Why the Concept of Private Demand for Innovations Should Be Understand: The case of ex-YU countries

Assoc. Prof. Dr. Slagjana Stojanovska (a), Assoc. Prof. Dr. Violeta Madzova (b), Assoc. Prof. Dr. Biljana Gjozinska (a)
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(a) Integrated Business Faculty, Skopje, Macedonia, (b) International Balkan University, Skopje, Macedonia

ABSTRACT

This paper aims to provide a comparative analysis of private demand for innovation in the context of the ex-YU countries such as Slovenia, Croatia, Serbia and Macedonia from 2011 to 2016. One key variable for the importance of demand for innovation is the buyer sophistication. This signals the ability of buyers to select products and services based on performance rather than price and to bear the cost of products at the beginning of the life cycle. The companies that face a sophisticated domestic market are likely to sell high quality products and a close proximity to such consumers should to enables the company to better understand the needs and desires of the customers and how they perceive the value of the product. For cultural or historical reasons, buyers may be more demanding in some countries than in others. Hence, our start point is that "higher degrees of buyer sophistication can to explain higher shares of innovative sales" (Hollanders and Es-Sadki, 2017, p. 42) and opposite "lower shares of innovative sales could to explain lower degrees of buyer sophistication" in the above countries. Thus, our analysis relies on two key indicators, the "buyer sophistication" and the "sales of new-to-market and new-to-firm product innovations", which are including, the first in the Global Competitiveness Report and the second, in the European Innovation Scoreboard. Looking at the results, it can be noted that Serbia has a big gap between the two indicators, so the extent of buyer sophistication is lower from the extent of innovative sales. As business leaders make a subjective assessment of the GCR's indicator Buyer sophistication, it can be assumed that Serbian business leaders assess the sophistication of domestic customers much lower than it is. This example is somewhat similar to the Slovenian business leaders. These two countries achieve the same level of sales of innovative products, while Macedonia and Croatia are in the same group and have lower sales of innovative products. This finding calls for demand-oriented policies which would have to influence the innovation culture in the market, making buyers more risk taking, aware of innovations and empower them to buy and use them.

KEY WORDS: private demand, buyer sophistication, innovations, value, sales

POVZETEK

Namen tega prispevka je zagotoviti primerjalno analizo zasebnega povpraševanja po inovacijah v kontekstu bivših jugoslovanskih držav, kot so Slovenija, Hrvaška, Srbija in Makedonija od leta 2011 do leta 2016. Ključna spremenljivka za pomembnost povpraševanja po inovacijah je prefinjenost kupca. Signalizira zmožnost kupcev, da izberejo izdelke in storitve, ki temeljijo na uspešnosti, ne pa na ceni, in nosijo stroške izdelkov na začetku življenjskega cikla. Podjetja, ki se soočajo s prefinjenim domačim trgom, verjetno prodajajo izdelke visoke kakovosti in bi morala biti v neposredni bližini takim potrošnikom, da bi podjetju omogočili boljše razumevanje potreb in želja kupcev ter zaznavanje vrednost izdelka. Iz kulturnih ali zgodovinskih razlogov so lahko kupci v nekaterih državah bolj zahtevni kot v drugih. Zato izhajamo iz ugotovitve, da "višja stopnja prefinjenosti kupcev lahko razloži višje deleže inovativne prodaje" (Hollanders in Es-Sadki, 2017, str. 42) in nasprotno, "nižji deleži inovativne prodaje lahko razložijo nižje stopnje kupca prefinjenosti" v navedenih državah. Tako se naša analiza opira na dva ključna kazalnika: »prefinjenost kupcev« in »prodaja podjetij, ki so nova na trgu in prodaja novih produktnih inovacij«, ki sta vključena v poročilu o svetovni konkurenčnosti (prvi) in v evropskem pregledu inovacij (drugi kazalnik). Rezultati kažejo, da ima Srbija velik razkorak med obema kazalnikoma, zato je obseg prefinjenosti kupcev nižji od obsega inovativne prodaje. Ker poslovodjenaredijo subjektivno oceno kazalnika GCR-ja kupca, se lahko domneva, da srbski poslovneži ocenijo prefinjenost domačih kupcev precej nižje, kot ta dejansko je. Primer je nekoliko podoben pri slovenskih poslovnežih. Ti dve državi dosegata enako raven prodaje inovativnih izdelkov, medtem ko sta Makedonija in Hrvaška v isti skupini in imata nižjo prodajo inovativnih izdelkov. Ta ugotovitev zahteva razvoj politik, usmerjenih v povpraševanje, ki bi morale vplivati na inovacijsko kulturo na trgu, tako da bodo kupci prevzeli večje tveganje, se zavedali inovacij in jih pooblastili za nakup in uporabo.

