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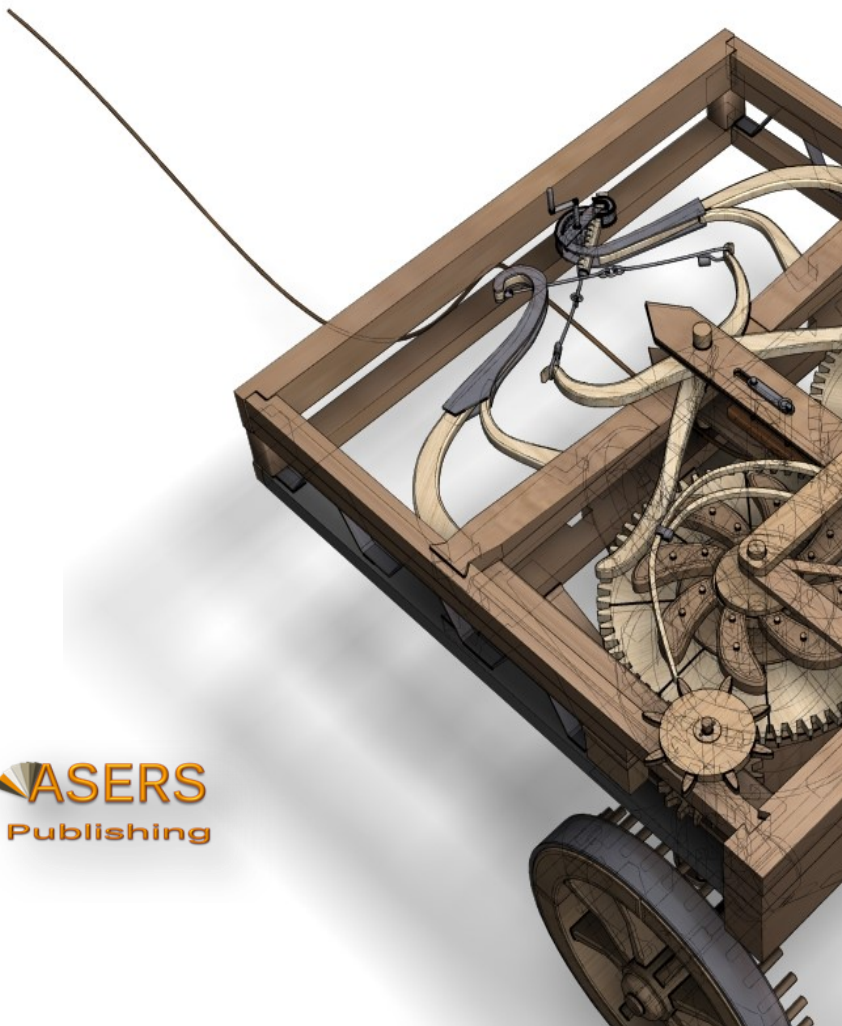

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Tourist Behavioral Intentions during the COVID-19 Pandemic. The Role of Reactance, Perceived Risk and Protection Motivation.

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Abstract:

The pandemic caused a number of changes in tourism, which require proper adjustment measures. Hence, learning about the mechanisms that motivate people to go on tourist trips during the epidemiological threat and identification of factors hindering the tendency to travel is of vital importance for determining the directions of such measures. The purpose of the paper is to present the results of studies illustrating the impact of perception of risk related to the infection with SARS-CoV-2 virus, reactance caused by epidemiological restrictions and health protection motivation with respect to tourist trips during the pandemic, as well as determination of force of impact of factors moderating the relationships above, i.e. immunization against SARS-CoV-2 or recovery from COVID-19, gender, age or education. Given the fact that the issue of changes in human behavior in the context of the pandemic is nowadays a vital element of the scientific discourse, the paper also features numerous references to the most recent publications dealing with the impact of the pandemic on the behavioral intention, reactions of people to epidemiological restrictions or health protection behavior in the period of epidemiological threat. The constructed model of dependency between the behavioral intention to go on a tourist trip and the factors that were studied was verified with the use of results of an empirical survey carried out in June 2015 on a sample of 1,615 persons. The paper also presents several implementation postulates that may offer guidelines for persons running tourist businesses and offer inspiration for further actions.

Keywords: behavioral intention(s); COVID-19 restrictions; reactance; perceived risk; protection motivation.

JEL Classification: D81; D91; Z32; Z33.

Introduction

The COVID-19 pandemic exerted a clear mark on numerous areas of our lives. Its effects are visible both from the perspective of individuals and entire societies; from the perspective of firms, industries and the entire economic systems. Given the great significance of the observed changes both for the economy and individual entities, the

issues related to the pandemic are the object of numerous studies and analyses, both in a macro and micro-economic perspective (e.g. Erdoğan *et al.* 2020; Vlados, 2020; Malova, 2020; Cevik, 2020; Salisu and Vo, 2020; Thorbecke, 2020; Jenke *et al.* 2021; Michie, 2020; da Silva Lopez *et al.* 2020; Korzeb and Niedziółka, 2021).

In the management context, a significant role will be played by changes in consumer behavior caused by the pandemic, both observed during the period of the epidemiological threat and the long-term ones. They will induce changes in the operational strategies of firms and the necessity of adjusting to the new reality. Hence, learning about the mechanisms of consumer behavior during the pandemic and the consequences of such behavior has fundamental practical implications. It will allow for efficient adjustment to the new situation.

Some of the interesting themes related to the scientific discussion in question are the factors affecting the behavioral intention during the COVID-19 pandemic (e.g.: Raman and Thannimalai, 2021; Muangmee *et al.* 2021; Melor *et al.* 2021; Rasoolimanesh *et al.* 2021; Sik *et al.* 2021; Pagliaro *et al.* 2021). In the wide array of factors, attention should be paid to: (1) reactance experienced by the consumer (from the perspective of perceived COVID-19 restrictions (*e.g.:* Ma and Miller, 2021; Díaz and Cova, 2021; Akhtar *et al.* 2020; Sakai *et al.* 2021; Kokkoris, 2021; DeFranza *et al.* 2020), (2) risk perceived by the consumer (*e.g.*: Klimanska *et al.* 2020; Cucchiarini *et al.* 2021; Thorpe *et al.* 2021; Viswanath *et al.* 2021; Rose and Edmonds, 2021; Trifiletti *et al.* 2021) and (3) experienced motivation for protection behavior within the meaning of health protection (*e.g.*: Gadai, 2020; Mortada *et al.* 2021; Kim *et al.* 2021; Yaprak *et al.* 2021; Cavicchiolo *et al.* 2021; Park *et al.* 2021).

