

# International Journal of Sales, Retailing and Marketing

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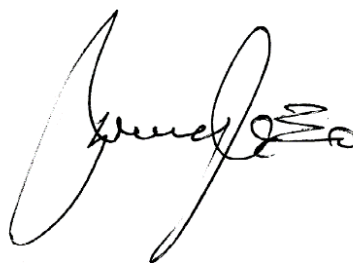
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A handwritten signature in black ink, which appears to be 'Lazo Roljić'. The signature is stylized and cursive.

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## AWARENESS AND ATTITUDES OF PLANT-BASED MEAT OPTIONS, AND THEIR IMPACT ON CONSUMPTION BEHAVIORS

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### **Abstract**

*In this study, we questioned 160 individuals of varying demographics on their attitudes towards, and awareness of, plant-based meat options in fast food restaurants. As the Impossible Burger has made the plant-based option more mainstream, especially after being introduced at Burger King, the goal of the study was to gauge awareness of the plant-based options, and whether the increased publicity is driving consumer choice towards the plant-based option. The results are in the form of descriptive analysis. There was a positive association with those who had diets incorporating plant-based, or no-meat restrictions, and those who had positive attitudes towards trying plant-based meat. Our results portray that because of the popularity of this meat alternative, plant-based options are purchased primarily out of curiosity and the aspect of the plant-based option being a healthy alternative to animal-based meats.*

**Keywords:** *plant-based options, plant-based meat, meat alternatives*

### **INTRODUCTION AND LITERATURE REVIEW**

In this study, we are aiming to understand the attitudes and awareness of plant-based options amongst college students. The goal of this study is to determine how individuals, namely college students, view plant-based options as an alternative to animal meat in fast-food settings. Additionally, the aim was to determine what factors, if any, influence their decision to order items containing plant-based options. We explore the hypothesis that an increase in plant-based diets is, in turn, causing an increased likelihood by consumers to purchase plant-based options in a fast-food setting. The survey results will be used to determine if a strong correlation exists between plant-based diets and the purchase of plant-based options at fast-food establishments.

This study is particularly focused on meat options that are “virtually indistinguishable from cow” and pig (Reilly, 2016). These products are typically marketed and sold in hamburger or sausage patty style, and are designed such that they appeal not only to those who may have adopted an animal meat-free diet, but to those who may be seeking a purportedly healthier alternative to meat. In fact, “dietary restrictions are not a top reason shopper

are trying plant-based meat alternatives. Health and curiosity are the primary drivers of plant-based meat purchases” (Brennan, 2019).

The plant-based meat that is being sold by fast-food establishments, typically sourced from either Beyond Meat, Inc. or Impossible Foods, is a highly-processed food made primarily of plant protein and oil, depending upon the producer (Root, 2019). This combination of ingredients does not typically make the plant-based option any healthier than animal meat itself, just in a different form, as most of the plant-based meats have very high sodium content. While studies have shown that increased red meat consumption can be detrimental to one’s health and even cause premature death, this does not indicate that plant-based meat is the answer to the problem (Sweeney, 2019). However, other studies have shown that “meat is an optional rather than an essential constituent of human diets” (Sanders, 1999). Yet, a 2019 poll showed that 60.9% of consumers would consider “ordering plant-based meats at restaurants, if they were healthier than real meat options”, which implies that consumers do not necessarily recognize plant-based meat as being healthier than real meat

(Lock, 2019). It also implies there is a market for plant-based options, if they are also produced to be a healthy product. The main takeaway from this seemingly conflicting information is the verdict on the health benefits of plant-based meat is still out, and accordingly most consumers could be trying the food simply out of curiosity.

While plant-based meat options have been in the market for some time, they just recently entered the fast-food market. Before, such products had to be prepared at home; now they are prepared in similar ways to fast-food meat options, and thus seemingly resemble meat more thanks to their preparation and presentation. As of May 2019, 36% of consumers feel that “fast-food restaurants should offer more vegetarian or vegan options” (Lock, 2020). Of consumers who do eat plant-based protein, 52% prefer plant-based simply because of taste, and only 10% due to dietary concerns (Shahbandeh, 2018). This indicates that those individuals initially tried plant-based options due to curiosity in taste, and because of health or environmental concerns.

More specific to our target audience for this research, a 2019 Statista study found that, on average, 51.7% of Millennials have tried plant-based meats (Shahbandeh, 2019). This particular study did not include Generation Z, which contains most current college students, but the trend in the data indicates that this generation would contain the highest percentage of those who have tried plant-based options compared to those who have not, as the younger generations had higher percentages of those who have tried the non-meat products. Altogether, this indicates that current college students could be the most likely individuals to try plant-based meat in a fast-food setting and would do so because of curiosity in its taste and potential health benefits.

Interestingly enough, while not included in our research, the recent coronavirus pandemic has impacted the demand for plant-based options significantly. Be it a result of increased demand across the food spectrum, substitution purchases, or simply because Americans are more interested in plant-based options, demand for plant-based options is greater than any other meat products, when measured as a percent increase (much smaller base). In fact, the dollar sales of “plant-based meat alternatives (fresh)” for the week ending March 14th is up 279.8% according to Nielsen (Domonoske, 2020). While this pertains to plant-based options sold in grocery stores and not in fast-food establishments, it is still interesting.

## SURVEY CONSTRUCT AND RESULTS

The goal of the survey was to examine the decision factors behind college students’ purchases of plant-based fast-food options and observe their attitudes and acceptance of meat analogues. This project was initially designed to focus more on the interest of college students regarding plant-based options, and whether college students purchased the product based upon their diet, perception of plant-based options as a healthy alternative, or the trendiness of the product. A 34-question survey was designed to ask questions about the knowledge of, and interest in, plant-based meat and whether that stemmed from dietary needs. The survey was sent to college students via email, and social media. It was also distributed by snowball method to acquaintances of those who received the original surveys.

The preconceived views we shared must be mentioned, in which a focus on plant-based diets would cause an increased likelihood by consumers to purchase plant-based products alternative to meat, which reigned true in relation to the desire for plant-based options and consideration of regularly consuming the plant-based alternative to meat and the likelihood of trying and buying the alternative at an establishment/ restaurant. The sample size returned was n=160. The choice of the plant-based option as the healthier alternative, and regular consumption of the plant-based product, had strong correlations to the diet of the students. The knowledge of plant-based meat alternatives was high among students that have seen promotions for the plant-based meat as well, potentially correlating the knowledge of the alternative to advertising.

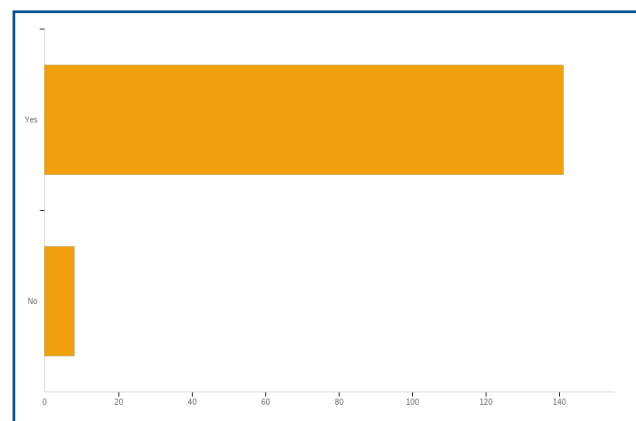


Figure 1: Have you heard of plant-based meat?

From our survey, it was found that 91% of the respondents were impacted in their desire for meat alternatives in relation to their diet. When analyzing this data, it is prevalent to mention that upon asking the following question: “Do you wish fast food had more meat-alternative options?” 80% of respondents



desired more alternatives. Additionally, 95% of the respondents had heard of plant-based meat prior to the survey, and 60% of the respondents have tried plant-based meat before, as shown in figures 1 and 2.

The majority of respondents would consider regularly eating plant-based meat as an alternative to a meat menu item, at 61% based on our survey. Additionally, 83% of respondents would try the plant-based meat option at a fast-food restaurant, 92% would eat plant-based options if they were a healthy alternative, while only 27% of respondents would try them if they were trendy and cool. After analyzing respondent’s answers to the survey, most students would try plant-based meat, especially if it were a healthy option.

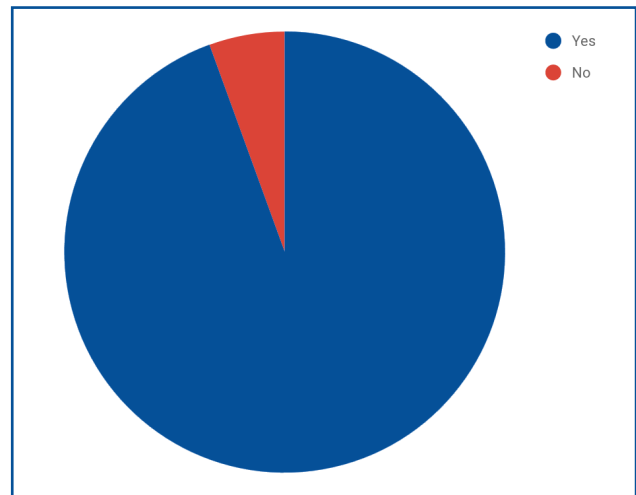


Figure 2: Have you tried plant-based meat?

**CORRELATIONS**

Descriptive Statistics

	Mean	Std. Deviation	N
Diet	4,97	2,201	149
Perception of Health of PBM Patty to meat patty	1,24	,431	115

**CORRELATIONS**

		Diet	Perception of Health of PBM Patty to meat patty
Diet	Pearson Correlation	1	,221*
	Sig. (2-tailed)		,018
	N	149	115
Perception of Health of PBM Patty to meat patty	Pearson Correlation	,221	1
	Sig. (2-tailed)	,018	
	N	115	115

\*. Correlation is significant at the 0.05 level (2-tailed).

Figure 3: Diet to Perception of Plant-Based Options as Healthy

When analyzing the relationship between diet and perception of plant-based options as a healthy alternative, 92% of those who follow diets consisting of eating plant-based responded as having a perception that plant-based meat is healthier than normal meat. From this response, we could possibly conclude plant-based eaters must choose to eat plant-based options due to the perceived health benefits over animal-produced meat (figure 3).

**CORRELATIONS**

## Descriptive Statistics

	Mean	Std. Deviation	N
Diet	4,97	2,201	149
Likelihood to go to Restaurant with intention to buy PBM	1,42	,496	137

**CORRELATIONS**

		Diet	Likelihood to go to Restaurant with intention to buy PBM
Diet	Pearson Correlation	1	,313*
	Sig. (2-tailed)		,000
	N	149	137
Likelihood to go to Restaurant with intention to buy PBM	Pearson Correlation	,313*	1
	Sig. (2-tailed)	,000	
	N	137	137

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

Figure 4: Diet to Desire to Consumer Plant-Based Options

When analyzing the relationship between diet and desire for plant-based options, 81% of those who follow diets consisting of eating plant-based responded as likely to go to a fast-food restaurant with the intention of purchasing a plant-based product. From this correlation, we can possibly conclude a large portion of plant-based purchases must come from those following plant-based diets (figure 4).

**CORRELATIONS**

## Descriptive Statistics

	Mean	Std. Deviation	N
Diet	4,97	2,201	149
Consideration of regularly consuming plant based meat	1,39	,489	142

**CORRELATIONS**

		Diet	Consideration of regularly consuming plant based meat
Diet	Pearson Correlation	1	,237*
	Sig. (2-tailed)		,004
	N	149	142
Consideration of regularly consuming plant based meat	Pearson Correlation	,237*	1
	Sig. (2-tailed)	,004	
	N	142	142

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

Figure 5: Diet to Likelihood to try Plant-Based Options

When comparing, diet to likelihood of trying plant-based options, 83% of those who follow diets consisting of eating plant-based responded as having a strong consideration to regularly consume plant-based options. From these responses, we can possibly conclude those who consume plant-based options at fast food restaurants would likely be regular customers (figure 5).

### LIMITATIONS OF STUDY AND REPLICABILITY

With a wide range of respondents, we were able to find several correlations between certain demographics and our results. The results, although informative, must be taken in the context of replicability and randomness of the sample group. The intent was to study college students in general, and over 50% of respondents were aged from 18 to 23 years old which reached our targeted survey group.

The difficulty in utilizing the results is the propensity for people in this age group to already be part of the move to a healthier, animal-meat free diet. Inferring to an older cohort would be a mistake, as many grew up eating meat and have a difficult time changing habit. A trend for the last number of years is having a dairy and meat free diet, since research has found more negatives than positives for consumers' health. It would be safe to say the results can be loosely applied to college students, and further replications would need to include older cohorts, who may be more established in their eating patterns.

Regarding demographics, 68% of the respondents were female and 86% of respondents were Caucasian. The limitations from skewing responses towards a certain demographic are numerous, including an inability to infer the results to the broader population. This survey's results skewed towards white, college-aged females who are willing to try meatless options at fast food restaurants. It's a snapshot of one type of demographic, and further replication will need to smooth out the demographic responses, as well as ensure randomness of those surveyed. In looking at respondents' residences, most were from New York, but 25% of respondents were out-of-state residents. There are many factors when looking over the demographics of the respondents and even though we covered most of them, there are still two other factors that we take into consideration. First being the education of the respondents, which may seem unrelated but can show a correlation with other factors, helping us conclude our data results. Even though a majority of our respondents did not choose to answer their education, we did receive over 25% of respondents having a bachelor's degree. With many of the respondents being college students, this was expected. Lastly, we will look at the disposable income which varied among many respondents.

Of the respondents, 23% reported they have \$1-50 of disposable income, which works well for our research, since the products we are asking about generally range in price from \$5-10. Also, disposable income in the \$51-100 and >\$200 was the range for roughly 18% of respondents. This makes it less complicated for our data since we have a majority with enough income to purchase a meatless option at a fast-food restaurant.

The main demographics that affected our research results were ethnicity, gender and age. Over 80% of respondents were Caucasian, showing a heavy skewing of respondents. This directly affects our results since it is such a large portion of our respondents. Along with ethnicity, we had over half of respondents attending college, which affects us the least since our hypothesis was based off of college students.

With this cumulative information provided by the respondents, we are able to explain how demographics may affect research results. This being said, many similar results may have potentially skewed our results in one direction. If this survey were to be conducted again, it would be wise to send it via different channels to reach respondents of varying demographics.

### FAST-FOOD INDUSTRY IMPLICATIONS

This study was based upon the recent resurgence of publicity and media surrounding plant-based options in fast-food restaurants, and the likelihood of college students to try plant-based options due to either curiosity or as part of a plant-based diet already in place. In that regard, there are implications and guidelines that can be produced for the fast-food industry. The fast-food industry must take measures to maximize their effectiveness of utilizing the plant-based meat patty based upon the increased attention it has received. Using these guidelines, the industry can focus on maximization of growth by utilizing the most effective pricing and promotional strategies.

#### Pricing:

- Have a pricing strategy to entice potential consumers to purchase plant-based meat.
- The degree to which consumers considered purchasing plant-based meat was affected by the fairness of price.
- The disposable income of the consumer reflects where they will purchase this product and the likelihood to go to an establishment with the intent of purchasing the plant-based meat alternative, therefore the price of the alternative must reflect the relative disposable income of the targeted consumer.

#### Promotion:

- Fast-food restaurants may need to consider the consumer's diet, their consumer's frequency of visitation, and awareness of the plant-based meat alternative offered at their establishment.
- Packaging and advertising should be tailored to encourage the demographic that eats plant-based meat for dietary purposes to not only create awareness but create a desire for fast-food plant-based meat products.
- To entice their loyal customers to purchase the alternative, the industry should consider ways to increase sales to this demographic, possibly using pricing as a tool as well as pushing the product as a healthy alternative with the same taste.
- Advertising methods must be tailored to the population most likely to purchase the plant-based option, considering the correlation between the reason for purchasing the alternative and the specified type of promotion.

#### SOURCE OF AWARENESS

To fully utilize the impression consumers, have on plant-based meat, the use of reviews, endorsements, and influencers should be utilized when considering the level of awareness consumers have of plant-based meat. Awareness of plant-based meat alternatives had a strong correlation with the college students that saw promotions for the plant-based meat. Though not all consumers are made aware of the alternative through promotion, they are influenced by their close circle of family, peers, friends and celebrity figures. The optimal way to ensure a positive impression comes from the utilization of creating a promotional strategy to fit the targeted demographic, match the claims that our promotions make, and make information that the plant-based meat alternative is a healthier option readily available to consumers.

#### CONCLUSION

Based upon our survey results and our interpretations, our study suggests that college students are interested in trying plant-based options at fast food restaurants. We found out that an overwhelming majority of respondents have heard of plant-based options before even taking the survey, which may be considered biased. Since we are looking for the likelihood of individuals to consider eating a plant-based diet, we see this bias as an advantage since they already have information about the questions we are asking. As a result, we are concluding that there is a propensity of college students to try plant-based options, and both drivers of trial are present in their responses: already on a plant-based diet and curiosity, due to increased awareness.

#### FURTHER LIMITATIONS AND REPLICATION

In addition to the earlier stated limitations, it is unclear in the survey if the students knew we were relating diet to the consumption of plant-based meat. Though we asked the questions separately and there was a correlation between the two, it was unknown to the degree in which a specific diet affected the desire for, willingness to try, and interest in plant-based meat based on the trendiness of that diet. The study could be replicated with more specific questions relating to the trendiness of plant-based diets in the future.

## REFERENCES

- Brennan, Shannon. (2019) The Real Deal with Fake Meat (Part 1). Numerator, 6 Aug. 2019. [www.numerator.com/resources/blog/real-deal-fake-meat-part-1](http://www.numerator.com/resources/blog/real-deal-fake-meat-part-1).
- Domonoske, Camila. (2020) America's Shopping List: Here's What We're Buying The Most. NPR, NPR, 20 Mar. 2020, [www.npr.org/2020/03/20/818995256/americas-shopping-list-here-s-what-we-re-buying-the-most](http://www.npr.org/2020/03/20/818995256/americas-shopping-list-here-s-what-we-re-buying-the-most)
- Lock, S. (2020). Opinions on More Vegetarian/Vegan Options at Limited Service Restaurants US 2019. Statista, 3 Mar. 2020, [www.statista.com/statistics/1029926/qsr-restaurants-providing-vegetarian-vegan-menu-options/](http://www.statista.com/statistics/1029926/qsr-restaurants-providing-vegetarian-vegan-menu-options/)
- Lock, S. (2019). U.S. Willingness to Buy Plant-Based Meat If Healthier than Real Meat 2019. Statista, 2 Oct. 2019, [www.statista.com/statistics/1056347/plant-based-meat-vs-real-meat-healthier-in-the-us/](http://www.statista.com/statistics/1056347/plant-based-meat-vs-real-meat-healthier-in-the-us/)
- Reilly, Michael. (2016). If the World Gives Up Meat, We Can Still Have Burgers. MIT Technology Review, 22 June 2016, [www.technologyreview.com/2016/06/22/159146/if-the-world-gives-up-meat-we-can-still-have-burgers/](http://www.technologyreview.com/2016/06/22/159146/if-the-world-gives-up-meat-we-can-still-have-burgers/)
- Root, Al. (2019). Beyond Meat and Impossible Foods Could Be the Coke and Pepsi of Alternative Meat. Barrons, 14 May 2019, [www.barrons.com/articles/beyond-meat-impossible-foods-ipo-burgers-51557847286](http://www.barrons.com/articles/beyond-meat-impossible-foods-ipo-burgers-51557847286)
- Sanders, T. A. B. (1999). The Nutritional Adequacy of Plant-Based Diets. Proceedings of the Nutrition Society, vol. 58, no. 2, 1999, pp. 265–269., doi:10.1017/S0029665199000361.
- Shahbandeh, M. (2019). Plant-Based Meat: Penetration among U.S. Consumers by Generation 2019. Statista, 8 Oct. 2019, [www.statista.com/statistics/1057293/plant-based-meat-consumption-in-the-us-by-generation/#statisticContainer](http://www.statista.com/statistics/1057293/plant-based-meat-consumption-in-the-us-by-generation/#statisticContainer)
- Shahbandeh, M. (2018) Plant-Based Proteins: Consumer Preferences Reasons U.S. 2018 | Statistic. Statista, 6 Aug. 2018, [www.statista.com/statistics/891848/reasons-us-consumers-prefer-plant-protein-over-animal-protein/](http://www.statista.com/statistics/891848/reasons-us-consumers-prefer-plant-protein-over-animal-protein/)
- Sweeney, Chris. (2019). Increasing Red Meat Consumption Linked with Higher Risk of Premature Death." Harvard School of Public Health, 13 June 2019, [www.hsph.harvard.edu/news/press-releases/increasing-red-meat-consumption-linked-with-higher-risk-of-premature-death/](http://www.hsph.harvard.edu/news/press-releases/increasing-red-meat-consumption-linked-with-higher-risk-of-premature-death/)

## ANIMAL WELFARE AND THE UK'S LEADING FOOD RETAILERS

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### Abstract

*This paper offers an exploratory review of how the UK's leading food retailers have publicly addressed animal welfare. The findings reveal that six interlinked themes, namely, strategic corporate commitment, animal welfare as good business policy, a focus on supply chains, policies on specific categories of animals and animal products, antibiotics, and auditing, illustrated the food retailers' approach to animal welfare. The authors raise a range of issues about the companies approach to animal welfare, including the aspirational nature of their commitments, the emphasis on regular audits, the role of external assurance in the reporting process, animal welfare pressure groups, and the impact of COVID-19. The paper offers an accessible review how some of the UK's leading food retailers have publicly addressed the issue of animal welfare.*

**Keywords:** *Animal welfare; animal welfare statements; food retailers; supply chain; audit; external assurance*

### INTRODUCTION AND LITERATURE REVIEW

The UK's major food retailers have a range of impacts on the environment, on society and on the economy, and academic research has focused on the corporate challenges for, and the retailers' strategic and operational responses, to those challenges (e. g. Rimmington et al. 2006; Jones et al. 2007; Hartmann 2011; and Souza-Monteiro and Hooker 2017). More specifically, the UK's leading food retailers have looked to address a number of issues, including climate change, health and well-being, human rights and labour standards, the communities in which they operate, supply chain relationships, business ethics, plastics and packaging, food waste, working relationships and animal welfare, in their annual corporate social responsibility reports. However, while the issue of animal welfare within the food industry has attracted attention in the literature, (e.g. Lever and Evans 2017; Buller and Roe 2018), relatively little research has been published on the food retailers' approach to animal welfare. This exploratory paper looks to add to this work by reviewing, and reflecting on, how the UK's leading food retailers have publicly addressed animal welfare. The paper includes an outline of the characteristics of animal welfare, a cameo literature review to provide an academic context and set of reference points for the paper, a review of the top ten UK food retailers' approach to animal welfare, some reflections on this approach, and some suggestions for future research.

### ANIMAL WELFARE

The welfare of farm animals generates vociferous and passionate debate, and it has attracted increasing attention in the academic literature. Clark et al. (2016), for example, recognised that increases in productivity may have negative impacts on farm animal welfare in modern animal production systems, and provided a systematic review of public attitudes to animal welfare. Their review suggested that 'the public are concerned about farm animal welfare in modern production systems' and that 'naturalness and humane treatment were central to what was considered good welfare' (Clark et al. 2016, p. 455). While consumer concerns about animal welfare are expressed in a variety of ways, for many people their closest, though indirect, contact with animal welfare is through the food they buy, and then eat. That said, animal welfare seems removed from the social practices of buying, cooking, and eating animal products. Buller and Roe (2018, p. 9), for example, argued 'we largely take farm animals' lives (and deaths) for granted when we eat them and their products' and they suggested 'for most of us, meat, egg and dairy consumption has become so distinct – geographically, morally aesthetically - from livestock, that the animal disappears.' More specifically, Buller (2016, p. 422) claimed 'shopping for welfare-friendly food products becomes an act of care-at-a-distance'

Animal welfare is concerned with the general health and wellbeing of animals and spans a wide range of issues from the care of family pets, to the exploitation and abuse of animals. The welfare of animals generates fiercely contested debates and while some voices stress the vulnerability of animals, for example, in intensive factory farms and medical research, others emphasise the need to increase food supplies and to develop new and better medicines. Essentially, the concept of animal welfare is concerned with how an animal is coping with the conditions in which it lives, and it is generally seen to include three elements, namely, an animal's normal biological functioning; its emotional state; and its ability to express (most) normal behaviours.

