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## Rationality is Service Receiver's Trait

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**Abstract:**

**Purpose:** The article constitutes the expansion of authorial research on rationality from a service provider point of view. This time, it is from a service receiver's standpoint. The research's main goal is to identify factors that positively affect a rational choice of healthcare or transport services and allow a consumer to evince a trait of rationality.

**Design/Methodology/Approach:** Chi-square tests and empirical significance level tests in statistics were performed. It was verified whether there is a correlation between a social group and the proportion of answers. A cross-functional analysis was done in different social groups.

**Findings:** A statistically significant test result indicated that particular social groups differed in terms of the frequency of pointing out a given answer. The research results that are presented cover the situations in which a consumer evinces rational behavior. The findings also highlight factors that influence a consumer's decision while buying a service. They clearly show that, in both service categories, high quality and efficiency are the factors that decide while making a final decision. Moreover, employed people and students stress the importance of an office in healthcare or the appearance of a service provider in transportation. Retired people appreciate the convenient location of a service facility in both categories.

**Practical implications:** the analysis of the variable distribution showed that it was possible to create a list of service providers' recommendations. Thanks to recognizing factors that determine the choices of service receivers, the providers will be able to arrange a service offer better – adequately to market needs.

**Originality/Value:** Rationality, from a service perspective, is a scarce subject. Raising it is original and makes the research unique, attested by the opinion comparison between three social groups – students, employed people, and pensioners. The analysis processes enabled the creation of action strategies for service receivers with regard to the future of selected service categories.

**Keywords:** Rational choices, consumer, services.

**JEL classification:** D11, D12.

**Paper type:** Research article.

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## 1. Introduction

Rationality in services, is an area where there is little research, even though it has been an immensely significant notion in economics. One of the major arguments favoring tackling this scientific issue is its economic dimension, i.e., utility and satisfying the market's needs. Additionally, services come from the domain that is mostly saturated with human labor and where factors of entrepreneurship are used (abilities, skills, intellect, intuition, proclivity to risk). Those are human attributes for running activity. The character of services requires separate and specific coverage of rationality, which is affected by distinct individual factors attributed only to humans. They constitute human potential equipment, and they include relations and interactions that do not occur in shaping the material and financial aspects (Skąpska, 2019). To tackle this gap in the literature, some theoretical frameworks cover the general understanding of rationality. It must be stressed that whether something is rational or not is determined by an acting person (Noga, 2006). In production, it may mean that an acting person is a producer. The task of an observer, who is a potential consumer most of the time, is to evaluate the effect quality of actions, but not the rationality of actions itself. In services, it is often the case that a consumer is not limited in their role to being just an observer, but they are also co-producers of the service. In services, a decision-maker must consider psycho-social variables, which include the following: cultural diversity, religion, social capital as well as trust (Skąpska, 2014).

## 2. Literature Review

Authors rarely raise the subject of rationality in services. One needs to accept the fact that clients are provided with services due to current relations, in which service providers and receivers join the interaction to define common history that marks clients' needs and helps to solve their problems (Jaakkola *et al.*, 2006). Service interaction requires a high degree of adjustment and personal judgment even by a professional (Sharma, 1999). In the process of service provision, means of delivery of knowledge and its application to solve a client's problem are of key importance for a service company's success (Dabholkar *et al.*, 2005). This process begins with creating an information and service category system to obtain the economic efficiency of a service provider. The provider should be market-oriented and make decisions are based on marketing. All that means considering wishes, tastes, and receivers' preferences. Only after a particular individual, or an institution, declares willingness to purchase services they may be served (Skąpska, 2019). Ch. Grönroos (1990) interprets a service as 'activity or a collection of activities of intangible nature that generally occur, but not necessarily, during the contact of a client with an employee providing the service and/or with physical resources and/or systems of a service enterprise that sells solutions to client's problems.

### **3. Methodology**

To recognize the essential part of rationality, survey research was performed using hand-outs in an auditorium. The PAPI technique (Paper and Pencil Interview) was used among 247 Polish students at economic universities. The questions asked regarding, among others, the type of entity that is a decision-maker and who decides what is rational or not, features of rationality that closest reflect a particular decision-maker; understanding the rationality and its synonyms as well as factors that influence the rationality of actions of the previously mentioned entities. To get to know the factors that decide about the choice of service by a consumer, the research on the trust that is put in service entities was performed. It regarded various services such as healthcare or transportation services. Again, the PAPI survey technique was used.

