

Janotík, Tomáš

**Working Paper**

## Empirical analysis of life satisfaction in German Benedictine monasteries

IES Working Paper, No. 20/2013

**Provided in Cooperation with:**

Charles University, Institute of Economic Studies (IES)

*Suggested Citation:* Janotík, Tomáš (2013) : Empirical analysis of life satisfaction in German Benedictine monasteries, IES Working Paper, No. 20/2013, Charles University in Prague, Institute of Economic Studies (IES), Prague

This Version is available at:

<https://hdl.handle.net/10419/102587>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

Institute of Economic Studies, Faculty of Social Sciences  
Charles University in Prague

# Empirical Analysis of Life Satisfaction in German Benedictine Monasteries

Tomáš Janotík

IES Working Paper: 20/2013



Institute of Economic Studies,  
Faculty of Social Sciences,  
Charles University in Prague

[UK FSV – IES]

Opletalova 26  
CZ-110 00, Prague  
E-mail : [ies@fsv.cuni.cz](mailto:ies@fsv.cuni.cz)  
<http://ies.fsv.cuni.cz>

Institut ekonomických studií  
Fakulta sociálních věd  
Univerzita Karlova v Praze

Opletalova 26  
110 00 Praha 1

E-mail : [ies@fsv.cuni.cz](mailto:ies@fsv.cuni.cz)  
<http://ies.fsv.cuni.cz>

**Disclaimer:** The IES Working Papers is an online paper series for works by the faculty and students of the Institute of Economic Studies, Faculty of Social Sciences, Charles University in Prague, Czech Republic. The papers are peer reviewed, but they are *not* edited or formatted by the editors. The views expressed in documents served by this site do not reflect the views of the IES or any other Charles University Department. They are the sole property of the respective authors. Additional info at: [ies@fsv.cuni.cz](mailto:ies@fsv.cuni.cz)

**Copyright Notice:** Although all documents published by the IES are provided without charge, they are licensed for personal, academic or educational use. All rights are reserved by the authors.

**Citations:** All references to documents served by this site must be appropriately cited.

**Bibliographic information:**

Janotík, T. (2013). “Empirical Analysis of Life Satisfaction in German Benedictine Monasteries”  
IES Working Paper 20/2013. IES FSV. Charles University.

This paper can be downloaded at: <http://ies.fsv.cuni.cz>

# Empirical Analysis of Life Satisfaction in German Benedictine Monasteries

Tomáš Janotík<sup>a</sup>

<sup>a</sup>IES, Charles University Prague  
E-mail: tomas.janotik@gmail.com

November 2013

**Abstract:**

This paper empirically examines life satisfaction in Benedictine monasteries in Germany from the perspective of happiness research in economics. A dataset of 154 Benedictine nuns is analyzed. The main objective is to identify the most important determinants of happiness of Benedictines and to empirically evaluate the hypothesis that they have very high subjective satisfaction with life. The impact of various aspects (such as age, health, religiosity, motivation and fulfillment of basic psychological needs) on life satisfaction is discussed. The fact that Benedictines are satisfied with their life might explain why this organization was remarkably successful in the past and that many monasteries managed to survive on the market for many centuries.

**Keywords:** Benedictine monasteries, life satisfaction, self-determination theory, happiness economics

**JEL:** D2, Z0

**Acknowledgements:**

This research was supported by Grant Agency of Charles University in Prague (GAUK), grant No. 442213.

## **1. Introduction**

Benedictine monasteries are extraordinary institutions with a remarkable tradition. Benedictine way of life according to their motto “Ora et labora” attracted many generations of monks and nuns. Their devotion to spiritual and productive life created an organization with unique corporate governance, work ethic and economic strength. According to Inauen and Frey (2008) who investigated the reasons for closures of monasteries in Germany and German-speaking part of Switzerland, the average Benedictine monastery in this area is more than 500 years old and many of the monasteries exist without interruption since their foundation. They found out that the last closure of Benedictine monastery that happened due to economic distress or management failure occurred in 1863. Since that time, no monastery had to be closed due to economic difficulties. Rost et al. (2010) argued that the system of monastic corporate governance could be an inspiration for modern companies, especially due to their success at avoiding agency problems.

Such success can hardly be explained merely by focusing on religious aspects of the functioning of the organization. The question how it is possible that Benedictines go bankrupt only very rarely and that they have a strong ability to stay on the market for centuries must be answered by economists. This paper presents an attempt to provide some answers to this question from the perspective of economics of happiness, a recent discipline on the borders between economics and psychology.