As such, the American Veterinary Medical Association (2020, webpage) suggested that an animal is seen to be in 'a good state of welfare if (as indicated by scientific evidence) it is healthy, comfortable, well-nourished, safe, able to express innate behavior, and if it is not suffering from unpleasant states such as pain, fear, and distress', and it argued that 'ensuring animal welfare is a human responsibility.' More popularly, commitments to animal welfare are often characterised by the 'Five Freedoms', drawn up by the UK's Farm Animal Welfare Council (2009, webpage), namely freedom from hunger and thirst; freedom from discomfort; freedom from pain, injury or disease; freedom to express normal behaviour; and freedom from fear and distress. At the same time, Red Tractor Scheme (2020), the UK's largest food standards scheme, offers assurance that farm animals are healthy with suitable living space and access to food, and water.

In some ways, the UK can be seen to have been a pioneer in animal welfare with legislation on the treatment of cattle dating back to the 1820's, and in more modern times the Animal Welfare Act was passed in 2007, and made owners and keepers responsible for ensuring that the welfare needs of their animals are met. These include the need 'for a suitable environment, for a suitable diet, to exhibit normal behaviour patterns, to be housed with, or apart from other animals (if applicable)' and 'to be protected from pain, injury suffering and disease' (GOV. UK 2019). The UK's most recent advice and guidance on protecting animal welfare on farms, in transport, and at markets, includes welfare regulations on poultry farming, laying hens, broiler chickens and breeder chickens, pig farming, sheep and goats, beef cattle and dairy cows and deer farming.

## CAMEO LITERATURE REVIEW

During the past two decades, the corporate social responsibility strategies adopted by food retailers to address their impacts on the environment, on society and on the economy, have attracted a wide range of deal of attention in the academic literature. However, the aim here is not to summarise this extensive literature, but rather to provide a cameo literature review of a small number of empirical and conceptual issues, which seem to provide some simple reference points to, and context for the issues raised in the paper. On the empirical side, some two decades ago, Piacentini et al. (2000), conducted an audit of food retailers to establish the nature and extent of corporate social responsibility activities, and they suggested that while some of the retailers acknowledged the benefits of being recognised as a socially responsible company, customer satisfaction and maximising profitability were seen as much more important than philanthropic motives. Jones et al. (2007) explored how the UK's leading food retailers employed corporate social responsibility to market to customers within stores. Their findings indicated that at that time, the major corporate social responsibility themes being employed, were value for money, support for local food producers, Fairtrade, healthy living and healthy eating, commitment to organic products, charitable donations, and initiatives to support the local community.

Anselmsson and Johnson (2007) examined the significance customers placed on different aspects of corporate social responsibility when evaluating and purchasing a retailer's own brand produce. Their work suggested that it is possible to build a corporate social responsibility image for these brands, and that such images can have a positive impact on the customers' intention to buy. In looking to explore the critical and notoriously elusive issue in corporate social responsibility research', namely 'the impact of corporate social performance on the bottom line', (Pivato et al.'s 2007) research on consumers of organic produce, revealed that a retailer's corporate social responsibility performance influences consumer trust, and that it in turn can influence brand loyalty. More recently. Souza-Monteiro and Hooker (2019) examined how socio-economic and institutional factors impacted upon UK food retailers' corporate social responsibility strategies, as revealed in corporate communications and product marketing. They concluded that corporate social responsibility strategies were increasingly being used not only to improve goodwill and reputation, but also as a competitive tool. Research by Jones et al. (2014) on the leading UK food retailers' approach to corporate social responsibility, suggested that independent external assurance of much of the information in the corporate social responsibility report had, at best, been limited.

More specifically, limited research has been published on the leading food retailers' approaches to animal welfare. Lindgreen and Hingley (2003) examined the approach taken by Tesco to deal with consumers' concerns about animal welfare, and found that the retailer had worked with its suppliers to address such concerns, and suppliers were evaluated using a series of detailed key performance indicators. In classifying groups of themes in food retailers' corporate social responsibility reports and on own label products, Souza-Monteiro and Hooker (2017) suggested that health and safety and the environment were the most popular group, while animal welfare, along with community, biotechnology and novel foods were in the second rank of groups. Schulze et al. (2019), looked to explore how food retailers were motivated to take on the marketing of products with increased animal welfare standards, and their findings suggested that a focus on animal welfare can not only achieve more successful marketing, but can also help both consumers and farmers to change their consumption and production habits.

On the conceptual side, while Garriga and Mele (2014, p. 51) suggested that corporate social responsibility 'presents not only a landscape of theories but also a proliferation of approaches, which are controversial, complex and unclear', two sets of theoretical approaches seem relevant here. Firstly, stakeholder theory emphasises that corporate social responsibility is about meeting the needs of all of a company's stakeholders, including the company itself, customers, employees, suppliers and society at large. Gavare and Johansson (2010), for example, argued that companies must be increasingly sensitive to the needs and concerns of a wide range of stakeholders. Secondly, there have also been attempts to develop theoretical approaches which seek to locate corporate social responsibility within wider economic, political and social structures, Castro (2004), for example, looked to develop a more critical approach and argued that economic growth relied on the continuing exploitation of both natural and social capital. Hanlon and Fleming (2009, p. 938), for example, suggested that corporate social responsibility is an 'ideological smoke screen designed to either soften the image of firms engrossed in the rampant pursuit of profit (at any cost) or as a way to deflect attention away from an unsavoury core business model.' Some social scientists (e. g. Springer 2010) see neo liberalism shaping contemporary political, economic, and social policy processes by emphasising free market mechanisms, a minimal role for the state and corporate and individual responsibility.

## METHOD OF ENQUIRY

In looking to undertake an exploratory review of how the UK's leading food retailers have publicly addressed animal welfare, the authors chose a simple method of enquiry, which they believe to be fit for purpose. The UK's top ten food retailers (Retail Economics 2020), as measured by market share in 2018/2019, namely, Tesco, Sainsbury's, Asda, Morrisons, Aldi, Co-op, Marks and Spencer, Waitrose, Lidl, and Iceland, which collectively account for some 90% of the UK market, were chosen for study. An Internet search was then conducted using the name of each of the ten food retailers and animal welfare as the key phrases. The search was undertaken in September 2020 using Google as the search engine. The information generated by this search process provided the empirical information for this paper. This information is in the public domain and the authors took the considered view that they did not need to contact the selected food retailers to obtain formal permission prior to using the information on animal welfare.

The paper looks to provide an exploratory review of how the leading UK food retailers publicly addressed animal welfare, rather than a systematic or comprehensive analysis of animal welfare issues within the UK's food retail industry. The paper draws heavily on selected quotations drawn from the food retailers' corporate websites. The aim here, is to explore how the retailers publicly expressed, and evidenced, their commitment to animal welfare, and the authors took the view that this was perhaps best captured in the retailers' own words, not least in that quotations could convey the corporate authenticity of the findings and offer greater depth of understanding (Corden and Sainsbury 2006). When outlining the issues of the reliability and validity of the information drawn from Internet sources, Saunders et al. (2009), emphasised the importance of the authority and reputation of the source and the citation of a specific contact who could be approached for additional information, and in collecting the retailer's information on animal welfare, the authors felt that these two conditions were met.



## FOOD RETAILERS' APPROACHES TO ANIMAL WELFARE

All the top ten UK food retailers posted animal welfare statements and policies, which articulated their approach to animal welfare, on their corporate websites. That said, there were marked variations in the extent of the material posted by the leading food retailers. Thus, while Sainsbury's, the Co-op and Lidl posted animal welfare reports on the corporate websites, Asda's animal welfare policy was described on one page, while the corresponding coverage posted by Iceland and Morrison, ran to two and three pages, respectively. However, rather than describing each retailer's approach, the aim here is to draw out a number of themes that illustrate their approach to animal welfare. More specifically, six interlinked themes can be identified, namely, strategic corporate commitment, animal welfare as good business policy, a focus supply chains, policies on specific categories of animals and animal products, antibiotics, and auditing.

Strategic commitment was expressed in a variety of ways. In outlining 'why animal welfare is important to us', the Co-op (2019, p. 2), for example, reported 'we know that animal welfare is important to our customers and members, so we are committed to creating products that have been produced to good animal welfare standards, regardless of their budget.' Further, the Co-op reported that in developing its standards and policies, it had followed the Five Freedoms of animal welfare mentioned earlier in this paper. More succinctly Asda (2017, webpage) claimed 'we care about animal welfare' and reported using 'the framework of the Five Freedoms' to define its animal welfare policies. A number of the leading retailers, including the Co-op, Morrisons and Lidl, reported that the approach to animal welfare was assessed through the Red Tractor scheme. Aldi (2020, webpage) emphasised 'animal welfare is an important part of being a responsible business and we are committed to the continuous improvement of animal welfare in our food and food products.'

At the same time, the leading food retailers also argued that their commitments to animal welfare were vitally important to their businesses. Waitrose (2019), for example, asserted its belief that 'animal welfare and good business go hand in hand, because our customers expect and rely on us to be doing the right thing' and 'rearing livestock well and ensuring that high quality standards apply throughout the animal's life are vital to ensuring the quality of the meat and fish we sell.' Sainsbury's (2019, p. 2), argued 'treating animals well and keeping them healthy is not just the right thing to do, it also makes good business sense' and that 'healthy well-managed animals are more likely to deliver better-tasting, higher quality products that our customers

enjoy buying and consuming. In a similar vein, Lidl (2020, p.3) claimed 'the welfare of farmed animals forms a key part of our continued dedication to our sustainability strategy' and 'we believe this is in the interests of both our business, ensuring integrity and sustainability, and our customers who have told us that they are increasingly interested in buying produce that has been produced and sourced with strong welfare considerations.'

The leading food retailers explicitly acknowledged the importance of their supply chains in addressing animal welfare. In outlining its approach to 'working in partnership with farmers and suppliers' Sainsbury's (2019, p. 3), for example, stressed its commitment to 'working with our farmers to continuously improve the lives their animals lead' and that all its farmers have to meet 'exacting animal health and welfare standards.' Marks and Spencer (2020, webpage) suggested 'good food starts with good ingredients – and the best ingredients come the best farmers. That's why we only work with producers who share our commitment to animal welfare.' Tesco (2017, webpage) claimed 'we work collaboratively with our suppliers, grower, farmers and fishermen... to identify ways in which high standards of animal welfare can be assured in a manner which is achievable for our supply base.' Asda (2017, webpage) simply claimed 'we're making improvements across our supply chain to make sure that livestock is treated properly at every step on the process', and Morrisons (2020, webpage) reported 'we take animal welfare seriously, from working with animals up to the point of slaughter.' Lidl (2020, p. 6) claimed that its animal welfare standards 'are continually evolving and go beyond legal requirements through all stages of the supply chain', while Iceland (2020) simply reported 'we work with our suppliers to ensure high standards of animal welfare based on the Five Freedoms.'

Several of the leading food retailers have policies for specific categories of animals and animal products. Sainsbury's (2019, p. 6), for example, claimed 'we adapt our animal health and welfare approach to meet each species' particular needs.' In outlining its policy on lamb, for example, Sainsbury's (2019, p. 9) reported 'we make sure that our lambs are reared as naturally as possible', that 'they stay with their mothers, suckle freely, and live in family groups until they are weaned' and that 'after that lambs stay together as a group but their diet is based entirely on grass and forage.' Waitrose (2019, webpage) claimed that all its beef is from British cattle, that 'our farmers adhere to strict protocols to ensure the highest standards of husbandry and welfare to ensure stress-free, naturally produced healthy cattle', and that 'during spring and summer, our cattle are reared on open pasture in social groups and during winter protective shelter is made available in bedded barns.' Lidl (2020, p. 12) emphasised that 'pigs and

sows must have access to environmental enrichment and be provided with adequate manipulable materials throughout their lives.' The Co-op (2019, p.8) reported that all the milk used for block butter, cheese and yoghurts is 100% British and that it looks to 'improve animal welfare through the monitoring of herd health and proactive practices.'

Antibiotic resistance is a major public health issue and the increased use of antibiotics in both human and veterinary medicine has enhanced naturally occurring resistance. Waitrose (2019, webpage), claimed that within its supply chain, 'all antibiotics are used carefully, under strict protocols and only in controlled circumstances.' Sainsbury's (2019, p. 4) focus 'is on preventing the need for antimicrobial intervention by improving the overall health status on our supplying farms.' Lidl (2020, p. 7) argued 'the use of antibiotics should not be a replacement for good animal husbandry', that 'we encourage our suppliers to optimise welfare, health, hygiene and the biosecurity of animals in order to reduce the need for antibiotic treatments, and that suppliers were to use antibiotics 'as little as possible and as much as necessary, while keeping animal welfare as the primary focus.' More generally, most of the leading food retailers also had a range of animal welfare policies, covering cloning and growth promoters, confinement, permitted mutilations, stunning and slaughter, research, development and training and transport.

Many of the leading food retailers reported their commitment to auditing designed to ensure animal welfare. Under the banner 'making sure our standards are met', Sainsbury's (2019, p. 3), for example, claimed 'we implement our farm animal and welfare policies by working with independent auditors, suppliers and processors, and directly with our farmers.' Further, Sainsbury's (2019, p. 3) reported monitoring compliance with its various animal welfare policies 'both through factory audits, carried out by our internal teams, and via on-farm audits undertaken by our agricultural consultants and third party assessors.' The Co-op (2019, p. 4) reported 'all farms supplying us with meat, poultry or dairy products may be subject to audits either by the Co-op or an appointed audit body at any time.' Lidl (2020) emphasised that all its food producers are required to complete annual audits that cover a multitude of standards including animal welfare credentials. Under the banner, 'auditing and compliance', Waitrose (2019, webpage), claimed that 'all our supply chains are independently audited', that 'we conduct our own responsible sourcing assessments' and that 'farms are independently audited by the relevant livestock assurance schemes.'

## REFLECTIONS

All the UK's leading food retailers publicly address the issue of animal welfare, and emphasised their commitment to it, but several issues merit reflection and discussion. While many of the retailers were emphatic in emphasising their strategic commitment to animal welfare, such commitments were also seen to make good business sense. As such the food retailers' commitments to animal welfare can be seen to be consistent with Schulze et al.'s (2019) findings that a focus on animal welfare can achieve more successful marketing. However, some of the food retailers' commitments to continuing improvements in animal welfare can be seen to be aspirational and expectational. Such corporate aspirations and expectations certainly reflect public concerns about animal welfare but given that the leading retailers source animal products across extensive geographical areas, fulfilling such aspirations presents complex challenges. The leading food retailers' future commitments on animal welfare, may demand changes in their current business models, which depends, in part, on large scale regular supply of competitively priced animal products. Here, Amos and Sullivan (2019, p. 8) suggested that 'customer willingness to pay continues to be the principal barrier to adopting higher standards of farm animal welfare.'

At the same time, the leading retailers' commitments to animal welfare are at least one step removed from their own operations, and this reduces their control over animal welfare. Here, a major element in the leading retailers' approach to animal welfare is the regular independent audits of their suppliers. However, in examining consumer concerns about food safety, the environment and animal welfare, Haggarty (2009, p. 767) argued that under neoliberal schemes, audit-based governance is effectively shaped by the food industry itself, and that 'grocery marketers translate consumer preferences into checklists of acceptable farming practices in negotiation with farming sector lobbies, consumer groups and other participants in agri-food systems.' More specifically, in reviewing the role of 'audit in animal welfare', Escobar and Demeritt (2016, p. 171) highlighted the general 'tendency for audit processes to become decoupled from the qualities they are meant to assure.' As such, there is the danger that the audit exercises which the leading food retailers claim as a major feature of their corporate commitment to animal welfare, become a routine reporting end in themselves, rather than a means to an end.

A number of the leading food retailers look to signal, or reference, their commitment to animal welfare in dedicated welfare reports or more often in their annual corporate social responsibility/sustainability reports, and thus it would seem to be appropriate for them to publicly report on achievements in

meeting such commitments, in these reports. While the animal welfare reports posted by three of the leading food retailers, identified earlier, did include some quantitative measures of animal welfare achievements, they fell short of the detailed key performance indicators outlined by Lindgreen and Hingley (2003) almost two decades ago. If the UK's leading food retailers are to build confidence and stakeholder trust in their delivery of animal welfare commitments, and to avoid accusations of greenwashing, or perhaps more accurately of welfare washing, this effectively demands independent external assurance of the reporting process. While commissioning comprehensive independent external assurance, within large, complex and geographically widespread supply chains can be a costly and time-consuming process, it is one which the UK's leading food retailers will need to address more wholeheartedly, as recommended by Jones et al. (2014), if they are to establish the integrity and credibility of their commitments to animal welfare.

The food retailers, and more generally the food industry, face strident public and pressure group criticism about animal welfare. Tescopoly (undated, webpage), for example, an alliance launched in 2006 to highlight and challenge the negative impacts of Tesco's behaviour along its supply chain, argued that 'supermarkets have enormous influence over the animal welfare standards used to produce the meat, milk and eggs that they sell.' Further Tescopoly (undated, webpage) argued that 'as a result of supermarket buying power, which drives down prices paid to suppliers, farmers are expected to work to impossibly small margins', that 'in many cases they have no option but to intensify production in order to try to cover their costs' and it concluded that 'the capture and control of the whole food supply chain by the supermarkets is a major contributor to poor animal welfare.'

At the time of writing, it is impossible to consider the leading UK food retailers' approach to animal welfare issues without some reference to COVID-19, not least because the pandemic has disrupted global supply chains and changed consumer habits and behaviours. On the one hand, trade reports that many abattoirs and meat packing and processing plants were COVID-19 hotspots and were closed, albeit temporarily, and restrictions on international trade have disrupted many traditional supply chains. On the other hand, public fears and concerns about the COVID-19 pandemic, about the claimed tracing of its origins to a wholesale food market in China, and about the reported incidences of high levels of the virus amongst people working in food processing and packing plants in a number of countries, have heightened consumer awareness about the safety of animal products within food supply chains.

Given the wide-ranging impact of COVID-19, it remains to be seen if, the leading food retailers will continue to commit the financial resources required to address continuing animal welfare concerns, or if they will concentrate on looking to restructure their business models to better respond to new consumer demands in a changing business environment. Looking to alternative futures, Plant Based News (2020, webpage), a UK based media outlet producing content about veganism and plant based living, suggested that 'with growing concerns about food safety in light of the COVID-19 pandemic and estimates that three out of every four new or emerging infectious diseases in people come from animals, it's about time that food companies ramped up their efforts to prevent the spread of such diseases.' Further Plant Based News (2020, webpage) claimed that 'the immune systems of animals raised on lower welfare factory farms are far weaker than any other; couple this with the immense overcrowding seen on these intensive farms - where some 90 percent of farmed animals are raised - and the risk of contracting and spreading dangerous diseases is worryingly high.'

Finally, the findings of this exploratory paper also have some implications for the conceptual approaches to corporate social responsibility. On the one hand, within the context of stakeholder theory, the findings suggest that the leading food retailers increasingly recognise the importance consumers attach to animal welfare. At the same time the findings also raise questions about how retailers will accommodate strident animal welfare pressure group campaigns, which may not necessarily reflect the opinions of many consumers who may be unwilling to pay higher prices for their meat products, within their animal welfare policies. On the other hand, critical conceptual approaches, based in political economy, which stress that current business models rely on the exploitation of natural capital, strike a chord with pressure group criticisms strident criticisms of animal welfare within the retailers' supply chains. In a similar vein, Hannon and Fleming's (2019) argument that the leading food retailers' commitments to animal welfare are but a smokescreen to draw attention away from what critics would see as their unsavoury business model, resonates.

## CONCLUSIONS

This paper has outlined the ways in which the leading UK food retailers have publicly addressed commitments to animal welfare in their animal welfare statements and their corporate social responsibility/sustainability reports. Six interlinked themes illustrate the retailers' approach to animal welfare namely, strategic corporate commitment, animal welfare as good business strategy, a focus on supply chains, policies on specific categories of animals and animal products, antibiotics, and auditing. At the same time, some of the food retailer's future commitments to continuing improvements in animal welfare were aspirational, and at least one step removed from production, and there are concerns both about auditing, and the external assurance of their achievements in meeting commitments, and about public unease about the welfare of animals in the retailers' supply chains. The paper has its limitations, not least in that it draws its empirical material exclusively from Internet sources and does not include any empirical information from the leading retailers or their suppliers, but the authors believe that as an exploratory paper it provides a platform for future research in what seems likely to become an important area for scholars interested in food retailers' approach to animal welfare.

Looking to the future, the leading UK food retailers' approach to animal welfare certainly offers a wide variety of research agendas for retail and business and management scholars. At a conceptual level, for example, animal welfare provides opportunities to test, develop and refine stakeholder theory by exploring how the positions of different groups of stakeholders within food retailing are incorporated into corporate decision making about approaches to animal welfare. At the same time, analysis of both changing perceptions of the importance of animal welfare considerations, as well as how such changes might be balanced against other corporate goals within materiality assessments which underpin stakeholder engagement within corporate social responsibility reporting processes, will contribute to stakeholder theory.

In a more radical vein, the retailers' approaches to animal welfare might also help to further illuminate and develop critical theories that look understand business operations and strategies under capitalism, and from a neoliberal perspective. Here, for example, a focus on exploring alternative ways of organising food retailing, possibly more communally at a local level, for example, and making it more accountable to animal welfare considerations, might be seen to contribute to calls by Amsler (2019) to explore alternative ways of organising life, and by Higgins-Desbiolles (2020) to make businesses more accountable to ecological and social limits.

On the empirical side, a wide range of research opportunities can be identified. At the corporate level, for example, research may help to increase understanding not only of why, and how leading food retailers develop their policies on animal welfare and how they look to elicit stakeholders' opinions, but also of how they take account of wider pressure group campaigns in formulating such policies. Research into how animal welfare concerns inform the relationships between the leading food retailers and their suppliers and on the locus of power within such relationships, also merits attention. At the same time, research on if, and how, more explicit and verifiable animal welfare policies affect profit margins, stock market performance and reputation, will inform understanding of the workings of new business models within food retailing. At the operational and consumer level, many research questions arise including, how the leading retailers have incorporated animal welfare policies into both general marketing messages as well as into marketing messages at the point of sale; if greater consumer awareness of a company's approach to animal welfare influences buying behavior and retailer patronage; and although the current paper has explored large retailers' approaches to animal welfare, an examination of small and medium sized retailers' policies on animal welfare, would broaden the scope of this genre of work.

