

Innovation Opportunities for the Tourism Industry enhanced by Social Media

by

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Affidavit

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Abstract

The emergence of Information- and Communication Technologies (ICT) has triggered many forms of interactions, networks and practices that were not possible before. The rise so called of ‘user-driven innovations’ reflects a high number of creative consumers working independently and sharing their practices within peer-to-peer networks. In order to enhance profitability nowadays, firms are forced to integrate consumers’ creativity into their business models. Therefore, companies are required to quickly adapt their strategies to this new phenomenon. Tourism-related firms have started to rely on consumers for innovation processes facilitated by ICT. However, firms often lack approaches to tap into ideas and inspiration from consumers. Furthermore, there is little research on how to identify consumers’ knowledge. Therefore, this dissertation incorporates three elements; the integrated use of social media spaces, creative consumers and the development of innovative marketing strategies for the tourism industry. The main aim of this dissertation is to provide an understanding of the usability of social media spaces for tourism marketers, but also to understand how tourism marketers can benefit from it for innovation of their existing products and/or services. Through the use of a three-paper design, this dissertation takes an interdisciplinary approach with multiple methods.

The first study, *‘Destination Brand Personality in Social Media Spaces: Opportunities to Innovate the Tourist Experience’*, provides marketers with an understanding of how to enhance their absorptive capacity to identify, assimilate and translate the knowledge from social media spaces into their innovation strategies. Moreover, positioning a destination around the feelings it generates, and its ability to offer visitors unique experiences, relationships, meanings and self-expressions is a strong competitive advantage nowadays. Hence, this study analyzes the concepts of destination brand personality and emotions reflected in TripAdvisor reviews among different service settings (restaurants, accommodations, and sights). Through a web mining technique (dictionary-approach), the study reveals how tourists connect themselves in an emotional manner to a city. Furthermore, significant differences among the different touristic settings and their impact on tourists’ evaluation behavior are detected. The results help practitioners to identify new ways of marketing their products as well as integrating elements that could enhance the experience.

The second study, *‘The Role of Creativity in Mobile User Driven Innovative Travel Communities’*, integrates the topic of user-driven innovation and mobile computing platforms in tourism. Through a web-based survey among members of a mobile computing travel platform, consumers’ creativity is assessed and analyzed as an effect on user-driven innovative outcomes. The exploratory analysis assisted by PLS-

SEM and the IC-based approach identifies the dominant influence of consumers' innate innovativeness on concepts such as domain-specific innovativeness, supporting platform conditions and creative-self efficacy. The complexity of context affecting online creativity demonstrates the need to continue analyzing this topic. Overall, the study shows that practitioners can, by developing good functioning mobile computing platforms, attract highly creative consumers, and thereby enhance the success of their platform.

The third study, *'Open Innovation Platforms in Tourism: A Case Study of a Destination Management Organization'*, focuses on the advantage for DMOs to integrate the open innovation paradigm facilitated by social media spaces. The analyses are based upon output from an idea contest held by the Vienna Tourist Board. Quantitative content analyses are performed to measure the quality of the 489 ideas sent in and interaction effects of the idea contest design elements. The majority of ideas were evaluated as an average idea quality with a few outstanding ideas. The study identifies significant differences between specific target groups based on 'age' and their ability to contribute to the idea contest. Furthermore, the study provides recommendations for design elements that can enhance the quality of submissions, and subsequently the success of open innovation initiatives in tourism.

Overall, this dissertation demonstrates how social media can offer a plethora of possibilities to receive valuable information about consumers and their experiences, directly steer consumers' experience by effective mobile computing platform design, and receive a high number of quality ideas as effective input for innovative strategies for product development and marketing. This dissertation provides an understanding of the usability of social media spaces for marketers. Furthermore, a solid understanding of the benefits of marketers innovating their existing products and/or services based on user-driven recommendations are provided. Generally, the dissertation demonstrates how the dynamics of the internet facilitate marketers to exploit their resources outside their company borders in order to secure stable growth. Social media can, thus, create fruitful opportunities for practitioners. For research, this dissertation integrates theories from the field of marketing and innovation. This allows a comprehensive understanding of consumers' behavior in tourism and their interaction with social media. The theories illustrate their applicability to the field of tourism and support the development of theories explaining marketing practices facilitated by consumers in the field of tourism.

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List of Abbreviations

Introduction of PhD Dissertation framework

DMO	Destination Management Organization
ICT	Information- and Communication Technologies
P2P	Peer-to-Peer Networks
UGC	User-Generation Content

Study 1

AC	Absorptive Capacity
BPS	Brand Personality Scale
CBBE	Customer-Based Brand Equity
DES	Destination Emotional Scale
ICT	Information- and Communication Technologies
DMO	Destination Management Organization
TDBP	Tourism Destination Brand Personality
UGC	User-Generation Content

Study 2

AGFI	Adjusted Goodness-of-Fit-Index
AVE	Average Variance Extracted
CA	Cronbach's Alpha
CFI	Comparative Fix Index
CB-SEM	Covariance-based Structural Equation Modelling
CI	Consumer Innovativeness
CPI	Creative Product Inventory
CR	Composite Reliability
CSE	Creative Self-Efficacy
DAG	Dyadic Acyclic Graph
DF	Degree of Freedom
DMO	Destination Management Organization
DSI	Domain-Specific Innovativeness
FIML	Full Information Maximum Likelihood Estimator
GFI	Goodness-of-Fit Index
GLS	Generalized Least Squares
IC	Inferred Causation- theory
ICT	Information- and Communication Technologies
M	Mean
MAR	Missing At Random
MCAR	Missing Completely At Random
ML	Maximum Likelihood

NFI	Non-Normed Fit Index
OC	Online Creativity
P	Passion
P2P	Peer-to-Peer Networks
PR	Parsimony Ratio
PLS-SEM	Partial Least Square Structural Equation Modelling
RMSEA	Root Mean Square Error of Approximation
SEM	Structural Equation Modeling
SPC	Supporting Platform Conditions
SSE	Sum of Squares Error
SSR	Sum of Squares due to Regression
St.D	Standard Deviation
SST	Total Sums of Squares
TI	Task Involvement
TLI	Tucker-Lewis Index
ULS	Unweighted Least Squares
VIF	Variance Inflation Factor
WLS	Weighted Least Square
WLSM	Robust Weighted Least Squares
WRMR	Weighted Root Mean Square Residual

Study 3

ANOVA	Analysis of Variance
CAT	Consensual Assessment Technique
CSS	Creative Semantic Scale
CSDS	Creative Solution Diagnosis Scale
DF	Degree of Freedom
DMO	Destination Management Organization
EFA	Exploratory Factor Analysis
ICT	Information and Communication Technologies
LSD	Least Significant Differences
M	Mean
MDS	Multi-Dimensional Scaling
N	Numbers included in the sample
OI	Open Innovation
SPSS	Statistical Package for the Social Sciences
St.D	Standard Deviation
VTB	Vienna Tourist Board

1. Introduction PhD Dissertation Framework

1.1. Research Problem

The emergence of Information- and Communication Technologies (ICT) has triggered many forms of interactions, networks and practices that were not possible before. Pitt and Berthon (2011) state that, worldwide, people bring together a variety of information technologies, devices, services, applications, networks and information to create personal information systems. Bruns (2007) refers to a new generation of people; Generation C, where C represents content. Due to the various forms of ICT and easier interfaces, consumers can create, share and upload content among their networks (Fisher & Smith, 2001; Labrecque, et al., 2013). Moreover, the two-way means of communication due to ICT allows consumers to be well informed and networked (Kozinets, Hemetsberger, & Schau, 2008; Cova, Dalli, & Zwick, 2011). Topics such as 'make-it-yourself' and 'sell-it-yourself' ventures are closely interlinked with Generation C (Cova & Dalli, 2008). This proactive consumer behavior has also been noted in branding literature, where consumers serve and disseminate branded content (Gensler, Völckner, Liu-Thompkins, & Wiertz, 2013).

Subsequently, the new environment enabled by ICT allows for i) consumer engagement, ii) creative content generated by consumers, iii) new structure of consumer networks and, iv) consumer social roles and interactions (Hennig-Thurau et al., 2010; Kozinets, Hemetsberger, & Schau, 2008; Seraj, 2012; Von Hippel, Ogawa, & de Jong, 2011). Edvardsson and Tronvoll (2013) stress the importance of the social forces enabled by ICT. Kozinets et al. (2008) refer to a qualitative innovative-oriented shift in consumers' networks using concepts such as collective intelligence and wisdom of the crowds. The modern business environment provides unprecedented opportunities for consumers to be innovative (Berthon, Pitt, Plangger, & Shapiro, 2012; Berthon, Pitt, McCarthy, & Kates, 2007).

Accordingly, due to the rapid dissemination and communication in consumers' networks, an increase of customer innovations has been noted (Hanna, Rohm, & Crittenden, 2011; Kozinets, Hemetsberger, & Schau, 2008). Consumers' innovations are hereby facilitated in a horizontal distributed innovation network (Von Hippel, 2005; Von Hippel, Ogawa, & de Jong, 2011). Creative consumers who are active through the diverse means of ICT are perceived as underground innovators working with all types of offerings without the permission of the relevant firm, and interacting with their peers (Mollick, 2005;

Berthon, Pitt, Plangger, & Shapiro, 2012). Von Hippel (2005) refers to innovation being democratized by consumers; explicitly he refers to user-driven innovation.

The vast social affiliation available through social networks and the constant sharing among consumers affects the marketplace in various ways (Van den Bulte & Wuyts, 2007). This social media phenomenon significantly impacts a firm's reputation, sales, and even firms' survival (Pitt & Berthon, 2011). Proactive consumers and their creative practices are an intriguing paradox for many companies. Businesses can use consumers as a goldmine of ideas and business projects, but they also represent an uncertainty for future revenues (Walls, Okumus, Wang, & Kwun; Berthon, Pitt, Plangger, & Shapiro, 2012). Many executives often ignore this form of social media because they do not understand what it is, the various forms it can take, and how to engage with it and learn from it (Pitt & Berthon, 2011). Marketing theories have been developed under the notion of power, such as the power of marketing and satisfying the consumer (Denegri-Knott, Zwick, & Schroeder, 2006; Fisher & Smith, 2001). However, companies are losing their control of different facets (i.e., online image) and are starting to compete with their own consumers (Fisher & Smith, 2001; Berthon, Pitt, McCarthy, & Kates, 2007). Therefore, managers must become aware of their creative consumers, analyze their impact and formulate appropriate responses (Berthon, Pitt, McCarthy, & Kates, 2007; Kozinets, Hemetsberger, & Schau, 2008). Creative consumers can be approached by firms through their ability to scan, track, and control consumer-produced innovations (Hjalager & Nordin, 2011). Conclusively, the question for marketers is how to best access the wealth of knowledge created by consumers through the diverse forms of ICT (Sloane, 2011b). As Sloane (2011a, p.4) states, *"if done right, it taps into the knowledge, creativity, the insights and the world around you"*.

This social phenomenon is an important topic, particularly in the field of tourism. Tourists are considered to be full-fledged actors who build their own experience packages in their network (Aldebert, Dang, & Longhi, 2011; Sundbo, Sørensen, & Fuglsang, 2010). Moreover, the intense development of smartphone usage while travelling significantly strengthens consumer power (Tussyadiah, 2013; Kozinets, Hemetsberger, & Schau, 2008). Tourists interact with fellow actors providing their experiences, evaluations, suggestions and knowledge that go beyond that of most firms (Chae, 2012; Van Heck & Vervest, 2007). The use of ICT and mobile devices mediates and shapes travelers' experiences, leading to innovative ways of travelling (Wang, Park, & Fesenmaier, 2012). The diverse forms of ICT, social media spaces and mobile devices are an integrated part of the tourism sphere (Tussyadiah & Zach, 2012).