KLJUČNE BESEDE: zasebno povpraševanje, prefinjenost kupcev, inovacije, vrednost, prodaja

1. Introduction

The consumer is the basic economic unit that determines the quantity and the types of the products and services that are purchased or will be purchase. Hence, demand is determined by the individual, businesses or public consumers who have “the desire or preference to purchase an affordable product or service” (NESTA, 2010, p. 11). The preferences are a way of characterising consumers’ relative desire to chose one from possible market offers in any given interaction (Australian Government, 2012). So, demand expresses a willingness to pay a certain price for the satisfaction of a need or want (Mowery and Rosemberg, 1979). According to Kotler (2002, p.6), the customer value is defined as “customer’s perception about the benefits received from using a product (service) relative to the cost and risks associated with acquiring it. It simple expresses a ratio between “what the customer gets” and “what the consumer gives”, understanding that the customer gets benefits (functional benefits + emotional benefits) and assumes costs (monetary costs + time costs + energy costs + psychic costs). Folowing Kotler’s logic, the company can increase the value of the customer offering by (1) raising benefits, (2) reducing costs, (3) raising benefits and reducing costs, (4) raising benefits by more than the raise in costs, or (5) lowering benefits by less than the reduction in costs.

Furthermore, it can be noticed that one key variable for the importance of demand for innovation is the buyer sophistication. This signals "....the ability of buyers to select products based on performance rather than price and, thus their willingness to purchase innovatove products and services and to bear their higher costs at the beginning of the life cycle (Edler, 2011, p. 185]. This demand factor can shape innovation activity in two major ways (Oslo Manual, 2005, p. 43): (1) for the development of new products, as firms modify and differentiate products to increase sales and market share; and (2) for the improvement of the production and supply processes in order to reduce costs and lower prices.

Innovation is the first attempt to put an idea into practice (Fagerberg, 2005). This is distinct from invention, which is the first occurrence of an idea. Many definitions of innovation, including the OECD-Eurostat definition, explaining that innovation covers five areas (OECD, 2005): product innovation, process innovation, marketing innovation, input innovation, and organizational innovation. Within each type of innovation there are three levels of innovation (NESTA, 2010, p. 10): incremental, radical and transformational. The incremental innovation refers of small continuous improvements that cause relatively little disruption, e.g. a new invoicing system; the radical innovation refers of new to the market or firm, often disruptive to the industry, discontinuous, e.g. a new product for sale or a new business model such as home delivery for a retailer and transformational innovation refers of new to the world, rare but big innovations that cut across all industries, e.g. the World Wide Web. The minimum requirement for an innovation is that „"the product, process, marketing method or organisational method must be new (or significantly improved) to the firm" (OECD, 2005, p. 46) or other user and introduced on a market or that the new processes are used in production.

A better understanding of the consumer demand for innovation influence on organisational activities, but we know too little about what companies actually do with what they know about consumer preferences or the sophistication of customer. Also, it is important to note that the innovations must be commercialized, that is, launched on the market, or in other ways widely diffused to customers on a large scale in the economy or society. Criteria for success can include market share, number of sales, profit made, diffusion rate, beating competitors, or changes in customers behaviour.

In this paper, our start point is that understending of buyer sophistication by business leader influences to increase sales of innovation produst/ services and that "higher degrees of buyer sophistication can to explain higher shares of innovative sales" (Hollanders and Es-Sadki, 2017, p. 42). We are analyzing the demand for innovation in context of the selected ex-Yugoslavian (YU) countries such as Croatia, Slovenia, Macedonia and Serbia during 2011 to 2016. These countries have a common past of about 45 years when they shared same market in the within of former Yugoslavia. For cultural or historical reasons, buyers may be more demanding for innovation in some countries than in others. So, in this article, we explore the following questions:

− Do the customers in ex-YU countries differ in their degree of Buyer sophistication?
− How many sales of innovative products are realized by the companies in ex-YU countries?
− Do the business managers from ex-YU countries make a good assessment of private demand for innovation and in which ex-YU country it better is doing?
− In which ex-YU country buyers are more demanding for innovation.