Given the fact that one of the areas affected most severely by the pandemic is the broadly understood tourism sector, which is particularly vulnerable to the repercussions of the COVID-19 restrictions that are being introduced, limiting human contacts and mobility of tourists, there is an urgent need for in-depth studies pertaining to various aspects that are shaping the size and the directions of the tourist traffic.

In the group of already quite numerous studies on the factors affecting the behavioral intention during the COVID-19 pandemic, only a minor part refers to the sector of tourism services and the impact of: (1) perceived risk (e.g.: Bae and Chang, 2021; Neuburger and Egger, 2020; Sánchez-Cañizares *et al.* 2021; Zhu and Deng, 2020; Li and Ito, 2021; Falahuddin *et al.* 2021; Rather, 2021; Bratić *et al.* 2021; da Silva Lopez *et al.* 2021) and (2) health protection motivation (*e.g.:* Itani and Hollebeek, 2021) behavioral intention for traveling for tourism purposes.

The studies performed by the authors were aimed at filling the research gap in this respect (identified in particular in the area of impact of reactance on tourism behavioral intention), by testing the model where the tourism behavioral intention (intention to go on a tourist trip during the COVID-19 pandemic) is a function of three variables listed above. In line with the authors' knowledge, the model simultaneously accounting for the designated three variables has not yet been tested and published in pertinent scientific studies. Furthermore, new variables, not analyzed before, were verified; they can moderate the studied relationships, *e.g.* the fact of recovery from COVID-19 or the fact of vaccination against SARS-CoV-2. Therefore, the purpose of the paper is to present the results of studies illustrating the impact of perception of risk related to the SARS-CoV-2 virus, reactance caused by epidemiological restrictions and motivation for health protection with respect to going on a tourist trip during the pandemic, as well as determination of force of impact of factors moderating the relations above, i.e. vaccination against SARS-CoV-2 or recovery from Covid-19, gender, age or education. The constructed model of dependency between the behavioral intention for going on a tourist trip and the examined factors was verified with the use of data from an empirical study carried out in June 2015 on a sample of 1,615 persons. The paper also presents a number of implementation postulates that may offer guidelines for persons running tourist businesses and offer inspiration for further actions.

1. Literature Review

1.1. Behavioral Intentions in the Light of the Theory of Planned Behavior

Multiple issues related to the process of consumer decision making have been present in the international scientific discourse for a long time. A well-documented and tested theoretical framework used to analyze and to predict human behavior that is target oriented is the Theory of Planned Behavior (TPB) (Martin i 2011) created in 1911 by Ajzen (1991). According to Ajzen, intentions, which are the result of specific components, constitute highly accurate predictors of various types of behavior (Ajzen 1991, 179). In Ajzen's understanding, intentions cover a motivation element and show the degree of people's willingness and the effort they make to behave in a specific manner. The stronger the intention of becoming engaged in a specific behavior, the more probable that it will be carried out. Intentions are affected by three factors (Ajzen 1991, 188). The first is the attitude toward the behavior, understood as the advantageous or disadvantageous evaluation of a given action by the (studied) person. The second determinant comprises subjectively perceived social standards, defined as the social pressure perceived by a given individual exerted by persons important for him/ her, pertaining to engagement or lack of engagement in a given

behavior. The third element is the perceived behavioral control, i.e. subjectively assessed ease or difficulty of behaving in a specific manner, resulting from prior experiences of the individual and the expected obstacles. Nevertheless, it should be noted that – as Ajzen claims – the TPB model is, in principle, open and allows for incorporation of additional predictors (Ajzen 1991).

The Theory of Planned Behavior (Ajzen 1991), as a universal type theory, was also applied in studies on consumer intentions of tourists in the context of the issue of traveling (Sparks and Pan 2009; Quintal, Lee and Soutar 2010), type of tourism (Sparks 2007), choice of travel destination (Lam and Hsu, 2006), choice of means of transport (Banberg, Ajzen and Schmidt 2003; Kaplan *et al.* 2015), pro-environmental behavior of tourists (Doran and Larsen 2016; Hu *et al.* 2019; Wang *et al.* 2019), on-line travel purchases (Amaro and Duarte 2015), or communication of negative opinions (word of mouth) (Cheng, Lam and Hsu 2006). Therefore, it is going to be used in the course of further discussion.

1.2. Concept of Perceived Risk and Its Significance in the Formation of Behavioral Intentions of Tourists

Perceived risk is a factor extensively described in the literature that has material significance for the choices and evaluations that are made and for the consumer behavior (Campbell and Goodstein 2001; Hasan *et al.* 2017). The concept of perceived risk was introduced by Bauer (1960). Nowadays, this category is diversely defined, depending on the product or service or the context of study (Yang and Nair 2014; Hasan *et al.* 2017). Generally, the concept of perceived risk means: "probable intrinsic risk and its quantity that reduces customers' confidence to accomplish the goal of purchase" (Cox 1967, as cited in: Hasan *et al.* 2017).

From the perspective of our studies and the relation of the perceived risk with the COVID-19 pandemic, such variable is also a significant factor affecting decisions related to travel (Gut and Jarrell 2007, Law 2006, Rittichainuwat and Chakraborty 2009, Kozak, Crotts and Law 2007, Seabra, Abrantes and Kastenholz 2014, Makhdoomi and Baba 2019; Sonmez and Graefe 1998; Mitchell and Vassos 1997, including intentions; An, Lee and Noh 2010; Artuğer 2015; Çetinsöz and Ege 2013). Studies published in reference books have confirmed that the tourists' decisions are more affected by the perceived risk than by the actual risk factors (facts and actual circumstances) related to traveling to specific destinations (Irvine and Anderson, 2006). This confirms the general rule that tourists' decisions result, to a greater degree, from their perception which is not always accurate (Carter 1998) than from the reality (Roehl and Fesenmaier 1992 as cited in: Rittichainuwat and Chakraborty 2009). "Tourism decisions seem to be made in the heart, not in the head" (Irvine and Anderson 2006, 180), which in practice means that "in marketing, consumer perception is reality" (Kozak *et al.* 2007, 236).

The perceived risk is an inhibitor to travel (Um and Crompton 1992; Chew and Jahari 2014). Tourists are willing to avoid risky destinations (Law 2006; Kozak *et al.* 2007; Sonmez and Graefe 1998; Chew and Jahari 2014) and the perceived risk affects their hesitation and postponing the decision about travel (Wong and Yeh 2009).