## REFERENCES

- Aldi (2020), 'Animal Welfare', available at: <https://www.aldi.co.uk/about-aldi/corporate-responsibility/resources-for-our-products/animal-testing-and-welfare> (accessed 23 September 2020)
- American Veterinary Medical Association (2010), "Animal Welfare! What Is It?" available at: <https://www.avma.org/resources/animal-health-welfare/animal-welfare-what-it> (accessed 24 July 2020)
- Amos, N. and Sullivan, R. (2019), "The Business Benchmark on Farm Animal Welfare Report 2019", available at: [https://www.bbfaw.com/media/1788/bbfaw\\_full-report\\_2019.pdf](https://www.bbfaw.com/media/1788/bbfaw_full-report_2019.pdf) (Accessed 29 September 2020)
- Amsler, S. (2019), "Gesturing towards radical futurity in education for alternative futures", *Sustainability Science*, Vol. 14, pp. 925-930
- Anselmsson, J. and Johansson, U. (2007) "Corporate social responsibility and the positioning of grocery brands: An exploratory study of retailer and manufacturer brands at the point of sale", *International Journal of Retail and Distribution Management*, Vol. 35, no. 10, pp. 835-856
- Asda (2017) "Animal Welfare Policy", available at: [http://s7d2.scene7.com/is/content/asdagroceries/Asda.com/7.%20Sites/Environment/Animal%20welfare%20policy\\_0.pdf](http://s7d2.scene7.com/is/content/asdagroceries/Asda.com/7.%20Sites/Environment/Animal%20welfare%20policy_0.pdf) (accessed 22 September 2020)
- Buller, H. (2016) "Animal Geographies III; Ethics", *Progress in Human Geography*, Vol. 40, No. 3, pp. 422-430
- Buller, H. and Roe, E. (2018), "Food and Animal Welfare", Bloomsbury Academic, London.
- Castro, C. (2004) "Sustainable Development: Mainstream and Critical Perspectives", *Organisational Environment*. Vol. 17, No. 2, pp. 195-225
- Clark, B., Stewart, G.B., Panzone, L.A., Kyriazakis, I. and Frewer, L.J. (2016), "A Systematic Review of Public Attitudes, Perceptions and Behaviours Towards Production Diseases Associated with Farm Animals", *Journal of Agricultural and Environmental Ethics*, Vol. 29, pp. 455-478
- Co-op (2019), "Co-op Animal Welfare Standards and Performance and Co-op Antibiotics Policy", available at: [https://assets.ctfassets.net/bffxiku554r1/vSmTTROxs7uNGvtKauQBj/c4b9c573798420426038ed74802c5ac5/Co-op\\_Animal\\_Welfare\\_Standards\\_\\_Performance\\_and\\_Co-op\\_Antibiotic\\_Policy.pdf](https://assets.ctfassets.net/bffxiku554r1/vSmTTROxs7uNGvtKauQBj/c4b9c573798420426038ed74802c5ac5/Co-op_Animal_Welfare_Standards__Performance_and_Co-op_Antibiotic_Policy.pdf) (accessed 23 September 2020)
- Corden, A. and Sainsbury, R. (2006), "Using verbatim quotations in reporting qualitative social research: Researchers' Views", available at: <https://www.york.ac.uk/inst/spru/pubs/pdf/verbquotresearch.pdf> (accessed 8 July 2020)
- Escobar, M.P. and Demeritt, D. (2017), "Paperwork and the decoupling of audit and animal welfare: The challenges of materiality for better regulation", *Environment and Planning C: Politics and Space*, Vol. 35, No. 1, pp. 169-190
- Farm Animal Welfare Council (2009), "Farm Animal Welfare in Great Britain; Past Present and Future", available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/319292/Farm\\_Animal\\_Welfare\\_in\\_Great\\_Britain\\_-\\_Past\\_\\_Present\\_and\\_Future.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/319292/Farm_Animal_Welfare_in_Great_Britain_-_Past__Present_and_Future.pdf) (accessed 9 September 2020)
- Garriga, E. and Mele, D. (2004) "Corporate Social Responsibility Theories: Mapping the Territory", *Journal of Business Ethics*, Vol. 53, pp. 51-71
- Gavare, R. and Johansson, P. (2010), "Management for sustainability – a stakeholder theory", *Total Quality Management*, Vol. 21, No. 7, pp. 737-744.
- Haggarty, J. Campbell, H. and Morris, C. (2009), "Keeping the stress off the sheep? Agricultural Intensification, neoliberalism and good farming in New Zealand", *Geoforum*, Vol. 40, pp. 767-777
- Hannon, G. and Fleming, P. (2003) "Updating the Critical Perspective on corporate Social Responsibility", *Sociology Compass*, Vol. 3, No. 6, pp. 937-948
- Hartmann, M. (2011), "Corporate social responsibility in the food sector", *European Review of Agricultural Economics*, Vol. 38, No. 3, pp. 297-234
- Higgins-Desbiolles, F. (2019), "Socialising tourism for social and economic justice after Covid-19", *Tourism Geographies*, Vol. 22, No. 3, pp. 610-623
- Iceland (2020), "Animal Welfare", available at: <https://about.iceland.co.uk/doing-it-right/animal-welfare/> (accessed 23 September 2020)
- Jones, P., Comfort, D. and Hillier, D. (2007), "Marketing and corporate social responsibility within food stores", *British Food Journal*, Vol. 109, No.8, pp. 582-593

- Jones, P., Hillier, D. and Comfort, D. (2014), "Assurance of the leading UK food retailers' corporate social responsibility/sustainability reports", *Corporate Governance*, Vol. 14, No. 1, pp. 130-138
- Lever J., Evans A. (2017), *Corporate Social Responsibility and Farm Animal Welfare: Towards Sustainable Development in the Food Industry?* In: Idowu S., Vertigans S. (eds) *Stages of Corporate Social Responsibility. CSR, Sustainability, Ethics & Governance*. Springer, Cham. [https://doi.org/10.1007/978-3-319-43536-7\\_10](https://doi.org/10.1007/978-3-319-43536-7_10) (Accessed 15 September 2020)
- Lidl, (2020), "Farm Animal Health and Welfare Policy", available at: [file:///C:/Users/Asua/Downloads/Farm%20Animal%20Health%20and%20Welfare%20Policy%202020%20\(3\).pdf](file:///C:/Users/Asua/Downloads/Farm%20Animal%20Health%20and%20Welfare%20Policy%202020%20(3).pdf) (accessed 23 September 2020)
- Lindgreen, A. and Hingley, M (2003), "The impact of food safety and animal welfare on supply chain management; The case of the Tesco meat supply chain", *British Food Journal*, Vol. 105, No. 6, pp. 328-349
- Marks and Spencer (2020), "Our Animal Welfare Policy", available at: <https://corporate.marksandspencer.com/stories/blog/our-animal-welfare-policy> (accessed 23 September 2020)
- Morrisons (2020) "Animal Welfare", available at: <https://www.morrisons-corporate.com/cr/policy/animal-welfare/> (accessed 22 September 2020)
- Piacentini, M., MacFadyen, L. and Eadie, D. (2000) "Corporate social responsibility in food retailing", *International Journal of Retail and Distribution Management*, Vol. 28, No. 11, pp. 458-469
- Pivato, S., Misani, N. and Tencati, A. (2007) "The impact of corporate social responsibility on consumer trust: the case of organic food", *Business Ethics*, Vol. 17, No. 1, pp. 3-12
- Plant Based News (2020), "Is COVID-19 The Beginning of the End for McDonalds", Available at: <https://www.plantbasednews.org/opinion/beginning-of-end-for-mcdonalds> (accessed 19 September 2020)
- Red Tractor (2020), "Who We Are", available at: <https://redtractor.org.uk/who-we-are/> (accessed 1 October 2020)
- Rimington, M., Smith, J.C. and Hawkins, R. (2006), "Corporate social responsibility and sustainable food procurement", *British Food Journal*, Vol. 108, No. 10, pp. 824-837
- Sainsbury's (2019), "Animal Health and Welfare Policy", available at <https://www.about.sainsburys.co.uk/~media/Files/S/Sainsburys/CRS%20Policies%20and%20Reports/AnimalHealthWelfareReport2019.pdf> (accessed 22 September 2020)
- Saunders, M., Lewis, P. and Thornhill, A. (2009) *Research Methods for Business Students*, Prentice Hall, Harlow, UK
- Schulze, M., Spiller, A. and Risius, A. (2020), "Food Retailers as Mediating Gatekeepers between Farmers and Consumers in the Supply Chain of Animal Welfare Meat – Studying Retailers' Motives in Marketing Pasture-fed Beef", *Food Ethics*, Vol. 3, pp. 42-52
- Souza-Monteiro, D. and Hooker, N (2017), "Comparing UK food retailers' corporate social responsibility strategies", *British Food Journal* Vol. 119, No. 3, pp. 658-675
- Springer, S. (2010) "Neoliberalism and Geography: Expansions, Variations and Formations", *Geography Compass*, Vol. 8, No. 8, pp. 1025-1038
- Tesco (2020), "Animal Welfare", available at: <https://www.tescopl.com/sustainability/product/animal-welfare-policy-group/> (accessed 22 September 2020)
- Tescopoly (undated), "Animal Welfare", available at: <http://www.tescopoly.org/animal-welfare> (Accessed 22 September 2020)
- Waitrose (2020,) "Animal Welfare", available at: [https://www.waitrose.com/home/inspiration/about\\_waitrose/the\\_waitrose\\_way/waitrose\\_animal\\_welfarecommitments.html](https://www.waitrose.com/home/inspiration/about_waitrose/the_waitrose_way/waitrose_animal_welfarecommitments.html) (accessed 23 September 2020)

## STUDENT PERCEPTION OF THE QUALITY OF HIGHER EDUCATION INSTITUTIONS' SERVICES IN CONTEXT OF THEIR OWNERSHIP STRUCTURE

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### Abstract

*Higher education institutions are the entities of specific business operation having knowledge-based intellectual and innovative products in their fundamental market offer. Bosnia and Herzegovina is a country in transition which refers to education as well, in which the Bologna Declaration has been applied for about last ten years, according to which higher education institutions are autonomous in their operation and they are responsible for the quality of services they provide to students.*

*Non-experimental empirical study was conducted in order to determine student perception of the quality of services in higher education institutions in Bosnia and Herzegovina, Republic of Srpska. The survey was conducted with 863 students, with an average age of 21.5 years, who were divided into two subsamples (the students from public institutions, N = 573 and the students from private institutions, N = 288). The research instrument was an assessment scale based on HEDUQUAL questionnaire, with 30 quality indicators.*

*The scale used to assess the quality of services showed high reliability (Chronbach Alpha 0.966). The students from public higher education institutions expressed moderate satisfaction (Mean 3.14), and the ones from private institutions expressed a slightly higher level of satisfaction (Mean 3.68) at the level of statistical significance Sig. = 0.000. Application of factor analysis (KMO=0.962, Sig. 0.000) in both subsamples, confirmed the one-factor structure of the instrument. Distribution of item observation within the isolated factor is more homogeneous among the students of private faculties (55.44% of the common variance is explained), in contrast to the students from public universities (44.53% of the common variance is explained). In the overall quality of services, the students perceive indicators based on mutual trust (providers and recipients of services) and empathy of employees towards students (quality of relationships between service providers and users) more intensively. The results obtained can be useful for managements of higher education institutions for improving the quality of services at faculties and as a basis for future similar research.*

**Keywords:** *quality of services, student perception, public and private institutions.*

## INTRODUCTION AND LITERATURE REVIEW

Recognising the role of knowledge and focusing on its importance as a key resource in the XXI century, on which the future of every society is based, should represent a new paradigm of educational institutions in Republic of Srpska. In this regard, the need to define the role of educational institutions and position it more actively as an integral part of all spheres of social policy in this area has been recognized. Primarily through formation of a clear vision that higher education institutions are the entities of specific business operation in which the fundamental market offer refers to knowledge-based intellectual and innovative products and services. In this respect, in the area of higher education in Republic of Srpska, a need for development of a system of services with distinctive target groups of users imposes.

It is noticeable that in the last ten years there have been changes in social perception of the system of studying in this area. The contours of comprehension that higher education is beginning to differentiate in terms of the quality of higher education institutions have been more clearly seen. This is especially evident in the context of accepting the fact that from the period of absolute domination of higher education institutions founded by the state, we have entered a more flexible period in which indicators of the quality of higher education system have been increasingly appearing, regardless of the fact who is the founder of a higher education entity (state or a natural person), i.e., what is the form of the founding capital in the essence of the institution (public or private). In this context, an increasing number of researches can be identified, especially in the immediate vicinity of Republic of Srpska, addressing the issue of satisfaction of direct users of higher education institutions' services (Mašić, 2010; Ćurković et al., 2011; Živković, Gajić & Brdar, 2013; Ahmetović, Tomka & Dimitrić, 2014; Vranješ, Gašević & Drinić, 2014; Nešić, Ahmetović, Srdić & Badrić, 2017).

Among other things, the tendencies of the European Higher Education Area refer to the growing orientation of higher education institutions (faculties and colleges) towards the market principle of business operation. This puts actual users at the centre of their overall business operation: students, alumni associations, donors, employees and partners in the surrounding areas. The users form a kind of control parameter of these institutions. They indicate the extent to which universities, faculties and colleges are successful in meeting their needs and desires, and marketing is given an integrative function in creating and delivering superior value to the users.

Precise identification of the level of user expectations aims to create and deliver satisfactory values (Gajić, 2011).

When considering issues of different context of service provision in a modern business environment, it is necessary to start from the conclusion that services (in the broadest contextual scope) are the result of mental and/or physical (socially useful) activities that are not of productive nature in their essence (Nešić, Dačić & Srdić, 2014). Observed like this, the services also occur in the higher education activities. The broadest context of services encompasses their perception as actions, processes and performances (Vargo & Morgan, 2005) involving a variety of activities the resultant of which is, in essence, an intangible form. It is mainly consumed at the same place where it is produced, so that it provides a benefit for the person who uses/buys the service. One of the definitions defines a service as any activity or benefit that one party offers to another party and that is essentially intangible and it does not result in ownership of anything. Its production may or may not be associated with a physically tangible good (Vargo & Morgan, 2005; according to: Popović, 2012: 17). An appropriate service environment is necessary for creation and distribution of services (it includes various elements of the physical environment and the atmosphere in which the service is performed). It can significantly influence both the service delivery process itself and the perception of users/clients (Grönroos, 2002).

Contemporary marketing literature pays more and more attention to the issue of service quality. Therefore, we encounter various determinants that treat quality as: (a) the degree to which the consumer expectations are met, (b) attractive price and value; (c) ability to use; etc. (Popmihajlov-Zeremski, 2010). Service quality implies an opinion created by consumers or users about the quality and quantity of benefits they received during its purchase/use (Tomka and Tomić, 2004). It can also refer to the quality of mutually established relationships and the consumer attachment to an organisation. It was found that this last factor positively connects the quality of service and the quality of established relationship with the consumer satisfaction (Segoro, 2013). However, it is necessary to distinguish between the real quality and high quality. In the context of the topic of this paper, the context of true quality is predominantly imposed. Thus, in order to successfully answer the question "what is real quality", the consumer/client (the person who is "in touch" with the service) must be put in the focus. In order to satisfy them, quality of the service provided must be in the focus of the activity of the one who distributes this particular service, i.e., they must continually "deal" with the consumer/client (Nešić & Zubanov, 2015). The results of certain research (Voss, Roth & Chase,



2008) have proven that if the consumer is satisfied, it does not mean that they will always be loyal too. It takes more than that. It is important that the service is unforgettable (that it is always in their memory) and that it differs from the others in its uniqueness (Hosany & Witham, 2010). The quality of the service itself should be defined and monitored within the organisation providing this particular service or the system of services (Vargo, 2011).

The European Higher Education Area, also including the academic area of Republic of Srpska since implementation of the Bologna Process, implies that the system of quality assurance of higher education institutions' services is based on: (1) autonomy of each higher education institution, and (2) responsibility for services' quality related to the system of overall activities that it provides to its clients/students (Nešić et al. 2017). In that sense, the activities on full standardisation and implementation of quality assurance of services are determined by the principles of the European Higher Education Area (Glanville, 2006) which predominantly refers to the quality of study programmes, and then to the responsibility of specific faculties/colleges for application of defined overall quality standards.

The concept of quality in higher education institutions is characterised by systemic multidimensionality, where the most important parts directly affecting the quality of services refer to: (a) teaching process, (b) teaching staff, (c) working conditions and (d) qualified administrative and other non-teaching staff (Puška, Stanišić & Maksimović, 2015). In that sense, measurability of the quality of services of each higher education institution (regardless of its formal-legal status in terms of the founder) has been determined by the student satisfaction. And it is, primarily, based on positive experience and fulfilled previous expectations for specific service aspects offered by the institution.

Assessing the quality of services in higher education institutions is increasingly attracting the attention of the entire academic community, as well as the institutional entities themselves (faculties and colleges), but also of the wider community. However, this is not always easy to do, provided that a few stakeholders (students, parents, teaching staff, government, business companies, etc.) emerge in the context of the higher education process (Houston, 2008). Each of these stakeholders can perceive quality in their own way, i.e. evaluate the phases and components of the educational process differently (input, transformation process, output) which is conditioned by the roles they play in this process, but also by their expectations, desires, goals, etc. (Voss, Gruber & Szmigin, 2007). In addition to external valorisation of the quality of work of higher education institutions by founders, financiers (and even the

widest general public), the students, as direct users of services, are increasingly placed in the focus (Vranješ, Gašević & Drinić, 2014). The value status and market positioning of a specific faculty/college depend on how the students (as key stakeholder in the higher education system) perceive the quality of the overall system of services of an institution (Nešić, Ahmetović, Srdić & Badrić, 2017). Therefore, it is extremely important that the business strategy of an institution is based on the understanding of authentic needs of users (Milosavljević, Maričić & Gligorijević, 2009). This means that the recognised (dis)satisfaction with a service as a whole (or a part of it) must be viewed through the prism of customer satisfaction and content. Expectations of the clients (students), and then also perception of the consumed service, are mutually correlated in the context of overall quality of services of a higher education institution (Douglas, Douglas & Barnes, 2006).

Measuring the quality of services of higher education institutions faces similar problems that arise in economy when measuring the usefulness of goods and services (Grubor, 2012). Therefore, in practice, measuring quality in education is most expedient to perform through assessment, which in the context of evaluating the quality of faculty/college services by students directs the attention towards the application of assessment scales (Nešić et al., 2017).

## METHODOLOGY

This study was implemented as a non-experimental empirical study aiming to determine how students perceived the quality of services provided by higher education institutions in Republic of Srpska. Also, an attempt was made to determine whether the type of institution (in terms of the status of founding capital - private or public) was an important determinant for determination of the respondents according to the intensity of assessment.

Stratified research sample (taken from the population of students attending one of the higher education institutions in Republic of Srpska) consisted of a total of 863 respondents whose average age was 21.5 years. In terms of subsampling, the total research entity was classified into: (1) the students attending "private" higher education institutions (N = 288) and (2) the students attending "public" higher education institutions (N = 573).

Collection of empirical data was performed by surveying technique, and the assessment scale based on the HEDUQUAL questionnaire was used as the primary research instrument. This scale for assessing the quality of services of higher education institutions has been used in several recent studies

(Klarić & Kulišan, 2011; Nešić et al., 2017). Metric characteristics of the HEDUQUAL scale, applied to the population of students from the area of Republic of Srpska, were previously checked in the research (Srđić, Nešić & Jakupović, 2019) where an adequate validity and good internal agreement were determined.

The scale construction (the five-level, summated scale) consisted of a total of 30 service quality indicators that had the following semantics: Q1) The faculty has modern equipment, Q2) The faculty equipment is visually appealing, Q3) The faculty employees are tidy and have professional appearance, Q4) The faculty provides the promised service to the maximum, Q5) Library resources at the faculty are good, Q6) Modern technologies are significantly used in teaching, Q7) The services provided by the faculty are always continuously good, Q8) Teachers adhere to the established teaching schedule, Q9) Administrative workers adhere to working hours of services, Q10) Records on student complaints are kept at the faculty, Q11) Student problems are being efficiently resolved, Q12) The curriculum of the faculty is contemporary, Q13) Working hours of the support service (student services, libraries, ...) are adjusted to students to the maximum, Q14) Students are informed in a timely manner when a certain service will be provided (teaching schedule, exam deadlines, ...), Q15) Administrative service at the faculty is precise and up-to-date, Q16) The faculty employees are always ready to provide help to students, Q17) The employees inspire the students' trust with their approach, Q18) Teachers apply consistent criteria when assessing, Q19) Students feel safe during service transactions of the support service (issuing certificates, registering for exams, using the library, ...), Q20) Students feel safe in service transactions of the teaching staff (consultations, exams, ...), Q21) The employees at the faculty are always kind, Q22) The employees at the faculty have competencies which can successfully respond to all student needs, Q23) Connection between theory and practice in teaching, Q24) Online communication with teachers is possible, Q25) Teachers are periodically evaluated by students, Q26) Students are given individual attention, Q27) The faculty employees treat students with care, Q28) The employees at the faculty are sincerely committed to realisation of the interests of students, Q29) The faculty employees have full understanding for specific/special needs of students, Q30) The teaching schedule is adjusted to the students.

Empirical data were processed by appropriate quantitative statistical procedures. For all variables the data of which are expressed by the minimum ordinal level of measurement, representative measures of central tendency and measures of variability - arithmetic mean (Mean) and standard deviation (Std. Dev.) were calculated, whereas frequency distribution was used for variables expressed by the nominal level of measurement. One-factor analysis of variance (ANOVA) was applied to test the significance of differences between scalar averages derived for different research subsamples. Factor analysis (the principal components method - Principal Components Analysis, PCA, with direct oblique rotation and Kaiser Normalisation of principal components - Direct Oblimin method of rotation and Kaiser Normalisation) was applied to determine the latent factor structure of quality assessment in subsamples. Reliability of the scale was checked by determining the Cronbach's alpha coefficient. Statistical conclusions were derived with a significance level of 0.05 ( $p < .05$ ).

## RESULTS

The chosen methodological approach in the analysis of empirical results of the study conditioned previous verification of reliability of the applied measuring scale. In accordance with the recommendations from previous research, a solution with a one-factor solution was accepted, i.e. the scale was treated as a unique multi-item construction which assesses the general quality of services of a higher education institution. In our research, the scale also showed high reliability (Ch. Alpha = 0.966, with ranges of values of individual items Ch. Alpha if Item Deleted from 0.963 to 0.965), which is significantly above the recommended theoretical value of 0.7 (De Vellis, 2003). In this way, conditions were created for continuation of the analysis and a correct quantitative basis for research observations was provided.

Looking into the values of scalar averages of empirical data clearly shows that a statistically significant difference was recorded in subsamples for all assessment indicators, as well as for the scale as a whole. Although in both subsamples the intensity of assessment of the overall quality of services of the higher education institution where they study ranges within moderate satisfaction ( $S_v = 3.32$ ), the students of private faculties/colleges express a slightly higher level of satisfaction ( $S_v = 3.68$ ) in comparison to their colleagues from public institutions ( $S_v = 3.14$ ), which is also expressed by the values of statistical significance ( $Sig. = 0.000$ ) (Table 1).

Indicator		N	Mean	Std. Dev.	Std. Error	F	Sig.
Q1) The faculty equipment	Private	288	3.72	.948	.056	238.788	<b>.000</b>
	Public	573	2.66	.954	.040		
	$\Sigma$	861	3.02	1.076	.037		
Q2) The equipment appearance	Private	287	3.75	.897	.053	224.647	<b>.000</b>
	Public	571	2.68	1.026	.043		
	$\Sigma$	858	3.04	1.106	.038		
Q3) Tidiness of employees	Private	287	4.01	.979	.058	20.343	<b>.000</b>
	Public	572	3.70	.941	.039		
	$\Sigma$	859	3.81	.964	.033		
Q4) Realisation of promised services	Private	278	3.68	1.020	.061	72.907	<b>.000</b>
	Public	567	3.07	.969	.041		
	$\Sigma$	845	3.27	1.027	.035		
Q5) Library resources	Private	277	3.17	1.212	.073	9.568	<b>.002</b>
	Public	555	2.92	1.092	.046		
	$\Sigma$	832	3.00	1.139	.040		
Q6) Modern technologies in teaching	Private	279	3.89	.947	.057	228.804	<b>.000</b>
	Public	565	2.78	1.027	.043		
	$\Sigma$	844	3.15	1.129	.039		
Q7) The services quality constancy	Private	284	3.51	.927	.055	62.243	<b>.000</b>
	Public	560	2.99	.892	.038		
	$\Sigma$	844	3.17	.936	.032		
Q8) Adherence to the schedule by teachers	Private	281	3.91	.935	.056	77.828	<b>.000</b>
	Public	568	3.25	1.074	.045		
	$\Sigma$	849	3.47	1.076	.037		
Q9) The administration punctuality	Private	280	3.88	1.075	.064	20.666	<b>.000</b>
	Public	564	3.52	1.067	.045		
	Total	844	3.64	1.082	.037		
Q10) Records on students' complaints	Private	280	3.41	1.030	.062	42.263	<b>.000</b>
	Public	565	2.90	1.094	.046		
	$\Sigma$	845	3.07	1.099	.038		
Q11) Efficiency in resolving students' problems	Private	283	3.54	1.025	.061	73.770	<b>.000</b>
	Public	568	2.89	1.039	.044		
	$\Sigma$	851	3.11	1.077	.037		
Q12) Contemporary curriculum	Private	285	3.98	.940	.056	135.014	<b>.000</b>
	Public	572	3.15	.995	.042		
	$\Sigma$	857	3.43	1.051	.036		
Q13) Adjusted working hours of the support service	Private	286	3.43	1.188	.070	9.165	<b>.003</b>
	Public	571	3.18	1.125	.047		
	$\Sigma$	857	3.26	1.152	.039		

Q14) Promptness of informing and updated information	Private	287	3.69	1.059	.063	11.971	<b>.001</b>
	Public	570	3.42	1.091	.046		
	$\Sigma$	857	3.51	1.087	.037		
Q15) Updated and precise administrative services	Private	284	3.65	.999	.059	23.508	<b>.000</b>
	Public	571	3.30	1.015	.042		
	$\Sigma$	855	3.41	1.023	.035		
Q16) Readiness of employees to provide support to students	Private	286	3.83	.993	.059	13.749	<b>.000</b>
	Public	572	3.56	1.007	.042		
	$\Sigma$	858	3.65	1.010	.034		
Q17) Trust in employees	Private	284	3.69	.964	.057	47.145	<b>.000</b>
	Public	572	3.21	.969	.041		
	$\Sigma$	856	3.37	.993	.034		
Q18) Consistency in assessment	Private	277	3.66	1.029	.062	27.924	<b>.000</b>
	Public	561	3.26	1.026	.043		
	$\Sigma$	838	3.39	1.043	.036		
Q19) Trust in support service	Private	273	3.86	.951	.058	13.376	<b>.000</b>
	Public	560	3.59	1.032	.044		
	$\Sigma$	833	3.68	1.014	.035		
Q20) Trust in teachers	Private	283	3.75	.920	.055	26.601	<b>.000</b>
	Public	570	3.41	.929	.039		
	$\Sigma$	853	3.52	.940	.032		
Q21) Kindness of employees	Private	284	3.54	1.030	.061	26.601	<b>.000</b>
	Public	566	3.15	1.039	.044		
	$\Sigma$	850	3.28	1.051	.036		
Q22) Competence of employees	Private	279	3.74	.876	.052	47.003	<b>.000</b>
	Public	566	3.30	.872	.037		
	$\Sigma$	845	3.45	.897	.031		
Q23) Connection of theory and practice in teaching	Private	284	3.76	.970	.058	66.984	<b>.000</b>
	Public	570	3.14	1.065	.045		
	$\Sigma$	854	3.35	1.074	.037		
Q24) Possibility of online communication with teachers	Private	280	3.81	.992	.059	16.914	<b>.000</b>
	Public	570	3.49	1.141	.048		
	$\Sigma$	850	3.59	1.104	.038		
Q25) Evaluation of teachers by students	Private	277	3.51	1.027	.062	37.890	<b>.000</b>
	Public	570	3.00	1.153	.048		
	$\Sigma$	847	3.17	1.137	.039		
Q26) Students are given individual attention	Private	284	3.49	.996	.059	110.500	<b>.000</b>
	Public	569	2.70	1.060	.044		
	$\Sigma$	853	2.96	1.104	.038		
Q27) Caring of employees towards students	Private	285	3.61	.971	.057	67.541	<b>.000</b>
	Public	571	3.02	1.016	.042		
	$\Sigma$	856	3.22	1.039	.036		

Q28) Commitment of employees for realisation of students interests	Private	284	3.65	.949	.056	82.741	<b>.000</b>
		569	3.00	1.004	.042		
		853	3.21	1.032	.035		
Q29) Understanding of employees for specific needs of students	Public	282	3.63	.958	.057	63.353	<b>.000</b>
	Public	567	3.05	1.016	.043		
	∑	849	3.24	1.033	.035		
Q30) Adjusted teaching schedule to students needs	Private	284	3.59	1.027	.061	67.685	<b>.000</b>
	Public	567	2.93	1.141	.048		
	∑	851	3.15	1.147	.039		
The scale IN TOTAL:	Private	288	3.68	.740	.044	111.202	<b>.000</b>
	Public	575	3.14	.680	.028		
	∑	863	3.32	.744	.025		

Table 1: Assessment of the quality of services in the subsample area (private - public faculties)  
(One Way ANOVA)

Also, in terms of perception of the quality of services of "their" faculties/colleges observed through the coverage of individual item indicators, there are statistically significant differences in all thirty observed quality indicators. The most dominant differences in scalar averages are observed in the indicators: (a) the faculty equipment (private-3.72; public-2.66), (b) the equipment appearance (private-3.75; public-2.68), (c) tidiness of employees (private-4.01; public-3.70), (d) modern technologies in teaching (private-3.89; public-2.78), (e) consistency of service quality (private-3.51; public-2.99), (f) providing individual attention to students (private-3.49; public-2.70), (g) adjusting the teaching schedule to the needs of students (private-3.59; public-2.93), etc., which indicates that in the above elements the perception of the quality of service of the higher education institution where they study (public faculties) is below their previous expectations. Also, it is obvious that private faculties create an overall service environment that students perceive very positively and are in accordance with their expectations that they had before the enrolment. In certain segments of the service, it can be considered that it has exceeded their previous expectations (tidiness of employees, modern technologies in teaching, contemporary curricula, possibility of online communication with teachers, etc.).