The ideas from users, combined with tourism experiences, are crucial forms of input for firms' innovation strategies (Sundbo, Sørensen, & Fuglsang, 2010). Tourism firms need to consider consumers as a goldmine of information, which will lead to innovation on the level of product, process, information and the overall business model (Hjalager & Nordin, 2011). Yu (2013) argues that a firm can increase its innovative knowledge creation by i) cooperative relationships, ii) discovering potentially useful elements, and iii) effectively combining different knowledge elements. In fact, firms with a high level of absorptive capability have more possible innovative outcomes (Yu, 2013). According to Gebauer et al. (2012), the application of external knowledge for commercial purposes can lead to product, service and strategic innovation.

Currently, tourism-related firms increasingly rely on consumers for innovation processes facilitated by ICT (Gustafsson, Kristensson, & Witell, 2012). However, Hjalager and Nordin (2011) argue that the involvement of consumers as informants for innovation often seems to be coincidental and unsystematic because organizations lack approaches to tap ideas and inspiration from consumers. Therefore, tourism firms frequently neglect or mismanage the opportunities presented by creative consumers in social media spaces. According to Kietzmann et al. (2011), firms do not know how to harvest innovations from social media. Tussyadiah and Zach (2013) state that if tourism firms manage to master the realms of social media, they will be able to transfer relevant information applicable for their innovation strategies. Hence, firms should realize that social media spaces can serve as an interactive platform that allows for forms of crowdsourcing, subsequently supporting firms to extract valuable information from tourists (Tussyadiah & Zach, 2013).

However, on the one hand, there seems to be little or almost no evidence in research about user-driven innovations in tourism that is performed out of the control of firms. On the other hand, there is little research on how to identify and extract tourist knowledge for tourism innovation in social media spaces (Tussyadiah & Zach, 2013). Therefore, this dissertation aims to understand how tourism businesses can exploit social media spaces to enhance their innovation strategies. The next section will explain the main concepts used in this dissertation, the research design and the development of the three inter-related studies.

1.2. Main Concepts in Dissertation

Web 2.0. Since 2004, Web 2.0 has been described as the new way in which software developers as well as end-users utilize the World Wide Web. Kaplan and Haenlein (2011) describe it as a series of technological innovations in terms of both hardware and software that facilitate inexpensive content creation, interaction, and interoperability. Berthon et al. (2012) state that the Web 2.0 can be summarized as platforms where content and applications are continuously modified by all users in a participatory and collaborative way.

User-Generated Content (UGC). Consumers exploit the Web 2.0 platforms by using and creating content. The content that consumers create is also called 'User-Generated Content' (UGC). However, UGC requires to i) be publicly accessible, ii) show an amount of creative effort, and iii) be created outside professional routines and practices (Kaplan & Haenlein, 2011). UGC can be seen as the sum of all the ways in which consumers make use of the Web 2.0 (Berthon, Pitt, McCarthy, & Kates, 2007).

Social Media. Kaplan and Haenlein (2011) describe social media as a group of internet-based applications that builds on the ideological and technological foundations of Web 2.0 that allows the creation and exchange of UGC. Different available channels enable interaction between people and entities. Individuals maintain regular blogs, send out short messages, share pictures (i.e., via Flickr), share videos (i.e., via YouTube), and communicate with their social network (i.e., via Facebook). Web 2.0 technologies and many forms of social media spaces have triggered three main changes: i) a shift in activity location from the desktop to the Web, ii) a shift in locus of value production from the firm to the citizen, and iii) a shift in the locus of power from the firm to the individual and the collective (Berthon, Pitt, Plangger, & Shapiro, 2012). Conclusively, one can state that technology and the availability of social media spaces have transformed traditionally passive consumers into a major source of creative talent.

Mobile Computing Platforms. Nowadays the characteristics of the Web 2.0 and social media spaces are integrated into mobile devices. Smartphones (wireless telephones with special computer-enabled features), in particular, offer many applications for consumers to connect to the Web 2.0 (i.e., Weather Forecast, WhatsApp). In addition, consumers have the possibility to engage in portable communities, so-called mobile 2.0 platforms. The mobile 2.0 platform supports participatory architecture, which enables the interactive organization of content creation by users on the move (Richardson, Third, & MacColl, 2007).

Peer-to-Peer Networks (P2P). The emergence of smartphones also triggered a shift from place-based connectivity to person-to-person connectivity (Tussyadiah & Fesenmaier, 2008). Tiwana (2003) refers to Peer-to-Peer (P2P) networks. P2P communities are social aggregations that emerge from the Internet and interaction processes between members (Seraj, 2012). Each peer is connected directly to the Web 2.0 and interacts with other peers within diverse social media spaces (Tiwana, 2003). P2P networks are hereby growing in size, connectivity and quality (Liu-Thompkins & Rogerson, 2012). Tiwana (2003) argues that P2P networks facilitate the flow of peers' know-how and tacit expertise, which makes it almost inaccessible for marketers (Hanna, Rohm, & Crittenden, 2011). According to Berthon et al. (2008), this shift is supported by the following changes: i) from companies to consumers, ii) from individuals to communities, iii) from nodes to networks, iv) from publishing to participation, and v) from intrusion to invitation (Berthon, Pitt, Plangger, & Shapiro, 2012).

Creative Consumers. Different names have been attributed to consumers in an attempt to understand their active role, ranging from prosumers to consumer-actors to post-consumers (Cova, Dalli, & Zwick, 2011). As Cova et al. (2011) state, consumers are working consumers who enable new 'free' forms of labor through the Web 2.0. Kozinets et al. (2008) refer to consumers as innovative prosumers, multipliers and members of inno-tribes. Conclusively, these terms refer to creative, active, participatory online community members (Kozinets, Hemetsberger, & Schau, 2008). The activities of creative consumers in social media spaces can vary on a spectrum of creativity; beginning with informal discussions about products and services, to consumers creating structured reviews, then becoming involved in the promotion or demotion of brands through self-created advertising videos and lastly becoming involved in the modification of proprietary products and services, as well as the distribution of these innovations (Berthon, Pitt, McCarthy, & Kates, 2007; Mollick, 2005). Hemetsberger and Kozinets (2008) state that consumers are i) creative and innovative participants, ii) networked collaborators in a web of collective intelligence, and iii) partners for commercial endeavors. In Figure 1 the development of creativity enabled through Web 2.0 and social media spaces is illustrated (Kozinets, Hemetsberger, & Schau, 2008).

Innovation. Schumpeter (1934) highlights that the function of innovation is acting as something new carried into practice providing benefits to the firm. Schumpeter proposed five broad distinct types of innovation; new product, new processes, new marketers, new source of supply and new organizational forms. The principal goal of innovation is to develop new or modified products for enhanced profitability, sharing three common elements: creativity, problem-solving, and new ways of thinking (Moscardo, 2008; Hauser, Tellis, & Griffin, 2006). Hjalager (2010) states that tourism innovation may converge with existing

models in the field of manufacturing innovation, or diverge and develop unique traditions and methods that illustrate innovation in this field. However, substantive research in this field is still scarce (Hjalager, 2010).

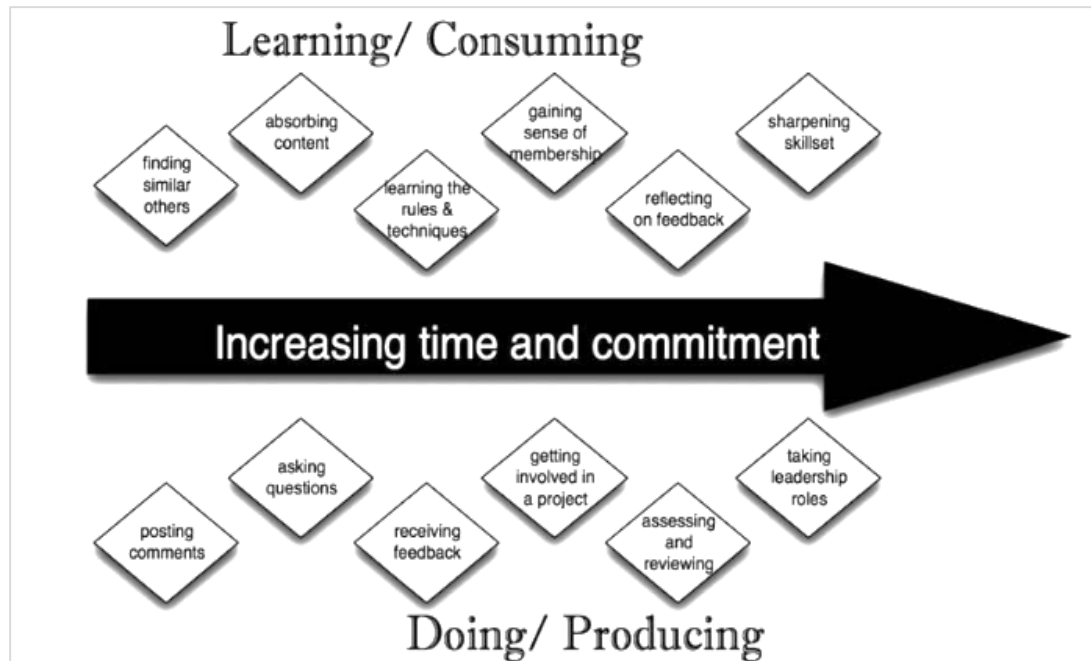


Figure 1. Development of Creativity Enabled Through Web 2.0 and Social Media Spaces (Kozinets, 2008)

Open Innovation. The term open innovation was introduced by Chesbrough (2003). He refers to the use of external sources (i.e., consumers) to enhance firms' innovation strategies. Different strategies within the open innovation paradigm support firms in integrating external sources effectively into their innovation strategies (i.e., idea contests, crowdsourcing, communities).

User-Driven Innovation. According to Von Hippel (2005), consumer innovative behavior is expected from users who aim to promote personal interest and to improve their consumption situation and, in sum, to fulfill new needs via the use of a particular new product. They have been called full-fledged collective creative forces in their own right (Kozinets, Hemetsberger, & Schau, 2008). Von Hippel (2005) refers to a more democratized way of innovating. In other words, user-driven innovation is when the consumer modifies and develops a product without direct collaboration or support of the company (Von Hippel, 2005). After defining the most important definitions used in this dissertation, the following section will explain the research question and design of the dissertation.

1.3. Research Question and Research Design

Given the integrated use of social media spaces in many marketing strategies, companies need to continue strategically using them. The need to start using social media spaces to innovate will have many positive spillover effects, such as growing market shares. The use of creative practices by consumers in diverse social media spaces can inspire, support and be exploited by tourism organizations to effectively innovate. However, in research, there is a lack of understanding about how to use this information and integrate consumers into the innovation process (Tussyadiah & Zach, 2013). Moreover, research techniques to capture the information are only in an emerging state. Therefore, this dissertation incorporates the integrated use of social media spaces, creative consumers and the development of innovation strategies for the tourism industry. The following question is central in this dissertation:

How effective are social media spaces to facilitate innovation strategies in the field of tourism?

This dissertation aims to provide an understanding of the usability of social media spaces for marketers, but also to understand how marketers can benefit from it and innovate their existing products and/or services. Especially in tourism, consumers co-create their experiences and rely heavily on information provided in social media spaces. Given the fact that tourists co-create by definition, tourism companies can take a creative approach for innovation. Innovation for experience goods, such as tourism, can appear on different levels (ranging from product, process to information). According to Hjalager and Nordin (2011), it is imperative for tourism organizations to identify knowledgeable and experienced consumers and create avenues for them to participate in new product/service development. Moreover, firms that foster relationships with consumers in social media have a higher capacity to recognize, understand, and analyze information to be useful input for innovation strategies (Hjalager & Nordin, 2011; Munar, 2010; Tussyadiah & Zach, 2013; Shaw & Williams, 2009). Therefore, this dissertation aims to illustrate, using different research settings and methods, how marketers can successfully approach social media spaces for innovation purposes. The dissertation is designed along three individual studies linking back to the overall framework (see Figure 2).