The risk factors perceived by tourists and considered in the context of tourist travels include factors related to: diseases (Rittichainuwat and Chakraborty 2009; Kozak *et al.* 2007), terrorism (Sonmez and Graefe 1998; Rittichainuwat and Chakraborty 2009; Kozak *et al.* 2007; Gałązka 2018; Seabra *et al.* 2014; Morakabati and Kapuściński 2016); natural disasters (floods, hurricanes, volcano eruptions, earthquakes, tsunami) (Faulkner and Vikulov 2001; Huang *et al.* 2008; Huang and Min 2002; Huan, Beaman and Shelby 2004); crime; political instability (Sonmez and Graefe 1998), which may cause various types of conflicts; increase of travel costs, lack of novelty, deterioration of tourist attractions, travel inconvenience (Rittichainuwat and Chakraborty 2009).

Nowadays, *i.e.* during the COVID-19 pandemic, the range of significant risk factors identified by tourists should also be supplemented with the risk of becoming infected with coronavirus in relation to tourism (*e.g.:* Perić *et al.* 2021; Joo *et al.* 2021; Chua 2021; Kim and Kang 2021; Richard *et al.* 2020; Christou, Simillidou and Stylianou 2020; Zielinski and Botero 2020; Majeed and Ramkissoon 2020; Karl *et al.* 2021; Zhang *et al.* 2020; Chica *et al.* 2021; Nisara *et al.* 2021). Perception of such risk will affect the intention of making use of a tourism service (*e.g.:* Bae and Chang 2021; Neuburger and Egger 2020; Sánchez-Cañizares *et al.* 2021; Zhu and Deng 2020; Li and Ito 2021; Falahuddin *et al.* 2021; Rather 2021; Bratić *et al.* 2021; da Silva Lopez *et al.* 2021).

1.3. Reactance, Its Measurement and Impact on Tourism Behavioral Intentions

Numerous restrictions introduced by governments of various countries to curb the spreading of coronavirus induced many types of behavior in people which threatened their feeling of individual causality and freedom. Such states release the urge to recover autonomy and control over the course of events (Wojciszke, p. 53), which is explained by the reactance theory formulated by J. Brehm (1966). Perception of the loss of control causes anger, increase of attractiveness of the possibility of action that was taken away and energetic attempts at recovering control and forfeited potential. Continuation of studies on the reactance theory led to the differentiation of two important

manifestations of reactance: anger and negative cognition (Brehm and Brehm 1981; Dillard and Shen 2005, Rains 2007). In the work of Dillard and Shen (2005), anger was considered a stronger construct of reactance than negative cognition, given the fact that it is a more frequent response to the threat to freedom. Anger is defined as a negative emotional state, experienced as irritation, wrath and fury. The significance of anger in studies on reactance was also confirmed by the work of Rains (2013). On the other hand, negative cognition comprises challenging the communications that threaten the freedom of individuals (Youn and Kim 2019, 234).

Experienced reactance results in motivation to actions that recover the freedom of choice that is under threat, increase the attractiveness of the possibility of acting, thinking or feeling that is under threat, reluctance or aggression towards a person, persons or institutions limiting the freedom of choice (Wojciszke 2020, 448 – 449), as well as taking actions to recover the limited freedom (Sprengholz, Betsch, and Böhm 2021, 1), taking actions against restrictions or stronger manifestation of other freedoms (Miron and Brehm, 2006). Studies also prove that reactance perceived in response to the instructions imposing obligations on people or forcing them to behave in a specific mode leads to taking actions that are opposite than intended by the instructions (Bensley and Wu 1991; Byrn and Hart 2009; Betsch and Böhm 2016; Sprengholz and Betsch 2020). In order to assert their independence, individuals act in opposition.

The key relationship from the perspective of further discussion is the relationship between reactance and behavioral intention. The findings of Bertini and Aydinl (2020) confirmed that declarations of behavioral intentions of consumers that are in opposition to the intended promotional persuasive message are the result of experiencing reactance. This is also indicated by the studies of Ding, Legendre, Han and Chang (2021) in the light of which limitation of freedom of the consumers' choice, resulting from preferential treatment of members of loyalty programs, causes reactance and leads to negative emotions and behavioral intentions. Also other studies (Bambauer – Sachse and Heinzle 2018; Dailey and Ülkü 2018; Chen *et al.* 2019; Ringer *et al.* 2019; Youn and Kim 2019; De Vries and Zhang 2020; Kavvouris, Chrysochou and Thogersen 2020; Shapiro, Drayer and Dwyer 2020) confirm the significance of the experienced reactance in behavioral acts or intentions of consumers in response to various manifestations of exerting pressure on their decisions. The reactance theory has also been used in the area of studies on behavior and intentions during the COVID-19 pandemic, as part of which many restrictions were imposed that limited the freedom of choice (Akhtar *et al.* 2020; Kokkoris 2020), also in tourism (Ma and Miller 2021; Lim 2021; Sakai *et al.* 2021). Nevertheless, it should be noted that in the context of the COVID-19 pandemic, the behavioral intention may be shaped by two mechanisms with opposite directions of operation: reactance and defence mechanisms, which are an element of the Protection Motivation Theory (Rogers 1975) described below.

1.4. Tourism Behavioral Intentions in the Context of Health Protection Motivation

The COVID-19 pandemic meant that entire communities had to face the threat to health and the necessity of health protection. The model of health protection motivation, prepared as part of the Protection Motivation Theory (PMT), assumes that taking health protection stances is preceded by the formation of behavioral intention. Studies on the PMT allowed Rogers (Rogers 1983; Maddux and Rogers 1983) to separate two major components of the protection motivation: subjective perception of a health threat and subjective perception of own possibilities of handling such threat. Dependences between the perception of efficiency and costs and profits from adaptation or non-adaptation measures affect the behavioral intention related to health protection (Verkoeyen and Nepal 2019). Perception of the seriousness of the disease, evaluation of own susceptibility to getting sick, expectations pertaining to the efficiency of actions that may be taken in a given situation and expectations of self-efficiency affect the degree of health protection motivation (Armitage and Conner 2000).

