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What factors influence the profitability of tourism firms:

An analysis for Austrian hotels and restaurants

Structure of the presentation

- » Problem statement, relevance & aim of the study
- » Theoretical framework & research questions
- » Research design, data & methodology
- » Variables of the study
- » Results
- » Summary and discussion of the results

Problem statement, relevance & aim of the study

Table 1. Bankruptcy rates of the tourism industry in Austria between 2008 and 2020

Year	Bankruptcies per 1,000 companies in general	Bankruptcies per 1,000 companies hotels & restaurants
2008	22.1	17.7
2009	18.8	19.5
2010	18.1	22.8
2011	16.8	21.3
2012	17.0	17.3
2013	15.3	16.4
2014	15.2	18.3
2015	11.3	18.4
2016	11.5	17.3
2017	11.1	18.3
2018	10.9	16.1
2019	10.9	16.7
2020	6.5	9.4

- » Tourism industry is a high-risk industry (Zhai et al., 2015)
- » This is visible by the insolvency statistics for Austria, where the bankruptcy rates for hotels and restaurants is higher than the general bankruptcy rates for all sectors in most years of the observation period (see table 1)
- » A **decline in performance** (profitability) without countermeasures can lead to bankruptcy (Habib et al., 2018)
- » Studies show that company success depends more on **strategic decisions** at **firm-specific level** than on industry conditions (Parsa et al., 2005; Spanos et al., 2004), which supports the theoretical assumptions of resource-based view (RBV)
- » Aim of the study to test the influence of different factors based on several theoretical paradigms (RBV, NBV, DBV) on the profitability of hotels and restaurants

Theoretical framework & research questions

- » Performance of companies in the tourism industry not only depends on the ability to use **internal resources** efficiently (Alberca & Parte, 2018), but also on **external factors** outside of the company (Duncan et al., 1998; Enright & Newton, 2004; Porter, 1999)
- » The **resource-based view** (RBV) is suitable to explain performance differences between companies, because some companies operate more efficiently than others (Peteraf, 1996) and are therefore more successful (Armstrong & Shimizu, 2007) / RBV is **not** suitable as **sole theory base**, as it is limited at the firm-level (Hong, 2008, 39) and should therefore be combined with another theoretical base (Arend & Lévesque, 2010; Lockett et al., 2009; Priem & Butler, 2011)
- » Network-based view (NBV) seems relevant as companies influence and are influenced by environment they operate in (Thorelli, 1986); this is especially relevant for the tourism businesses as they are **embedded** in **regions** or **destinations** and thus operate in highly dynamic and challenging environment that can increase or improve competitive advantage (Duncan et al., 1998; Porter, 1999); **Competitiveness of the destination** is one the **most important success factors** for tourism businesses (Enright & Newton, 2004)
- » Research question:
 - What (risk) factors influence the profitability of hotel and restaurant firms in Austria?

Research design, data & methodology

- » Data base includes figures from **financial statements** of Austrian companies in the tourism industry
- » In the classification by industry the classification criterion of **ÖNACE2008** was used – here the focus was driven on the sub-codes I.55.1 and I.56.1

Table 2. Structure of industry code I (Accommodation and food service activities)

I 55 – Accommodation	I 56 - Food and beverage service activities
I 55.1 – Hotels and similar accommodation	I 56.1 – Restaurants and mobile food service activities
I 55.2 – Holiday and other short-stay accommodation	I 56.2 - Event catering and other food service activities
I 55.3 – Camping grounds, recreational vehicle parks and trailer parks	I 56.3 – Beverage serving activities
I 55.9 – Other accommodation	

- » Data collected was supplemented with data from **other sources** (urban-rural-typology from Statistics Austria; economic indicators of Statistics Austria, etc.)
- » After the reduction process (eliminating companies from the database for which no data was available) **776 observations** (466 Austrian hotel and 310 Austrian restaurant firms) for the period between 2005 and 2015 were finally obtained
- » Application of **quantile regression analysis**: because of non-normal error terms and robustness in estimation concerning outliers (Buchinsky, 2018; Cade & Noon, 2003); powerful robust alternative to least-square procedures when assumptions underlying least-square estimation are questionable (Taylor & Houthakker, 2010, 60)

Variables of the study

Table 3. Classification of the variables of the studies according to risk type

In order to be able to systematize the variables, the concept of [Everett & Watson](#) (1998) was used in this study, in which risks were divided into a.) systematic and unsystematic and b.) exogenous and endogenous risks. Thus, following [Tsai et al.](#) (2009), critical issues of tourism and hotel competitiveness such as competitive forces of the industry, firm-specific level and destination level can also be captured.