The studies are interrelated in a hierarchical manner supporting the overall research question. The hierarchy refers to the ways in which firms can choose to use social media spaces to engage with consumers to enhance their innovation strategies. The first study presents a passive form of using social media spaces. This study will provide marketers with an understanding of how to enhance their absorptive

capacity to identify, assimilate and translate the knowledge from social media spaces into their innovation strategies. The second study goes one step further and aims to understand the creative consumers participating in mobile user-driven innovative travel communities. These mobile user-driven innovative travel communities are out of scope and control by marketers. However, an understanding of content creator characteristics will enable marketers to attract and support innovative customers. The third study reaches the highest level of integrating social media spaces into innovation strategies, by focusing on the use of open innovation platforms. This study will provide insights into how consumers are actively engaged in the open innovation processes through the use of social media spaces. A short overview of the objectives per study will be provided.

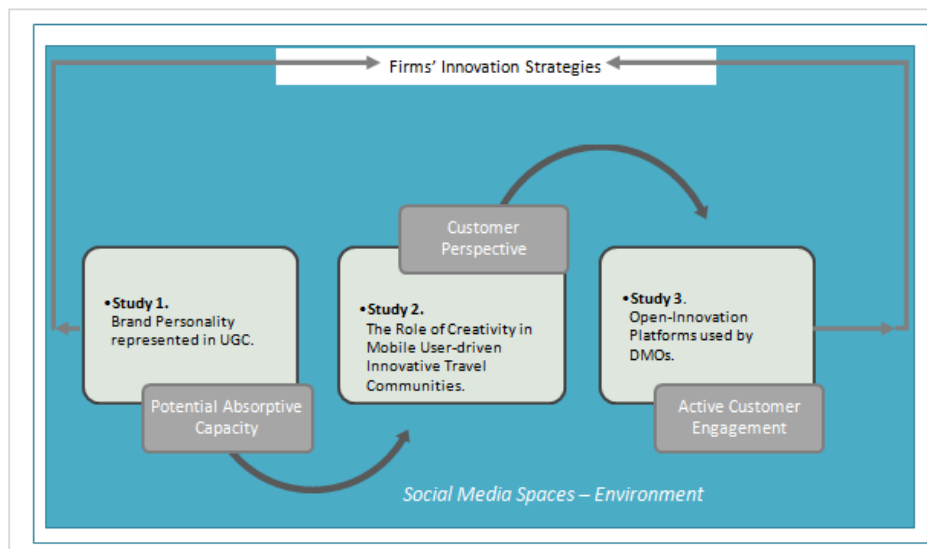


Figure 2. Representation of PhD Framework and Three Studies

Objectives study 1 'Destination Brand Personality in Social Media Spaces: Opportunities to Innovate the Tourist Experience'. Marketers have started to realize that the use of UGC is useful to understand, engage and co-create with their consumers. In addition, practitioners understand that they need to start marketing their products based upon their emotional connections. The introduction of brand personality scale by Aaker (1997) illustrates that consumers make anthropomorphic connections with brands. Also, in tourism, the importance of developing products and services based upon emotional links has been noticed recently. The use of brand personality can enhance marketers to understand how consumers make emotional links with the city they visited. Therefore, the objective of this study is to analyze UGC through the use of Aaker's brand personality scale. This study hereby illustrates how

marketers can effectively assimilate knowledge through social media spaces, and subsequently develop innovative marketing strategies.

Objectives study 2 ‘The Role of Creativity in Mobile User Driven Innovative Travel Communities’.

The consumers of user-driven innovative communities spend hours and effort to publish their creative content for themselves and their peers. Their travel-related content is, on the one hand, an innovative marketing form for destinations; on the other hand, it triggers many new innovative forms of travelling. The impact of these mobile user-driven innovative communities in tourism needs to be considered by marketers. An understanding of who these creators are will support research and practitioners to attract creative members. Therefore, the objective of this study is to understand which creative abilities these content creators have, and which context-dependent factors influence their creative work shared in the mobile user-driven innovative travel communities.

Objectives study 3 ‘Open Innovation Platforms in Tourism: A Case Study of a Destination Management Organization’. Open innovation platforms are initiatives by firms to integrate external sources into their innovation strategies. Crowdsourcing and idea contests are examples of how companies can harvest ideas for innovation strategies. Destination Management Organizations (DMOs) have started to slowly integrate these techniques. However, there is a lack of understanding of how effective open innovation platforms are for the development of accurate innovation strategies. Therefore, this study aims to understand how open innovation platforms supported by social media can successfully integrate consumers into firms’ innovation processes. An overview of the three studies, conceptual focus, research context and linked method and analysis is given in Table 1.

	Study 1	Study 2	Study 3
Conceptual Focus	Brand Personality in User-Generated Content	Consumers’ Creativity in Mobile User-Driven Innovative Travel Communities	Open Innovation Platforms used by DMOs
Research Context	Third-Party Review websites	Mobile Web 2.0 Platform	Idea Contest Vienna Tourist Board
Research Method	Web Mining	Web-based Survey	Quantitative Content Analysis
Analysis	Dictionary-based Sentiment Analysis	Structural Equation Modeling	Multiple Regression ANOVA

Table 1. Overview Three Inter-related Studies of PhD Dissertation

Conclusively, the challenge to deal with consumer empowerment enhanced by diverse forms of ICT in tourism is the current state-of-art. According to Von Hippel, Ogawa and de Jong (2011), marketers can save money and raise their success ratio by focusing on product concepts that have already been market-tested by consumers. Labrecque et al. (2013) posit that marketers need to be dynamic, flexible, and open to consumers' proactive and creative behaviors. As a consequence, consumer empowerment needs to be embraced by companies. This dissertation will support the illustration of the different opportunities social media and the different forms of ICT offer practitioners to manage consumers' empowerment in a strategic way.

Study 1.

Destination Brand Personality in Social Media Spaces: Opportunities to Innovate the Tourist Experience

1. Introduction

1.1. Problem Statement

The new generation of Web 2.0 tools has revolutionized the way destination image is projected and how tourists search and gather information about tourism destinations (Camprubí, Guia, & Comas, 2013). Destination Management Organizations (DMO) cannot ignore the fact that social media websites, such as TripAdvisor, Holidaycheck and Tripwolf, are becoming increasingly popular and are likely to evolve into primary online travel information sources (Jalilvand, Samiei, Dini, & Manzari, 2012). Tourists have gained more power over what and how information is distributed and used on the Internet (Tapscott & Williams, 2006). Tourists play an active role in the process of destination image formation through their direct and spontaneous contributions in blogs, forums and social network sites (Camprubí, Guia, & Comas, 2013). The actual costs for the destination occur when unsatisfied tourists share their experiences in Web 2.0 platforms, and potential visitors become deterred by the negative comments (Camprubí, Guia, & Comas, 2013).

Successful branding partly relies on a positive relationship between the tourist and the destination (Ekinci, 2003). Considering the fact that traditional branding strategies and image formation are enhanced by User-Generated Content (UGC), DMOs have to be aware of this new phenomenon (Munar, 2010). In order to assure a significant level of destination brand efficiency, DMOs need to incorporate users into their branding process and understand the evolution of destination image through the means of social media spaces (Blain, Levy, & Ritchie, 2005; Garcia, Gomez, & Molina, 2012; Veasna, Wu, & Huang, 2012). Moreover, the need to understand the technological dynamics as well as the development of pro-active strategies to capture a strong position in the highly competitive tourism market is called for. According to Boulin (2008), social media spaces can be seen as a new mechanism for DMOs to learn about tourists' opinions about the destination (Boulin, 2008). Through monitoring and analyzing the different kinds of destination images, a deep understanding of tourists' experiences can be achieved (Jalilvand, Samiei, Dini, & Manzari, 2012). The transformation of massive amounts of UGC into strategic knowledge supported by UGC is crucial for DMOs to develop and/or maintain their competitive advantages (Munar, 2010).

Subsequently, the capacity of firms to extract and integrate valuable knowledge from consumers exposed in social media spaces can enhance their marketing strategies (Munar, 2010). In addition, UGC can be fruitful input for firms' innovation strategies. Hence, firms need to be able to successfully i) acquire knowledge from consumers, ii) transform the knowledge, and iii) exploit the knowledge for new product/service development (Tussyadiah & Zach, 2013). The three inter-related knowledge management aspects

are challenged by the high amount of knowledge available in social media spaces. Therefore, DMOs need to be aware of the many possibilities available for product development. Creative and innovative mindsets are required that will allow DMOs to successfully translate and subsequently enhance their innovative business processes. According to Gebauer et al. (2012), the application of external knowledge for commercial purposes can lead to product, service and strategic innovation. Hence, to maintain a competitive advantage, DMOs need to go one step further. They need to search for elements that can, besides enhance, also innovate the tourism experience. Therefore, DMOs are also confronted with looking for new ways to increase consumer satisfaction.

One way of doing that is by integrating the brand personality concept into future tourist experience designs. Due to the growing substitutability of destinations the functional attributes of tourist destinations alone no longer help destinations to increase tourist arrivals (Pike & Ryan, 2004; Usakli & Baloglu, 2011). Nowadays, positioning a destination around the feelings it generates, and the ability to offer visitors unique experiences, relationships, meanings and self-expressions is a strong competitive advantage (Papadimitriou, Apostolopoulou, & Kaplanidou, 2013). Hence it is a necessity for DMOs to understand tourists' emotional links to a destination and to develop a distinct relationship with their visitors (Hosany et al., 2014; Veasna, Wu, & Huang, 2012). For destination is it beneficial to understand what associations of a brand are advantageous over their competitors (i.e., points of difference). Aaker (1996) states that the point of differentiation helps consumers to attach to the brand and positively evaluate the brand. This also implies that a brand personality enables the creation of symbolic effects for the consumer: the effective match of brand personality creates a holiday status symbol, and an expression of a lifestyle (Aaker, 1997). Usakli and Baloglu (2011) posit that this will lead to favorable destination attitudes (i.e., positive word-of-mouth, intentions to return and/or to recommend). Subsequently, DMOs need to understand which connotations consumers positively evaluate, and how they attach themselves to the destination (Keller, 2009). In other words, DMOs need to strive to develop a distinctive destination personality that meets travelers' actual and symbolic needs. Költringer (2012) indirectly refers to the concept of brand personality, arguing that there is still a lack of understanding regarding how tourists emotionally connect themselves with tourist destinations. This implies a need for future research to take a cohesive approach to understanding tourists' emotional experience (Hosany et al., 2014; Yuksel, Yuksel & Bilim, 2010; Garcia, Gomez, & Molina, 2012; Blain, Levy, & Ritchie, 2005).

1.2. Research Question and Objectives

Given the limit of studies on destination brand personality, this study aims to illustrate how resourceful social media can be for exploiting consumer knowledge for innovating DMOs' products (i.e., accommodations, restaurants and sights). Furthermore, the study aims to provide new ways to innovatively market a destination by its emotional linkages. The following research question is introduced:

How is destination brand personality represented in social media spaces, and how useful is this User-Generated Content for Destination Management Organizations to develop innovative marketing strategies?