The selected PMT constructs are used in studies on behavior and intentions resulting from protection motivation related to the perception of a health threat (Milne, Sheeran and Orbell 2000), natural environment (Bockarjova and Steg, 2014; Horng, Hu, and Lin, 2014; Rainear and Christensen 2017), safety of information (Hanus and Wu, 2016; Tsai *et al.* 2016; Menard, Bott and Crossler 2017). Furthermore, engagement of individuals in protection behavior during the COVID-19 pandemic was also examined with respect to the PMT (Mehrolia *et al.* 2020; Laato *et al.* 2020, Foroudi *et al.* 2021), taking the role of the TPB into account (Cavicchiolo *et al.* 2021; Kim *et al.* 2021; Mortada *et al.* 2021) and combining the PMT elements with the perceived risk and behavioral intention (Gadai 2020; Park *et al.* 2021; Yapark, Kilic and Okumus 2021). The research area taking the PMT into account also refers to the intention and behavior of tourists. Protection motivation is examined in the context of traveling to the destinations which are unsafe due to various reasons (Lu and We 2019; Wang *et al.* 2019) or at risk of destruction (Wang *et al.* 2019). A separate thread of studies refers to the protection motivation of tourists who, during a tourist trip, prefer additional, sometimes dangerous activities (Verkoeyen and Nepal 2019). Studies on the protection motivation of tourists traveling during the COVID-19 pandemic or manifesting behavioral intention of

traveling form a part of studies on travels to destinations which are, due to various reasons, dangerous (Hsieh, Chen and Wang 2021; Rather 2021; Zheng, Luo and Ritchie 2021). In the course of studies to date, it has been determined that the level of the perceived threat of COVID-19 adversely affected tourists' behavioral intentions (Hsieh *et al.* 2021). In spite of the global threat, the intention of visiting a pandemic environment is related to the perceived risk (Rather 2021). Most recent studies show that the perception of efficiency of handling the pandemic, not only in the individual context, but also in the context of communities, is of significance in the area of travel intentions (Zheng *et al.* 2021). The PMT allows for discerning factors that affect the behavioral intentions of tourists and explaining the adaptation or non-adaptation behavior adopted by them during travels, in the course of which risks related to COVID-19 are diversely perceived.

2. Research Framework

2.1. Research Model and Hypotheses

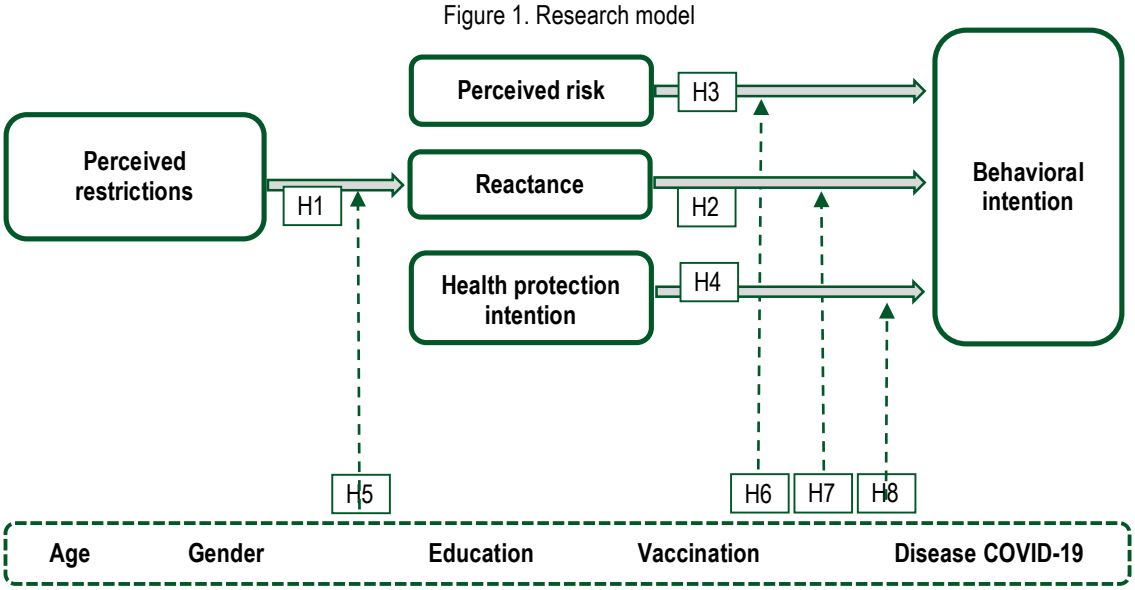
Since the moment of the COVID-19 pandemic outbreak and its noticeable impact on the infinite range of human activities, it has become the focus of research interests of numerous scientists from various areas of science. One of the areas of scientific discussion, closely correlated with diagnosing its effects, are the studies pertaining to behavioral intentions and the range of factors affecting them.

As mentioned earlier, the TPB concept, describing the basic variables shaping the behavioral intentions, allows for incorporating additional predictors that can be defined, measured and that are conceptually independent from the existing ones. As manifested by the results of already published studies mentioned above, during the COVID-19 pandemic, such additional significant predictors which fulfill the above-listed conditions may include: reactance experienced through the perspective of introduced restrictions, perceived risk related to the use of tourism services, as well as the inclination manifested by potential tourists to manifest protection behavior within the meaning of health protection.

Bearing the above in mind, the authors decided to examine the intentions of tourists during the COVID-19 pandemic by testing a model where the behavioral intentions are the function of three variables: reactance perceived by a potential tourist (through the perspective of the perceived pandemic restrictions), perceived risk of a tourism trip during the pandemic and perceived protection motivation (within the meaning of health protection) (Figure 1).

Given the urgent necessity of filling the research gap related to the human behavior during the pandemic, many studies are carried out in parallel, while more and more papers are being published, the results of which offer an inspiration and a valuable clue for further studies. And thus, the relationship between the perception of pandemic restrictions introduced by governmental authorities and reactance experienced by the addressees were the object of analyses (Ma and Miller 2021; Díaz and Cova 2021), also in the context of the impact of restrictions and experienced reactance to behavioral intentions (Akhtar *et al.* 2020; Sakai *et al.* 2021; Kokkoris 2021; DeFranza *et al.* 2020). Furthermore, the impact of variables that could potentially moderate the analyzed relationships, *e.g.* age, gender, education, SARS-CoV-2 vaccination and recovery from COVID-19, were also analyzed.

Figure 1. Research model



Source: authors' own compilation.

Bearing the above in mind, the authors attempted to examine the relationship between the perception of the perceived pandemic restrictions, reactance experienced on this account and behavioral intention in the area of tourism services. Thus, the following research hypotheses were formulated:

H1: There is a relationship between the perception of restrictions with respect to the possibility of going on a tourist trip during the COVID-19 pandemic and the experienced reactance.

H2: There is a relationship between reactance and the intention of going on a tourist trip during the COVID-19 pandemic.

