td>
<td>-1.134</td>
</tr>
<tr>
<td>X₂</td>
<td>30</td>
<td>14.689</td>
<td>11.70</td>
<td>9.16</td>
<td>35.40</td>
<td>7.305</td>
<td>1.889</td>
<td>2.733</td>
</tr>
<tr>
<td>X₃</td>
<td>30</td>
<td>22.136</td>
<td>15.90</td>
<td>12.90</td>
<td>59.90</td>
<td>12.792</td>
<td>1.745</td>
<td>2.287</td>
</tr>
<tr>
<td>X₄</td>
<td>30</td>
<td>32.280</td>
<td>21.60</td>
<td>16.70</td>
<td>82.80</td>
<td>22.363</td>
<td>1.475</td>
<td>0.576</td>
</tr>
</tbody>
</table>

Taking into account the data set in Table 3, control limits have been provided for \( \bar{X} \) and R control charts.

Table 3. Mean (\( \bar{X} \))-Range (R) and Mean (\( \bar{X} \))- Standart deviation (s) control limits

<table>
<thead>
<tr>
<th></th>
<th>( \bar{X} ) chart</th>
<th>R chart</th>
<th>s chart</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCL</td>
<td>0.0087</td>
<td>0.0001</td>
<td>29.818</td>
</tr>
<tr>
<td>CL</td>
<td>20.101</td>
<td>27.577</td>
<td>13.158</td>
</tr>
<tr>
<td>UCL</td>
<td>40.194</td>
<td>62.932</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

Figure 1 shows the \( \bar{X} \) and R charts based on the control limits determined. Initially, as we examine \( \bar{X} \) chart, we see that the above points did not exceed the upper control limit. In the graph, we can say that the process is under control. However, as we examine R, we see that four points exceed the upper control limit. From this, we conclude that there are special causes producing an increase in the process variability at least at those points. Our records show that at these points, the regular operator was absent, and a relief operator, who was less experienced, was responsible for the data collection line for a short time. When the \( \bar{X} \) and s control chart is examined, we see that four points exceed the upper control limit. Furthermore, due to the sample exceeding the control limits, it can be stated that the process is out of control. Undoubtedly, in this case,
intervention in the process and investigation of the special cause should be carried out in order to rectify the issue. The special causes mentioned here could include factors such as method, labor, equipment, and so on.
Figure 1. Mean (\(\bar{X}\))-Range (R) and Mean (\(\bar{X}\))-Standart deviation (s) Control Charts
5. Conclusion and Discussion

It is clearly seen that industrial wastes and materials used in building materials that are not suitable for recycling cause environmental pollution and water pollution. In our country, the rapid growth of the population, industrialization, the bias of pesticides and fertilizers used in agriculture adversely affect the environment and water pollution. As Tomar (2009) emphasized in his study, the pollution of water basins must be kept under control in order to keep water and water pollution under control. Begum and Pereira (2008), Aksioma, Wibawati, and Jayanti (2015), Lixin, Ju and Baohui (2017, and Tufan and Özel (2018)) It is clearly stated in his work.

In our study, it was aimed to investigate whether the materials used in the construction sector cause water pollution in the Ergene River by using statistical quality control methods. And the results show similar results with the statistical quality control results of Conceicao, Boas, Sampaio, Remor and Bonaparte (2018) for Passaúna and Piraquara Rivers. As a result, it is observed that water resources in our country, as well as in the world, are decreasing more rapidly due to environmental and domestic wastes, misuse of water resources and use of building materials. Most developed world countries have made significant progress in the reduction, reuse and recycling of these wastes (Ölmez and Şenol, 2008). In our country, studies on the management of these wastes are quite new. Reduction, reuse and recycling of construction and demolition wastes are important steps in which the amount of these wastes can be reduced before they go to final disposal (Ölmez and Şenol, 2008).

As a result, it is seen that environmental protection and environmental awareness concern all scientific disciplines and it would be beneficial to conduct studies in this direction in every field (Beycioğlu, Başyiğit, Subaşı, 2008). It is necessary to ensure the use and protection of water, which is the most important part of the human life cycle, and it should be conscious that it should be delivered to future generations in the purest way.