In the next sections we present the methodological framework and date, results and discussion based on the findings. At the edn is the conclusion.

2. Methods

In order to analyse above starting poins and to answer the questions, we need effective ways to measure it. Most aggregate, publicly available data focus on innovation is the European Innovation Scoreboard (EIS) that includes different indicators to measure and compare relative efficiency of the performance of country's innovation systems. The EIS data is from different data sources such as the Community Innovation Survey, EUROSTAT and other internationally recognised sources such as the OECD and the United Nations. Second source, which characterise demand conditions across different countries is the Global Competitiveness Report (GCR) by the World Economic Forum (WEF). The GCR data is largely based on surveys of business leaders who give their subjective assessment on a whole series of demand side variables.

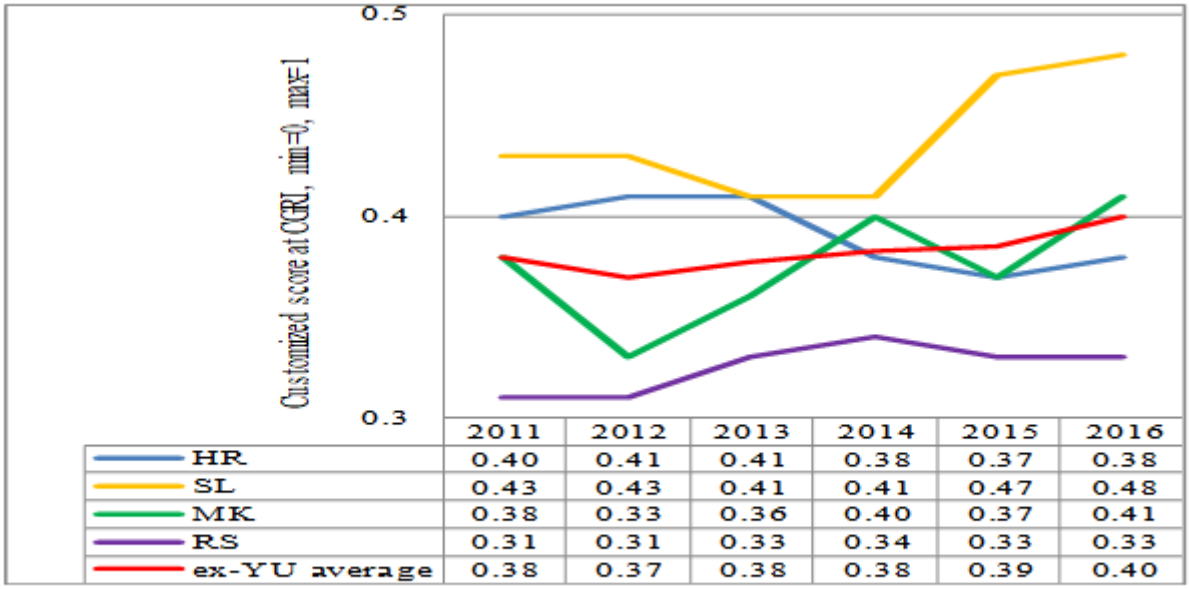
For the issues in this paper we used two indicators which characterise the demand for innovation by these two sources. The first indicator, "Bayer sophistication" is included in the Executive Opinion Survey of the World Economic Forum (WEF) based on surveys of business leaders who give their subjective assessment of this demand variable. While this is not a hard indication, it nevertheless shows how business leaders in the countries perceive the situation, and those perceptions are the basis for decision making for innovation activities. The degree of Buyer sophistication measures, on a scale from 1 (low) to 7 (high), the degree of the preferences of individual consumers for innovative products, whether buyers focus more on price or quality of products and services. The second indicator, "Sales of new-to-market and new-to-firm product innovations (measures as % of turnover)" is employed by the European Innovation Scoreboard (EIS) in order to takes the customers purchase of innovation into account. The EIS indicator "Sales of new-to-market and new-to-firm product innovations" (EISI. SNM&NFP innovation) has normalized score from 0 (min) to 1 (max). In order these the two indicators scores to be comparable they should to have same value. So, we adjust the score of the GCR indicator "Bayer sophistication" (GCRI. BS) of each ex-Yu countries in the following way: the GCRI.BS score is divided by the number 7 which is the maximum of the best GCR score. For example, the GCRI. BS score of Macedonia for 2016 is 2.9 (on scale from 1 to 7), but after adjusting its score is 0,41 (on a scale from 0 to 1). Original GCRI. BS's score and the normalised GCRI.BS's scores as such as the EISI. SNM&NFP innovation score from 2011 to 2016 are presented in Appendix 1.