The research sample included N=308 observations, which covered 103 students, 103 employed persons, and 102 retired persons. A cross-sectional analysis was performed due to the presence of different social groups. The chi-square independence tests were carried out to see the answer distribution of multiple-choice questions in various social groups (students vs. employed persons vs. retired persons). For each category of answers, one chi-square test was performed, which had meant to check whether there was a correlation between the type of a social group and the answer ratio. A statistically significant test result indicates that separate social groups differed about the incidence of giving a particular answer. Further stages of the analysis used the z-score to determine the groups that meaningfully differed from the average profile. The analysis results were created for questions with the possibility of multiple answers. The values in individual columns of the table show proportions of indications in the given category of answers by separate social groups, the average profile, chi-square test results (in the brackets, there is a degree of freedom) the empirical level of statistical significance. In cases where the precise Fisher test was done, the statistic  $\chi^2$  value was not reported. Additionally, the tables used a '\*' symbol to mark the cells whose absolute values of the z-score were more than 1.96.

### **4. Empirical Results**

#### **4.1 Rationality Essence by Service Consumer**

The analysis of the conducted research concludes that, by knowledge obtained during the economic studies, an entity that finds something rational or not is the one that is a decision-maker. 80% of the surveyed persons supported this view. The possible choices included: an entrepreneur, an employee, a consumer, and a state. The respondents, firstly, opted for an entrepreneur and then a consumer. Few persons selected a state. Some answers from 'the other' category mentioned an investor. Rationality as a trait was assigned to conscious choices and actions (79.2%). It is a decision made based on knowledge and experience (52.8%). 35% of the researched persons claim it is a consumer trait, and 30% - an entrepreneur. Actions based on intuition do not concern the rationality of behavior. This particular trait was marked by 3.6% of the respondents.

The students more often attribute the trait of rationality to a consumer than to an entrepreneur. Rational behavior consists of conscious selection and actions, and the decision must be supported by knowledge and experience. Few respondents, as it has been mentioned before, approve of behavior that draws on intuition. The rationality of a consumer, as the analysis suggests, occurs in a situation when the right choice is made, i.e., by the utility and when there is a balance between the quality and the costs. Satisfaction from using goods or service consumption has been put in the less significant category. In turn, one deals with an entrepreneur's rationality when their activity is effective 45% of the respondents; and when there is a balance between resources and affects 65%. Surprisingly, there are certain indications, lower even by 50 percentage points concerning the previous elements, reaching an intended goal (i.e., effectiveness) and only 14% voting for the results that exceed expectations and savings. The ranking of the most important factors for the rationality in consumers' activity includes the following issues:

- database on a product or service (80.8%),
- own experience (78%),
- earnings (54.8%),
- mental and social predisposition (50%).

The answer analysis suggests that the question “an entity that determines if something is rational or not” was mostly answered. Every decision maker 46.69%, entrepreneur received 18.08% of the answers. Slightly fewer answers (17.63%) went to consumer. 8.93% of the researched persons answered employee, and 8.24% that it was state. Finally, the question received 0.46% answers with investor.

Then we have 'Synonyms of rationality' (Table 1.) in economics, and the researched persons used the terms like cost-effectiveness, efficiency, success rate. Those terms were distributed into 37.73% after cost-effectiveness, 8.61% for efficiency, the success rate gained 19.75%. The fewest persons chose the answer other 0.51%. The question “rationality of consumer takes place” when was answered with the following answers: 45.99% they choose the right product or service about its price and quality, 37.68% they achieve a balance between the quality of goods and the expense. However, 14.96% say they achieve satisfaction from using the goods or consuming the service. 1.39% of the respondents answered with other. The received answers might prove that the respondents use their acquired knowledge on economics easily and use their own experiences while making purchases. They are participants of the market that represent the category of 'household.'

**Table 1.** *Rationality determiners (in %)*

Specification	Answer rate
Other	2
Efficiency	78
Cost-effectiveness	149
Success rate	132

*Source: Own study.*

#### 4.2 Determinants of Service Consumer's Rational Decisions

To verify the services that are a subject of the most frequent consumption, the following distribution was analyzed, and the question read "What healthcare services do you use most frequently?" (Table 2). Statistically significant chi-square tests' results indicate that the proportions of answers (doctor care, dental services, remedial services, and aesthetic medicine services) were not the same in all the social groups. The standard score analysis resulted in the fact that students less frequently used dental services, remedial services, and aesthetic medicine services. On the other hand, the employed persons often used dental services and aesthetic medicine, but less frequently remedial services. The retired persons often made use of doctor care and remedial services, and seldom aesthetic medicine facilities.