The aim of this study is to continue in our previous work (Janotík, 2012) in which we proposed the following explanation of the success of Benedictine monasteries: living in a monastic community leads to high satisfaction with life (happiness) of Benedictines which thus increases the propensity of monks to fully invest their potential into future of their organization. Their increased satisfaction with life thus influences the corporate governance and contributes to economic survival of the organization. However, this explanation was established only theoretically and our previous study lacked any empirical validation. Therefore, our current objective is to empirically examine satisfaction with life of Benedictines and its determinants. Are Benedictines really happy? If yes, what are the main factors behind it? To address these questions, we apply methodology of happiness research in economics which works with the concept of subjective well-being (SWB). Respondents in a questionnaire subjectively evaluate various aspects of their satisfaction with life. This allows quantification of happiness and use of statistical methods. Quantitative analysis is used to detect determinants of happiness. Our empirical sample consists of 154 Benedictine nuns.

The analysis proceeds as follows. Chapter II discusses the most important theoretical concepts that we use in empirical analysis. Chapter III presents the empirical research and discusses the main findings. Chapter IV concludes.

## **2. Theoretical concepts**

This section provides an overview of the approaches that we use for investigation of Benedictines. Although many of these ideas and concepts originally belong to the domain of psychology, they can be very beneficial for understanding the behavior of Benedictines as economic agents.

### **Maslow's hierarchy of needs**

Maslow (1943) in his theory of motivation came up with hierarchy of human needs. According to his approach, humans proceed from fulfillment of basic physiological needs

(such as need for food, shelter, safety) to more sophisticated needs (such as need to be loved, need for self-esteem, respect of others), ending with such complex needs as need for self-actualization and transcendence at the top of the need pyramid. It is argued that needs at the bottom of the pyramid are more acute and necessary for well-being, whereas the needs at the top are worth striving for only if the more basic needs are already fulfilled. Maslow's approach gives us the way how to approach satisfaction with life – to find how satisfied with life the individual is, it is useful to concentrate on the degree of fulfillment of human needs.

### **Self-determination theory**

Self-determination theory (SDT) postulates three fundamental psychological needs: need for autonomy, need for competence and need for relatedness. These needs are considered to be innate and universal to all people and their fulfillment is essential for ongoing psychological growth, integrity and well-being (Deci & Ryan, 2000). Contrary to Maslow, all these needs are equally important and thwarting of any of them might lead to deterioration in psychological health and well-being. The need for autonomy means that an individual needs to feel a sense of control, choice and freedom in initiation of one's own actions. It is argued that a happy life must come from within – from individual's own free decisions. The need for competence is fulfilled when the individual feels effective and productive in his environment and is aware of his ability to shape it and influence it. Finally, the need for relatedness is a need for experience of being cared for and connected to others (Visser, 2010). SDT predicts that an environment which provides good conditions for fulfillment of the three basic needs will generate happiness and satisfaction with life by providing a comparative advantage at the level of individual and group selection. On the contrary, thwarting of these needs should result into substantial loss in individual well-being. If we want to determine whether Benedictines are satisfied with their life, SDT provides us with inspiration which aspects of their life we should examine.

### **Intrinsic vs. extrinsic motivation and flow theory**

When studying motivation, psychologists often make a distinction between intrinsic and extrinsic motivation. Intrinsic motivation refers to activities that are inherently interesting or enjoyable and individuals engage in them for the mere pleasure of experiencing them. On the other hand, extrinsic motivation refers to activities that individuals pursue because they are associated with external rewards, such as monetary incentives, respect of others or other material benefits (Frey & Stutzer, 2007). A similar distinction is made between autonomous and controlled motivation. Whereas autonomous motivation comes from within – it is a result of internal desire to engage in an activity, controlled motivation is a result of external pressures (e.g. orders of other people, social expectations, monetary incentives). A lot of research in psychology and happiness research suggests that activities associated with intrinsic and autonomous motivation increase individual well-being whereas activities with controlled and external motivation have negative impact on life satisfaction (Nix et al., 1999). Dweck (1986) and Nichols (1984) make a similar point. They distinguish between performance goals and learning goals. Performance goals are associated with external rewards and admiration of others (ego involvement), learning goals with internal rewards and pleasure of doing something for its own sake (task involvement). M. Csikszentmihalyi (2002) argues that happiness is a result of flow – of an experience of being heavily concentrated on difficult task for the mere pleasure of doing it, being involved in it and eventually succeeding in it. Csikszentmihalyi claims that repeated experience of flow is a necessary precondition to a fulfilling life. These lines of research also provide us with a perspective to look at

Benedictines. Do monasteries create good environment for experiencing flow? Is motivation of monks internal or external, controlled or autonomous?

