

Introduction

In contemporary economics only one thing is constant – constant change [Gunday et al., 2011]. The notion of change relates directly to innovation. The very nature of innovation constitutes combining existing factors in a new, changed way. Since the early stage of the scientific investigation of innovation research has focused mainly on the solutions actually implemented [Schumpeter 1939]. Yet it is only through implementation that the benefits of innovation may materialise. The task is not simple. The process of obtaining the gains is complex as innovation may pass through different stages. Thus for almost half-century the scientific community has considered innovation to be a complex process and not just a simple occurrence [Myers and Marquis 1969]. Innovation pushes progress forward. Thus previous scientific investigation limited the concept of innovation to implementations which generate positive effects [Nelson and Winter 1982]. The above scientific considerations still hold today [Moss Kanter 2006].

Innovation is of crucial importance for tourism companies, which cover accommodation for visitors, food and beverage serving activities, passenger transportation, travel agencies and other reservation activities, cultural activities, sports and recreational activities and retail trade of country-specific tourism characteristic goods [UNWTO 2010]. It provides them with competitive advantage and hence the firms with market power gain more from innovation [Tirole 1995]. A firm's innovation interacts with the environment. It delivers diverse benefits to the consumers in the form of new products and lower prices which in turn impact positively on the company [Shiller 2006]. In the context of tourism the ongoing scientific discussion on innovation seems not to have achieved any definite conclusions yet.

The implementation of innovation in tourism enterprises leads to the achievement of diverse ends. From this point of view the measurement of the effects of innovation is of vital importance. There are a number of financial measures covering substantially different fields. The most comprehensive amongst them is a company's value. It covers all the aspects of a company's activity [Bodie

and Merton 2000]. However due to its importance and complexity numerous approaches to company value were created.

The basic distinction covers book and market value based approaches. The proponents of book value assume that the balance sheet yields a reliable estimate of the value of assets and equities. However numerous shortcomings emerge: the static character, dealing with historical figures, failing to include intangibles and treating all classes of accounts as having equal importance [Nunes 2003]. The market value based approach stands for the price that assets would fetch in the marketplace [Fabrozi and Drake 2009]. It uses actual data (actual prices, not estimations), includes the value of all of a business's operating assets and does not rely on explicit forecasts [Hitchner 2006]. The comprehensiveness and the up-to-date character of the market value-based approach determine its strong support in extant literature [Milburn 2008; Fabrozi and Drake 2009].

Tourism company market value (MV) represents the sum of claims of equity holders and creditors and it is composed of the market value of equity and the market value of debt [Damodaran 2012a]. In the context of measuring the effects of innovation on the market value, the market value of debt may be problematic. Not many companies issue publicly traded bonds and they are traded infrequently in comparison to common stock. For public companies the market value of equity changes frequently and is publicly available. Its change constitutes the best approximation of change in a company's market value resulting from innovation [Berk et al. 2014]. The extant literature delivers support for such an approach [Frykman and Tolleryd 2003; Damodaran 2012a]. For public tourism companies it materialises in the share prices [Appolloni et al. 2011]. In the light of the above discussion the market value of equity may be defined as the product of the number of shares outstanding and their current price. In a situation in which the number of shares remains constant the changes in their price represent the changes in the market value of equity [Grossman and Livingstone 2009; Damodaran 2012a].

For publicly traded tourism companies the market value of equity fluctuates due to new information hitting the market [Fama and French 2007]. The process of communication is essential in shaping stock prices. The vast majority of investors rely on publicly available information which increases the ranking of a company's announcements. Furthermore companies actively manage their communication policies and voluntarily disclose positive news expecting affirmative market reaction. Thus the role of innovation announcements is critical for two reasons: their ability to shape stock prices and their voluntary disclosure and accessibility. In the extant literature the approach consisting of analysing

the impact of publicly available announcements on the market value of equity is strongly advocated and widely used in empirical research [Pauwels et al. 2004; Sharma and Lacey 2004; Sorescu, Shankar and Kushwaha 2007; Hanssens, Rust and Srivastava 2009].