Such empirical data, which clearly show that students of private higher education institutions more positively assess the quality of services they receive (one can, conditionally, talk about their greater satisfaction), imposed the need to check the latent structure of general service quality in subsamples (in the context of one-factor multi-item scale).

The nature of empirical data (sample suitability) enabled application of factor analysis (KMO = 0.962; Sig. = 0.000) (Kaiser, 1970; 1974). Adequate one-factor structure of the instrument was confirmed in both subsamples (Figure 1), and the results show that in respondents attending private faculties a more homogeneous distribution of item observations within a single factor is noted (55.54% of common variance is explained). In both subsamples, items that correlate with the domain of trust and empathy (trust in employees, trust in teachers, the employees' understanding of student needs, commitment of employees to student interests, the employees' care for students, etc.) in the hierarchical composition of indicators in the factor are positioned dominantly (Table 2), which may indicate an attitude that within the overall quality of services provided by the higher education institution (included in this research) the students more intensively perceive those indicators based on: (a) mutual trust (of providers and recipients of services), (b) empathy of employees towards students (quality of service providers' relationships with customers). The other three domains of the service (reliability, responsibility and equipment) are perceived as fair, i.e. they are within the expectations that students have when choosing a faculty.

Indicator	PRIVATE			PUBLIC		
	Mean	factor		Mean	factor	
		Communalities	The frame matrix		Communalities	The frame matrix
Q1) The faculty equipment	3.77	.436	.660	2.64	.308	.555
Q2) The equipment appearance	3.84	.397	.630	2.66	.257	.507
Q3) Tidiness of employees	4.04	.521	.722	3.69	.327	.572
Q4) Realisation of promised services	3.73	.569	.754	3.04	.528	.727
Q5) Library resources	3.18	.355	.596	2.90	.270	.519
Q6) Modern technologies in teaching	3.88	.578	.760	2.76	.381	.617
Q7) The services quality constancy	3.56	.595	.771	2.95	.595	.771
Q8) Adherence to the schedule by teachers	3.91	.479	.692	3.22	.363	.602
Q9) The administration punctuality	3.95	.484	.696	3.50	.261	.511
Q10) Records on students' complaints	3.46	.583	.764	2.88	.415	.644
Q11) Efficiency in resolving students' problems	3.59	.640	.800	2.84	.572	.757
Q12) Contemporary curriculum	4.07	.604	.777	3.13	.510	.714
Q13) Adjusted working hours of the support service	3.45	.465	.682	3.16	.315	.562
Q14) Promptness of informing and updated information	3.70	.430	.656	3.40	.421	.649
Q15) Updated and precise administrative services	3.71	.601	.775	3.26	.426	.653
Q16) Readiness of employees to provide support to students	3.89	.637	.798	3.52	.522	.723
Q17) Trust in employees	3.75	.719	.848	3.16	.598	.773
Q18) Consistency in assessment	3.66	.515	.718	3.20	.446	.668
Q19) Trust in support service	3.90	.636	.797	3.54	.337	.581
Q20) Trust in teachers	3.80	.689	.830	3.40	.571	.756
Q21) Kindness of employees	3.58	.545	.739	3.14	.462	.680
Q22) Competence of employees	3.74	.617	.785	3.29	.581	.762
Q23) Connection of theory and practice in teaching	3.78	.603	.776	3.12	.392	.626
Q24) Possibility of online communication with teachers	3.87	.487	.698	3.51	.334	.578
Q25) Evaluation of teacher by students	3.51	.517	.719	2.96	.434	.659

Q26) Students are given individual attention	3.51	.538	.734	2.64	.574	.758
Q27) Caring of employees towards students	3.65	.626	.791	2.96	.635	.797
Q28) Commitment of employees for realisation of students interests	3.68	.667	.817	2.94	.632	.795
Q29) Understanding of employees for specific needs of students	3.66	.669	.818	2.98	.496	.704
Q30) Adjusted teaching schedule to students needs	3.64	.461	.679	2.90	.394	.628

KMO = 0.962  
Chi-Square = 5126.273  
Sig. = 0.000  
**% of Variance = 55.543**

KMO = 0.960  
Chi-Square = 8399.529  
Sig. = 0.000  
**% of Variance = 44.531**

Table 2: The factor structure of service quality perception in subsample space

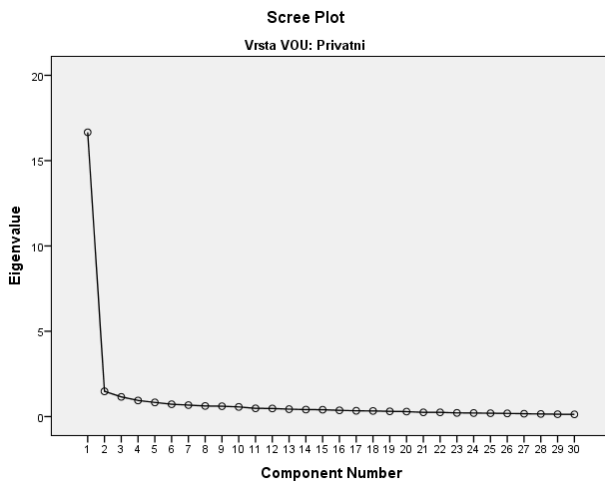


Figure 1a: Scree plot private faculties

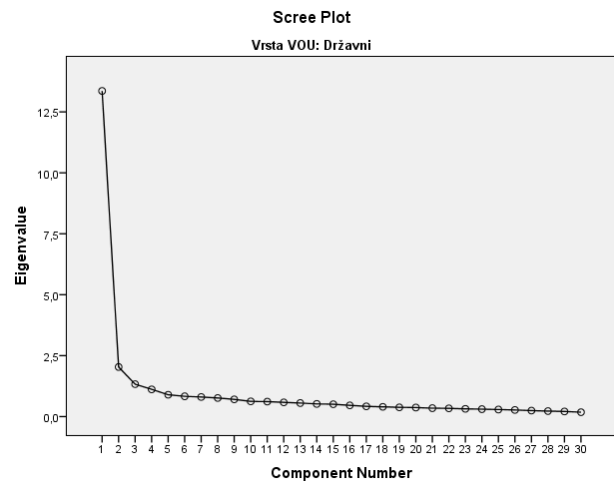


Figure 1b: Scree plot public faculties

## DISCUSSION

Higher education and its quality are an important factor in the development of social community, and hence the area of Republic of Srpska as well. Institutions dealing with higher education legislation are conceptually oriented towards the state project of integrating the mission and vision of higher education into the European Education Area. In the context of looking through the prism of existence of higher education institutions, it is necessary to keep in mind some facts: (a) the legal framework defined that the founders of higher education institutions can be the state, but also other legal and natural persons; (b) they are formed and registered according to the

same criteria; (c) they accredit the study programmes in accordance with uniform standards; (d) the quality evaluation processes and criteria should be binding on all institutions; (e) teaching staff are selected according to the same criteria; etc. In this sense, the legislator does not imply discrimination among higher education institutions, teaching staff or students on any grounds, not even on the grounds of the origin of the capital of the founders of the institutions. However, the legislator does not recognise higher education in any segment as a form of market concept. The state expresses its "public interest and care" for higher education, and in accordance with its capabilities, it provides it through a form of public good (it provides its production

in the institutions that it forms itself). However, it is necessary to draw attention to the fact that in most European countries, especially those that have accepted the concept of the Bologna Declaration, the higher education institutions exist in an environment that promotes higher education also as a service that has its market value. It can be "bought" in both public and in private/entrepreneurial institutions (Ahmetović, Tomka & Dimitrić, 2014).

Increasingly noticeable competitiveness of the academic area requires higher education institutions to develop mechanisms of sustainable development more intensively, where the issue of continuous improvement of service quality and recognition of obligations towards the users should predominantly occupy the attention of managements. In order to achieve the set goals, the faculties and colleges need to provide their users with values that are constantly improving. Understanding, satisfying and overcoming the needs and expectations of the higher education service users are essential for achieving the competitive advantage of institutions and their positioning in the academic area (Janovac, 2014).

The fundamental tasks of the European Higher Education Area in the XXI century are aimed at ensuring quality, its permanent improvement, as well as sustainability (guarantees) in relation to direct users which creates preconditions for determining the competitiveness of higher education institutions, as well as the complete national system of higher education (Lazić, 2007). With the implementation of the Bologna Process in the system of higher education in Republic of Srpska, the issue of introducing, application and monitoring the overall quality of work of higher education institutions becomes one of the key topics for all stakeholders in this process. The issue of identifying the quality of services is becoming particularly interesting. The created environment of realistically present competition among faculties and colleges-imposed intensification of the Bologna determinant on the student as the central pillar of higher education ("the student in the centre of attention"). Higher education must be understood as a place of providing educational services in which all determinants of the educational process in general (pedagogical, ethical, economic, sociological, etc.) are implemented. Therefore, the issues of improving the quality of overall activities of higher education institutions cannot be imagined without active participation of students. The Bologna Process has defined that in the topic on the quality system at a higher education institution, students are placed in the centre of attention as subjects of the educational process. Thus, the service quality area is used to monitor, evaluate and improve the determinants of student experience during studies which creates the conditions for achieving the goal - satisfaction of all participants in the education system (students,

teachers, management and administration, social community, sponsors and investors, etc.) (Puška, Stanišić & Maksimović, 2015).

Although quality management is still insufficiently stably incorporated into the work of higher education institutions, both due to lack of a unified concept and due to different interpretations and meanings for stakeholders (Becket & Brookes, 2008), improvements, based on the knowledge that quality assurance is a necessary comprehensive process, dominantly based on mechanisms, structure and activities by which a higher education institution establishes, maintains and improves quality in all areas of work, have been noticed. In the European Education Area<sup>1</sup>, as one of the actual trends, positioning of the development of institutional quality systems oriented towards the user is emphasized (O'Mahony & Garavan, 2010). Awareness of quality management in higher education is the starting point for understanding its importance and improvement. The quality of services of higher education institutions can be based on institutional characteristics, and it should not be viewed only as a process managed through procedures, measurements and evaluation, but also as creation of new social value (Janovac, 2014).

The problem of quality assessment in higher education in the area of Republic of Srpska has been evident for several years. The beginning of implementation of the Bologna Declaration created the obligation of continuous evaluation of the work of higher education institutions, both externally and internally. However, the criteria have not yet been clearly defined and uniform criteria have not yet been created to ensure binding "uniformity" for all higher education institutions, regardless of their founding character (private or public). The predominantly present form is recognised through the form of student evaluation of the teaching process (the so-called teacher and teaching process evaluation), whereas less attention is paid to the other segments of service quality evaluation.

The results of this research can be viewed correlatively in the context of the RATER Model of service quality (Parasurman, Zeithamel & Berry, 1985; according to: Filipović & Đurić, 2010), given that higher education in the world today is considered a specific service environment. The dimensions of the quality of service of a higher education institution are reflected through the following interactive domains: (a) reliability (ability of the service provider to perform the service reliably and accurately, and it is expressed quantitatively), (b) assurance (ability of the service provider to create long-term trust with clients/users),

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<sup>1</sup> With the tendencies of Republic of Srpska towards its full incorporation within



(c) participation of tangibles (spatial and technical capacities of the service provider), (d) empathy (ability of the service provider to make appropriate contact with users during provision of the service; the service provider must have information on needs, requirements and expectations of current, but also potential users), (f) responsiveness (readiness of the service provider to react in a timely manner).

In that sense, in recent years, more and more research has appeared that deals with the problems of quality of services in higher education (Ivković, 2009; Babić, 2011; Subotić, Gajić & Lungulov, 2011; Klarić & Kulišan, 2011; Stojanović, Pavlović & Višnjić, 2011; Paszek, 2012; Banjević, 2012; Puška, Stanišić & Maksimović, 2015; Puška, Maksimović & Fazlić, 2015; Horvat-Novak & Hunjet, 2015; Dužević, Čeh-Časni & Lazibat, 2015; Nešić, Ahmetović, Srdić & Badrić, 2017; Srdić, Nešić & Jakupović, 2019), especially from the aspect of the activities of higher education institutions that are recognized as service providers and put students in the focus of their interest as key stakeholders, both in educational process and in the overall service environment, that is, as the most important factors in the valorisation of the quality of services of higher education institutions.

## CONCLUSION

An empirical non-experimental study was conducted on a sample of 863 respondents consisting of students of higher education institutions in Republic of Srpska, the aim of which was to determine student perceptions of the quality of services of higher education institutions they attend. The subsampling of the study sample was performed according to the criterion of ownership structure of the higher education institution, into two entities: (1) the students of public faculties/colleges and (2) the students of private faculties/colleges. The results showed that in the area of assessing the overall quality of services, the students of private faculties expressed a higher level of satisfaction compared to their colleagues who study at public institutions. The difference was also identified within the threshold of statistical significance (Sig. = 0.000). The general quality of services at public faculties/colleges is perceived at the level of moderate satisfaction (Sv = 3.14), whereas at private ones this intensity is somewhat higher and ranges at the level of the grade very good (Sv = 3.68). This study also confirmed the validity and usability of the applied questionnaire, based on the HEDUQUAL scale (Ch. Alpha = 0.966). Its one-factor multi-item character has been confirmed. In this respect (latent space of service satisfaction) in both subsamples in the factor distribution, the item indicator was predominantly focused on the part of the service system that are considered domains of trust and empathy, whereas

the other domains (reliability, responsibility and equipment) were relatively similarly distributed within the factors. In general, a more homogeneous distribution of the observation of items within a single factor was observed with the students of private faculties (55.54% of the common variance is explained, compared to the public ones where it was at the level of 44.53%)

The reasons for such results can be sought, among other things, in the social environment in which higher education institutions exist on the territory of Republic of Srpska. The area of higher education in this entity of BiH realistically exists in the environment of an illusion of "fair market competition" of higher education institutions. The frameworks for the evaluation process of faculties and colleges are formally set (by the state), however, they are not truly based on competitive loyalty. This is why, the private faculties/colleges are in a relatively unfavourable position at the very start, and they have to direct their activities much more intensively towards higher quality of services, attractiveness of their programmes, more competitive material and technical conditions, and similar.

This is noticeable in the following segments: (a) the legislator does not regulate higher education in the form of a market concept (nor does it suggest such an environment); (b) about 80% of the student population is studying in public higher education institutions, while in private ones this percentage is below 20%; (c) in public faculties/colleges more than 50% of the students are on a budget funding system (and about 30% are self-funded); (d) unfair competition in terms of enrolment of self-funding students at public institutions (students enrol in institutions that use already provided public resources for "budget" students in higher education production, certainly at a lower market price, thus generating an environment of unfair competition compared to private higher education institutions); (e) upon obtaining a working permit, public higher education institutions are profiled as non-profit organisations, and private (entrepreneurial) ones are, as a rule (and without their will), considered as for-profit organisations; (f) private higher education institutions are forced to constantly raise the level of quality of their services in order to survive economically in the "market" of higher education (this requires additional financial investments made from their own sources, as opposed to public ones where they reach for budget funds for each additional investment); (g) the discriminatory context of the diploma (the preamble of the diploma shows personal identification of the founders - the state versus individuals, which can later produce many discriminatory consequences, especially with employment in public sector); etc.

## REFERENCES

- Ahmetović, Z., Tomka, D., & Dimitrić, M. (2014). Univerziteti u tržišnoj utakmici, paradigma koja to još nije. [Universities in Market Competition, a Paradigm that is not yet to be that.] U: Katić, V. (ur.). XX skup trendovi razvoja: "Razvojni potencijal visokog obrazovanja", Zbornik radova, Novi Sad: Fakultet tehničkih nauka, 148-156.
- Babić, M. (2011). Percepcija kvalitete u visokom obrazovanju – osvrt na studente Sveučilišta u Mostaru. [Perception of Quality in Higher Education – Reflection on Students at the University of Mostar.] 7. Naučni skup sa međunarodnim učešćem "Kvalitet 2011", Zbornik radova, Zenica: Mašinski fakultet, 855-860.
- Banjević, K. (2012). Percepcija parametara kvaliteta ustanove u odnosu na ostvareni uspeh studenata. [Perception of the Quality Parameters of an Institution in Relation to the Success Achieved by Students.] U: Drljača, M. (ur.). 13. Međunarodni simpozij o kvaliteti "Kvaliteta i društvena odgovornost", Zbornik radova, Zagreb: Hrvatsko društvo menadžera kvalitete, 285-292.
- Becket, N., & Brookes, M. (2008). Quality Management Practice in Higher Education-What Quality Are We Actually Enhancing. *Journal of Hospitality, Leisure, Sport and Tourism Education*, 7(1), 40-54.
- DeVellis, R. F. (2003). *Scale Development: Theory and Applications* (2nd ed.). Thousand Oaks, California: Sage.
- Douglas, J., Douglas, A. & Barnes, B. (2006). Measuring Student Satisfaction at a UK University. *Quality Assurance in Education*, 14(3), 251-267.
- Dužević, I., Čeh-Časni, A., & Lazibat, T. (2015). Istraživanje percepcije studenata o kvaliteti usluge visokog obrazovanja. [Study on Student Perception of the Quality of Higher Education Service.] *Hrvatski časopis za odgoj i obrazovanje*, 17(4), 37-67.
- Ćurković, B., i saradnici (2011). Osiguranje kvaliteta u visokom obrazovanju: evropska iskustva i prakse. [Quality Assurance in Higher Education: European Experiences and Practice.] Banjaluka: Agencija za razvoj visokog obrazovanja i osiguranje kvaliteta.
- Filipović, J., & Đurić, M. (2010). Sistem menadžmenta kvalitetom. [Quality Management System.] Beograd: Fakultet organizacionih nauka.
- Gajić, J. (2011). Merenje satisfakcije studenata u visokom obrazovanju. [Measuring Student Satisfaction in Higher Education.] *Marketing*, 42(1), 71 – 80.
- Glanville, H. (2006). Osiguranje kvalitete u visokom obrazovanju. [Quality Assurance in Higher Education.] Zagreb: Agencija za znanost i visoko obrazovanje.
- Gronroos, Ch. (2002). An Applied Service Marketing Theory. *European Journal of Marketing*, 16(7), 30-41.
- Grubor, A. (2012). Izazovi kvaliteta usluga u visokom obrazovanju. [Services Quality Challenges in Higher Education.] *Ekonomске teme*, 50(4), 615-631.
- Horvat-Novak, D., & Hunjet, A. (2015). Analiza učinkovitosti visokog obrazovanja u Hrvatskoj. [Analysis of Higher Education Effectiveness in Croatia.] *Tehnički glasnik*, 9(4), 461-468.
- Hosany, S., & Witham, M. (2010). Dimensions of Cruisers' Experiences, Satisfaction, and Intention to Recommend. *Journal of Travel Research*, 49(3), 351–364.
- Houston, D. (2008). Rethinking Quality and Improvement in Higher Education. *Quality Assurance in Education*, 16(1), 61-79.
- Ivković, M. (2009). Osiguravanje kvalitete u visokom obrazovanju. [Quality Assurance in Higher Education.] *Ekscentar*, 11, 20-23.
- Janovac, T. (2014). Unapređenje kvaliteta visokoškolske ustanove na osnovu kriterijuma potreba korisnika. [Improving the Quality of a Higher Education Institution Based on the Criteria of User Needs.] Doktorska disertacija. Beograd: Fakultet za primenjeni menadžment, ekonomiju i finansije.
- Klarić, S., & Kulašin, Dž. (2011). Konstrukcija HEDUQUAL instrumenta za mjerenje glavnih faktora usluge visokog obrazovanja u BiH. [Construction of HEDUQUAL Instrument for Measuring the Main Factors of Higher Education Service in BiH.] U: Brdarević, S. (ur.). 7. Naučno-stručni skup sa međunarodnim učešćem "KVALITET 2011", Zbornik radova, Zenica: Mašinski fakultet, 821-828.
- Kaiser, H. (1970). A second generation Little Jify. *Psychometrika*, 35, 401-415.
- Kaiser, H. (1974). An index of factorial simplicity. *Psychometrika*, 39, 31-36.