Due to the fact that in the light of more and more numerous studies indicating that there is a relationship between the perceived risk related to the COVID-19 pandemic and the behavioral intention (*e.g.*: Klimanska *et al.* 2020; Cucchiarini *et al.* 2021; Thorpe *et al.* 2021; Viswanath *et al.* 2021; Rose and Edmonds 2021; Trifiletti *et al.* 2021), the authors also decided to examine this relationship, supplementing the area of the hitherto analyses by the examination of factors potentially moderating such relationship. Studies on risk perception in the context of tourism are nowadays of great significance, which is testified by the most recent publications in the reference books (Bae and Chang 2021; Neuburger and Egger, 2020; Sánchez-Cañizares *et al.* 2021; Zhu and Deng 2020; Li and Ito 2021; Falahuddin *et al.* 2021; Rather 2021; Bratić *et al.* 2021; da Silva Lopez *et al.* 2021). Thus, the following research hypothesis (H3) was verified:

H3: There is a relationship between the perceived risk related to COVID-19 and the intention of going on a tourist trip during the COVID-19 pandemic and the hypothesis related to this relationship (H6), described in a further part of the study.

Literature query in the aspect of determinants of the PMT during the COVID-19 pandemic confirms the relationship between the health protection intention and the behavioral intention (*e.g.:* Gadai, 2020; Mortada *et al.* 2021; Kim *et al.* 2021; Yaprak *et al.* 2021; Cavicchiolo *et al.* 2021; Park *et al.* 2021). The authors decided to test this relationship in reference to tourism services, which are represented to a more limited degree in the current studies (Itani and Hollebeek 2021).

H4: There is a relationship between the health protection intention and the intention of going on a tourist trip during the COVID-19 pandemic.

Even though the relationships described above are essential for the performed analyses, it must be noted that as a result of the pandemic, new factors have emerged which may moderate the relationships described above, such as the fact of vaccination against SARS-CoV-2 or recovery from COVID-19, and thus four additional hypotheses were also verified:

H5: Age, gender, education, vaccination against SARS-CoV-2 and recovery from COVID-19 moderate the relationship between the experienced reactance and the perception of epidemiological restrictions.

H6: Age, gender, education, vaccination against SARS-CoV-2 and recovery from COVID-19 moderate the relationship between the reactance and the intention of going on a tourist trip.

H7: Age, gender, education, vaccination against SARS-CoV-2 and recovery from COVID-19 moderate the relationship between the perceived risk and the intention of going on a tourist trip.

H8: Age, gender, education, vaccination against SARS-CoV-2 and recovery from COVID-19 moderate the relationship between the health protection intention and the intention of going on a tourist trip.

2.2. Research Method

Primary data which were the basis for analyses were compiled with the use of CAPI in June 2021. In line with the adopted theoretical framework, a fully-structured, voluntary and anonymous assessment questionnaire of the factors affecting the intention of going on a tourist trip during the COVID-19 pandemic was designed comprising, in particular, questions relying on the constructs applied in other studies (Table 1). By means of non-random haphazard sampling selection, 1,615 respondents were covered by the study; they were the residents of the city of Gdańsk (Poland), participants of a research panel carried out by the Gdańsk Tourist Organization.

The group of respondents comprises persons considered of lawful age in Poland (+18) and thus persons who can independently decide about vaccination, going on a tourist trip, etc. The sample included persons at diverse ages, *i.e.*: 18-30 years of age (16.58%); 31-40 years of age (33.04%); 41-50 years of age (28.40%); 51-60 years of age (10.89%) and above 60 (11.08%). The sample comprised 37.87% men and 60.83% women. A minor part of the respondents (1.30%) used the possibility of refusing to declare gender in terms of male/ female. The majority of respondents declared higher education (78.53%) or secondary education (19.49%). One-third of the respondents (33.99%) claimed that they had no children, 25.45% had one child, and 32.57% had two children, while 7.99% had more than two children. As far as the relatively new variables characterising the respondents are concerned, as of

the date of the survey, every fifth respondent was not vaccinated against coronavirus (20.30%), every second was fully vaccinated (51.24%), while the remaining persons only received one (first) dose (28.47%).

Table 1. Constructs and measurement items

Construct	Items	Measures	Supporting References
Behavioral intention	Q1	If I had the possibility of going on a tourist trip during the COVID-19 pandemic, I would consider such option.	Reddy *et al.* 2010, pp. 515-516.
Perceived restrictions	Q2	Restrictions introduced due to COVID-19 threaten my freedom of choice related to the possibility of going on a tourist trip.	Dillard and Shen, 2005 Kavvouris, Chrysochou and Thogersen, 2020
	Q3	Restrictions pertaining to tourist trips, introduced on account of COVID-19, are burdensome for me.	Diilard, Shen, 2005 Kavvouris, Chrysochou and Thogersen, 2020
Reactance	Q4	How important is the possibility of going on a tourist trip to a freely selected place at a freely selected time for you?	Ding *et al.* 2021
	Q5	I feel angry when I think about the restrictions related to tourist trips introduced on account of the COVID-19 pandemic.	Rains, Turner 2007
	Q6	When I discuss restrictions and bans related to tourist trips, I express my opposition against them.	Kavvouris, Chrysochou and Thogersen, 2020
Perceived risk	Q7	In my opinion, a tourist trip is nowadays (June 2021): risky/ safe	Cui *et al.* 2016 Huang *et al.* 2008
Protection motivation	Q8	I believe that taking protection measures with respect to own health during a tourist trip is necessary.	Wang *et al.* 2019

Source: authors' own study.

Furthermore, it was determined that 30.28% of respondents recovered from or were infected with COVID-19 on the date of the survey, in majority without symptoms (4.70% of the respondents in total) or with mild symptoms (24.13% of the respondents in total).

3. Data Analysis

The multiple regression model was used to verify the research hypotheses. This is a commonly used tool that allows for examining the impact of multiple independent variables on a single dependent variable. Given the fact that three areas of dependences were analyzed, three models were built; the first verifies hypotheses H2-H4, the second hypotheses H6-H8, whereas the third hypotheses H1-H5 (cf. Fig. 1).

The first model focuses on the impact of variables: "reactance", "perceived risk" and "health protection behavior" on the behavioral intention. In light of the received results, all three dependences turned out to be statistically significant (cf. Table 2). A positive coefficient with respect to the "reactance" variable means that the higher the "reactance", the stronger the "behavioral intention." This complies with the results of prior studies presented in the literature. In case of the study population, the growth of reactance by one unit will cause an increase in the behavioral intention by 0.6.

Table 2. Results of basic model with the "behavioral intention" dependent variable

Basic model (Adj. R^2= 0.4567)				
	coefficient	std. error	t value	Pr(>|t|)
Intercept	4.302	0.311	13.840	0.000
Reactance	0.605	0.029	20.670	0.000
Perceived Risk	-0.485	0.046	-10.480	0.000
Health Protection Behavior	-0.111	0.030	-3.680	0.000

Source: authors' own study.