The relationship between innovation and the market value of tourism enterprises may be explained based on the fundamental economic rule that higher returns involve higher risk [Hay and Morris 1979]. Most empirical findings advocate that innovation indeed stimulates growth in market value as investors seem to be optimistic about the news concerning innovation [Sorescu 2012]. However there are a few studies, also in the context of tourism, indicating the opposite [Zach, Krizaj and McTier 2015]. It suggests the existence of a number of unsuccessful innovation announcements for which the market judges the risk to outweigh the benefit which results in the decrease in the market value of equity. The previous research delivered the important conclusion that innovation is an important predictor of changes in market value of equity [Hall 1998]. However substantial research gaps remain.

The relationship between innovation and market value is not straightforward. Numerous variables determine the magnitude of market value fluctuations. In the context of tourism the previous research covered the type of innovation but failed to deliver consistent indications on the magnitude of the effects generated by particular types [Nicolau and Santa-Maria 2013a; Zach, Krizaj and McTier 2015]. In the context of services there were no definitive clues to the predictors of market value. According to the author's knowledge, only two pieces of research included more than three predictors [Meng, Zhang and Wei 2015; Dotzel, Shankar and Berry 2013]. In the light of the results of previous studies it seems that the sets of predictors were insufficient to precisely represent the relationship as the research delivered different conclusions. The definitive set of predictors of changes in market value is still to be developed.

Most of the previous research studying the impact of innovation announcements on the market value of equity focused on the manufacturing sector [Ehie and Olibe 2010]. The relatively small number of studies in the service sector resulted in little scientific coverage of its specificities. It concerns especially tourism as the main scientific teaching seemed to neglect it [Hjalager 2002]. The existing scientific evidence covering exactly the impact of innovation announcements on the market value of equity of tourism enterprises is small [Nicolau and Santa-Maria 2013a; Zach, Krizaj and McTier 2015]. Also the research devoted to innovation concentrated on the high-tech industries, which left the low-tech ones examined to a relatively small extent. The impact of innovation on low-tech

service companies such as tourism companies is largely uncharted. The scientific gap is especially important considering the importance of tourism in the economy of the European Union.

Europe is the most visited region in the world with international tourist arrivals reaching 582 million and receipts at euro 383 billion [UNWTO 2016a]. The receipts are estimated to maintain a constant growth of approximately 3% per year until 2025 [UNWTO 2016b; World Travel and Tourism Council 2016]. The direct contribution of travel and tourism to the GDP of European Union constituted 3,5% in 2015 and the total contribution was significantly higher and was 9,6%. Travel and tourism supported directly almost 14 million jobs which represented 3,6% of total employment. The total contribution was even greater and surpassed 36 million jobs, which constituted 9,1% of total employment. In terms of investment travel and tourism brought about 4,8% of the total investment in European Union [World Travel and Tourism Council 2016].

In the light of the ongoing scientific discussion important research gaps remain. First, the effects of innovation announcements on the market value of equity of tourism enterprises were not clearly proved. Second, there are no definitive clues as to the predictors of the changes in the market value of equity. A comprehensive study attempting to represent this complex relationship is still missing. Thus inclusive research building on a sound theoretical background and depicting the impact of innovation on the market value in tourism is of vital theoretical and practical importance.

Based on the above considerations the research problem is expressed in the following question: what is the relationship between innovation announcements and the market value of equity of tourism enterprises?

The main objective of the research is to measure the short- and long-term impact of innovation announcements on the market value of equity of tourism enterprises. To complement the main objective the following supplementary objectives were formulated:

1. Building a sound theoretical background by the identification of the position of innovation in economic theories.
2. Conceptualisation of innovation with special regard to innovation in tourism.
3. Critical assessment of the existing approaches to company value and indication of the most appropriate approach from the point of view of the impact of innovation.
4. Synthesis of the extant research on the impact of innovation on the market value of enterprises in the service sector with a particular focus on tourism.

5. Creation of a model representing the relationship between innovation announcements and the market value of equity of tourism enterprises.
6. Verification of the predictors of the changes in the market value of equity of tourism enterprises resulting from innovation announcements.