The comparative analysis between the indicators is based on the average score obtained by of the four scores of the ex-YU countries of given indicator. Furthermore, as "people differ greatly in their readiness to try new products …and ...can be classified into the adopter categories after a slow start, an increasing number of people adopt the new product" (Rogers, 2003, p. 250], in this paper we classified buyers of the ex-YU countries into the three adopter categories: high adopters, moderate adopters and low adopters' buyers. So, according to the indicators "Sales of new-to-market and new-to-firm product innovations (measures as % of turnover)" the countries with five-years average score above of the five-years average score by all ex-YU countries indicates have high adopters buyers. Those countries whose the five-years average score, for same indicators, is equal to the five-years average score by all ex-YU countries have moderate adopter buyers. In the three group are countries with the five-years average score below from the five-years average score by all ex-YU countries which have low adopter buyers.

3. Results and discussion

For first question, Do the customers in the ex-YU countries differ in their degree of Buyer sophistication, we look at the results presented in Figure 1. The figure shows overall

comparison of the CGR's indicator Bayer sophistication (CGRI. BS) with customised scores (from min=0 to max=1) between the ex-YU countries relative to the average for ex-YU countries that is 0,38 in 2011, to 0,40 in 2016. Hence, it can note than the CGRI. BS scores are the highest of Slovenia compared to the average for ex-YU countries and in relation to the individual scores of other ex-YU countries. Contrary to this, the lowest degree of buyer sophistication has Serbia for all years. The Macedonian buyer sophistication go up in 2014, then followed down in 2015, while in 2016 the degree of buyer sophistication again grows. In Croatia from 2013 has trend of decreasing the degree and it is lower in relation to Slovenia and Macedonia.