Thus, the angrier one is when one thinks about the restrictions introduced on account of COVID-19 and opposes them, the more willingness such person has to consider the option of going on a tourist trip during the pandemic. In case of the "perceived risk" variable, there is a negative regression coefficient, which is logical. Higher assessments assigned by the respondents to the risk of tourist travels during the pandemic are matched by lesser willingness to consider the option of such travels. The situation is similar in the case of the "health protection behavior" variable: the more one believes that protection measures with respect to one's health are necessary during a trip, the less willing such person is to go on a trip during the COVID-19 pandemic.

Summing up, relying on the basic model, it may be concluded that in reference to the study population, "reactance", "perceived risk" and "health protection behavior" significantly impact the response variable, which confirms the H2-H4 hypotheses. The strongest impact is exerted by the "reactance" variable, while the weakest by the "health protection behavior." Nevertheless, it should be noted that in the light of the study assumptions, the power of such dependences may be moderated by the descriptive variables, *i.e.* age, gender or the fact of vaccination against SARS-CoV-2. Hence, in order to understand the analyzed phenomena better, the basic model was expanded to the variables that potentially moderate the relationships studied in the basic model. The variables potentially moderating the relationships include: "vaccination against Sars-CoV-2", "recovery from COVID-19", "age", "education" and "gender." These variables were added as the main effects and as the interactions with the other independent variables. To minimize the number of predictors, an abbreviated model is presented in the study (cf. Table No. 3), which results from the application of the stepwise elimination of variables according to the Akaike criterion (Yamashita T., Yamashita K. & Kamimura R. 2007). In the course of the analyses it was concluded that, *e.g.* in the model (2), apart from the "education" variable, all moderating variables affect the "behavioral intention." Thus in the abbreviated model, only this variable was removed, along with all interactions that it created. The stepwise elimination of variables allows for leaving only these independent variables that significantly affect the dependant variable. The abbreviated model (2) thus contains all the explanatory variables from the basic model, the moderating variables ("vaccination", "recovery", "age", "gender") and the interactions. The interactions that remained in the model were: "reactance" with "vaccination", "reactance" with "age", "perceived risk" with "recovery", "health protection behavior" with "age" and "health protection behavior" with "gender." The adjusted R-squared for the abbreviated model is equal to 0.48, which allows for concluding that the created model explains 48% of the studied phenomenon. Therefore, there are other variables which, apart from the analyzed ones, have a great impact on the response variable. These may be, among others, material situation, family situation and many others which were not analyzed in this study.

When interpreting the analyzed model (2) with the use of regression coefficients, it may be concluded, for example, that if other variables remain unchanged and if the variables that enter into interactions with the "reactance" variable remain on the reference level – if "reactance" grows by one unit – then the "behavioral intention" would grow on average by 0.459 unit. The reference level for the nominal variables are the following states: for the "vaccination" variable – "no", for the "recovery" variable – "no", for the "gender" variable" – "female." On the other hand, for the ordinal/ quantity variables, the reference level is the central value (for the "age" variable – "41-50 years of age"). Table No. 3 specifies the degree to which the moderating variable and their combinations reinforce or weaken the basic relationship.

As far as the interactions of moderating variables with explanatory variables are concerned, it must be noted that only a part of them are statistically significant (<0.05), which confirms only some of the H6-H8 hypotheses. The impact of "reactance" on the "behavioral intention" variable is significantly moderated only by the "age" variable, while the "health protection behavior" by the "age" and "gender" variables (cf. Table 3).

In order to verify H1 and H5 hypotheses, another model was built (3). Just like before, a full model was created first and was then reduced by using stepwise variable elimination according to the Akaike criterion. The results of the abbreviated model are presented in Table 4.

In this model (3), the impact of the "perception of burden of restrictions" variable and potentially moderating variables ("vaccination", "recovery", "age" and "gender") was examined with respect to the "reactance" variable. Moderating variables were added to the model as the main effect and as the element of interaction with the "perception of burden of restrictions" variable. As follows from the calculations presented in Table 4, the "perception of burden of restrictions" variable has a significantly positive impact on the "reactance" variable, which confirms the first hypothesis (H1). In the analyzed case, an increase in the perception of restrictions by one-unit results in an increase of reactance by 0.98. This is consistent with the assumptions of the theory of reactance presented in the literature.

Table 3. Results of extended model with the "behavioral intention" dependent variable

	Abbreviated model with interactions (Adj. R^2= 0.4800)			
	coefficient	std. error	t value	Pr(>|t|)
Intercept	4.959	0.754	6.572	0.000
Reactance	0.459	0.086	5.339	0.000
Perceived Risk	-0.468	0.051	-9.222	0.000
Health Protection Behavior	-0.045	0.071	-0.632	0.527
Vaccination: Yes, partially (only first dose)	-0.184	0.428	-0.430	0.667
Vaccination: Yes, full dose	0.531	0.404	1.315	0.189
Recovery: Yes	-0.437	0.290	-1.506	0.132
Age	-0.209	0.224	-0.935	0.350
Gender: male	-0.541	0.308	-1.757	0.079
Reactance * Vaccination Yes, partially (only first dose)	0.046	0.075	0.615	0.539
Reactance * Vaccination Yes, full dose.	-0.072	0.070	-1.029	0.304
Reactance * Age	0.063	0.022	2.799	0.005
Perceived Risk * Recovery: Yes	0.131	0.082	1.603	0.109
Health Protection Behavior * Age	-0.052	0.025	-2.056	0.040
Health Protection Behavior * Gender: male	0.136	0.051	2.688	0.007

Source: authors' own study.

The more burdensome the restrictions introduced on account of the pandemic, the angrier such person feels when thinking about the restrictions and opposes them, with an assumption that the variables that enter into interactions with "perception of burden of restrictions" are on the reference level.

Table 4. Results of extended model with the "reactance" dependent variable

	Model with interactions reduced (Adj. R^2= 0.5601)			
	coefficient	std. error	t value	Pr(>|t|)
Intercept	0.336	0.419	0.803	0.422
Perception of Burden of Restrictions	0.978	0.070	13.986	0.000
Vaccination: Yes, partially (only first dose)	0.329	0.377	0.874	0.382
Vaccination: Yes, full dose	0.469	0.353	1.330	0.184
Recovery: Yes	-0.305	0.248	-1.225	0.221
Age	0.034	0.093	0.370	0.712
Education	-0.098	0.062	-1.576	0.115
Perception of Burden of Restrictions * Vaccination: Yes, partially (only first dose)	-0.135	0.064	-2.128	0.034
Perception of Burden of Restrictions * Vaccination: Yes, full dose.	-0.164	0.059	-2.769	0.006
Perception of Burden of Restrictions * Recovery: Yes	0.066	0.044	1.502	0.133
Perception of Burden of Restrictions * Age	-0.024	0.017	-1.432	0.152

Source: authors' own study.