The aims of this study are twofold: 1) to analyze how tourists express themselves in social media spaces by applying the concept of destination brand personality, and 2) to provide insights for tourist destinations how to optimally use social media spaces in order to develop innovative emotional attachments based on user-driven suggestions. According to Shaw and Williams (2009), competitive advantages no longer rely on internal knowledge alone, but rather originate from absorbing external knowledge. The recommendations can offer practitioners hands-on insights into how to effectively absorb knowledge from social media spaces. However, more importantly, the study will illustrate how consumers' knowledge can be translated into an innovative tourism experience design closely meeting future tourists' needs. As Tussyadiah and Zach (2013) posit, the potential fruitful use of social media forces businesses to go beyond listening and observing their consumers. Hence, firms need to go one step further and start to internalize ideas and insights from social media spaces into their organizational processes (Tussyadiah & Zach, 2013). Subsequently, the transformative capacity of social media knowledge will positively impact DMOs' performances (Tussyadiah & Zach, 2013). Therefore, DMOs are encouraged to think creatively when integrating social media input for creating new processes, policies or services.

The next section will discuss the main literature within the framework of destination branding and brand personality. This will provide insights into the central terms, definitions, and theoretical foundations for this study. The third section will explain the chosen methodology.

2. Literature Review

The theoretical background of this study is founded in the literature of destination brand management and related issues to the evolution of ICT in tourism. The first part of the literature review will focus on the attractiveness of a destination, since branding a destination starts with defining its unique selling points and creating a strong position in the market. The second stream of this literature review is focused on destination branding with related subtopics such as brand equity, brand image and brand personality. The third stream will focus on the recent ICT developments and how tourism practitioners are and can deal with that.

2.1. Destination Attractiveness

The main attractions of a destination are perceived as the main determinants of destination attractiveness. This also implies that tourist attractions are of great relevance to develop competitive advantages (Krešić & Prebežac, 2011). Moreover, the role of the supporting services (i.e., infrastructure, roads, accommodations, airport water facilities) as a part of the destination experience should not be underestimated. Dwyer et al. (2004) argue that these supporting services play an important role in enhancing the attractiveness of a destination. The destination experience is multi-dimensional, involving many independent organizations operating in the destination co-producing the destination experiences together with the tourist (Hankinson, 2010). Tourists can, thus, choose to combine the main tourist attractions with related services (tourism services) as well as with urban agglomeration services to optimize their experience at a specific destination (Van den Berg & Braun, 1999).

This also implies that destinations can operate in different spatial ways to meet the needs of different consumer groups, which enables them to serve different segments at the same time (Ashworth & Kavaratzis, 2010). According to Hankinson (2010), a destination can be multi-functional and co-consumed by consumers. The selection by the consumers can be across different jurisdictional areas and the tourist experience may not be promoted originally like those by the DMO (Ashworth & Kavaratzis, 2010). Hence, the DMO has little control over the tourist experience. However, in order to overcome this, the topic of branding has been introduced. The following section will explain this in more detail.

2.2. Destination Branding

The topic of destination branding has been introduced as a hands-on marketing tool for DMOs to coordinate the different stakeholders in one theme, and support the values that destinations have to offer (Ritchie-Brent & Ritchie, 1998). According to Hankinson (2010) a destination brand can act as an all-embracing function of a destination. As such that a destination brand can effectively link the various service organizations together in a destination. Pike (2008) argues that branding also enables DMOs to efficiently manage as well as to communicate the intangible part of the tourist experience. According to Munar (2010), the destination brand, accompanied by taglines, slogans and logos, represents the formal elements of the brand. Munar (2010) states that the brand can, thus, on the one hand help the DMO to deal with their lack of ownership of the destination elements. Thus, it can help DMOs to establish unique selling propositions too. On the other hand Munar (2010) argues that a destination brand helps tourists to make the associations between the different attractions and services as well as give visitors an assurance of quality experiences and reduce their search costs. Especially in light of this study, this becomes an important issue to consider.

Destination branding is vital in the current destination management practice, where there is almost infinite tourist opportunities and travel locations. Given the fact that destinations are facing increasing global competition in both international and domestic markets, the application of branding techniques to places is growing in frequency (Hanna & Rowley, 2008; Caldwell & Freire, 2004). In other words, the development of destination brands has become a strategic tool for many tourist destinations in countries, regions and cities (Garcia, Gomez, & Molina, 2012).

The introduction of branding has been discussed intensively among scholars and managers. According to Aaker (1991), the purpose of branding is to differentiate a product from those of the competitors. Generally, branding is a process that attempts to influence how consumers interpret and develop their own sense of what a brand means for them. As Ashworth and Kavaratzis (2010) argue, destination branding attempts to transfer those meanings to the operational environment of place management and it centers on the conceptualization of a specific destination as a brand. This means that destination branding is meant to develop a memorable bond or an emotional link between the target marketer while respecting the broader values and goals of the community that maintains the sense of the place (Kozak & Tasci, 2006). Ritchie-Brent and Ritchie (1998) have defined a destination brand as:

'a name, symbol, logo, word mark that both identifies and differentiates the destination, it conveys the promise of a memorable experience that is uniquely associated with the destination, it also serves to consolidate and reinforce the recollection of pleasurable memories of the destination experience.' (Ritchie-Brent and Ritchie, 1998, p.103)

However, destination branding is more than creating a catchy advertisement, slogan or logo (Ekinci, Sirakaya-Turk, & Baloglu, 2007). Therefore, the development and management of the destination brand is perceived as a process depending on the effectiveness of the DMO's leadership (Hankinson, 2010). A strong destination is recognized instantly and establishes deeper connections with travelers' values and self-concept (Ekinci, Sirakaya-Turk, & Baloglu, 2007). Various authors state that branding can also be explained as a way for DMOs to communicate the expectations of a travel experience (Blain, Levy, & Ritchie, 2005; Pike, 2008; Qu, Kim, & Im, 2011). This also implies that destination branding can be used for effective differentiation between destinations (Qu, Kim, & Im, 2011). Hence, the selection and associating attributes representing the main values connected to the destination brand makes the branding process a rather deliberated practice (Knox & Bickerton, 2003). The combinations of products and services need to be a unique mixture of functional attributes and symbolic values supporting the positioning of a destination (Hankinson, 2010).

Hankinson (2010) perceives a destination brand as i) a combination of perceptual entities, ii) a tool for relationships, iii) a way to communicate, and iv) a value enhancer. This implies that the multidimensionality of the destination brand construct consists of functional, emotional, relational and strategic elements (Ashworth & Kavaratzis, 2010). In the literature, different definitions have been constructed; see appendix A for an overview. Conclusively, branding is perceived as a complex construct aiming to develop a strong connection with tourists on different dimensions. Aaker (1991) developed the Customer-Based-Brand-Equity Model that can support DMOs in effectively branding their destination. The next section will explain the model in more detail.

2.3. A Customer-Based Brand Equity Model

DMOs have to start the process of branding with wisely choosing one or more brand elements to serve as brand strategies (Murphy, Moscardo, & Benckendorff, 2007). According to Murphy et al. (2007) the brand strategies should contain brand associations that identify the destination. Murphy et al. (2007) identify three components that can help DMOs to develop brand associations; attributes, affective and attitudes components. The attributes characterize the perceptual and intangible elements in a destination. The affective component refers to the visitor itself, their personal values. Lastly, the attitudes

refers to tourists' overall evaluation and thus results into specific actions and intention to return. In order to analyze how the destination brand is performing, Aaker (1991) introduced the Customer-Based Brand Equity (CBBE) hierarchy model; see Figure 3.

The model illustrates how companies can influence the effectiveness of their branding process by building the brand while keeping four main dimensions central (brand identity, brand meaning, brand responses, brand relationships). The hierarchy addresses the key aspects of the destination branding definition. Moreover, the hierarchy model illustrates the importance of building the right type of experiences of the brand, which in the end results in favorable feelings and recommendations (i.e., moving from brand identity up to brand relationships in the model). The foundation of the CBBE hierarchy is brand salience, which represents the strength of the presence of the brand in the mind of the consumer. The consumer needs to remember the destination for the right reasons (Aaker, 1996). The aim should be to increase familiarity with the brand through repeated exposure and strong associations with the product category (Keller, 2003). Additionally, Keller (2003) argues that brand associations need to be strong, favorable and unique in order to increase the level of responses from consumers (i.e., satisfaction, the third level in the hierarchy). The highest level of the hierarchy is resonance, which manifests in brand relationships such as loyalty, intent to visit, repeat visitation, and word-of-mouth referrals.

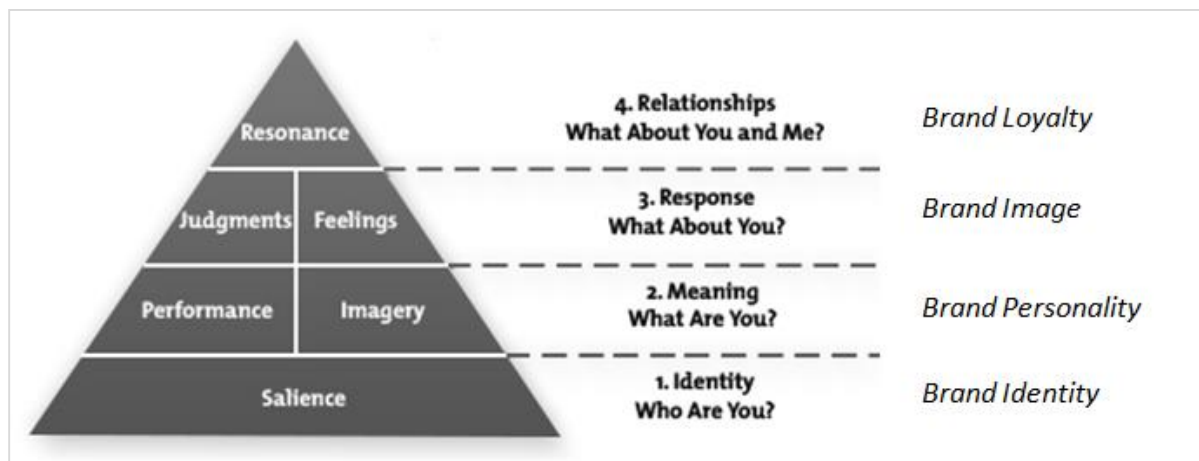


Figure 3. Aaker's Customer-Based Brand Equity (CBBE) Hierarchy Model (1991)

2.4. Levels of Hierarchy in the CBBE Model

2.4.1. Brand Identity

The level of efficiency of the brand needs to be considered by DMOs, emphasizing consumers' overall utility about a brand compared to competitors (Esch, Langner, Schmitt, & Geus, 2006). Keller (1993) argues that brand efficiency is the differential effect that brand knowledge has on consumer response to the marketing of the brand. The effectiveness of brand efficiency is mediated by the favorable, strong and unique brand associations that consumers have in their memory (Garcia, Gomez, & Molina, 2012). However, the favorability of consumers to attach themselves to a brand depends on the different knowledge flow they were able to retrieve when visiting the destination.

The pyramid (Figure 3) supports companies in developing branding strategies that result in customer relationships. The brand identity represents a desired brand image DMOs try to communicate through different communication channels. The brand image represents the actual image held by consumers. This can be influenced by brand positioning strategies. In fact, DMOs should aim to have a significant overlap between the destination identity and image, which indirectly illustrates the successfulness of the branding campaign efforts (see Figure 4).