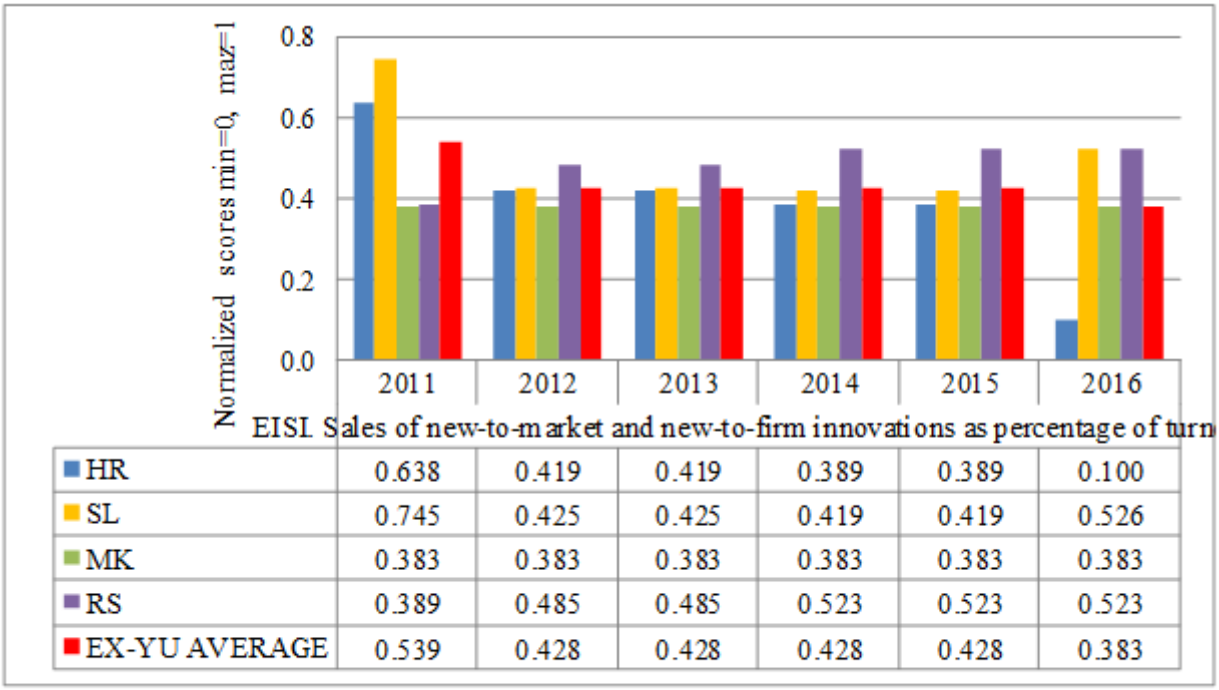


	2011	2012	2013	2014	2015	2016
HR	0.40	0.41	0.41	0.38	0.37	0.38
SL	0.43	0.43	0.41	0.41	0.47	0.48
MK	0.38	0.33	0.36	0.40	0.37	0.41
RS	0.31	0.31	0.33	0.34	0.33	0.33
ex-YU average	0.38	0.37	0.38	0.38	0.39	0.40

Figure 1: Buyer sophistication differences between ex-YU countries. Source: author's calculations based on of the GCR data

This means that buyers in Macedonia and Croatia, but especially in Serbia are not very prone or able to buy innovation products or leading-edge technology. Thus, the pre-conditions for innovations to be absorbed in the market are challenging. One reason for lower buyer sophistication can be "limits of disposable income of private consumers" (Edler, 2009, p.14). This low sophistication calls for private demand policies that target awareness, attitudes and skills of buyers, in order to influence the innovation culture in the market, making buyers more risk taking, aware of innovations and empower them to use them.

As it was previously mentioned, the second question, how many sales of innovative products are realized by the companies in ex-YU countries, we consider through EIS indicators "Sales of new-to-market and new-to-firm product innovations" (EISI. SNM&NFP innovation), see Figure 2.



	2011	2012	2013	2014	2015	2016
HR	0.638	0.419	0.419	0.389	0.389	0.100
SL	0.745	0.425	0.425	0.419	0.419	0.526
MK	0.383	0.383	0.383	0.383	0.383	0.383
RS	0.389	0.485	0.485	0.523	0.523	0.523
EX-YU AVERAGE	0.539	0.428	0.428	0.428	0.428	0.383

Figure 2: Differences the innovations sales among the ex-YU countries. Source: author's calculations based on of the EIS data

From Figure 2, it can be noted that Serbia from 2012 to 2016 achieves the highest level of sales in relation to average at ex-Yu countries, followed by Slovenia. Macedonia has an unchanging constant for all five years, while Croatia has a serious fall in the sales of innovation in 2016.

For the third question (see Figure 3), Do the business managers from ex-YU countries make a good assessment of private demand and in which ex-YU country it better is doing, we doing a comparative analysis using above two indicators (GCI. BS vs. EISI. SNM&NFPI). As the Figure 3 presents, Serbia has an obvious gap between the two indicators during 2011 to 2016, because Serbia has much sales of innovation in relation the assessement at low buyer sophistication. This means that the business leaders in Serbia think that most buyers are unwilling to pay for innovative products while on other hand its companies achieve high sales of innovation. This contradiction shows that business leaders in Serbia need better to understand customers' preferences and it to incorporate into their business strategies and innovative activities, in order to increase profits as a result of a greater offer with innovative products.

