

# **Economic Development**

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## **Economic Development**

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**Dear reader,**

“Economic Development”, published by the Institute of Economics – Skopje, is an academic journal in the field of economic development and has been an important medium for 20 years. The main goal of “Economic Development” is to provide intellectual platform to the wider academic and professional publics, and to promote the development of economic thought in the country and the world.

The interest and need for publishing of the journal were continuously increased all these years. It covers theoretical and empirical researches in the field of economic and social development, demography, education, corporate governance, international economics, international management, administrative management, corporate and public finance, economics and tourism management, agricultural policy and agricultural management, marketing and marketing management, entrepreneurial management and other areas in the field of social sciences.

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Skopje, October, 2022

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**(Original scientific paper)**

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## **EFFECTS OF NUDGES: EVIDENCE FROM MACEDONIAN CONSUMERS**

**Abstract:** Being aware that many people are not certain and constant in their decisions, it is important to find out as much as possible about what customers want and what influences their choice. Therefore, there has been an increase in research about so-called nudges, believed to be influencing consumer choice at a less than conscious level. The Nudge theory is thought to explain so much of consumer choice and can help companies create strategies to guide their consumers. By knowing how nudges work, companies can choose to include or exclude different tactics within marketing communication strategies.

Research data has been gathered and analyzed through an online survey experiment, on a convenient sample of 195 people, residents of North Macedonia. The use of nudges is tested by creating three experimental surveys, in which the presence of three nudges is being manipulated. Each group had 65 participants (ages 16-61). Overall results show that for some types of nudges and in some situations, their use could lead to higher benefit, to change in choice, prediction, evaluation or perception, however definitely not in all.

**Keywords:** nudges, decoy, anchoring, mere exposure, consumer choices

**JEL Classification:** M3

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## **Introduction**

This research investigates the possibility of using nudges for better Strategic Marketing Communication, seeing whether, and how, choice and perspective of the Macedonian Consumer can change with nudge presence. The Nudge theory is believed to explain so much of consumer choice and can help companies create strategies to guide their consumers towards creating better choice, ease and shorten the time needed for someone to create a decision or do a task, and improve how a company is viewed, create a higher/better flow of goods, and much more (Abhyankar, 2019; Nguyen, 2019; Jung and Mellers, 2016). This paper investigates the possibility of using nudges for better Strategic Marketing Communication, seeing whether, and how, the choice and perspective of the Macedonian Consumer can change with nudge presence. Since it is a newer and wide field of research, this could help understand whether some nudges can influence the everyday consumer in North Macedonia. With this, we aim to help communication management by shifting their views toward better solutions, and hopefully, help others with their future research on the topics.

The aim of this research is to assess whether there is a potential difference in choice and perspective of the Macedonian Consumer when Nudges are being used and speculate how this can add to a better Marketing Strategy. This will be managed by looking into the effect of 3 nudges: decoy, anchoring, and mere exposure. Since the research will investigate more than one factor, it is safe to assume that it will also have more than one goal/objective, splitting into the following:

H1: By changing or adding a 3<sup>rd</sup> asymmetrical option, choice preference of consumers changes.

H2: When adding a numerical anchor, prediction, and perception of price change.

H3: Previous exposure to a stimulus can lead to change in preference towards it when presented again.

Regardless, if all put together into one, our main hypothesis would be: “With the presence of a nudge, there is a change in preference, perception or choice of alternatives for the Macedonian consumer”.

## **1. INTRODUCTION TO NUDGES**

Nudge theory starts out as a concept in behavioral economics and sciences, indicating a psychological factor by which the decision of a person can be influenced in a less than conscious way (Cherubino et al, 2019). It is a theory considered to be based on the concept of behavioral economics and dual-process theory (Hummel and Maedche, 2019). Years of research show that many of our choices in life, and part of our mental processing, occur on a subconscious level, thus including the decisions made as customers (Cherubino et al, 2019). Due to human beings' cognitive biases, the design of how information/choices are represented to an individual could influence or "nudge" their behavior toward a choice (Venema et al, 2020; Cai, 2019). In a way, nudges are "rules" or "ways" as to how to push or direct someone's attention and choice towards an outcome.

Something most agreed upon is that for something to be considered a nudge, its existence must leave space for the choice we want someone to make - to be easily avoided (Korhonen, 2020; Abhyankar, 2019; Sunstein et al, 2019). In other words, a nudge cannot influence the freedom of choice. Their power lies in the ability to modify behavior without coercion (Blumenstein et al, 2018). In a way, nudge theory can be considered a more advanced and modern approach to creating change in people, as appose to the traditional "enforced" change (BusinessBalls, 2020).

The nudge is "any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives" (Thaler and Sunstein 2008), meaning that the possibility for someone to make a choice, can be increased. They comment on the choice architect as someone (individual, company, industry, government etc..) who manages the application of the nudge (BusinessBalls, 2020).

Although the nudge theory has been widely used in different life domains, its effectiveness varies across studies (Hummel and Maedche, 2019). Some studies have even proven nudges to be ineffective, or even create opposite results from those expected (Caraban et al, 2019; Mols et al, 2014).

### **1.1 Decoy Effect**

The primary effect that we research is the asymmetric dominance effect, attraction effect (Kim and Hasher, 2005), or in other words the Decoy Effect/Theory. An asymmetric dominance choice involves more than two options,

where one is dominated, by at least one other option, however not all of them (Bateman et al, 2008). By others, the decoy effect is most optimal while having two options, and introducing a third asymmetrical, clearly inferior choice to one of the primary two, to influence the choosers' final decision (BusinessBalls, 2020; Abhyankar, 2019).

A possible explanation is that when faced with too many alternatives, we look at things that are easier to compare, avoiding those that are too different from one another (Ariely, 2008).

### **1.2. Anchoring Effect**

When speaking about the anchoring effect it is considered that people compare products (and other things in life), with some of their first impressions of something similar to those things (ex. a category), and later on guess subjectively, adjusting their judgment accordingly to the primary anchor (BusinessBalls, 2020; Dennis et al, 2020; Korhonen, 2020; Soga, 2018). New information is viewed relative to the first information gained (Taylor, 2016). Research has shown that presenting even a randomly generated number before creating a choice, can bias and influence a decision maker's decision (Dennis et al, 2020).

### **1.3. Mere Exposure Effect**

The mere exposure effect (MEE) turns towards the accessibility/visibility of a familiar object, meaning that people are more often choosing something because of mere previous exposure to it (BusinessBalls, 2020). The effect represents the "formation of a positive affective reaction (PAR) to repeated or single exposure" (Ye and van Raaij, 1997, p.629), and argues that prolonged exposure to a stimulus is enough to trigger a predisposition and preference toward it (Caraban et al, 2019). Repeated exposure to an object or stimuli, becoming more familiar with it, changes the way we experience it, and changes our attitude toward it, even though the object\stimuli might remain unchanged (Bornstein and Craver-Lemley, 2017). The stimuli might be a person, artifact, product, advertisement, brand name, picture, individual, symbol, logo, etc (Ye and van Raaij, 1997). This makes research and implementation of this effect extremely promising for the marketing communication world.

## **2. METHODS**

For the purpose of this research, an online causal survey experiment was conducted. Due to random assignments thanks to a random redirection tool, we can assume that the only difference between conditions (Groups) is the difference within the treatment. As an experimental manipulation of the independent variable, a seemingly randomized stimulus is added - for questions on the decoy theory, a carefully planned asymmetric dominance option, for anchoring – price, and for exposure – background of the survey.

### **2.1 Data Collection**

Three online surveys - Group A, B, and C (control Group) were created on the online application for surveys – Google Forms. Direct links to each Group were then added to a random redirection tool which created one link instead of three (Fergusson, 2016). The link was then distributed throughout social media, as well as through other participants who had the option to share the link as well.

### **2.2 Sample**

For the aim of this Thesis, data has been gathered and analyzed from a convenient sample of 195 participants, 65 per Group, residents of N. Macedonia. The sample started off with a larger number (230), however, participants who answered with “I do not know” or in another invalid way, were excluded.

## **3. RESULTS**

Gathered data from the Groups were reviewed, coded, and analyzed with the help of SPSS 28.0 for Windows 10. To analyze the statistically significant difference between expected and observed frequencies of categorical variables between Groups, we will be using a Pearson’s Chi-Square test. Mann-Whitney U test and Kruskal-Wallis H Test will be used for differences between Groups.

### 3.1 Demographic data

Out of all 195 participants whose answers were analyzed, 63,6% (124) were female and 71% (36.4) male. The sample for this online experiment was randomly chosen through social media and “digital word of mouth”. Participants were between the ages of 16 and 61, with a Mean age of 30, and an average monthly salary of around 20-30.000 denars.

### 3.2 Decoy Effect

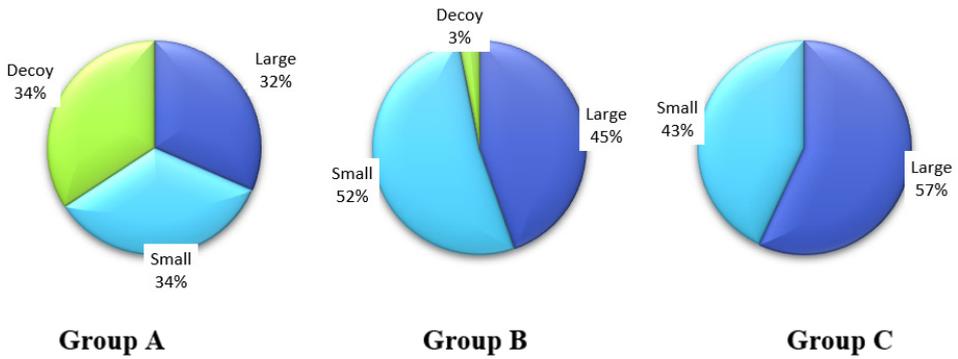
To test the Decoy effect 2 separate experimental questions were created. Answers were analyzed by coding the target and decoy as one, while the competitor as another option.

Our first question has people choose between popcorn of different sizes (Picture 1), taking an example of the National Geographics popcorn experiment (Hochma, 2017). Results here show difference in choice between groups (Figure 1) strangely showing choice of Decoys as well. As seen in Table 1, results suggest that there is a statistically significant difference in frequency of choice of target and decoy, compared to “competitor”, from one Group to another ( $\chi^2(2, N=195) = 11.530, p = .003$ ).

Figure 1 Example of Popcorn options between groups



Figure 2 Percentage of Target, Competitor and Decoy choice within groups



When adding a higher decoy (Group A), there is a significant rise in frequency of choice towards target and decoy ( $\chi^2(1, N=130) = 11.5, p = .001$ ) when compared to Group B. However, compared to Group C, there is only a small significant rise in choice ( $\chi^2(1, N=130) = 4.112, p = .043$ ). A statistically significant difference between Group C, and Group B, does not exist in the frequency of choice,  $\chi^2(1, N=130) = 1.97, p = .16.$ , as seen in Table 2.

**Table 1 Chi-Square Test representing expected and real count of popcorn choice between all groups**

Group x Popcorn choice Crosstabulation					
		Popcorn Option		Total	
		Large	Small		
Group	A	Count	48	17	65
		Expected Count	38.0	27.0	65.0
	B	Count	29	36	65
		Expected Count	38.0	27.0	65.0
	C	Count	37	28	65
		Expected Count	38.0	27.0	65.0
Total		Count	114	81	195
Expected Count			114.0	81.0	195.0

Group x Popcorn choice Chi-Square Tests			
	Value	df	Asymptotic Sig. (2-sided)
Pearson Chi-Square	11.530	2	.003
Likelihood Ratio	11.797	2	.003
N of Valid Cases	195		

**Table 2 Chi-Square Test Between Groups**

Group x Popcorn choice Chi-Square Tests									
	A x C			A x B			B x C		
	Value	df	Asymptotic Sig. (2-sided)	Value	df	Asymptotic Sig. (2-sided)	Value	df	Asymptotic Sig. (2-sided)
Pearson Chi-Square	4.112	1	.043	11.500	1	.001	1.970	1	.160
Likelihood Ratio	3.399	1	.065	11.702	1	.001	1.508	1	.219
N of Valid Cases	130			130			130		

When analyzing the effects of a “free prize choice”, as seen in Table 3, we see no statistically significant difference of choice between any of the Groups,  $(2, N=195) = .289, p = .865$ , meaning the existence of a decoy choice, created no significant change in the frequency we would wish our target to be chosen. In this setting, our controlled Group (C) chose between chips and a thematic pillow as one option, and chips and a thematic toy as the second option. Our experimental Groups were presented with a third choice- a decoy, an option of only a toy (Group A), or only a pillow (Group B).

**Table 3 Chi-Square Test for expected and real count of choice of prize between groups**

Group * Choice of Prize Crosstabulation					
CTT CTP		Choice of Prize		Total	
Group	A	Count	29.7	35.3	65
		Expected Count	30	35	65.0
	B	Count	28	37	65
		Expected Count	31	34	65.0
	C	Count	29.7	35.3	65
		Expected Count	29.7	35.3	65.0
Total		Count	89	106	195
Expected Count		89.0	106.0	195.0	

Group x Choice of Prize Chi-Square Tests			
	Value	df	Asymptotic Sig. (2-sided)
Pearson Chi-Square	.289 <sup>a</sup>	2	.865
Likelihood Ratio	.290	2	.865
N of Valid Cases	195		

### 3.3 Anchoring Effect

As the theory proposes, we created 2 questions where participants in Group A were presented with high numerical anchors, Group B with lower ones, and Group C had none. Participants had the freedom to estimate and predict the cost of a product, in the first question a wristwatch, and in the second, a hammock. The existence of outliers was detected, so a total of 60 participants per Group were analyzed in these settings.

**Table 4 Descriptive Statistics of Anchoring Questions**

		Mean	SD	Min	Max	Sum
Wristwatch	Group A	56,906.08	31,004.580	75	100,000	3,414,365
	Group B	21,115.32	10,446.592	1000	61,000	1,266,919
	Group C	12,380.83	10,074.998	100	43,000	742,850
Hammock	Group A	3,622.63	2,171.399	799	15,000	217,358
	Group B	2,459.97	611.026	990	3,500	147,598
	Group C	3,565.17	3,066.297	100	15,000	213,910

Within the first question, as assumed and seen within Table 4, Group A had the highest predicted price for our product ( $M = 56,906$  denars), and Group C had the lowest ( $M = 12,380$  denars). Analyses showed a significant difference between the mean of ranks within all Groups ( $H(2) = 63.276$ ,  $p = .000$ ) (Table 5). As seen in Table 6, Group A again had significant difference between both Group B ( $U = 852.5$ ,  $N_a = 60$ ,  $N_c = 60$ ,  $p = .000$ ) and Group C ( $U = 497$ ,  $N_a = 60$ ,  $N_c = 60$ ,  $p = .000$ ). In addition, Group B and Group C showed a statistically significant difference in ranks ( $U = 811.5$ ,  $N_b = 60$ ,  $N_c = 60$ ,  $p = .000$ ).

When evaluating the price of the hammock, Group A again had the highest assumption ( $M = 3,622$  denars), however here Group C was close behind ( $M = 3,565$  denars). Group B had the lowest assumptions ( $M = 2,459$  denars). Analysis of the three Groups shows a significant difference in the rank means between Groups ( $H(2) = 15.71$ ,  $p = .000$ ) (Table 5). Looking at Table 6, a statistically significant difference between experimental settings and the controlled Group is not found. However, when comparing the mean of ranks from high anchors (G.A.) with the mean of ranks from low anchors (G.B), there is a strong significant difference ( $U = 914.5$ ,  $N_a = 60$ ,  $N_b = 60$ ,  $p = .000$ ).

**Table 5 Kruskal-Wallis H test for differences in mean ranks of estimated prices**

Ranks			
	Group	N	Mean Rank
<b>Wristwatch</b>	C	60	52.31
	B	60	91.18
	A	60	128.01
	Total	180	
<b>Hammock</b>	C	60	91.83
	B	60	71.08
	A	60	108.59
	Total	180	

Test Statistics <sup>a,b</sup>		
Question	Wrist Watch	Hammock
Kruskal-Wallis H	63.376	15.710
df	2	2
Asymp. Sig.	<.001	<.001

**Table 6 - Mann-Whitney U Test Statistics for differences in mean ranks of estimated prices between all Groups**

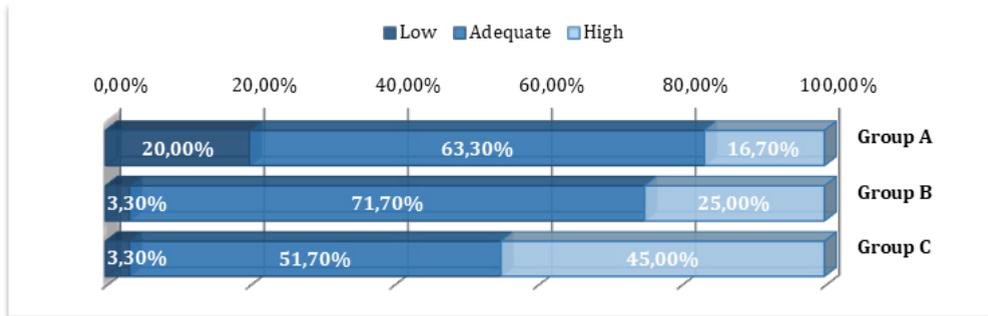
	Wristwatch	Hammock	Wristwatch	Hammock	Wristwatch	Hammock
Groups	AxC		BxC		AxB	
<b>Mann-Whitney U</b>	497.000	1600.000	811.500	1520.000	852.500	914.500
<b>Wilcoxon W</b>	2327.000	3430.000	2641.500	3350.000	2682.500	2744.500
<b>Z</b>	-6.843	-1.053	-5.191	-1.474	-4.976	-4.673
<b>Asymp. Sig. (2-tailed)</b>	<.001	.292	<.001	.140	<.001	<.001

With this set of questions, we also analyzed the perception of price upon the existence of an anchor. For the wristwatch, participants find its true

value of 18,590 denars, much lower than Anchors in Group A, but near those in Group B (Figure 3). For the hammock, participants learn that the true price is 2,790 denars, again near the prices in Group B (Figure 4).

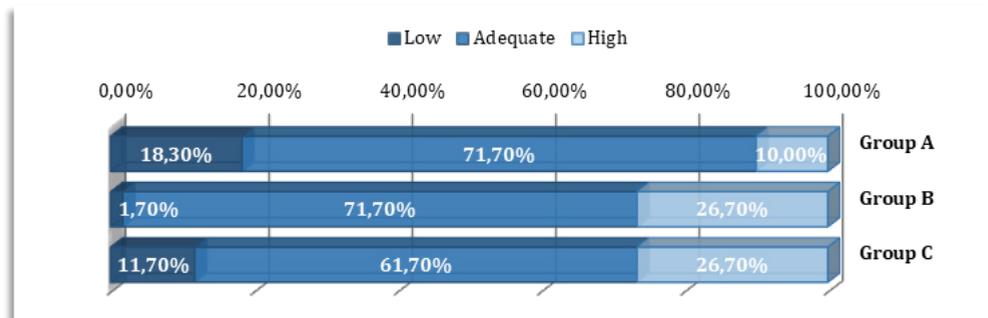
For the wristwatch, both Group A ((1, N=120) = 11.29, p=.001) and Group B ((1, N=120) =5.28, p=.022) significantly differ in the frequency of perceived low or adequate prices for the watches when compared to Group C, and not differ between each other ((1, N=120) = 1.26, p=.261) (Table 8)

**Figure 3 Wristwatch real price perception writing groups**



Most of the participants have assessed that the given value of the hammock is a low or adequate value. Those with a higher anchor significantly differed with a higher assessment of low and adequate cost of the hammock, with both those from Group B with a lower anchor near the true price ((1, N=120) = 5.56, p= .018), and those with no anchor at all ((1, N=120) = 5.56, p= .018). Group B and C showed no significant difference ((1, N=120) = 4.95, p=0.84) (Table 8).

**Figure 4 Hammock real price perception writing groups**



**Table 7 - Chi-Square Tests of price perception as low/adequate vs high**

		Value	df	Sig. (2-sided)
<b>Wristwatch</b>	Pearson Chi-Square	12.386 <sup>a</sup>	2	.002
	Likelihood Ratio	12.291	2	.002
	N of Valid Cases	180		
<b>Hammock</b>	Pearson Chi-Square	6.672 <sup>a</sup>	2	.036
	Likelihood Ratio	7.363	2	.025
	N of Valid Cases	180		

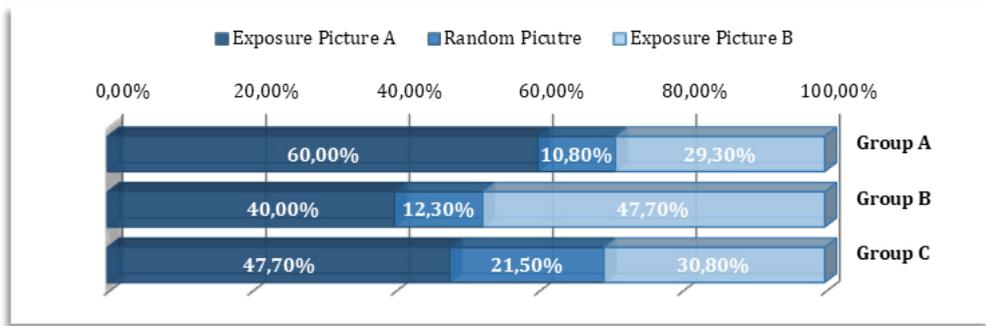
**Table 8 - Chi-Square test of price perception as low/adequate vs high**

		AxC			BxC			AxB		
		Value	df	Sig. (2-sided)	Value	df	Sig. (2-sided)	Value	df	Sig. (2-sided)
<b>Wristwatch</b>	Pearson Chi-Square	11.293	1	<.001	5.275	1	.022	1.263	1	.261
	Likelihood Ratio	11.619	1	.002	5.330	1	.021	1.270	1	.260
	N of Valid Cases	120			120			120		
<b>Hammock</b>	Pearson Chi-Square	5.566	1	.018	.000	1	1.000	5.566	1	.018
	Likelihood Ratio	5.739	1	.017	.000	1	1.000	5.739	1	.017
	N of Valid Cases	120			120			120		

### 3.4 Mere Exposure

In our final set of questions, and for our final hypothesis, we have the mere exposure effect. For this, both Group A and B within their heading had a reoccurring picture as heading/background, while Group C had nothing. Group A had 12.3% (8) more participants than the controlled Group who chose the exposed picture as most attractive. Group B had 16.9% (10) (Figure 5). Analyzing all Groups shows (although close) no statistically significant results ((4, N=195) = 9.453, p = .051) (Table 9).

**Figure 5 Choice of picture preference between groups**



**Table 9 Chi-Square test for expected and real count of choice of picture preference**

	Value	df	Sig.
Pearson Chi-Square	9.453 <sup>a</sup>	4	.051
Likelihood Ratio	9.130	4	.058
N of Valid Cases	195		

## Conclusion

Commenting on the results from the first batch of questions, we need to keep in mind not only the statistical significance of rise in frequency of choice, or in total revenue but also the fact that each company/business exists in different terms. Each business would need to see the effect of a decoy product on its own offerings, evaluate the financial difference that can be created, and see whether that rise in revenue, if small, would lead to higher benefits and help achieve a higher target (Wu and Cosguner, 2018). Results of research on the decoy theory, lead us to believe that we cannot fully accept H<sub>1</sub>, nor can we fully accept H<sub>0</sub>.

For the anchoring effect, results show that there is a difference between Groups in estimating price when presented with a high anchor, and very often with a low one as well. Something that would need to be kept in mind is the familiarity that people have with a specific brand or product, as well as competitor prices. All results for the Anchoring Effect as nudge can lead to the conclusion that anchors do create change in the prediction of price, as well

as its perception. With this, we accept H2, leading in favor of the Nudge as a marketing strategy tool.

Settings for the mere exposure effect show no statistically significant difference between Groups. Complex stimuli exposure would lead to a longer liking, and people these days need more frequent exposure to a specific advertisement (stimuli) if we wish them to create higher preference, however, we need to mind not over-exposing them as well. This might be why the results here are as they are. Research of the mere exposure effect shows no significant difference in expected and observed values between Groups and leads us to the conclusion that H3 is not accepted.

As with other studies, ours is also unclear on the true effectiveness of nudges.

Hypothesis testing shows significance in the use of some of the nudges, while does not in others. With results for one of the nudges (anchoring) showing a steady significance in difference, another showing some results in favor and others not (decoy), and the final showing no significance (exposure), generalization on the overall use of nudges presents a difficulty. Overall results show that for some types of nudges and in some situations, their use could lead to higher benefit, to change in choice, prediction, evaluation, or perception, however definitely not in all. When implementing nudges within a business, the whole setting surrounding them would need to be evaluated. Marketers need to have a clear idea of how they wish to present themselves, how much this change will cost them and where or when should this change be implemented.

Use of the decoy could possibly help in steering choice from one product to another and could help in smarter product/service offers, leading to overall higher revenue. Anchoring with its influence in price “prediction” and perception would be useful in planning cost and when presenting products and position planning. Mere exposure shows no significant change of preference towards a stimulus. If proven relevant, mere exposure could help marketers understand frequency, place, and type of advertisements that would help get the organization/business/brand to gain a higher position in people’s minds.

Furthermore, it should be noted that since nudges affect a subconscious level of a more generalized population, individualization and personalization of nudges are not always needed, even though they have shown additional positive results (Peer et al, 2020).

While planning a strategy to include nudges, more aspects of the product/service production need to be kept in mind – ex. overall costs vs benefit

of decoy offer, target market, and resources available. Furthermore, knowledge of the existence of such nudges could help organizations by re-evaluating these offers, to see whether some of these nudges are unintentionally used, and steering customers away from our targets. Specifics of the organization's target Group, familiarity with the products/services we are offering, competitor offers, points of difference and points of parity, as well as marketers' target position, need to be kept in mind when implementing and using nudges to help strive a business.

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**(Original scientific paper)**

## **SOCIAL CAPITAL AND HAPPINESS AT YOUTH IN SOCIAL RISK**

**Abstract:** Numerous studies show that high levels of social capital are associated with higher level of happiness around the world. However, it is not known whether this association extends to young people at social risk. It is essential for this people to be in a state of positive feelings and satisfaction in order to thrive and leave healthier. A huge deficiency is the lack of research on the subject for this group of people in Republic of North Macedonia and it is very important to make national analysis because of the cultural differences between the countries that can produce different conclusions. Also, it is not known which indicators of the broad concept of social capital are associated with happiness at youth in social risk. Social capital is a complex multidimensional concept without unified definition. One easy way to explain the social capital is through benefits that arise from social activity of one individual. Among many distinctions of social capital are distinctions of structural and cognitive social capital and distinction based on relationships such as strong, weak, vertical, horizontal, bonding, bridging or linking. In this paper, we took the distinction of structural and cognitive social capital. We examine the association between different types of individual structural social capital and individual cognitive social capital with level of happiness at youth in social risk. Therefore, the subject of this paper is to examine social capital and its different dimensions and their association to happiness of youth in social risk. Main goal of this paper is to determine which dimensions of individual social capital are positively associated with happiness among youth in social risk. Thus, paper hypothesis is: structural and cognitive dimensions of social capital are positively associated with happiness among youth in social risk.

Data is gathered through conducted survey on youth in social risk from 16 to 35 years in February 2022. These youth are participants in project “Youth empowerment enabling prospects”, which goal is to increase the employability and find employment for youth in social risk. The project is operating in

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four cities in Republic of North Macedonia: Skopje, Tetovo, Prilep and Bitola. The data comes only from project participants in the city of Skopje. Out of 140 project participants in Skopje, 75 gave valid answers to the questionnaire which was consisted of 13 questions about demographics, happiness and social capital.

The individual structural social capital is measured as bonding and bridging network of people and network frequency, while individual cognitive social capital is measured by quality of social relationships through trust, receiving and giving social support, positive and negative experience with others. Happiness is measured through self-perceived happiness at the moment. We first use Ordinary Least Square regression to model happiness as a function of different proxies of individual structural and cognitive social capital, controlling for age, education and income. The results of the first regression analysis suggest no statistical significance. Because of the results in the first regression, second multiple linear regression was developed via method of eliminating independent variables which had lowest level of statistical significance. After excluding age, trust, positive and negative experience with others, number of different friends and frequency of time spent with different friends, new regression model results were obtained. The results from the second regression analysis suggests that level of education and receiving social support from friends are the only variables that have statistical significance and are positively associated with level of happiness. Receiving social support variable is positively correlated with variable frequency of bonding social capital, which means that the latter is associated with greater level of happiness. Therefore, the results from the regression analysis confirm the hypothesis that some dimensions of cognitive and structural social capital are positively associated with happiness among youth in social risk.

This paper shows that in order to increase level of happiness of youth in social risk, activities should be taken to increase social support among youth in social risk as peer to peer support, increase level of education and increase frequency of time spent with friends that have similar socioeconomic characteristics.

**Keywords:** social capital, happiness, youth in social risk

**JEL Classification:** I31, C20

## **Introduction**

Many researches from social sciences and international organizations are focused on happiness. This measure is consisted in the third SDG's of United Nations – Good health and well-being. Therefore, there is a huge interest in research focused on contributing factors for increasing happiness level of people.

There are lots of studies in different fields such as sociology, psychology and economics that are analyzing subjective well-being. In these studies, for explaining the variation of subjective well-being are used individual characteristic and demographics such as age, gender, marital status, employment, education and income. As additional factors, there are studies that explain variation in subjective well-being through social capital. The association is observed through different forms of social capital such as social support, volunteering and trust. Institutionalized trust is also associated with life satisfaction, as trust in family, friends, relatives and people in the local community.

Social capital is also very popular subject in the research field. Its influence is researched by institutions such as World Bank and OECD. Because social capital is a very complex and multidimensional concept, a lot of researchers are using proxy measures for analyzing its particular individual aspects and associations to other concepts. Multidimensionality is the reason why it is needed to analyze different aspects of social capital and their association with subjective well-being.

Contribution in the research topic of association of social capital and subjective well-being at youth in social risk is very needed, as this research topic on the specific target group is not much developed. According to the Law of Social Protection in Republic of North Macedonia, social risk is social condition that has the potential to disable and harden the living conditions of the individuals, families or specific groups who may need institutional social support. In this category enters: youth without parental care, recipients of institutional social support, people with disabilities, people living in poverty, single parent families, victims of family violence, long term unemployed people and other categories. It is essential for this people to be in a state of positive feelings and satisfaction in order to thrive and leave healthier. A huge deficiency is the lack of research on the subject for this group of people in Republic of North Macedonia. It is very important to make national analysis because of the cultural differences between the countries that can produce different conclusions about the subject.