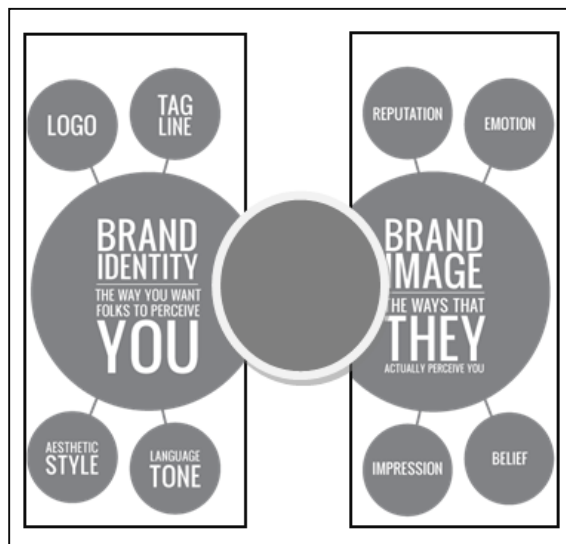


Figure 4. Brand Identity and Brand Image (Dsigngo, 2013)

Destination brand image is an important part of the brand, since the destination image contributes to forming the destination brand and to its success in the market (Tasci & Kozak, 2006). Different studies claim that tourists decide to go for a destination based upon the most favorable image of a destination. Tourists seek to determine a destination's potential for their satisfaction (Pearce, 1982; Woodside &

Lysonski, 1989; Bigne, Sánchez-García, & Blas, 2001; Chen & Phou, 2013). However, Gunn (1972) points out that many destination images are already formed before DMOs begin their work. Therefore, destination branding is primarily a rebranding exercise that seeks to reinforce, change or augment images that have developed organically. In addition, due to infrequent consumption in tourism, the positive influence of the overall image should be emphasized more than before (Qu, Kim, & Im, 2011). As such, in order for DMOs to manage the projected image and tourists' perceived image, branding a destination is extremely important (Kozak & Tasci, 2006). Therefore, the core of destination branding is to build a positive destination image that identifies and differentiates the destination by selecting a consistent brand element mix (Cai, 2002). This also implies that destinations compete through the images held in the minds of potential tourists (Baloglu & McCleary, 1999). Accordingly, many researchers discussed the relationship between branding and image from a destination marketing point of view (Garcia, Gomez, & Molina, 2012). This explains the dominant focus of destination image in the tourism marketing literature (Selby, 2004; Pike, 2008). Bigné et al. (2001) explain the destination image as follows:

'Consist of all that the destination evokes in the individual, any idea, belief, feeling or attitude that tourists associate with the place.'
(Bigné et al. 2001, p.716)

A destination image is, thus, based on subjective knowledge (Ekinci, 2003). Gunn (1972) argues that customers' subjective knowledge can be influenced on three levels i) by different information channels, so called organic image, ii) by projected image given by destination marketing activities, induced image, and iii) through the actual experience with the destination, modified induced image. This will result in three-dimensional evaluations based on cognitive, affective and conative evaluations.

The first dimensions, the cognitive evaluations, refer to beliefs and knowledge about the destination, mainly about the physical attributes of a destination (San Martin & Del Bosque, 2008; Chen & Phou, 2013). The cognitive component of destination image is related to tourist destination attributes, which can be functional and tangible (e.g., landscape, cultural attractions) and psychologically abstract (e.g., hospitality, atmosphere). The second dimension, the affective evaluation, refers to feelings the destination evokes. Baloglu and McCleary (1999) state that the affective evaluation refers to the appraisal of the affective quality of feelings towards the attributes and the surrounding environment (i.e., pleasure and excitement). The last evaluated component, the conative component, is considered to be similar to behavior, and evolves from cognitive and affective images, such as intention to revisit (Beerli & Martin, 2004; Prayag, 2007). Tourists will use these three dimensions to form their impressions and evaluate the considered destination in their choice process (Martin & Del Bosque, 2008). The overall image is, thus,

one of the most important factors to elicit the intention to revisit the same destination (Baloglu & Brinberg, 1997; Baloglu & McCleary, 1999; Hosany, Ekinci, & Uysal, 2006; Usakli & Baloglu, 2011). Thus, tourist behaviors are influenced by the total impressions of the destination, which is the combination of the cognitive, unique and affective image components (Qu, Kim, & Im, 2011). Qu et al. (2011) claim that the cognitive components positively impact the overall destination image. Their study shows that beliefs and knowledge of attributes are the most influential brand associations to form the overall image. Qu et al.'s (2011) study also shows that the second largest influence on the overall image is the unique image component. Baloglu and McCleary's (1999) study conversely shows that affective image is significantly influential on the overall image. Echtner and Ritchie (1993) therefore argue that the overall image of a destination should be viewed and measured based on three dimensions of attributes. Echtner and Ritchie (1993) refer to the holistic, functional-psychological, and unique-comment characteristics.

Aaker (1991) argues that the purpose of branding is to differentiate a company's product from those of its competitors. Therefore, destination branding should emphasize a destination's unique image to be differentiated from competing destinations. In addition, a strong and unique image would increase the favorability of the overall image towards the destination (Qu, Kim, & Im, 2011). Destination image and destination satisfaction are positively related, and has a significant influence on the way tourists attach themselves to a destination (Veasna, Wu, & Huang, 2012; Prayag & Ryan, 2011). In addition, the brand identity, that is, the DMO's idea about the brand, is reciprocal with the destination image; inasmuch as the destination image is a powerful dimension that enables the creation of the destination identity as well (Cai, 2002; Qu, Kim, & Im, 2011). Conclusively, different scholars agreed upon the fact that the destination image should be viewed as an attitudinal construct in the framework of destination-branding.

Murphy et al. (2007) developed an illustration (see Figure 5) reflecting the process of destination branding, starting with evaluations of destination images including a strong emotional attachment. The overall image consists of personality characteristics and affective and cognitive images (Murphy, Moscardo, & Benckendorff, 2007). This also means that brand personality is linked directly to both the overall destination image and affective component, showing the importance of matching the needed and self-image of the tourists with their perceptions of the brand personality (Murphy, Moscardo, & Benckendorff, 2007). Ekinci (2003) argues that successful destination branding involves establishing a mutual relationship between destinations and tourists by satisfying tourists' needs. The brand image and brand personality are both consumers' perceptions that result from consumers' decoding, extracting and interpreting brand signals and associations, which are both affected by nearly everything related to the

brand (Ekinci, 2003). They are both structured in associative memory networks, which are considered critical to consumers' decision making (Aaker, 1996). The differentiating aspect that involves brand personality consists of human characteristics associated with a brand, while brand image includes additional non-human elements such as physical elements, price, perceptions or reputation (Hayes, 1999).

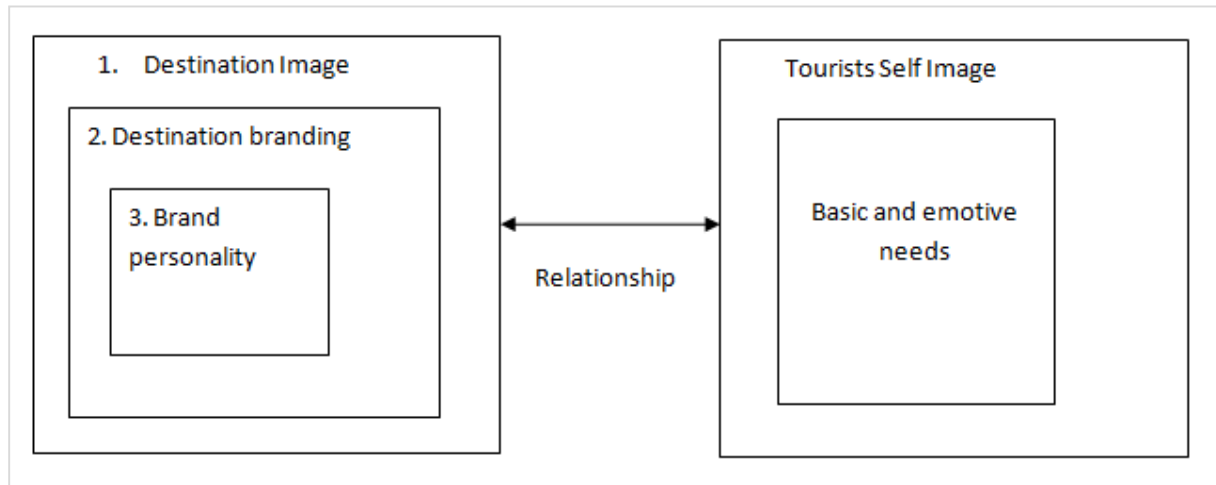


Figure 5. Destination Image and Destination branding (based upon Murphy et al., 2007)

2.4.2. Destination Personality

Destination personality has been used in different studies to explicitly illustrate tourists' attachment to a destination (Morgan & Pritchard, 2004). Murphy et al. (2009) argue that brand personality, a rather anthropomorphic metaphor, is commonly used in organization studies, defining personality as enduring traits that differentiate individuals. The theory of animism suggests that people have the need to anthropomorphize objects in order to facilitate interaction with the nonmaterial world (Murphy, Moscardo, & Benckendorff, 2009). This means that human qualities are attributed to nonhuman objects, such as brands. Geuens et al. (2009) argue that consumers use brands with a strong personality to build relations with and to show their own personality. Therefore, consumers choose brands that fit with their personal style, or that can even compliment their status (Aaker, 1997). Aaker (1997) defined brand personality as the set of human characteristics associated with a brand. Consumers tend to select brands that are congruent with their needs but also with their personality characteristics.

The self-image of tourists and brand personality is, thus, an important implication for related attitudes and future behaviors (Aaker, 1997). A correlation can be found between brand personality and consumers' self-concept, having a positive effect on tourist behavioral intentions (also reflected in Figure

5). The higher the match, the more likely tourists will have a favorable attitude towards the destination, which spills over to word-of-mouth communications and intention to re-visit (Usakli & Baloglu, 2010; 2011). Brand personality therefore has positive indirect effects on intention to return and intention to recommend through the self-congruity concept (Usakli & Baloglu, 2011).

The brand personality has the possibility to create symbolic effects in consumers (Aaker, 1996). Hence, brands that are described with words such as “cool” and “young” tend to be considered as having human characteristics (Usakli & Baloglu, 2011). A destination can, thus, also pose a personality that consumers use as an avenue for self-expression or to experience the emotional benefits that differentiate the destination from competitors (Chen & Phou, 2013). Brand personality is seen as a valuable factor for increasing brand engagements and brand attachments in the same way as people relate and bind to other people. Ekinici and Hosany (2006) define destination personality as:

*‘The set of personality traits associated with a destination.’
(Ekinici & Hosany, 2006, p.127)*

The brand personality can be formed through travelers’ direct and/or indirect contact with a destination (Ekinici & Hosany, 2006). As Ekinici et al. (2007) argue, destination personality traits can be associated with a destination in a direct way, through people in a community, citizens in a city, hotel employees, restaurants and tourism attractions, or through tourist imagery, defined by a set of human characteristics associated with the typical visitor of a destination. In an indirect manner, personality traits can be attributed to a destination through marketing programs such as cooperative advertising, value pricing, celebrities of the country, and media construction of a destination (Ekinici, Sirakaya-Turk, & Baloglu, 2007).

Morgan and Pritchard (2004) claim that building a powerful destination brand is about developing a rich, appropriate brand personality. Only branded destinations are able to establish an emotional link with their tourists (Chen & Phou, 2013). An individual who is satisfied with a brand might have an emotional attachment to it (Thomson, MacInnis, & Whan Park, 2005), so the formation of emotional relationships between consumers and destinations can increase customer loyalty (Palmatier, Dant, Grewal, & Evans, 2006). Moreover, a well-established brand personality influences consumers’ preferences and patronage (Sirgy, 1982). Different authors argue that brand personality becomes a representation for building destination brands for understanding tourists’ perceptions of the destination (Chen & Phou, 2013; Ekinici & Hosany, 2006).