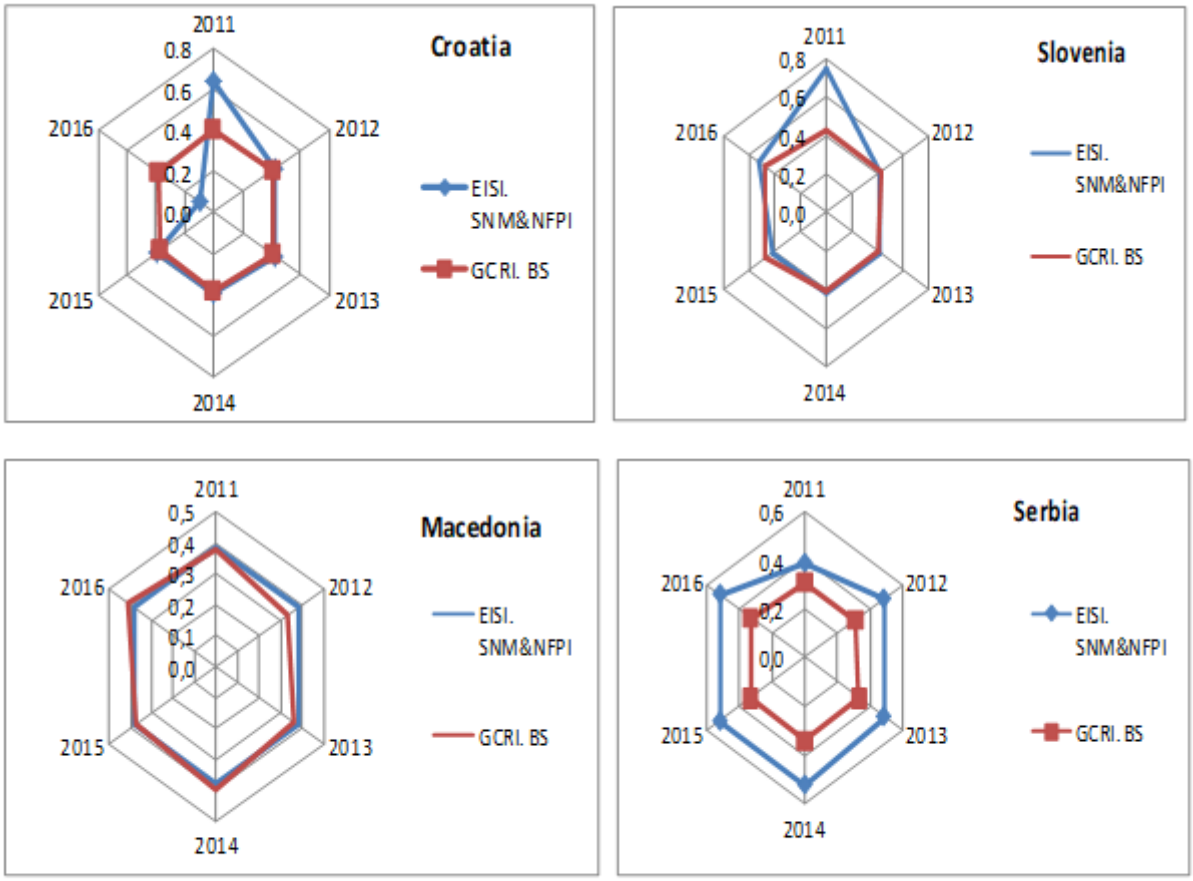


Figure 3: Assessment by business leaders in the ex-Yu countries for the private demand for innovation. Source: author's calculations based on of the GCR data and EIS data

Similarly, the business leaders in Croatia (see Figure 3) should have a better understanding of the concept buyer sophistication, because they opposite from their colleagues in Serbia higher assess its buyers in relation low achieved sales of innovation in 2016. Fall on the sale for innovation show that the buyers in Croatia in 2016 made purchasing decisions for innovation based on the lowest price.

On other hand, the business leaders in Slovenia and Macedonia show a greater understanding the buyer's perception and its purchasing decisions for innovation because sales of innovation and its assess for the sophistication of buyer is equal.

Finally, for the issue in which ex-YU country buyers are more demanding for innovation, we do a comparative analysis between the ex-YU countries based on the amount of adoption of new products by buyers, in order to classify them in one of the three earlier mentioned groups: high adopters, moderate adopters and low adopters' buyers (see Table 1). For this purpose, we used the five-years average (2011-2016) scores of the indicators EISI. SNM&NFPI in relation of the five-year average score of ex-Yu countries (2011-2016) separately, as Figure 4 presented. From the observed the EISI. SNM&NFPI scores of the ex-YU countries Slovenia have the highest value, followed by Serbia. It indicates that their buyers belong in the group high adopter of now product.