Research subject of this paper is social capital and its association with happiness among youth in social risk. The goal of this paper is to determine which of the different dimensions of social capital are associated with happiness at youth in social risk. General hypothesis of the paper is: individual social capital is positively associated with happiness at youth in social risk. In order to achieve the goals of the paper and to prove the hypothesis, this paper will elaborate about happiness and individual social capital and up to date research, and will make a linear regression analysis. The analysis will be made on the basis of data obtained from a previously conducted questionnaire on a representative sample of youth in social risk participating in the project “Youth empowerment enabling prospects”, which recruits youth in social risk in order to increase their employability and employ them. The conclusion follows in the final part.

## **1. CONCEPT OF HAPPINESS AND ITS BENEFITS**

Subjective well-being (SWB) is defined as the evaluation of one’s own life (Diener and Biswas-Diener 2002). Veenhoven (2008) further extended the concept by defining SWB as an overall judgment of life using two sources. These sources were cognitive comparisons regarding what the good life means, and affective information regarding how an individual may feel the majority of the time. This concept is recognized in Sustainable Development Goals of United Nation because of its significant meaning for the social progress that may be otherwise hard to measure. The former Secretary General of the United Nations, Ban Ki-Moon, gave a speech in 2012 regarding the use of SWB indicators as a relevant measure of sustainable growth and prosperity.

Rojas (2007), approach SWB as inherently subjective, acknowledges the authority of the person, is inferential and transdisciplinary. The SWB approach assumes that well-being is essentially subjective phenomena experienced by the actor living life. Individuals are the most appropriate evaluators of their own life satisfaction.

Veenhoven (2008) applied social constructionist theory to SWB that proposes that humans attach meanings to phenomena and construct reality. Because humans belong to different cultures, the meanings created may be relative and relevant to the specific culture, in other words, the shared notions of what it means to live well or to be happy may vary between the cultures. Another theory is social comparison theory which states that people compare their life using referential standards in order to make judgments about whether

they are living well. Lucas (2007) elaborate about adaptation theory which postulates that individuals adapt to good and bad life events because individuals SWB has a biological set-point that typically remains constant.

From the theory, it can be seen that life satisfaction and feelings of happiness are two separate aspects of SWB. Feelings of happiness is defined as affective component of SWB, and life satisfaction is considered as more stable and evaluative process that is referring to individual life events, in other words it represents evaluation of the level of realization of individual potentials relative to nature and aspiration of that individual (Diener 1984). Many scientist and institutions are using these measures as proxy measures of SWB. In most of the scientific papers, life satisfaction is measured by following question, “All thing considered, how satisfied are you with your life as a whole these days”, on a scale from 0 (completely dissatisfied) to 10 (completely satisfied)<sup>1</sup>. Other studies for measuring the feelings of happiness use different measures on different scales from 0 (very unhappy) to 10 (very happy), or on a scale form 1 (not very happy) to 3 (very happy).

Happiness may lead to better life outcomes. Although this high subjective well-being tends to help people function better, it is of course not a cure-all. Happiness is like any other factor that aids health and functioning; with all other things being equal, it is likely (but not guaranteed) to help<sup>2</sup>. There is initial evidence about happiness and its beneficial outcomes. For instance, happiness has positive effects on health and longevity such as reduced inflammation (Appleton 2011); (Slopen 2012), improved cardiovascular and immune system (Ong 2010), lowered risk of heart disease (Davidson, Mostofsky, & Whang 2010), practicing good health behaviors (Blanchflower, Oswald, & Stewart-Brown 2012), survival and longevity (Pressman & Cohen 2012). Happiness also have positive effects on individual’s income and productivity: more positive individuals delivered better results at work (Oswald, Proto, & SgROI 2012), happy workers are more highly rated (Peterson, Luthans, Avolio, Walumbwa, & Zhang 2011), happiness can increase curiosity, creativity, and motivation (George & Zhou 2007), happiness is positively associated with individual earnings and can predict the future earnings (Judge, Piccolo, Podsa-

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<sup>1</sup> Kamarudin N., Yen S.H., See K.F.: Social capital and Subjective Well-Being in Malaysia, Malaysian Journal of Social Sciences and Humanities (MJSSH), Volume 5 (Issue 6), 2020, p.4.

<sup>2</sup> De Neve, J.-E., Diener, E., Tay, L., & Xuereb, C.: The objective benefits of subjective well-being. In Helliwell, J., Layard, R., & Sachs, J., eds. World Happiness Report 2013. New York: UN Sustainable Development Solutions Network, 2013, p.2.

koff, Shaw, & Rich 2010). Other benefits of happiness are in the field of social behavior. Survey evidence shows the probability of re-employment within one year is higher among individuals who are happier (Krause 2012). Well-being increases interest in social activities leading to more and higher quality interactions (Myers 2000). Also, positive moods lead to more engagement in social activities (Mehl, Vazire, Holleran, & Clark 2010). The happiness and social interaction link are found across different cultures and can lead to the transmission of happiness across social networks (Tay & Diener 2011). This means that, generally, we observe a dynamic relationship between happiness and other important aspects of our lives, with influence running in both directions. Therefore, happiness can be considered as a means — rather than an end in itself.

## **2. DISTINCTION OF THE SOCIAL CAPITAL AND ITS ASSOCIATION TO HAPPINESS**

One easy way to explain the social capital is through benefits that arise from social activity of one individual. The main idea of this type of capital is that networks and relations have value. Social capital is aspect of the social context (the “social” part) which have productive benefit (“the capital” part). This capital includes solidarity and good will between the people.

There is no unified definition for social capital. Coleman (1988) defines social capital as a variety of different entities, with two elements in common: they all consist of some aspect of social structures and they facilitate certain action of actors within the structure. Putnam (1993) defines social capital as features of social organization such as networks, norms and social trust that can facilitate coordination and cooperation for mutual benefit. Nahapiet and Ghoshal (1998), define social capital as the sum of the actual and potential resources embedded within, available through and derived from the relationships possessed by an individual or social unit. Iyer, Kitson and Toh (2005) define social capital as institutions, relationships, attitudes and values governing interactions amongst people<sup>3</sup>. From these definitions, one can see the multidimensionality of the social capital concept. Hence the problem with unified definition and measure of social capital.

Researchers in this field, often make distinction based on relationships. Hence, the social relationships can be strong, weak, vertical, horizontal, bond-

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<sup>3</sup> <https://www.socialcapitalresearch.com/current-definitions-of-social-capital/>

ing, bridging or linking. Most common used distinction is of bonding, bridging and linking social capital. Bonding social capital are ties between individuals within the same social group or with others who are primarily like them. Bridging social capital are ties that link people together with others across a cleavage that typically divides society (like race, or class, or religion), and linking social capital are social ties (often a bridging social ties) to those with power that provides one with the capacity to gain access to resources, ideas and information from formal institutions beyond the community.

There are other distinctions of social capital such as distinction of structural and cognitive social capital (Uphoff 1999), and structural, relational and cognitive social capital (Nahapiet and Ghoshal 1998). In this paper, we took the Uphoff distinction of structural and cognitive social capital. In this distinction, the cognitive social capital includes the relational social capital. Structural social capital is related to different forms of social organization such as roles, rules and procedures and different types of networks. This type of social capital is related to features and type of networks that one has developed, or the people that individual knows and can use them for benefits such as information, material or non-material support. Typically, this capital on individual level is measured as structure and position of social network, number of network memberships, types of social networks, frequency of social relationships. Measures are presented in Table 1.

Cognitive social capital derives from mental processes and resulting ideas, reinforced by culture and ideology, specifically norms, values attitudes and beliefs. This type of social capital is related to characteristics and quality of social relationships and networks. It is associated with trust, obligations, mutual respect and empathy. On individual level, it is measured by quality of social interactions, social relationships, social networks, social support, social cohesion, mutual care, helping, trust, trustworthiness, norms, obligations, expectations, identity, vision and values. Because cognitive and relational social capital are derived from mental and not material world, researchers usually are summing these two aspects into one dimension: cognitive social capital.

**Table 1: Distinction of social capital on individual level**

STRUCTURAL	RELATIONAL	COGNITIVE
<u>Social structure:</u> <ul style="list-style-type: none"> <li>- Social networks and relationships</li> <li>- Membership in organizations and clubs</li> <li>- Bonding, Bridging and Linking social networks and ties</li> </ul>	<u>Nature and quality of relationships:</u> <ul style="list-style-type: none"> <li>- Trust and trustworthiness</li> <li>- Norms and sanctions</li> <li>- Obligations and expectations</li> <li>- Identity and identification</li> </ul>	<u>Shared understandings:</u> <ul style="list-style-type: none"> <li>- Shared language, codes, and narratives</li> <li>- Shared values, attitudes and beliefs</li> <li>- Shared goals, purpose and vision</li> </ul>

Source: <https://www.socialcapitalresearch.com/relational-social-capital/>, Claridge Tristan, *What is Relational Social Capital?*, 10.02.2022.

Because of the complexity and multidimensionality of social capital and not having unified measure, researchers usually use proxy measure for social capital that are theoretically connected with the variable of interest. Hence, one paper shows that individuals who have greater social support, who volunteer and have bigger level of trust in others, have greater level of life satisfaction and positive feelings (Calvo, Zheng, Kumar, Olgiati and Berkman 2012). Data of this paper are gained from conducted research in 142 countries. Social support is measured by asking respondents “if you were in trouble, do you have friends and relatives you can count on to help you whenever you need them, or not?”. Volunteering was measured by asking respondents “Have you volunteered your time to an organization in the past month” and social trust was measured by asking “Do you think people can be trusted or not”.<sup>4</sup>

However, there are not many papers that focused on association of social capital and subjective well-being at people in social risk. One paper that explores the association of social capital and SWB at older adults with Non-communicable diseases, suggests that social capital was associated with increased subjective well-being of adults in all the six countries that were included in the research (Ghana, China, India, Mexico, Russia and South Afri-

<sup>4</sup> Calvo R., Zheng Y., Kumar S., Olgiati A., Berkman L.: Well-Being and Social Capital on Planet Earth: Cross-National Evidence from 142 Countries. PLoS ONE, 2012, p.4.

ca). The positive association between social capital and subjective well-being was higher for those with a single chronic condition than those with multiple chronic conditions in India and South Africa (Christian, Adekunle Sanuade, Adu Okyere and Adjaye-Gbewonyo 2020).

### **3. EMPIRICAL RESEARCH ABOUT SOCIAL CAPITAL AND HAPPINESS AMONG YOUTH IN SOCIAL RISK IN REPUBLIC OF NORTH MACEDONIA**

Main purpose of this paper is to contribute to scientific evidence of association of different types of individual social capital to happiness among youth in social risk in Republic of North Macedonia. In addition, in using different proxy measures for measurement of structural and cognitive social capital on individual level, this paper makes significant contribution to the research focused on enhancing happiness levels of people in social risk. These kind of research topics are very rare in Republic of North Macedonia, either from social capital or social risk category research perspective.

#### **3.1 Research methodology**

Research was conducted on a sample of youth in social risk that participate in the project: “Youth empowerment enabling prospects”, in order to prove the association of individual social capital with happiness among youth in social risk. The aim of the project is to increase the employability of youth in social risk and employ them. The project works with youth in social risk from 16 to 35 years and is operating in four cities in Republic of North Macedonia: Skopje, Tetovo, Prilep and Bitola. The data comes only from project participants in the city of Skopje. The research was conducted in the period of 7<sup>th</sup> till 14<sup>th</sup> February 2022. In order to gather data, questionnaire was developed in google forms and distributed to youth in social risk via e-mail, social media, platforms for communications. The questionnaire consisted 13 questions regarding demographics, structural social capital, cognitive social capital and happiness. Out of 140 youth in social risk that participate in the project, 75 youth gave valid responses of the questionnaire that were used for analysis.

This research was conducted on youth in social risk in the following categories: youth without parental care, single parent families, youth in poverty, victims of family violence, receivers of institutional support, youth that

live in family that have disability person, long term unemployed youth (above 6 months).

Data will be used to perform linear regression analysis. As control variables for the linear regression analysis, are used demographic variables: age, education and income. Happiness is measured by proxy measure using the question "How happy do you feel?", on a scale from 0 (very unhappy) to 10 (very happy). This measure is the dependent variable in the regression analysis.

As independent variables are used measures for structural and cognitive social capital. Structural social capital is measured by: number of similar friends, number of different friends (similarities and differences are related to socio-economic characteristics), frequency of time spent with similar friends and frequency of time spent with different friends, that are measured on a scale from 1 (very rare) to 7 (everyday). Cognitive social capital is measured by: level of trust by answering "Most people can be trusted" on a scale from 1 (completely disagree) to 7 (completely agree); level of receiving social support by answering "If you were in need, how easy can you receive support from your friends" on a scale from 1 (very difficult) to 7 (very easy); giving social support by answering "If people you know have need, how often do you help them" on a scale from 1 (very rare) to 7 (always); level of positive experience with people in local community by answering "how often do you have positive feelings experience with people from local community. For example, someone is treating you friendly and make you feel happy and pleasant" on a scale from 1 (never) to 7 (very often); level of negative experience with people from local community by answering "how often do you have negative feelings experience with people from local community. For example, someone is treating you badly and make you feel stressed or discomfort", on a scale from 1 (never) to 7 (very often).

### **3.2 Analysis of the results**

In order to analyze the association of different levels of individual social capital and happiness among youth in social risk, linear regression analysis was developed:

$$(1) \quad Y = \beta_0 + \beta_p X_{ip} + \epsilon$$

Multiple linear regression model contains one dependent variable – happiness. As independent variables are structural and cognitive social capital, and controlling demographics variables.

Two different regression models were developed. The first model contains all mentioned variables. From this model (Table 2) it can be seen that determination coefficient is  $R^2= 0,23$ , which mean that 23% of the variation in happiness can be explained by the variation in independent variables. This model doesn't have statistically significant F-test, suggesting that not even at least one independent variable is associated with happiness, and that this model is not statistically significant. Also, the results suggest that none of the independent variables have statistically significant t-test, which means that none of the variables have significant effects on dependent variable.

Because of the results in the first regression, second multiple linear regression was developed via method of eliminating independent variables which had lowest level of statistical significance. After excluding age, trust, positive experience, negative experience, number of different friends and frequency of time spent with different friends, new regression model results were obtained:

$$(2) \quad \text{Happiness} = 1,255 + 0,608 * \text{Education} - 0,190 * \text{Income} + 0,45 * \text{Receiving social support} + 0,426 * \text{Giving social support} + 0,04 * \text{Number of similar friends} - 0,17 * \text{Frequency of time spent with similar friends}.$$

New regression model has coefficient of determination  $R^2= 0,21$ , which mean that 21% of the variation in happiness can be explained by the variation in independent variables. This model, also has statistically significant F-test. From Table 2, can be acknowledged that independent variable from cognitive social capital – receiving social support, has statistically significant positive association with happiness after conducting t-test. For one level increasing of perceived social support, happiness is increasing for 0.45 on the scale of measurement. Also, from the table, it can be observed that demographic variable education is statistically significant on 10% level, showing that increasing one educational level is associated with 0.608 increasing of happiness level. Other variables are not statistically significant.

**Table 2: Multiple linear regression analysis**

<b>HAPPINESS</b>		
Source	Model 1	Model 2
	Value	Value
<u>DEMOGRAPHICS</u>		
AGE	-0,013	
EDUCATION	0,631	0,608*
INCOME	-0,192	-0,190
<u>COGNITIVE SOCIAL CAPITAL</u>		
TRUST	-0,077	
RECEIVING SOCIAL SUPPORT	0,349	0,45**
GIVING SOCIAL SUPPORT	0,364	0,426
POSITIVE EXPERIENCE	0,230	
NEGATIVE EXPERIENCE	0,012	
<u>STRUCTURAL SOCIAL CAPITAL</u>		
BONDING FRIENDS NUM	0,034	0,04
BRIDGING FRIENDS NUM	-0,003	
BONDING FRIENDS FREQUENCY	-0,192	-0,17
BRIDGING FRIENDS FREQUENCY	0,036	
R <sup>2</sup>	0,23	0,21
F test (p value)	0,144	0,01

Note: \*\* significant at 5% level; \*10% level

Source: Author's research

Table 3 shows correlation between all variables that are included in the second regression model. It can be seen that the variables receiving social support and frequency of time spent with similar friends have correlation coefficient of 0.603. This data show that these two variables are supporting each other, or to be more specific, frequency of time spent with similar friends in local community contributes to receiving social support or vice versa, which in turn happiness of youth in social risk. From the other correlations it can be seen that there is no high multicollinearity.

Table 3: Correlation matrix – regression model 2

<b>Correlation matrix:</b>	EDUCATION	INCOME	RECEIVING SOCIAL SUPPORT	GIVING SOCIAL SUPPORT	BONDING FRIENDS NUM	BONDING FRIENDS FREQUENCY	HAPPINESS
EDUCATION	<b>1</b>	0,408	0,021	0,085	-0,179	-0,001	0,173
INCOME	0,408	<b>1</b>	-0,097	0,081	0,031	-0,168	-0,007
RECEIVING SOCIAL SUPPORT	0,021	-0,097	<b>1</b>	0,365	0,244	0,603	0,361
GIVING SOCIAL SUPPORT	0,085	0,081	0,365	<b>1</b>	0,045	0,183	0,299
BONDING FRIENDS NUM	-0,179	0,031	0,244	0,045	<b>1</b>	0,218	0,146
BONDING FRIENDS FREQUENCY	-0,001	-0,168	0,603	0,183	0,218	<b>1</b>	0,147
HAPPINESS	0,173	-0,007	0,361	0,299	0,146	0,147	<b>1</b>

Source: Author's research

This analysis has limitations that need to be addressed in the next papers. First limitation is the small sample of youth in social risk. Because of this, it cannot be made conclusion about the population of youth in social risk in Skopje and in Republic of North Macedonia. There is a need of bigger sample. Second limitation is the cross-sectional analysis which cannot show causality of the variables. Other papers should use panel data to address this limitation.

## **Conclusion**

Social capital is complex concept that is hard to measure and is in the category of so-called umbrella concepts. As such, this type of capital is multi-dimensional and each dimension have different influence on specific variable of interest.

This paper showed theoretical concepts of happiness and its benefits and social capital on individual level through two dimensions: structural and cognitive social capital. The association of these concepts was analyzed for youth in social risk that participate in the project “Youth empowerment enabling prospects”, for employment support in city of Skopje, Republic of North Macedonia.

Two linear regression analysis were conducted in order to gain results. In the first model, none of the independent variables had statistically significant association with happiness. From the second model, it can be concluded that receiving social support from friends and education are positively related to happiness. Because of high correlation between receiving social support from friends and frequency of time spent with similar friends, these variables are supporting each other and through this relation, frequency of time spent with similar friends is associated with happiness. The later independent variable belongs to structural social capital category.

Results of this paper show that while working with youth in social risk, it should be worked on increasing the perceived level of received social support from people, increasing the levels of education and increasing the frequency of time spent with similar friends in order to increase the level of happiness, which in turn will have positive effect on other important thing in life such as health, income and productivity and personal development.

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**(Professional paper)**

## **THE IMPACT OF MILITARY EXPANSION AND EFFECT OF COVID-19 PANDEMIC ON THE INTERNATIONAL ECONOMY**

**Abstract:** The basic research question in this paper is what tendencies and movements the international economy and financial markets face in conditions of great market turbulence, uncertainty and military crisis. The different motives are the reason for the international trends, changes and effects caused by the post-COVID and military expansion in Ukraine. Namely, this paper highlights the reasons for the ascertained turbulence in the international economy and markets, with the aim of recovery and stabilization of the economies. But, the question is not only about reviving economies, but also how to make a better recovery that will be more sustainable and more resistant to future shocks.

The aim of this paper is to show the structure and dynamics of the international economy, how was moved and what kind of transition process went through it. Also, the conditions, advantages and disadvantages of foreign models for stimulating the international economy in the crisis period are emphasized.

The research indicates that with the greater and correct conceptualization of financial markets from highly developed countries to underdeveloped countries and developing countries, in order to ensure the stability and efficiency of these economies.

**Keywords:** international economy, financial markets, international movement of capital, international trade, covid pandemic, military invasion.

**JEL Classification:** F21, F62, F63, F65

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## **Introduction**

Considering the developments in the international economy in the last few years, it has become clear that the COVID pandemic and the military expansion in Ukraine have caused a complete collapse of markets and economies around the world. With the newly emerging conditions in the world economy that were caused by the great impact of the two crises that occurred one after the other, they resulted in great turbulence of the economies of the states, both at the global and regional level.

This type of asymmetric interdependence is explored in this paper, along with other aspects of international flows in financial markets and economies.

Therefore, this paper, from several sides, warns of the danger of the fact that in this turbulent post-pandemic and new war period, the world economic situation is in great search for a new balance. The reason for that is the new complex situation in international economic and financial relations, especially caused by the military expansion in Ukraine. As such, the questions about energy, about blocking the movement of labor force, means of production, prices, inflation, but also about the politics of the global economy, became complex characteristic situations. In the globalized era, these relationships continue to deserve special analysis, monitoring and control.

The subject of the paper is the new tendencies and indicators of the international economy and international financial markets in times of great turbulence and crises. Namely, due to the newly created situation with the military expansion in Ukraine, they demand new approaches, new national and international regulation, use of new instruments, new role in world and regional financial responsible institutions, etc.

The purpose of this paper is to cover new characteristics and indicators in the process of the new stages of the development and stabilization of the international economy in post-pandemic and military crisis conditions. But, this goal is far more complex and as such should be subject to a good financial market system in an extremely complex and risky environment. Also, the purpose of this paper is to investigate several more significant factors that have influenced the market conditions towards underdeveloped and developing countries in comparison with highly developed countries. However, it can be pointed out that in recent years in the underdeveloped and developing countries in these economies, significant changes have occurred in the movement of

their economic-financial architecture. The role played by international financial centers stands out with special emphasis.

Therefore, this paper is generally divided into qualitatively methodological studies through the application of inductive and comparative methods, described in the table and graphic in which conclusions are drawn. For this purpose, it was essential to use the analysis of various elements in the domestic economic politic of the countries in comparison with developed economies and global movements that had a great impact on the overall conditions for development and adjustment of market economies.

The basic hypothesis of the paper is that the international economy and financial markets today are facing new challenges and risks. The reason for that is the complex situation in international economic and financial relations caused by the COVID pandemic and the military crisis in Ukraine. In this direction, however, it can be deduced that the state of the international financial markets, which in the last three years developed into an extremely complex and dynamic system, were influenced by many economic, political, health and psychological factors, reacting smoothly to their changes.

As a problem, it can be singled out that the level of uncertainty and unpredictability remains at a high level due to the two successive crises. In this context, the current global challenges and conditions, the understanding of the priorities both at the regional and local level, is a necessary aspiration towards faster overcoming and finding solutions for a large number of the problems that the countries are facing.

The final goal is the acquisition of knowledge about financial stabilization, overcoming current risks in dealing with the economic consequences, especially of the military expansion, which is aimed at increasing the disposable income and consumption of the population. But, also more successfully dealing with the new challenges in the international economy and financial markets.

## **1. THE IMPACT OF THE COVID-19 PANDEMIC ON THE INTERNATIONAL ECONOMY**

The turbulence in the international economy caused by the intensification of the COVID crisis process, led to a change in the attitude towards the financial markets and towards the entire international economic system. The pandemic has not only reduced the size of the international economy, but also increased rivalry between the leaders of the global economy. The nega-

tive impact of COVID-19 on the international economy occurred through the general decline in demand, global value chain disruptions, export restrictions, increased trade costs, tightening of sanitary requirements, restrictions on tourism, business travel and so on.

As a result of the pandemic, companies began looking for other ways to avoid production disruptions due to abrupt termination of connections. Firstly, with the diversification of supply sources and secondly, giving preference to local partners over foreign, as well as to partners from geographically closer countries, compared to suppliers from distant countries. Not only companies, but also governments were extremely concerned about ensuring the stability of production and supply. Especially with the provision of medicines, medical equipment and materials.

However, it should be borne in mind, as the circle of potential partners narrowed, so did the range of possible economic solutions. In each country, alternatives and back-up options were sought that could be used in the event of disruption of existing production links that have become heavily affected by external shocks in all companies.

The slowdown in international economic growth in 2019 was especially present in the most economically developed countries in the world the United States, China, Japan, and especially the member states of the European Monetary Union.<sup>2</sup> This has caused energy and oil to become a significant input in many production processes. With which, through the increase of prices, the prices of transport services increased, further the prices of other types of energy, the price of labor and the prices of final goods and services, etc.

As a result,<sup>3</sup> the world's largest central banks have again resorted to lowering reference interest rates. The reason for that was the intensification of unconventional monetary policy measures such as: quantitative restrictions, the so-called forward guidance of informing the economic entities about the intention of the central bank for the future path of interest rate movement. However, these differences are not always statistically significant for all economies.

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<sup>2</sup> <https://www.imf.org/en/Publications/WEO/Issues/2022/01/25/world-economic-outlook-update-january-2022> accessed on 03.06.2022

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All this caused a pronounced inflationary pressure. Rising costs of firms have reduced their profits, some firms have gone bankrupt, others have reduced production and unemployment has risen globally. As a result, economies around the world have faced a new phenomenon, namely stagflation – stagnant or negative rates of GDP, accompanied by relatively high unemployment and inflation. The forecasts for the movement of GDP in different countries in the world have become extremely uncertain. In particular, all forecasts are based on two different scenarios, mainly conditioned by the length of the pandemic and the scope and effectiveness of government measures to deal with the crisis. For that reason, the IMF granted assistance under the Special Drawing Rights (SDR)<sup>4</sup> section, with a total value of 650 billion US dollars. About \$275 billion of the allocation was given to emerging markets. Accordingly, it can be determined that this has mitigated the long-term global need to replenish existing reserves.

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<sup>4</sup> <https://www.biznisvesti.mk/mmf-zapochna-so-raspredelbata-na-650-milijardi-dolari-na-zemjite-chlenki/> accessed on 07.06.2022

**Table 1 Overview of the projections for the world economic perspective expressed in percentages for the period 2021 – 2023**

	Year over Year								
	2020	2021	Projections		Difference from April 2022 WEO Projections 1/		Q4 over Q4 2/		
			2022	2023	2022	2023	2021	2022	2023
<b>World Output</b>	-3.1	6.1	3.2	2.9	-0.4	-0.7	4.4	1.7	3.2
<b>Advanced Economies</b>	-4.5	5.2	2.5	1.4	-0.8	-1.0	4.7	1.3	1.5
United States	-3.4	5.7	2.3	1.0	-1.4	-1.3	5.5	1.0	0.6
Euro Area	-6.3	5.4	2.6	1.2	-0.2	-1.1	4.7	0.7	2.1
Germany	-4.6	2.9	1.2	0.8	-0.9	-1.9	1.8	0.5	1.5
France	-7.9	6.8	2.3	1.0	-0.6	-0.4	4.9	0.4	1.1
Italy	-9.0	6.6	3.0	0.7	0.7	-1.0	6.4	0.6	1.6
Spain	-10.8	5.1	4.0	2.0	-0.8	-1.3	5.5	1.3	2.3
Japan	-4.5	1.7	1.7	1.7	-0.7	-0.6	0.4	2.4	0.6
United Kingdom	-9.3	7.4	3.2	0.5	-0.5	-0.7	6.6	0.1	1.3
Canada	-5.2	4.5	3.4	1.8	-0.5	-1.0	3.2	2.5	1.7
Other Advanced Economies 3/	-1.8	5.1	2.9	2.7	-0.2	-0.3	4.6	2.0	2.8
<b>Emerging Market and Developing Economies</b>	-2.0	6.8	3.6	3.9	-0.2	-0.5	4.2	2.1	4.7
Emerging and Developing Asia	-0.8	7.3	4.6	5.0	-0.8	-0.6	3.8	4.0	4.7
China	2.2	8.1	3.3	4.6	-1.1	-0.5	3.5	4.1	3.2
India 4/	-6.6	8.7	7.4	6.1	-0.8	-0.8	3.9	4.1	7.2
ASEAN-5 5/	-3.4	3.4	5.3	5.1	0.0	-0.8	4.7	3.4	6.1
Emerging and Developing Europe	-1.8	6.7	-1.4	0.9	1.5	-0.4	6.1	-7.0	7.7
Russia	-2.7	4.7	-6.0	-3.5	2.5	-1.2	4.8	-13.9	4.8
Latin America and the Caribbean	-6.9	6.9	3.0	2.0	0.5	-0.5	3.9	1.8	2.1
Brazil	-3.9	4.6	1.7	1.1	0.9	-0.3	1.6	1.5	1.5
Mexico	-8.1	4.8	2.4	1.2	0.4	-1.3	1.2	2.9	1.0
Middle East and Central Asia	-2.9	5.8	4.8	3.5	0.2	-0.2	...	...	...
Saudi Arabia	-4.1	3.2	7.6	3.7	0.0	0.1	6.7	6.9	3.7
Sub-Saharan Africa	-1.6	4.6	3.8	4.0	0.0	0.0	...	...	...
Nigeria	-1.8	3.6	3.4	3.2	0.0	0.1	2.4	2.1	2.3
South Africa	-6.3	4.9	2.3	1.4	0.4	0.0	1.8	2.2	1.7
<i>Memorandum</i>									
World Growth Based on Market Exchange Rates	-3.4	5.8	2.9	2.4	-0.6	-0.7	4.4	1.6	2.5
European Union	-5.8	5.4	2.8	1.6	-0.1	-0.9	4.9	0.9	2.8
Middle East and North Africa	-3.4	5.8	4.9	3.4	-0.1	-0.2	...	...	...
Emerging Market and Middle-Income Economies	-2.2	7.0	3.5	3.8	-0.3	-0.5	4.3	2.0	4.7
Low-Income Developing Countries	0.1	4.5	5.0	5.2	0.4	-0.2	...	...	...
<b>World Trade Volume (goods and services) 6/</b>	-7.9	10.1	4.1	3.2	-0.9	-1.2	...	...	...
Advanced Economies	-8.8	9.1	5.3	3.2	-0.3	-1.4	...	...	...
Emerging Market and Developing Economies	-6.2	11.7	2.2	3.3	-1.8	-0.9	...	...	...
<b>Commodity Prices (US dollars)</b>									
Oil 7/	-32.7	67.3	50.4	-12.3	-4.3	1.0	79.2	28.6	-13.4
Nonfuel (average based on world commodity import weights)	6.7	26.1	10.1	-3.5	-1.3	-1.0	16.4	5.7	-0.6
<b>World Consumer Prices 8/</b>	3.2	4.7	8.3	5.7	0.9	0.9	5.6	8.3	4.1
Advanced Economies 9/	0.7	3.1	6.6	3.3	0.9	0.8	4.9	6.3	2.3
Emerging Market and Developing Economies 8/	5.2	5.9	9.5	7.3	0.8	0.8	6.1	10.0	5.7

Source: <https://www.imf.org/en/Publications/WEO/Issues/2022/07/26/world-economic-outlook-update-july-2022> accessed on 19.08.2022

According to Table 1, the conditions and turbulences of the movements of the global economy during the pandemic crisis are evident, and in comparison with today's movements in the conditions of a new military crisis. According to the above described data, it can be noted that, the movement of the global economy in 2021, reached a recovery and growth of 6.1%. This recovery in 2021 was followed by positive spillovers from trade partners, but also by additional support from the United States. A similar strengthening moment at the beginning of 2022 was expected in France, Germany, Italy, Spain, Japan, as well as in many other economies in Europe. But, the actual data on emerging markets and developing economies indicates that in 2022, they decreased to 3.6%, in contrast to 2021, which reached a growth tendency of

6.8%, especially for Asia. In contrast to this, the data in advanced economies recorded a growth tendency. Compared to this in 2022, it is forecast to have a lower growth rate of 3.2% which is 0.4% points lower than the April forecast according to the World Economic Outlook 2022. The reason for this situation was the global production, which decreased in the second quarter of this year, as a result of the military expansion on Ukraine and the developments in China, but also with the reduced expectations of consumption in the United States. For advanced economies, growth data has been revised for 2021-22-23, based on expected further normalization, with additional fiscal support.