The analytical framework of the present research draws on the current scientific discussion of the efficiency of capital markets. It seems that nowadays the assumption that the stock prices always fully reflect all available information cannot be adopted without in-depth consideration. In this research the theoretical foundation included five modifications: lack of the absolute investor rationality, long-time adjustments of the initial reaction, existence of insider information, presence of the momentum effect and different efficiency levels of capital markets [Fama and French 2007; Kaestner 2006; Stockl 2014; Carhart 1997; Kristoufka and Vosvrda 2012].

In order to construct the sound theoretical representation of the relationship studied the systematic model-building procedure was adopted. It covered the synthesis of the existing scientific evidence on the subject and the addition of the theoretically related predictors of the market value of equity being the author's propositions. The comprehensive construction of the author's model connects innovation-level variables, firm-level innovation-related variables, interaction and second-order effects and control variables. The model covers such predictors of changes in market value of equity such as: patent, CSR, type, degree of novelty, source, stage and communication of innovation and R&D intensity and the innovativeness of the implementing company. It includes also the second-order effect of R&D intensity and the interaction effect between innovativeness and R&D intensity. The control variables include industry, size, volume, total cash dividend, operational experience, leverage, return on equity and growth.

Taking into account the research gaps in extant literature and the adopted theoretical background and in order to fulfil the above objectives the empirical study examined the changes in the market value of equity resulting from the innovation announcements of tourism enterprises. The examination was based on the author's model representing the relationship. Its first part concerned the general impact of innovation announcements while the second focused on the predictors of market value of equity. In respect of the model the following groups of hypotheses were formulated:

1. The impact of innovation announcements.
 - H1. There is a positive relationship between innovation announcements and the market value of equity of tourism enterprises.

- H2. The impact of innovation announcements on the market value of equity of tourism enterprises is immediately and fully incorporated in stock prices.
- H3. No information leakage and dissemination occur in the period preceding the announcement.
- H4. The positive change in the market value of equity resulting from the successful innovation announcement is bigger in absolute value than the negative change resulting from the unsuccessful one.
- 2. Prediction of the impact of innovation announcements.
 - H5. Innovation-related company-level variables predict the changes in the market value of equity above and beyond the effect of the control variables.
 - H6. Innovation-level variables predict the changes in the market value of equity above and beyond the effect of the control and innovation-related company-level variables.
 - H7. Interaction and second-order effects predict the changes in the market value of equity above and beyond the effect of the control, innovation-related company-level and innovation-level variables.
- 3. Innovation-level predictors.
 - H8-1. There is a positive effect of patents on the changes in the market value of equity resulting from innovation announcements.
 - H8-2. Innovation's CSR elements contribute positively to the changes in the market value of equity resulting from innovation announcements.
 - H8-3. The effect of product innovation on the changes in the market value of equity resulting from innovation announcements is greater than that of other innovation types.
 - H8-4. A positive relationship exists between the innovation's degree of novelty and the changes in the market value of equity resulting from innovation announcements.
 - H8-5. The effect of innovation developed in-house on the changes in the market value of equity resulting from innovation announcements is smaller than that of innovation from other sources.
 - H8-6. A positive relationship exists between the innovation stage and the changes in the market value of equity resulting from innovation announcements.
 - H8-7. The effect of the first innovation announcement on changes in the market value of equity is greater than that of the second and further announcements.

4. Firm-level innovation-related predictors.
 - H9-1. The stronger the firm's R&D intensity the greater the change in the market value of equity resulting from innovation announcements.
 - H9-2. A firm's innovativeness is positively related to the changes in the market value of equity resulting from innovation announcements.
5. Interaction and second-order effects.
 - H10-1. There is an interaction effect between R&D intensity and innovativeness in the context of the changes in the market value of equity resulting from innovation announcements.
 - H10-2. There is a negative effect of the squared R&D intensity on the changes in the market value of equity resulting from innovation announcements.