### **Adam Smith: mutual correspondence of sentiments**

Adam Smith in his Theory of moral sentiments stresses the importance of mutual sympathy and fellow feeling among people. Sugden (2005) follows Smith's ideas and argues that fellow feeling and correspondence of sentiments (i.e. when a person shares its affective states with other persons around her) is an important determinant of well-being. Janotík (2012) argues that Smithian mutual correspondence of sentiments is crucial in the life of Benedictines and can even explain their decision to enter the Benedictine order and devote their life to the community:

*"Knowing that we are not alone, that there is someone else who has the same sentiments, attitudes, and way of life is always pleasurable. It confirms the validity of our own sentiments, reinforces our sense of self-worth, and thereby also assures us that our life is composed up of worthwhile activities."*(Janotík, 2012)

Sugden (2005) stresses the fact that humans need justifications for their actions and decisions. Correspondence of sentiments is closely linked with social approval and disapproval. For Benedictines, their life in monastic community and the fact that they are surrounded by their brethren mean that they continuously share all their daily experiences with someone else. The fact that they belong to a community composed of the similar-minded people serves as a confirmation that their decision to join the monastery and live according to the rule of St. Benedict was right and correct. This can have a very significant effect on their life satisfaction.

### **Economics of religion: Internal vs. external religiosity**

In order to understand the life of Benedictines, it is also necessary to investigate the impact of religious and spiritual life on subjective well-being. It is useful to distinguish between two aspects of religiosity - external and internal. External religiosity refers to activities that are observable, e.g. going to the church, attendance of religious rituals and community participation. Internal religiosity includes spiritual aspects, such as prayers, belief in God and relationship with Him (Steiner et al., 2010).

As far as external religiosity is concerned, the literature suggests that the higher is the frequency of attending religious rituals and community events, the higher is also subjective well-being of individuals (Greene and Yoon (2004), Pollner (1989)). Therefore, an important part of the increased happiness as a result of religion might be gained from socializing with others and from common attendance of religious ceremonies and events.

According to the research on subjective well-being, internal religiosity is also associated with increased happiness. Pollner (1989) and Myers (2008) show that people who believe in God report higher satisfaction and suffer from fewer depressions and negative psychological conditions. Their happiness is increased as a result of a relationship with supranatural imaginary being, strong sense of meaning and greater purpose in life (Steiner et al., 2010). These factors also contribute to easier handling of every-day problems and difficulties, thus leading to lower levels of stress (Lewis et al., 2005). Therefore, religion correlates not only with subjective measures of well-being but also with variables that are more objectively measurable, such as health and age. Levin (1994) and Tao (2008) find that religious life increases health. Consequently, religious people also live longer. This is also confirmed in the

case of Benedictine monasteries where the average life span is much higher than in the rest of the population (with 25% lower mortality rate (Dobson, 2002)). Factors like stress, health and age will also be included in our analysis of determinants of happiness in Benedictine monasteries.

### 3. Empirical analysis

This section applies the approaches to individual motivation and well-being mentioned in the previous chapter and aims to find out which factors are the most important in the life of Benedictines.

We conducted empirical investigation using questionnaires directly in monasteries in Germany. The main reason for choosing Germany was the fact that Benedictine monasteries have a very old tradition in this country. Moreover, Germany has a very good availability of data about subjective well-being, thanks to the German Socio-Economic Panel (GSOEP) which is a dataset containing data about social, demographic and economic factors in Germany which is published every year since 1984 (Wagner, Frick & Schupp, 2007). The availability of this dataset enables us to compare the data about Benedictines obtained from our data collection with the data for general public in Germany.

We mailed the printed questionnaires to all 54 Benedictine monasteries in Germany. Table 1 shows the response rates. Out of 54 monasteries that we contacted, 16 monasteries agreed to participate in our survey, leading to a sample of N = 154 respondents. All the respondents were women; no male monastery chose to participate in the survey.

Table 1: Main characteristics of the sample

	<b>Total in Germany</b>	<b>Our Sample</b>	<b>Response rate</b>
<b>Benedictines</b>	1257 <sup>1</sup>	154	12.25 %
<b>Monasteries</b>	54	16	29.62 %

Into the questionnaire we included items relating to many factors that could be considered to be determinants of subjective well-being based on theoretical concepts mentioned in the previous chapter. Respondents in the questionnaire assessed their degree of agreement with various statements on a scale from 1 to 4, where answer 1 means “totally disagree” and 4 means “totally agree”. We also included questions about frequency of some feelings or events in life of respondents on a scale from 1 to 5 where 1 means “not at all” and 5 “very often”. Questions about satisfaction with life were measured on a scale between 0 and 10 (to assure comparability with German Socio-Economic Panel where life satisfaction is also measured on this scale), where 0 means “totally dissatisfied” and 10 means “totally satisfied”. Tables 1 and 2 present sample averages for answers to items that we included into the questionnaire.