Interactions that are statistically significant include the interaction of the "perception of burden of restrictions" variable with the "vaccination" variable with variant: "Yes, partially (first dose only)" and variant: "Yes, full dose." Hence, the H5 hypothesis is partially confirmed, which says that the relationship between the "perception of burden of restrictions" and "reactance" is moderated by variables: "vaccination", "recovery", "age" and "education." The adjusted R-squared for the abbreviated model (3) is equal to 0.5601, thus the estimated model explains approx. 56% of the phenomenon was covered by the study.

4. Discussion

The performed study referred to the impact of perceived reactance, protection motivation and perceived risk on the behavioral intention pertaining to tourist trips during the COVID-19 pandemic. Based on the Protection Motivation Theory (PMT), the reactance theory (RT) and the theory of planned behavior (TPB) of Ajzen, a model was designed to explain the impact of the analyzed factors on the behavioral intention of tourists during the COVID-19 pandemic.

The dependences subjected to study should be interesting both for tourism organizations and persons responsible for the development of tourism and individual entrepreneurs. They unveil the mechanisms which will, for some time, continue to shape the volume and the directions of tourist traffic.

As a result of the performed analyses, a positive relationship between the perception of restrictions related to COVID-19 and the feeling of reactance was confirmed. Tourists for whom the introduced restrictions are more burdensome experience reactance to a greater degree, which is consistent with the RT and prior studies. In the context of the COVID-19 pandemic, perception of restrictions is a strong predictor of the experienced reactance (Akhtar *et al.* 2020; DeFranza *et al.* 2020; Kokkoris 2020; Diaz and Cova 2021; Sakoi *et al.* 2021). This leads to the conclusion that the mode of introducing and formulating the pandemic restrictions contributes, indirectly, to the creation and reinforcement of the feeling of reactance among the respondents. In the study, the feeling of reactance was combined with the significance of free choice in the context of a decision about a tourist trip, experienced anger and negative cognition. The significance of free choice, anger and negative cognition as the determinants of reactance were also presented in the studies pertaining to other situations related to COVID-19 (Ma & Miller 2021), which confirms their efficiency in foreseeing the feeling of reactance in a pandemic situation.

Our study confirmed the positive relationship between the experienced reactance and the behavioral intention pertaining to tourist trips during the pandemic. Other studies devoted to the relationship between the experienced reactance and intentions of varied behavior of people during the COVID-19 pandemic have not always led to such unequivocal conclusions (Ma and Miller 2021; Akhtar *et al.* 2020). This may be related to the fact that the study was carried out in a different cultural environment, where the behavioral intention was also affected by other variables, such as trust to the government (Sakai *et al.* 2021) and greater possibilities of compensating the behavior to which the studied perception of restrictions referred (Kokkoris 2020) than in the case of a tourist trip.

The negative relationship between the perceived risk and the intention of a tourist trip during the COVID-19 pandemic that was observed during the study is confirmed in other papers pertaining to tourism during the pandemic (Sánchez-Cañizares *et al.* 2021; Rather 2021; Neuburger and Egger 2021; Radic *et al.* 2021; Matiza and Kruger 2021). Without doubt, the perceived risk weakens the intention of going on a trip. The impact of the perceived risk on the behavioral intention related to traveling tends to depend on other factors, such as the feeling of overall anxiety or fear (Bratić *et al.* 2021), perception of cognitive or affective risk (Bae and Chang 2021) and various perceived types of risk (Falahuddin *et al.* 2020). Only one study carried out among the residents of Wuhan did not show any statistically significant relationship between the perceived risk and the behavioral intention pertaining to travel in the context of COVID-10 (Li and Ito 2021), which was probably affected by different experiences of Wuhan residents in coping with the pandemic. However, the aforementioned study did not combine the perceived risk with the feeling of reactance, which may hinder the comparison of the impact which the perceived risk exerted on the intentions of respondents. Other interesting relationships were also revealed in our study, namely that persons who are not vaccinated are less afraid of infection, feel stronger reactance due to epidemiological restrictions and thus have a stronger motivation for going on tourist trips.

Even though the health protection intention, similarly to the perceived risk, negatively affected the behavioral intention pertaining to tourist trips during the pandemic, yet the observed impact was relatively slight. The protection motivation in various areas of human functioning during the COVID-19 pandemic (Yaprak, Kılıç and Okumuş 2021) is conducive to adaptation behavior, related to protection against Sars-COV-2, which comprises the use of protection measures and observance of social distance (Gadai 2020; Itani and Hollebeek 2021, Cavicchiolo *et al.* 2021; Kim *et al.* 2021). Avoiding a tourist trip during the pandemic may not be perceived by the respondents as a type of beneficial adaptation behavior in the context of avoiding threats related to COVID-19, in particular because the willingness to travel is declared primarily by those who manifest the least fear about getting infected and grave course of the disease. A slight negative impact of health protection motivation on the examined intention may be related to weak perception of self-efficiency in coping with curbing SARS-CoV-2 (Cavicchiolo *et al.* 2021) and an optimistic attitude of the respondents (Park *et al.* 2021) in particular among non-vaccinated people who believe that the severe course of the disease is of little probability in their case. Thus, it needs to be assumed that non-vaccinated persons who come to tourist destinations may ignore safety measures offered by the host and contribute to increased transmission of coronavirus. The strongest risk factor perceived by the respondents was the possibility of infecting friends and family. The probability of grave COVID-19 was assessed definitely lower than the probability of infecting family and friends, both among vaccinated and non-vaccinated people. This dependence may be valuable when promoting actions aimed at reinforcing health protection behavior of tourists. However, it is difficult to conclude whether it is moderated by cultural factors, as this was not the object of the study.

Conclusions

Infection statistics during the COVID-19 pandemic indicate a relationship between the speed of the virus' spread and the calendar of tourism activity of entire social groups: for example, in Europe, the pandemic started to spread significantly in selected countries during the ski season (La Foresta and Dziadkiewicz 2020).