In this direction, it can be concluded that these two successive crises left their consequences in the movement of the global economy followed by great turbulence in the economies of the countries and reduced the development of their GDP. Analyzed by region, during the pandemic crisis the biggest change was observed in a larger group of countries from Europe. This was to be expected from the fact that these economies pushed market reforms faster. But, due to a series of global factors, as well as changes in the structure of economies, more significant shifts in their structure were noticeable. On the other hand, it can be noted that the growth rate in the countries listed in the table constantly oscillates over the years and therefore a general trend of improvement cannot be concluded. If the course of the two crises is analyzed by groups of countries in the past few years, it will be noted that the global tendency is mainly dictated by the course and developments in developed and newly developed countries. Compared to that, for developing economies it is pointed out that they still need to improve their macroeconomic climate, in order to improve their short-term and long-term financing.

Crucial to developing countries was that they had \$200 billion in demand to fight the pandemic and an additional \$250 billion to return to pre-pandemic status. Access to international liquidity was vital to help these countries in crisis.<sup>5</sup> Therefore, there was a great deal of uncertainty that was not seen for a long time and initiated large movements in the international financial markets.

In the backward trend were the big continuous declines in the world stock markets since 2020. With which, in the past period, the unstable movements of the world stock markets were different, with great turbulence. As their stabilization and again their decline. The reason for this was the pandemic that

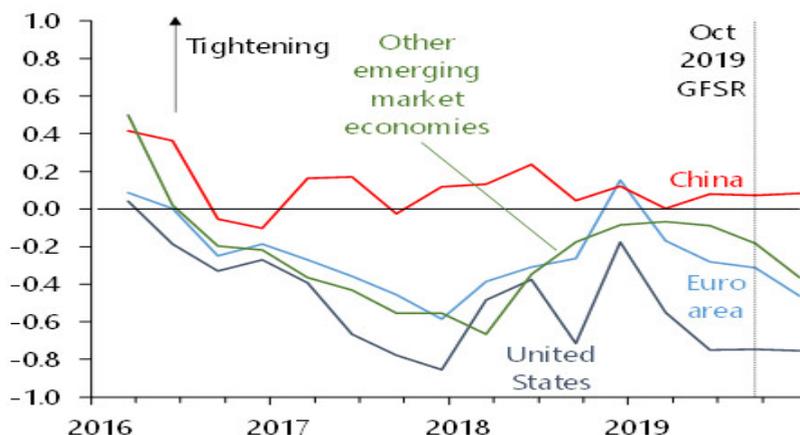
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<sup>5</sup> <https://www.imf.org/en/Publications/WEO/Issues/2022/01/25/world-economic-outlook-update-january-2022> accessed on 23.05.2022

determined their condition in which the financial markets were located from Shanghai through Frankfurt to New York and others. Exchange rates have been different from the real economy for too long. For example, the state of German industry, which had been in recession for months, and the weak movement in the German economy were not taken into account. All this has led to major declines in the world's economies and large losses to countries. But, if this crisis is compared to the financial crisis of 2008, the result is well known: hundreds of billions of dollars, euros, yuan and yen were highly valued in national economies – money that countries did not actually have. The consequences of this are still felt today, for example in terms of interest rates with all the negative consequences for banks and depositors. Such was the case with Deutsche Bank,<sup>6</sup> which in 2020, its shares fell and faced a downward a negative record.

### Chart No. 1 Global Financial Stability Movements for 2019

**Figure 1. Global Financial Conditions Indices**  
(Number of standard deviations from mean)



Sources: Bank for International Settlements; Bloomberg Finance L.P.; Haver Analytics; IMF, International Financial Statistics database; and IMF staff calculations.

Note: Other emerging market economies comprise Brazil, India, Mexico, Poland, Russia and Turkey. GFSR = Global Financial Stability Report.

Source: <https://www.imf.org/en/Publications/WEO/Issues/2020/01/20/weo-update-january2020> accessed on 17.06.2022

<sup>6</sup> <https://www.dw.com/mk/%D0%BA%D0%BE%D1%80%D0%B0%D0%BD%D0%BE%D0%B2%D0%B0%D1%80%D0%B8%D1%83%D1%81-%D0%B4%D0%BE-%D0%BA%D0%B0%D0%B4%D0%B5-%D1%9C%D0%B5-%D0%BE%D0%B4%D0%B8-%D0%BF%D0%B0%D0%B4%D0%BE%D1%82-%D0%B-D%D0%B0-%D0%B1%D0%B5%D1%80%D0%B7%D0%B8%D1%82%D0%B5/a-52820458> accessed on 10.06.2022

According to Chart 1, the movements in the global financial situation that were favorable in contrast to two years ago are evident. Namely, these movements were stable until 2019, and then became much more turbulent, although there was a easing of the situation in some individual economies. In terms of trade tensions, financial markets have fluctuated more or less according to the latest trade-related projections. Also net, global stock markets rose about 8%, while long-term yields in the eurozone, Japan and the United States rose 15-30 basis points from very low levels. These developments have made the US financial situation unchanged on the network.<sup>7</sup>

## **2. THE IMPACT OF MILITARY EXPANSION ON THE INTERNATIONAL ECONOMY**

Before the war, the world economy was on the road to a strong recovery from the pandemic. The conflict in Ukraine has disrupted supply chains, which have again dealt a severe blow to the recovery of economies and markets.

The ongoing invasion of Ukraine and sanctions against Russia are expected to generate significant economic spillovers into the international economy, mainly through six channels:<sup>8</sup> global goods, invasion-related production disruptions, blocking the movement of labor force, sanctions markets, and severely disrupted access to cross-border payment systems, disrupt trade and especially food and energy. The magnitude of these changes will depend not only on declining exports as a result of conflict and sanctions, but also on the resilience of global supply and demand.

Although oil prices have risen sharply, free capacity in other countries and the release of oil reserves are likely to mean that these increases will be sustained in the medium term.

In addition, the relatively inflexible infrastructure required for gas transportation means that global supply cannot be easily adjusted, increasing projections for higher prices over time. Even before the war, during the pandemic, inflation increased in many economies due to high commodity prices and the imbalance of supply and demand caused by the pandemic. The central banks of some developed economies, such as the US Federal Reserve and those in Latin America, were already under pressure before the war. This has contributed to

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<sup>7</sup> <https://www.imf.org/en/Publications/WEO/Issues/2020/01/20/weo-update-january2020> accessed on 18.06.2022

<sup>8</sup> Analysis, of Ass. Prof. Dr Miki Runtev PhD of economics, direction of international financial management

the tightening of their monetary policy. Lack of supply associated with the war can greatly increase these pressures. However, mitigation is expected in the future as production in many places responds to higher prices.

During 2022, the invasion of Ukraine caused great economic damage that could contribute to a significant slowdown in global growth, and further higher inflation. In particular, fuel and food prices have risen rapidly, affecting vulnerable low-income countries. Therefore, global GDP growth is projected to slow sharply in 2022 and 2023, to around 3%.<sup>9</sup> The growth trend is expected to be significantly weaker than expected in almost all economies. Currently, the most severely affected are the countries of Europe, which are directly exposed through the import of energy, raw materials, oil and refugee flows.

Russia and Ukraine are important suppliers in many commodity markets. Together they accounted for about 30% of global wheat exports, 20% for corn, mineral fertilizers and natural gas and 11% for oil. With which, the prices of these products increased sharply after the beginning of the war, especially endangering the low-income countries.<sup>10</sup>

The COVID crisis in 2020, which slowed down global growth, now in 2022, in terms of military expansion, it will be at a lower growth rate of 3.6%. While, for 2023, global growth is projected to decline to around 3.3% in the medium term. Rising commodity prices caused by the war and rising price pressures led to inflation projections for 2022 of 5.7% in advanced economies and 8.7%, in emerging markets -1.8 and developing economies by 2.8% points higher than the 2021 projections.<sup>11</sup>

In many countries, inflation has become a major problem. In the economies of the United States and some European countries, it has reached its highest level. For emerging markets, this can significantly increase the risk of social unrest. Therefore, there is an increased risk that inflation expectations will be exceeded, which will provoke a more aggressive response to tightening by central banks.

The invasion of Ukraine increased the risk of further fragmentation of the world economy into geopolitical blocs with different technological standards, cross-border payment systems and reserve currencies. Such tectonic shifts can lead to high adjustment costs and long-term efficiency losses as supply chains and production networks change.

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<sup>9</sup> <https://www.oecd.org/economic-outlook/> accessed on 20.06.2022

<sup>10</sup> <https://www.oecd.org/economic-outlook/>

<sup>11</sup> <https://www.imf.org/en/Publications/WEO/Issues/2022/04/19/world-economic-outlook-april-2022> accessed on 23.06.2022

In times of military crisis, effective policies at the international level can play an even more important role in shaping economic results. To this end, central banks can adjust their monetary policies even more aggressively. But if long-term inflation expectations start to deviate from the central bank's targets or core inflation remains steadily rising, then emerging economies could face a further withdrawal of capital depreciation and currency, which would further increase inflationary pressures.

The invasion of Ukraine and the sanctions on Russia have had important consequences for the global economy. Impacts and effects have spread more widely especially in Europe, through international spillovers with global commodity prices, trade and financial ties, unemployment, labor supply and humanitarian impacts, and so on.

Expectations of tighter policies and concerns about the war contributed, again, to financial market instability and rising risks. In particular, war and related sanctions have exacerbated global financial conditions, reduced risk appetite, and stimulated quality flows.

The invasion of Ukraine and sanctions on Russia have also had a direct impact on the eurozone economy, driven by rising world energy prices and energy security. Therefore, higher global prices are a negative shock to the trade situation for most European countries, which translates into lower production and higher inflation. In this regard, the disruption of the supply chain has hurt some industries, further hampering the production of key inputs.

As a consequence, the GDP growth of the euro area has been revised down to 2.8% or 1.1% point lower than in January 2022.<sup>12</sup> The largest economies in Europe, with relatively large production sectors, but also with greater dependence on energy imports from Russia, also faced a downward trend.

## **Conclusion**

Over the past three years, changes in the international environment have been strongly influenced by the pandemic. It caused a deep decline in global economic activity and high volatility in financial markets. The timely measures taken by policy makers globally due to the crisis have helped markets to stabilize rapidly and prevent risks from spilling over into the financial sector.

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<sup>12</sup> International Monetary Fund, World Economic Outlook – War Sets Back the Global Recovery, apr.2022 pg.4

However, as economies and markets have successfully recovered from the pandemic, a new threat to the international economy has emerged the Russian-Ukrainian invasion. As a result, economic activity slowed down or stopped altogether, reducing the supply of goods and services to world markets. Furthermore, this caused a major shock to energy prices, which many countries faced with rising inflation and uncertainty. Therefore, it can be noted that the stabilization of the international economy, which was supported by monetary and fiscal economic stimulus from the countries, is still ongoing.

In conclusion, it can be determined that in regulating global economic and financial mobility in this new war crisis period, the connection between stock exchanges, institutional networking, ownership or functional, with other international markets and their long-term stabilization should be important. Also, this should be in the direction of overcoming the challenges faced by central banks, portfolio investments, FDI, inflation, etc., which have hit the international economy hard and caused great turbulence again. The important thing for them is that, during the pre-pandemic and military crisis, they were stable and navigable without any special trading challenges.

According to many analyzes of the market situation, it can also be concluded that in the last three years there have been significant changes in the financial architecture. Special emphasis is placed on the role played by international financial centers.

In this direction, it can be determined that poorly developed and developing countries are in desperate need of support, which require the attraction of domestic and foreign financing. In such an environment, higher external financing costs could be catastrophic, especially if the Fed changes its adaptive policy, which to date helps emerging markets and starts raising rates. Therefore, emerging economies need to carefully balance fiscal and monetary policies, provide transparent information about them, and closely monitor their impact on the cost of external borrowing.

It is characteristic that in just 10 years since the last great financial crisis, the international economy and the financial markets have again faced a crisis and great turbulence and uncertainty. A fact that indicates that every 10 years there is a crisis, turbulence stabilization and re-crisis, especially in Europe and the United States.

It can also be concluded that the slowdown in the growth of the international commodity economy in the future may affect changes in the structure of services in production and consumption, especially the expansion of economic opportunities of developing countries.

However, the uncertainty factor also initiated a movement in the financial markets that had not been seen for a long time.

An essential problem is that emerging economies need to close the gaps with advanced economies in order to reap the benefits and experiences of international trade and labor mobility in financial markets, and also to overcome all uncertainties and crises.

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- 9 United Nations Conference on Trade and Development Unctad;
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- 11 <https://unctad.org/news/global-foreign-direct-investment-fell-42-2020-outlook-remains-weak>;
- 12 <https://unctad.org/news/global-foreign-direct-investment-fell-42-2020-outlook-remains-weak>;
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**(Original scientific paper)**

## **TECHNOLOGICAL CHANGE AND FINANCIAL INNOVATION IN BANKING**

**Abstract:** The banking sector is changing due to technological revolution, globalization, innovation processes, and new ideas. Hence now adays banks' concentration is on investments in advanced technology and innovation it is made to improve operational procedures in order to serve the customer in accordance with their needs and requirements. To understand how the banking industry has evolved over time, we need to understand the process of financial innovation, which has transferred the entire financial system.

This paper first describes the role of innovation in the banking system and how those changes such as: technologies, globalization, innovation has affect banking system. The main objective of the present resource is review the empirical studies relating to several specific financial and banking innovation. Research has been carried out using secondary data drawn from a diverse pool of materials, including books, journals and other credible reports from international institutions. This research concludes that development and application of a variety of financial technology, has improve the way of doing business and enhance competitiveness of commercial banks by reducing bank operating costs, improving service efficiency, strengthening risk control capabilities, and creating enhanced customer-oriented business models for customers.

**Keywords:** innovation, baking, technology change.

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## **INTRODUCTION**

During the last two decades, innovation has been an important topic for researchers, because of its influence and contribution in economic growth and to the stability of financial systems. In process of achieving a market condition of managing bank system should implementation an innovation technology in order to increase competitiveness.

Based on the literature review, financial innovation has been different ways defined. According to Schumpeter innovation means something new that may involve a new good or higher quality than their previous counterpart, new production, new source of supply, the opening of new markets.<sup>3</sup>

On the same view, Rogers definition for innovation is prescribe as a an idea, practice or object that is perceived as new by an individual or group (or organization).Also he refers the word “technology” and “innovation” as the same one meaning that technology is instrumental action that decrease the uncertainty in the cause-effect relationships in order to achieve wanted outcome.<sup>4</sup> Based on the Solans definition it is mention that financial innovation on the same way as technological advances simplify access to information, way of the payment and trading, and the needs for new financial instruments and services, new way of organization which will developed and complete financial market.<sup>5</sup>Also, Frame and White defined an innovation new concept, a new product and organizational that helps to reduce cost or risk for banks, the overcoming of agency problems and information asymmetries, and improvement of the service for the whole financial system.<sup>6</sup>

While defining financial innovation it is important to mentation that innovation can be separation into three groups, according to where innovation take place:<sup>7</sup>

- Process innovation means to a new process that give the opportunity for a new financial product and service.

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<sup>3</sup> Schumpeter, J. A. (1934). *The theory of economic development – An inquiry into profits, capital, credit, interest, and the business cycle*. Cambridge, MA: Harvard University Press

<sup>4</sup> Rogers, E.M. (2003). *Diffusion of innovations* (5th ed.). New York: Free Press.

<sup>5</sup> Solans, D., (2003). *Financial innovations and monetary policy*. Speech, Delivered at the 38th SEACEN Governors Conference and 22nd Meeting of the SEACEN Board of Governors on Structural Change and Growth.

<sup>6</sup> Frame W.S., White L.J. (2004) *Empirical studies of financial innovation: lots of talk, little action?*, *Journal of Economic Literature*. Vol. 42, p: 116-144.

<sup>7</sup> Vargas, A. R. (2009). *Assessing the contribution of financial innovations to the production of implicit services of financial intermediation in Costa Rica*. *IFC Bulletin*, Vol.3,p: 445-466.

- Organizational innovation involves a new organizational structure which will be implemented in the company and will influence the whole system of the company.
- Product innovation are new product or service are created to fulfil costumers needs based on the market demands

On the other hand, Lerner & Tufano, divide innovation into two categories, which are product and process innovations. The products are new derivative contracts, new corporate securities or new forms of pooled investment products, the process are new means of distributing securities, processing transactions or pricing transactions.<sup>8</sup>

Nowadays innovation is alternative word for the development countries, progressive financial system and all other sectors of the economies of the country. Innovation contains two part: first one is the act of invention and second one is diffusion even though those to parts are connected with each other because most of the financial innovation are evolutionary adaptation of prior products.

At this time, embrace of financial technologies in banking industry has becoming a crucial for development and enhancing of profit in banking industry and has influence the application of electronic banking, digital technology, alternative payment methods, block chain and cryptocurrencies, artificial intelligence and machine learning and etc.

Research analyses about the application of new technology and the performance of Turkish bank during period 1996 and 2005 conclude that the adoption of online banking has significant impact on the performance of commercial bank.<sup>9</sup> On the same view, research analyses that is done in UK retail banks for the period 2010 to 2016 with the purpose to explain the role and impact of Fintech digital banking start-ups in the financial industry, the result conclude that Fintech have a positive effect on incumbents' stock returns.<sup>10</sup>

Furthermore, analyses done on Lebanese bank for the period 2010 to 2017 studied the influence of technological innovation on bank performance. Findings suggest that financial innovation such as: internet banking, mobile

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<sup>8</sup> Lerner, J., & Tufano, P. (2011). The consequences of financial innovation: A counterfactual research agenda.

<sup>9</sup> Onay, C., Ozsoz, E., & Helvacioğlu, A. P. D. A. D. (2008). The impact of internet-banking on bank profitability-The case of Turkey. In 2008 Oxford Business & Economics Conference Program, St. Hugh's College, Oxford, UK.

<sup>10</sup> Li, Y., Spigt, R., & Swinkels, L. (2017). The impact of FinTech start-ups on incumbent retail banks' share prices. *Financial Innovation*. Vol.3(1),p:1-6.

banking, ATMs and investment in computer software had a positive impact on bank profitability.<sup>11</sup> Broadly speaking based on the above research, findings conclude that Fintech support the development of banking industry also Fintech services would have a positive impact on banks' performance.

Therefore, the main reason for the research of this topic is to investigate the type of financial innovation and technological change that have impact on profitability of commercial banks.

### **1. New banking financial technology with focus on innovations**

The banking sector is changing due to technological revolution, globalization, innovation processes, and new ideas. Nowadays banks concentration is in investments for advanced technology and innovation it is made to improve operational procedures in order to serve the customer in accordance with their needs and requirements.

Meanwhile, the improvement of technology and innovation in products, process and organizational of banks could help to minimize the growing risks faced by the sector itself. According to Berger, investment in technological improvements such as ATM's and internet banking, which are considered as product (ATM) and process (internet banking) innovations, are proved to be positively linked with bank profitability and also will reduce costs and increase the quality of lending favor the client.<sup>12</sup>

The most important source of changes in supply conditions that has stimulated financial innovation has been the improvement in technology information. Technology information has had two effects. First, it has reduced the costs of processing financial transactions, creating new financial products and services. Secondly, it has made it easier for investors to get information.

Banks focus should be new technological and innovation to improve efficiency, increase productivity and overall performance.

The development of technology has led to new product and service also the ability to provide services electronically. The adoption of new technology in banking system has become the standards as way of securing a competitive advantage in the electronic age.

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<sup>11</sup> El-Chaarani,H., & El-Abiad, Z.(2018). The impact of technological innovation on bank performance, *Journal of Internet Banking and Commerce*. Vol. 23(3) p: 1-33.

<sup>12</sup> Beck, Th., (2003), *Financial Development and Economic Growth: Stock Markets versus Banks?*, *Private Sector Development* , Proparco's Magazine, *Africa's Financial Markets: A Real Development Tool?* Vol.5

Banks are interested in increasing customer service that can always be available to customers while generating profit for the bank requires investment costs. Thus, the innovations in banking sector include:

### **1.1. Electronic banking**

An integral part of a bank in this century is that with the development of technology the need to advance with technology is imperative. Development of new electronic banking such as mobile software, development of automation and digital security.

Nowadays, banks offer different forms of online banking or electronic banking. The challenge of this industry is to design this new channel for providing banking services, in a simple and reliable way to be used by customers. This service provided by banks must meet two basic conditions which are: to be safe and to be functional and for this service clients pay a certain fee.

According to Santo about the services that banks offer through e-banking, they are classified into four groups:<sup>13</sup>

- Informative. The bank uses the online system to inform clients about the products and services it offers in electronic way.
- Communicator. This system enables communication between the client and the bank in electronic way.
- Interactive with the user. The client is informed about the products and services that the bank offers by clicking on each product or service to get the relevant information. If the client is interested in getting a loan, they can calculate the interest rate, the monthly online instalment and can apply online the same applies to deposits.
- Transactional. The online system enables the client to perform transactions himself. The client can transfer money within his own bank accounts, to any other bank, apply for loans, for debit/credit card, make various payments. So all the typical services of a traditional banking are performed by online banking.

Compared to traditional banking, electronic banking offers ease, convenience and access for their customers so that they can use the banking site for all types of transactions in a secure environment. Customers can interact on the banking site 24 hours a day, seven times per week.

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<sup>13</sup> Santos, J. (2003). E-service quality: a model of virtual service quality dimensions, *Managing Service Quality: An International Journal*, Vol. 13(3), p: 233-246.

E-banking can improve the efficiency of a bank and increase competitiveness, in this way existing and potential customers can benefit more and this will affect transactions way of doing.

## **1.2. Debit and credit card**

Credit card are the most standardized instruments that are used to obtain money, property, or service on credit with specific credit terms established by the issuing bank.<sup>14</sup>

The success of credit card banks has led banks to come up with a banking innovation that is debit cards. Debit cards are essentially instruments that give the costumers access to their funds to pay or to withdraw money at ATM machines.<sup>15</sup>

Thus, debit cards are used for purchases in the same way as credit cards, but unlike a credit card in which the buyer is issued a credit to which he owes, credit card purchases only deduct the amount of the purchase from the cardholder's bank account.

Using debit and credit card have some benefits based on Zimman analyses, those benefits are:

- Acceptance: credit and debit card have same high acceptance rate.
- Security: credit and debit card have same level of protection and incurred the same fraud risk.
- Time costs: credit and debit card do not requires going to bank.
- Portability: credit and debit card have similar advantages.
- Pecuniary costs: the different consequences/costs for a customer that would exceed his line of credit are: over limit fee, decrease of the credit score, penalty pricing.<sup>16</sup>

Moreover, debit and credit cards are payment instruments issued by banks so that customers can access their funds at any time to make payments, as well as to withdraw cash from ATMs. Although bank cards are a technology invented many decades ago, their use in Republic of North Macedonia and the region still remains in the shadow of cash which dominates payments in the economy. However, the trends of banking customers in recent years are in the direction of using digital services, including bank cards.

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<sup>14</sup> Woelfel, C.J. (1994) .The Dictionary of Banking. Illinois, NY: Probus Publishing.

<sup>15</sup> Fitch, T.P. (2000). Dictionary of Banking Terms. Hauppauge, NY: Barron's Educational Series, Inc.

<sup>16</sup> Zinman, J. (2009), Debit or Credit?, Journal of Banking and Finance, Vol33(2), p: 358-66.

This trend of increased use of credit cards can be confirmed also in the Macedonian banking sector. The following table shows the number of Credit Card and Debit Card cards for the period 2005-2018 in Republic of North Macedonia. From the table we see that we have a significant increase from year to year in the use of bank cards offered by banks operating in Republic of North Macedonia.

**Table 3.1. Number of debit and credit card in circulation on Republic of North Macedonia period 2005-2018**

Year	Na. of CREDIT CARD in circulation	Na. of Debit CARD in circulation	Total CARD
2005	75,859	77,783	153,642
2006	115,827	221,617	337,444
2007	178,630	353,551	532,181
2008	197,740	481,477	679,217
2009	267,947	559,198	827,145
2010	374,159	1,048,183	1,422,342
2011	351,545	1,098,800	1,450,345
2012	350,580	1,156,562	1,507,142
2013	368,135	1,188,947	1,557,082
2014	369,953	1,231,492	1,601,445
2015	381,639	1,289,126	1,670,765
2016	564,691	1,316,985	1,881,676
2017	548,968	1,273,029	1,821,997
2018	550,088	1,271,395	1,821,483

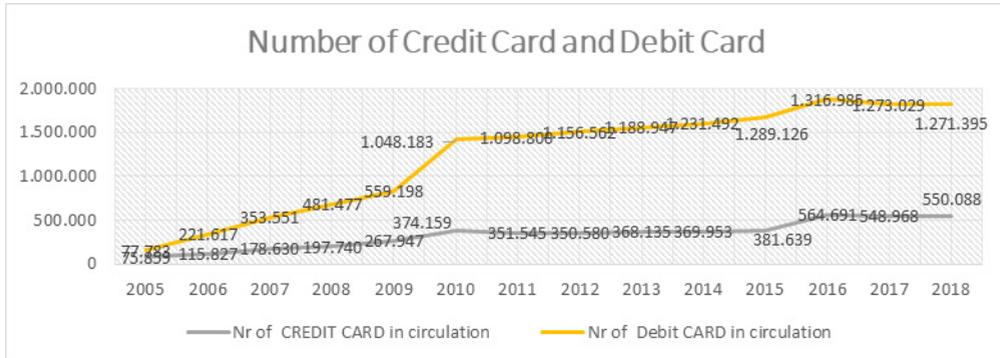
*Source: Authors' compilation based on the Report on the use of payment cards and devices for their use in the country, National Bank of the Republic of Macedonia.*

At the end of 2018, the number of cards in use was about 1.82 million cards, of which 550 thousand Credit Card and 1.27 million Debit Card. The trend of the largest increase of cards in use was recorded in the period 2005 - 2010.<sup>17</sup>

<sup>17</sup> Report on the use of payment cards and devices for their use in the country, National Bank of the Republic of Macedonia.

The following chart best explains the trend of moving the number of bank cards on Republic of North Macedonia.

**Figure 3.1 Number of Credit and Debit Card on Republic of North Macedonia period 2005-2018**



Source: Authors' compilation based on the report on the use of payment cards and devices for their use in the country, National Bank of the Republic of Macedonia

This confirmation that the behaviours of the clients also have a key role in introducing new products. The increase in bank card transactions is a positive indicator both for the replacement of cash with card transactions which in direct way have impact on increasing non-interest income for banks and for the whole economy country's as well. The main benefits and advantages for bank card payments are numerous including:

- Higher security and efficiency in payments, enabling payment even for transactions for small and daily amounts;
- Bank card payments can be made on all POS equipment of Republic of North Macedonia banks, without commission and regardless of the amount you pay;
- Bank card payments help fight the informal economy and prevent the spread of counterfeit money;
- Easier and faster control of payments through electronic banking report;
- Increase non-income for banks and this have a direct contribution on bank profitability

The banking sector in Republic of North Macedonia continuously contributes to the digitalization of the process hence there is a positive trend of

increased number of credit cards and debit cards and increased value of payments made with them because improvement and modernization started.

### 1.3. ATM

An important form of an electronic banking device is the Automated teller machines (ATM). Automated teller machines (ATMs), is another financial innovation which were introduced in the early 1970s and diffused rapidly through the 1980s which resulted from the desire to avoid the restrictions of branching.

The reduce cost of computer and telecommunications technology enabled banks to provide ATMs at lower costs, making them profitable innovations. Moreover, empirical analyses done in UK during the period the period 1976–1996, proposed that the high number of ATMs installed by the bank the higher the bank profitability.<sup>18</sup> Also, another empirical analysis done in the 11 European country highlights that the number of ATM and electronic payments have positive effect on bank profitability by reducing the operating cost to asset value.<sup>19</sup>

Analyses of electronic payment system (EPS) in Republic of North Macedonia shows that electronic payment system (EPS) is new compared to other European countries, the key reform started in 2000 and last till 2002. This reform change the environment of banking industry and bring new modern way of payment such as: ATMs, imprinters and POS terminals.

The trend of increasing use of ATMs can be confirmed based implantation of reforms in the Macedonian banking sector. The following table shows the ATM and POS for the period 2005 - 2018 on The Republic of North Macedonia. From the table we see that we have a significant increase from year to year in the use of banking innovation offered by banks operating in The Republic of North Macedonia.

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<sup>18</sup> Holden, K., El-Bannany, M., (2004). Investment in information technology systems and other determinants of bank profitability in the UK. *Applied Financial Economics*, Vol.14(5),p:361-365.

<sup>19</sup> Valverde, S.C., Humphrey, D.B., (2009). Technological innovation in banking: the shift to ATMs and implicit pricing of network convenience. In: Anderloni, L., Llewellyn, D.T., Schmidt, R.H. (Eds.), *Financial Innovation in Retail and Corporate Banking*. Edward Elgar, Cheltenham, UK.