The empirical study examined the impact of innovation announcements on the market value of equity of tourism enterprises according to the author's own analytical framework. The subjects of the analysis were the changes in the market value of equity resulting from the innovation announcements of tourism enterprises. The time frame ranged between February 2011 and February 2016. The spatial scope covered the 28 European Union member states. The announcements released for the total of 111 tourism companies listed on the most important stock exchanges in Europe were analysed. The precise content analysis of the 9.000 innovation announcements allowed the assessment of their substantial value in the light of the present research. Sample size was calculated based on three approaches: the power of the chosen methods to detect abnormal changes in market value of equity, applicability of the model verification methods and the ability to generalize results. The representative sample included 398 observations.

The research is built on the literature on innovation driven and Neo-Schumpeterian economics. It includes classical and recent publications on the efficiency of capital markets and the approaches to company value. It employs the previous research on the relationship between innovation and market value in services with special regard to tourism. The empirical research exploits such diverse sources of information on innovation as: Factiva, Eikon, ProQuest and Amadeus databases. The data on the changes in market value of equity was obtained through stock exchange databases. Any missing data was filled in the direct contact with companies.

The empirical research covered the short- and long-term effects of innovation announcements which required the precise selection of the research methods. In

the short-term investigation the event-study method was employed. In the long term the research relied on the buy-and-hold abnormal returns method. The selected methods were widely used to determine the impact of announcements on the changes in market value. The short-term cumulative abnormal returns were used amongst others by Sood and Tellis [2009] and Rao, Chandy and Prabhu [2003]. The long-term buy-and-hold abnormal returns were employed by Sorescu, Chandy and Prabhu [2007]. In order to calculate the changes in the market value of equity the research employed the concept of abnormal returns. In the light of previous considerations if the number of shares is constant in the period, the changes in share price become the right proxy for the changes in market value of equity.

In the event-study the expected returns were calculated with the use of a Carhart four-factor model to account for the momentum effect [1997]. Furthermore the abnormal returns were standardised which led to more powerful tests [Dodd and Warner 1983]. The length of the event windows (the periods in which the changes in the market value of equity were analysed) was determined based on the significance of a single days' abnormal returns. The firms' BHARs were calculated against the main stock index. The length of the periods under investigation was adopted based on the previous research. The statistical significance of the changes in the market value of equity was verified with the use of the Z-test [MacKinlay 1997] and two groups difference of means test [Cowan and Sergeant 2001].

The empirical research resulted in the calculation of the equal number of changes in the market value of equity in the short and long term which called for the selection of the data analysis methods. In order to capture the patterns emerging from the data the changes in the market value of equity were described with use of such statistical measures as: central tendency, dispersion, skewness and peakedness. The author's model and the significance of single predictors of changes in the market value of equity were tested through the joint application of response surface regression and hierarchical regression.

This research builds on the theoretical background of innovation and market value. It introduces the author's model and tests it empirically. The book is divided into five chapters. Figure 1.

The first chapter discusses the evolution of the approaches to innovation in the world. The investigation constitutes the basis for introducing the definition of innovation for the purpose of the present book. It sets innovation in the framework of economic theories. It analyses innovation in the service sector and scrutinizes the research on innovation in tourism.