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Public order and the effects of its invoking in international private law

Mihaela POP

Abstract

The set of legal norms and general legal principles that comprise a new order is called public order. So public order is a legal concept that refers to the fundamental principles, values, and interests of a particular jurisdiction that are deemed essential to society's functioning and well-being. It consists of a set of rules and norms designed to maintain social harmony, protect public welfare, and protect public interests.

The invocation of public order in the context of international private law can have significant effects on transnational legal matters. Public order can be used as a justification for refusing to apply foreign laws or judgments that contradict the fundamental principles of the local government. When a foreign law or judgment is regarded as being in violation of public order, it may be nullified or not recognized in the local jurisdiction by applying the public order.

Public order assures the preservation of a jurisdiction's essential values and fundamental rights, even in international legal matters. These values and liberties may include the principles of human rights, public health, environmental protection, and legal integrity.

In cases involving conflicts of laws, where the laws of different jurisdictions may apply to the same situation, public order can be invoked to determine which law should prevail. If the application of a foreign law would violate the public order of the local jurisdiction, the local law may be applied in its place. Public order concerns may also influence the enforcement of foreign judgments within a jurisdiction.

Keywords: public order, conflicts of laws, fundamental rights, foreign law, local jurisdiction.

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Introduction considerations

The concept of public order has a long history rooted in legal systems around the world. Its significance in international private law has evolved over time, influencing its effects and implications when invoked.

The origins of the concept of public order can be traced back to Roman law. Certain principles were considered fundamental to the welfare of Roman society and were protected by the state. This concept of public order was adopted by civil law systems, which were significantly influenced by Roman law. It played a significant role in protecting societal interests and upholding fundamental values. The principle of state sovereignty in international law grants each jurisdiction the authority to determine and enforce its own laws. Public order evolved into a manifestation of a state's independence, enabling it to preserve its fundamental principles and values.

The interpretation and application of public order in international private law have evolved over time in response to shifting societal values and legal advancements. Depending on the jurisdiction and the specifics of the case, invoking public order in international private law may have different effects and ramifications.

Since the nineteenth century, the use of the public order exception in international private law has increased as a result of several factors: the emergence of codifications that emphasize the peculiarities of each national legislation; the development of the means of communication that have contributed to the intensification of relations between the inhabitants of distant countries, representing different civilizations; and the reluctance displayed by the judges of the international courts.

It should be noted that, for the first time, a general concept of public order appears in the French Civil Code⁴, with this exception serving as a defense against foreign law when its content is deemed objectionable or inappropriate - under the terms of article 6 of the civil code, „One cannot derogate, by particular agreements, from the laws which relate to public order and good morals“.

Those who have systematized the concept of the public order exception in international private law are Etienne-Adolphe Bartin in his Private international law studies⁵ in France and Carl

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⁴ French Civil Code, effective March 21, 1804
⁵ Etienne-Adolphe Bartin, Études de droit international privé, publisher A. Chevalier-Marescq, 1899
Ludwig von Bar with his *Theory and practice of private international law*\(^6\) in Germany. This concept is accepted today by all authors and consistent in almost all modern codifications of international private law, as well as in international conventions on conflict of laws.

**Concept**

Public order transcends national borders and encompasses international public policy. This concept refers to fundamental principles that are universally recognized and serve as the basis for refusing to apply foreign laws or judgments that violate these principles.

„Public order in private international law represents an exceptional means by which the application of the competent foreign law is removed when it is contrary to the fundamental principles of the court's law.“\(^7\)

Public order can intervene when foreign law is applicable to a relationship with an element of foreignness. The legal provisions relating to the political, economic and social order have an imperative character. „The legal provisions relating to the political, economic and social order have an imperative character.“\(^8\)

Competent foreign law may be inconsistent with or consistent with the court's fundamental legal principles. The appeal to public order is contingent on both the local law and the foreign law designated as competent. The law will determine, for each individual, if the application of foreign law violates a fundamental principle of court law. Public order is therefore an exception to the application of foreign law under international private law.

In international private law, the public order varies from state to state. In general, the public order is invoked not against the foreign law itself but against its application in that case, i.e., against the result that would be reached if the foreign law were applied to that case. It must be mentioned that public order is relative, not absolute.