---

<sup>1</sup> According to Catholic Encyclopedia: <http://www.newadvent.org/cathen/02443a.htm>. This number also corresponds to our number based on gathering the information from the webpages of all German monasteries.



Table 2: Average subjective responses of the respondents to relevant monastery-related items

Item name	Scale	Sample average
<b>Need for autonomy</b>		
My work in the monastery is exactly what I always wanted to do in my life.	1-4	3.03
How my life goes on depends primarily on me.	1-4	2.91
If I could choose, I would do a lot of things in my life differently.	1-4	2.27
<b>Need for competence</b>		
I am Expert in what I am doing.	1-4	2.97
I am happy when I am able to fulfill all rules of monastic life.	1-4	3.14
<b>Need for relatedness/correspondence of sentiments/identification with the community</b>		
Monks/nuns in our monastery are one big family.	1-4	3.00
I sometimes feel lonely.	1-4	2.31
As a member of our community, I have a feeling of belonging to something bigger.	1-4	3.10
I often engage in voluntary work, like taking care for other people in need.	1-4	2.92
Other members of the community support me in everything.	1-4	2.93
<b>Flow</b>		
I often engage in activities that I find fascinating.	1-4	3.05
Working on something challenging (frequency, last 4 weeks)	1-5	3.10
Being concentrated on something difficult (frequency, last 4 weeks)	1-5	2.99
Learning new and interesting things (frequency, last 4 weeks)	1-5	3.03
<b>External religiosity</b>		
I love listening to organ music.	1-4	3.16
Attending religious rituals is very important to me.	1-4	3.47
I like wearing habit, even outside monastery.	1-4	3.24
<b>Internal religiosity</b>		
I feel the presence of God in my life.	1-4	3.43
Prayer is very important to me.	1-4	3.86
<b>Autonomous and intrinsic motivation</b>		
The work that I do in the monastery is meaningful and important.	1-4	3.64
I am always trying to do my work well, regardless of the reward.	1-4	3.51
I love my work because it is interesting.	1-4	2.95
I often have to do things I don't want.	1-4	1.83
<b>Other items</b>		
I experience a lot of stress.	1-4	2.05
I am an optimist.	1-4	2.96
I feel regrets that I couldn't marry, have children and have my own family.	1-4	1.52

Aggregated average subjective evaluations of items in our questionnaire from all respondents give us some answers about which factors play a crucial role in the life of Benedictine nuns. The strongest agreement is expressed in the case of items relating to internal and external religiosity (values above 3 and even close to 4), indicating that these areas are very important for Benedictines. Benedictines also report a strong sense of meaning and identification with the way of life they lead (strong agreement in the case of items relating to communal life, autonomous and intrinsic motivation). They express strong sense of belonging to their community. These results show that the motivation of monks is rather intrinsic than extrinsic, and rather autonomous than controlled. Agreement, although milder, is expressed also in terms relating to the fulfillment of three basic psychological needs according to self-determination theory (need for autonomy, competence and relatedness). This shows that Benedictines tend to indicate the fulfillment of these basic needs. Benedictine nuns also indicated some presence of flow in their life (their average responses to questions about frequency of working on something challenging and difficult in last 4 weeks are roughly in the middle of a scale from 1 to 5). Disagreement is expressed in the case of experiencing a lot of stress, suggesting that monastic life is not too stressful. Benedictine nuns are also rather optimistic than pessimistic. Strongest disagreement is expressed in case of feeling regrets about not getting married and not having children and own family. This suggests that Benedictine nuns are not dissatisfied with this important aspect of their life.

For the comparison with GSOEP dataset (the most recent available wave from year 2011), we included into the questionnaire also the same items as are used in GSOEP surveys. Table 2 presents the results. The GSOEP sample that is used here contains representative sample of female adult population in Germany (number of observations  $N = 3205$ ) and a subgroup of catholic women ( $N = 775$ ).

Table 3: Comparison of the averages for two GSOEP samples with our sample<sup>2</sup>

	Scale	Benedictine nuns	GSOEP 2011 women	GSOEP 2011 Catholic women
<b>Satisfaction with life</b>	<b>0-10</b>	<b>8.47</b>	<b>6.78</b>	<b>6.83</b>
Satisfaction with health	0-10	7.53	6.29	6.36
Satisfaction with sleep	0-10	7.83	6.42	6.57
Satisfaction with work	0-10	8.55	6.74	6.88
Satisfaction with accomodation	0-10	8.75	7.75	7.83
Satisfaction with family life	0-10	7.67	7.57	7.65
Frequency of being angry in last 4 weeks	1-5	2.61	2.90	2.90
Frequency of being happy in last 4 weeks	1-5	3.61	3.51	3.50
Frequency of being feared/worried in last 4 weeks	1-5	1.90	2.28	2.33
Frequency of being sad in last 4 weeks	1-5	2.35	2.67	2.66

<sup>2</sup> The data used in this publication were made available to us by the German Socio-Economic Panel Study (SOEP) at the German Institute for Economic Research (DIW), Berlin.