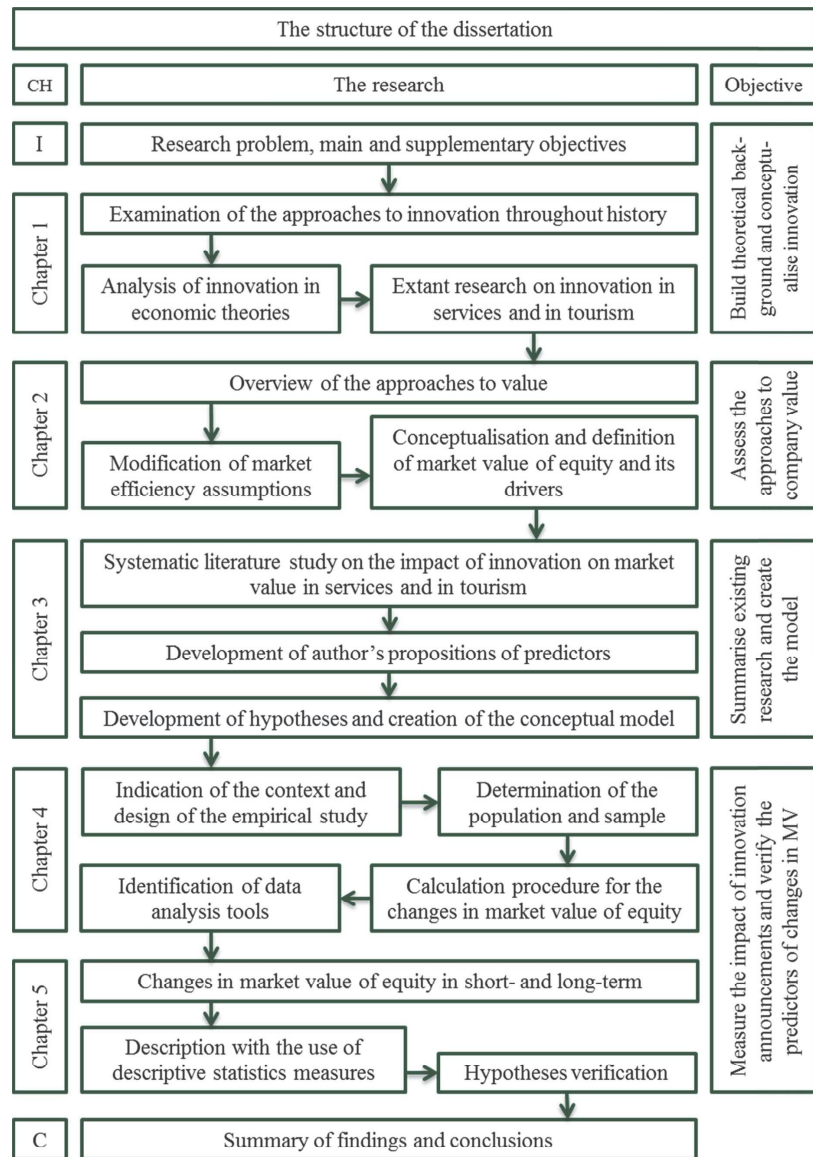


Figure 1. The structure of the book

Source: own development

The second chapter delivers an overview of the approaches to valuation which allows the selection of the most conceptually adequate from the point of view of the present research. It examines the modifications of the market efficiency assumptions. The chapter includes the definition of the market value of equity and terminates with an overview of the factors driving it.

The third chapter concentrates on linking innovation and the market value of tourism enterprises. It presents the systematic model-building procedure and brings details on the strategy of the literature study. It introduces and discusses the predictors of the market value of equity in the context of this research. It presents the author's model and the development of the research hypotheses.

Chapter four focuses on the methods used in the empirical research. It provides details on the data collection methods and the research techniques used to answer the research questions. The chapter considers the context and design of the empirical study, describes the population and the variables and delineates the data analysis methods.

Chapter five presents the results and a discussion of the empirical investigation. It demonstrates the changes in the market value of equity as well as their statistical significance. It summarises and describes the data with the use of descriptive statistical measures. The chapter provides the results of the hypotheses testing performed with the use of hierarchical regression.

The book terminates with conclusions. Supplementary information is to be found in the Appendix.

The benefits of the research reported here are diverse. It contributed to the current scientific discussion on innovation in services and in particular in tourism. It assessed the current research in the field and conceptualised innovation in the context of tourism. Furthermore the study added to the scientific dialogue on the efficiency of capital markets by providing theoretical considerations and unsupportive empirical evidence. The research introduced the author's model representing the relationship between innovation announcements and the market value of equity of tourism enterprises. Thus it attempted to fulfil the important research gap in respect of the predictors of changes in market value. The model was tested empirically using the analytical framework designed particularly for the present research. Finally it allowed verifying the impact of innovation announcements on the market value of equity of tourism enterprises. The research attempted to fulfil the existing research gap concerning the relationship between innovation announcements and the market value of equity of tourism enterprises and theoretically related variables.