Public order may be invoked under the following conditions:

- it is presumed that foreign law is competent to regulate the relationship with the extraneous element;

- the applicable foreign law must be in conflict with the fundamental principles of court law.

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\(^6\) Carl Ludwig von Bar, *Theorie und Praxis des Internationalen Privatrechts*, published by Han’sche Buchhandlung, Hanover, 1889


The nature of public order of international private law

From a geographical standpoint, the public order of international private law has a national character; in its content, it is interpreted in light of the internal law of the state where the court is located, and it varies from country to country.

In this regard, a very common example is the recognition of the marriage of two foreign citizens of different religions that was celebrated in another country, as it is consistent with the public order of international private law.

Over time, the composition of public order in a given nation changes. The content of public order can change if any of the existing laws are modified, resulting in a change in a certain quality level and a reversal of the current situation. The character of public policy is therefore mobile, not only from country to country but also over time within the same country.

The public order is current in the sense that if the content of the public order has changed between the time of the birth of the legal relationship and the time of the dispute involving this legal relationship, the content from the day the legal relationship was created is not considered, but rather the content from the day of the litigation. Thus, a foreign act cannot be considered contrary to public order if, in the interim, the law of the court has changed to become similar to the foreign law in question. In contrast, if the conflicting rule has changed in the interim, in the absence of contrary legal provisions, the conflict rule in effect on the date of conclusion of the relevant legal act shall apply.

Public order has a material exception to the rule that foreign law, which is normally competent, must be applied to the legal relationship with the extraneous element.

Public order is essentially of strict interpretation, in the sense that it cannot be interpreted exhaustively but only restrictively; also, public order of international private law prevents the occurrence of the effects of foreign law on the territory of the country of the court, but only to the strict extent that these effects contradict the fundamental principles of court law.

In conclusion, public order has, in principle, a partial effect on the effects of a legal fact act committed under foreign law in the state of the court. In every instance, the court's function in evaluating the specific situation is determined.
The process of demanding public order

Public order may be invoked to avoid the application of foreign law in all international private law matters. However, certain domains are more likely to raise public policy concerns.

The most important area of material law is that pertaining to the status of the natural person (citizenship, capacity, and family relations). For instance, the marriage of a Romanian citizen to a person who is already married is not permitted in Romania, nor is the religious marriage of a Romanian citizen in a country where such a marriage has legal effects.

The area of procedural law that causes the most concern is the violation of the court's exclusive jurisdiction. In national law, conflicting norms are generally mandatory, i.e., of public order, with the exception of those pertaining to contractual obligations.

The court of appeals applies its own conflicting rule, while the foreign court (which becomes instant to the court) applies its own (foreign) conflicting law. Therefore, there is no reciprocity in the application of foreign law at the level of conflicting rules as a general rule.

The scope of the international private law concept of public order varies depending on the conflicting framework in which it is invoked. Thus, it can be invoked in the context of a conflict of laws, in space, or in both space and time.

Public order regulations in Romanian international law

Our legal system's fundamental principles determine the meaning of the concept of public order in international private law, which is not defined by our statutes. Public order is invoked against the application of foreign law (not foreign law itself), with the determination of specific cases in which it can intervene left to the discretion of the courts.

Public order regulations in international private law can be found in both the Civil Code and the Code of Criminal Procedure. Article 2564 of the Civil Code prohibits the application of foreign law if it violates international private law or public order. In the event that a foreign law is repealed, Romanian law will apply. In accordance with Article 2567 of the Civil Code, rights

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9 Law no. 287 of July 17, 2009 regarding the Civil Code, rectified in Official Gazette no. 246/29 Apr. 2013, as amended and supplemented
10 Law no. 286 of July 17, 2009 regarding the Criminal Code, published in Official Gazette no. 510/24 Jul. 2009, as amended

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acquired in a foreign country are respected in Romania unless they are contrary to public order under international private law. Article 522 of the Criminal Procedure Code states that the civil provisions of a foreign criminal judgment will only be enforced if international private law in Romania does not contravene the public order.