**Table 3.2. Number of ATM and POS on Republic of North Macedonia period 2005-2018**

Year	ATM	POS
2005	157	5,914
2006	297	9,546
2007	529	17,884
2008	761	29,153
2009	832	31,447
2010	869	31,491
2011	876	33,435
2012	852	33,267
2013	930	37,167
2014	959	39,027
2015	1,049	40,501
2016	1,039	34,826
2017	1,031	31,995
2018	1,040	31,542

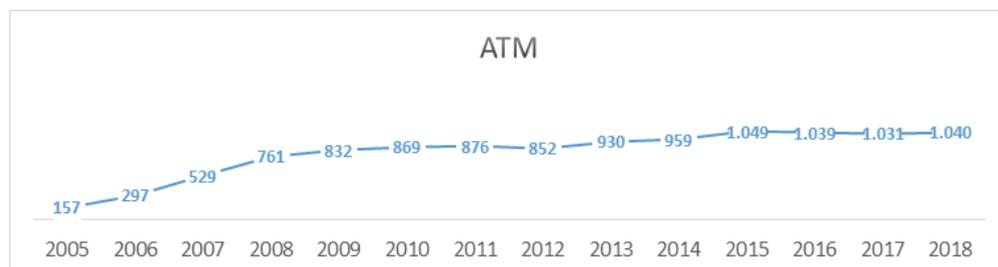
*Source: Authors' compilation based on the report on the use of payment cards and devices for their use in the country, National Bank of the Republic of Macedonia.*

The number of ATMs on Republic of North Macedonia has increased from year to year. Thus, if we compare the period 2005 - 2018, the number of ATMs has increased from 157 ATMs as they were in 2005 to 1040 ATMs in 2018, which represents an increase of 883 ATMs or expressed in percentage 662%.

The largest increase was recorded from 2005 to 2010, where only for this 5year period an increase of 712 ATMs or 453% was recorded as a result of the full implementation of reforms in ESP.<sup>20</sup>

The following chart best explains the trend of ATM number movement

<sup>20</sup> Report on the use of payment cards and devices for their use in the country, National Bank of the Republic of Macedonia.

**Figure 3.2. AMTs trend on Republic of North Macedonia period 2005-2018**

*Source: Authors' compilation based on the report on the use of payment cards and devices for their use in the country, National Bank of the Republic of Macedonia.*

From the figure it is visible that banking industry in Republic of North Macedonia are constantly strengthens the infrastructure for credit card use through increasing of the POS and ATM terminals. The increase of computerized payment systems promises to reduce employee time and the paperwork involved in transferring funds. The use of automatic payment machines (ATMs) provides computerized systems that allow 24-hour banking services, such as electronic withdrawal of money from the deposit account, making deposits and loan payments, as well as the transfer of funds between accounts. Highly advanced ATMs offer customers additional services such as accessing their mutual fund accounts, buying or selling shares, paying utility and store bills, and printing bank statements.

Overall, banking industry in Republic of North Macedonia have adopted information technology to offer classic services in the online form, the growing use of electronic payment systems (EPS) combines both cost savings and increased convenience to customers.

First, reduce costs and improve the quality of customer service as well as to provide standardization of basic services.

Second, the number of bank branches and the number of employees has been reduced, thus minimize cost and increasing the efficiency of banks. In other words, many customers can receive the same service at the same time, without the help of cashiers or bank clerks, reducing administrative work and with it the costs, and consequently the reduction of fees that banks apply to their customers.

In addition, with the help of information technologies and communication technology, it is possible to overcome schedules, waste of time and bu-

reaucratic aspects of traditional banking, to manage personal finances faster and more efficiently.

## **CONCLUSION**

Banking sector develop new products and processes to meet their needs, as well as those of customers driven by the desire to become profitably .The most important source of changes in supply conditions that has stimulated financial innovation has been the improvement in technology information. Technology information has had two effects. First, it has reduced the costs of processing financial transactions, creating new financial products and services. Secondly, it has made it easier for investors to get information.

The development of technology has led to new product and service also the ability to provide services electronically. The adoption of new technology in banking system has become the standards as way of securing a competitive advantage in the electronic age. Hence, financial innovation and technological progress have encouraged to the creation of many financial products, services, production processes, and organizational structures. Innovation it is not the idea of just the creation of a new thing, but it is actually bringing it to market, putting into putting into practice and developing it in a method that leads to new products, process or technology that add value or improve quality. Innovation also mean walking in the same way and in the same direction with the new technology and trying to use it to generate new value to bring new and significant change in society.

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**(Original scientific paper)**

## **SOURCE CREDIBILITY THEORY APPLIED TO INFLUENCER MARKETING**

**Abstract:** Social media represent a strategic resource for companies to promote and build relationships with consumers by using digital influencers, that have a base of followers interested in their content with a certain area of expertise. The purpose of the study is to analyze Instagram influencers' credibility to determine the impact of social media users' perceptions regarding influencers' credibility on their purchase intention. A survey on a purposive sample of 76 Instagram users in North Macedonia that follow influencers was conducted. The results from regression analysis revealed that the trustworthiness and attractiveness of influencers positively affect customers' purchase intention. Finally, recommendations are given to marketing managers regarding the effective use of influencer marketing for the purpose of increasing customers' purchase intention.

**Keywords:** influencer marketing, social media, credibility, purchase intention

**JEL Classification:** M31, M37

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## **Introduction**

Social media platforms are recognized by companies as a strategic resource for not only advertising the brands but also for building relationships with social media users (Shiau et al., 2018) by creating positive associations with brands (Munnukka et al., 2016) thus affecting their purchasing behavior. Social media marketing facilitates brand-related eWOM through influencer marketing (Castillo and Fernández, 2019). In that direction, companies use endorsers, people that demonstrate product use, give information, are perceived as credible and attractive (Batra et al. 1996) and thus positively affect advertisement effectiveness (Spry et al., 2011) and customers' purchase intention (Belch and Belch, 2013). With the rise of social media, digital influencers, in general, emerged as a valuable alternative for brand promotion. According to Lou and Yuan (2019) social media influencers represent online personalities, regular people who post content with expertise in a certain area, generating a base of followers interested in that area.

Despite digital influencers being a growing brand communication tool, there is a research gap in analyzing the influence of digital influencers on their followers' perceptions regarding endorsed brands (Castillo and Fernández, 2019). In cases when the recipient has little or no information except the message being advertised, the endorser's credibility is especially important (Jain and Posavac, 2001). To increase the effectiveness of advertisement with endorsers, companies need to focus on source credibility (Munnukka et al., 2016; Bower and Landreth, 2001; Pornpitakpan, 2004).

Source credibility is related to the communicator's character and positive personal characteristics that affect message persuasiveness (Ohanian, 1990; Hovland and Weiss, 1951). The endorser, perceived as a credible source of information, is effective in creating purchase aspirations (Ohanian, 1990; Van der Walldt et al., 2009) because consumers perceive influencers as more credible than sellers (Rebelo, 2017). Source credibility is comprised of several dimensions i.e., expertise and trustworthiness (Hovland et al., 1953), and attractiveness (McGuire, 1985). Ohanian (1990) defined source credibility as a three-dimensional construct comprising trustworthiness, expertise, and attractiveness. According to Lou and Yuan (2019), credibility is comprised of four dimensions: trustworthiness, expertise, attractiveness, and similarity.

The aim of this research is to investigate the impact of influencers' credibility on customers' purchase intention relying on source credibility theory that explains the existence of different source credibility dimensions (Munnuk-

ka et al., 2016; Lowry et al., 2013). To the authors' knowledge, this study is the first to empirically examine the effect of four dimensions of source (influencer) credibility on customers' purchase intention on one social media platform i.e. Instagram. Previous research studies mainly focused on investigating advertisement effectiveness and purchase intention through the mediating role of source credibility (Munnukka et al., 2016; Pornpitakpan, 2004; La Ferle and Choi, 2005; Spry et al., 2011; Wang et al., 2017) focusing on social media in general.

## 1. LITERATURE REVIEW

*Expertise:* Source expertise refers to the knowledge or skills of a source to have an opinion, views, and make claims around a certain topic (McCroskey, 1966). Expertise can also refer to the extent to which the communicator is perceived as a source of valid assertions (Munnukka et al., 2016). Moreover, the endorser's expertise relates to attaining adequate skills, knowledge, and experience in endorsing a brand or product (Van der Waldt et al., 2009). Similarly, Ohanian (1990) explains source expertise as the perception of consumers that the endorser is an expert, qualified, skilled, and with proper knowledge.

*Trustworthiness:* Source trustworthiness means that the receiver of the message perceives the source to be honest, sincere, truthful (Giffin, 1967), reliable, dependable (Ohanian, 1990), possessing integrity, and being believable (Van der Waldt et al., 2009). Trust occurs when one has confidence in an exchange partner i.e., the communicator will convey certain assertions that are considered most valid (Moorman et al., 1993; Munnukka et al., 2016). Thus, trustworthiness represents the degree of confidence that the listener has in the source of the message (Ohanian, 1990). According to Munnukka et al. (2016), trustworthy endorsers have product expertise and therefore are more persuasive (Ohanian, 1990).

*Attractiveness:* According to McGuire (1985) source attractiveness concerns physical aspects of the source such as attractiveness, likeability, or similarity. However, attractiveness or the positive associations regarding a person include other characteristics besides physical attributes such as personality and athletic ability (Erdogan, 1999). Ohanian (1990) indicated the elegant, classy, attractive, beautiful, or sexy characteristics of the attractiveness dimension of endorsers.

*Similarity:* Similarities in cultural background, demographics, and values between the source of the message i.e., the endorser and the recipient

facilitate source credibility (Munnukka et al., 2016, Morimoto and La Ferle, 2008). Advertising effectiveness is under the influence of customers' positive attitudes towards the brand created when there is a high degree of similarity between the endorser and the customer (Munnukka et al., 2016). The findings of Munnukka et al. (2016) indicate that when consumers perceive an endorser as trustworthy, they perceive the endorser as similar to them as well.

*Purchase intention:* Purchase intention, the possibility that customers will purchase the product (Lou and Yuan, 2019) is the situation where customers are consciously planning to purchase a product or a brand (Spears and Singh, 2004) and represents an antecedent of actual purchase behavior (De Magistris and Gracia, 2008). The study of Chakraborty and Bhat (2018) confirmed that consumers' perceived credibility of a review affects purchase intentions. In terms of social media influencers, Sokolova and Kefi (2019) confirmed that Instagram and YouTube bloggers' credibility determines customers' purchase intention.

Yoon et al. (1998) empirically proved that **expertise**, as part of the source credibility construct, has a positive influence on customer's purchase intention, whereas the study of Ananda and Wandebori (2016) confirmed the positive influence of YouTube beauty vloggers' expertise on customers' purchase intention. Therefore, we propose the following hypothesis:

H1: The expertise dimension of Instagram influencers' credibility positively affects customers' purchase intention.

**Trustworthiness** has a strong influence on advertising effectiveness and brand attitude (Munnukka et al., 2016), thus affecting customer's purchase intention (Belch and Belch, 2013). According to Lou and Yuan (2019), Yoon et al. (1998), Rebelo (2017), Weismueller et al. (2020), and Ananda and Wandebori (2016) trustworthiness positively influences purchase intention. Furthermore, the direct positive effect of social media influencers' trustworthiness on customers' purchase intention is confirmed in the study of Saima and Khan (2020). Based on all the above, we suggest the following hypothesis:

H2: The trustworthiness dimension of Instagram influencers' credibility positively affects customers' purchase intention.

One of the key factors affecting companies' message effectiveness is **source attractiveness** (Schlecht, 2003). Previous studies indicated that those influencers that are perceived as attractive, have a positive impact on product and customer behavior in terms of purchase intention (Joseph, 1982; Van der Waldt et al., 2009; Rebelo, 2017; Yoon et al., 1998). Based on the above mentioned, we propose the following hypothesis:

H3: The attractiveness dimension of Instagram influencers' credibility positively affects customers' purchase intention.

Yoon et al. (1998) confirmed the positive influence of **similarity** on purchase intention. The similarity is a persuasion facilitating factor (Brock, 1965) and according to the Social Cognitive Theory people are influenced by social figures similar to them (Bandura, 2001). In that direction, similarity with source of the message is relevant for customers' decision making (Pentina et al., 2015). According to Evans (1963) and Lichtenthal and Tellefsen (2001), customers buy more from salespeople with whom they have some characteristics in common. Moreover, millennials are more likely to purchase a product endorsed by an influencer with a similar self-image as their (Sukhdial et al., 2002). Having in mind previously elaborated, we propose the following hypotheses:

H4: The similarity dimension of Instagram influencers' credibility positively affects customers' purchase intention.

## 2. METHODOLOGY

### 2.1. Sample and measures

We used purposive sampling and distributed online questionnaire to Instagram active users who follow influencers in the Republic of North Macedonia. Starting from an initial sample of 126 respondents, due to missing values and low level of engagement of respondents, 50 questionnaires were removed from the sample, resulting in 76 effective responses that were subject to the multiple linear regression method using the SPSS statistical software.

Regarding demographic and behavioral characteristics, the sample is comprised predominantly of female (73.8%) students (42.5%), that spend at least 1.5 hours on Instagram per day (18.8%). Additionally, the questionnaire consisted of questions related to the four dimensions of influencer's credibility and customer's purchase intention. Items regarding expertise (five items), trustworthiness (five items), attractiveness (five items) and statements regarding customers' purchase intention were adapted from the study of Rebelo (2017). The similarity dimension (3 statements) was adapted from Munnukka et al. (2106). The degree of respondents' agreement with the statements regarding all variables was captured by using a 7-point Likert scale (1 - strongly disagree and 7 - strongly agree).

### 3. RESULTS

#### 3.1 Assessment of reliability and construct validity

To confirm the factors as conceptualized in the literature, we examined the construct validity by running the exploratory factor analysis using p component analysis with Promax rotation. Five factors were extracted (expertise – 5 items; trustworthiness – 4 items; attractiveness – 4 items, similarity – 3 items, and purchase intention – 3 items) explaining 85.857 % of the variance. One item from the attractiveness dimension which relates to “classy” and one item from the trustworthiness dimension which relates to “reliable” were deleted due to a cross-loading problem. Standardized factor loadings for all retained items in the EFA model exceeded the 0.5 threshold value as recommended by Hair et al. (2010). (See Table 1). Additionally, Cronbach’s alpha coefficients for each construct: expertise (0.943), trustworthiness (0.923), attractiveness (0.925), similarity (0.960), and purchase intention (0.932) confirm high internal scales’ reliability as they are above the threshold value of 0.7 as recommended by Hair et al. (2010).

**Table 1. Factor analysis results, factor loadings (N=76)**

No.	Indicator	Factor				
		1	2	3	4	5
	I follow influencers on Instagram because they are...					
	<i>Expertise dimension</i>					
1.	Knowledgeable	.957				
2.	Experienced	.934				
3.	Expert	.934				
4.	Qualified	.789				
5.	Skilled	.712				
	<i>Attractiveness dimension</i>					
1.	Attractive		.913			
2.	Sexy		.906			
3.	Handsome		.872			

4.	Elegant		.794		
	<i>Similarity dimension</i>				
1.	We have a lot in common			.903	
2.	We are a lot alike			.895	
3.	I can easily identify with the endorser			.863	
	<i>Purchase intention</i>				
1.	It is likely that I will buy the products promoted by the influencers on Instagram				.952
2.	I pretend to buy the products promoted by the influencers on Instagram				.942
3.	I am willing to buy the products promoted by the influencers on Instagram				.930
	<i>Trustworthiness dimension</i>				
1.	Honest				.909
2.	Dependable				.907
3.	Sincere				.651
4.	Trustworthy				.606

Source: Authors' calculations

### 3.2 Multiple linear regression method results

To examine the effect of Instagram influencers’ credibility, through its four dimensions, on customers’ purchase intention, we applied the multiple linear regression method with the following equation:

$$(1) \quad Y = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 + \varepsilon$$

where:

Y = purchase intention;  $x_1$  = expertise;  $x_2$  = trustworthiness;  $x_3$  = attractiveness;  $x_4$  = similarity;  $\varepsilon$  = standard error

Normality, linearity, and homoscedasticity were confirmed by examining diagrams of standardized residuals (Tabachnick and Fidell, 2012). Furthermore, the variables meet recommended values for VIF and Tolerance (Hair et al., 1995) (Table 2) and the Durbin-Watson test indicates no autocorrelation in the residuals from the regression analysis (Table 3) (Durbin and Watson, 1971).

**Table 2. Linear regression model coefficients**

Independent Variables Beta	Standardized Coefficients	Sig. Tolerance	Collinearity Statistics	
			VIF	
(Constant)		.178		
Attractiveness	.236	.040	.694	1.441
Trustworthiness	.477	.003	.364	2.748
Expertise	-.157	.329	.347	2.879
Similarity	.131	.362	.433	2.311

Source: Authors’ calculations

The overall model is statistically significant with a p-value=.000 (Table 3).

**Table 3. Model summary**

R Square	Adjusted R Square	p-value	Durbin-Watson
.372	.336	.000	1.875

*Source: Authors' calculations*

The R square and Adjusted R square values (Table 3) indicate that expertise, trustworthiness, attractiveness, and similarity explain 37.3% and respectively 33.6% variation in customers' purchase intention.

Trustworthiness and attractiveness positively influence customers' purchase intention ( $p < 0.05$ ), thus confirming the H2 and H3 (Table 2). Based on the standardized beta coefficients, we can conclude that trustworthiness (0.477) has the strongest positive effect on purchase intention, followed by attractiveness (0.236). On the other hand, H1 and H4 regarding the influence of expertise and similarity dimensions on customers' purchase intention are rejected.

#### 4. CONCLUSIONS AND IMPLICATIONS

There is a gap in the research literature that investigates the effect of the four-dimensional source credibility construct when it comes to digital influencers on a specific social network. A solid base of past research focuses on either the source credibility as a three-dimensional construct (Yoon et al., 1998; Rebelo, 2017; Weismueller et al., 2020) or the effect of source credibility on ad effectiveness (Munnukka et al., 2016; Tripp et al., 1994). However, our study is the first, as known by the authors, to focus on the direct effect of Instagram influencers' credibility as a four-dimensional construct on customers' purchase intention.

The findings from this study confirm the positive effect of attractiveness and trustworthiness dimensions of Instagram influencers' credibility on customers' purchase intention which are in line with the findings of Weismueller et al. (2020) and Rebelo (2017). On the other hand, our research results indicate that customers' purchase intention is not driven by expertise and similarity of the source similar to the findings of Lou and Yuan (2019) and Rebelo (2017).

#### **4.1 Theoretical contributions**

The findings of the conducted research add value to the scientific community and the growing literature in the field of influencer marketing regarding the role and impact of digital influencers on consumer behavior. This study focuses on the four-dimensional construct of source credibility unlike most of the past research that investigated three dimensions of credibility (Yoon et al., 1998; Rebelo, 2017; Weismueller et al., 2020) by including the similarity dimension as suggested by Lou and Yuan (2019). Furthermore, the study deepens the understanding of the individual effect of each of the credibility dimensions on customers' purchase intention when it comes to following influencers on Instagram. Previous research studies mostly focused on the mediating role of the credibility construct and its impact on advertising effectiveness (Munnukka et al., 2016 Tripp et al., 1994).

#### **4.2 Practical implications**

The findings of the study provide marketing practitioners a direct insight into the dimensions of digital influencers' credibility that can affect a company's potential customers and their intention to purchase the product being advertised. Accordingly, marketing practitioners should collaborate with influencers on Instagram that have an attractive appearance and are a reliable and trusted source of information. On the other side, whether influencers have similar features as the company's potential customers and whether they have expertise and knowledge of the product/s being advertised is not relevant to influencers' followers regarding their purchase intention. Thus, social media marketing managers should collaborate mostly with attractive and trusted influencers instead of selecting knowledgeable influencers with similar characteristics as potential customers.

### **5. LIMITATIONS AND FUTURE RESEARCH**

Even though the results of this study significantly contribute to the scientific literature, and provide guidance for real-world marketing practitioners, this research still has its limitations, which future researchers can overcome and improve.

First, although the sample size of at least five times as many observations as the number of variables to be analyzed is sufficient according to Hair

et al. (2010), the larger sample can be used to make it easier to generalize the findings of the study. Furthermore, instead of focusing on one social network, future research studies may focus on the existence of possible differences in social media users' perceptions of influencers' credibility on different social media. Additionally, respondents from several countries can be included in the sample to make a cross-country comparison having in mind cultural differences. Lastly, researchers should draw attention to the relationship between perceived trust in brand-related content created by Instagram influencers or other social media influencers, and customers' perception of influencers' credibility.

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**JOVANKA DAMOSKA SEKULOSKA\*** 331.5:004.031.4-057.54].01  
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(Original scientific paper)

## **INFLUENCE OF THE ONLINE FREELANCING TO THE LABOR MARKET**

**Abstract:** The digitalization of the processes and the appearance of new business models have consequently generated new professions and new modes of working resulting in greater labor prosperity and efficiency. Internet is growing into a huge labor market where freelancers offer their knowledge and skills. The main objective of the research is to analyze the changes resulting from the digitalization of the labor market and growth of the online freelancing. Internet and digital technology have been transforming and revolutionizing the labor market. It has changed the demand for skills, knowledge, and occupations. The paper examines the changing trends in the labor market analyzing primary and secondary data. The main focus of the research is directed to primary research revealing the economic, social, demographic, and motivational aspects behind online freelancing. The questionnaire survey was shared among the freelancers who have tried or pursued a career in the gig economy. The acquired answers provide valuable information about the motives and the challenges the freelancers encounter. The main result of the paper is to identify online freelancing as a key visible indicator of the labor market.

**Keywords:** online freelancing, gig economy, Internet, labor market, digitalization

JEL Classification: J21, J24, O33

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## **Introduction**

The development of digital technologies and the emergence of new business models have resulted in the disruption of the way people work and the global labor market. New technologies lead to new opportunities and change the nature of work. Internet is growing into a huge labor market where freelancers offer their knowledge and skills. Internet and digital technology have been transforming and revolutionizing the labor market. It has changed the demand for skills, knowledge, and occupations. Online gig platforms enable remote workers to serve multiple projects from their homes instead of working full-time for a single employer. Digital labor has become a dominant feature of the global economic landscape (Langley and Leyshon, 2017).

According to the Online Labor Index, an indicator of the online gig economy, the global demand for online freelancing workers has been growing by 11% annually in the period from 2017 to 2021. Online freelancing is getting play an important role in economic development equally for the developed and developing economies. It could be considered a powerful mechanism for the development of the highest portion of the global digital labor force that resides in developing countries. Its relevance is getting higher, especially in times of the global Covid-19 pandemic.

The main objective of the research is to analyze the changes resulting from the digitalization of the labor market and growth of the online freelancing. In the first part of the paper, theoretical aspects of the online freelancing issue are presented. The second section of the paper examines the growing trends in online freelancing referring to the size and occupations. It will be explained the changes in the labor markets resulting from the process of digitalization and the challenges the labor market encounters. The main focus of the research is to reveal the economic, social, demographic, and motivational aspects behind online freelancing. Intentionally, the primary research is conducted to acquire information about the motives and challenges the freelancers encounter. A summary of the research and proposal for future research will be provided in the conclusion part of the paper.

## **1. THEORETICAL BACKGROUND**

Freelancing or the gig economy as a mode of working is not a new phenomenon. The appearance of the gig economy is connected with the Great Recession when most of the workers lost their permanent jobs and started to

work on gigs or short-term tasks. In the research studies, it is revealed that the gig economy provides an opportunity to bridge employment during the recession when traditional full-time jobs are hard to reach (Donovan et al., 2016). Digital work is reflected in performing a series of tasks, and gigs, without permanent employment (Graham et al., 2017). In the contemporary time, due to the development of digital technology, the phenomenon of the gig economy is related to the growing number of workers abandoning traditional employment in favor of working independently on a task-by-task basis for various employers (Chen, 2016). The Internet has been changing profoundly the way we work today. Digitalization is causing new jobs to emerge, while some others decline or disappear entirely. The digital labor market has become a valuable source of work and income for many workers, especially in developing countries. For many people freelancing is not only the main job, but also it is a source of complementary income. The rise of freelancers is considered one of the remarkable issues in the evolution of the labor market. Online work is growing rapidly (Chan and Wang, 2018; Huws et al., 2017). Digital labor and talent access could be a central part of the future and online labor platforms promise to connect jobs with knowledge workers all over the globe (Horton et al., 2017). The influence of ICT technology and the rise of online gigs are related to three main trends influencing the labor market. The transformation can be identified from local to the remote global labor market, from full-time to temporally flexible, and from permanent to casual occupancy (Kässi and Lehdonvirta, 2018). Online freelancing is considered a means which provides opportunities for the workers to be engaged in flexible employment arrangements (Gray and Suri, 2019). Since it is project-based, the workers are not locked in one permanent job for a single employer. Online freelancing is appearing as a new value in the labor market. It leads to facilitation of the virtual migration, bringing jobs to people instead of forcing them to migrate (Lehdonvirta, 2018; Horton et al., 2018; Braesemann et al., 2018; Melia, 2020). According to the World Bank's World Development Report (2019) changing the nature of work is a reality and the economies should be prepared and capable to adapt online freelancing as a reality to take advantage of and diminish the weaknesses following the changes happening in the labor market.

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## **2. TRANSFORMATION OF THE LABOR MARKET**

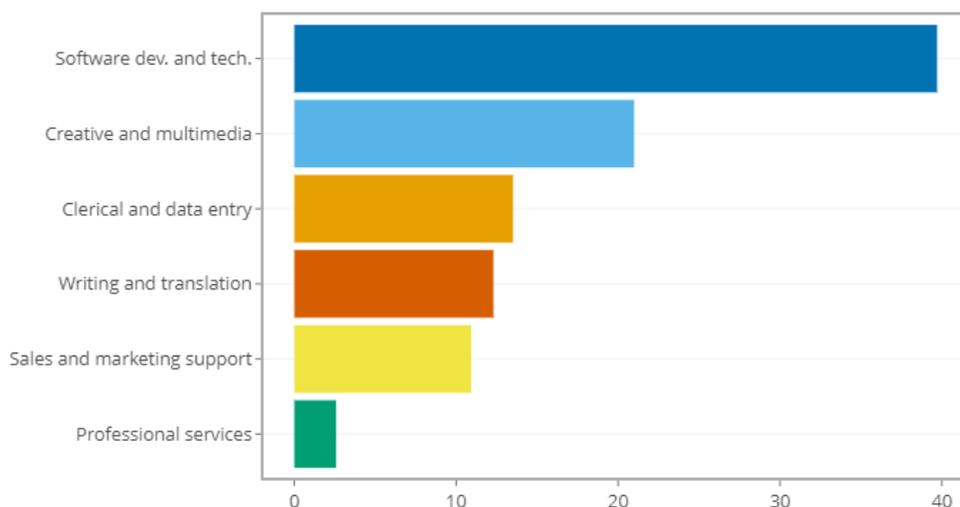
Digital technology leads to a fundamental transformation of the workplace and the mode people engage at work. The rise of digital labor is related to the appearance of the platform economy (Schmidt, 2017). The digital labor platforms connect workers globally with companies seeking to have projects completed (Horton et al., 2018). The digital platforms represent a substantial part of the global labor market. According to Warner (2020), digital platforms are the most important and required place to find a job for 73% of freelancers. The main reason behind the dominance of the platforms is their ability efficiently and quickly to match supply and demand, which leads to a significant reduction in transaction costs (McKinsey, 2015). The platforms allow access to skills and talents around the world. They provide an opportunity to use the labor only for a temporary task that the client or business organization needs and terminates when the required project or task is completed (Marvit, 2014). The platforms as an online labor market promote new work orders where flexibility, adaptability, and attaining the results are key features. Digitally enabled gig work is conducted and organized in the absence of a standard employment relationship between an employer and an employee (Stanford, 2017). Platforms as a type of labor market provide an opportunity for overcoming some shortcomings of a local labor market when there is no demand for some skills or if the job price is low. The main drivers of the freelancing transformation of the labor market can be found in the: cost advantage, time advantage, performance advantage, strategic advantage, and risk advantage. Against the transformation of the labor market toward the most flexible, accessible, efficient, and non-discrimination digital market, the online labor platforms have transformed the demand and supply for skills, knowledge, and occupations.

Online labor index 2020 (OLI 2020) is an index that measures the supply and demand of online freelance labor across countries and occupations by tracking the number of projects and tasks across the platform (Online Labor Observatory). OLI 2020 indicates global growth in the online gig economy of 51% from 2016 to 2021. The online labor index examines the demand and supply of the online freelancing work on the base of the occupation. Figure 1 reveals that the highest demand of almost 40% is for software development and technology skills. Then they are followed by creative and multimedia work and by the clerical and data entry work. The lowest level of demand belongs to the professional services, which is explained by the fact for requirement a high

level of trust and the necessity for understanding in communication (Kassi and Lendonvirta, 2018).

The supply for the online freelancing occupation corresponds with the demand for occupations. According to the Online Labor Observatory, it is remarkable dominance of online labor supply for software development and technology. It is followed by the supply of creative and multimedia and clerical and data entry online labor.