Unsystematic		Systematic
Firm	Industry	Economy
<ul style="list-style-type: none"> • Independent variables describing the firm (firm-specific level) <ul style="list-style-type: none"> ○ Financial statement ratios ○ Size & age (logarithm) ○ ONEG ○ Diversification ○ Affiliation ○ Legal form • Independent variables on the location of the enterprise (destination level) <ul style="list-style-type: none"> ○ Urban-rural typology ○ Criterion tourism destination ○ Permanent settle area per district 	<ul style="list-style-type: none"> • Independent variables describing the industry (industry forces) <ul style="list-style-type: none"> ○ Main industry ○ Industry-related profitability • Independent variables describing the resilience level <ul style="list-style-type: none"> ○ Change in tourism intensity per inhabitants ○ Average length of stay ○ Insolvency rate of the industry 	<ul style="list-style-type: none"> • Independent variables describing the national economy (demand & supply level) <ul style="list-style-type: none"> ○ Inflation rate ○ Change in gross domestic product ○ Unemployment rate ○ Gross investment in fixed assets ○ Gross regional product
Endogenous		Exogenous

Results

Quantile regression analyses

Table 4. Results from quantile regression analyses: All firms

Dependent variable: EBIT_TA (proxy for profitability); S.E. = standard error
Significance: *) 10 percent level; **) 5 percent level; ***) 1 percent level.
(n = 776 observations) / 50 % quantile

Variable	Model I		Model II		Model III		Model IV		Model V	
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
AGE	0,121***	0,035	0,124***	0,035	0,136***	0,036	0,116***	0,035	0,132***	0,037
AGE ²	-0,043***	0,014	-0,043***	0,014	-0,049***	0,014	-0,042***	0,014	-0,046***	0,014
SIZE	0,208***	0,053	0,236***	0,053	0,213***	0,054	0,277***	0,055	0,216***	0,057
SIZE ²	-0,015***	0,004	-0,017***	0,004	-0,015***	0,004	-0,020***	0,004	-0,016***	0,005
CA_TA	0,054***	0,013	0,063***	0,013	0,064***	0,014	0,060***	0,014	0,065***	0,015
TD_TA	-0,019***	0,002	-0,017***	0,002	-0,018***	0,002	-0,016***	0,002	-0,017***	0,002
ONEG	-0,066***	0,010	-0,066***	0,011	-0,067***	0,011	-0,062***	0,011	-0,068***	0,011
EFFCOD_REL_NO	-0,024**	0,012	-0,020*	0,012	-0,019	0,012	-0,024**	0,012	-0,020	0,012
EFFCOD_UNRELI_NO	-0,006	0,008	-0,006	0,009	-0,008	0,009	-0,007	0,009	-0,008	0,009
EFFCOD_UNRELI_NO	0,023***	0,008	0,018**	0,008	0,019**	0,008	0,021**	0,008	0,020**	0,008
IND_HOSP	-0,028***	0,009	-0,033***	0,010	-0,033***	0,010	-0,037***	0,010	-0,033***	0,010
URB_RUR_EFFECT_I			0,005	0,007	0,005	0,008	-0,016*	0,010	-0,004	0,009
URB_RUR_EFFECT_II			0,004	0,009	0,001	0,010	0,011	0,010	0,008	0,010
URB_DUMMYxTOURISM			0,029	0,023	0,019	0,025	-0,005	0,026	0,011	0,026
RUR_DUMMYxTOURISM			0,031*	0,017	0,018	0,018	0,001	0,019	0,019	0,019
ALS					0,009	0,007	0,008	0,007	0,009	0,008
TOURISM_INSOLV					-0,139	0,199	0,065	0,201	-0,063	0,208
FIXED_INV_LAGO							0,009	0,025	-0,006	0,026
SIZExGDP_CHG_LAGO							0,493**	0,207	0,590***	0,217
BED_OCCUP							0,172***	0,055		
CHG_ARRxBED_OCC									0,555*	0,320
CONSTANT	-0,745***	0,166	-0,855***	0,166	-0,785***	0,170	-1,086***	0,180	-0,827***	0,180
Pseudo-R ²	0,088		0,091		0,092		0,099		0,096	
Mean Absolute Error	0,116		0,116		0,116		0,115		0,115	7