The comparison with GSOEP dataset in Table 3 reveals that Benedictine nuns report much higher satisfaction with life than average for the German women in GSOEP survey. A similar difference (although slightly smaller) is observed if we make a comparison to group of Catholic women in GSOEP sample. This simple comparison supports the hypothesis that monastic life has a positive influence on satisfaction with life and that Benedictines are indeed happier. Benedictine nuns also feel healthier; their subjective satisfaction with health is higher than in GSOEP samples. Similar results occurred in the case of satisfaction with some other aspects of life (sleep, work, accommodation) with the only exception which is satisfaction with family life where the score is comparable to German average. We also investigated the frequency of various feelings (anger, happiness, being worried or sadness) on a scale from 1 (not at all) to 5 (very often). The comparison reveals that Benedictine nuns indicated that they experience negative emotions (such as anger, being worried or sadness) less often than German average and vice versa, they experience positive emotion of being happy more often than German average.

How does life satisfaction of Benedictine nuns depend on age? Do many years spent in the monastery increase or decrease the life satisfaction? Most nuns usually enter the monastery when they are less than 30 years old (average entry into monastery in case of our sample was at 25.5 years of age). Figure 1 shows the average life satisfaction for sample of GSOEP adult German women and from sample obtained in our survey plotted against age together with linear trend line for our sample. It is possible to observe that age has a positive effect on happiness of Benedictine nuns. In case of German women life satisfaction decreases in the period between 40<sup>th</sup> and 60<sup>th</sup> year of age and then returns to original level after 60<sup>th</sup> year, a phenomenon commonly observed in happiness studies examining the relationship between age and happiness (Haidt, 2006). No such U-shaped development could be observed in case of Benedictine nuns from our sample. The gap between Benedictine nuns and German women is widening with increasing age, especially in the period after reaching 40th year. This suggests that the decision to join the monastic community leads to permanent increase in satisfaction with life which continues to rise even after many years spent in the monastery. It could also mean that Benedictines do not suffer from the crisis of middle age.

Figure 1: Life satisfaction vs. age: Comparison of our sample with women in GSOEP dataset



For analyzing what determinants of happiness significantly influence satisfaction with life of Benedictines, we perform econometric analysis. For model specification, we adopt framework used by Blanchflower and Oswald (2004) which we modify for the purpose of investigating the Benedictines. Let us assume that there exists a self-reported well-being function:

$$swb = h(u(z)) + \varepsilon \quad (1)$$

where *swb* is person's self-reported subjective well-being, *u(.)* is person's true well-being, *h(.)* is a function relating person's true well-being to self-reported well-being, *z* is a vector of person's individual characteristics (both objective and subjective) and  $\varepsilon$  is the error term. Function *h(.)* is assumed to increase in steps when *u(.)* increases. Function *u* is unobservable, since it is accessible only to the respondent. We examine impact of various factors on subjective well-being of Benedictine nuns (vector *z*). Equation (1) can be estimated as ordered logit where person's true well-being *u* is a latent variable and subjectivity of the responses can be thought of as going into the error term (Blanchflower & Oswald, 2004).

We estimate ordered logit model with the following specification:

$$\text{Logit}(swb) = \beta_1 \text{age} + \beta_2 \text{health} + \beta_3 \text{autonomy} + \beta_4 \text{competence} + \beta_5 \text{relatedness} + \beta_6 \text{loneliness} + \beta_7 \text{stress} + \beta_8 \text{god\_presence} + \beta_9 \text{ceremonies} + \beta_{10} \text{children} + \beta_{11} \text{flow} + \varepsilon$$

where:

Dependent variable *swb* is subjective satisfaction with life on a scale between 1 and 3 (1 - less satisfied/ 2- satisfied/3 - very satisfied). We obtained this variable by rescaling satisfaction with life from the survey where it was measured on a scale between 0-10.

Variable *age* is respondent's *age* and variable *health* is respondent's subjective evaluation of his health condition (1 – very good/ 2 – good/ 3 – satisfactory/ 4 – bad/ 5- very bad) from our survey.