- Lazić, M. (2007). Sistem kvaliteta - QMS u visokom obrazovanju. [Quality System – QMS in Higher Education.] 34. Nacionalna konferencija o kvalitetu, Zbornik radova, Kragujevac: Agencija za kvalitet i standardizaciju Srbije, 2-10.
- Mašić, B. (2010). Kvalitet i strategija diferenciranja u visokom obrazovanju: put ka evropskim integracijama. [Quality and Differentiation Strategy in Higher Education: the Path to European Integration.] V naučni skup "Sinergija", Zbornik radova, Bijeljina: Univerzitet Sinergija, 86-94.
- Milosavljević, M., Maričić, B., & Gligorijević, M. (2009). Osnovi marketinga. [The Principles of Marketing.] Beograd: Ekonomski fakultet.
- Nešić, M., Dačić, D., & Srđić, V. (2014). Korisnička percepcija sistema sportskih usluga karate kluba. [User Perception of the Karate Club Sports Services System.] Sportske nauke i zdravlje, 4(2), 121-130.
- Nešić, M., & Zubanov, V. (2015). Zadovoljstvo korisnika sportskih usluga kao činilac lojalnosti sportskoj organizaciji. [Satisfaction of Users of Sports Services as a Factor of Loyalty to Sports organisation.] Poslovna ekonomija, 9(1), 335-355.
- Nešić, M., Ahmetović, Z., Srđić, V., & Badrić, M. (2017). Evaluation of the HEDUQUAL Scale Intended for Assessment of Students' Perceptions of Service Quality in Higher Education Institution in Vojvodina. Croatian Journal of Education, 19(3), 869-889.
- O'Mahony, K., & Garavan, T. (2012). Implementing a Quality Management Framework in a Higher Education Organisation: A Case Study. Quality Assurance in Education, 20(2), 184-200.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. Journal of marketing, 49(4), 41-50.
- Paszek, Z. (2012). Metodologija ocene kvaliteta edukacije. [Education Quality Assessment Methodology.] Škola biznisa, 3, 18-28.
- Popović, B. (2012). Doprinos povećanju efikasnosti uslužnih organizacija u Republici Srbiji. [Contribution to Increasing the Efficiency of Service Organisations in the Republic of Serbia.] Doktorska disertacija. Zrenjanin: Tehnički fakultet „Mihajlo Pupin“.
- Popmihajlov-Zeremski, S. (2010). Evaluacija kvaliteta sportskih usluga na bazi stavova i mišljenja zaposlenih i korisnika JP SPC „Vojvodina“ u Novom Sadu. [Evaluation of the Quality of Sports Services Based on the Attitudes and Opinions of Employees and Users of PE SBC "Vojvodina" in Novi Sad.] (Magistarska teza). Sremska Kamenica: Fakultet za uslužni biznis.
- Puška, A., Stanišić, D., & Maksimović, A. (2015). Utjecaj sustava kvaliteta na zadovoljstvo i odanost studenata VŠ "Empirica" [The impact of the Quality System on the Satisfaction and Loyalty of Students at the College "Empirica"], Praktični menadžment, 6(1), 15-21.
- Puška, A., Maksimović, A., & Fazlić, S. (2015). Utjecaj kvalitete na zadovoljstvo i lojalnost studenata. [The impact of Quality on the Satisfaction and Loyalty of Students.] Poslovna izvrsnost, 9(2), 101-118.
- Segoro, W. (2013). The Influence of Perceived Service Quality, Mooring Factor, and Relationship Quality on Customer Satisfaction and Loyalty. Procedia – Social and Behavioral Sciences, 81, 306–310,
- Srđić, V., Nešić, M., & Jakupović, S. (2019). Metrical Characteristics of the Questionnaire Applied to the Quality Assessment of the Services of Higher Education in Republic of Srpska. EMC REVIEW-ČASOPIS ZA EKONOMIJU, 9(2), 264-276.
- Stojanović, I., Pavlović, D., & Višnjić, M. (2011). Uloga studenata u unapređenju kvaliteta u visokom obrazovanju. [The Role of Students in Improving Quality in Higher Education.] Studentski medicinski glasnik, 2(1-4), 62-64.
- Subotić, L., Gajić, O., & Lungulov, B. (2011). Kvalitet visokog obrazovanja u društvu znanja - mogućnosti i perspektive. [Quality of Higher Education in the Knowledge Society - Possibilities and Perspectives.] U: Matejić, V. (ur.). Tehnologija, kultura, razvoj - Zapadni Balkan na putu ka Evropskoj uniji, Beograd: Udruženje "Tehnologija i društvo", 142-150.
- Tomka, D., & Tomić, E. (2004). Marketing i menadžment u sportu. [Marketing and Management in Sports.] Novi Sad: Fakultet za sport i turizam.
- Živković, R. Gajić, J., & Brdar, I. (2013). Model kvaliteta u visokom obrazovanju. [Quality Model in Higher Education.] XIII Međunarodni naučni skup Sinergija, Zbornik radova, Bijeljina: Univerzitet Sinergija, 40-48.
- Vargo, S., & Morgan, F.W. (2005). Services in Society and Academic Thought: An Historical Analysis. Journal of Macromarketing, 25(1), str. 42-53.

- Vargo, S.L. (2011). On Marketing Theory and Service-Dominant Logic: Connecting some Dots. *Marketing Theory*, 11(1), 3-8.
- Voss, C., Roth, A. V., & Chase, R. B. (2008). Experience, Service Operations Strategy, and Services as Destinations: Foundations and Exploratory Investigation. *Production and Operations Management*, 17(3), 247–266.
- Voss, R., Gruber, T., & Szmigin, I. (2007). Service quality in higher education: The role of student expectations. *Journal of Business Research*, 60(9), 949-959.
- Vranješ, M., Gašević, D., & Drinić, D. (2014). Analiza elemenata kvaliteta usluga u visokom obrazovanju. [Analysis of Service Quality Elements in Higher Education.] *Marketing*, 45(3), 213-223.

## STUDENTS' PERCEPTIONS OF E-LEARNING THROUGH ONLINE TEACHING IN SECONDARY SCHOOL

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### **Abstract**

*To achieve the best possible results in the implementation of e-learning, it is a necessity that applications and services regarding e-learning are accepted by all participants in the educational process. In this paper, an attempt has been made to present the perception of learning in high school students through online teaching in the context of the Covid 19 virus pandemic. Based on the results of this research, a proposal was made for the usage of software tools assuming it is likely that online teaching will be present to some extent in the future. There is also room for the continuation of the mentioned research in the context of the so-called "Flipped learning" - a new approach in online teaching among high school students in Bosnia and Herzegovina.*

**Keywords:** e-learning, online teaching, e-learning applications.

### **INTRODUCTION**

In the first part of this paper, we briefly looked at the possibilities of e-learning from the cloud - in general. We highlighted the difference between urgent and quality online learning. The following section describes the research. The results are shown in the diagrams and a brief comment is given. In the conclusion, the assessment of the perception of online teaching among students is given, and the possibility of the continuation of this research in new circumstances is announced. The sample consists of 500 students from one mixed high school. Students attend five different occupations and just over half of them live in rural areas. This sample well reflects the general picture of the tested population. In connection with the above, the questionnaire can be considered statistically relevant. One of the limitations of this paper stems from the fact that the research was conducted among students of only one high school. Due to the small number of respondents

in the sample, it is not representative, so based on it we can not reliably form a conclusion about all current high school students.

### **E-LEARNING IN THE CLOUD**

In recent years, the development of information technology is moving in the direction of "cloud computing", which is increasingly accepted and widely used in various fields, including education. Cloud computing is a new direction in the development of the IT industry and the use of computer resources. The name "cloud" was chosen because it uses the resources of virtual computers - network servers whose exact location is unknown. The possibilities of applying Cloud for e-learning are divided in the sense of the use of Cloud in higher education institutions and secondary schools. By using a variety of cloud applications, higher education institutions may sometimes express a need for high processing power to conduct research

and experiments or additional space to store large amounts of data. Certain study programs deal with the development of web applications, so students need development tools and other resources for hosting and managing these applications. In this case, the Cloud platform can be used as a service. Cloud computing has a lot of potential for creative use in studying in general and also for connecting and establishing collaboration between students and teachers. In secondary education (and at lower levels) e-learning from the cloud is mainly applied in the form of (free) use of available applications. Online educational platforms have widespread use in the so-called e-classroom. One of the most popular is Google Classroom. Teaching materials and tasks are set and ordered simply and clearly. Assessments and overall analysis of completed tasks are in one place. Google Classroom allows teachers to send notifications and initiate discussions within a single classroom and it allows teachers and students to share resources, teachers to leave comments on student work, and thus provide them with feedback. Online teaching can be performed as urgent online learning and quality online learning.

Urgent online studying is conducted in an emergency such as this one in which educators and students can currently find themselves. Because of the coronavirus, many teachers are forced to teach online without prior experience, quality training, or adequate tools. Many students are forced to study at a distance, also without prior experience, training, or access to technology. Although both teachers and students should be congratulated on their quick adjustment, it is important to keep in mind that this type of teaching is of low quality and that it makes it difficult to achieve educational goals. Quality online learning includes carefully planned lessons, based on scientific research. Teachers and students that are trained to use the platform have all that available to them. They also have ongoing support during teaching and access to technology and the Internet within or outside their educational institution. In the case of the pandemic and online teaching in 2020, we had an example of emergency learning.

	Moodle	Google Classroom	Microsoft Teams	Blackboard Course Sites	Skype, Zoom, Viber, Whatsapp
Discussion / Forum	✓	✗	✗	✓	✗
e-Portfolio	✓	✗	✗	✗	✗
Limited duration test	✓	✗	✗	✗	✗
Quiz	✓	✓	✓	✓	✗
Analytical sections	✓	✓	✓	✓	
Plagiarism detection applications	✓ (Turnitin)	✗	✗	✓ (Turnitin, SafeAssign)	✗
Integration with applications for synchronous classes	✓ Skype/ Teams/ Zoom	✓ Hang- outs	✓ Teams	✓ Collaborate Ultra	✓
An overview of student progress through all subjects	✓	✗	✗	✗	✗
Analyzing student involvement in class (eg last time a student logged in to the platform, how much time they spent on the platform, did they look at the content you posted, etc...	✓	✗	✗	✓	✗
Setting up groups	✓	✗	✓	✓	✗
Automatic calculation of average student grades	✓	✓	✓	✓	✗
Chat / Messages	✓	✓	✓	✓	✓

## EXAMINING THE PERCEPTION OF E-LEARNING WITH STUDENTS THROUGH ONLINE TEACHING IN SECONDARY SCHOOL

The research was conducted in the period starting from the date of 13th March 2020 up until the 5th June 2020, when there was an interruption of regular classes due to the pandemic of the COVID-19 virus. The problem area of this paper is the involvement of students in more active acceptance of applications in the cloud for monitoring online teaching including solving and submitting tasks and the testing of educational achievements. The implementation of online teaching on different platforms was the priority. Initially, the following platforms were used: Facebook and Viber, and later it was mostly switched to Google Classroom and Zoom. The focus of this study was on students and there was no questioning of the lecturer's experiences. To research the perception of e-learning regarding students, a survey questionnaire was compiled in the GoogleDocs tool, which was distributed exclusively online. In the first part, general data on the respondent (gender and grade) and computer use (number of computers and other devices with which they access the Internet) were collected.

The second part includes questions related to the assessment of one's own engagement and adoption of the content with the offered answers and the possibility of multiple choice. The following are statements from the respondents expressing their degree of agreement (5-point Likert scale) so based on this information we can determine how students perceive cloud applications.

### DATA COLLECTION BY A SURVEY AND THE PRESENTATION OF THE RESULTS

Five hundred students were surveyed, of which 35% attended the first grade, 7% the second, 35% the third, and 23% the fourth. More than half of the test sample (51%) participate in online classes only with a smartphone, 44% of them use a smartphone and a computer and 5% use a computer, laptop, or tablet (do not use a smartphone). The vast majority of them (>97%) had no experience with online teaching until then. Poor or unsatisfactory equipment has had an impact on the quality of online teaching. Also, a poor internet connection occasionally made teaching difficult.

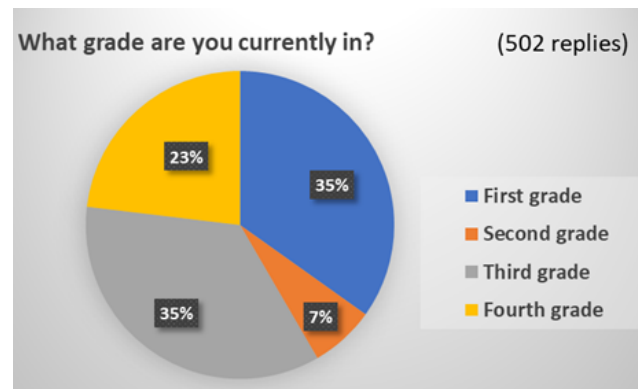


Figure 1. Distribution of students by grades

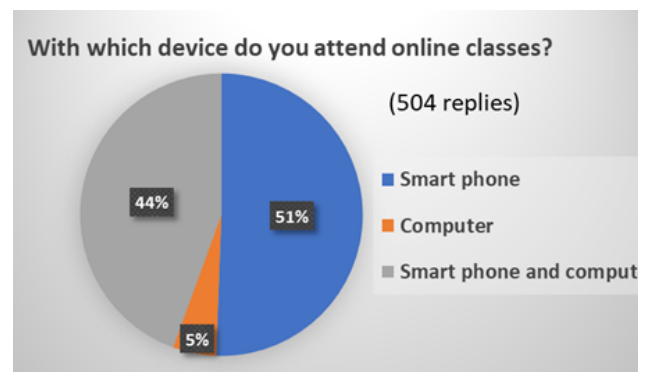


Figure 2. Device preferences used by respondents to follow online classes

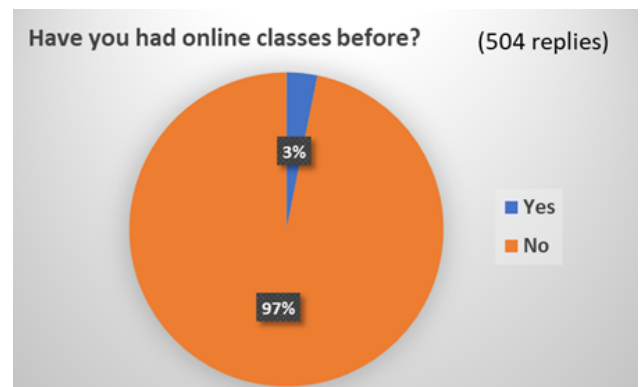


Figure 3. Replies to the following question: „Have you had online classes before?“

What follows are two questions by which students make a self-assessment of their skills on the online teaching platform and how they evaluate their efforts in terms of fulfilling their obligations. Most of the students answered both questions with the grade "very good". A slightly smaller percentage of students (29.3%) answered that they are excellent on the platform and that they think that their commitment is excellent. But there were significantly lower percentages and lower grades regarding the self-assessment.

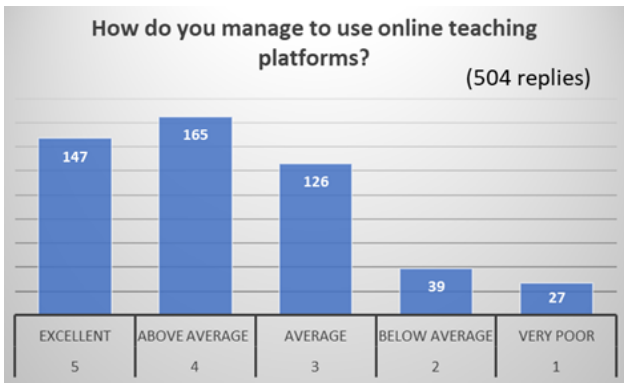


Figure 4. Skills-based on self-assessment regarding the usage of online educational platforms

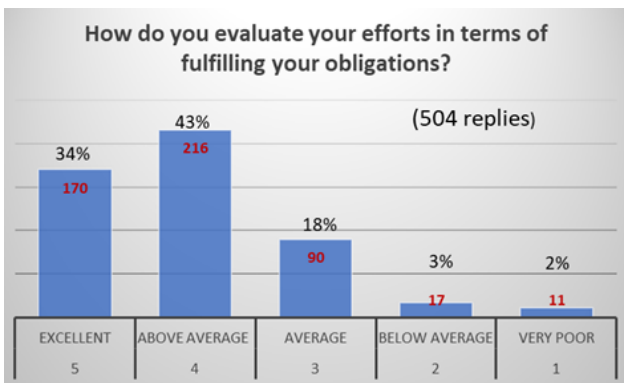


Figure 5. Self-evaluation of one's own efforts regarding the fulfillment of the obligations in online learning

Most of the students answering the question: "How would you rate the online lectures you attend?" (32.3%) choose the answer very well. The attached diagram shows the distribution of other responses.

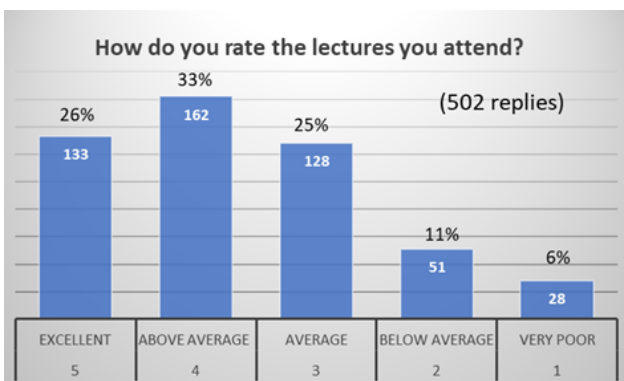


Figure 6. The display of quality assessment regarding online lectures

Next question: "How do you evaluate the elements of online teaching?". Each of the following elements was assessed individually: Communication with

the professor, pictures, written documents, presentations, video, assignments, and a quiz. Although the average grade of the listed elements is between 3 and 4, it is noticeable that the students rated the quiz the best and the communication with the professors the worst.

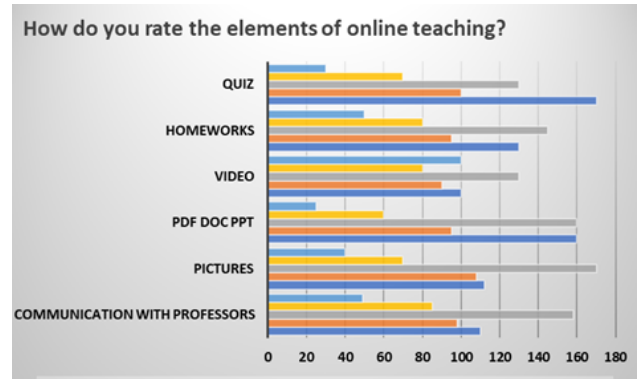


Figure 7. The assessments of individual elements regarding online teaching

To the question: "How much time do professors spend during the week communicating with you and explaining the materials and tasks you do?" "More than half of the respondents (58.8%) answered within 25 minutes. That was also the planned minimum. The diagram shows that a significant number of students reported a longer duration of live lectures and consultations.



Figure 8. Answers to the following question: „How much time do professors spend with you explaining lessons and assignments?“

And from the perspective of the students, it is very important that they are familiar with the grades that are given to them with a possible comment or suggestion. The distribution of answers to this question is equal. The school in which the research was conducted has a large number of occupations, teachers, and external associates. Understandably, some teachers did not do well in the sudden transition to online teaching.



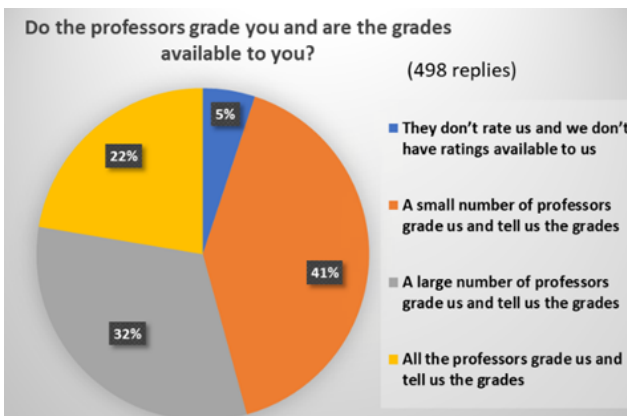


Figure 9. Answers to the following question: „Do the professors grade you and are the grades available to you?“

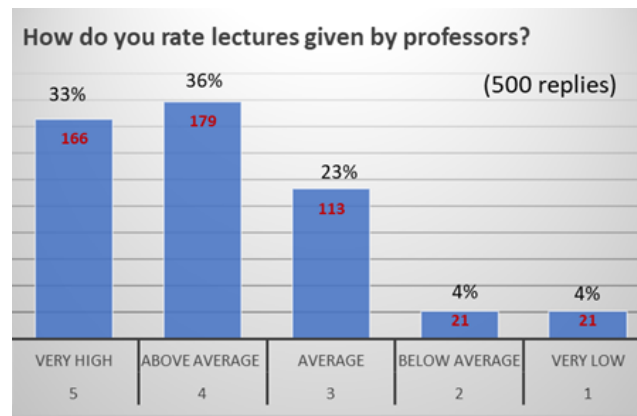


Figure 11. Answers to the following question: „How do you rate lectures given by professors?“

The next two questions relate to the quality of lectures and teaching materials. To the question: “How do you rate the lectures given by the professor”, the largest number of respondents gave a very good and excellent grade (35.8%) and (33.2%). Slightly more than one-fifth of them (22.6%) gave a grade of 3, while a small number of respondents gave lower grades, which can be seen in the diagram. The highest percentage of answers to the question: “Are the lectures given by professors their own or do they use Internet resources, books, etc.?” or are they mostly pictures, documents from books (32.7%) and - Largely own lectures (30.7 %). An equal number of respondents feel that teachers use their own materials to a lesser extent (19%) and that they use sources from the Internet (17.6%).

Finally, respondents were asked to provide an assessment of the platforms used to conduct online classes. The diagram shows the rating of each platform on a five-point Likert scale and the number of respondents who gave that rating. The best grades were given to the Google Classroom platform and the lowest to the Zoom application.

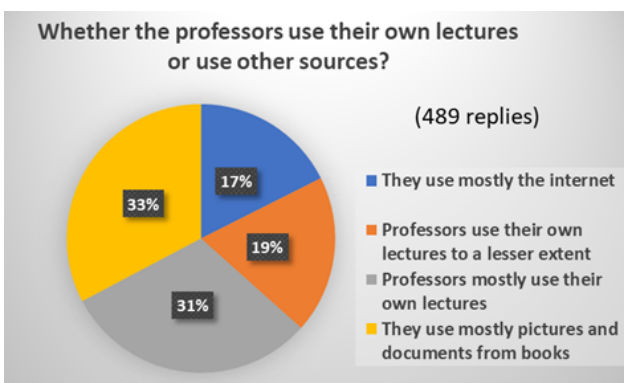


Figure 10. Answers to the following question: „Whether the professors use their own lectures or use other sources?“

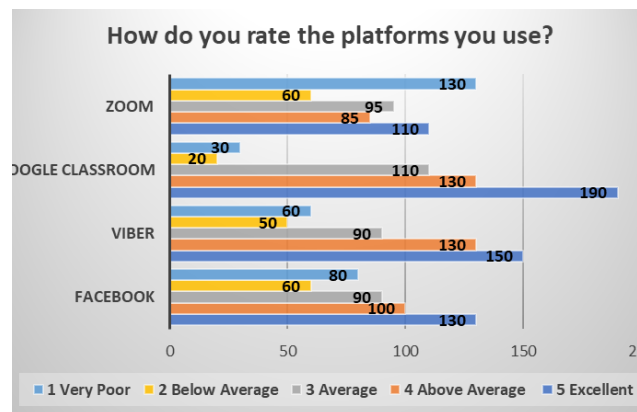


Figure 12. Answers to the following question: „How do you rate the platforms you use?“

Using positive experiences in conducting online teaching in the world, it is proposed to use software tools that enable a higher level of student interactivity in online teaching and tools that will enable so-called “Flipped learning”. This may be the subject of future research.

## CONCLUSION

The digital alternative in teaching is a necessity and in the future, it will certainly be an integral part of the educational process. From the given results, it is possible to report that both teachers and students, despite all the difficulties they encountered, have a positive opinion about the use of educational platforms and tools in online teaching. Although an attempt was made to introduce the "living word" in online teaching through the Zoom application - the initial enthusiasm of students decreased as time passed. Nevertheless, according to the assessment of professional services, solid results have been achieved through online teaching - it is obvious that there is room to improve the perception of online teaching among students.

The frontal form of work in online teaching should be replaced by the use of tools to support interactive teaching. There are free versions of these tools whose possibilities are limited, but still sufficient to establish the teaching focus on the student as much as possible. The cloud provides greater learning opportunities to higher education institutions through a wide range of its services. Secondary and primary schools - primarily due to the scope of the quality of their work, make less use of everything that is provided in terms of education from the Cloud. Even better implementation of these applications is expected in the future. This is supported by the fact that the use of many Cloud services is completely free up to certain limits.

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## REFERENCES

Armbrust M. et al, A View of Cloud Computing, 2010., [<http://cacm.acm.org/magazines/2010/4/81493-a-view-of-cloud-computing/fulltext>] (21.09.2020.)

Horrigan, J. B., Use of Cloud Computing Applications and Services, Pew Internet, 2008., [<https://www.pewresearch.org/internet/2008/09/12/use-of-cloud-computing-applications-and-services/>] (26.09.2020.)