The chi-square test results showed that the social groups differed from one another in a statistically significant way due to the Location of the service facility's answer category. The standard score analysis proved that the retired persons paid attention to the service facility's location more often than students. Table 3 presents the distribution of answers to the question "What transportation services do you use most frequently?"

**Table 2.** Distribution of answers to question on most frequently used healthcare services

	student [%] <i>n</i> = 103	employee [%] <i>n</i> = 103	retiree [%] <i>n</i> = 102	AVG profile [%] <i>N</i> = 308	$\chi^2(2)$	<i>p</i>
Doctor care	71.8	62.1*	81.4*	71.8	9.36	0.009
Dental services	35.9*	63.1*	39.2	46.1	18.23	<0.001
Remedial services	1*	6.8*	39.2*	15.6	66.06	<0.001
Aesthetic medicine	1*	14.6*	1*	5.5	24.27	<0.001
Other	0	1.9	2.9	1.6	-	0.209

*Source:* Own study.

**Table 3.** Answer distribution to question about transportation services that are used the most

	student [%] <i>n</i> = 103	employee [%] <i>n</i> = 103	retiree [%] <i>n</i> = 102	AVG profile [%] <i>N</i> = 308	$\chi^2(2)$	<i>p</i>
Railway services	18.4	32*	10.8*	20.5	14.61	0.001
Taxi services	13.6*	28.2*	19.6	20.5	6.78	0.034
Coach services (trips, long-haul)	1*	7.8	9.8	6.2	7.59	0.022
Bus services (city public transport, regional transport, national services)	75.7	50.5*	84.3*	70.1	30.31	<0.001
Other	5.8	4.9	4.9	5.2	0.13	0.939

*Source:* Own study.

Statistically significant chi-square test results mean that proportions of answers for railway services, taxi services, coach transport, and bus transport were not the same in all the social groups. The z-score analysis demonstrated that the students used taxi cars and coach services for long-haul trips less frequently. The employed persons more often used railway services and taxis, but not so often the bus transportation. In turn, the retirees used the railway less, but the buses more.

The next table presents the distribution of answers to the question about the factors that determine the choice of healthcare services (the questionnaire inquiry: The greatest influence on the trust in healthcare services have – Table 4). The chi-square test results show that the social groups differed from one another in a statistically significant way due to the Location of the service facility answer category. The standard score analysis proved that the retired persons paid attention to the service facility's location more often than students.

**Table 4.** Distribution of answers to question on choice of healthcare services

	student [%] <i>n</i> = 103	employee [%] <i>n</i> = 103	retiree [%] <i>n</i> = 102	AVG profile [%] <i>N</i> = 308	$\chi^2(2)$	<i>p</i>
Office appearance (neat, well-equipped)	18.4	23.3	18.6	20.1	0.97	0.616
Service facility location	4.9*	21.4	36.3*	20.8	30.8	<0.001
Appearance and personality of service provider (esthetic, kind and empathic service)	15.5	18.4	20.6	18.2	0.89	0.642
High quality service (competencies, clear message)	52.4	64.1	57.8	58.1	2.88	0.237
Success rate (quick recovery, expected result)	51.5	46.6	46.1	48.1	0.72	0.696
Other	0	0	1	0.3	-	0.335

**Source:** Own study.

Analogically, the answer distribution on the factors regarding the choice of a carrier's services was made. The question read, “The biggest influence on the trust in a carrier have” (Table 5). Statistically, significant chi-square test results meant that proportions of answers for service facility location and success rate were not the same in all the social groups. The z-score analysis demonstrated that the students did not pay so much attention to the service facility's location and did not assign trust. However, for the retired persons, the location was more important and more influential. On the other hand, the fast and collision-free reaching the destination, i.e., success rate, was less important.

The next distribution regarded the question, “How often do you use healthcare services?” Again, the answers included the division into social groups. Because the question allowed the possibility of only a single answer, the correlation analysis was performed by a single use of the chi-square independence test (Table 6). As the chi-square test result was statistically significant [ $\chi^2(6) = 68.16$ ;  $p < 0.001$ ], one should

conclude that the frequency of using the healthcare services in particular social groups differed from one another.