Results

Quantile regression analyses

Table 5. Results from quantile regression analyses: Hotels

Dependent variable: EBIT_TA (proxy for profitability); S.E. = standard error
Significance: *) 10 percent level; **) 5 percent level; ***) 1 percent level.
(n = 466 observations) / 50 % quantile

Variable	Model I		Model II		Model III		Model IV		Model V	
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
AGE	0,094***	0,035	0,143***	0,036	0,158***	0,035	0,148***	0,034	0,131***	0,035
AGE ²	-0,030**	0,014	-0,045***	0,014	-0,051***	0,014	-0,050***	0,013	-0,043***	0,014
SIZE	0,431***	0,089	0,461***	0,091	0,554***	0,087	0,609***	0,089	0,567***	0,090
SIZE ²	-0,032***	0,007	-0,034***	0,007	-0,041***	0,007	-0,045***	0,007	-0,042***	0,007
CA_TA	0,036***	0,013	0,047***	0,014	0,067***	0,015	0,061***	0,015	0,065***	0,015
TD_TA	-0,014*	0,008	-0,015*	0,008	-0,003	0,008	-0,007	0,008	-0,008	0,008
ONEG	-0,042***	0,013	-0,041***	0,013	-0,042***	0,013	-0,037***	0,013	-0,035***	0,013
EFFCOD_REL_NO	0,141***	0,042	0,175***	0,043	0,162***	0,042	0,135***	0,041	0,135***	0,043
EFFCOD_UNRELI_NO	-0,055***	0,016	-0,066***	0,016	-0,068***	0,015	-0,052***	0,015	-0,051***	0,016
EFFCOD_UNRELI_NO	-0,030**	0,015	-0,046***	0,016	-0,042***	0,016	-0,035**	0,015	-0,034**	0,016
URB_RUR_EFFECT_I			0,003	0,011	0,009	0,011	0,004	0,013	0,009	0,012
URB_RUR_EFFECT_II			-0,004	0,018	-0,015	0,018	-0,011	0,018	-0,013	0,018
URB_DUMMYxTOURISM			0,031	0,030	0,031	0,029	0,021	0,030	0,026	0,030
RUR_DUMMYxTOURISM			0,024	0,016	0,014	0,016	0,003	0,017	0,009	0,017
ALS					0,018**	0,007	0,018**	0,007	0,015*	0,008
TOURISM_INSOLV					-0,179	0,173	0,110	0,172	0,004	0,177
FIXED_INV_LAG0							0,050**	0,024	0,038	0,025
SIZExGDP_CHG_LAG0							0,672**	0,319	0,825**	0,331
BED_OCCUP							0,110**	0,054		
CHG_ARRxBED_OCC									0,164	0,308
CONSTANT	-1,399***	0,287	-1,565***	0,293	-1,957***	0,279	-2,230***	0,293	-2,049***	0,291
Pseudo-R ²	0,086		0,092		0,096		0,105		0,101	
Mean Absolute Error	0,084		0,083		0,083		0,082		0,082	

Results

Quantile regression analyses

Dependent variable: EBIT_TA (proxy for profitability); S.E. = standard error
 Significance: *) 10 percent level; **) 5 percent level; ***) 1 percent level.
 (n = 310 observations) / 50 % quantile