Aaker (1996) developed the Brand Personality Scale (BPS) where five personality dimensions, based on sources of personality scales from psychology, were selected. The BPS represents five dimensions; *competence, excitement, ruggedness, sincerity and sophistication*. Ekinci and Hosany (2006) examined Aaker's Brand Personality Scale (BPS) in the context of tourism destinations. They argue that tourists ascribe personality characteristics to destinations based upon three salient dimensions: sincerity, excitement and conviviality. According to Ekinci and Hosany (2006), sincerity and excitement were found to be the main factors, whereas conviviality specifies the destination. However, there are only a few studies on brand personality of tourist destinations (Ekinci, Sirakaya-Turk, & Baloglu, 2007; Ekinci & Hosany, 2006; Usakli & Baloglu, 2011). In appendix B, an overview of related studies can be found. All the studies show how the brand personality concept is related to specific attitudes and feelings towards a destination. Nevertheless, the existing studies have found three, four and/or five dimensions representing the tourism destination brand personality (TDBP). This also implies that there is no valid instrument for measuring TDBP. In fact, the mentioned studies use different scales to validate the personality construct. The next section will explain this in more detail.

2.4.3. Attitudes and Feelings

Destination satisfaction

The reaction of tourists regarding their experiences provides an understanding of their satisfaction (Yu & Goulden, 2006). In fact, understanding the level of satisfaction is of great relevance for DMOs since it influences the choice of consumers to return or not and/or to recommend the destination. San Martin and del Bosque (2008) argue that satisfaction can be understood as an individual cognitive-affective stage derived from the tourist experience. Chen and Phou (2013) postulate that tourist satisfaction about a destination is the tourist emotional reaction to the extent to which a specific destination was able to meet their travel needs and expectations. Hence, the function of tourist satisfaction refers to the differences between pre-travel expectations and post-travel experiences.

Destination trust

Destination satisfaction however mediates the effect on consumer trust (Chen & Phou, 2013). Trust is perceived as an affect-based construct, and as such an outcome of the communal relationship with the brand, and consumer willingness to rely upon his expectations about a firm's future behavior (Esch, Langner, Schmitt, & Geus, 2006). Moreover, a feeling of trust also creates emotional attachment between the customer and the brand. The emotional attachment has an influence on consumer commitment and loyalty and willingness for financial sacrifices (Thomson, MacInnis, & Whan Park, 2005).

Trust is thus an important antecedent of customer future behavior and for long-term relationship building (Chen & Phou, 2013). Trust has been claimed to be one of the most powerful marketing tools to enhance loyalty and relationship quality (Berry, 1995). Ekinçi and Hosany (2006) found that tourists are more likely to visit a destination if they perceive the destination as trustworthy and dependable. Brand trust exists when tourists believe and have confidence in exchange partners' reliability and integrity (Morgan and Hunt, 1994). Overall, different scholars argue that trust is one of the most fundamental components of building successful relationships (Morgan & Hunt, 1994).

Destination attachment

The component of destination attachment has been mentioned previously as a result of brand personality, brand satisfaction, and trust. Destination attachment is perceived as an affective bond, as well as the emotional linkage of an individual tourist to a particular destination (Chen & Phou, 2013). Different researchers argue that destination attachment can be viewed as a longer-lasting commitment including a bond between the brand and the consumer (Yuksel et al., 2010; Hildalgo & Hernandez, 2010; Esch, Langner, Schmitt, & Geus, 2006). However, it has been argued that attachment generally starts to develop after one or more visits. A tourist feeling satisfied after visiting a destination could lead to a sense of destination attachment (Chen & Phou, 2013; Esch et al., 2006). Therefore, Esch et al. (2006) argue that destination attachment can trigger feelings of regret, for example, when the destination is no longer available. Taking this effect into account, different researchers argue that destination attachment can be seen as an antecedent of destination loyalty.

2.4.4. Relationships

A study by Chen and Phou (2013) illustrates how destination satisfaction, destination trust and destination attachment are the three main components of the relationship between the tourist and a destination. The destination image and destination personality are the critical antecedents of this relationship, and tourist behavior is the outcome. This, in fact, results in the value of a brand, based on the extent to which it has high brand loyalty, perceived quality and strong brand associations. Therefore, tourist behaviors, such as the intention to revisit, have been extensively studied in tourism research for their signal of customer loyalty, effectiveness, consumer preferences and purchase intentions. According to Aaker (1991) these issues are increasingly important to create a strong competitive advantage. Garcia et al. (2012) argue that DMOs have to work constantly on the three interrelated aspects of brand equity (loyalty, perceived quality and word-of-mouth) in order to remain in a strong position in the touristic

market. Zeithaml (2000) considers that high perceived quality drives a consumer to choose the brand rather than other competitors.

The spill-over effects in the end can increase positive word-of-mouth communications, where the tourist will identify the destination brand and recommend the visit to his/her family and friends. Subsequently, this will contribute to the destination brand creation (Gracia et al., 2012). Conclusively, it can be argued that brand equity also increases the communication of the brand, its meaning and assets perceived by the customer. Subsequently, this would influence consumers' behavior, including aspects such as awareness, choice, use, satisfaction, recommendation, trust and loyalty (Kozak & Tasci, 2006). The rise of social media mediates this process of attitudes, feelings and formation of the destination image. However, DMOs can integrate different strategies to deal with the challenges social media spaces create. The next section will explain the possible strategies indicated by research.

2.5. Social Media Spaces and Strategies

2.5.1. Social Media Spaces and Tourism

Social media spaces are described as a group of Internet based applications that build on the ideological and technological foundations of the Web 2.0 that allow the creation and exchange of UGC (Kaplan & Haenlein, 2010). UGC is the information that is digitalized, uploaded by users and made available through the Internet. The different forms of social networking, text messaging, shared photos, podcasts, wikis, blogs, and discussion groups are examples of how consumers use the Web 2.0. Hence, social media spaces take an integrated place in consumers' lives as well as in tourist experiences. Different studies show how ICT is changing the nature of tourism. Significant changes are the interrelations between consumers' information search, destination choice-process, and the various social, cultural and economic changes regarding tourist behavior. This change also evokes changes in the locus of control in the brand creation process (Munar, 2010). Web-based branding is now to be found in the expression and in the interaction between end-users. Consequently, it is no longer on a business-to-customer basis, but largely on a customer-to-customer basis (Munar, 2010; Seraj, 2012). Communication through the Internet, thus, presents several challenges for DMOs. The image formation process is changing and has shifted power to the consumers. The Internet allows tourists to express their experiences of services, products and other resources provided by tourism destinations.

Munar's (2010) study shows that when tourists return from their holiday, they upload text presenting their opinions and memories of their travel experience(s). Munar (2010) describes it as a way

of digitalizing the tourist experience. Munar (2010) claims that UGC functions as a virtual mediator, since tourists' air their personal considerations of their experiences. In the online world, tourists have the following options to express themselves: narrative, visual and audio (Munar, 2010). The narrative is in the form of a review, travel diary and blogs containing impressions, beliefs and attitudes on the destination experience. The review genre is based on the critical evaluation of a tourism product or experience. Munar (2010) argues that the diary genre is related to the narrative explanation of the personal travel experience, including emotional and personal perceptions, beliefs and attitudes. Visual experiences are expressed through pictures uploaded on platforms such as Flickr.at. Audio content can be provided through platforms such as YouTube. Conclusively, social media spaces are intensively used by and through tourists as a tool for storytelling, information exchange and indirect brand content management (Seraj, 2012).

Subsequently, UGC can provide a significant amount of information about tourists, as well as their behavior, needs and wants. This can be an extremely useful form of strategic knowledge input for DMOs' branding processes. The content provided by tourists can contain emotions and salient dimensions of the destination image, brand personality and behavioral intentions. Moreover, tourists express satisfying and pleasurable emotions. Satisfaction with the tourist experience can, for example, be assessed by the feeling of enjoyment related to the destination, the different attributes and the overall feelings about the tourist experience (Chen & Phou, 2013). Conclusively, UGC is, thus, rich in travel-related knowledge, and can support DMOs to enhance their branding process, and subsequently innovate the tourist experience (Tussyadiah & Zach, 2013). The following section will explain which strategies DMOs can take into account when dealing with UGC.

2.5.2. Strategies to Deal with UGC

The intense development of social media spaces used by tourists also raises issues for practitioners regarding how to deal with it. Firstly, the content created can indirectly serve as a brand management tool for many brands, and subsequently also for destinations (Seraj, 2012). Secondly, consumers' power is hereby increased and often marketers do not know how to react to this social phenomenon (Labrecque, et al., 2013). Often marketers ignore this form of social media because they do not understand what it is, the various forms it can take, and how to engage with it and learn from it (Pitt & Berthon, 2011).

However, DMOs have various options to profit from these developments: Munar (2010) indicated three main strategies. *Mimetic strategies* imply that DMOs can copy the style and e-culture of social network sites to create their own web site. This type is a rather conservative strategy, which is

characterized by the organization keeping the main locus of control of web content on the organization (Munar, 2010; Marchiori, Pavese, & Cantoni, 2012). The mimetic strategy is a rather easy and inexpensive way to participate in Web 2.0. In addition, it allows DMOs to keep control of UGC, DMOs can remove unwanted and/or inappropriate content (Munar, 2010). Morgan et al. (2011) state that DMOs can also re-direct advertisements and hereby follow a rather static approach to online content management. Munar (2010) refers it as *advertising strategies*. Illustrating how these strategies support DMOs benefiting from the pool of information provided by tourists. In fact, Munar's (2012) study demonstrates how the DMOs in her study dominantly integrate these approaches. Nevertheless, the lack of users' participation and dynamism makes the advertising approach problematic and conservative (Munar, 2012). The lack of cultural integration between online community and traditional corporate portal makes the mimetic strategy problematic (Munar, 2012). Hence, the third strategy indicated by Munar (2010), *analytic strategy*, can help DMOs to monitor and regulate their online reputation (Marchiori et al., 2012). Analytic strategy is based upon monitoring and trend analysis and can act as a valuable tool in forecasting destinations (Munar, 2012; Marchiori et al., 2012). Moreover, DMOs can transform a large amount of UGC into strategic knowledge by examining, selecting, classifying, monitoring and evaluating the content (Marchiori et al., 2012; Költringer & Dickinger, 2015). This can support a DMO's understanding of image formation of their destination (Munar, 2011; Marchiori et al., 2012; Morgan, Pritchard, & Pride, 2011; Cakman & Isaak, 2012). In other words, the strategic knowledge approach is extremely helpful for DMOs, since it will help DMOs to understand the image formation of their destination brands. Surprisingly, Munar's (2012) study demonstrates how DMOs rarely integrate the analytic strategic and if they do, it is rarely converted into specific initiatives. Lately, DMOs started to use a new strategy called *immersion strategy*. This implies that DMOs take the initiative to develop a social network or community based on users' contribution (Munar, 2012). Hence, users' participation is required and furthermore, synergies between the corporate and social media platforms can be enhanced (Munar, 2012).

In other words, there are many creative pro-active strategies marketers can develop to manage this new social phenomenon as well as to integrate into DMOs' marketing strategies. This study is an example of how to use and interpret UGC strategically. A firm needs to develop specific learning processes to integrate external knowledge sources to effectively innovate. The next section will explain this in more detail.

2.5.3. Absorptive Capacity and Innovation

DMOs can use different forms of social media spaces in creative ways to, on the one hand, gain their marketing power back from consumers, but on the other hand, effectively co-create with their consumers (Munar, 2010; Tussyadiah & Zach, 2013). According to Tussyadiah and Zach (2013), tourism firms who nurture relationships with their customers in social media spaces will have a higher ability to use external knowledge. DMOs are thus confronted with the challenge to develop capabilities to absorb, assimilate and translate knowledge taken from social media spaces. Cohen and Levinthal (1990) refer to it as absorptive capacity (AC). According to Cohen and Levinthal (1990), a firm has the ability to improve its understanding, evaluation, assimilation and application of external knowledge by investigating specific activities. This is based on a learning process, which is directed at exploring, assimilating, transforming and exploiting external knowledge (Lichtenthaler & Lichtenthaler, 2010). The learning process supports companies in converting their external knowledge into innovations (Lichtenthaler & Lichtenthaler, 2010). Table 2 provides the four phases that are indicated to be required absorptive capabilities by research.