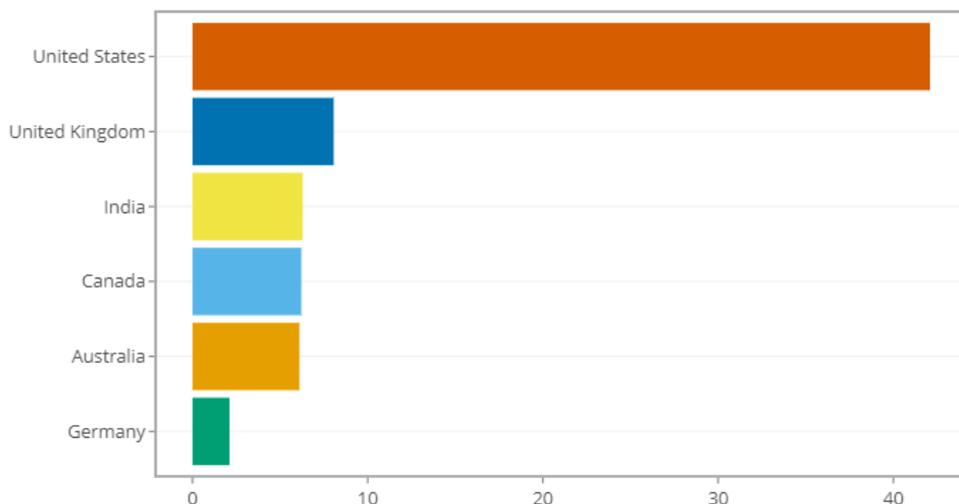
**Figure 1. Online labor demand by occupation**



Source: OLI 2020, [onlinelabourobservatory.org](http://onlinelabourobservatory.org)

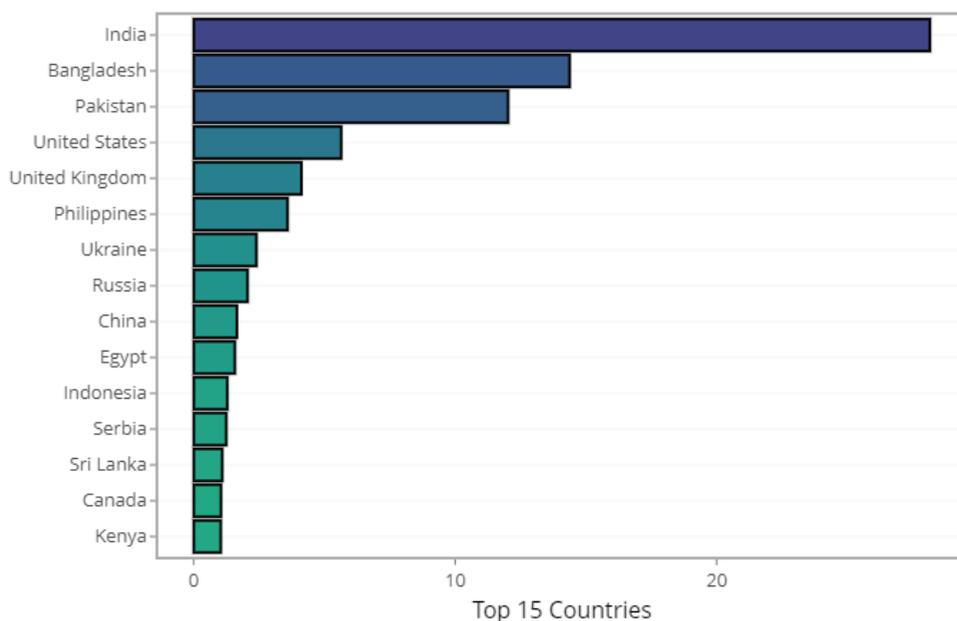
Figure 2 reveals the location of the global demand for online freelancing work. Most of the online freelancing projects are posted by employers from developed countries with the dominant role of the United States. Other important employer countries represent the UK, India, Canada, and Australia.

**Figure 2. Global share in the online labor demand**



Source: OLI 2020, [onlinelabourobservatory.org](http://onlinelabourobservatory.org)

Against the developed countries that dominate the demand for online labor, the supply side comprises developing and lower-income economies like India, Pakistan, and Bangladesh (Figure 3).

**Figure 3. Global share in the online labor supply of the top 15 countries**

Source: OLI 2020, [onlinelabourobservatory.org](http://onlinelabourobservatory.org)

On the demand side, the companies in the battle to maximize revenue are most focused on online freelancers. They consider online freelancers as a source of an immediate skillful and well-trained workforce, with lower costs and access to innovative ideas. So, online freelancers as a workforce can help companies streamline operations and save costs of operation (Tripathi et al., 2022.) A fifth of all organizations around the world has engaged at least 30% remote workers. On the other hand, the supply side consists mostly of young people who use the online labor platforms to find a job. The majority of freelancers are heavily belonging to the younger ages, with almost 70% between the ages of 18 to 34 and only 10% over 45 years old.

As the Internet is growing into a more powerful market space, online freelancing is getting a more dominant model of the labor market. The fundamental unit of the new economy is not the corporation but the individual. Tasks aren't assigned and controlled through a stable chain of management but rather are carried out autonomously by independent contractors (Malone and Laubacher, 1998).

### 3. ONLINE FREELANCING IS A CHALLENGE FOR THE FREELANCERS

#### 3.1 Methodology of research

To get insight into the changes that are happening in the labor market and to reveal the economic, social, demographic, and motivational aspects behind online freelancing, is conducted primary research. Purposely, a survey is prepared consisting of 17 questions. The survey is delivered using Reddit Discord servers, which are used mostly by freelancers as a platform to connect and share information. The survey is completed by 100 freelancers in one week. The questions are divided into three groups.

1. Basic features and type of the online freelancer.
2. Motivations and attitudes towards the freelancing job.
3. Concerns and challenges related to the freelancing job.

#### 3.2 Results and analysis of the survey

The target group of research is freelancers who have tried or pursued a career in the gig economy. The research provides valuable answers to many issues related to the online freelancing job. Since the questions are divided into three areas, the research identifies three sections of relevance related to the attitudes of the freelancers and their personal experience in exercising the online freelancing job.

Table 1 reveals information about the basic features of freelancers.

**Table 1. Responds to the main characteristics and types of freelancers**

	Frequency
<b>Age of the freelancers</b>	
Gen Z (18-22)	28%
Millennials (23-38)	51%
Gen x (39-54)	11%
Baby Boomers (55 +)	10%

<b>Time to join the gig economy</b>	
Before COVID-19	61%
During COVID-19	39%
<b>Type of the freelancer</b>	
Independent Contractor	37%
Moonlighter	21%
Diversified worker	8%
Temporary worker	25%
Business worker	9%
<b>Education level</b>	
High school	5%
Bachelor Degree	48%
Master Degree	11%
PhD	4%
Paid online courses	30%
NA	2%
<b>Type of client (employer)</b>	
Local	9%
International	91%
<b>Occupation</b>	
Literature	4.3%
Science and Robotics	2.5%
Advertising, PR and Marketing	11%
Fashion Design	3%
Architecture and Construction	6%
Web content and development	16%
IT	33%
Graphic Design	8%
Music producing	2%
Sports and personal training	0%
Transport	7%
Business analysis	2%
Finance	5%
Hospitality	0%

Medical	1%
Food and Beverages	0%
Health	0%
Media	1%
Education	4%
Other	1%

The first group of questions in table 1 reveals that most of the freelancers belong to the young generations – millennials 51% and X generation 28%. It means the population between 18 and 38 years old represents almost 80% of the gig economy workforce. On the other hand, it is obvious that to the workers over the age of 39 representing Gen X and Baby boomers, freelancing is not a popular and attractive choice of work. The second question refers to the time of joining the gig- economy. Two-thirds of the freelancers have confirmed that they have joined freelancing before the pandemic, which means the tendency for freelancing employment has started before the pandemic and was strengthened during the pandemic. Referring to the type of commitment to the freelancing, most of the freelancers, or 37% belong to the independent contractors. They are persons who work on a range of different short or long-term projects. The second group of freelancers belongs to the temporary workers who are focused on one temporary project with a finite deadline. In the research, it is noticed that 20% of the freelancers belong to the group of moonlighters who have a regular job, but they are engaging in freelancing to earn additional finances.

Referring to the question about the education level of freelancers, the survey reveals that almost half of 48% have a bachelor’s degree and 30% are persons who have acquired education and skills through some paid online courses or training. It means young educated and skilled persons are mostly focused on online freelancing. The survey shows very valuable information about the occupations in which the freelancers are most engaged. The dominant occupations where the freelancers are most engaged are IT and creative services. The contribution and advantage of online freelancing is access to the global labor market. More than 90% of the freelancers are oriented toward the international labor market and work on international projects and employers.

The second section of questions of the survey provides information about the motivations and attitudes towards the freelancing job (Table 2).

According to the research, the main motivation behind the freelancing job could be summarized in two points. Firstly, it is a financial aim where almost all people consider online freelancing as a way to earn money and in-

crease their income. The second motivation is recognized in the flexibility of exercising the freelancing job referring to the time, schedule, and place. The second question in this section reveals the opinion of the freelancers toward the worthiness of the freelancing job. The highest portion of the persons or 77% expresses positive attitudes and satisfaction from the freelancing job. Referring to the possibility of returning the freelancers to the regular conditions after the pandemic, most of the freelancers are happy with their current arrangement and will not return to the previous conditions.

On the question about the opinion of the freelancers related to the amount of working time, surprisingly only one-third of 33% think they work less. The rest of the freelancers have responded that they work equally or even more. So, if previously the remote working was considered more relaxing, actually it is more demanding. More than two-thirds of the freelancers have stressed that they feel pressure and struggle to deliver the job on time. It suggests they encounter a very stressful issue.

**Table 2. Responds to the motivation and attitudes toward freelancing**

	<b>Frequency</b>
<b>The motivation behind the freelancing (multiple choice)</b>	
Higher earnings (salary)	99
Earning extra money	33
Flexibility refers to the working hours	41
Flexibility refers to the working schedule	66
Working from home in and relaxed environment	14
Hard to find a job and no other options	20
Pandemic of COVID-19	8
<b>Are you more successful as a freelancer?</b>	
Yes	77%
No	0%
It's a tie	23%

<b>Would you return in regular conditions after the pandemic</b>	
Yes	40%
No	50%
It is negotiable	10%
<b>Are you working more or less on a project when working remotely?</b>	
More	33%
Less	27%
On average, the same just differently spread out hours	40%
<b>Managing the time to deliver the job on time</b>	
Struggle but deliver on time	36%
Struggle and not deliver	4%
Struggle and deliver late	31%
Don't struggle	29%
<b>Where do you enjoy working?</b>	
My favorite coffee shop	22%
A shared workspace	17
Home	59
Outside	1
Doesn't matter to me	1

The third section of the survey research is focused on the most essential issues connected to freelancing. Table 3 reveals very useful information about the concerns and challenges of online freelancers.

**Table 3. Responds to the concerns and challenges of the online freelancers**

	<b>Frequency</b>
<b>Concerns about freelancing (multiple choice)</b>	
Worried to find enough gigs.	78
Worried about the technical readiness	22

Worried to be fooled out of payment	61
Worried about the tax payment	15
Worried about meeting the deadlines	5
Other	10
<b>How many concerns do you put into the future?</b>	
A lot	21%
Not a lot	45%
From time to time	34%
<b>Attitudes toward paying taxes as an employee or as a freelancer?</b>	
Employee	12%
Freelancer	28%
I don't know yet	60%
<b>Do you save money for pension funds?</b>	
Yes	5%
No, it's not a problem for me	36%
No, I don't make enough	59%
<b>Do you think the future will be based on remote work?</b>	
Yes	5%
No	20%
Not for me	28%
Yes, but not completely	47%

The research reveals that the main concerns of the freelancers are connected with the worry to find enough projects or gigs and the worry to obtain the payment for the completed job. These concerns suggest the insecurity and instability the freelancers feel when they exercise remote work and it will be one of the most important law issues in the future. Generally, related to the concerns, more than half of the freelancers are worried and thought about their future as freelancers.

As the most important issues for any freelancer are taxing and pension and social security. Referring to the tax issue the survey research reveals

that most freelancers are not aware of the tax issue, which would have a very adverse influence on the freelancers and the tax evasion in the economy. So, the national economies should have determined very clear and transparent tax regulations intentionally for the remote workers. The second issue which could be considered as one of the challenges for the freelancers is the pension and social security. According to survey research, only 5% of freelancers save money for the pension fund. The rest of them are not interested or consider that they don't make enough money to pay for the pension security. Since the freelancers belong to the younger population it is obvious that they are not so interested in and don't think about long-term issues related to the pension and social security. Thus, it should be one more issue where the regulation should be established to enforce higher security for freelancers.

### **Conclusion**

The rise of digital technology, especially the Internet is creating new opportunities for workers. The Internet has disrupted the labor market providing opportunities to perform jobs remotely. Using statistical data about the demand and supply for online freelancers and results from the survey the paper provides additional empirical value in the research of the gig economy. Examining the data and the attitudes of the freelancers the paper suggests that the transformation of the labor market to the digital labor market is a reality. Online freelancing is becoming a new value in the labor market. Complementary to the online freelancing mode of labor, the paper suggests that the policymakers have to update and upgrade the labor market regulation to ensure equivalent treatment for different forms of labor and provide a more stable and secure labor environment for the online freelancers.

The future direction of the research will be oriented towards examining the contribution of online freelancing to the national economies.

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**(Original scientific paper)**

## **SMALL AND MEDIUM SIZED ENTEPRISES DURING THE COVID-19 PANDEMIC CRISIS – PROBLEMS AND CHALLENGES**

**Abstract:** Small and medium enterprises are the backbone of economic development. They have huge contribution for employment, utilization of entrepreneurial abilities, rational use of national and local resources, the creation of added value and the inclusion of the national economy in world trade through their internationalization. Their importance is due to their characteristics such as flexibility and rapid production reorientation, entrepreneurial orientation, and especially their creativity and innovation.

In the last two years, the world has been facing with a pandemic that has had major and serious consequences for human health and economy. Actually, the COVID-19 pandemic is a global phenomenon with unprecedented impact on individuals, communities, and organizations. There is no doubt that there is no segment of the society that was not under the pressure of the global pandemic. The COVID-19 pandemic crisis, has already become a permanent part of the 21st century and it cause a significantly changes in businesses operations. SMEs are facing with numerous challenges and problems as a consequence of the pandemic. Many studies shows that the competitive advantage of any modern enterprise is based on ability for innovation in products or production processes. Only through innovation SMEs will increase their and competitive advantage of the national economy. Considering this the focus will be on the innovation strategy and its necessity for overcoming the conditions and consequences caused by the pandemic.

The main aim of the paper is to identify the basic problems and challenges of small and medium sized enterprises during the corona virus pandemic in developing countries, specifically in North Macedonia, as well as strategies of transformation and adaptation to changes in the environment. To achieve the aim a survey will be conducted to the sample of SMEs in North

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Macedonia. At the end of the paper based on the obtained results we will provide recommendations for small and medium businesses on how to remain flexible or competitive through resilience and renewal strategies.

**Key words:** SMEs, pandemic, strategy

**JEL classification:** D2, O3,

## **Introduction**

SMEs in EU represent 99% of the total number of enterprises. Their development allows us to feel their effects on the macroeconomic performance in terms of employment, production growth, strengthening competition and, entiresocial and human development. Therefore, the policies to promote the development of SMEs are common in both developed and developing countries. Nowadays, SMEs are the key driver of economic growth. They play an important role in creating employment, adding value and exports. Considering this fact, it is necessary to implement appropriate strategies that will enable SMEs growth and development. At the beginning of 2020, the world faced major challenges due to the COVID-19 pandemic. To stop the spread of the infection, the governments of the countries had to impose various restrictive measures and lockdowns. The COVID-19 pandemic created problems for the SME sector and consequently threatened the development of the countries' economies.

Considering this the main aim of the paper is to identify the basic problems and challenges of small and medium sized enterprises during the corona virus pandemic in the Republic of North Macedonia, as well as strategies of transformation and adaptation to changes in the environment, with special reference to the importance of innovation and innovation strategy. Section 2 deals with some previous work on this topic. Section 3 gives theoretical overview for SMEs. Section 4 gives information about the SMEs importance in Macedonia and the condition during pandemic. Section 5 provides insights into the data, methodology, and results of the analysis. The last section concludes conclusion and recommends.

## **Literature review**

The repercussions of the COVID-19 pandemic have been felt across all economic sectors and institutions, including small and medium enterprises (SMEs) (Hasanat et al., 2020).<sup>1</sup> Many studies have shown that SMEs are confronted with various difficulties and challenges due to the COVID-19 pandemic. On the other hand SMEs are crucial sector for economy development. To protect this vital sector from collapse due to the COVID-19 crisis, many

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<sup>1</sup> Hasanat, M. W., Hoque, A., Shikha, F. A., Anwar, M., Hamid, A. B. A., & Tat, H. H. (2020). The impact of coronavirus (Covid-19) on E-business in Malaysia. *Asian Journal of Multidisciplinary Studies*, 3(1), 85–90.

governmental and nongovernmental organizations (NGOs) have provided various forms of support to SMEs (Nawal & Ghadah). Governments have adopted several policies that will mitigate the negative effects of this crisis (Ahmd et al., 2020). SMEs have received some financial support from local and international NGOs and financial institutions during the COVID-19 crisis (Song et al., 2020).

Additionally, SME owners have adopted a number of practices and strategies to confront the ramifications of the crisis (Thorgren & Williams, 2020). The appropriate use of innovation strategies can create additional value for customers and shareholders and increase enterprise competitiveness (Baker, Grinstein, & Harmancioglu, 2015) (Rubera & Kirca, 2017). Innovation can also lead to increased organizational performance and revenue as business leaders develop and implement more efficient and effective processes for reducing costs or facilitating the development of better products (Chowhan, 2016) (Simester, 2016).

### **Theoretical background for SMEs**

The last decades of the 20<sup>th</sup> century brought a change in the production philosophy of the world most developed countries, whereupon the era of gigantic corporations has been replaced with the era of small enterprises, which promote the creative spirit and individualism, against the standardization and globalization promoted by the big and multinational corporations.

Considering the fact that small and medium enterprises are a heterogeneous group, it is hard to determine a single criteria or a unique combination of criteria, which will give a definite and unique response. There is no single, uniformly accepted definition of a small firm. In that way, European Commission has given the definition for SME, and according to the last modification (in 2003), these are the quantitative criteria: number of employees, annual turnover and annual turnover and annual current assets.<sup>2</sup>

The qualitative aspect of determining the SME's takes into consideration the following criteria:<sup>3</sup>

- SME's are considered those business entities where the employees know each other and on that way act as a team, and not as group of individuals;

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<sup>2</sup> <http://ec.europa.eu>

<sup>3</sup> Stefanović I., Milišević D., Miletić S. (2009). Significance and development problems of SME's in contemporary market economy. *Serbian journal of management, 2009*

- centralization of the decision making (usually the owner is a top manager who must approve all decisions. This can cause serious problems when the business entity will develop, because one person cannot be responsible for all activities);
- low level of specialization, where the employees have wide range of tasks to perform, particularly at those business entities that operate in unpredictable and dynamic conditions;
- intuitional and informal strategy, where the management is oriented toward short-term planning;
- informal communication channels and external communication, because the internal communication is horizontal or vertical and bounds the initiatives and the ideas of the employees, while the external communication enables easier exchange of information between suppliers and buyers.

The key characteristics that small and medium enterprises need to possess are: flexibility; independence; proximity in business relations; great opportunities for creation of new jobs; the creativity among individuals and realization of their ideas, adapting to market needs and so on.<sup>4</sup> The main advantages of SMEs are: greater flexibility and increased response capacity to adjust to market changes; their decisions are quick and prompt; have simple and low level hierarchical structure, so the control and other functions are accomplished immediately; usually the small enterprises due to its big number, contribute to maintaining a satisfactory level of competition, and therefore for development of products and services that meet customers needs; better access to information on the market; because of its flexibility, small enterprises have possibility continuously to innovate, introduce new products on the market, services or promotions without greater risk, compared to big companies which have complex organizational structure and extensive production program; increased ability for correction of the mistakes; the tasks in small and medium enterprises are executed with team work; compared to big companies they have greater productivity of the employees, because the communication with the management team is direct and positively impacts on their motivation.<sup>5</sup>

However, despite their advantages, it mustn't be neglected the shortcomings of their operation: lack of working capital and difficult access to it;

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<sup>4</sup> Suklev B., Management of small business, Faculty of economics- Skopje, 2006

<sup>5</sup> Tomash R.(2010). *Applied economy*. Faculty of economics. Banja Luka.

lack of specialization; lack of effective management; high fixed costs resulting from the individual manufacturing; difficulties in mobilizing of highly skilled staff; undiversified project portfolio; the systemic information they dispose are fragmented; limited access on foreign markets because of the lack of resources for investment and access on foreign markets, as well as for production of an assortment of products aimed for foreign markets.

Many studies show that in the dynamic surrounding the competitiveness of small SMEs depends by the speed by which new products are introduced on the market and the costs for savings and improvements for them to be made. The innovations significantly contribute to increasing the productivity and quality of products and services, making companies more competitive. Really, they imply major changes in the company but if the subject does not change the products or services it offers, as well as the way they are created and delivered, then there is a risk other company to do that. Today, exist only the businesses that are capable of accurately targeted and constant change.

According to Paul Almeida professor at Georgetown University “SMEs play a unique, active and crucial role in the innovation process, technological advances and improving the high-tech information networks.

Usually, the innovations are divided as: product innovation, process innovation, marketing innovation and organizational innovation. An innovation strategy should determine what types of innovation should be pursued. It should also align activities in relation to core innovation goals and the key competitive advantage that the company is trying to gain. A vital element in this strategy is the relationship between creating and capturing new value.<sup>6</sup>

Therefore, a firm can have one of the sixteen possible innovation strategies at a given point in time. The strategies are: non-innovative; doing only product innovation in year; doing only process innovation in year; doing only marketing innovation in year; only organizational innovation in year; doing product and process innovations in year; doing product and marketing innovations in year; doing product and organizational innovations in year; doing process and marketing innovation in year; doing process and organizational innovations in year; doing marketing and organizational innovations in year; doing product, process and marketing innovations in year; doing product process and organizational innovations in year; doing product, marketing and organizational innovations in year; doing process, marketing and organizational

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<sup>6</sup> Chapa R. T., Implementing an innovation strategy in WCO; responding to disruptive events. *World Customs Journal*, Volume 14, Number 2

innovations in year; doing product, process, marketing and organizational innovations in year. The most popular ones are: (1) only product, (2) only process, (3) only marketing, (4) only organizational, (5) both product and process, and finally (6) all four types of innovation.<sup>7</sup>

### **SMEs during COVID - 19 pandemic**

SMEs are facing with numerous challenges and problems as a consequence of the pandemic. The period of closure and movement prevention policies adopted by governments in many countries have greatly affected SMEs, paralyzing their operations, weakening their financial positions, and exposing them to financial risk. SMEs have suffered from a shortage of workers and production inputs because of distortions that marred supply chains, which negatively affected their sales and their ability to fulfill their financial obligations and pay employees' salaries. This problem has coincided with a decrease in consumer spending because of the reduction in consumers' income and widespread feelings of uncertainty. As a result, many SMEs found themselves incapable of dealing with the situation and some of them have stopped their activities and remained closed since the first months of the outbreak. Today, SMEs are forced to look for strategies in order to survive and to create existential prognoses of business operations during great economic and social uncertainty.<sup>8</sup>

In the Republic of North Macedonia, SMEs are also significantly affected by the consequences of the pandemic and on the other hand, they have a significant role for the economy and economic development in the country. In Macedonia according to the preliminary data of the State Statistical Office, the number of active business entities in 2021 was 72 922 and compared to 2020 it decreased by 0.2%. The data on the structure of active business entities by sections of activities show that the sections with the highest share in the structure in 2021 were Wholesale and retail trade; repair of motor vehicles and motorcycles with 30.0% and Manufacturing with 10.9%. The data on the structure of active business entities according to the number of persons employed show that the highest share of 82.0% belongs to business entities

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<sup>7</sup> Karlsson Ch., & Tavassoli S., Innovation strategies of firms: What strategies and why?. *The Journal of Technology Transfer*, 2016

<sup>8</sup> Nawal A. A. & Ghadah A., (2021), Innovation practices for survival of small and medium enterprises (SMEs) in the COVID-19 times: the role of external Support, *Journal of Innovation and Entrepreneurship*.

with 1-9 persons employed, followed by business entities with no persons employed or entities with unascertained number of persons employed (no data on persons employed) with 8.2%, and entities with 10-19 persons employed with 4.5%. The share of entities with 20-49 persons employed was 3.0%, those with 50-249 persons employed participated with 2.0%, while entities with 250 or more persons employed had a share of only 0.3%. SMEs in Macedonia are known as job creators, in 2019 namely they create 73,5% of employment and participate in the creation of added value with 65,7%. In 2020, overall SME value added declined by 8.6%. The downturn was particularly pronounced in the accommodation and food services sector, with SME value added falling by 10.2%. The wholesale and retail trade sector, the largest sector in terms of SME value added, was also affected, albeit not as severely, with value added down 1.8%. In 2019, SMEs accounted for 65.7% of overall value added and 73.5% of overall employment, far exceeding the respective EU averages of 53.2% and 65.0%. However, SME productivity, defined as value added per person employed, was only EUR 10 900, around one quarter of the EU average of EUR 42 600.<sup>9</sup>

The table below shows key strengths and key challenges related to SMEs in Macedonia.

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<sup>9</sup> [https://ec.europa.eu/neighbourhood-enlargement/system/files/2021-09/north\\_macedonia\\_-\\_sme\\_fact\\_sheet\\_2021.pdf](https://ec.europa.eu/neighbourhood-enlargement/system/files/2021-09/north_macedonia_-_sme_fact_sheet_2021.pdf)

**Table 1: Strengths and challenges of SMEs in North Macedonia**

Key strengths	Key challenges
<p>* The government has managed to remove some administrative and regulatory barriers over the last decade, as reported by the World Bank's Doing Business Report. The number of tax payments has seen a significant decrease and now stands at 7 – this is 3 less than the EU average and 33 less than a decade ago. In addition, North Macedonia's businesses only take 119 hours a year to pay taxes – 54 less than the EU average.</p> <p>* According to the National Employment Agency, the number of startups that create new job openings has increased in the last 3 years with an average annual growth rate of 7.38% over this period.</p> <p>* According to the State Statistical Office, the number of innovative SMEs increased by 53% in 2014-2020. In recent years, the government has launched several measures to support innovation in SMEs and start-ups, including grants to support innovation activities in start-ups or low-interest credits to help SMEs with technological investment. The effectiveness of this support needs to be evaluated</p>	<p>* According to the National Bank of the Republic of North Macedonia, the country lags behind EU Member States in the share of private equity funding and non-banking sources available to innovative SMEs and entrepreneurs, such as venture capital, equity, mezzanine financing and business angel financing.</p> <p>* According to the State Statistical Office, SMEs' contribution to the economy's export performance is becoming less significant. In 2018, SMEs provided 26.7% of exports, while in 2016 their exports represented 31.2% of the total. Private sector representatives indicate that corruption is a significant challenge that continues to hamper SMEs' capacity to do business.</p> <p>* According to data from Transparency International's 2020 Corruption Perceptions Index, people's perceptions of public sector corruption in the country have been worsening since 2014.</p>

To overcome the consequences of the pandemic, the Government of Northern Macedonia prepared six packages of economic measures to support businesses and individuals, but still they proved to be insufficient.

### **Research**

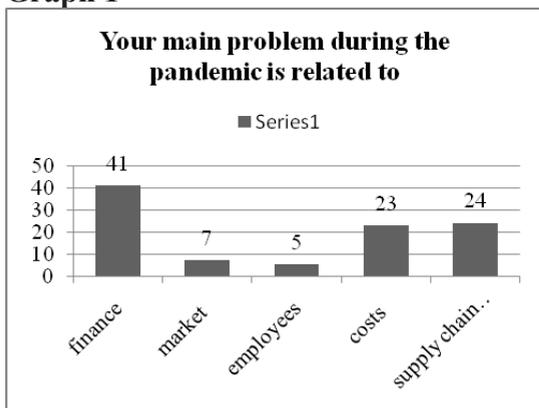
In order to give new prospect to this issue, a survey on small and medium businesses was carried out in April 2022. The survey comprised 55 SMEs from North Macedonia, and there were 50 questionnaires. The businesses that were part of the research are usually from the manufacturing industry and wholesale and retail trade. All respondents were managers responsible for day-to-day business processes – usually the entrepreneur, and otherwise a general manager. Most of the questions were set using a 5-point Likert scale anchored by strongly disagree to strongly agree. The questions were divided into four groups. The first set of questions concerns general company data. The second group is questions related to the problems of SMEs during pandemic. The third group of questions are related to technological changes and the anticipation of the importance of innovation. The fourth set of questions is related to the measures taken by the Government in order to overcome the problems of SMEs.

### **Research results**

On the basis of data analysis from the first group of questions, the following results have been obtained: from the businesses-respondents, 36 were registered before 2010, and 14 were established after 2010, which means that the number of surveyed firms older than 10 years. Most of the respondents, i.e. 39% are small businesses, 7% micro and 54% medium businesses. The managers of the businesses that were part of the survey had more than 10 years of work experience.

The second group of questions is related to the problems of SMEs during pandemic.

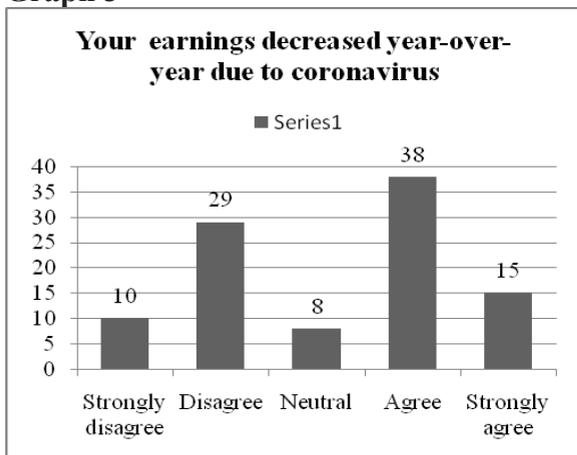
**Graph 1**



**Graph 2**



**Graph 3**



As can be seen from the data of the graph 1, the key problems of SMEs during the pandemic are related to finances, and 41% of respondents replied that finances are their main problem, 24% think the problems associated with the supply chain activities are most significant, 23% cited increased costs, 5% problems with employees and 7% problems with markets. On the question “You were forced to make significant changes in the organisation of activities in the company due to coronavirus”, 12% of the respondents strongly disagree, 26% disagree, 4% neutral, 38% agree and 20% strongly agree. The data from the graph 3 shows the following results: on the question “Your earnings decreased year-over-year due to coronavirus”, 10 % of the respondents strongly disagree, 29% disagree, 8 neutral, 38% agree and 15% strongly agree.

The third group of questions is related to technological changes and the anticipation of the importance of innovation for overcoming the problems caused by the pandemic.