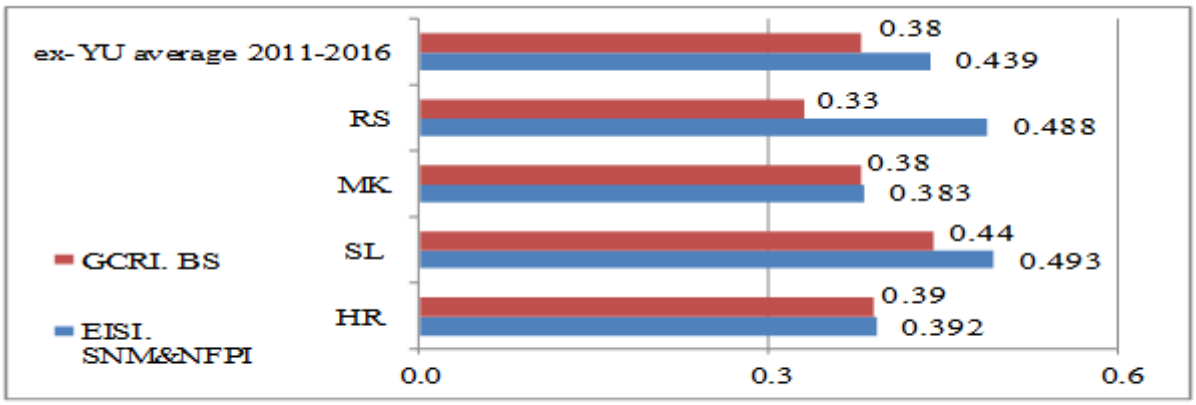


Figure 4:The best private demand for innovation during 2011 to 2016. Source: author's calculations based on the GCR data and EIS data

Unlike these countries, the EISI. SNM&NFPI scores of Macedonia and Croatia are near to the five-years average score of the ex-Yu countries that means that their buyers are in the group of moderate adopters, as Table 1 presents.

Table 1: Buyers adopters of new products

Countries	Buyers adopters of new products		
	High adopters	Moderate adopters	Low adopters
Croatia		√	
Slovenia	√		
Macedonia		√	
Serbia	√		

Overall, this finding calls for change of demander's behaviour for innovation and transforming the market into a desirable direction, such as adopter of innovation product. For example, demand oriented policies which would have to influence the innovation culture in the market of each ex-YU countries, making buyers more risk taking, aware of innovations and encourage to adopter now product and to use it. Work done by Rothwell (2007) found that a majority of successful innovations where in fact reactions to perceived changes in demand preferences rather than due to radical developments on the technology side (cited in Edler, 2010, p. 8)[1]. In this context, as Figure 4 presented, the five-years average score of GCI. BS indicators indicates that, private demand for innovation failures often due to a misperception of what the market is ready and willing to accept, and a lack in sound marketing after innovations were launched on the market by the companies (business leaders). NESTA (2010)[2] believes that "the organisations can gain advanced insight from customers and maximize their competitive advantage if involve users early in the innovation process" (ibid. p. 9).

4. Conclusion

It is important to note that the innovations must be commercialized, that is, launched on the market, or in other ways widely diffused to customers on a large scale in the economy or

society. On other hand, the bussines leaders should be understend the councept Buyer sophistication in order to make more sales. Criteria for success can include market share, number of sales, profit made, diffusion rate, beating competitors, or changes in customers behaviour. But, in this paper we research the degrees of both indicators, Buyer sophistication and Sales of new-to-market and new-to-firm product innovations (measures as % of turnover) to explain shares of innovative sales and buyers adopters of new products.

Overall, the paper's findings call for change of demanders behaviour for innovation and transforming the market into a desirable direction, such as higher degree of adoption of innovation product. For example, demand oriented policies which would have to influence the innovation culture in the market of each ex-YU countries, making buyers more risk taking, aware of innovations and encourage to adopt now product and to use it. At the same time, the findings indicate that private demand for innovation failures often due to a misperception by business leaders for it what the market is ready and willing to accept, and a lack in sound marketing after diffusion of innovations.

[4] The former Yugoslavian countries included Slovenia, Croatia, Serbia, Macedonia, Montenegro and Bosnia and Hercegovina, but for the last two countries the EIS data is not collected.
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Korespondenca/Correspondence: slagjana.stojanovska@fbe.edu.mk, vmadzova@gmail.com, biljana.gjozinska@fbe.edu.mk