**Table 5.** Distribution of answers to question on factors that decide what carrier services to choose

	student [%] n = 103	employee [%] n = 103	retiree [%] n = 102	AVG profile[ %] N = 308	$\chi^2(2)$	p
Vehicle look (make, color, size)	17.5	22.3	10.8	16.9	4.91	0.086
Service facility location	2.9*	14.6	25.5*	14.3	21.34	<0.001
Service provider personality (polite service)	18.4	20.4	12.7	17.2	2.27	0.322
Provider's appearance (esthetic)	3.9	10.7	7.8	7.5	3.47	0.176
High service quality (time-keeping)	57.3	65	56.9	59.7	1.82	0.403
Success rate (fast and safe reaching the destination)	65	68	52*	61.7	6.29	0.043
Transport company capital (located in the country, abroad located)	1	1.9	1	1.3	-	1.000
Other	0	0	2	0.6	-	0.111

**Source:** Own study.

The analysis with standard scores allowed the author to deduce that the students more often indicated the seldom category, and less frequently: often and other. In turn, the employed persons more frequently answered hardly ever. In the group of retirees, people gave fewer 'hardly ever' and 'seldom' answers, but more 'often' and 'other' answers. Summing up the acquired results, one may state that the retiree group was the one that used the healthcare services the most. The students, however, were the group that used them the least frequently.

**Table 6.** Distribution of answers to question on choice of particular healthcare services (in %)

How often do you use healthcare services	student	employee	retiree	total
hardly ever	19.4	27.2*	3.9*	16.9
seldom	67.0*	41.7	33.3*	47.4
often	3.9*	9.7	27.5*	13.6
other	19.7*	21.4	35.3*	22.1
total	100	100	100	100

**Note:** By means of '\*' symbol the author indicated cells for which absolute value of the z-scores was more than 1.96

**Source:** Own study.

Using the same procedure, the analysis of correlation was carried out. It examined the frequency of using the transportation services and the affiliation to the social group. The question was, "How often do you use the transportation services?" (Table 7). The statistically significant chi-square test result [ $\chi^2(6) = 32.27$ ;  $p < 0.001$ ] indicates that the frequency of using the transportation services was connected with

the social group. The analysis using the standard scores allowed one to conclude that the students and the employed persons less frequently indicated the answer hardly ever, and more often the category marked often. It means that both social groups used the transportation services more frequently than the retired persons.

**Table 7.** Distribution of answers to question on frequency of using transport services (in %)

How often do you use transportation services?	student	employee	retiree	total
hardly ever	22.3*	41.7*	27.5	30.5
seldom	11.7	18,4	11.8	14.0
often	63.1*	27.2*	55.9	48.7
other	2.9	12.6*	4.9	6.8
total	100	100	100	100

**Note:** \* By means of '\*' symbol the author indicated cells for which absolute value of the z-scores was more than 1.96

**Source:** Own study.

## 5. Conclusions and Recommendations

A service consumer is identified as any other consumer. However, they are specific receivers as services are also specific. The development of the whole service sector is determined by investment expenditure, quality, entrepreneurship, innovation, competitiveness (Skąpska, 2016). Those factors translate into the service business activity, which is consumer-oriented. As distinct from the rationality of a service provider, a service receiver's rationality occurs when they make the right choice, i.e., by the usefulness and when there is a balance between the quality and the expense.

Satisfaction from using the goods or consuming the service has been put into the category of lesser importance. On the other hand, an entrepreneur's rationality comes into existence when their activity is effective and balances the resources and the effects. The choice and the loyalty, as for the service provider selection in the branch of healthcare or transportation, are mostly affected by the same factors: high quality (33% and 35% of the answers respectively) and success rate (29% and 34% respectively). The respondents to the healthcare questions put the high quality of services first (quick recovery and expected outcome). 35% of the researched persons confirmed the fact. In turn, in transportation services, the most important role in gaining trust is the success rate (quick and collision-free reaching the destination) – 34%.

Except for the above-mentioned factors, the other answers about the service selection included the appearance of an office and personnel who provide services. Those were important to the students and the employees. The retired persons favored the convenient location of a service facility more, and it regarded both – healthcare services and transport services. The retirees used the healthcare offer the most frequently, but considering this branch's internal division, the employees used the dental services and aesthetic medicine more, and remedial services less. The



transportation services were most successful with the students as the employed persons used their own means of transport more.