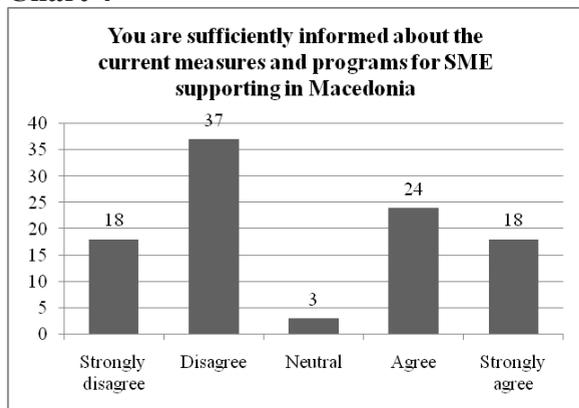
Here are the result:

- On the question “Your company uses innovative ways to obtain new markets and to retain the existing customers” 22% of the respondents strongly disagree, 34% disagree, 7% neutral, 25% agree and 12% strongly agree which means that SMEs do not use some new ways to attract new markets and customers.
- The result of the question” You have transformed into electronic distribution of goods and services due to corona virus” shows that SMEs use classic (physical) ways for goods and services distributions (22% of the respondents strongly disagree, 40% disagree, 3% neutral, 20% agree and 15% strongly agree)
- Many surveyed companies believe that innovation strategy plays a crucial role in overcoming the consequences of the pandemic. Actually on the question” Innovation strategy has a crucial role for overcoming business crisis caused by COVID 19 pandemic” 18% of the respondents strongly disagree, 28% disagree, 2% neutral, 35% agree and 17% strongly agree.
- On the question “Your business introduces new products before the competitors do”22% of the respondents strongly disagree, 29% disagree, 7% neutral, 30% agree and 12% strongly agree which means that SMEs do not use some new ways to attract new markets and customers.
- The result of the question ”Your business has the ability to change the production methods quickly in accordance with changing in technology”

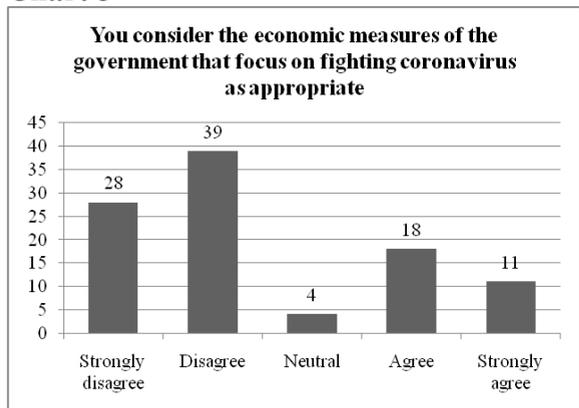
shows that most of the business actually 48% of the respondent strongly disagree or disagree and they are not prepared to make big changes in the production methods on the other hand the technology changes in their industry is very fast. (48% of the respondent strongly agree or agree).

The fourth set of questions is related to the measures taken by the Government in order to overcome the problems of SMEs. The results from the last two questions of the survey shows that large number of the respondents, actually even 42%, are sufficiently informed about the measures and programs for encouraging innovation in businesses and 67% of respondents said that the measures taken by the Government focus on fighting corona virus are inappropriate.

**Chart 4**



**Chart 5**



The results that emerged allow to formulate some initial considerations that many of the companies have financial problems, ie lack of own capital, hence the funds they allocate for research and development are very small. Also, a large number of the respondents, actually even 42%, are sufficiently informed about the measures and programs for encouraging innovation in businesses. To cope with the global economic crisis caused by the pandemic, SMEs have identified the challenges created and applied new strategies to protect their businesses. The data in Chart 6 underscore the importance of an innovative strategy for overcoming the consequences of the Covid pandemic 19.

## **Conclusion**

SMEs have a key role in the development of the macedonian economy and it's necessary to create a business environment that will encourage their growth and competitiveness. Today, unfortunately, the functioning of businesses is affected by the consequences associated with the Covid 19 pandemic, and on the other hand, there are still those structural weaknesses that follow our economy from the beginning of the transition, and they come up to expression especially in crisis, such as: the constant trend of deindustrialization of our economy; the deterioration of the structure of the factors that create GDP; failure to create a sustainable model for economic growth and development; the asymmetric state of the labor market; Extremely weak institutions without adequate support and motivation of the private initiative and the private sector, etc. The government has adopted six packages of measures to support businesses but it is obvious that they are insufficient in this period.

In order to encourage and develop small and medium businesses in North Macedonia, the following measures and recommendations should be taken:

- Encouraging of export activities through increasing mobility of the production factors, higher accumulation and foreign capital inflow, encouraging of technical-technological development etc.;
- Creating ranges of products that meet the consumers' needs, appropriate assortment, design and packing of the products;
- Higher promotion activities in order Macedonian products to become recognizable for the foreign buyers;
- Establishing of business entities in different activities and encouraging collaboration between them;
- Creation of specialized production factors via financing and institutional

support of special educative programs and researches, investing in specialized infrastructure;

- Establishing and implementation of strict standards for customers and environment protection, which will enable the national companies to face the same or similar requirements as on the world markets;
- Stimulation of investments in research and development and in other activities that lead towards inventiveness and advancement of individual competitive abilities of the business entities, through encouraging projects of direct competitors within a definite industry.

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**336.221-022.233:336.225.53]:303.725.36**  
**(Original scientific paper)**

## **MIRRLEESIAN OPTIMAL TAXATION: REVIEW OF THE STATIC AND DYNAMIC FRAMEWORK**

**Abstract:** Modern tax theory has been subject of investigation of this paper. Namely static taxation theory with issues such as: income effects, inverse elasticity rule, and linear and non-linear taxa formulas. The issue of heterogeneity is present in the dynamic taxation models and inverse Euler equation where savings affects incentive to work, so government needs to discourage savings to prevent the flowing deviation by highly skilled to save more today and work less tomorrow. Other important implication for fiscal policy is that if your labor income is below average, your capital tax is positive. Numerical results at the end have confirmed results from theoretical models in optimal taxation outlined in this paper.

**Keywords:** Optimal taxation, non-linear tax rates, inverse Euler equation, Mirrlees taxation

**JEL:** H20, H21

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## Introduction

Modern tax theory relies heavily on Mirrlees (1971) idea. This equation is the staple in the public finance field: Mirrlees (1976), Saez (2001), Choné, Laroque (2010), Fleurbaey, Maniquet (2018). Atkinson, Stiglitz, (1980); Kaplow, (2008); Mirrlees (1976), Mirrlees (1986); Stiglitz, (1987); Tuomala, (1990) include rigorous derivations of tax formulas. Saez (2001) argued that “unbounded distributions are of much more interest than bounded distributions to address high income optimal tax rate problem”. Saez (2001) investigated (four cases)<sup>1</sup> and the optimal tax rates are clearly U-shaped, see Diamond (1998) too. Saez, S. Stantcheva (2016), define social marginal welfare weight as a function of agents’ consumption, earnings, and a set of characteristics that affect social marginal welfare weight and a set of characteristics that affect utility. Piketty, Saez, Stantcheva (2014), derived optimal top tax rate formulas in a model where top earners respond to taxes through three channels: labor supply, tax avoidance, and compensation bargaining. Dynamic taxation most famous examples in the literature are: Diamond-Mirrlees (1978); Albanesi-Sleet (2006), Shimer-Werning (2008), Ales-Maziero (2009), Golosov-Troskin Tsyvinsky (2011). Sizeable literature in NDPF studies optimal taxation in dynamic settings, (Golosov, Kocherlakota, Tsyvinski (2003), Golosov, Tsyvinski, and Werning (2006), Kocherlakota (2010)). This paper will review the basis of the optimal tax theory and will show the derivation of the optimal tax formula in linear-and non-linear cases and in dynamic Mirrlees model too.

### 1. ATKINSON-STIGLITZ THEOREM: COMMODITY TAXATION AS SUPPLEMENTARY TO LABOR TAXATION

The question here is whether governments can increase social welfare by adding differentiated commodity taxation  $\tau = (\tau_1, \dots, \tau_k)$  in addition to nonlinear tax on earnings  $w$ . Atkinson and Stiglitz (1976) theorem:

*Theorem:* Commodity taxes cannot increase social welfare if utility functions are weakly separable in consumption goods versus leisure and the subutility of consumption goods is the same across individuals, i.e.,  $u_i(c_1, \dots, c_k, w) = u_i(v(c_1, \dots, c_k), w)$  with the subutility function

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<sup>1</sup> Utilitarian criterion, utility type I and II and Rawlsian criterion, utility type I and II.

$v(c_1, \dots, c_k)$  homogenous across individuals. Laroque (2005) and Kaplow (2006) have provided intuitive proof of this theorem.

### 1.1. Inverse elasticity rule

In Ramsey (1927), utility function is given of the following type:  $u = f(p_1, p_2, p_3, \dots, w)$ ,  $p_1, p_2, p_3, \dots$  are the prices and  $w$  is an income. This result is known as Roy's identity, Roy (1947)<sup>2</sup>, it is:  $\frac{\partial u}{\partial p_i} = -f_i \frac{\partial u}{\partial w}$ . With the horizontal demand curves, price of the producers is fixed, change in the goods price is only equal to the change in taxes. Then,  $dp_1 = d\tau_1 > 0$ ,  $dp_2 = d\tau_2 < 0$ . Change in taxes must satisfy the following equation:

$$dU = \frac{\partial U}{\partial p_i} d\tau_1 + \frac{\partial U}{\partial p_2} d\tau_2 = 0, \frac{d\tau_2}{d\tau_1} = -\frac{F_1}{F_2}, \tag{1}$$

change in the revenues caused by the change in taxes is:  $\frac{\partial(\tau_1 f_1)}{\partial \tau_1} = F_1 + \frac{\tau_1 df}{dp_1} = F \left( 1 + \frac{\tau_1 dF_1 p_1}{p_1 d p_1 F_1} \right) = F_1 \left( 1 - \frac{\tau_1}{p_1} \varepsilon_u^1 \right)$ , where  $\varepsilon_u^1$  represents the compensated elasticity of the demand for good 1. Change of revenues of good 2 is:  $\frac{\partial(\tau_2 F_2)}{\partial \tau_2} = F_2 \left( 1 - \frac{\tau_2}{p_2} \varepsilon_u^2 \right)$ . This identity must hold:  $\frac{\tau_2}{p_2} \varepsilon_u^2 - \frac{\tau_1}{p_1} \varepsilon_u^1 = 0$ , for the linear demand curve results is:  $\frac{t}{p} = \frac{kQ}{bp} = \frac{k}{\varepsilon_u^d}$ . This conclusion is supported by the findings of Feldstein (1978). Ramsey's model was used in life cycle models, for best reference see Atkinson, A.B. and Stiglitz, J. (1976), Atkinson, A.B. and A. Sandmo (1980), Atkinson, A.B. and Stiglitz, J. (1980).

## 2.OPTIMAL LINEAR TAX FORMULAE

The first modern treatment of optimal linear tax was provided by Sheshinski (1972). Optimal linear tax formulae is given as:

$$\int_0^\infty \tau(w) f(n) dn = \int_0^\infty (w - \alpha - \beta w) f(n) dn = 0 \tag{2}$$

$f(n)$  is PDF of ability  $n$ ,  $\alpha$  is a tax parameter and is a lump-sum tax if  $\alpha < 0$  and tax-subsidy if  $\alpha > 0$  given to an individual with no income.  $1 - \beta$  is a marginal tax rate i.e.  $0 \leq \beta \leq 1$  so that marginal tax rate is non negative

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<sup>2</sup> The lemma relates the ordinary (Marshallian) demand function to the derivatives of the indirect utility function.

in the linear tax function which is  $\tau(w) = -\alpha + (1 - \beta)w$ , after tax consumption is  $c(w) = w - \tau(w) = \alpha + \beta w$ . Optimal labor supply is given as:  $l = \hat{\ell}(\beta n, \alpha)$ . If  $\lambda$  is the lowest elasticity of labor supply function and it is equal to  $\lambda = \liminf_n \left[ \frac{\beta}{\hat{\ell}} \frac{\partial \hat{\ell}}{\partial \beta} \right]$  so that  $\frac{\beta}{\hat{\ell}} \frac{\partial \hat{\ell}}{\partial \beta} \geq \lambda$ . Revenue maximizing linear tax rate is given as:  $\frac{\tau^*}{1-\tau^*} = \frac{1}{e}$  or  $\tau^* = \frac{1}{1+e}$ . Government FOC given  $SWF = \int \omega_i G \left( u^i(1 - \tau)w^i + \tau w(1 - \tau) - E, w^i \right) df(i)$  is :

$$0 = \frac{dSWF}{d\tau} = \int \omega_i G'(u_i) u_c^i \cdot \left( (w - w^*) - \tau \frac{dw}{d(1-\tau)} \right) df(i) \quad (3)$$

Social marginal welfare weight  $g_i$  is given as:  $g_i = \frac{\omega_i G'(u_i) u_c^i}{\int \omega_j G'(u_j) u_c^j df(j)}$ . So that optimal linear tax formula is:

$$\tau = \frac{1-\bar{g}}{1-\bar{g}+e} \quad (4)$$

where  $\bar{g} = \frac{\int g_i \cdot w_i df(i)}{w}$ .

### 3.OPTIMAL NON-LINEAR TAX FORMULAE: DERIVATION

Utility function is quasi linear:  $u(c, l) = c - v(l)$ .  $c$  is disposable income and the utility of supply of labor  $v(l)$  is increasing and convex in  $l$ . Earnings equal  $w = nl$  where  $n$  represents innate ability. CDF of skills distribution is  $F(n)$ , its PDF is  $f(n)$  and support range is  $[0, \infty)$ . The government cannot observe abilities instead it can set taxes as a function of labor income  $c = w - \tau(w)$ . Individual  $n$  chooses  $l_n$  to maximize:  $\max(nl - \tau n(l) - v(l))$ . When marginal tax rate  $\tau$  is constant, the labor supply function is given as:  $l \rightarrow l(n(1 - \tau))$  and it is implicitly defined by the  $n(1 - \tau) = v'(l)$ . And  $\frac{dl}{d(n(1 - \tau))} = \frac{1}{v''(l)}$ , so the elasticity of the net-of-tax rate  $1 - \tau$  is:

$$e = \frac{\left( \frac{n(1-\tau)}{l} \right) dl}{d(n(1-\tau))} = \frac{v'(l)}{lv''(l)} \quad (5)$$

As there are no income effects this elasticity is both the compensated and the uncompensated elasticity. Government maximizes SWF :

$$SWF = \int G(u_n) f(n) dn \quad s.t. \int cnf(n) dn \leq \int nlnf(n) dn - E(\lambda) \quad (6)$$

$u_n$  denotes utility,  $w_n = nl_n$  denotes earnings,  $c_n$  denotes consumption or disposable income, and  $c_n = u_n + v(l_n)$ . By using the envelope theorem and the FOC for the individual,  $u_n$  satisfies following:  $\frac{du_n}{dn} = \frac{lnv'(ln)}{n}$ . Now the Hamiltonian is given as:

$$\mathcal{H} = [G(u_n) + \lambda \cdot (nl_n - u_n - v(l_n))]f(n) + \phi(n) \cdot \frac{lnv'(ln)}{n} \tag{7}$$

In previous  $\phi(n)$  is the multiplier of the state variable. The FOC with respect to  $l$  is given as:

$$\lambda \cdot (n - v'(l_n)) + \frac{\phi(n)}{n} \cdot [v'(l_n) + l_n v''(l_n)] = 0 \tag{8}$$

FOC with respect to  $u$  is given as:  $-\frac{d\phi(n)}{n} = [G'(u_n) - \lambda]$ . Integrated previous expression gives:  $-\phi(n) = \int_n^\infty [\lambda - G'(u_m)]f(m)dm$  where the transversality condition  $\phi(\infty) = 0$ , and  $\phi(0) = 0$ , and  $\lambda = \int_0^\infty G'(u_m)f(m)dm$  and social marginal welfare weights  $\frac{G'(u_m)}{\lambda} = 1$ . Using this equation for  $\phi(n)$  and all previous  $n - v'(ln) = n\tau'(w_n)$ , and that

$$\frac{[v'(l_n) + l_n v''(l_n)]}{n} = \left[ \frac{v'(l_n)}{n} \right] \left[ 1 + \frac{1}{e} \right] \tag{9}$$

FOC with respect to  $l_n$  is:

$$\frac{\tau'(w_n)}{1 - \tau'(w_n)} = \left( 1 + \frac{1}{e} \right) \cdot \left( \frac{\int_n^\infty (1 - g_m) dF(m)}{nf(n)} \right) \tag{10}$$

In the previous expression  $g_m = \frac{G'(u_m)}{\lambda}$  which is the social welfare of individual  $m$ . The formula was derived in Diamond (1998),  $h(w_n)$  is density of earnings at  $w_n$  if the nonlinear tax system was replaced by linearized tax with marginal tax rate  $\tau = \tau'(w_n)$  we would have that following equals  $h(w_n)dw_n = f(n)dn$ ;  $f(n) = h(w_n)l_n(1 + e)$ , henceforth  $nf(n) = w_n h(w_n)(1 + e)$  and we can write the previous equation as:

$$\frac{\tau'(w_n)}{1 - \tau'(w_n)} = \frac{1}{e} \cdot \left( \frac{\int_n^\infty (1 - g_m) dF(m)}{w_n h(w_n)} \right) = \frac{1}{e} \cdot \left( \frac{1 - H(w_n)}{w_n h(w_n)} \right) \cdot (1 - G(w_n)) \tag{11}$$

$G(w_n) = \int_n^\infty \frac{dF(m)}{1 - F(n)}$  is the average social welfare above  $w_n$ . If  $n \rightarrow w_n$ , we have  $G(w_n) = \int_{w_n}^\infty \frac{g_m dH(w_m)}{1 - H(w_n)}$ . The transversality condition implies  $G(w_0 = 0) = 1$ .

#### 4.GOLOSOV ET AL. (2016) FRAMEWORK: HETEROGENOUS PREFERENCES

This economy is described by  $t + 1$  periods denoted by  $t = 0, 1, \dots, t + 1$ . Agents preferences are described by a time separable utility function over consumption  $c_t$  and labor  $l_t$ , and discount factor  $\beta \in (0, 1)$ , and expectation operator in period  $t = 1$ ,  $E_0$  and utility function  $u: \mathbb{R}_+^2 \rightarrow \mathbb{R}$ . Where;  $E_0 \sum_{t=0}^{t+1} \beta^t (c_t, l_t)$ . In period  $t = 0$  agent skills are  $\theta_0$  and the distribution of those skills is  $F(\theta_0)$ . In period  $t + 1; t \geq 1$  skills follow Markov process  $F_t(\theta_t | \theta_{t-1})$ , where  $\theta_{t-1}$  represents skills realization, and PDF is  $f_t(\theta_t | \theta_{t-1})$ . People retire at period  $\hat{t}$  in which case  $F_t(0 | \theta) = 1 \forall t, \wedge \forall t \geq \hat{t}$ .

*Assumption 1.*  $\forall t \geq \hat{t}$ , pdf is differentiable with  $f'_t \equiv \frac{\partial f_t}{\partial \theta}$  and  $f'_{2,t} \equiv \frac{\partial^2 f_t}{\partial \theta^2}$ , where  $\forall \theta_{t-1}$ , where  $\psi(\theta | \theta_{t-1}) = \frac{\theta_{t-1} \int_{\theta}^{\infty} \frac{\partial f_t}{\partial \theta_{t-1}}(x | \theta_{t-1}) dx}{\theta f_t(\theta | \theta_{t-1})}$ , is bounded one sided  $|\psi| \leq \infty \forall \theta$  and this limit is finite:  $\lim_{\theta \rightarrow \infty} \frac{1 - F_t(\theta | \theta_{t-1})}{\theta f_t(\theta | \theta_{t-1})}$ .

If previous process is AR(1) then  $\psi$  is equal to autocorrelation of the shock process  $\forall \theta$ . Skills are non-negative  $\theta_t \in \Theta = \mathbb{R}^+$ ,  $\forall t$ . Agent types are also persistent like in [Hellwig \(2021\)](#) :

$$\Theta(\theta | \theta_{t-1}) = \frac{\frac{\partial f_t(\theta_t | \theta_{t-1})}{\partial \theta_{t-1}}}{f_t(\theta | \theta_{t-1})} \quad (12)$$

Where  $\frac{\partial f_t(\theta_t | \theta_{t-1})}{\partial \theta_{t-1}} = -\rho \frac{\partial f_t(\theta_t | \theta_{t-1})}{\partial \theta_t}$ , when  $\rho = 0$ ,  $\theta_t$  is i.i.d. and when  $\rho = 1$   $\theta_t$  is random walk with persistence.

*Assumption 2.* Single crossing condition strictly decreasing:

$$\frac{u_{c\theta}}{u_c} - \frac{u_{y\theta}}{u_y} > 0 \quad (13)$$

Where  $y$  are the earnings of the agent. Social planner evaluates welfare by Pareto weights  $\alpha: \Theta \rightarrow \mathbb{R}_+$ . Then  $\alpha$  is normalized to 1  $\int_0^{\infty} \alpha(\theta) dF_0(\theta) = 1$  Social welfare is given by:

$$SWF = \int_0^{\infty} \alpha(\theta) (E_0 \sum_{t=0}^{t+1} \beta^t (c_t, l_t)) dF_0(\theta) \quad (14)$$

*Assumption 3.*  $u$  is continuous and twice differentiable in both arg. and satisfies  $u_c > 0; u_l < 0; u_{cc} \leq 0; u_{ll} \leq 0$ , and  $\frac{\partial}{\partial \theta} \frac{u_y(c, \frac{y}{\theta})}{u_c(c, \frac{y}{\theta})}$ . There the optimal

allocation solve mechanism design problem as in Golosov, Kocherlakota, Tsyvinski (2003):

$$\max_{c_t(\theta_t), y_t(\theta_t); \theta_t \in \Theta; t \in (0, \hat{t})} \int_0^\infty \alpha(\theta) \left( E_0 \left( \sum_{t=0}^{t+1} \beta^t \left( c_t(\theta_t), \frac{y_t(\theta_t)}{\theta_t} \right) | \theta_t \right) \right) dF_0(\theta) \quad (15)$$

s.t. IC (incentive compatibility) constraint:

$$E_0 \left( \sum_{t=0}^{t+1} \beta^t u \left( c_t(\theta_t), \frac{y_t(\theta_t)}{\theta_t} \right) | \theta_t \right) \geq E_0 \left( \sum_{t=0}^{t+1} \beta^t u \left( c_t(\sigma^t(\theta_t)), \frac{y_t(\sigma^t(\theta_t))}{\theta_t} \right) | \theta_t \right), \forall \sigma^t \in \Sigma^t, \sigma^t \in \sigma^{\hat{t}}, \theta \in \Theta \text{ and}$$

feasibility constraint:

$$\int_0^\infty E_0 \{ \sum_{t=0}^{\hat{t}} R^{-t} c_t(\theta_t) | \theta_t \} dF_0(\theta) \leq \int_0^\infty E_0 \{ \sum_{t=0}^{\hat{t}} R^{-t} y_t(\theta_t) | \theta_t \} dF_0(\theta) \quad (16)$$

Now,  $\omega(\hat{\theta}, \theta)$  is state variable following Fernandes, Phelan (2000). Dynamic generalization of Envelope condition of Mirrlees (1971) and Milgrom and Segal (2002), Kapicka (2013), Williams (2011), Pavan, Segal and Toikka (2014). So now we have:

$$\begin{cases} u \left( c_t(\theta_t), \frac{y_t(\theta_t)}{\theta_t} \right) + \beta \omega_{t+1}(\theta_{t-1} | \theta_t) \geq u \left( c_t(\theta_{t-1}, \hat{\theta}), \frac{y_t(\theta_{t-1}, \hat{\theta})}{\theta_t} \right) + \beta \omega_{t+1}(\theta_{t-1}, \hat{\theta} | \theta_t), \forall \hat{\theta}, \theta \in \Theta, \forall t, \\ \omega_{t+1}(\theta_{t-1}, \hat{\theta} | \theta_t) = E_t \left\{ \sum_{s=t+1}^{\hat{t}} \beta^{s-t-1} u \left( c_s(\hat{\theta}_s), \frac{y_s(\hat{\theta}_s)}{\theta_s} \right) | \theta_t \right\} \end{cases} \quad (17)$$

The first and second derivatives of utility are:  $w(\theta) = \omega(\theta | \theta)$  and  $w_2(\theta) = \omega_2(\theta | \theta)$ . The value function takes form of:

$$\begin{cases} V_t(\hat{w}, \hat{w}_2, \underline{\theta}) = \min_{c, y, w, w_2} \int_0^\infty \left( c(\theta) - y(\theta) + \frac{1}{R} V_{t+1}(w(\theta), w_2(\theta), \theta) \right) f_t(\theta | \underline{\theta}) d\theta, \text{ s.t.} \\ \dot{u}(\theta) = u_\theta \left( c(\theta), \frac{y(\theta)}{\theta} \right) + \beta w_2(\theta), \hat{w} = \int_0^\infty u(\theta) f_t(\theta | \underline{\theta}) d\theta, \hat{w}_2 = \int_0^\infty u(\theta) f_{2,t}(\theta | \underline{\theta}) d\theta \\ u(\theta) = u \left( c(\theta), \frac{y(\theta)}{\theta} \right) + \beta w(\theta) \end{cases} \quad (18)$$

Labor  $(1 - \tau_t^y(\theta_t))$  and savings distortions  $(1 - \tau_t^s(\theta_t))$  are defined as:

$$1 - \tau_t^y(\theta_t) \equiv \frac{-u_l \left( c_t(\theta_t), \frac{y_t(\theta_t)}{\theta_t} \right)}{\theta_t u_c \left( c_t(\theta_t), \frac{y_t(\theta_t)}{\theta_t} \right)}; \quad 1 - \tau_t^s(\theta_t) \equiv \frac{1}{\beta R} \frac{u_c \left( c_t(\theta_t), \frac{y_t(\theta_t)}{\theta_t} \right)}{E_t \left\{ u_c \left( c_{t+1}(\theta_{t+1}), \frac{y_{t+1}(\theta_{t+1})}{\theta_{t+1}} \right) \right\}} \quad (19)$$

In the case of separable preferences, let  $\varepsilon_t(\theta) \equiv \frac{u_{ll,t}(\theta)l_t(\theta)}{u_{l,t}(\theta)}$  is the inverse of Frisch elasticity of labor<sup>3</sup>, and  $\sigma_t(\theta) \equiv -\frac{u_{cc,t}(\theta)c_t(\theta)}{u_{c,t}(\theta)}$  represents the intertemporal elasticity of substitution. Preferences are isoelastic:  $u(c, l) = \frac{c^{1-\sigma}-1}{1-\sigma} - \frac{l^{1+\varepsilon}}{1+\varepsilon}$ . The optimal tax rate here is:

$$\frac{\tau_t^y(\theta)}{1-\tau_t^y(\theta_t)} = (1 + \varepsilon) \frac{1-F_0(\theta)}{\theta f_0(\theta)} \int_0^\infty \exp\left(\int_0^x \sigma_t(\tilde{x}) \frac{\dot{c}(\tilde{x})}{c_t(\tilde{x})} d\tilde{x}\right) \left(1 - \lambda_{1,t} \bar{\alpha}_t(x) u_{c,t}(x)\right) + \beta R \frac{\tau_t^y(\theta)}{1-\tau_t^y(\theta_t)} \frac{A_t(\theta)}{A_{t-1}} \frac{u_{c,t}(\theta)}{u_{c,t-1}} \psi_t(\theta), t > 0 \quad (20)$$

In the previous expression:  $A_t(\theta) = (1 + \varepsilon)$ ;  $B_t(\theta) = \frac{1-F_0(\theta)}{\theta f_0(\theta)}$ ;  $C_t(\theta) = \left(\int_0^x \sigma_t(\tilde{x}) \frac{\dot{c}(\tilde{x})}{c_t(\tilde{x})} d\tilde{x}\right) \left(1 - \lambda_{1,t} \bar{\alpha}_t(x) u_{c,t}(x)\right)$ ;  $D_t(\theta) = \frac{A_t(\theta)}{A_{t-1}} \frac{u_{c,t}(\theta)}{u_{c,t-1}} \psi_t(\theta)$  where also:  $\lambda_{1,t} = \int_0^\infty \frac{f_t(x)}{u_{c,t}(x)} dx$ ;  $\bar{\alpha}_t(\theta) = \alpha(\theta)$  if  $t = 0$ ;  $\bar{\alpha}_t(\theta) = 1$  if  $t > 0$ . In a case when  $\sigma = 0$  and  $t = 0$  previous optimal labor tax becomes:

$$\frac{\tau_t^y(\theta)}{1-\tau_t^y(\theta_t)} = (1 + \varepsilon) \frac{1-F_0(\theta)}{\theta f_0(\theta)} \int_0^\infty (1 - \alpha(x)) \frac{f_0(x) dx}{1-F_0(\theta)} \quad (21)$$

And if  $t > 0$  then previous intratemporal components will be equal to zero ( $A_t(\theta) = B_t(\theta) = C_t(\theta) = 0$ ) and optimal marginal tax rate will be equal to intertemporal component

$$\frac{\tau_t^y(\theta)}{1-\tau_t^y(\theta_t)} = \beta R \rho \frac{\tau_t^y(\theta)}{1-\tau_t^y(\theta_t)} \quad (22)$$

In the case of nonseparable preferences between labor and consumption almost all principles as in the case with separable preferences hold,  $\gamma_t(\theta) \equiv \frac{u_{c,l,t}(\theta)l_t(\theta)}{u_{c,t}(\theta)}$  represents the degree of complementarity between consumption and labor, and the MPC from after-tax income on the right upper tail of the distribution  $\bar{x} = \lim_{\theta \rightarrow \infty} \frac{c_t(\theta)}{(1-\tau_t^y(\theta))y_t(\theta)}$ . Labor distortions are:

<sup>3</sup> The Frisch elasticity measures the relative change of working hours to 1% increase in real wage given the marginal utility of wealth  $\lambda$ . In the steady state benchmark model is given as:

$$\frac{\frac{dh}{h}}{\frac{dw}{w}} = \frac{1-h}{h} \left(\frac{1-\eta}{\eta} \theta - 1\right)^{-1}$$

$$\left\{ \begin{aligned} A_t(\theta) &= (1 + \varepsilon(\theta) - \gamma_t(\theta)) \\ C_t(\theta) &= \int_{\theta}^{\infty} \exp\left(\int_{\theta}^x \left[\sigma_t(\tilde{x}) \frac{\dot{c}(\tilde{x})}{c_t(\tilde{x})} - \gamma_t(\tilde{x}) \frac{\dot{y}_t(\tilde{x})}{y_t(\tilde{x})}\right] d\tilde{x}\right) \left(1 - \lambda_{1,t} \bar{\alpha}_t(x) u_{c,t}(x)\right) \frac{f_t(x) dx}{1 - F_t(\theta)} \\ D_t(\theta) &= \frac{A_t(\theta) u_{c,t}(\theta) \theta_{t-1} \int_{\theta}^{\infty} \exp\left(-\int_{\theta}^x \gamma_t(\tilde{x}) \frac{d\tilde{x}}{\tilde{x}}\right) f_{2,t}(\tilde{x}) dx}{A_{t-1} u_{c,t-1} \theta f_t(\theta)} \end{aligned} \right. \quad (23)$$