Phases of AC	Capabilities required	Type of AC	Learning Phases
1. Acquisition Capacity	Firms' ability to identify, locate, evaluate and acquire external knowledge		Exploratory Learning
2. Assimilation Capacity	Firms' ability to analyze, classify and internalize knowledge from outside	Potential Absorptive Capacity	
3. Transformation Capacity	Firms' ability to facilitate the transfer and combination of prior knowledge with newly acquired knowledge		Transformative Learning
4. Exploitation Capacity	Firms' capacity to incorporate the knowledge acquired, assimilated and transformed in firms' routines	Realized Absorptive Capacity	Exploitative Learning

Table 2. Learning Process of Absorptive Capacity (based upon Jimenez-Barrionuevo et al., 2011; Lichtenthaler, 2009; Gebauer et al., 2012).

In general, absorptive capacity can be divided into two parts; i) potential absorptive capacity and ii) realized capacity (Gebauer, Worch, & Truffer, 2012). Potential absorptive capacity refers to firms' receptiveness to external knowledge (phase 1 and 2), whereas realized capacity refers to firms' ability to transform and exploit the knowledge into firms' knowledge structures (phases 3 and 4) (Gebauer, Worch,

& Truffer, 2012; Shaw & Williams, 2009). Lichtenhaler and Lichtenhaler (2010) refer to three learning phases; *exploratory learning* (phases 1 and 2), *transformative learning*, stages of maintaining assimilated knowledge and reactivating this knowledge, and *exploitative learning*, which comprises the stages of transmitting and applying the assimilated knowledge. However, different authors refer to the same steps of using external knowledge to enhance firms' business models. According to Yu (2013), managers should emphasize that all learning processes are equally important, and it is not only one phase that leads to innovation.

Yu (2013) states that firms with greater absorptive capacities tend to enhance their learning capabilities, which will help them to effectively utilize external knowledge. Moreover, firms with higher levels of absorptive capability will acquire new knowledge from external sources in order to enhance their innovation activities and obtain a more effective knowledge transfer. Hence, the absorptive capability of a firm impacts how much the firm can improve their innovation through the search, transformation, and utilization of such knowledge (Yu, 2013). Nevertheless, the experiences and capabilities of the firm to absorb and utilize knowledge will determine the success of using external sources (Yu, 2013).

The recombination search theory, for example, states that innovation is a problem-solving process where firms recombine their current knowledge, problems and solutions, or reconfigure the linkages in knowledge in order to produce new knowledge (Yu, 2013). Therefore, when a firm obtains knowledge and capabilities that are similar to what they already possess, a recombination of knowledge can only produce incremental innovation (Yu, 2013). If a firm obtains diverse and unique knowledge, it can challenge the status quo and discover new ties between knowledge elements, and develop new concepts and solutions for existing problems (Yu, 2013). Firms can, thus, generate new combinations of knowledge and create innovations based upon existing knowledge (Audia & Goncalo, 2007). The application of external knowledge for commercial purposes can lead to product, service and strategic innovation (Gebauer, Worch, & Truffer, 2012). Strategic innovation aims at reshaping the existing business model and creates a leap in customer value (Gebauer, Worch, & Truffer, 2012). Moreover, strategic innovation also includes innovating consumer roles and skills in the value creation process (Michel, Brown, & Gallan, 2008). Shaw and Williams (2009) state that knowledge may be additive, complementary or substitutive for the development of innovation in tourism. Tourism, also known as a combination of experiential goods and services, can be innovated on the level of product, process, information and the overall business model (Zomerdiijk & Voss, 2010; Sundbo, Sørensen, & Fuglsang, 2010). Shaw and Williams (2009) refer to process,

product and management logistic and institutional innovations. The different types of innovation may require different degrees and combinations of knowledge (see Figure 6).

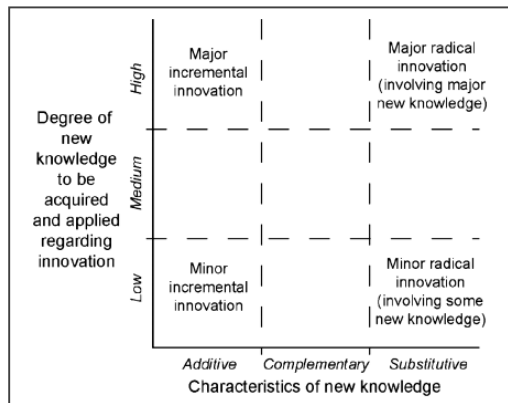


Figure 6. Knowledge and Forms of Innovation in Tourism (Shaw & Williams, 2008)

However, the knowledge typology also shows how the different forms of knowledge can trigger various forms of innovation. This also indicates the diverse possibilities social media spaces and their related knowledge can have for tourism firms to increase their innovation opportunities. Tussyadiah and Zach (2013) posit that if DMOs consider social media strategies to be a tool for co-creation of the tourist experience, they have the ability to effectively transform external knowledge. Subsequently, the different types of knowledge will enhance product development strategies. In fact, Tussyadiah and Zach's (2013) study shows that there is a positive effect of transformative capacity on DMOs' performance. As Yu (2013) posits, all phases of absorptive knowledge capacity are important for innovations within in a firm. Given the emergence of knowledge management, social media spaces and innovation in the field of tourism, this study focuses on the first two phases. DMOs need to recognize external knowledge, and assimilate so that it can be used for innovation purposes. Lichtenhaler and Lichtenhaler (2010) call it exploratory learning. This learning process will help Sundbo et al. (2010) state that firms often do not know how to use and integrate consumers' knowledge. Currently, the sporadic use and integration of available consumer knowledge in social media spaces does not support effective input for innovation. Hjalager and Nordin (2011) state that firms need to start to structurally integrate ICT as a part of their innovation strategies. Therefore, this study illustrates how the use of social media spaces can be successfully exploited to retrieve various forms of knowledge to trigger innovation in the tourism product. The following chapter will introduce the proposed method, unit of analysis and data analysis techniques.

3. Method

3.1. Introduction

Examining people's behavior when contributing to the virtual community is beneficial to consumers and managers (Ye, Zhang, & Law, 2009). The growth of Internet applications in tourism creates many opportunities as well as challenges for data generation and analysis (Law, Qj, & Buhalis, 2010). The feedback that is available on travel blogs can be richer in content and is more detailed than Likert-scale based questionnaire surveys (Pan & Li, 2011). Furthermore, using self-report methods to capture emotional experiences might not be honestly reflective (Pan & Li, 2011). However, rapid changes in the patterns of Internet use challenges researchers to capture and efficiently integrate massive amounts of data (Munar, 2010). This calls for more innovative techniques that can automatically analyze the attitudes of customers in their reviews (Ye, Zhang, & Law, 2009). Ye et al. (2009) argue that the amount of the information available in travel blogs and reviews requires sophisticated sentiment classification techniques.

In their tourism research review, Law et al. (2010) illustrate the five main approaches used for analyzing travel blogs, which include automated, numerical computation, user judgment, and combined methods. However, the combination of quantitative and qualitative approaches is still in its infancy in tourism studies (Law, Qj, & Buhalis, 2010). One reason is that there is not a commonly agreed upon set of standards for evaluating information presented online. There is a need to incorporate theories, algorithms and models from other disciplines, such as psychology and human-computer interaction, into the tourism website evaluation process (Law, Qj, & Buhalis, 2010).

Hence, considering the overall aim of this study, the previous discussion is highly relevant. The study will rely on a combination of quantitative and qualitative analytic research methods, including textual analysis of web content where UGC is displayed, by using a combination of automatic coding methods supporting data mining.

3.2. Opinion Mining

The transfer of knowledge to strategic patterns is recognized as the process of data mining. First, this chapter will explain the principles of data mining followed by web mining, and opinion mining.

3.2.1. Data Mining

Lui (2009) describes data mining as a multi-disciplinary field that involves machine learning, statistics, databases, artificial intelligence, information retrieval and visualization. Data mining is a process involving multiple iterative steps in order to discover meaningful and interesting patterns in data (Lui, 2009). Written and Frank (2005) state that data mining is useful to solve problems as well as to make predictions about new data (Witten & Frank, 2005). The process of data mining can be semiautomatic or automatic using data stored in relational tables, spreadsheets, or flat files in the tabular form (Lui, 2009; Hung & Zhang, 2008).

The data mining process consists of three iterative main steps (see Figure 7). The first step is pre-processing; in this step the data set needs to be cleaned and reduced to data elements that are useful for further analysis. The second step is data mining: in this step the processed data is led into a data mining algorithm. The algorithm will develop patterns of knowledge prediction (Lui, 2009). The third step is post-processing: using visualization techniques, new patterns can be discovered that were not extracted in step 2. Therefore, the third step supports the researcher in making decisions about defining the algorithm in step 2. Chen et al. (2008) argue that the steps are performed iteratively until meaningful knowledge is extracted.

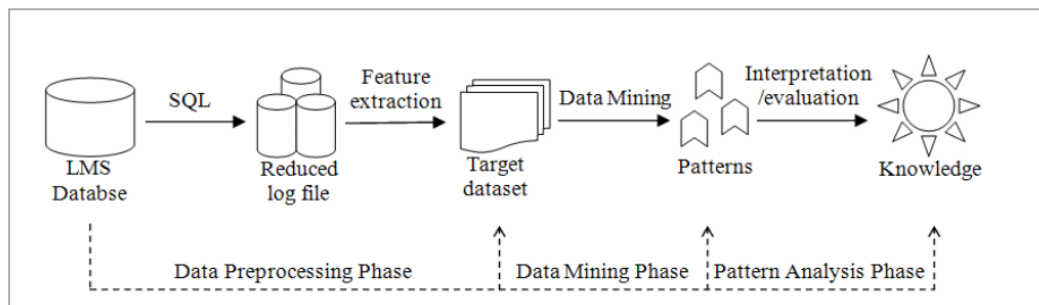


Figure 7. Data Mining Process (Hung & Zhang, 2008)

Hence, data mining methods are appropriate approaches to automatically extract and analyze free-text customer feedback from online reviews and travel platforms (Schmunk, Höpken, Fuchs, & Lexhagen, 2014). A closely related popular method is web mining, which is in fact data mining based on knowledge from web pages. This will be explained in the next section.

3.2.2. Web Mining

The significant difference between data mining and web mining is the type of data collection (Lui, 2009). In data mining the researcher has direct access to a data set, whereas in web mining the data needs to be collected. Therefore, data collection in web mining is an extra task one needs to perform before data processing can start. The steps of data processing are similar to the data mining process, namely consisting of data pre-processing, web data mining, and post-processing (Lui, 2009). According to Lui (2009), one can have three types of web mining: 1) web structure mining (discovering useful knowledge from hyperlinks), 2) web content mining (extracting or mining useful information from web-pages' contents), and 3) web usage mining (the discovery of user access patterns from web usage logs). This study uses the second type of web mining, where knowledge (UGC) is retrieved from web pages.

UGC can be measured with three mining tasks: sentiment classification (is often document-based and provides positive or negative valences distinction), feature-based opinion mining and summarization (sentence-level, and aspects consumers commented on), and comparative sentence and relation mining (comparing elements mentioned in one sentence) (Lui, 2009; Petz, et al., 2013). This study is interested in a combination of sentiment classification and opinion mining.