Given the foregoing, the recommendations for service providers, in the context of improving the service offer, include the advice clearly define a target group they want to reach. While preparing the offer for retired people, businesses should consider high quality and effective services and easy access to them. An essential factor in the offer of healthcare and transportation is the convenient location of the facility. As for students and employed people, the offer should cover transport services provided by people with proper looks. In healthcare, the neat appearance of an office is significant.

Therefore, bigger entrepreneurs (the ones who employ at least 50 workers) who have the budget assigned to market research (market analysis) should pay special attention to the recognition of needs and possibilities to realize the above expectations of service receivers. At present, it is essential to have attached and loyal clients – most notably in services. As services are distinct from the production, it is critical to maintain long-term ties with a service receiver so that they wish to contract out another cycle of service provision and benefit the utility from its consumption. In a broad sense, service providers should apply marketing strategies based on interest research, opinions, and personality analysis. They will then be able to match their product to the current behavior patterns of a consumer and use the predictability of their reactions and relatively constant attitudes (Skapska, 2009).

## **References:**

- Dabholkar, P.A., Overby, J.W. 2005. Linking Process and Outcome to Service Quality and Customer Satisfaction Evaluations. *International Journal of Service Industry Management*, 16, 10-27.
- Engel, J.F., Balckwell, R.D. 1982. 'Consumer Behavior'. Chicago, The Dryden Press.
- Grönroos, C. 1990. *Service Management and Marketing, Managing the Moment of Trade in Service Competition*. Toronto, Maxwell Macmillan International Editions, 27.
- Harris, L.C., Ogbonna, E. 2008. The Dynamic Underlying Service Firm - Customer Relationship – insights from a study of English premier league soccer fans. *Journal of service Research*, 10(4), 382-99.
- Jaakkola, E., Halinen, A. 2006. Problem Solving within Professional Services: Evidence from the Medical Field. *International Journal of Service Industry Management*, 17, 409-29.
- Jha, S., Balaji, S., Ranjan, K.R., Sharma, A. 2018. Effect of Service - Related Resources on Employee and Customer Outcomes in Trade Shows. *Industrial Marketing Management*.
- Mortimer, K., Pressey, A. 2013. Consumer Information Search and Credence Services: Implications for Service Providers. *Journal of Service Marketing*, 27(1), 55.
- Noga, M. 2006. Racjonalność gospodarowania a logika monetarystyczno-liberalna we współczesnej ekonomii. Retrieved from: <http://www.pte.pl/pliki/0/247/nogam.pdf>.
- Ren, H., Huang, T. 2018. Modeling Customer Bounded Rationality in Operations Management: Review and Research Opportunities. *Computers & Operations Research*, 91(C).

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- Sharma, N., Peterson, P.G. 1999. The Impact of Communication Effectiveness and Service Quality on Relationship Commitment in Consumer Professional Services. *The Journal of Services Marketing*, 13, 15-70.
- Simon, H.A. 1955. A Behavioral Model of Rational Choice. *The Quarterly Journal of Economics*, 99-118.
- Simon, H.A. 1957. *Models of Man: Social and Rational*. Hoboken, John Wiley & Sons.
- Skąpska, E. 2004. Jakość usług jako czynnik zadowolenia konsumenta i sukcesu przedsiębiorstwa usługowego. *Optimum - Studia Ekonomiczne*, 1(21), 128.
- Skąpska, E. 2009. *Percepcja usługobiorcy w rozwoju społeczeństwa wiedzy*. Warszawa.
- Skąpska, E. 2014. *Development of the Service Sector in Poland at the Turn of the Century. Tendencies, Determinants, Prospects*. Saarbrücken: LAP Lambert Academic Publishing.
- Skąpska, E. 2014. Oblicza racjonalności w ekonomice usług. *Studia Ekonomiczne*, 180, 257-266.
- Skąpska, E. 2019. *Racjonalność gospodarowania. Perspektywa usług*. Warszawa.
- Syah, R., Nasution, M.K.M., Elveny, M., Arbi, H. 2020. Optimization Model for Customer Behavior with Mars and KYC System. *Journal of Theoretical and Applied Information Technology*, 98(13), 2616-2627.