Table 6. Results from quantile regression analyses: Restaurants

Variable	Model I		Model II		Model III		Model IV		Model V	
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
AGE	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
AGE ²										
SIZE	0,027*	0,014	0,025*	0,013	0,018	0,013	0,024*	0,014	0,022	0,014
SIZE ²										
CA_TA	0,109***	0,033	0,087***	0,034	0,070**	0,035	0,061*	0,033	0,067**	0,033
TD_TA	-0,015***	0,003	-0,018***	0,003	-0,021***	0,003	-0,015***	0,003	-0,014***	0,003
ONEG	-0,097***	0,028	-0,128***	0,028	-0,134***	0,027	-0,154***	0,026	-0,132***	0,026
EFFCOD_REL_NO	0,000	0,021	-0,009	0,021	-0,011	0,021	-0,025	0,020	-0,009	0,020
EFFCOD_UNRELI_NO	-0,060**	0,027	-0,037	0,028	-0,047*	0,028	-0,040	0,027	-0,052*	0,026
EFFCOD_UNRELI_NO	0,043**	0,021	0,036*	0,021	0,035*	0,021	0,040*	0,020	0,035*	0,020
URB_RUR_EFFECT_I			0,010	0,017	-0,013	0,020	-0,055**	0,023	-0,017	0,020
URB_RUR_EFFECT_II			0,032*	0,019	0,053***	0,020	0,063***	0,020	0,052***	0,019
URB_DUMMYxTOURISM										
RUR_DUMMYxTOURISM			0,025	0,078	0,048	0,080	-0,087	0,081	0,047	0,077
ALS					0,002	0,021	0,023	0,022	0,004	0,021
TOURISM_INSOLV					-0,950	0,695	-0,483	0,714	-0,718	0,681
FIXED_INV_LAG1							0,022	0,058	0,032	0,059
SIZExGDP_CHG_LAGO							1,089**	0,422	0,953**	0,421
BED_OCCUP							0,438***	0,150		
CHG_ARRxBED_OCC									0,669	0,784
CONSTANT	-0,161	0,111	-0,151	0,108	0,052	0,144	-0,364	0,180	-0,103**	0,142
Pseudo-R ²	0,125		0,132		0,138		0,153		0,145	
Mean Absolute Error	0,159		0,158		0,157		0,154		0,156	

Summary and discussion of the results (1/3)

- » Variables from **firm-specific** level show **highest significant** influence on firm profitability
- » For **hotels** a **non-linear behaviour in AGE and SIZE** is given; profitability increases with size (Fernández-Gàmez & Becerra, 2015) and then decreases at a certain threshold; this can be explained by **scale inefficiencies** as it is more difficult for managers to manage bigger firms efficiently (Glancey, 1998; Serrasqueiro & Nunes, 2010; Yazdanfar & Öhman, 2020)
- » For both types of firms **higher CA/TA** (current assets/total assets) and **lower over-indebtedness** (ONEG= negative book value) are positively affecting profitability
- » The **type of diversification** influences the profitability of tourism businesses
 - Hotels with **related diversification** are **more profitable** than hotels with no diversification
 - **Unrelated diversification** (other industry than tourism) for restaurants leads to **higher profitability** compared to no diversification
 - » Exploitation of **economies of scope** so that existing assets can be used **efficiently** leading to **improved profitability** (Agnihotri, 2014; Chen et al., 2014)
 - All types of **unrelated diversification** for hotels lead to **lower profitability** compared to no diversification
 - » Diversification creates additional costs and constraints to business (El Mehdi & Seboui, 2011; Everett & Watson, 1998; Situm, 2019)

Summary and discussion of the results (2/3)

- » The **assumptions of RBV** fit quite well for **hotels**, but only partially for restaurant firms
- » Influence of the **destination-level** (based on urban-rural classification) is only significant for **restaurant** firms; restaurant firms in **cities in suburbs** (URBAN_2) are **more profitable** than ones located in **sparsely populated locations** (RURAL); **location** is an **important strategic factor** generally (Vivel-Bùa & Lado-Sestayo, 2021) and especially for tourism businesses (Enright & Newton, 2004)
- » The classification of a location as **tourism region** (TOURISM) is **not** having an impact on the profitability of tourism businesses
- » The **assumptions of NBV** fit quite well for **restaurants**, but not for hotel firms
- » The **average length of stay** (ALS) is having a **positive significant** effect on the profitability of hotel firm (**no** relevance for restaurant firms); the longer guests stay, the higher the profitability; ALS suitable to capture demands for tourist services (Candela & Figini, 2012, 38, 111)

Summary and discussion of the results (3/3)

- » For both types of businesses the variable SIZExGDP_CHANGE_LAG0 showed a **positive significant** influence on the profitability; a **positive change in GDP** of Austria is especially helpful for **bigger companies** to increase profitability
- » Economic development determines the expansion of tourism activity ([Pulido-Fernández & Cárdenas-García, 2021](#))
- » Also for both types of businesses the variable BED_OCCUP showed a **positive significant** influence on the profitability; the higher the bed occupancy is, the higher the profitability
- » Implications:
 - Managers from both types of businesses should therefore **build up resources, keep debt at an acceptable level** and consider a **strategy for diversification** in order to increase profitability
 - From regional perspective, decisionmakers should improve the offer in tourism destinations to increase average **length of stay** (ALS) and the **utilisation of bed capacities** (BED_OCCUP)
 - **RBV** and **NBV** are only partially suitable as theoretical bases

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