Variables *god\_presence* and *ceremonies* measure religious aspects of monastic life. Variable *god\_presence* is designed to measure internal religiosity. It is respondent's degree of agreement to a statement "I feel the presence of God in my life." on a scale from 1 (totally disagree) to 4 (totally agree). Variable *ceremonies* measures external religiosity and it is respondent's degree of agreement to a statement "Attending religious ceremonies is very important to me." on the same scale.

Variables *autonomy*, *competence* and *relatedness* are based on self-determination theory. Variable *autonomy* is a degree of agreement to a statement "How my life goes, depends primarily on me." on a scale from 1 (totally disagree) to 4 (totally agree) and it represents the degree of fulfillment of need for autonomy. Variable *competence* indicates degree of agreement to a statement "I am expert in what I am doing." on the same scale and reflects the degree of fulfillment of need for competence. Variable *relatedness* indicates degree of agreement to a statement "In our monastery we are one big family." again on the same scale. This variable represents the degree of fulfillment of need for relatedness. Effect of these three variables on life satisfaction is expected to be positive.

Variable *loneliness* measures the degree of agreement to a statement "I sometimes feel lonely" again on a scale from 1 (totally disagree) to 4 (totally agree). We include this variable

into the model to measure the absence of correspondence of sentiments with others, as understood by Adam Smith. We assume that loneliness means lack of interaction with others and few opportunities to experience correspondence of sentiments with others. Therefore, this variable can be used to measure its absence. We expect the negative effect of this variable on life satisfaction.

Variable *stress* is a degree of agreement to a statement “I am confronted with a lot of stress” on a scale from 1 (totally disagree) to 4 (totally agree). We expect negative effect of stress on happiness. Variable *children* indicates degree of agreement to a statement “I feel regrets that I couldn’t marry, have children and have my own family.” on the same scale. Absence of marriage and family life together with celibacy is a very important characteristic of monastic life and therefore it is included into the model. We expect negative effect of this variable on life satisfaction.

Variable *flow* measures the respondent’s answer to question “How often in last 4 weeks have you worked on something challenging?” on a scale from 1 (not at all) to 5 (very often). This variable measures the presence of flow experience and it is expected to influence life satisfaction positively.

Table 3 presents the odds ratios for ordered logit estimation from statistical software Stata. As far as handling of missing data is concerned, we included into analysis only the complete cases, i.e. those observations which do not suffer from any missing observations in any of the variables.

Ordered logistic regression				Number of obs = 126		
Log likelihood = -92.307				LR chi2(11)	=	48.41
				Prob > chi2	=	0.0000
				Pseudo R2	=	0.2078
Swb	Odds ratio	Std. Err.	Z	p value P> z	[95% Conf. Interval]	
age	1.031	0.148	2.13	0.033	1.002	1.060
health	0.611	0.143	-2.10	0.036	0.386	0.968
autonomy	1.733	0.410	2.32	0.020	1.090	2.756
competence	1.622	0.398	1.97	0.048	1.003	2.625
relatedness	0.645	0.162	-1.74	0.081	0.394	1.056
loneliness	0.637	0.143	-2.01	0.044	0.411	0.988
stress	0.511	0.137	-2.50	0.012	0.302	0.865
god_presence	1.291	0.338	0.98	0.328	0.773	2.155
ceremonies	1.891	0.531	2.27	0.023	1.091	3.278
children	1.223	0.352	0.70	0.484	0.696	2.151
flow	1.225	0.235	1.06	0.290	0.841	1.784
/cut1	0.956	1.839		-2.648	-2.648	4.56
/cut2	4.092	1.884		0.399	0.399	7.78

Regression output shows that on 5% significance level there are 7 significant variables: *age*, *health*, *autonomy*, *competence*, *loneliness*, *stress* and *ceremonies*. Variables *relatedness*, *god\_presence*, *children* and *flow* are insignificant.

Our estimation shows that respondent's age has a positive effect on life satisfaction. An increase in age by one year would increase probability of higher satisfaction with life by 3 %, all other factors being equal. This also confirms the result about positive relationship between age and life satisfaction shown in figure 1. Health has a positive effect on satisfaction with life. One-unit deterioration in respondent's evaluation of his health would mean that the probability of higher satisfaction with life would decline by almost 39 %. Our regression reveals that variables autonomy and competence have very strong impact on life satisfaction. An increase in degree of agreement on a scale between 1 and 4 by one unit would increase probability of higher life satisfaction by 73 and 62 % respectively. This confirms the self-determination theory (SDT) which claims that these needs are fundamental for life satisfaction and psychological growth. However, the effect of third need according to SDT (*relatedness*) is not significant in our model. On the other hand, variable loneliness that measures absence of attachment to others and social relationships is significant and one-unit increase in the degree of agreement in the case of this variable would lead to decrease in the probability of higher satisfaction with life by 37 %. The effect of absence of social relations is therefore negatively associated with individual well-being. Variable *stress* also has a very negative effect on happiness; one unit increase in the presence of stress in life of nuns would decrease the probability of stating higher satisfaction with life by almost 50 %. Variable *god\_presence* which is measuring internal religiosity is insignificant, however, variable *ceremonies* representing external religiosity is significant with strongly positive effect on individual well-being (one unit increase in this case would increase the probability of higher life satisfaction by more than 89 %). This could mean that external religiosity and attending religious ceremonies is more important for Benedictines than internal religiosity. After all, nuns spend roughly 3 hours a day attending religious ceremonies and community prayers. Variable *children* is insignificant, suggesting that absence of marriage and family life is not important for their life satisfaction. Similar result was achieved in case of variable *flow*.