Now about the income and substitution effects, let  $\varepsilon_t^u(\theta), \varepsilon_t^c(\theta)$  be the compensated and uncompensated elasticities and the income effect is  $\eta_t(\theta) = \varepsilon_t^u(\theta) - \varepsilon_t^c(\theta)$ , now we can rewrite labor distortions  $A_t(\theta), C_t(\theta)$ :

$$\left\{ \begin{aligned} A_t(\theta) &= \frac{1 + \varepsilon_t^u(\theta)}{\varepsilon_t^c(\theta)} \\ C_t(\theta) &= \int_{\theta}^{\infty} \exp(g_t; (x; \theta)) \left(1 - \lambda_{1,t} \bar{\alpha}_t(x) u_{c,t}(x)\right) \frac{f_t(x) dx}{1 - F_t(\theta)} \end{aligned} \right. \quad (24)$$

$g_t = \int_{\theta}^x \left\{ \frac{-\eta_t(\tilde{x}) \dot{y}_t}{\varepsilon_t^c(\tilde{x}) y_t} \tilde{x} - \sigma_t(\tilde{x}) \frac{(1 - \tau_t^y(\tilde{x})) \dot{y}_t - \dot{c}_t}{c_t} \tilde{x} \right\} d\tilde{x}$ ,  $A_t(\theta), C_t(\theta)$  are similar in their dependence on  $\varepsilon_t^u(\theta), \varepsilon_t^c(\theta)$  as in Saez (2001). Preferences here are given as in Greenwood, Hercowitz., Huffman (1988):  $u(c, l) = \frac{1}{1-\nu} \left(c - \frac{1}{1+\varepsilon} l^{1+\frac{1}{\varepsilon}}\right)$ . Labor distortions here are given as:

$$\frac{\tau_t^y(\theta)}{1 - \tau_t^y(\theta_t)} \sim \left[ a \frac{1}{1 + \frac{1}{\varepsilon}} - \varepsilon \frac{-\bar{\sigma}(1 - \bar{x})}{\bar{x}} \right]^{-1}; \theta \rightarrow \infty \quad (25)$$

#### 4.1 Dynamic Mirrlees taxation: two period example

The government computes allocations subject to IC constraints and then implicit taxes are inferred from the resulting wedges between marginal rates of substitution (MRS) and marginal rates of transformation (MRT). The assumptions of the model here are:

1. Workers are heterogenous plus random
2. The government does not observe individual skills, but it knows the distribution of skills *a priori*
3. There are no *a priori* restrictions on fiscal policy \*e.g. lump-sum taxes are available -possible
4. The government can commit

5. Preferences are separable between consumption and leisure (government should be able to observe marginal utility of consumption)
6. There is no aggregate uncertainty

Without aggregate uncertainty a perfect consumption insurance is possible (everybody gets the same consumption). However, if government cannot observe the skills. The assumptions here are:

1.  $\exists$  continuum of workers who live in the 2<sup>nd</sup> period and the maximization problem is
2.  $\max E(u(c_1) + v(n_1) + \beta[u(c_2) + v(n_2)])$
3. The skills production is:  $y = \theta \cdot n$

$y$  represents observable output,  $\theta$  are skills,  $n$  is effort/labor. Furthermore:  $\theta_i$  is only observed by the agent  $i$  at the beginning of period,  $\Pi_1(i)$  represents period 1 distribution of skills, and here  $\Pi_2(j|i)$  is the conditional distribution of skills 2. Government maximization problem is given as:

$$\max_{\substack{c_1(i), c_2(i) \\ y_1(i), y_2(i)}} \sum_i \left\{ u(c_1, l_{i,j}) + v\left(\frac{y_1(i)}{\theta_1(i)}\right) + \beta \sum_j \left[ u(c_2, l_{i,j}) + v\left(\frac{y_2(i)}{\theta_2(i)}\right) \right] \right\} \Pi_2(j|i) \Pi_1(i) \quad (26) \text{ s.t.}$$

1) **Resource constraint :**

$$\sum_i \left\{ [c_i, l_{i,j} + \frac{1}{R} \sum_j c_2, l_{i,j} \Pi_2(j|i)] \Pi_1(i) \right\} + G_1 + \frac{1}{R} G_2 \leq \sum_i \left[ y_1(i) + \frac{1}{R} \sum_j y_2(i,j) \Pi_2(j|i) \right] \Pi_1(i) + Rk_1 \quad (27)$$

2) **Incentive compatibility constraints** are given below:

$$u(c_1 l_{i,j}) + v\left(\frac{y_i l_{i,j}}{\theta l_{i,j}}\right) + \beta \sum_i \left[ u(c_2, l_{i,j}) + v\left(\frac{y_2(i,j)}{\theta_2(i,j)}\right) \right] \Pi_2(j|i) \geq u\left(c_1 l(i_r) + v\left(\frac{y_i l(i_r)}{\theta(i)}\right) + \beta \sum_j (u(c_2(i_r, j_r)) + v\left(\frac{y_2(i_r, j_r)}{\theta_2(i_r, j)}\right) \Pi_2(j|i))\right) \quad (28)$$

4. **Revelation principle:** The government asks what your skill is and allocates consumption plus labor contingent on your answer. So now

here we have  $i_r$ -which denotes first-period skills report (which depends on realized  $i$ ) and  $j_r$ -which represents the 2<sup>nd</sup> period skills report (which depends on realized  $j$ ). Characterization of optimum

Let's consider the following simple variational argument:

- 1) Fix a 1<sup>st</sup> period realization  $i$  and a hypothetical optimum  $c_1^*(i), c_2^*(i)$ .
- 2) Increase 2<sup>nd</sup> period utility uniformly across 2<sup>nd</sup> period realizations:  
 $u(\tilde{c}_2(i, j; \Delta)) \equiv u(c_2^*(i, j)) + \Delta$
- 3) Hold total utility constant by decreasing 1<sup>st</sup> period utility by  $\beta\Delta$ :  
 $u(\tilde{c}_1(i, j, \Delta)) = u(c_1^*(i)) - \beta\Delta$
- 4) Note that this variation does not affect IC constraint and only the resource constraint is potentially affected.
- 5) Therefore, for  $c_1^*(i); c_2^*(i)$  to be optimal,  $\Delta=0$  must minimize resources expended on the allocation.

One can express the resource costs of the perturbed allocation as follows:

$$R^{-1} \sum_j u^{-1}(u(c_2(i, j) + \Delta)) \Pi(j|i) = u^{-1}(u(c_1(i) - \beta\Delta) + R^{-1} \sum_j u^{-1}(u(c_2(i, j) + \Delta)) \Pi(j|i)) \tag{29}$$

FOC evaluated at  $\Delta=0$  is as follows:

$$\frac{1}{u'(c_1(i))} = \frac{1}{\beta R} \sum_j \frac{1}{u'(c_2(i, j))} \Pi_2(j|i) \tag{30}$$

Previous equation is inverse Euler equation,  $\frac{d}{dx} f^{-1}(x) = \frac{1}{f'(x)}$ . We outline three cases as follows:

- 1) Skills observable  $\Rightarrow u'(c_1) = \beta R u'(c_2)$
- 2) Skills unobservable  $\Rightarrow u'(c_1) = \beta R u'(c_2)$  but not random constant overtimes
- 3) Skills observable plus random:  $\frac{1}{u'(c_1)} = \frac{1}{\beta R} E \left[ \frac{1}{u'(c_2)} \right] > \frac{1}{\beta R E u'(c_2)} \Rightarrow u'(c_1(i)) < \beta R E [u'(c_2(i, j))] \Rightarrow \tau_k > 0$

Previous is Jensen's inequality. Intuition here is that savings affects incentive to work, so government needs to discourage savings to prevent the

flowing deviation by highly-skilled: 1) save more today; 2) work less tomorrow. Some other features of optimal fiscal policy are:

- 1) On average wealth taxes across individuals are zero ex-ante
- 2) However, they depend on future labor income-if labor income is below average, your capital tax is positive. If your labor income is above average, then your capital tax is negative.
- 3) So this tax or this fiscal policy might be regressive for incentive reasons

The fact that the capital tax varies in this regressive way makes investment risky and creates a positive risk premium<sup>4</sup>. This explains how  $\tau_k > 0$

### 5.NUMERICAL SOLUTIONS TO MIRRLEES STATIC MODEL: GRAPHIC AND TABULAR

In this first example we are using non-linear tax formula :  $\bar{\tau} = \frac{1-\bar{g}}{1-\bar{g}+\bar{\varepsilon}^u+\bar{\varepsilon}^c(\alpha-1)}$ . Table consists of three global columns with supposed elasticities (uncompensated)  $\varepsilon_u \in (0,0.2,0.5)$  and supposed compensated elasticities  $\varepsilon_c \in (0.2,0.5,0.8)$ .

**Table 1 Non-linear income taxes under different uncompensated and compensated elasticities**

$\varepsilon_c =$	$\varepsilon_u = 0$			$\varepsilon_u = 0.2$			$\varepsilon_u = 0.5$		
	0.2	0.5	0.8	0.2	0.5	0.8	0.2	0.5	0.8
$\bar{g} = 0$									
$\alpha=1.5$	0.91	0.80	0.71	0.77	0.69	0.63	0.63	0.57	0.53
$\alpha=2$	0.83	0.67	0.56	0.71	0.59	0.50	0.59	0.50	0.43
$\alpha=2.5$	0.77	0.57	0.45	0.67	0.51	0.42	0.56	0.44	0.37
$\bar{g} = 0.25$									
$\alpha=1.5$	0.88	0.75	0.65	0.71	0.63	0.56	0.56	0.50	0.45
$\alpha=2$	0.79	0.60	0.48	0.65	0.52	0.96	0.52	0.43	0.37
$\alpha=2.5$	0.71	0.50	0.38	0.60	0.44	0.35	0.48	0.38	0.31

<sup>4</sup> The risk premium is the rate of return on an investment over and above the risk-free or guaranteed rate of return. To calculate risk premium, investors must first calculate the estimated return and the risk-free rate of return.

$\bar{g} = 0.5$									
$\alpha=1.5$	0.83	0.67	0.56	0.63	0.53	0.45	0.45	0.40	0.36
$\alpha=2$	0.71	0.50	0.38	0.56	0.42	0.33	0.42	0.33	0.28
$\alpha=2.5$	0.63	0.40	0.29	0.50	0.34	0.26	0.38	0.29	0.23
$\bar{g} = 0.75$									
$\alpha=1.5$	0.71	0.50	0.38	0.45	0.36	0.29	0.29	0.25	0.22
$\alpha=2$	0.56	0.33	0.24	0.38	0.26	0.20	0.26	0.20	0.16
$\alpha=2.5$	0.45	0.25	0.17	0.33	0.21	0.15	0.24	0.17	0.13

Source: Author's calculation

Highest optimal tax rates are obtained where there are low uncompensated and compensated utility as well as low Pareto parameter.

**Table 2 Linear optimal tax rates per Piketty, Saez (2013)**

	$e = 0.25$		$e = 0.5$		$e = 1$	
	$\bar{g}$	$\tau$	$\bar{g}$	$\tau$	$\bar{g}$	$\tau$
Rawlsian revenue maximizing rate	0	0.8	0	0.67	0	0.50
Utilitarian CRRA=1 $u_c = \frac{1}{c}$	0.61	0.61	0.54	0.48	0.44	0.36
Median voter I $\frac{w_{median}}{w_{average}}$	0.7	0.55	0.7	0.38	0.7	0.23
Median voter II $\frac{w_{median}}{w_{average}}$	0.75	0.50	0.75	0.33	0.75	0.20
very low tax country 10%	0.97	0.1	0.94	0.1	0.88	0.1
low tax country 35%	0.87	0.35	0.807	0.35	0.46	0.35
high tax country 50%	0.75	0.5	0.5	0.5	0	0.5

Source: Author's calculation

The first row of table 1 is Rawlsian criterion with  $\bar{g} = 0$ . The second row is utilitarian criterion with coefficient of risk aversion (CRRA) equal to one. Chetty (2006) proved and showed that  $CRRA = 1$  is consistent with empirical labor supply behavior and that is a reasonable benchmark. MATLAB example settings are:

$$\begin{cases} u = \alpha \log x + \log(1 - y) \\ G(u) = -\frac{1}{\beta} e^{-\beta u} \\ f(n) = \frac{1}{n} \exp\left[-\frac{(\log n+1)^2}{2}\right] \end{cases} \quad (31)$$

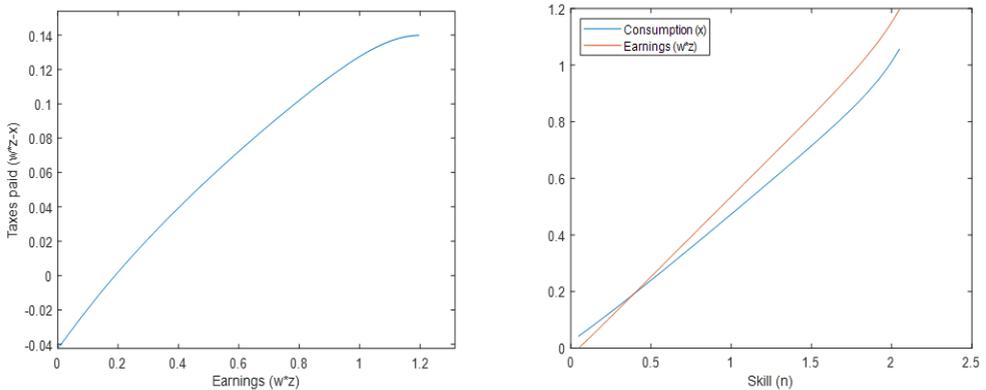
Skills are assumed to be lognormally distributed with the average  $\bar{n} = \frac{1}{\sqrt{e}} = 0.607$ . So now, the equations:

$$\begin{cases} \frac{dv}{dn} = -\frac{v}{n} \left(2 + \frac{nf'}{f}\right) - \frac{1}{n^2 u_1} + \frac{\lambda G'}{n^2} \\ \frac{du}{dn} = -\frac{y u_2}{n} \end{cases} \quad (32)$$

Would become:

$$\begin{cases} \frac{dv}{dn} = -\frac{v \log n}{n} - \frac{x}{\alpha n^2} + \frac{\lambda}{n^2} e^{-\beta u} \\ \frac{du}{dn} = \frac{y}{n(1-y)} \end{cases} \quad (33)$$

**Figure 1 Mirrleesian taxation**



**Table 3 FOC's for the Mirrlees model**

iteration	Func-count	f(x)	Norm of step	First-order optimality
0	3	1.37E-01		
1	6	9.01E-04	0.000224	0.00276
2	9	2.13E-04	2.97E-01	0.000677
3	12	5.02E-08	4.86E-01	9.93E-06
4	15	2.87E-14	6.74E-03	7.50E-09

**Table 4 skills, consumption and earnings for the Mirrlees model**

F(n)-skills	x-cons.	y-income	x(1-y)	z-earnings
0	0.0424	0	0.0424	0
0.1	0.116	0.3894	0.0708	0.0869
0.5	0.18	0.4382	0.1011	0.1612
0.9	0.2888	0.4686	0.1535	0.2842
0.99	0.4315	0.4841	0.2226	0.4412

**Table 5 average and marginal tax rates for Mirrlees model**

z-earnings	x-consumption	average tax rate	marginal tax rate
0	0.0424	-Inf	0.2147
0.05	0.0847	-0.54	0.2336
0.1	0.1271	-0.1558	0.2223
0.2	0.214	0.0273	0.1993
0.3	0.3031	0.0817	0.1824
0.4	0.3937	0.1052	0.1698
0.5	0.4856	0.1171	0.1599

The optimal Mirrleesian taxation is flat for a long range of top incomes  $>1$ .

**Conclusion**

In static models with Utilitarian SWF there is not substantial evidence for progressive taxation optimal tax rates and as this paper shows they depend on redistributive tastes of the supposedly benevolent social planers.

The numerical solutions in the non-linear optimal tax rates showed that high tax rates are obtained when there are unrealistically low uncompensated and compensated elasticities, also the shape parameter of Pareto distribution must be lower. For high tax countries, with burden around 50% the area that provides such high tax rates is where compensated elasticity is between 0.2 and 0.5 and uncompensated elasticity and unrealistically high compensated elasticity between 0.5 and 0.8 but medium redistributive tastes  $\bar{g}=0.5$ . If uncompensated elasticity is high  $\varepsilon_u=0.5$  then also the taste for redistribution must be high e.g.  $\bar{g}\in(0,0.25)$ . For low tax countries the area where those taxes are provided is in high Pareto distribution parameter and very low taste for redistribution. In the dynamic Mirrlees approach, capital is taxed to provide more efficient labor supply incentives when there is imperfect information (private distributions of ability unknown to other parties) and as a part of optimal insurance scheme against stochastic earning abilities. Savings affects incentive to work, so government needs to discourage savings to prevent the flowing deviation by highly skilled. Dynamic Mirrlees approach assumes that agents' abilities to earn income are heterogeneous, stochastic, and private information. Tax instruments ex ante are unrestricted. The model solves for the optimal allocations using dynamic mechanism design (subject only to incentive compatibility constraints) and then considers how to implement these allocations using decentralized tax systems, see also Stantcheva (2020).

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(Original scientific paper)

## RELATIONSHIP BETWEEN RESTAURANT MANAGEMENT AND CUSTOMER SATISFACTION

**Abstract:** Businesses did not always place customers in the center of their operations. On the contrary, the traditional organizational structure had stakeholders in focus and all operations were done in order to please them. With the appearance of globalization and having many countries taking down their market entry barriers, the level of competition has increased tremendously causing changes in every aspect of businesses' operations and managerial decisions. As a result, businesses' looking for sustainability put customers in the center of their operations, following many managerial decisions to shift towards them too. Differently from the product-oriented industries, service-oriented industries are among the biggest in the world, and their growth is not only in terms of volume, but in terms of complexity and sophistication too. Service-oriented businesses by definition are in a direct relation with customers which have immediate influence on the end offer. As such, service-oriented businesses must make meeting customers' needs and wants a priority, and by doing this, they gain customers' satisfaction and loyalty, and hence profit increase.

Hospitality industry is a people-oriented industry which requires person serving other person, so their service offer has become even more challenging regarding its diversity besides its quality. To further help managers understand their businesses and the industries they are in, researchers have established a classification system for services according to which the restaurants are defined as service-oriented businesses with tangible actions and services are aimed at people. As such, restaurants are facing continuous challenges due to their day-to-day operations in changing markets. Looking closely at restaurants' operations it is no secret that there isn't customer who would come back if they had a bad customer service. Although literature review already states the positive relationship between service quality and customer satisfaction in

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restaurant industry, the goal of this research paper is to look further at customers and test two hypotheses. The first hypothesis states that the restaurant management adds value to the dining experience, and to test it a questionnaire on a representative sample was conducted. The questions included all tangible and intangible factors that add value to the customer such as food quality, service quality, location, uniqueness of menu, restaurant interior and ambient, value for money, service time, customer privacy and entertainment, word-of-mouth recommendation etc. The second hypothesis states that the restaurant management has a positive influence on the customers' perception, for which also a questionnaire on a representative sample was conducted. To test this hypothesis, more questions of the intangible factors were included such as good value, restaurant cleanness, tasty food, employees' knowledge of the menu, new or seasonal changes to the menu etc. Clearly there is a combination of factors, both tangible and intangible, that affect customer's perception on restaurant management and their dining experience. Not all factors have to be satisfied for a customer to return to the restaurant. There are factors that add more value to their experience and perception than others, but more of them are related to it. As a result, the findings of this research are presented in the paper pointing out what factors have great influence on customers. Furthermore, there are recommendations pointed out that the restaurant management can rely on in order to offer a better customer service, add value to them, and hence gain their loyalty and satisfaction. All this results with business and sales growth, and sustainability on the market.

**Keywords:** *customer service, restaurant management, service-oriented, customer satisfaction*

**JEL Classification:** L83

## **Introduction**

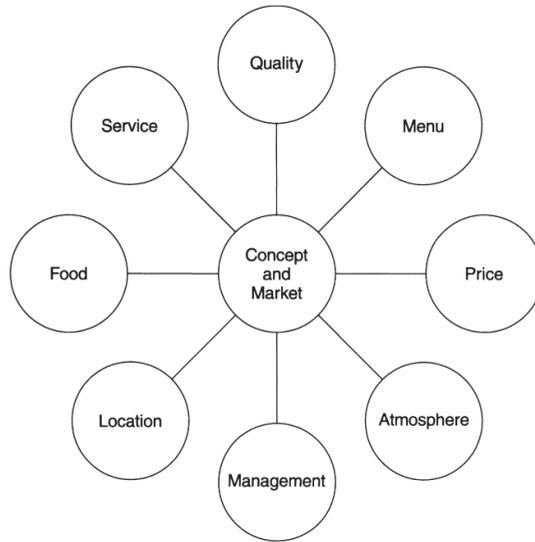
Customers are considered as a driving force for each business nature, both product, and service oriented. When it comes to succeeding at the market, organizations put customers in the center of their operations and decision-making processes. By doing this, organizations focus on satisfying customers' needs, and make them loyal to their businesses. This focus is especially expressed in the service industry, such as the restaurant industry. There is not even one customer who would come back in a restaurant if he/she had a bad experience. Therefore, particularly in the restaurant industry, it is important to have the right people in the right places, gaining customers' satisfaction and making them loyal.

The aim of this paper is to show the strong connection between restaurant management and customers' satisfaction. Furthermore, defining and implementing the elements of the restaurant concept are important part of the process. After a short description of the restaurant concept and its elements, the methodology used to test the hypothesis is presented, followed by the results and a recommendation and conclusion.

## **Restaurant concept**

The restaurant concept is at the core of its existence. It is consisted of several elements, all working towards better restaurant operations and greater customers' satisfaction and loyalty. For that reason, it is important to define each element precisely in the contest of the market that will be served. (Abernethy 2010) Figure 1 presents the restaurant concept elements:

**Figure 1. The restaurant concept elements**



Source: (Walker 2011)

*Location* is the first element of the restaurant concept, and it has to be in consistency with the entire concept. More importantly, it has to be consistent with the target market. The analysis of the location as an element includes looking at the conveniences for fitting the building in the environment, such as environmental, technological etc. Also, the accessibility, noticeability, and attractiveness are an important factor for the location choice. The analysis also include looking at the surroundings, possibility for parking and so on.

*Ambient and atmosphere* are key stakeholders of the concept. The restaurant ambient such as the environment, mood, and situation, necessarily arise from the role of the subjective factor as well as the material factor. The factors affecting these elements are architecture, decoration, correctness of technical appliances, service quality etc. The importance of this concept elements arouses from the fact that it creates immediate conscious and subconscious influences on the guests. As a result, the ambient and the atmosphere are usually referred as mood creators.

*Ecological environment* as an element receives greater attention the last several years. The need for ecologically clean environment and the contribution to it, has been at the focus of every business on the market. The ecological

pollution of the natural and social tourist resources is one of the factors and motives for a place to be attractive for a tourist visit. Furthermore, restaurants implement this concept element by making more sustainable choices, such as focusing on recycle, minimizing food wastage, water consumption, energy consumption, package, supply chain etc. By doing so, restaurants include customers in the process of building an ecological environment, and thus build brand loyalty, grow their customer-base, increase profits, engage employees, improve awareness, improve their supply chain, and offer a better menu. <sup>2</sup>

*Quality* is key concern for both customers and restaurant management. This concept element focuses on the food and beverages production and offer, as well as the services and environment of the restaurant. The key is to satisfy and exceed customers' expectations with their characteristics. As a result, it offers surpassing the competition, long term customer loyalty, and better operational success overall followed with profit increase. Usually the higher quality level leads to greater customer satisfaction.

*Food and beverages* are the main components of the restaurant operations. Furthermore they are at the core of the restaurant existence. They stand as a separate concept element because it is of great importance to decide about the type of food and beverage the restaurant will offer since they depend on the customers' wants and preferences. When analyzing this element, the restaurant management must decide about the choice that the menu will offer, the product quality, the product quantity, normative, consistency, diversity, and the food and beverage presentation.

*Menu* in restaurant concept is important element that dictates the type of food and beverage that will be served. The menu construction is based on several elements. The first element that affects the menu is the price that customers are willing to pay for the menu components. Another element is the time that the customers have for products usage. The type of the customers is also crucial element for the menu construction.

*Service* is another essential element of the restaurant concept, the one that is tightly connected to the customer satisfaction. When looking at the service offered, it can go from none at all to a maximum. The successful restaurant concept takes customers perception into consideration when deciding on the service offer and aims at satisfying their need. For that reason, there is a

direct and indirect service offered in the restaurants. The direct service offer, or the basic one, includes the food and beverages. By offering phone service, phone charging, luggage care, car parking, e-transactions, free Wi-Fi, and so on, restaurants include the indirect service offer in their concept. This differentiates them from the competition and gives them competitive advantage.

*Prices* also are part of the restaurant concept. The price strategy varies depending on the type of the restaurant, its target market, and the characteristics of the target market too. The price of every menu component has to be acceptable both for the restaurant and the market. There are several key factors affecting the pricing strategy in the restaurant operations: competition, direct costs, labor costs, expected profit, margin range, and other costs. One thought must be kept in mind when deciding on the pricing strategy. The feeling that for the price customers pay they get the right value and quality, leads to loyal customers.

*Managers* are the creators of the restaurant concept, but they are an important element of it too. This is due to the three phases that occur between the restaurant and the customer. The first phase is the expectations and happens before the customer even comes at the restaurant. The second phase is the actual experience. The third phase is the impression with which the customers leave, and it can be either positive or negative. In every phase there is a significant level of management involvement, but the greatest concentration happens in the second phase.

Each of the above-mentioned elements are important for the restaurant operation and management, and they are interrelated. Furthermore, the restaurant concept must have a market to support it, and they must fit in.

## **Methods**

The stated hypotheses of this research paper are:

*H1: The restaurant management adds value to the dining experience*

*H2: The restaurant management has a positive influence on the customers' perception*

To test the two hypotheses, the restaurant concept was used for the questionnaire creation. The research was conducted online with a distribution

of questionnaire, done with Google Forms, on a representative sample. There are 155 totally analyzed questionnaires. The overall restaurant management was measured through twenty-three questions divided into 6 elements: Location, Ambient and Atmosphere, Food and Beverages, Service staff, Price, and Management. The service users' satisfaction was measured by asking 3 questions related to the received service, the overall access of the employees and the overall impression for choosing the restaurant. The questions included all tangible and intangible factors that add value to the customer such as food quality, service quality, location, uniqueness of menu, restaurant interior and ambient, value for money, service time, customer privacy and entertainment, word-of-mouth recommendation etc. For the evaluation of the questions, the Likert scale of five values is used, in the interval from 1 to 5 ("strongly disagree = 1" to "strongly agree = 5"). The reliability of the questionnaire was confirmed by the Cronbach alfa coefficient. The relationship between the elements of restaurant management and the satisfaction of service users and the confirmation of the specified hypotheses set out in this paper has been tested by applying structural equation modeling. The data was statistically processed with software package SPSS version 19 and SPSS Amos version 22.

## Results

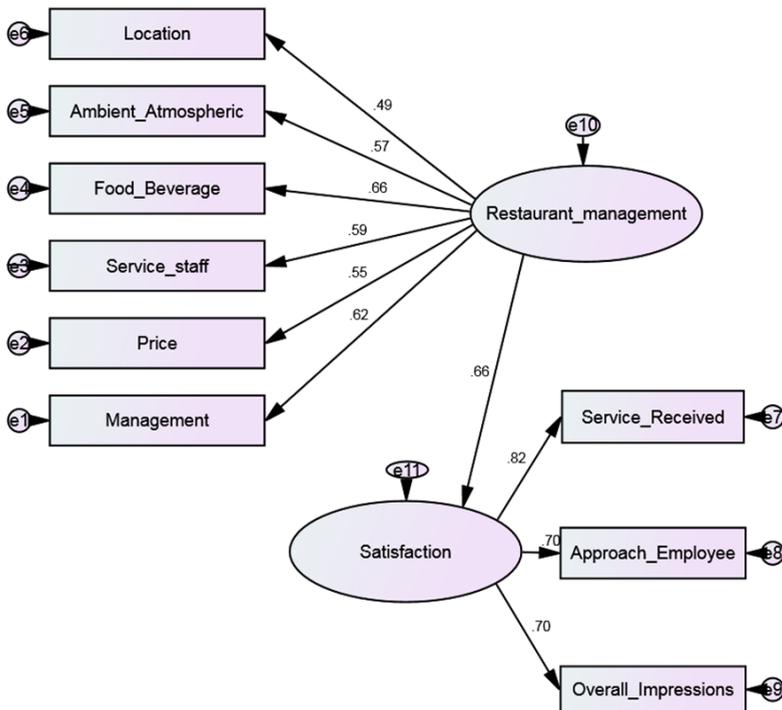
Based on the obtained value for Cronbach alfa coefficient for internal consistency of data grouping of 0.87, the reliability of the questionnaire was proven. Structural equation modeling was used to determine the impact of the relationship between restaurant management and customer service satisfaction in restaurants. Table 1 shows the fit statistics results. According to the results, the small value of  $X^2/df$  ( $<2$ ) and the acceptable values for GFI, NFI, TLI ( $\geq 0,9$ ), AGFI ( $\geq 0.85$ ) and SRMR, RMSEA ( $\leq 0,08$ ) it can be concluded that the model of structural equations shown in Table 1 is appropriate and can be approached to test the set hypotheses. (Karin and Helfried, 2003; Bentler, 1990; Browne and Cudeck, 1992; Hair et al., 2009; Noruzy et al., 2013).

**Table 1. Fit Statistic Results of the quality model**

	$X^2$	$X^2/df$	GFI	AGFI	SRMR	RMSEA	NFI	TLI
Obtained values	51,058	1,96	0.93	0.89	0.03	0.08	0.90	0.91
Recommended values	$p > .05$	$\leq 3.00$	$\geq 0.90$	$\geq 0.85$	$\leq 0.08$	$\leq 0.08$	$\geq 0.90$	$\geq 0.90$

Note: Chi-square test ( $X^2$ ), Goodness-of-fit Index (GFI), Adjusted Goodness-of-fit Index (AGFI), Standardized Root Mean Square Residual (SRMR), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Normed Fit Index (NFI), Tucker-Lewis Index (TLI).