Sultan, N., Cloud computing for education: A new dawn? International Journal of Information Management, 2010., [[https://www.academia.edu/5547760/Cloud\\_computing\\_for\\_education\\_A\\_new\\_dawn](https://www.academia.edu/5547760/Cloud_computing_for_education_A_new_dawn)] (26.09.2020.)

Šafhalter A., Classroom in the cloud, Media, culture and public relations, 2013.

UNESCO IITE, Cloud Computing in Education, Policy Brief, 2010., [[https://iite.unesco.org/files/policy\\_briefs/pdf/en/cloud\\_computing.pdf](https://iite.unesco.org/files/policy_briefs/pdf/en/cloud_computing.pdf)] (28.09.2020.)

## INTERNAL MARKETING, ORGANIZATIONAL COMMITMENT, JOB SATISFACTION AND MARKET ORIENTATION

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### Abstract

*This research provides insight of antecedents of market orientation by presenting a conceptual model stem from relevant literature. The empirical results indicated that internal marketing is an antecedent for market orientation, job satisfaction and organizational commitment. Moreover, both job satisfaction and organizational commitment has direct positive impact on market orientation. Managerial implications and theoretical applications have been explored for both managers and scholars.*

**Keywords:** *internal marketing, market orientation, organizational commitment*

### INTRODUCTION

Market orientation as a culture or as a plan, cannot take place without organizational commitment. Moreover, organizational commitment is a through concept that done not only by top managers, but also by all the employees in any organizational level. Therefore, the prosperity of service organizations in their commercial activities has to assured by the commitment of employees that could be done through internal marketing. Although internal marketing has crucial role in financial performance of companies, by reviewing the marketing literature, it found that the most relevant studies have focused on concepts like employee motivation and loyalty. Moreover, there is paucity of researches in investigating the role of internal marketing on other factors like organizational commitment or market orientation warranting more research in this field. Therefore, this study focuses on investigating the effect of internal marketing on rare studied variables namely organizational commitment, employees' satisfaction and organizational commitment. According to recent statistics, services accounts for about one-quarter of the world trade volume (Keegan, 1995). This figure is even higher in western countries (e.g., United States and many European countries) which makes about a half of their total amount of GDP. Therefore, it comes as no surprise to see a dozen of studies and different

scholars who closely investigate different aspects of service organizations issues. In recent years, issues have become more specialized, concepts like market orientation, and internal marketing has become more popular among scholars. Internal marketing is a prevailing concept in marketing literature in last two decades, which first introduced as a solution for employee-related problems such as quality of work or lack of satisfaction and loyalty toward the organization. Nowadays, studies show that internal marketing programs have direct positive effect on employees' commitment and the performance of the organization due to increase of employees' motivation (Ahmed and Rafiq, 2002). Market orientation, which is another closely relevant concept to internal marketing, is a leading variable in boosting organizational commitment through increasing commitment of employees. Conducting internal marketing programs is a mean for fulfilling this goal (Caruana and Calleya, 1998). The concept of market orientation is a vital issue for prosperity of any service organization due to several reasons. Firstly, market orientation is responsible for information gathering of customers that makes their potential need known to the organization. Consequently, this process may lead to creation of the highest possible value for customers (Awwad and Agti, 2011). Secondly, by considering the main role of human resource, which makes the core of service organizations, designing

and conducting a comprehensive and integral market orientation program, could be crucial in increasing the level of commitment and loyalty in organization.

The study starts with a section presenting the literature review. Because of this review, hypothesis will be developed and Methodology and results will be followed. Findings will be summarized and managerial implications presented in the last section.

## LITERATURE REVIEW

### Market orientation

Market orientation is defined as creating a competitive advantage through a customer-focused enterprise, in which customer values are created (Hou, 2008). Due to abundant number of studies in this area, different definitions are available in relevant literature. Some scholars have discussed market orientation as a firm capability (Day, 1994), others (e.g., Teece et al.,) emphasized more on the dynamic capabilities feature of market orientation in firms which is the ability of organizations to integrate and build competencies for adjusting themselves to rapidly changing environments. In this perspective, firms will gain ability to both make the best use of the existing resources and at the same time, develop their organizational capabilities (Teece et al., 1997). Concerning the definition of market orientation, some researchers have defined this term from behavioral perspective as including both customers and competitors' orientation. Particularly in the study of Mullins et al. (2005) market orientation is defined as those organizations which are customer and competitor focused and simultaneously have integrate marketing with other activities. By reviewing the literature, there are two identifiable approaches through conceptualizing market orientation, namely behavioral and cultural (Homburg and Pflesser, 2000). The main emphasis of behavioral perspective is on organizational activities related to the generation and dissemination of information while in cultural perspective, the main concentration remains on influential organizational values which are effective on market orientation (Kirca et al., 2005; Narver and Slater, 1990).

### Internal marketing and market orientation

Internal marketing has been defined as considering employees as customers and jobs as internal products which would lead to fulfillment of needs of employees through the path to reaching organizational goals (Achfeldt and Coote, 2005). For instance, Studies shows that development of internal marketing in financial institutions have direct positive effect on the commitment of employees (Kyriazopoulos et al., 2007). Moreover, some studies have proposed

that perception of employees of internal marketing concept in management systems has direct positive effect on the commitment of employees in industries such as hotel industry (Hung and Lin, 2008).

Nowadays, internal marketing is considered as a strategy for market orientation. Hogg and Carter have defined internal marketing as integral part of every service organization which needs marketing techniques for empowering it to be able to create values for customers (Hogg and Carter, 2000). Some scholars considered internal marketing as an influential factor for performing market orientation in organization (e.g., Gummesson (1991)), others like Bouranta et al. have indicated that internal marketing has direct positive effect on market orientation of the firm and dimensions of internal marketing has positive effect on customer orientation and other variables of market orientation (Bouranata et al., 2005). Another study also demonstrated that the fully implementation of internal marketing among bank employees will prevail market orientation. Therefore, by studying the relevant literature it is proposed that:

H1: Internal marketing has a positive effect on market orientation.

### Organizational commitment and market orientation

There are different definitions of organizational commitment in literature which most of them have discussed one common feature of organizational commitment which is the link between organization and individuals. (Sivaramakrishnan et al., 2008). Regarding this link, the most relevant definition of organizational commitment is relative strength of employee's involvement in organization which lead to identification of employees with their organization (Mowday et al., 1982).

By reviewing the relevant literature, different dimensions of organizational commitment could be found. For instance, Meyer and Allen (1991) identified different dimensions of organizational commitment, namely affective, continuance and normative. Affective commitment is emotional bond between employee and the organization. Continuance commitment is about costs and benefits of quitting the job and leaving the organization and normative commitment is the feeling of obligation about not leaving the company.

Although organization commitment has been discussed thoroughly in relevant literature and its antecedents and consequences has been prevalently investigated by scholars, there is still no definite agreement for the role of organizational commitment as an antecedent of market orientation of organizations (Conduit and Mayaondo, 2001). In the other hand, few studies have investigated

the consequent role of organizational commitment for market orientation, in which results show that by inclination of organizations toward market orientation, organization commitment will improve (Kohli et al., 1993).

Therefore, review of the relevant literature led us to the following hypothesis:

H2: Organizational commitment has direct influence on market orientation

### Job satisfaction and market orientation

Job satisfaction is defined as the actual satisfaction of employee about its job which is caused by both intrinsic and extrinsic sources (Weiss et al., 1967). Therefore, job satisfaction is considered as a comparison of employee's expectations and the actual outcome of the job (Locke, 1969). In some cases, more emphasis has been put on affective component of job satisfaction which is the degree of satisfaction that the employee attaches to its different facets of job (MacCormick & Ilgen, 1985). Moreover, other scholars have investigated the feeling of employees toward their job and have found many influential factors of job dimensions affecting employees' job satisfaction (Schultz and Schultz, 1994).

There are several studies attempting to identify the relationship of job satisfaction with other kind of organizational factors (e.g. Kline and Boyd (1994); Kerego and Mthupha, 1997). In the study of Kline and Boyd (1994) the relationship of organizational context and job satisfaction has been examined in which results support the relationship of job satisfaction with different aspects of market environment. In the study of Azizi et al., (2012) the relationship between job satisfaction and market orientation has been studied and results shows that job satisfaction has direct positive effect on brand orientation. Despite supporting relevant literature, the relationship of job

satisfaction and market orientation has not yet been investigated; therefore, it is proposed that:

H3: Job satisfaction has a positive effect on market orientation

### Internal marketing on organizational commitment and job satisfaction

Previous researches have indicated the effective role of internal marketing on job related variables, namely job involvement and organizational commitment (Tansuhaj et al., 1991). For instance, in the study of Berry (1981) the correlation between internal marketing and organizational commitment has been investigated in which results shows that internal marketing has a direct positive effect on employees' job satisfaction. Other studies also show for employees to be satisfied be committed to their organization, managers must promote services to internal employees first and after assurance of satisfied internal employees they can concentrate on their external customers (Ting, 2010).

Different studies have investigated the relation of internal marketing and job satisfaction (e.g., Conduit and Mayaondo, 2001) in which the results shows that by implementing internal marketing the job satisfaction of employees will increase in turn and the final outcome will be enhanced organization performance (Tansuhaj et al., 1991). Another research shows different factors and dimensions of internal marketing could have different effects on employees' job motivation and job satisfaction (Rajyallakshmi and Kameswari, 2012). In the study of Al-Hawary et al., (2013) the effect of internal marketing on employees' job satisfaction has been explored and results support the positive effect of aspects of internal marketing on employees' job satisfaction. Therefore, it is posited that:

H4: Internal marketing has a positive effect on organizational commitment

H5: Internal marketing has a positive effect on job satisfaction



Figur1. Conceptual model

## METHODOLOGY

### Measures

The questionnaires were mainly adapted from relevant prior studies and carefully modified to reflect the characteristics of Iran's market. The first set of items for internal marketing were derived from Caruana and Calleya (1998) and Tsai (2008). The items for job satisfaction were derived from the existing measurement scales developed by Hachman and Oldham's (1974). The items for organizational commitment were derived from the scale developed by Porter et al., (1974). The scale used to measure market orientation was developed by Narver and Slater (1990). To assess the content and face validity, the questionnaire was submitted to three marketing professionals who assessed each item for representativeness, specificity, and clarity. The final questionnaire was divided into two parts.

The first part contained questions regarding respondents' demographics, and the second part focused on measurement scales. All variables in the second part of the questionnaire were closed-ended five-point scales, with 1 indicating "strongly disagree" and 5 indicating "strongly agree".

### Sample

The sample for this organization was employees of food companies which have more than 100 employees and have central office in Tehran. A convenience sampling technique was used and total number of 292 employees were selected from 8 companies. In total, 23.4 percent of the respondents were female, and 32.4 percent were below 30 years old. Moreover, 71.8 percent were married and half of the respondents were graduates. Table 1 lists the demographic statistics of all respondents.

Percentages	
<b>Gender</b>	
Male	76.6%
Female	23.4%
<b>Age</b>	
30 and below	32.4%
31-40	30.9%
41-50	26.7%
50 and above	10.0%
<b>Marital status</b>	
Single	28.2%
Married	71.8%
<b>Education</b>	
Diploma and below	28.10%
Graduate	51.40%
Post graduate and above	20.50%

Table 1. Respondents profile

## ANALYSIS AND RESULTS

### Measure Validity and Reliability

For identifying the poorly fitting items exploratory factor analysis (EFA) has been used following confirmatory factor analysis (CFA) for further measure purification as shown in table 2. One item within the internal marketing scale has been removed due to one-dimensionality requirements. Scales' coefficient alphas are indicated in table 2. In all the constructs, coefficient alpha has been

exceeded the recommended threshold value of .7 (Nunnally, 1978). Scales' average variance has been more than .5 which is the recommended level of Dillon and Goldstein (Dillon and Goldstein, 1984).

Discriminant validity of scales was measured using the test suggested by Fornell and Larcker (Fornell and Larcker, 1981).

According to this test, for scale to have discriminant validity, the extracted average variance of latent variable must be greater than the shared variance of a latent variable with another latent variable. As

shown in table 3, no correlation exceeds the square root of the average variance extracted, which is in compliance of needed criterion.

For examining fit between the data and the proposed structural model, the casual structure of the proposed model has been tested. The estimation of the structural model yields a chi-square of 107.52 with 76 d.f. the  $\chi^2/df$  value was 1.41.

The GFI provides evidence of a reasonably fitting model (GFI = 0.89); so, all other indices are within the recommended range of acceptability. As a result, the structural model demonstrated good fit to the data. The various goodness-of-fit statistics are also presented in table 2.

Scale items	Item reliability
<b>Internal marketing</b>	
IM1	0.76
IM2	0.71
Composite reliability	0.73
Average variance extracted	0.64
Cronbach's alpha	0.77
<b>Organizational Commitment</b>	
OC1	0.80
OC2	0.71
Composite reliability	0.79
Average variance extracted	0.52
Cronbach's alpha	0.82
<b>Job Satisfaction</b>	
JS1	0.64
JS2	0.72
JS3	0.74
JS4	0.71
JS5	0.70
JS6	0.62
JS7	0.73
Composite reliability	0.74
Average variance extracted	0.59
Cronbach's alpha	0.75
<b>Market Orientation</b>	
MO1	0.71
MO2	0.81
MO3	0.73
Composite reliability	0.82
Average variance extracted	0.77
Cronbach's alpha	0.81

Notes:  $\chi^2 = 107.52$ ;  $df = 76$ ; RMSEA = 0.058; CFI = 0.93; NFI = 0.91; GFI = 0.89; IFI = 0.92

Table 2. Measurement scale items

Variable	Mean	SD	IM	OC	JS	MO
Internal Marketing (IM)	3.30	0.59	0.94	-		
Organizational Commitment (OC)	2.73	0.63	0.41*	0.07	-	
Job Satisfaction (JS)	2.56	0.71	0.27*	0.29	0.37*	-
Market Orientation (MO)	3.51	0.94	1.12	0.76	0.46*	0.71*

Note: \* Significant at the  $p < 0.05$

Table 3. Correlation Matrix of latent constructs

### Testing Research Hypotheses

The standardized path coefficients ( $\beta$ ) indicate that internal marketing is an antecedent of organizational commitment ( $\beta=0.32$ ,  $t=6.41$ ). The results of the analysis support the antecedent role of internal marketing for job satisfaction ( $\beta=0.41$ ,  $t=4.23$ ). The argument that internal marketing is an antecedent and positively relate market orientation is supported by the findings ( $\beta=0.64$ ,  $t=4.12$ ). Also, the argument that organizational commitment has antecedent role for market orientation is supported in the findings ( $\beta=0.27$ ,  $t=3.28$ ) and the effect of job satisfaction on market orientation also has supported ( $\beta=0.32$ ,  $t=2.89$ ).

Hypotheses		Estimate	t-Value	Hypotheses validation
H1: IM	OC	0.32	6.41**	Yes
H2: IM	JS	0.41	4.23**	Yes
H3: IM	MO	0.64	4.12**	Yes
H4: OC	MO	0.27	3.28*	Yes
H5: JS	MO	0.32	2.89*	Yes

\* Significant at  $p < 0.05$ ; \*\* Significant at  $p < 0.01$

Table 4. Summary of results

### Test of the Structural Model

Table 5 shows the common model-fit indices, recommended values and results of the test of structural model fitness. The estimation of the structural model indicates a chi-square of 107.52 with 76 d.f. the  $\chi^2/df$  value was 1.41. As shown in Table 5, with comparison of all fit indices with their corresponding recommended values (Hair et al., 1998), the evidence of a good model fit was revealed.

Fit indexes	Global fit		Incremental fit	
	$\chi^2 = 107.52$		AGFI = 0.82	
	df = 76		CFI = 0.98	
	GFI = 0.89		IFI = 0.92	
	RMSEA = 0.058		NFI = 0.97	
	SRMR = 0.04		NNFI = 0.97	

Table 5. Overall fit of the model



## CONCLUSION AND MANAGERIAL IMPLICATIONS

The effect of internal marketing, organizational commitment and job satisfaction on market orientation were investigated in this research. By presenting a conceptual model based on the researches in relevant literature, new antecedents and their effects on market orientation and their own internal relationships become known which many of them have never been investigated in previous studies. Due to evidence of good model fit, the model and the relationships it presents, could be considered as highly reliable and applicable to different purposes either academic or practical.

In previous researches the role of internal marketing on market orientation has been investigated. For instance, Bouranta et al., have indicated that internal marketing has direct positive effect on market orientation of the firm and dimensions of internal marketing has positive effect on customer orientation and other variables of market orientation. In this research, this effect has been investigated for Iranian food companies and showed that in Iranian food companies internal marketing has direct positive effect for prevailing market orientation.

The relation of market orientation on organizational commitment has been examined in the work of Berry (1981) in which the correlation between internal marketing and organizational commitment has been investigated. Results show that internal marketing has a direct positive effect on employees' job satisfaction. In this research this relation has been confirmed for Iranian food companies.

Therefore, it is now known for managers and marketers that for reaching organizational commitment the first step is concentration on development of internal marketing.

In previous researches in literature the relation of job satisfaction and internal marketing has been investigated thoroughly. For instance, in the study of Conduit and Mayaondo (2001) results show that by implementing internal marketing the job satisfaction of employees will increase in turn and the final outcome is enhanced organization performance. Likewise, in this study by investigating and supporting the effect of internal marketing on job satisfaction for food companies in Iran, managers have easier task for improving job satisfaction of their employees due to identified antecedents of that variable.

Although organizational commitment is a popular concept in recent studies, there is still no agreement for the role of organizational commitment as an antecedent of market orientation (Conduit and Mayaondo, 2001). Therefore, in this study this rarely studied relation has been investigated and results show that organizational commitment has a direct positive effect on market orientation.

Finally, the effect of job satisfaction on market orientation has not been investigated directly. Though, in the most similar studies, the effect of job satisfaction and brand orientation has been supported (Azizi et al., 2012) or in another relevant study the effect of organizational context on job satisfaction has been investigated and supported by results. In this study the effect of job satisfaction and market orientation has been studied in Iranian food companies and results support the direct positive effect of job satisfaction on market orientation.

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## REFERENCES

- Ackfeldt, A. L., and Coote, L. V. (2005), A study of organizational citizenship behaviors in a retail setting. *Journal of Business Research*, 58(2), 151-159, 58(2), 151-159.
- Ahmed, P. K., and Rafiq, M. (2002), *Internal marketing: the tools and concepts for change*: Butterworth-Heinemann.
- Al-Hawary, S. I. S., Al-Quadah, K. A. M., Abutayeh, P. M., Al-Zyadat, D. Y., The impact of internal marketing on employee's job satisfaction of commercial banks in Jordan, *Interdisciplinary Journal of Contemporary Research in Business*, 4(9), 811-823.
- Awwad, M. S., and Agti, D. A. M. (2011), The impact of internal marketing on commercial banks' market orientation. *International Journal of Bank Marketing*, 29(4), 308-332.
- Berry, L. (1981), The employees as customer, *Journal of Retail Banking*, 3, 25-28.
- Bouranta, N., Mavridoglou, G., and Kyriazopoulos, P. (2005), The impact of internal marketing to market orientation concept and their effects to bank performance. *Journal of Operational Research*, 5(2), 349-362.
- Caruana, A., and Calleya, P. (1998), The effect of internal marketing on organizational commitment among retail bank managers. *International Journal of Bank Marketing*, 16(3), 108-116.
- Conduit, J. and Mayaondo, F. T. (2001), How critical is internal customer orientation to market orientation? *Journal of Business Research*, 51(1), 11-24.

- Day, G. (1994), The capability of market-driven organization, *Journal of Marketing*, 58, 37-52.
- Gummesson, E. (1991). Marketing-orientation revisited: the crucial role of the part-time marketer. *European Journal of Marketing*, 25(2), 50-75.
- Hogg, G., and Carter, S. (2000), Employee attitudes and responses to internal marketing. *Internal marketing: Directions for Management*, Routledge, London, 109-124.
- Homburg, C. and Pflesser, C. C. (2000), a multiple-layer model of market-orientation organizational culture: measurement issues and performance outcome, *Journal of Marketing Research*, 37, 449-462.
- Hou, J. J. (2008), Toward a research model of market orientation and dynamic capabilities, *Social Behavior and Personality*, 36(9), 1251-1268.
- Hugn, J. and Lin, T. (2008), The investigation on the internal marketing practices of the international tourism hotel chains, *Journal of International Management Studies*, 170-176.
- Kirca, A. H., Jayachandaran, S. and Bearden, W.O. (2005), Market orientation: a meta-analytic review and assessment of its antecedents and impact on performance, *Journal of Marketing*, 69, 24-41.
- Kyriazopoulos, P., Yannacopoulos, D., Spyridakos, A., Siskos, Y., and Grigoroudi, E. (2007), Implementing internal marketing through employee's motivation.
- Locke, E. A. (1969), What is job satisfaction? *Organizational Behavior and Human Performance*, 4, 309-336.
- McCormick, E. J. and Ilgen, D. (1985), *Industrial and Organizational Psychology*, London: Allen and Unwin.
- Narver, J. C. and Slater, S. (1990), The effect of a market orientation on business profitability, *Journal of marketing*, 54(4), 20-25.
- Porter, Lyman W., Richard M. Steers, Richard T. Mowday, and P. V. Boulian (1974), Organizational commitment, job satisfaction and turnover among psychiatric technicians, *Journal of Applied Psychology*, 59(5), 603-609.
- Rajyalakshmi, Nittala and Kameswari, A. Vijaya (2009), *Internal Marketing for Customer Satisfaction in Retail Sector*, 3(3), 207-220.
- Schultz, D.P. and Schultz, S.E., (1994), *Psychology and Work Today: An Introduction to Industrial and Organizational Psychology*. New York: Mc Millan.
- Sivaramakrishnan, S., Zhang, D., Delbaere, M., and Bruning, E. (2008), The relationship between organizational commitment and market orientation. *Journal of Strategic Marketing*, 16(1), 55-73.
- Tansuhaj, P., Randall, D., and McCullough, J. (1991). Applying the internal marketing concept within large organizations: as applied to a credit union. *Journal of Professional Service Marketing*. 6(2), 193-202.
- Ting, S. C. (2010), The effect of internal marketing on organizational commitment: job involvement and job satisfaction as mediators. *Educational Administration Quarterly*. 5. 1-30.
- Wiess, D. J., Dawis, R. V., England, G. P. and Lofquist, L. H. (1967). *Manual for the Minnesota Satisfaction Questionnaire*. St. Paul: University of Minnesota, Industrial Relations Center.

## CHALLENGES OF THE FOURTH INDUSTRIAL REVOLUTION: A CASE STUDY OF BOSNIA AND HERZEGOVINA

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### Abstract

*This study focuses on Industry 4.0 in developing countries and, in particular, that of Bosnia and Herzegovina, which is one of the least competitive economies in the Region. A review of the literature on Industry 4.0 and the current prospect of it in the developing countries will be presented and then collecting the required data from the secondary data. This study aims to explore the main challenges along with some opportunities to apply Industry 4.0 in Bosnia and Herzegovina. The challenges that will be tested include poor infrastructure, harmonization of the education system and labour market, expensive installation of technologies, lack of government supports and growing trend of depopulation. Through insight into the structure of world trade and technology achievement, we will also look at the fact that the new industrial revolution will bring an even greater gap between developed and developing countries and try to answer the question of why such a disproportion in development occurs. As this is one of the first research projects regarding Industry 4.0 in Bosnia and Herzegovina, the findings of the study will generate some recommendations and propose some alternatives to be considered that could be useful for the decision-makers both in government and the private sector.*

**Keywords:** Industry 4.0, developing countries, challenges, disproportion.

### INTRODUCTION AND BACKGROUND

The industrial sector is important to every country's economy and remains the driver of growth and employment. More attention is devoted to the implications of the integration of new technological products and services and the creation of industrial values. New technologies evolve at an exponential rate and there is no historical precedent that marked the beginning of evolution. These moves are followed by the emergence of artificial intelligence, robotics, the Internet of things, autonomous vehicles, both nanotechnology, 3-D printing, material science, quantum computing and storage energy (Hussin, 2018). This new paradigm of digitized and related products is called "Industry 4.0". The term "Industry 4.0" became publicly known in 2011, when an

initiative called "Industry 4.0" where an association of representatives from business, politics, and academia promote the idea as an approach to strengthen the competitiveness of German manufacturing industry (Hermann, Pentek i Otto, 2015). The idea of Industry 4.0 includes a wide variety of devices, from smartphones, gadgets, televisions and watches to household appliances, which are becoming ever more flexible and intelligent (KUKA, 2016). Industry 4.0 or fourth industrial revolution also refers to the next phase in a digitization of the manufacturing sector where the Internet of Things (IoT) looks to play a huge role that have the potential to feed information into it and add value to manufacturing industry to realize a low-volume, high mix production in a cost-efficient way (William, 2014). Industry 4.0 is also called the fourth industrial revolution,

based on the “Internet of products and service” after mechanization (Industry 1.0), mass production (Industry 2.0) and automation (Industry 3.0). Internet of products and services is already an inevitable part of production in developed countries, particularly in sophisticated manufacturing and service industries, such as car manufacturing, aircraft manufacturing, insurance, logistics and communications industries (Witkowski, 2017)

Today’s employees will work in a more globalized, automated, virtualized, networked, and more flexible world. They will compete for business on the global market. In this way, new competencies and skills become more important. The adoption of industry 4.0 will enable producers to create new jobs to meet the needs that have led to the growth of existing markets and the introduction of new products and services (Motyl et al., 2017). Experts predict that companies will be able to increase their productivity by about 30% using industry 4.0 (BDI, 2016). However, there is also a question of how to measure the country’s readiness for the 4.0 industrial revolution. For this paper, some of the company or state-level indicators will be presented which can be used to assess readiness or achieve industrial and competitive development. Also, some of the above indicators have been used in this work to assess the impact of ICT sector development. So, according to Roland Berger (2014) Industry 4.0 Readiness index includes the following sets of indicators when creates country rankings:

- Industrial excellence: a. production process sophistication b. degree of automation c. workforce readiness d. innovation intensity
- Value network: e. high value-added f. industry openness g. innovation network h. internet sophistication

Also, The Doing Business index is focusing on the environment Small and Medium Size Enterprises are operating in. The data collected are relating to the largest business city of each economy and covering 10 areas: starting a business; dealing with construction permits; getting electricity; registering property; getting credit; protecting investors; paying taxes; trading across borders; enforcing contracts; resolving insolvency. One of the most popular analysis frameworks for global competitiveness is Michael Porter’s (2008) Diamond Model. Porter identifies four factors with the high impact of national and regional competitiveness.