Studies on behavioral intentions of tourists during the pandemic allow for preparing mechanisms mitigating the impact of the pandemic on the tourism sector. Socially responsible enterprises, by learning the intentions of tourists, may support health protection measures by ensuring protection from the virus, both for those who see a higher risk of infection and those who marginalize it. In a situation when a significant part of the society motivated by restrictions which they consider painful, wishes to practice tourism in the previous, pre-pandemic scope, care for the tourists' health and their psychical comfort during a trip should form an important element of the tourism offer. Unfortunately, the mechanisms described in this study also apply to entrepreneurs operating in the sector of tourism, resulting in tension and frustration. Therefore, it is hard to predict whether care for the long-term value and durability of own business will be stronger than motives shaped under the current market situation. A broader cooperation seems necessary, as well as planning of actions and preventive measures during the pandemic in the private sector of tourism, which encompass both tourists and entrepreneurs. As indicated by the performed study, tourists show significant reactance with respect to the imposed restrictions and, in spite of noting the dangers related to COVID-19 and declared motivation for health protection, manifest behavioral intention related to tourist trips. If the demand created in this mode meets with a market offer, which is not accompanied by adequate safety measures, curbing the pandemic may prove to be very difficult.

This imposes additional social obligations on the tourism sector. Both in the context of the COVID-19 pandemic and from the perspective of other potential pandemic threats in the future, it seems necessary to work out mechanisms reducing the risk of spread of a pandemic, both on a global, regional or sectoral level, but also on the management level of individual market entities. The studies show that the sector cannot count on the self-limitation of tourism, as the people's desire to return to "normalcy" will be stronger than the fear of spreading coronavirus. The specific mode of operation of the tourism sector makes the necessity of designing efficient procedures (taking the protection from possible virus infection into account) of vital importance, simultaneously extending a guarantee that tourists can have the option of enjoying attractions during the trips.

Limitations and Future Studies

During the analysis of results, certain limitations resulting from the applied methodology must be mentioned. First of all, the non-random selection of the sample to a certain degree limits the possibility of generalizing the received results. Here, it must be stressed that the sample includes persons representing only a fraction of the population of tourists. Nevertheless, on account of the fact that the key of the performed analyses was the identification of dependences among variables determining the behavior of the group of respondents covered by the study, this aspect does not exert any significant impact on the conclusions drawn.

Secondly, the proposed set of factors, potentially influencing the tourism behavioral intention and the self-descriptive nature of the applied research tool could contribute to the limitation of the scope of the analysis. In order to minimize the risk identified in this mode, the authors limited the choice of the evaluated factors to these that have the vital significance in the complex process of making decisions about tourist trips during the pandemic, taking the hitherto scientific accomplishments in this realm into account.

The studies carried out by the authors refer only to a selected group of potential tourists from Poland; therefore, further research could consist in, for example, identification of potential differences among individual regions or countries. An interesting area of research which, in the light of the performed literature studies, has not been sufficiently explored, is the impact of the analyzed factors on the entrepreneurs operating in the tourism industry, their inclination to take health protection measures and the inclination to limit the scale of business in order to curb the spread of the pandemic.

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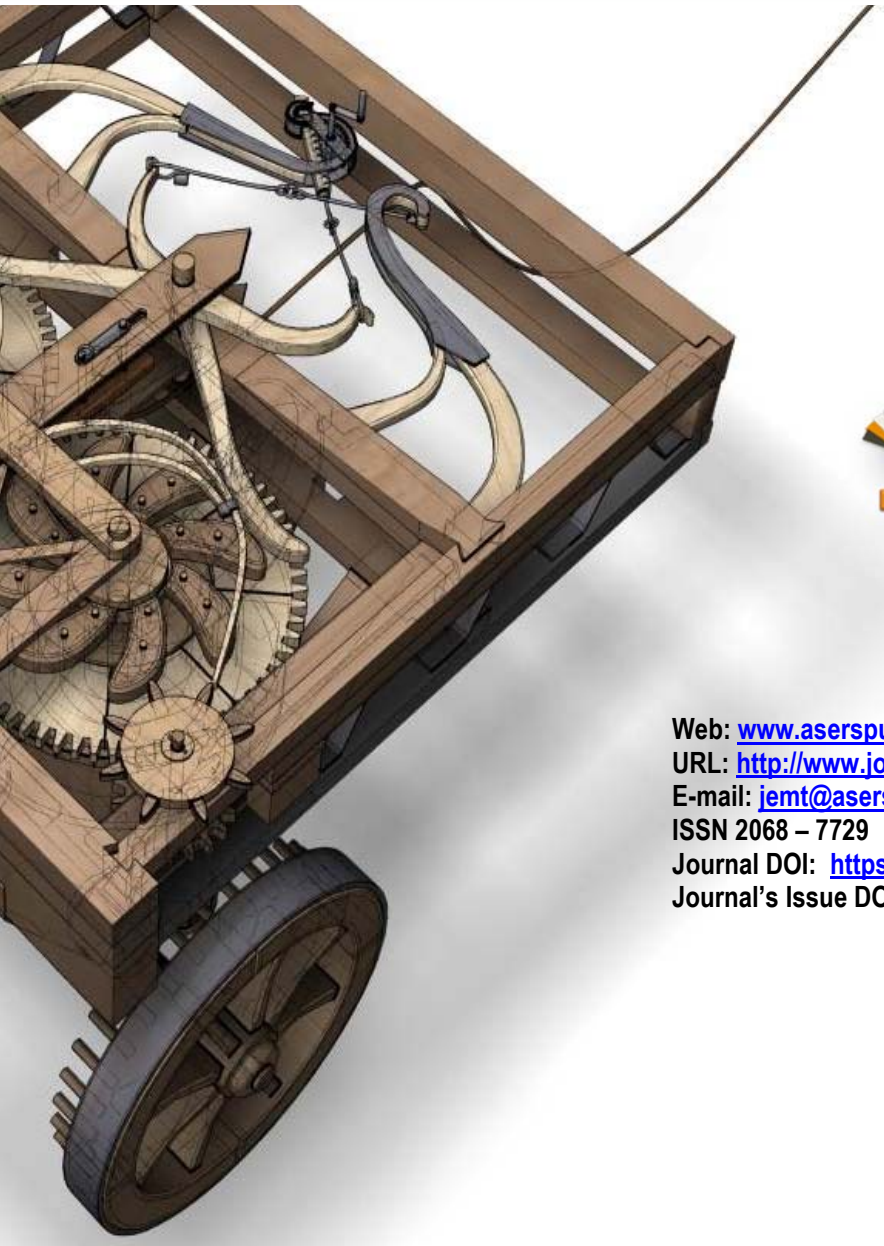

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