**Figure 2. Model of the connection and influence of restaurant management with the satisfaction of service users in the restaurants.**



The results shown in Table 2 indicate that the hypotheses set: H1 (Location → Restaurant\_management), H2 (Ambient\_Atmospheric → Restaurant\_management), H3 (Food\_Beverage → Restaurant\_management), H4 (Service\_staff → Restaurant\_management), H5 (Price → Restaurant\_management), H6 (Management → Restaurant\_management) and (Satisfaction → Restaurant\_management), are strongly supported by statistically significant regression coefficients,  $\beta$  at the significance level  $p < 0.001$ . Restaurant management significantly affects the satisfaction ( $\beta - 0.66$  \*\*\*) of the customers' service in the restaurants. "Location", "Ambience and Atmosphere", "Food and Drink", "Staff Service", "Price" and "Management" have a significant impact on restaurant management ( $\beta - 0.49$  \*\*\*,  $0.57$  \*\*\*,  $0.66$  \*\*\*,  $0.59$  \*\*\*,  $0.55$  \*\*\*,  $0.62$  \*\*\*)).

**Table 2. Standardized regression coefficients ( $\beta$ ) for restaurant management dependence and satisfaction**

			$\beta$	P	Results
H1: Location	<---	R e s t a u r a n t _ management	0.49	***	Supported
H2: Ambient_ Atmospheric	<---		0.57	***	Supported
H3: Food_Beverage	<---		0.66	***	Supported
H4: Service_staff	<---		0.59	***	Supported
H5: Price	<---		0.55	***	Supported
H6: Management	<---		0.62	***	Supported
H7: Satisfaction	<---		0.66	***	Supported

Note: Level of significance \*\*\*  $p < 0,001$  (Karin 2003)

Our analysis shows that all elements have great impact on the customers' satisfaction. However, the strongest ones are noted by the elements: *food and beverages*, *management*, and *staff*. Analyzing the questionnaires' answers regarding the element *food and beverages* 72.6% of the respondents stated that they are strongly affected by the quantity of the food and beverage when choosing the restaurant. Also, 42.9% and 42.3% rated as 4 and 5 on the Likert scale the impact that consistency and diversity of menu offer has on their restaurant choice. The temperature on which the food and beverages are served is another important component, and 31.6% and 54.8% of the respondents agree and strongly agree about it. The external appearance of the food, such as freshness,

appearance, consistency etc., is another important component for which 60.5% of the respondents strongly agree and almost 30% of them agree that it affects their choice of restaurant.

The next most dependent element is the management. The management as an element includes many components that vary depending on the type of the restaurant and the time of managing. In order to test the element, the components included in the questionnaire were online presence, customer recognition, overall service received, and overall approach of the employees. For almost 62% of the respondents in total, it is important the restaurant to be present online, including social media, website, online order service, smart phone app etc. Almost 90% of the respondents in total agree that the overall service received during their visit of the restaurant affects their choice, 59.1% strongly agree and 30.5% agree. Looking at the overall approach of the employees, 85% of the respondents in total agree that it is important for a repeated visit, 47.7% strongly agree and 37.4% agree. The overall impression for the choice of restaurant is important for 88.5% of the respondents, from which 59% strongly agree and 29.5% agree with it.

The restaurant staff is an important element for gaining customer's satisfaction and hence loyalty. Almost 37% of the respondents strongly agree that the readiness and education of the employees affect the restaurant choice, followed by 32.3% that agree with it too. For total of 83.4% the mood of the employees affect their choice of restaurant visit, 24.4% agreed and 59% strongly agreed. From the respondents, 71.6% strongly agree that the kindness of the staff affects their restaurant choice of visit, almost 22% of them agree to it too, 5.2% neither agree nor disagree, and only 1,3% strongly disagree. The highest percentage of answers was given to the importance of employee commitment, where total of 90% of the respondents agree that this element affects their choice of restaurant, 61.3% strongly agree and 29% agree.

Even though in-depth analysis of those three elements is provided all other elements of the restaurant concept were proven to be dependent with the customer satisfaction too.

## **Conclusion**

Today's competitive business market pressures businesses to focus on customer satisfaction as a key to success and sustainability. This is especially important for the service-oriented businesses such as restaurants. The customers are the ones that directly influence the post purchase behavior, and their

Satisfaction is deemed to be critical for each and every business on the market. This comes as a result from the influence on repeated purchases and word-of-mouth recommendations on which customers, notably in the restaurant industry, rely on. Research shows that there is a close link between service quality and the customers' satisfaction. Furthermore, the management involvement is vital for the success of the restaurant, and that was proven by our research stated in this paper too.

Restaurant concept is a useful guideline for establishing a sustainable and successful business. The elements included in the concept are location, ambient and atmosphere, ecologically clean environment, quality, food and beverage, menu, service, price, and management. It is of great importance the restaurant concept to be in fit with the market on which it will operate. Furthermore, all elements of the restaurant concept are interrelated, so when constructing one element, all others must be taken into consideration. The importance of the concept has been proven by the time it takes from the construction of it to actual opening of the business, which is usually two or more years. After the development, the concept has to adapt, change, or modify if needed. Of course, there is prove of coping and improving an existent concept in the restaurant industry too. Moreover, when placing the concept on the market it can fail too. Instead of closing the restaurant, the concept can be analyzed, and the needed elements changed so that it can fit the market. All these processes depend on the market fit. For that reason, the restaurant concept elements were used to test the two hypotheses: H1: restaurant management adds value to the dining experience, and H2: restaurant management has a positive influence on customer perception. The research was conducted online with the distribution of questionnaires, from which 155 were analyzed. The results showed that restaurant management significantly affects the customers' satisfaction. Furthermore, the elements: *location, ambience and atmosphere, food and drink, staff service, price, and management* have a significant impact on the restaurant management. Their standardized regression coefficients  $\beta$  are 0.49 \*\*\*, 0.57 \*\*\*, 0.66 \*\*\*, 0.59 \*\*\*, 0.55 \*\*\*, 0.62 \*\*\* accordingly. All elements of the restaurant concept have strong influence on the customer satisfaction, and among the top three are: food and beverages, management, and staff. Once again, the research showed that putting the customer in the center of the operations and focusing on the market fit, enables businesses to successfully compete on the market, succeed and sustain.

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**(Original scientific paper)**

## **SLAVERY AS A DETERMINANT OF ECONOMIC GROWTH. THE CASES OF BRITISH AND DUTCH EMPIRES**

**Abstract:** When someone hears the word *slavery*, most people think of the past, of a long-gone era that has no bearing on today's society. However, slavery is a topic that continues to attract academic interest, with historians, sociologists, psychologists, and economics all studying it. The widespread interest in the study of slavery is demonstrated by the repercussions that this past institution has had on the world that we know today. From an economic standpoint, the issue of slavery is intriguing because it may give information on the economic growth of states that were involved in this practice. The purpose of this paper is to examine various perspectives in the academic literature towards the economic impact of transatlantic slavery within the British and Dutch Empires. Moreover, the present article aims to observe how and if the enslavement of Africans influenced the economic expansion of the two state entities. The key findings suggest that the academic literature that studies the importance of slavery on the economic growth of the British and Dutch Empires is highly divided. There could be found two sides, one claiming the fact that slavery had an important role towards the economic growth of both Empires, whereas, the other side supports the idea that slavery's involvement in the economics development of British and Dutch Empire is overestimated. Despite the fact that the international literature has not yet reached an agreement, this issue continues to spark researchers' interest. It is necessary to demonstrate, on a moral basis, if an institution that exploited a certain group of people for centuries was a determinant of economic success for the world's most developed countries.

**Keywords:** Slavery, Transatlantic Slavery, British Empire, Dutch Empire, economic growth

**JEL Classification:** A13, B17, B52, J40

## **Introduction**

Slavery has always been a sensitive area of discussion since it represents one of the humanity's worst experiences. Slavery is described as a process in which a group of individuals targets another group of people with the intent of exploiting and inflicting violence on them. Even though slavery is perceived as an institution of the past, it is still having reverberations on present society. More specifically, modern slavery and the process of economic growth of states involved in past slavery are two of the most visible consequences of slavery's institution. On the one hand, modern slavery is a global issue that encompasses a wide range of illicit actions, ranging from forced labor and domestic servitude to sex trafficking, forced marriage, and descent-based slavery. The economic growth and social development of state entities involved in past slavery, on the other hand, raises dozens of questions concerning whether today's developed countries' involvement in slavery, particularly the transatlantic slave trade, has led those countries down the path of development and modern civilization. The transatlantic slave trade was an international slave trade that transported enslaved Africans over the Atlantic Ocean from Africa to the Americas. During the 16th, 17th, 18th, and 19th centuries, both the British and Dutch Empires were involved in the transatlantic slave trade. The British Empire possessed slave-labor plantations in North America and the West Indies, and it was the state entity that transported and exploited the largest number of African slaves. In comparison, the Dutch Empire was mostly a maritime phenomenon, with just a few genuine colonies in the Caribbean, North America, and Taiwan. Therefore, both empires' participation in transatlantic slavery is thoroughly investigated in order to establish if it facilitated the development and economic growth of the British and Dutch nations.

The purpose of the present paper is represented by the examination of various perspectives in the academic literature towards the economic impact of transatlantic slavery within the British and Dutch Empires. Moreover, this article aims to open the question related to how and if the enslavement of Africans influenced the economic expansion of these two state entities as it is necessary to demonstrate, on a moral basis, if an institution that exploited a certain group of people for centuries was a determinant of economic success for the world's most developed countries. The contribution of the present paper is reflected in the literature review process, as it highlights various viewpoints and positions on the influence of transatlantic slavery on the economic development of the British and Dutch Empires. The undertaken analyze revealed the

fact that the studied literature review is divided in two sides; some specialists claim that slavery represented a factor of economic growth and expansion for the British and Dutch Empires, whereas, some other specialists and authors support the idea that slavery is overestimated when discussing the economic development of states involved in transatlantic slavery. The remainder of this paper is organised as follows. Chapter 1 introduces the relationship between slavery and economics; Chapter 2 presented the used methodology; Chapter 3 examines the case of the British Empire and the various perspectives on the relationship between slavery and economic growth; Chapter 4 explores the case of the Dutch Empire and the multiple viewpoints on slavery and economic development. Some final remarks conclude the paper.

## 1. SLAVERY AND ECONOMICS

Slavery may appear to be a topic more closely related to history, sociology, or psychology at first glance, but it is also important for the field of economics. For instance, slavery has been discussed in the context of Ancient Greece because it had a significant impact on its territory from a social and economic point of view, although Ancient Greece lacked an uniform Greek economy<sup>1</sup> due to the absence of a universal Greek society<sup>2</sup>. In order to understand slavery's impact on the Greek society and economics it is necessary to mention the great ancient thinker Aristotle who developed and supported the doctrine of natural slavery in the light of intellectual considerations - unlike free citizens, natural slaves lack normative intelligence<sup>3</sup>. Lacking normative intelligence, slaves represented nothing but objects whose role was solely to fulfill labour duties, being deprived of any kind of rights and freedoms, comparing to their free citizens counterparts.

Socrates, another important Greek intellectual, describes several ways in which Greek citizens may gain economic advantages only by the use of slave's workforce: (1) owing a large farm (where slaves undertook the entire labour and activities); (2) owing housing in order to be rented (usually,

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<sup>1</sup> **Cartledge, P.:** The Political Economy of Greek Slavery. In P. Cartledge, E. E. Cohen, & L. Foxhall (Eds.), *Money, Labour, and Land. Approaches to the economies of ancient Greece*, (pp. 156-166), Routledge, London and New York, 2002, 158-159.

<sup>2</sup> **Wiedemann, T. E. J. (Ed.):** *Greek and Roman slavery*, Johns Hopkins University Press, London and New York, 1981, 5.

<sup>3</sup> **Charles River Editors:** *Slavery in Ancient Greek*, 2016, Available at: <https://www.charles-rivereditors.com/>, [03.06.2022], 16.

these forms of accommodation provided temporary housing for transitory tenants, but they also served as brothels for prostituted slaves); (3) owing slaves craftsmen (slave labor was used in numerous workshops, and some of them were even supervised by trustworthy and highly competent slaves)<sup>4</sup>. Slaves were therefore an essential component of the available labour in Greek society, engaging in a variety of agricultural and industrial occupations, as well as household responsibilities<sup>5</sup>. As previously stated, despite the fact that Ancient Greece lacked a unified economic and political economy, the elites analysed economic rationality in a modern manner in order to maximise their profits. As a result, the wealthy people of Greek society understood the profit that slaves' labor could provide<sup>6</sup>. Slaves provided a significant financial advantage to Greek people who owned them. Nevertheless, it should be noted that there appears to be a scarcity of measurable available data in this respect when analyzing the profitability and political economics of slave labor<sup>7</sup>.

Slavery's importance may also be seen in the study of earlier economic growth of today's world's most developed countries. Moreover, slavery has an essential role in economics since it portrays trading patterns and agreements in the beginning of international trade. The case of Transatlantic slave trade illustrates the discourse over slavery, international commerce, and its profitability. The Transatlantic slave trade was an international slave trade in which enslaved Africans were transported from Africa to the Americas across the Atlantic Ocean. There is an insightful perspective on the profitability of Transatlantic slavery that suggests that slavery was created not of racism, but of economic reasons; therefore, racism was determined by slavery's economic interests<sup>8</sup>. Initiating the process of international trade and with access to the African continent, Europeans found that black people were more resistant, more docile, and had a higher labour capacity than white people<sup>9</sup>. As a result, Europeans preferred African slaves for economic reasons since they were cheaper and more profitable<sup>10</sup>. Slaves were considered forms of capital and viewed as

<sup>4</sup> **Cartledge, P.**, op. cit, 160.

<sup>5</sup> **Schlaifer, R.**: Greek theories of slavery from Homer to Aristotle. In M. I. Finley (Ed.), *Slavery in Classical Antiquity*, (pp. 93-132), Heffer, Cambridge, 1968, 94-95.

<sup>6</sup> **Finley, M. I.**: *The Ancient Economy*, University of California Press, London, 1999, 60-61.

<sup>7</sup> **Cartledge, P.**, op. cit, 160-161.

<sup>8</sup> **Williams, E.**: *Slavery and Capitalism*, The University of North Carolina Press, Richmond, 1944, 7.

<sup>9</sup> **Basset, J. S.**: *Slavery and Servitude in the Colony of North Carolina*, Johns Hopkins University, Baltimore, 1896, 77.

<sup>10</sup> **Walsh, L.**: Work and the Slave Economy. In G. Heuman, & T. Burnard (Eds.), *The Rout-*

a production function; this function should be valued as slaves' entries and essential materials in order to support slaves in the harvesting of agricultural crops and the creation of slave labor<sup>11</sup>.

It should be noted that the cases of Ancient Greek slavery and the Transatlantic slave trade provide information that connects slavery to the fields of economics, as well as an ongoing field of research, as they continue to ask questions about the profitability of slavery and its relevance in the economic development of certain states.

## **2. METHODOS**

In order to achieve the purpose of the present paper, a qualitative research method was used, namely, content analysis. Through the content analysis there was undertaken a literature review on the implication of slavery in the economic growth of the British and Dutch Empires. In all, eighteen sources were examined, including ten books and eight articles. Jstor, ProQuest, Science Direct and Francis and Taylor were the main databases used. The primary keywords employed were *transatlantic slavery*, *British Empire slavery*, *Dutch Empire slavery*, *slavery profitability*. More specifically, books and articles supporting the idea that slavery was a determinant of the British and Dutch empires' economic growth and general development were analyzed, as well as books and articles arguing that slavery was not such a profitable activity, and thus had little impact on the empires' economic expansion.

## **3. RESULTS**

### **3.1. The British Empire**

The British Empire was a state entity in the transatlantic slave trade that dominated for a long time the purchase, sale and use of African slave labor for its own economic development. However, the literature presents opposing views on the effect that the transatlantic slave trade actually had on the economic expansion of the British Empire. There are experts, such as Williams (1944), Inikori (1988, 1992), Darity (1982, 1990) who claim that the Brit-

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*ledge History of Slavery*, (pp. 10 -118), Routledge, London and New York, 2011, 102.

<sup>11</sup> **Tomich D. W.**: *Through the Prism of Slavery Labor, Capital, and World Economy*, Rowman & Littlefield Publishers, Inc., New York, 2004, 5.

ish Empire benefited from the Transatlantic slave trade and that its economic development and territorial expansion were based on slaves and their labor. On the other hand, some scholars, Hyde (1953, 1971), Floud & McCloskey (1994), Morgan (2000), believe that slavery and the Transatlantic slave trade were not so lucrative as to support the entire economic development and territorial expansion of the British Empire. The present paper is briefly presenting Eric Williams's (1944) approach, which argues in favour of slavery and the use of slaves' strong impact on the economic development of the British Empire, but it is also presenting some opinions that try to prove that the activity of the British Transatlantic slave trade was not in real life so profitable as to propel the British Empire to the forefront of the world's great economic powers.

Eric Williams discusses the triangular trade between the British Empire, France and the colonised Americas, which was a way for trade to grow at international levels, and the countries involved, especially the British Empire, to grow economically to the detriment of non-trading countries<sup>12</sup>. Williams explains the process between the triangular trade and its profitability as follows: ships sailed from their country of origin with loads of various goods specific to the European continent, these goods were later given in exchange for African slaves who, in turn, were traded on plantations, in the exchange of colonial products that were eventually brought back to their country of origin<sup>13</sup>. In Williams' view, triangular trade provided the British Empire with a threefold incentive for industrial development<sup>14</sup>.

Williams further details the benefits of the triangular trade for the British Empire and mentions that, in the first phase, African slaves were bought with British products. They were then transported to the Empire's plantations and produced sugar, cotton, indigo, molasses, and other tropical products, and most importantly, their processing led to the creation of new industries in England<sup>15</sup>. The maintenance of African slaves and the existence of slaveholders in the New World created new markets for the British Empire and for the British industry, with the New World also benefiting from agriculture and fishing. Williams argues that around the 1750s there was no city of production or trade in the British Empire that was not connected to the triangular trade and, implic-

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<sup>12</sup> Williams, E.: *Slavery and Capitalism*, The University of North Carolina Press, Richmond, 1944, 51.

<sup>13</sup> *Ibid*

<sup>14</sup> *Ibid*, 52.

<sup>15</sup> *Ibid*, 51-52.

itly, to the transatlantic slave trade<sup>16</sup>. Moreover, the islands of the West Indies have become a pivot of importance and prosperity for the British Empire; here, it was the African slaves who built the sugar-based colonies, the colonies that proved to be the most prosperous and profitable of all imperialist colonies<sup>17</sup>. The profits from the transatlantic slave trade and slaves' labor were the main source of capital in the British Empire, which later led to the 18th century Industrial Revolution<sup>18</sup>.

A number of scholars, such as Hyde (1953, 1971), Floud & McCloskey (1994), Morgan (2000), have tried to demonstrate the exaggerated economic benefits of the British Empire through the triangular trade and, implicitly, the transatlantic slave trade. They argue that the initial estimates made by specialists such as Williams (1944) or Inikori (1988)<sup>19</sup> regarding the profitability of slaves were confusing; they overestimated both the volume of slaves and the prices at which they were sold<sup>20</sup>, ignored time factors in estimating profits, and relied on unrepresentative samples, using relatively small slave shipments<sup>21</sup>. Another underestimated aspect that was not taken into account when discussing the profitability of slavery in the British Empire is the costs and risks of transporting slaves from West Africa to the colonies of the Empire or the European continent<sup>22</sup>. The full picture of the costs included the costs of arranging the vessel to transport the slaves, including the deployment of the enslaved slave crew, the minimum subsistence requirements for the maintenance of the slaves, and the extent to which the slaves were transported further off the West African coast - the higher the transport costs<sup>23</sup>. Compared to the transportation

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<sup>16</sup> *Ibid*, 37.

<sup>17</sup> **Darity, W.:** British Industry and the West Indies Plantations, *Social Science History*, (14/1), 1990, 117–149, Available at: <https://doi.org/10.2307/1171367>, [03.06.2022], 120.

<sup>18</sup> **Darity, W.:** Mercantilism Slavery and the Industrial Revolution, *Research in Political Economy*, (5), 1982, 1-21, Available at: <https://www.jstor.org/stable/2121763>, [06.06.2022], 4-5.

<sup>19</sup> **Inikori, J. E.:** Slavery and the Development of Industrial Capitalism in England. In Solow B. L. &, Engerman, S. L. (Eds.), *British Capitalism and Caribbean Slavery. The Legacy of Eric Williams*, pp. 79-102, Cambridge University Press, Cambridge, 1988, 81.

<sup>20</sup> **Richardson, D.:** Accounting for Profits in the British Trade in Slaves: Reply to William Darity, *Explorations in Economic History*, (26/4), 1989, 492-499, Available at: [https://doi.org/10.1016/0014-4983\(89\)90020-X](https://doi.org/10.1016/0014-4983(89)90020-X), [06.06.2022], 493.

<sup>21</sup> **Morgan, K.:** *Slavery, Atlantic Trade and British Economy 1600-1800*, Cambridge University Press, Cambridge, 2000, 15.

<sup>22</sup> *Ibid*

<sup>23</sup> **Richardson, D.:** The costs of survival: The transport of slaves in the middle passage and the profitability of the 18th-century British slave trade., *Explorations in Economic History*, (24/2),

of other goods that were included in the triangular trade, it turns out that the transportation of slaves was much more expensive and less profitable<sup>24</sup>. In addition to the high costs, the transport of slaves from Africa to the colonies of the Empire or the European continent also involved a number of risks to which traders were subjected, risks that once materialized turned into financial losses<sup>25</sup>. The risks involved could vary from one transport to another but, generally, they resulted in difficulties in synchronizing travels to ensure profitable sales on the coast of Africa, the problem of obtaining inland slaves when wars and political changes appeared on the African continent, the need to standardize slave deliveries in order to take advantage of the sale of crops from plantations, the problem of high mortality during the Middle Passage, the loss of the vessel due to natural disasters or due to enemy pirates in wartime<sup>26</sup>. All these risks, together with the fact that a complete transport lasted more than a calendar year, made the slave trade not profitable enough to be perceived as the engine of the British Empire's economy and industrialization<sup>27</sup>.

### 3.2. The Dutch Empire

The debate over the importance of slavery and the slave trade for the socio-economic expansion of the Dutch Empire is, as in the case of the British Empire, divided. A number of experts, such as Eltis (2016), Anstey (1976), argue that slavery and the transatlantic slave trade did not have a major impact on the socio-economic development of the Dutch Empire and that it was, in fact, an unprofitable business. Other scholars, like Brandon & Bosma (2021), Williams (1944), Fatah-Black & van Rossum (2014), believe that slavery and the transatlantic slave trade had a positive effect on the economy and development of the Dutch Empire, the main argument being that slave-based activities and slave labor actually influenced a wide range of activities within the Empire. What is certain is that the Dutch formed a vast empire that was scattered along the borders of Europe, Asia, America, and Africa<sup>28</sup>. The points on which the

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1987, 178–196, Available at: [https://doi.org/10.1016/0014-4983\(87\)90011-8](https://doi.org/10.1016/0014-4983(87)90011-8), [06.06.2022], 180.

<sup>24</sup> *Ibid*

<sup>25</sup> **Morgan, K.**, op. cit, 18.

<sup>26</sup> *Ibid*

<sup>27</sup> *Ibid*

<sup>28</sup> **Emmer, P. C., & Gommans, J. J. L.**: *The Dutch Overseas Empire, 1600-1800*, Cambridge University Press, Cambridge, 2021, 10.

Dutch Empire stretched were in fact represented by trade centres partially conquered by the Dutch; for example, along Asia, where there were other powerful empires such as Iran, India, China or Japan, but also on the West Coast of Africa, the Dutch had only small trade offices without territorial rights. The Dutch Empire was in fact a maritime phenomenon with only a few “real” colonies in some regions such as the Caribbean, North America, or Taiwan<sup>29</sup>.

Specialists who argue that slavery and the transatlantic slave trade were not in fact profitable for the economic development and expansion of the Dutch Empire emphasize that abolitionist literature created and perpetuated a myth that slavery and trade brought huge profits<sup>30</sup>. In fact, in the discussion of slavery, it is neglected that during and before the 18th century, the transatlantic slave trade was seen as a common commercial activity, although it was a very risky activity<sup>31</sup>. The Dutch Empire owned a company through which it traded slaves, the West India Company (WIC). Specialists who argue for the unprofitability of the slave trade in the Dutch Empire point out that it is impossible for the WIC to calculate the profit and loss of travel involved in the slave trade because no full financial account has been maintained<sup>32</sup>.

When discussing the slave trade, the profit from the sale or use of slave labor is emphasized, but a wide range of issues are lost in the discourse, issues which have resulted in costs and often in losses. For example, the passengers ship’s damages, the food for the crew and slaves, the salaries of the crew and officers or the maritime insurance were aspects that included expenses; moreover, these expenditures varied according to weather conditions, length of travel, market variations, and international political conditions (a tense international political climate could lead to much higher costs for those involved in the transatlantic slave trade)<sup>33</sup>. Furthermore, the African continent from which the Dutch procured slaves for trade, involved another set of expenses. Therefore, those who wanted to buy slaves had to pay various payments to their masters in order to be allowed to cooperate and trade in a certain area; there were also

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<sup>29</sup> *Ibid*

<sup>30</sup> **Eltis, D., Emmer, P. C., & Lewis, F. D.:** More than profits? The contribution of the slave trade to the Dutch economy: assessing Fatah-Black and Van Rossum, *Slavery & Abolition*, (37/4), 2016, 724–735, Available at: <https://doi.org/10.1080/0144039X.2016.1242905>, [06.06.2022], 2.

<sup>31</sup> **Anstey, R.:** *The Atlantic Slave Trade and British Abolition, 1760-1810*, Macmillan Press, New York, 1976, 9.

<sup>32</sup> **Postma, J. M.:** *The Dutch in the Atlantic Slave Trade 1600-1815*, Cambridge University Press, Cambridge, 1990, 276-277.

<sup>33</sup> *Ibid*

payments made to various African brokers who attended the transactions; fees were often paid for intermediaries; taxes and wages were also paid for guards, announcers, carriers, and oarsmen to transport slaves to ships; other expenses were also reflected in the purchase and transport of water and firewood to the slave ships for the return journey; once they arrived at their destination, various expenses arose again, such as medical visits to the colonies attesting to the health of the slaves so that they could be sold further<sup>34</sup>. The triangular slave trade involved expenses that other types of trade did not include - the human cargo was very sensitive and prone to disease and death<sup>35</sup>. Several researchers use all of these considerations to argue that slavery and the transatlantic slave trade were not profitable businesses, and that this form of trade was more dangerous than profitable.

Specialists who argue that slavery and the transatlantic slave trade played a very important role in the expansion and economic development of the Dutch Empire include the phenomenon of slavery and its benefits in a wider Dutch economy context. They claim that the transatlantic slave trade reflected several indirect economic benefits for the Dutch Empire<sup>36</sup>. Therefore, the Dutch economy produced and sold ships with which slaves were transported, each slave-buying mission had to be supplied with food and various tools necessary for trade, and, at the same time, all the goods to be traded in the interaction with African state entities had to be produced and sold<sup>37</sup>. All these activities have certainly produced many jobs for textile and firearms stores, but also for various workshops within the Dutch Empire<sup>38</sup>.

Moreover, the slave labor that was forced to work on Empire's colonies plantations produced goods, raw products that had to be refined and processed. The process of refining and processing those products took place on the territory of the Dutch Empire, which determined new jobs and profits; once completed, these products/goods were again entered into a process of transportation and trading<sup>39</sup>. Even for the common population within the Empire, slavery

<sup>34</sup> *Ibid*, 277-278.

<sup>35</sup> *Ibid*

<sup>36</sup> **Fatah-Black, K., & van Rossum, M.**: Beyond profitability: The dutch transatlantic slave trade and its economic impact, *Slavery & Abolition*, (36/1), 2015, 63–83, Available at: <https://doi.org/10.1080/0144039X.2013.873591>, [07.06.2022], 3.

<sup>37</sup> **Brandon, P., & Bosma, U.**: Slavery and the Dutch economy, 1750–1800, *Slavery & Abolition*, (42/1), 2021, 43–76, Available at: <https://doi.org/10.1080/0144039X.2021.1860464>, [07.06.2022], 44-45.

<sup>38</sup> *Ibid*

<sup>39</sup> **Postma, J. M.**, op. cit, 281.

and the transatlantic slave trade have provided ways to earn enough income to support themselves, whereas for another segment of the population, slavery has been real sources of wealth<sup>40</sup>. Specifically, the elite of Dutch society was actively engaged in financing, insuring, organizing and empowering the slave system because through this system they managed to obtain very high profits and financial benefits<sup>41</sup>.

The arguments presented previously seek to demonstrate that the profitability of slavery and the transatlantic slave trade in the Dutch Empire should not be downplayed and debated solely in terms of the process of buying and selling slaves, in contrast to the viewpoint that supports slavery's lack of profitability. Slavery's profitability and beneficial influence on the Dutch Empire's development and economy must, in reality, be seen within a larger conceptual framework that allows the linkage between slavery and its activities.

## CONCLUSIONS

Slavery is a topic of research that has engaged researchers from a variety of disciplines, including history, psychology, sociology, and economics. Slavery is significant for economics since it can be incorporated into the discourse of former economic growth of today's most developed countries. Economists are interested in this past institution because it illustrates trading tendencies and agreements at the start of global trade. During the 16th, 17th, 18th, and 19th centuries, the British and Dutch Empires were two state entities that were actively involved in the transatlantic slave trade, transporting and using slave labour from Africa to the Americas and the European continent. The British Empire, on the one hand, had slave-labor plantations in North America and the West Indies. In turn, the Dutch Empire was mostly a maritime phenomenon, with just a few genuine colonies in the Caribbean, North America, and Taiwan.

The purpose of this paper was to conduct a content analysis in order to highlight how slavery is perceived in relation to the economic development of the British and Dutch Empires. The key findings indicated that the literature review focusing on the role of slavery in the economic growth of the British and Dutch Empires is divided into two camps. One argues that slavery was a key component in the British and Dutch Empires' economic growth, while the

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<sup>40</sup> *Ibid*

<sup>41</sup> **Fatah-Black, K., & van Rossum, M.**, op. cit, 5.

other claims that slavery is exaggerated when considering the economic progress of state entities involved in transatlantic slavery.

In conclusion, this disagreement provides potential for more research in the fields of slavery and economics, as specialists have yet to reach a consensus. Apart from the economic implications of slavery on the socio-economic development of the countries involved in the transatlantic slave trade, it is necessary to demonstrate, on a moral basis, whether an institution that for centuries exploited a specific group of people was a determinant of economic success for the world's most developed countries.

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