#### 4. Conclusion

This paper came up with empirical analysis of subjective well-being in female German Benedictine monasteries. The main findings can be summed up as follows:

- 1) Benedictine nuns in our survey indicated strong agreement with items relating to fulfillment of basic psychological needs, such as autonomy, competence, relatedness. Their answers suggested that their motivation to live monastic life, is rather intrinsic than extrinsic, and rather autonomous than controlled. Furthermore, nuns indicated that they feel a strong sense of meaning and belonging to their community, which provides them with opportunities to accept challenges and experience flow. Internal and external religiosity were evaluated as very important parts of their life. These aspects are considered to be important determinants of well-being, psychological health and motivation according to relevant psychological approaches.
- 2) Benedictine nuns indicate much higher satisfaction with life than GSOEP survey for general German population. Reported satisfaction with some other aspects of life, such as health, work, sleep or accommodation is also higher. Benedictines also reported lower frequency of negative emotions than GSOEP respondents and higher frequency of positive ones.
- 3) Our econometric analysis revealed that the most important determinants of life satisfaction of Benedictine nuns are their age, health, fulfillment of basic

psychological needs (need for autonomy and competence), absence of loneliness, absence of stress and presence of external religiosity.

### References

- Baumeister, L.F., Leary, M.R. (1995): Desire for Interpersonal Attachments as a Fundamental Human Motivation, *Psychological Bulletin*, Vol. 177, No.3 , 497-529
- Blanchflower, D.G., Oswald, A.J. (2004): Money, Sex and Happiness, *Scandinavian Journal of Economics*, vol. 106, No. 3, p. 393-415
- Csikszentmihalyi, M. (2002): *Flow*, Rider, New York, USA
- Czaja, R., Blair, J. (2005): *Designing Surveys. A Guide to Decisions and Procedures*, Sage Publications, Thousand Oaks, California, USA
- Deci, E.L., Ryan, R.M. (2000a): The “What” and “Why” of Goal Pursuits: Human needs and the Self-Determination of Behavior. *Psychological Inquiry*, Vol. 11, No. 4, pp. 227-268
- Deci, E.L., Ryan, R.M. (2000b): Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions, *Contemporary Education Psychology*, 25, 54-67
- Dillman, D. A. (2011). Part II of Making Part II of Making Surveys Work for You: Writing Questions., retrieved from:  
[http://www.ttac.org/resources/pdfs/061511\\_Making\\_Survey\\_Work\\_Netconference-handout.pdf](http://www.ttac.org/resources/pdfs/061511_Making_Survey_Work_Netconference-handout.pdf)
- Dweck, C. S. (1986). Motivational processes affecting learning. *American Psychologist*, 41, 1040–1048.
- Dobson R. (2002) “Want to live longer? Be a monk” *The Independent*, 16/06/2002 Available at: <http://www.independent.co.uk/news/science/want-to-live-longer-be-a-monk-645518.html>
- Frey, B.S., Stutzer, A. (2007): *Economics and Psychology. A promising new cross-disciplinary field*, MIT Press, Boston
- Frey, B.S. (2008) *Happiness. A Revolution in Economics* MIT Press: Cambridge
- Haradkiewicz, J.M. (1998): The Joint Effects of Target and Purpose Goals on Intrinsic Motivation: A Mediatonal Analysis. *Personality and Social Psychology Bulletin* July 1998 24: 675-689
- Haidt, J. (2006): *The Happiness Hypothesis. Finding Modern Truth in Ancient Wisdom*, Basic Books, New York, USA
- Inauen, E. and Frey, B.S. (2008) “Benediktinerabteien aus ökonomischer Sicht. Über die ausserordentliche Stabilität einer besonderen Institution” Institute for Empirical Research, University of Zurich working paper number 388
- Janotík, T. (2012): Benedictine Monasteries from the Point of View of Happiness Economics, *Economics Bulletin*, Vol. 32, No. 2, 1215-1225
- Maslow, A.H. (1943). A theory of human motivation. *Psychological Review*, 50(4), 370–96.
- Montero, B., White, M.D.(2007): *Economics and the Mind*. Routledge, London