These are:

- Factor conditions that can be found in a given territory and strengthening competitiveness like skilled workforce or linguistic abilities
- Demand conditions: competitive large home market can create competitive advantage
- Related and supporting industries
- Firm Strategy, Structure, and Rivalry

World Economic Forum Global Competitiveness Index assesses the competitiveness landscape of 140 economies, and it aims to identify and measure the drivers of their productivity and prosperity. The index groups its indicators into 12 categories, the so-called pillars. These are Institutions; Infrastructure; Macroeconomic environment; Health and primary education; Higher Education and training; Goods market efficiency; Labour market efficiency; Financial market development; Technological readiness; Market size; Business sophistication; Innovation. Economic systems of the countries with developed economy are based on high technologies and innovational goods and services that allow them to be leaders and show high quality of economic growth, while the countries with developing economy are oriented at the existing technologies, goods, and services, due to which they reach high growth rates with its low quality, establishing their “underdeveloped” position in the global economic system (Alekseev et al., 2018).

However, these products are often not competitive in the foreign market, given their technological achievements. These countries are often criticized for lack of women’s leadership skills, factory infrastructure, technological applications, and low levels of modification in line with industry evolution and availability, all of which are identified as the main challenges for this growing country. As the key restraining factor on the path of implementing the strategies of increase of the quality of economic growth in the countries with developing economy is deficit of financial resources, the financial aspect of development of industry 4.0 should be paid special attention (Alekseev et al., 2018). Although this paper presents a regression analysis of the example of Bosnia and Herzegovina, the authors will look at some of the macroeconomic indicators of Bosnia and Herzegovina and the surrounding countries, and compare these indicators with European Union countries. Transition economies provide a particularly fascinating background for entrepreneurship development. Bosnia and Herzegovina, Macedonia, Serbia, and Montenegro are rarely in the sample of transnational analyses of transitional economies. Slovenia was the only former Yugoslav state that was very often involved in the research. Western Balkan economies (Albania, Bosnia and Herzegovina, Former

Yugoslav Republic of Macedonia and Montenegro) are relatively small open economies, with an advanced level of trade integration with the EU and CEFTA, with per capita income from medium to low-income levels. Their traditional specialization is in highly-labour intensive industries (clothing, textiles, and leather) and the transformation sectors (melting, metalwork and agribusiness). Tourism represents a significant share of GDP in Montenegro, while money transfers play an important role in stimulating domestic demand and smaller investments in Albania and Bosnia and Herzegovina (Dana and Ramadani, 2014).

Table 1 shows the structural and macroeconomic indicators of the Western Balkans countries compared to the European Union, according to Key Figures on Enlargement Countries (2019), which presents an updated series of key statistics for five candidate countries and two potential candidates, as well as EU-28 data for a period of 10 years (2007 - 2017). Table 1 shows selected indicators that can be read from column one to compare them between the five selected accession countries as well as the EU-28. Table 1 does not include ten years, but only the last observed year, i.e., 2017, but will be mentioned below for some indicators and changes occurring over ten years, according to data available at Eurostat. Population<sup>1</sup> and population structure statistics are increasingly used to support policymaking and provide opportunities for tracking demographic behaviour within the economic, social and cultural context. The population of the observed countries (Bosnia and Herzegovina, Albania, Serbia, Montenegro, and Macedonia) is estimated at 18 million people in 2017 (see Table 1), which is slightly less than 4% of the EU-28 total (508 million people). Serbia has the largest population of 7.114 million, out of 5 observed countries (outside the EU), and Montenegro is the smallest country with 622 thousand inhabitants. The number of inhabitants in Montenegro and the former Yugoslav Republic of Macedonia grew at a modest pace, increasing by 1.4% and 1.7% respectively; which was slower than the corresponding rate of change in the EU-28, where the population grew by 2.8%. Albania has the lowest GDP per capita (BiH has EUR 3,800 in GDP, and Albania EUR 3,600 in GDP).

	EU	Bosnia and Herzegovina	Serbia	Montenegro	Albania	Macedonia FYR	
Population in millions	508 451	3 819	7 114	622	2 892	2 069	
GDP per capita (€)	28 800	3 800	4 700	5 800	3 600	4 400	
Employment rate (people from 20 to 64)	70,1	43,2	56,0	56,7	59,3	51,9	
Balance sheet % of GDP	Products	0,9	- 26,0	-19,9	- 40,4	-22,4	- 20,1
	Services	1,0	7,3	2,2	21,8	5,1	3,8
FDI	Inflows	118 944	264	2 114	630	890	157
	Outflows	96 071	43	310	11	72	-14
Trade balance with EU-28	Export in EU	-	3 291	7 672	113	1 303	3 126
	Import from EU	-	4 930	8 266	760	2 398	3 586

Source: author, according to Key figures on enlargement countries, edition 2019, Eurostat

Table 1. Structural and macroeconomic indicators of Balkan countries compared to EU countries, 2017

1 <https://ec.europa.eu/eurostat/documents/3217494/9799207/KS-GO-19-001-EN-N.pdf/e8fbd16c-c342-41f7-aaed-6ca38e6f709e?t=1558529555000>

The European Union has a 3.7 times bigger GDP than Bosnia and Herzegovina. The EU-28 employment rate for people between the ages of 20 and 64 was 70.1% in 2017, in other words slightly over three-quarters of people aged between 20 and 64 were employed. Employment rates in the enlargement countries were generally much lower than in the EU-28. In 2017, the overall employment rate among the enlargement countries ranged from 59.3% in Albania to 43.2% in Bosnia and Herzegovina for people aged 20 to 64 years. Balance of Payments is a record of some international business transactions with the rest of the world. The current account balance is made up of several components, and in Table 1 there are two of them, including trade in goods and services. In 2017, EU-28 recorded a positive balance for goods and services, while all expansion countries reported a negative balance of goods and a positive balance for services. The current account deficit is relatively large in most enlargement countries, reaching -40.4% of GDP in Montenegro. On the other hand, Montenegro accounts for the largest surplus of the current account for services (21.8% of GDP), mainly as a result of tourist sector arrivals. In terms of FDI, outflows from EU-28 (non-member countries) amounted to EUR 96 billion in 2017, while non-member inflows amounted to EUR 119 billion. Each of the enlargement countries also recorded a higher level of foreign direct investment inflow than outflow.

The business environment is still burdened with numerous administrative barriers at various levels of government.

Doing Business provides an aggregate ranking of "ease of business" for small and medium businesses. Economies are ranked from 1 to 190 according to "ease of operation" and indicators of metrics. When it comes to Bosnia and Herzegovina, certain progress has been made in recent years, in asset registration, but companies still have to register in both entities if they want to operate throughout the country, registration procedures are still different and there is no registration system for the entire Bosnia and Herzegovina. Procedures for opening new companies, the process of obtaining licenses, time and costs are still long and are one of the worst points of our country's competitive ability, which is also rejected by foreign investors. Particular difficulties in the field of competitiveness are related to the beginning of a business, i.e., the start of business where, according to the World Report "Doing Business for 2019", it is stated that starting a business in Bosnia and Herzegovina should go through 13 procedures that need 81 days. After that, for the granting of permits, 16 procedures in 193 days and the time needed for access to electricity, 125 days must be passed. Table 2 shows how Bosnia and Herzegovina was ranked in the period from 2014 to 2019 according to the "ease of operation" and the indicator of measurement regulations.

Thus, it can be seen that in 2014 it occupied the 174th place of 189 world economies for the "start of business" indicator, in 2017 it was in 147th place and 2019 in 183th place. Regarding, for example, "solving insolvency", it can be noticed that Bosnia and Herzegovina were significantly better ranked in 2019 than in 2014, as well as in "cross-border trade".

Country Bosnia and Herzegovina	2014	2017	2019
Start of business	174	174	183
Attaining construction permit	175	170	167
Access to electricity	164	123	130
Registration of ownership	96	99	99
Getting a loan	73	44	60
Investors protection	115	81	72
Taxes payments	135	133	132
Cross-border trade	107	36	37
Conducting the contracts	115	64	75
Solving insolvency	77	41	37

Source: author, according to <http://www.doingbusiness.org/~media/WBG/DoingBusiness/Documents/Annual-Reports/English/DB16-Full-Report.pdf>

Table 2. Indicators of conditions for start-up and business operation according to "Ease of Business" in Bosnia and Herzegovina

Country	Albania	Bosnia and Herzegovina	Montenegro	Croatia	Macedonia, FYR	Serbia
Start of business	50	183	90	123	47	40
Attaining construction permit	151	167	75	159	13	11
Access to electricity	140	130	134	61	57	104
Registration of ownership	98	99	76	51	46	55
Getting a loan	44	60	12	85	13	60
Investors protection	26	72	57	38	7	83
Taxes payments	122	139	68	89	31	79
Cross-border trade	24	37	47	1	29	23
Conducting the contracts	98	75	44	25	37	65
Solving insolvency	39	37	43	39	30	49

Source: author, according to <http://www.doingbusiness.org/~media/WBG/DoingBusiness/Documents/Annual-Reports/English/DB19-Report.pdf>

Table 3. Indicators of conditions for start-up and business operations according to "Ease of Business" in the Balkans, 2019 (in days)

Compared with neighbouring countries, Bosnia and Herzegovina is ranked the worst and in terms of ease of doing business in the 89th place (1-190). Companies face a range of internal weaknesses and constraints in terms of low knowledge of new technologies, access to funding sources, low negotiation power, low productivity, lack of entrepreneurial skills and lack of knowledge related to adequate staff management. Factors that improve the company's performance are related to the stable business conditions that do not hobble but encourage entrepreneurial initiative.

World Bank, Migration and Remittances Factbook, and the used reports of the Statistic Agency of Bosnia and Herzegovina. For establishing how the independent variables influence the number of ICT companies, the used research method implied ten years period from 2007 to 2017, processed with SPSS. The sample includes key indicators of Bosnia and Herzegovina and the period between 2007 – 2017.

## USED METHOD AND DATABASE

The paper aims to analyse the interdependence between the development of ICT companies and infrastructure, the education system, the installation of technologies, the lack of government supports and the growing trend of depopulation. Starting from the previous considerations about the Industry 4.0 framework and the changes that digital transformation will induce in the economy of the developing country, we propose the following model:

$$ICTCOMP_t = \alpha + \beta_1 STARTUP_t + \beta_2 TIMEBUSS_t + \beta_3 INFRASTR_t + \beta_4 MIGRPERC_t + \beta_5 HIGHEdu_t + \epsilon_t$$

where ICTCOMP is the ICT companies, t time period; STARTUP (Start-up procedures to register a business - number), TIMEBUSS (Time required to start a business - days), INFRASTR (Infrastructure - Rank out of 139), HIGHEdu (Higher education and training - Rank/137), MIGRPERC (Stock of emigrants as percentage of population)  $\epsilon_t$  standard error;  $\alpha$  constant;  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$  and  $\beta_5$  parameters to be evaluated. Statistical data underlying come from the

Variables	Indicators	Source
ICTCOMP	ICT companies (2007-2017)	Statistical Agency of BiH
STARTUP	Start-up procedures to register a business (number)	World Bank
TIMEBUSS	The time required to start a business (days)	World Bank
INFRASTR	Infrastructure - Rank out of 139	World Bank
MIGRPERC	Rate of emigrants as a percentage of the population	Migration and Remittances Fact-book
HIGHEDU	Higher education and training - Rank/137	World Bank

Table 4. View of the observed variables in Bosnia and Herzegovina model for the period 2007-2017

	Mean	Std. Deviation	N
ICT companies (2007-2017)	827,0909	309,88916	11
Start-up procedures to register a business (number)	13,1818	,40452	11
Time required to start a business (days)	89,0000	9,50789	11
Infrastructure (Rank out of 139)	121,6364	16,30505	11
Higher education and training (Rank/137)	87,2727	11,95902	11
Rate of emigrants as percentage of population	41,1182	3,27103	11

Table 5. Descriptive statistics

### Using the Multiple regression model for analysing interdependence between ICT companies and independent variables

In order to achieve the multifactorial linear model, the analysis aimed the tendency line of the ICT companies, expressed in numbers of company per year depending on Stock of emigrants as percentage of population, Higher education and training (Rank/137), Start-up procedures to register a business (number), Time required to start a business (days), Infrastructure (Rank out of 139), Urban population (% of total) (2007-2017) separately taken, building, for this purpose, unifactorial linear econometric models (Figure 1). Variables which have the most influence on ICT companies will be presented. From the analysis of the tendency line it can be noticed that the value of the multiple determination coefficient (R<sup>2</sup>) shows that, in the proportion of 66,6 %, ICT companies are influenced by the time required to start a business (in days).

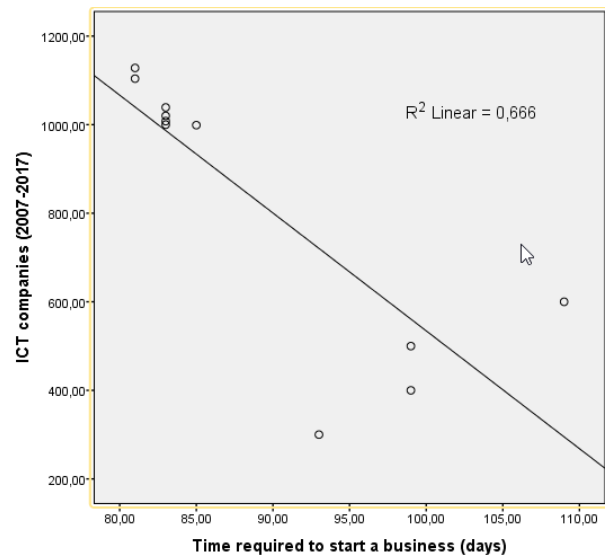


Figure 1. ICT companies depending on time to start a business

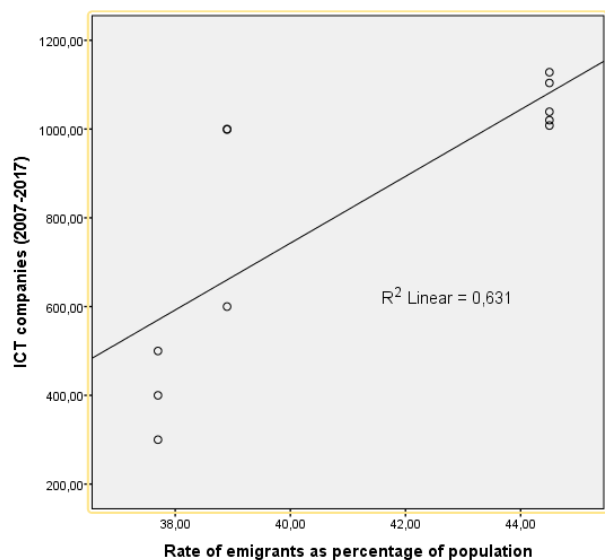


Figure 2. ICT companies depending Emigration rate



**Testing the interdependence and intensity between variables**

To measure the interdependence and also the intensity between the resultative variable and the factorial variables, we shall calculate the coefficients of multiple correlations (R), and for determining the percentage with which five independent variables influences the ICT companies some coefficients of determination shall be established (Table 6.)

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,992 <sup>a</sup>	,984	,968	55,43772	,984	61,493	5	5	,000

a. Predictors: (Constant), Start-up procedures to register a business (number), Higher education and training (Rank/137), Migration, Time required to start a business (days), Infrastructure (Rank out of 139)

b. Dependent Variable: ICT companies (2007-2017)

Table 6. Statistics of the regression, 2007 – 2017

From the analysis of data displayed by the SPSS (Table 6.) it results that the value of R is rather high, respectively 0,992, a value showing that there is an intense connection between ICT companies and independent variables. The analysis of the connection between variables using the R2 highlights that 98,0 % of ICT companies were influenced by the proposed independent variables, and 2,0 % of ICT companies are influenced by other random factors, while the standard error (Se) of the model is 55,437.

Thus,  $\beta_0$  takes values from the range [- 3654,585; - 333,094],  $\beta_1$  from the range [-14,467; -6,540], [-48,126; -87,401],  $\beta_3$  from the range [-3,206; 4,257],  $\beta_4$  from the range [-18,002; -5,132],  $\beta_5$  from the range [- 30,692; - 260,138]. We may notice that the threshold of significance (Sig.), for each coefficient is lower than 0,05, except for variable that represent Infrastructure, which is  $p = 0,732$ , and showing that there is statistically significance between the dependent variable and independent variables (Table 7.).

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
	Higher education and training (Rank/137)	-10,504	1,542	-,405	-6,813	,001	-14,467	-6,540	,563	1,776
	Rate of emigrants as percentage of population	-67,764	7,639	-,715	-8,870	,000	-48,126	-87,401	,306	3,263
	Infrastructure (Rank out of 139)	,526	1,452	,028	,362	,732	-3,206	4,257	,342	2,927
	Time required to start a business (days)	-11,567	2,503	-,355	-4,621	,006	-18,002	-5,132	,338	2,960
	Start-up procedures to register a business (number)	-145,415	44,629	-,190	-3,258	,022	-30,692	-260,138	,587	1,703

a. Dependent Variable: ICT companies (2007-2017)

Table 7. Value of the model coefficients, 2007 – 2017

The estimated equation is:

$$\hat{Y} = -1993,839 - 10,504x_1 - 67,764x_2 - 11,567x_3 - 145,415x_4$$

After the verification of the multicollinearity between the independent variables (Table 7.), we found that the value of the variance inflation factor (VIF) is of 2,960, lower than 5, Tolerance is higher than 0,2, leading to the conclusion that between independent variables there is no direct connection, these variables do not influence each other, and we may build a model. In table 8. can be seen in the residues (Rs) showing the minimum (Min.) value and the maximum (Max.) value of standard deviations (Sd).

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	292,6270	1102,2905	827,0909	308,34132	11
Residual	-69,53670	48,84180	,00000	30,93418	11
Std. Predicted Value	-1,733	,893	,000	1,000	11
Std. Residual	-1,589	1,116	,000	,707	11

a. Dependent Variable: ICT companies (2007-2017)

Table 8. Statistics of the residues for the model, 2007 – 2017

The analysis highlights the predicted value of ICT companies, knowing independent variables, is of 827,0909 with a minimum of 292,6270 and a maximum of 1102,2905. It results that the deviation from the model is in minus with 69,53670 Be plus with 48,8418 Be. The average and the Sd of these variables is rather high  $\pm 30,934$  respectively  $\pm 308,341$ .

ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	950743,673	5	190148,735	99,354	,000 <sup>b</sup>
	Residual	9569,236	5	1913,847		
	Total	960312,909	10			

Table 9. Analysis based on the ANOVA table, 2007 – 2017

To test the model validity, we are using F - test, based on the theoretical repartition Fisher – Snedecor (F). The empirical value of the F-test based on the ANOVA table is  $F = 99,354$ . At the level of significance  $\alpha = 5\%$   $F_{table} = 5,12$ . Since the  $F_{table} < F_{calculated} = 99,354$ , the null hypothesis is rejected in favour of the alternative one, and the chosen model is considered as significant from the statistical point of view. The model validity and the strong connection between the variables are also supported by the threshold of significance (Sig. F) Significance  $F < 0,000$ .

## DISCUSSION

The coefficient value has shown that there is a strong and direct link between the dependent variables and the four independent observed variables. The proposed model can be used to determine the additional values of ICT companies in Bosnia and Herzegovina, pointing to the importance of reduced administrative obstacles that negatively reflect the growth of ICT companies. When it comes to starting a business and the length of its establishment, Bosnia and Herzegovina is ranked 175th out of 190 countries in 2018.<sup>1</sup> In addition to the length of enterprise

creation and complex procedures, there is also the education system as one of the key competitiveness indicators. According to research results, it had a significant impact on the establishment of ICT companies in Bosnia and Herzegovina. According to the Global Competitiveness Report<sup>2</sup>, education implies a general level of skills in workforce, quantity, and quality of education. Although the concept of quality of education is constantly evolving, important quality factors today include the development of digital literacy, interpersonal skills and the ability of critical and creative thinking. Research findings indicate that there is a negative link between the number of ICT companies and the variables of education. Namely, Bosnia and Herzegovina, according to the new Global Competitiveness Report (2018), is ranked 87th among the 140 countries in terms of skills and the quality of education. What is worrisome is the fact that Bosnia and Herzegovina deteriorated its position compared to 2017 when it was the 83rd position. Also, the Competitiveness Indicator in which Bosnia and Herzegovina has the worst result (position 133) refers to the skills appraisal of the graduates who are required by the companies. This all suggests that the education system in Bosnia and Herzegovina does not allow labour

1 <http://www.doingbusiness.org/content/dam/doing-Business/media/Annual-Reports/English/DB2018-Full-Report.pdf>

2 <http://www3.weforum.org/docs/GCR2017-2018/05Full-Report/TheGlobalCompetitivenessReport2017%E2%80%932018.pdf>

competitiveness and that there is no compatibility between the supply of education structure and labour demand in terms of knowledge, expertise, and abilities. When it comes to population emigration, it is expected that it will harm the development of the ICT sector. Apart from being educated in Bosnia and Herzegovina, it is not tailor-made to the needs of the IT sector, i.e. it does not “produce” a sufficient number of high-skilled IT staff, IT companies are also losing experienced professionals. According to research and data obtained from a member of the IT company “BIT Alliance”, in the past 12 months, 4.5% of the total number of IT employees (about 150 experts) left the country.<sup>3</sup>

## CONCLUSIONS AND FUTURE RECOMMENDATIONS

Industry 4.0 will affect all sectors and disciplines, bring structural transformation into a global economy and lead to a new divide that will have a tremendous impact on developing countries. Although ICT is emerging in Bosnia and Herzegovina, however, the initiatives of individuals launching the ICT industry need to be supported by strategic initiatives in the context of future IT legislation development in Bosnia and Herzegovina to have long-term potential. There is a question of the readiness of Bosnia and Herzegovina and other developing countries for the new industrial revolution. Although most developing countries pay attention to the development of science and technology, initiatives have not been implemented appropriately. Low university research results, as well as insufficient intellectual property production, means that these countries are still poor in innovation. If we take for an example export of IT

services in the context of participation in total exports, all countries in the region are better positioned than Bosnia and Herzegovina which occupies 77th place on the world rank. Other countries occupy these places: Romania 18, Albania 21, Serbia 26, Macedonia 37, Bulgaria 41, Montenegro 45, Croatia 50. The basic condition for a better position of Bosnia and Herzegovina when it comes to the quality of the workforce is to change the quality of education that will contribute to the creation of a critical mass of adequately trained experts. Due to the long and complicated process of opening a business, the World Bank's last Doing Business list has reached Bosnia and Herzegovina's 183rd place in 190 countries. Low ranked because opening an enterprise on average requires as many as 81 days and 13 procedures, so the start-up process should be more efficient and faster. Also, business transformation on the basis of digital models will make possible to reach an absolutely different level of product and services creation and promotion, to provide the optimal quality of services to clients and the efficiency to companies and enterprises (Kupriyanovsky et al., 2017). However, such transformation necessitates substitution of traditional managerial approaches, principles and values to the models with priority goals and economic system's success criteria being not the profit or short-term efficiency, but client focus, innovation, new project realization rate, cooperation with suppliers and partners. For future recommendation, authors suggest testing these variables in other developing countries, also including other indicators such as capacity innovation, research and development expenditure, unemployment rate and cooperation in labour-employer relations.