In private-law proceedings involving a foreign element, the Code of Civil Procedure\textsuperscript{11} also mentions public order. In accordance with Article 1096(1)(a), the recognition of a foreign judgment may be denied if it is manifestly incompatible with the public order of Romanian international private law; this incompatibility shall be evaluated by taking into account, in particular, the intensity of the case's connection to the Romanian legal order and the gravity of its effect.

**Public order regulations in Europe and rest of the world**

Austrian law recognizes references to the public order of international private law (the law has been in effect since January 1, 1979): „A foreign provision may not be applied if its application would result in a result that is incompatible with the fundamental values of the Austrian legal order. Alternatively, the applicable provisions of Austrian law shall apply.” (Section 6, „Public Order”)

Article 22 of the Portuguese Civil Code\textsuperscript{12} of 1966 contains the following provisions pertaining to public order: „1.) The provisions of foreign law designated by the rule of conflict are inapplicable if their application would violate the fundamental principles of the international public order of the Portuguese State. In such cases, the most appropriate rules of competent foreign law or, subsidiarily, Portuguese domestic law shall apply.”

A regulation in this sense is also found in German Law on the New Regulation of International Private Law of July 25, 1986, in Article 6 entitled Offentliche Ordnung (Ordre Public), public order, which states: „A foreign legal norm shall not apply if its application leads to a result that is manifestly incompatible with the fundamental principles of German law.” In particular, it does not apply when the application is incompatible with fundamental rights.

In accordance with Article 16 of Law 218/1995, foreign law is not applicable to Italian law if its effects violate the public order of international private law.


\textsuperscript{12} Portuguese Civil Code (Código Civil) approved on 26 November 1966 and entered into force on 1 June 1967.
Numerous international conventions have supplanted public order as the guiding principle of international private law. The first citation is to the Hague Convention on the Law Applicable to Contracts for the International Sale of Goods from 1986. Article 18 of the Convention states, „The application of one of the laws designated by this Convention may not be rejected unless such application is manifestly incompatible with public order.” Article 17 of the same Convention alludes to the essential rules of application in a state's domestic law: „The Convention shall not prejudice the provisions of the law of the court which are applicable, whatever the law applicable to the contract.” They are distinct from public policy.

Article V of the New York Convention of June 10, 1958, on the Recognition and Enforcement of Arbitration Judgments stipulates that a violation of international private law's public order may constitute a basis for refusing to recognize and enforce arbitration judgments.

The European Convention on International Commercial Arbitration of Geneva, 1961 (to which Romania is a party pursuant to Decree No. 281/1963) grants comprehensive discretion to tribunals whose interpretation of Article IX’s text is dependent. Public order is not explicitly mentioned in the text as a circumstance under which recognition and enforcement of arbitral judgments may be denied.

**Comparative analysis of private international law’s public order and other legal institutions**

**Public order in international private law and public order in domestic law**

- Each serves a distinct purpose but ultimately expresses and defends the interests of the respective state.

- In the sense that not all rules of public order in domestic law are public order rules in international private law, the scope of the two concepts is distinct. Thus, under international private law, it is possible to recognize the effects of a foreign legal act without the public order opposing it, whereas under domestic public order, such an act would not be permitted.

**Public order and referral**

- There may be some similarities between these outcomes, but they are not interchangeable. Thus, the referral presupposes a discrepancy between the conflicting rule of the court and the foreign conflict rule, which determines the negative conflict of laws, whereas public order presupposes not only an inconsistency but also fundamental distinctions between the tribunal's material law and foreign law. Thus, the distinction pertains, first, to the type of inconsistent norms and, second, to the degree or intensity of the disparity between the two situations.
Public order and regulations with immediate effect

- In international private law, public order should not be confounded with norms of immediate application. Although sometimes a mark of equality is placed between these concepts, they differ greatly. Public order shall be invoked after the foreign law has been designated competent and against it in order to prevent its application, granting precedence to the court's law that replaces the foreign one. Since it does not entail the prior designation of foreign law, the rule of immediate application occurs at a distinct time. The rule of immediate application is invoked because it is believed that the respective legal relationship expresses such vital social interests that only the court's law can be applied. Thus, the conflict of laws is eliminated from the start. Consequently, if we consider how to reason for determining the applicable law, we observe that not only do the two concepts intervene at different moments, but they also necessitate distinct methods of determining and, consequently, reasoning in the two situations.