- Nicholls, J.G. (1984): Achievement motivation. Conception of ability, subjective experience, task choice and performance. *Psychological review*, 91, pp. 203-214
- Nix, G.A., Ryan, R.M., Manly, J.B., Deci, E.L. (1999): Revitalization through Self-Regulation: The Effects of Autonomous and Controlled Motivation on Happiness and Vitality, *Journal in Experimental Social Psychology*, Vol. 35, No. 3, 266-284
- Rost, K., Inauen, E., Osterloh, M. & Frey, B.S. (2010) “Corporate Governance: What Can Stock Corporations Learn from Monasteries?” *Journal of Management History*, 16 (1), 90-115
- Sugden, R.: (2005) “Correspondence of Sentiments: An Explanation of the Pleasure of Social Interaction “ in: Bruni, L. and Porta, P.L. *Economics & Happiness: Framing the Analysis*, Oxford University Press, Oxford, 91-115
- Thomas, S.J. (1999): *Designing Surveys That Work! A Step-by-Step Guide*, Corwin Press, Inc., Thousand Oaks, California, USA
- Visser, C.F. (2010). Self-Determination Theory Meets Solution-Focused Change: Autonomy, Competence and Relatedness Support In Action, *InterAction - The Journal of Solution Focus in Organisations*, Volume 2, Number 1, May 2010 , pp. 7-26(20)
- Wagner, G. G., Frick, J. R., Schupp, J. (2007), [The German Socio-Economic Panel Study \(SOEP\) – Scope, Evolution and Enhancements](#), *Schmollers Jahrbuch* 127 (1), 139-169
- Wooldridge, J. M. (2009). *Introductory Econometrics* (2nd ed.). MIT Press, Cambridge, Massachusetts.

#### **Used software**

StataCorp. (2009). *Stata Statistical Software: Release 11*. College Station, TX: StataCorp LP.



# IES Working Paper Series

## 2013

1. Jiří Witzany: *A Note on the Vasicek's Model with the Logistic Distribution*
2. Tomáš Havránek, Ondřej Kokeš: *Income Elasticity of Gasoline Demand: A Meta-Analysis*
3. Jiří Witzany: *Estimating Default and Recovery Rate Correlations*
4. Petra Valíčková, Tomáš Havránek, Roman Horváth: *Financial Development and Economic Growth: A Meta-Analysis*
5. Jan Soudek, Jiří Skuhrovec: *Public Procurement of Homogeneous Goods: the Czech Republic Case Study*
6. Martin Gregor: *Electoral competition for the 2+1 electoral rule and the close alternatives*
7. Aleš Čornanič, Jiří Novák: *Signaling by Underpricing the Initial Public Offerings of Primary Listings in an Emerging Market*
8. Adrian Babin: *Bank Efficiency during the Current Economic Crisis: An International Comparison*
9. Radovan Parrák: *The Economic Valuation of Variance Forecasts: An Artificial Option Market Approach*
10. Karel Janda, Eva Michalikova, Lucia Psenakova: *The Performance of Export Credit Agencies in Post-Communist Central European Countries*
11. Tomas Havranek, Roman Horvath, Zuzana Irsova, Marek Rusnak: *Cross-Country Heterogeneity in Intertemporal Substitution*
12. Michael Princ: *Multi-Level Analysis of Dynamic Portfolio Formations: Central European Countries*
13. Petr Jakubík, Tomáš Slačík: *How to Measure Financial (In)Stability in Emerging Europe*
14. Jan Babecký, Tomáš Havránek: *Structural Reforms and Growth in Transition: A Meta-Analysis*
15. Tomáš Havránek: *Publication Bias in Measuring Intertemporal Substitution*
16. Ladislav Křišťoufek, Karel Janda, David Zilberman: *Non-linear price transmission between biofuels, fuels and food commodities*
17. Lubomír Cingl, Jana Cahlíková: *Risk Preferences under Acute Stress*
18. Jakub Matějů: *Explaining the Strength and the Efficiency of Monetary Policy Transmission: A Panel of Impulse Responses from a Time-Varying Parameter Model*
19. Jozef Baruník, Jiří Kukačka: *Realizing stock market crashes: stochastic cusp catastrophe model of returns under the time-varying volatility*
20. Tomáš Janotík: *Empirical Analysis of Life Satisfaction in German Benedictine Monasteries*

All papers can be downloaded at: <http://ies.fsv.cuni.cz>