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<sup>3</sup> BIT Alijansa

## REFERENCES

- Alekseev, A. N., Evdokimov, S. Y., Tarasova, A. Y., Khachatryan, K. S., & Khachatryan, A. A. (2018). Financial strategy of development of industry 4.0 in the countries with developing economy. *Revista ESPACIOS*, 39(12).
- Berger, R. (2014). *INDUSTRY 4.0—The new industrial revolution* | Maschinenbau | Engineered Products/High Tech | Branchenexpertise | Expertise | Roland Berger.
- BIT Alijansa (<https://bit-alliance.ba/en/>)
- Dana, L. P., & Ramadani, V. (Eds.). (2015). *Family businesses in transition economies: Management, succession, and internationalization*. Springer., str. 27, 28.
- Hermann, Pentek, Otto. 2015. *Design Principles for Industrie 4 Scenarios: A Literature Review*. Business Engineering Institute St. Gallen, Lukasstr
- [http://ec.europa.eu/eurostat/statisticsexplained/index.php/Enlargement\\_policy\\_and\\_statistical\\_cooperation](http://ec.europa.eu/eurostat/statisticsexplained/index.php/Enlargement_policy_and_statistical_cooperation)
- <http://www.doingbusiness.org/content/dam/doingBusiness/media/Annual-Reports/English/DB2018-Full-Report.pdf>

<http://www3.weforum.org/docs/GCR2017-2018/05FullReport/GlobalCompetitivenessReport2017%E2%80%932018.pdf>

Hussin, A. A. (2018). Education 4.0 Made Simple: Ideas for Teaching. *International Journal of Education and Literacy Studies*, 6(3), 92-98.

Key figures on enlargement countries, edition 2018, Eurostat.

KUKA. 2016. Hello Industrie 4.0: Smart Solutions For Smart Factories. Augsburg: KUKA Aktiengesellschaft

Kupriyanovsky, V., Dobrynin, A., Sinyagov, S., & Namiot, D. (2017). A holistic model of transformation in the digital economy-how to become digital leaders. *International Journal of Open Information Technologies*, 5(1), 26-33.

Motyl, B., Baronio, G., Uberti, S., Speranza, D., & Filippi, S. (2017). How will we change the future engineers' skills in the Industry 4.0 framework? A questionnaire surveys. *Procedia Manufacturing*, 11, 1501-1509.

Porter, M. E. (2008). *Competitive strategy: Techniques for analyzing industries and competitors*. Simon and Schuster.

Vasin, S., Gamidullaeva, L., Shkarupeta, E., Palatkin, I., & Vasina, T. (2018). Emerging Trends and Opportunities for Industry 4.0 Development in Russia. *European Research Studies*, 21(3), 63-76.

William M. D. 2014. *Industrie 4.0 - Smart Manufacturing For The Future*. Berlin: Germany Trade & Invest

Witkowski, K. (2017). Internet of things, big data, industry 4.0—innovative solutions in logistics and supply chain management. *Procedia Engineering*, 182, 763-769.

## EFFECTS OF EUROPEAN EMISSION TRADING SYSTEM ON OIL PRICES AND STOCK EXCHANGE IN NIGERIA

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### Abstract

*The consequences of carbon dioxide emission have negative effect on human health, other natural and man-made resources. This was while on one hand, European emission trading scheme was introduced with the aim of reducing the level of carbon dioxide emission and on the other hand it can improve firms' performance and lead to economic growth through trading of marketable carbon emission. There is a gap in the literature about European emission trading scheme, and its application for oil prices and firm performance in Nigeria, as there is no known research done on effect of EU ETS on Nigeria oil prices and stock market returns. The aim of this study is to examine the effects of European emission trading system on oil prices and stock exchange in Nigeria.*

*Therefore, to achieve the research objectives, the relationship between the dimensions of EU ETS and market value and oil prices will be analyzed using panel data regression models. This model will prove the significance of the results generated. Data will be collected from the published financial reports of the selected companies that are regulated by EU ETS. SPSS version 21 will aid the data analysis.*

*The findings shall be discussed while necessary recommendations will be made.*

**Keywords:** *European emission trading system, Nigeria oil prices, stock market returns and Nigeria stock exchange*

### INTRODUCTION AND BACKGROUND

Oil and gas companies operating in Nigeria have been experiencing serious financial challenges partly due to the volatility in the global oil market and partly due to their inability to take advantage of opportunities in their environment, which has impacted negatively on their profitability. Available data showed that Oil and Gas firms quoted on the Nigerian stock exchange reported 18 per cent losses after tax for the half year period ended June 30th 2016 when compared with preceding year (Gbadebo, Izuora, Okoromadu & Nnana, 2016). According to the authors, this has resulted in cost-cutting measure like staff retrenchment and salary reduction and available statistics showed that Nigerian Oil and Gas Sector listed on the Nigeria stock exchange recorded 18 per cent losses after tax for the half year period ended June 30th 2016.

This is apparent that the low performance in Nigerian oil and gas companies has resulted in

the slow economic, low standard of living, falling inflation expectations and the consequential effect on the lives of citizens in general, and not to mention the long standing uncontrolled effect of industrial activities on the natural environment that has created critical ecological and economic concerns (Gutti, Aji & Magaji, 2012; Ozor, Umunakwe, Ani & Nnadi, 2015). Although local and global policies in both developed and developing nations have to some extent alleviated many of these environmental problems, the impact is still on the rise.

The worsening of ozone depletion, climate change, and exploitation of natural resources, air pollution and toxic wastes are harming environmental sustainable development and economic system. For example, the refining of oil, which is a water consumption activity and maintaining oil and gas production facilities are being affected by climate change (Schaeffer et al., 2012). Additionally, Covington and Thamotheam (2015) argued that 1% to 20% of investment value is at risk if the warming

effect of climate change continues to increase. In terms of stock investment, stock price and share performance are very sensitive to the climate change issue (Dell, Jones, Olken & Gates, 2014). For instance, development of green energy could be a threat to conventional energy, thereby making stock price of green energy to be higher than conventional energy. It is estimated that Nigeria losses about 72 billion USD in revenues and 2.5 billion USD annually to gas flaring (Anomohanran, 2012).

The EU ETS, one of the greenhouse gas emissions trading scheme was set up to fight climate change issues and thereby improve corporate performance (European Union, 2003). The EU ETS relies on the principle of “cap-and-trade”, whereby players in the market are mandated to hold allowances corresponding to the amount of carbon dioxide they release into the atmosphere (Liu & Feng, 2018). The total amount due to EU Allowances is capped and gradually reduced. Participants can choose either to implement emission reduction measures or to buy EUAs from other players that have it in excess. Additionally, it provides a market efficient price for emission units that can be utilized by companies for future investment or business planning purposes (Lepone, Rahman & Yang, 2011).

In December 2004, Nigeria acceded to the EU ETS thereby setting the stage for the trading of Certified Emission Reductions (CERs) in Nigeria and making qualifying Nigerian emission reduction projects eligible for the issuance of CERs (Ijaiya, 2017). When adopting the EU ETS, Parties to the United Nations Framework Convention on Climate Change (UNFCCC) established the Clean Development Mechanism (CDM) with the twin goals of contributing to the sustainable development of developing countries and assisting developed countries to meet their emission limitation targets (Spalding-Fecher et al., 2012) through reduction in their carbon emissions. Despite the growing number of firms adopting EU ETS, there are mixed results findings regarding their benefits in empirical literature. Previous studies on EU ETS, which are mainly based on event studies or survey research, reveal inclusive and contradicting results in the relationships between EU ETS and firm performance (Martin, Muûls & Wagner, 2015; Wagner, Martin & Muûls, 2016). More importantly, the effect of European Emission trading system on oil prices and stock exchange has not been investigated. This current research attempts to fill this research gap by examining the effect of European Emission trading system on oil prices and stock exchange in Nigeria. Though studies on EU ETS in developed nations are abundant, (Rogge, Schleich, Hausmann, Roser & Reitz, 2011; Schmidt & Werner, 2012; Marin, Pellegrin & Marino, 2016; Makridou, Andriosopoulos, Doumpos & Galarotis, 2017), the same is not true of developing countries, particularly in Nigeria.

It is important to analyze the effects of the European scheme, because this scheme remains the largest carbon trading market and the most important policy tool for climate change relief of the European Union.

### Objectives of the Study

In line with the introduction, the general objectives of the study sought to examine the effect of European Emission trading system on oil prices and stock exchange, using data from Nigerian quoted firms. The specific objectives of the current study areas follows; to

- To ascertain the extent to which purchase of emission permits affect oil prices in Nigeria.
- To determine the effect of purchase of emission permits on the stock market returns of regulated Nigeria firms.
- Examine the impact of carbon price change by EU ETS on oil prices in Nigeria.
- To test the effects of carbon price change by EU ETS on the stock market returns of regulated Nigeria firms.
- To identify allowance allocation within the EU ETS framework effects on oil prices in Nigeria.
- To ascertain the extent to which allowance within the EU ETS framework affects the stock market returns of regulated Nigeria firms.

### Research Hypotheses

In order to achieve the objectives as highlighted in the study, the following null hypotheses were formulated;

- H01:** Purchase of emission permits does not have significant effect on oil prices in Nigeria.  
**H02:** Purchase of emission permits does not have significant effect on the stock market returns of regulated Nigeria firms.  
**H03:** Carbon price change by EU ETS does not have significant effect on oil prices in Nigeria.  
**H04:** Carbon price change by EU ETS does not have significant effect on the stock market returns of regulated Nigeria firms.  
**H05:** Allowance allocation within the EU ETS framework does not have significant effect on oil prices in Nigeria.  
**H06:** Allowance within the EU ETS framework does not have significant effect on the stock market returns of regulated Nigeria firms.

## Significance of the Study

An upward trend in environmental sustainability practices is being noticed worldwide, as companies in developed countries have started devising measures to combat the effect of carbon dioxide emission due to industrial activities. However, the same cannot be confidently said of developing countries like Nigeria, since the extent of environmental sustainability has remained predominantly very low (Oyebanji, Adeniyi, Khobai & Le Roux, 2017). Nevertheless, given the intensified interest and increasing demand from stakeholders for environmental sustainability through the EU ETS to combat climate change, this study further provides an avenue for organizations on ways to view the importance of low carbon growth as they thrive to grow economy of their country and meet energy supply and demand. This study will invariably allow industrial companies that are under the EU ETS to identify opportunities for cost savings. It will provide an insight to industrial companies on how to satisfy the growing demands and continuous yearning for green house emission. More so, this study will make available for developed and emerging countries to see the need for environmental improvement and corporate environmental performance. This in the long run, helps to visualize an image of the country as having a moral obligation to take responsibility for its environmental activities.

Furthermore, this study will educate government or policy-makers on ways in which companies are planning, or have completed, the implementation of EU ETS can enhance its operations and better connect their efforts for environmental sustainability performance improvement. Besides, this study will serve as a template for other scholars that are involved in carrying out studies that are climate change/environmental sustainability based, especially within the context of developing country like Nigeria. Finally, this study serves as a reference point for future research on environmental sustainability practices through EU ETS among Nigerian firms.

## Scope of the Study

The main focus of this study is to examine the impact of emissions trading on the performance of firms in Nigerian oil and gas industry. The choice of Nigeria arises due Nigeria being one of the largest producer of crude oil in Africa and 14th largest in the world (Central Intelligence Agency, 2008). This statistic implies that Nigeria would be at the central of environmental sustainability through emission trading to combat climate change while still improving their performance.

To achieve the objectives of this study, this research would cover six (6) emission trading scheme project in Nigeria: (1) Escravos Oil Field Associated Gas Recovery and Utilization Project; (2) Recovery of associated gas that would otherwise be flared at Kwale oil-gas processing plant, Nigeria; (3) Pan Ocean Gas Utilization Project; (4) Recovery and marketing of gas that would otherwise be flared at the Asuokpu/Umutu Marginal Field, Nigeria; (5) Recovery and Utilization of Associated Gas from the Obodugwa and neighboring oil fields in Nigeria; (6) Afam Combined Cycle Gas Turbine Power Project. Only six were selected because the projects are owned by various oil and gas industries in Nigeria. Moreover, the choice of these industries is informed by the nature of their industrial/production activities and its direct impact on the environment. These industries are considered to have a high pollution rate (First Global Select, 2008).

## Operational definition of terms

Emission permits also known as carbon credit is defined as "a certificate showing that a Government or Company has paid to have a certain amount of carbon dioxide removed from the environment.

Oil prices refers to the spot price of a barrel of benchmark crude oil in Nigeria Stock market returns is defined as the returns that an investor makes out of the stock market.

Carbon price refers to the cost applied to carbon pollution to encourage polluters to reduce the amount of greenhouse gas they emit into the atmosphere.

Allowance allocation is the process of distributing allowances to covered entities in an emissions trading system (ETS). There are two basic options for allocation: allowances can be either given away (freely allocated) or sold at auction.

## Methodology

In this research, in order to answer the research questions and test the hypotheses generated above, the methodology to be applied will be as follows: Before achieving the objective set, it is necessary to have a detailed understanding and knowledge in of EU ETS and market value and oil prices in Nigeria. Concept of EU ETS and its application is important for generating further research questions in the area. Literature review on these topics will be done through reading books, journal papers and related research studies.

The literature review will build up the understanding on the definitions, meanings and importance of EU ETS on one hand and its relationship with market value and oil prices in Nigeria on the other hand. Investigation of the level of EU ETS compliance and its effect in Nigeria will be carried out in Nigeria stock exchange using panel data methodology. The relationship between the dimensions of EU ETS and market value and oil prices will be analyzed using panel data regression models. This model will prove the significance of the results generated. Data collected will be through the published financial reports of the selected companies regulated by EU ETS.

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## REFERENCES

- Anomohanran, O. (2012). Determination of greenhouse gas emission resulting from gas flaring activities in Nigeria. *Energy Policy*, 45, 666–670.
- Covington, H. and Thamotheram, R. (2014). How should investors manage climate change risk? *Rotman International Journal of Pension Management*, 7(2):42{49.
- Dell, M., Jones, B. F., Olken, B. A., & Gates, M. (2014). What do we learn from the weather? The new climate-economy literature. *Journal of Economic Literature*, 52(3):740-798.
- European Union, (2003). Directive 2003/87/EC of the European Parliament and of the council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC, *Official Journal of the European Union*, L 275: 32-46.
- First global select (2008): Nigerian Stock Exchange Listed Companies and equity securities. Retrieved January 22 2018, from <http://www.firstglobalselect.com/scripts/cgiip.wsc/htm/index>.
- Gbadebo, B., Izuora C., Okoromadu F., & Nnana, M.G. (October 24, 2016). Nigeria: recession- oil firms slash salaries, hold new investments <http://allafrica.com/stories/201610030159.html>
- Gutti, B., Aji, M. M., & Magaji, G. (2012). Environmental impact of natural resources exploitation in Nigeria and the way forward. *Journal of Applied technology in Environmental sanitation*, 2(2), 95-102.
- Ijaiya, H. (2017). Legal and Institutional Framework for Achieving Sustainable Development in Nigeria through the Clean Development Mechanisms. *University of Botswana Law Journal*, 20.
- Lepone, A., Rahman, R. T., & Yang, J. Y. (2011). The Impact of European Union Emissions Trading Scheme (EU ETS) National Allocation Plans (NAP) on Carbon Markets. *Low Carbon Economy*, 2(02), 71.
- Liu, J. Y., & Feng, C. (2018). Marginal abatement costs of carbon dioxide emissions and its influencing factors: A global perspective. *Journal of Cleaner Production*, 170, 1433-1450.
- Makridou, G., Andriosopoulos, K., Doumpos, M., & Galariotis, E. (2017). The impact of the EU Emissions Trading Scheme (EU ETS) on firms' performance and energy efficiency. In *Meeting the Energy Demands of Emerging Economies*, 40th IAEE International Conference, June 18-21, 2017. International Association for Energy Economics.
- Marin, G., Pellegrin, C., & Marino, M. (2016). The impact of the European Emission Trading Scheme on multiple measures of economic performance (No. EPFL-WORKING 215751). EPFL.
- Martin, R., Muûls, M., & Wagner, U. J. (2015). The impact of the European Union Emissions Trading Scheme on regulated firms: What is the evidence after ten years? *Review of environmental economics and policy*, 10(1), 129-148.
- Oyebanji, I. J., Adeniyi, B., Khobai, H., & Le Roux, P. (2017). Green Growth and Environmental Sustainability in Nigeria. *International Journal of Energy Economics and Policy*, 7(4), 216-223.
- Ozor, N., Umunakwe, P. C., Ani, A. O., & Nnadi, F. N. (2015). Perceived impacts of climate change among rural farmers in Imo State, Nigeria. *African Journal of Agricultural Research*, 10(14), 1756-1764.



Rogge, K., Schleich, J., Hausmann, P., Roser, A., & Reitz, F. (2011). The role of the regulatory framework for innovation activities: the EU ETS and the German paper industry. *International Journal of Technology, Policy and Management*.

Schaeffer, R., Szklo, A. S., de Lucena, A. F. P., Borba, B. S. M. C., Nogueira, L. P. P., Fleming, F. P., ... & Boulahya, M. S. (2012). Energy sector vulnerability to climate change: a review. *Energy*, 38(1), 1-12.

Schmidt, P., & Werner, T. (2012). Verified emissions and stock prices: Is there a link? An empirical analysis of the European Emission Trading Scheme. working paper.

Spalding-Fecher, R., Achanta, A. N., Erickson, P., Haites, E., Lazarus, M., Pahuja, N., ... & Tewari, R. (2012). Assessing the impact of the clean development mechanism. Report commissioned by the High-Level Panel on the CDM Policy Dialogue. CDM Policy Dialogue. [http://www.cdmpolicydialogue.org/research/1030\\_impact.pdf](http://www.cdmpolicydialogue.org/research/1030_impact.pdf).

Wagner, U. J., Martin, R., & Muûls, M. (2016). The Impact of the European Union Emissions Trading Scheme on Regulated Firms: What Is the Evidence after Ten Years?

## LETTER TO EDITOR

In his letter to the editor, we received on 11/11/2020., Michael Marshall, Ph.D. from the point of view of his profession and experience describes and analyzes the situation with the COVID-19 pandemic and huge changes in behavior and life of people and work it caused. He concluded this situation is stimulating the evolution of business. He wrote the next:

### THE COVID VIRUS IS STIMULATING THE EVOLUTION OF BUSINESS

It seems obvious to most people that business of all types, are changing, adapting and evolving in response to the Covid Virus and its' effects on business. Observing this is continual daily everywhere. Discussing this with business owners, management, staff and employees of all types of business and companies, confirm that business management, attitudes, operations, strategies, human resources, communications and marketing, revenue generating parts of the business is changing quickly and evolving. Restaurants are now focusing more on the 'take-out', 'pick-up' and catering side of the business.

Enhancements and changes for more sanitation of the restaurants, employees, food preparation and food packaging for 'take out'/'pickup' are all advancing and evolving. Social distancing and wearing masks are now part of daily life and work. Some cultures are struggling with this since they are not used to this. USA is struggling with this with 35-45% seeming to object to this.

Retail stores having same issues with customers and evolving as well with these things. Stores are controlling and managing this but this is a challenge. The stores are now focusing more with their online websites and selling online with home delivery. Inventory levels are declining in the stores forcing customers to shop online via the Internet. There is an increase demand for home delivery services and logistics. This is creating new jobs.

Clothing stores have declining sales because many people are working out of their house now and do not need to buy so much office business clothing. Auto sales are declining since people are not driving as much so they do not need new autos as much and same for auto repairs and new tires sales. Computer sales are increasing, and auto sales and auto repairs

are declining since many people are now working out of their homes instead of driving into the office and workplace through traffic daily.

There is an increase in unemployment in some jobs and business sectors and an increase in others especially logistics, warehousing, truck drivers and home delivery drivers. Some businesses cannot stay in business with the Covid Virus situation. Restaurant Buffets where food is put out on tables in the open, for all that you can eat and serve yourself, is not able to meet the sanitation and social distancing requirements and needs. These businesses are closing or changing to provide only 'take out', 'carry out', 'catering'.

The air quality is increasing and getting better because of less people driving to work every day. Less travel and less autos on the road mean a decrease in gas demand so gas prices are decreasing. Companies are now having many of their office staff and management work from their own house remotely. This is a major attitude change, management change and operations change. Video conferencing being utilized far more now instead of traveling to customers and meeting in an office. Companies are finding that they are actually more productive with this and there are substantial cost savings with not having to support company offices. They can now utilize the space for other things that can help the business to grow. Companies also are finding that many highly talented people who previously they could not hire due to relocation was not acceptable or desirable, now can attract more of these highly talented people since they can work remotely.

When in person meetings are needed and required , video conferencing technology is utilized or such meetings are held to a minimum and staff travel by

airplane to a major airport selected as the central point to meet, and local business conference and meeting rooms are rented for the day for such.

The airlines business has decreased significantly with some estimate being 50-60% decrease because business travel has decreased so much as well as personal travel decreasing. For social distancing airlines cannot pack people into the airplanes, elbow to elbow so close anymore. More people are staying home to entertain or entertaining outside of house on the lawn or grass. This is causing a big demand on lawn chairs to sit on outside.

Since there are more people working from their home now, there is a big demand for home improvement products to repair the house or update and remodel. In the USA, house building products and wood lumber is in such high demand that prices have increased significantly causing new housing and new buildings cost to increase. Home furniture and home décor stores are busy with sales increasing since people are at home more and see the need for such.

There is a high demand for higher level air quality equipment for all businesses and companies. Cleaning supplies and sanitation supplies for higher level sanitation requirements are in high demand. Personal hygiene protection products such as masks and medical gowns are in high demand. With company factories, they are reorganizing the facilities to provide more social distancing. Some companies, businesses, products and services are increasing sales while others declining.

Due to the Covid Virus students from many schools, grade schools, elementary schools' levels are now learning from home online with a computer and teachers are learning how to do this. A lot of new computers are being sold with the increase of demand and need. Parents are learning how to help their children to learn and how to help motivate them as well. This is a very big challenge for the parents and the students.

Same for college and universities. Online classes are taking the place of classrooms and teachers are learning how to teach online and students are learning how to learn online and motivate themselves.

It is so important and critical for businesses and companies to creatively adjust and make bold changes and improvements for 'growing the business' and 'staying profitable in businesses with the current Covid Virus situation and challenges.

Even now, many businesses and companies are re-evaluating their products, services and their capabilities to expand their products and services into things in high demand. All businesses need to be doing the same thing. This is progressively

helping these businesses and companies to grow significantly, both in sales and profits.

There are a lot more changes with businesses and consumers happening right now and I have only mentioned just a few in this article to help open up your eyes to it, to help you be more aware and thinking about it more. Once you are more aware of this, you will automatically and naturally start seeing it more. This may even take over much of your thinking and observing. Businesses are evolving and changing due to the Covid Virus. Consumer behaviors, needs and attitudes are changing and evolving. There will be a lot more changes to come and all will evolve. Many of the business changes will most likely progress even though the Covid Virus will eventually get managed better and have inoculations / vaccinations for it.

**Do not expect all of the business changes to go back to the way things were before Covid-19.**

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#### **Some words about the author:**

Professor Marshall has taught advanced business subjects at universities in the USA and globally, in many countries over the last 9 years. Prior to this, Michael Marshall worked his way up to senior executive levels in various businesses and industries over 35 years. He has served many corporate executives internationally from his own consulting firm, as well. He has over 59+ high level professional business certifications. His 57+ global / international business publications over the last 30 years are in many business subjects; including Sales & Marketing Management, Change Management, Strategy & Implementing, Customer Service & How to Increase Sales from This, Business Creativity, Business Growth and more. Prior to Michael's extensive and long business career, early on when young, he worked in behavioral health/psychology/psychiatry with his first university degrees in psychology and social human behavior. Here he learned about what influences and motivates others, how to change and improve, and the importance to understand 'The Psychology of Business'. After this, he went back to the university to obtain a PhD in business and enter a progressive business career working his way up from starter level positions, though all management levels and into executive levels.

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