Effects of Public Order

The effects of invoking public order vary depending on the situation in which that legal institution is invoked.

The negative effect

This effect is manifested by the elimination of foreign law's application. Two spouses whose national law permits divorce will not be able to divorce in a country that does not recognize divorce or recognizes it under different conditions.

Similarly, two aliens whose national laws would be subject to racial, religious, or other discrimination may marry in a country that does not recognize such obstacles, even if their national laws prohibit them from marrying, since the application of their national laws is eliminated.

The positive effect

In the event that foreign law is invalidated, domestic law shall apply. Constantly, the negative impact is accompanied by a positive effect.

According to some authors, invoking public order eliminates the application of foreign law that would have otherwise been applicable.

According to this view, the negative effect of invoking public order is not denied, but it is believed that it is always followed by a positive effect, as the dispute is resolved in accordance with the
law of the court that applies to the foreign law that has been removed, and the judge is obligated
to resolve the case with which he or she was charged, even if the foreign law has been removed.

Some authors attributed this effect to the territoriality of the laws, stating that each state exercises
its sovereignty on a specific territory and that the application of foreign law on this territory has
an exceptional quality; however, in the case of invoking the public order exception, the
application of the court's law is the manifestation of the tribunal's sovereignty.

The French authors provided an alternative explanation, namely that the implementation of the
law of the court is preferable from a practical standpoint because it is the law that most closely
matches the legal circumstance in the state of the court.

Given that the invocation of public order itself has an exceptional nature, it follows that the
substitution of domestic law for foreign law must also be limited, i.e. only to those provisions of
foreign law that are in conflict with public order; the remaining foreign legal provisions that are
relevant to the case and are not in conflict with public order apply.

**Implicit or more attenuated effect**

The court's law is only applied to undo the effects of foreign law. This effect does not occur
automatically in matters involving rights acquired abroad; rather, the court will decide for each
case, in particular, whether the right obtained abroad will produce effects in the country of the
court. It is possible that a right acquired abroad will have no effect in the country of the court, but
it is also possible that a right acquired abroad, despite being contrary to the public order of the
state of the tribunal, will produce effects in the country of the tribunal.

**Explicit or more firm effect**

In the void left by the abolition of foreign law, the law of the forum is also applied in a practical
sense. The question that arises, however, is whether the effects of public order are recognized in
countries other than the one in which it was invoked.

Two citizens whose personal laws permit some racial discrimination wish to wed in a specific
country. By invoking public order, their national law prohibiting racial discrimination will not
apply, as such discrimination does not exist in that country; therefore, the couple may marry in
accordance with local law. If the issue of recognizing their marriage in another state, such as
Romania, arises in the future, it will not be analyzed in light of Romanian marriage law but rather
the law of the place where the marriage took place.
Conclusions

In summary, we can say that public order can be invoked in situations where the principles of international private law permit the application of foreign law. The appeal to public order appears to be an exception to the normal application of conflicting rules when the foreign law designated to be competent conflicts with the fundamental principles of the legal order of the court's country.

The interpretation and application of public order in international private law have evolved over time, influenced by societal shifts, legal advancements, and international standards. It is continually evaluated and modified to reflect contemporary values and concerns.

The purpose of public order is to strike a balance between the autonomy of various jurisdictions and the preservation of fundamental values and societal interests. It permits states to maintain their core values while engaging in international legal matters.

Public order plays a crucial role in international private law by enabling jurisdictions to defend their fundamental values, basic rights, and societal interests. It functions as a mechanism to strike a balance between autonomy and the maintenance of fundamental principles, ensuring that international legal matters respect the public order of each jurisdiction.
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Portuguese Civil Code (Código Civil) approved on 26 November 1966 and entered into force on 1 June 1967.

Law no. 287 of July 17, 2009 regarding the Civil Code, rectified in Official Gazette no. 246/29 Apr. 2013, as amended and supplemented

Law no. 286 of July 17, 2009 regarding the Criminal Code, published in Official Gazette no. 510/24 Jul. 2009, as amended

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