3.2.3. Opinion Mining and Sentiment Classification

Opinion mining is the process of identifying the expressed opinion on a particular subject and evaluating the polarity of this opinion (Tsytarau & Palpanas, 2012). An opinion denotes an evaluation or sentiment, appraisal, attitude or emotion (Lui, 2009). In research, sentiment words are also called opinion words, polar words or opinion-bearing words (Lui, 2009). According to Lui (2009), an opinion can be quintuple (e,a,s,h,t) where 'e' is the name of the unit, 'a' is the aspect of the unit, 's' is the sentiment about the target, 'h' is the opinion holder and 't' is the time when the opinion is expressed. Opinion mining in social media spaces can be a complicated task due to noisy text (grammar mistakes), language variation (irony), relevance, and target identification (Petz et al., 2013). However, an opinion is a transitional concept, reflecting our attitude towards something, whereas sentiments reflect our emotions about something (Tsytarau & Palpanas, 2012). Sentiment analysis is built upon an in-depth view of the emotions expressed in the text, and enables the further processing of the data, in order to aggregate the opinion (Tsytarau & Palpanas, 2012). Hence, sentiment classification and opinion mining are closely linked. In general, sentiment classification of web mining can be used for explicit and or implicit opinion mining.

Sentiment classification is steered by a classifier, assigning each document into positive or negative classes (Lui, 2009). It makes use of natural language processing, information retrieval,

information extraction and artificial intelligence (Lui, 2009). In sentiment classification, the researcher aims to find documents that are relevant for a specific topic, pre-processes the data, and finally identifies the sentiment (Petz et al., 2013; Lui, 2009). Hence, the steps of sentiment analysis are threefold; i) recognition of properties, ii) subjectivity and sentiments, followed by iii) analysis of identifying, classifying, and aggregating (see Figure 8). The sentiment analysis can occur on a document-level, sentence-level or aspect-level.

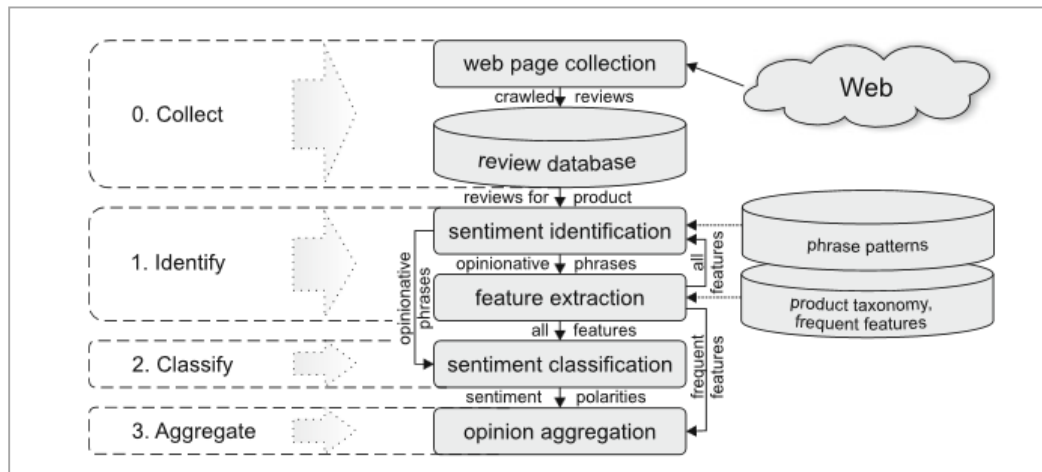


Figure 8. Sentiment Aggregation (Lui, 2009)

In the field of opinion mining, language-specific tools, algorithms and models are frequently utilized. Tytsarau and Palpanas (2012) classify the approaches of sentiment analysis into four categories: i) machine learning, ii) dictionary-based, iii) statistical, and iv) semantic approaches. In the machine learning approach, the researcher uses continuous, categorical or binary features (labels), which ‘supervises’ the classification of text. In the dictionary approach, a category with synonyms andonyms are used to identify specific sentiments words. The semantic approach searches for positive or negative valence emotions in the corpus of the text. The statistical approach aims to estimate co-occurrence of adjectives in a corpus (Tytsarau & Palpanas, 2012). However, often researchers combine the different methods, for example, the supervised machine learning technique is often followed up by the statistical approach (He, Macdonald, He, & Ounis, 2008). This study uses the dictionary-based approach followed by the statistical approach.

3.2.4. Dictionary-based Approach

The dictionary-based approach uses synonyms, antonyms and hierarchies to determine word sentiments. The dictionary building process looks as follows: i) small sets of sentiment words with known or negative orientations are first collected manually, ii) the algorithm grows this set by searching for

synonyms and antonyms, ii) new words are added to the seed list, iv) the next iteration begins until no new words are found, and v) often followed by a manual inspection step.

The pre-processing part of dictionary-building is significant to ensure valid and reliable list of words reflecting sentiments. For example, the importance of indicating possible stems of words included in the dictionary is something that needs to be considered. A stem is the portion of a word that is left after removing its prefixed and suffixes (Lui, 2009). Therefore, stemming enables different variations of the word to be considered in retrieval which improves the recall. Moreover, the researcher also needs to define several stemming algorithms, similar with issues related to hyphens and punctuation marks. Especially in texts from social media spaces one can have grammar mistakes, abbreviations and different usage of punctuation marks. However, dictionary approaches are often hard to use when finding domain or context depending orientations or sentiment words (Lui, 2009).

According to Lui (2009) the corpus-approach is a significant follow-up to overcome the shortcoming of the dictionary-approach. The corpus-approach deals with problems relating to the orientation of words. The development of linguistic rules helps to identify more adjective sentiment words and their orientations from the corpus (Lui, 2009). For example, the rule about conjunction 'AND' implying that conjoined adjectives usually have the same orientation (i.e. this city is beautiful and spacious). Rules can also be designed for connectives, such as, 'OR', 'EITHER-OR', 'NEITHER-NOR'. Lui (2009) refers to this as sentiment consistency. Other approaches can be intra-sentential (within a sentence) and inter-sentential (between neighbouring sentences) sentiment consistency, which they call coherency. Sentiment changes can be captured by expressions, such as 'but' and 'however'. The aim is to find orientation and sentiment consistency idea. In addition, researchers can decide upon weighting effects. The weight effects decide the importance of words when operationalizing categories. Hence, the combination of the dictionary-based approach and the corpus-based approach will help to achieve precise measurement of concepts (Lui, 2009).

The use of the dictionary-based approach can be supported by computer content analysis programs, such as WordStat and Worder (Pollach, 2011). These programs help to design dictionaries and support the corpus-approach. This study uses the computer-aided content analysis program WordStat. The program allows employing: i) tests in several formats ii) reduce words in canonical form, iii) univariate frequency analysis, and iv) bivariate comparison between any textual field and any nominal and ordinal variable (i.e. age of respondents). The following section will explain the data collection method and sample selection.

3.3. Data Collection and Sample Selection

The data collected for this study is gathered from TripAdvisor. TripAdvisor is a third-party review website, which is known world-wide and used by millions of users daily to write reviews as well as to find relevant information for a holiday (i.e., hotels, restaurants). This study focuses on three main service settings reflecting the tourist experience: accommodations, sights and restaurants. In total, 1104 TripAdvisor reviews are collected about the capital of Austria, Vienna. The same number of reviews in the range of negative, average and positive review scores are systematically collected, in order to aim for a fair reflection. Moreover, a maximum of ten review per object (i.e., a sight) were collected.

3.3.1. Operationalization - Dictionary Design

The dictionary design is defined by theory-driven variables and data-driven key words. The keywords are clustered into more holistic themes, based on theory. There are two dictionaries designed for this study, one on brand personality and one on basic emotions.

Brand personality

Aaker’s brand personality scale (BPS) is used to operationalize the phenomenon of brand personality and will guide and inform the content analysis. The BPS consists of five dimensions with a list of linked main sub dimensions developed by Aaker (1997), see Table 3. As mentioned before, the analysis is carried out using the software package WordStat. As Pollach (2011) explains, this program compares a list of words (dictionary) selected by the researcher against an amount of text loaded into the software. Subsequently, frequencies with which these words occur in the text are provided (Pollach, 2011). The first step in this research involves collecting, and compiling synonyms on Aaker’s BPS (199) as seen in Table 3. The aim is to find original synonyms to all these traits, as well as synonyms to the five basic dimensions to enrich the dictionary. In total 1030 words are collected and subsequently verified by two researchers, resulting in a rather equal representation of every dimension of the BPS, see appendix C for a detailed overview.

Competence	Excitement	Ruggedness	Sincerity	Sophistication
Reliable	Daring	Outdoorsy	Down-to-earth	Upper-class
Hard-working	Trendy	Masculine	Family-oriented	Good-looking
Secure	Spirited	Tough	Small-town	Charming
Intelligent	Cool	Rugged	Honest	Feminine
Technical	Young	Western	Sincere	Smooth
Corporate	Imaginative		Wholesome	Glamorous
Successful	Unique		Original	
Leader			Cheerful	
Confident			Sentimental	
			Friendly	
			Real	

Table 3. Aaker’s Brand Personality and Related Keywords (1997)

Emotions

In addition to the brand personality scale, the study also analyzes the emotions used in reviews in order to provide a holistic view of tourists' emotional attachment to Vienna as a tourist destination. Hosany et al. (2014) validated the Destination Emotional Scale (DES). However, the DES only captures positive emotional experiences using the dimensions of joy, love and positive surprise. Different authors argue that tourists often remember rather 'rosy views' of their experiences, whereas negative experiences are not recalled (Hosany et al., 2014). Plausibly, the dominant use of self-reports in tourism research to capture destination related emotions could explain the lack of indicated negative emotions. As explained in the previous section, online reviews reflect rather candid evaluations of one's holiday, thus negative valenced experiences might be present too.

The need to capture the range of possible emotions during a holiday is aimed for. Given the lack of agreement on basic emotions in general research as well as in tourism studies, this study decided to use the main six identified basic emotions as guidance. Many authors agree on six emotions, which are joy, surprise, fear, anger, sadness and disgust (James, 1884; Watson, 1913). Laros and Steenkamp (2005) argue that basic emotions allow the understanding of consumers' feelings effectively. According to Han et al. (2010), researchers who examine emotional aspects of consumer behavior can take a categorical dimension approach. The categorical dimension uses several independent mono-polar categories of emotional responses. Laros and Steenkamp (2005) additionally propose to introduce a hierarchy of consumer emotions, since emotions can be considered at different levels of abstraction (most general, basic emotion level, and subordinate level). Based upon the discussion, this study applies a categorical approach based upon six basic categories of emotions: joy, fear, sadness, disgust, anger and surprise. Table 4 provides an overview of the main dimensions and linked key-words based upon Lazarus' categorization. In total, 912 words are collected that equally spread across the six categories of emotions and subsequently verified by two researchers, see appendix C for a detailed overview.

Anger	Sadness	Joy	Fear	Disgust	Surprise
Annoyance	Depress	Cheerful	Anguish	Awful	Admire
Arrogance	Disappoint	Comfortable	Anxiety	Dangerous	Attractive
Complain	Dissatisfy	Enjoy	Despair	Desperate	Fantastic
Furious	Regret	Delightful	Distress	Dislike	Magnificence
Irritate	Comfortless	Fun	Fear	Fury	Amazing
Mad	Hopeless	Glad	Hesitate	Horrendous	Excellent
Protest	Somber	Happy	Restless	Nervousness	Extraordinary
Severity	Miserable	Pleasant	Timidity	Shame	Gracious
Wound	Unpleased	Satisfied	Unease	Terrible	Splendid

Table 4. Emotions and Related Keywords (based upon Lazarus, 1991)

In terms of anger, words such as annoyance, hate, irritate and unkind were taken into account. This category can be defined according to Lazarus (1991) as a reaction to degrading offense which can be a result of perceived injustice in a hotel setting. According to Lazarus (1991), the category sadness refers to when someone experiences irrevocable loss. Words such as depress, disappoint, dissatisfy, grief, miserable and regret are within this category. In terms of joy, Lazarus (1991) argues that this refers to reasonable progress towards the realization of a goal; words such as cheerful and comfortable are included. Fear can be felt when someone is facing an immediate and concrete danger while disgust is felt when observing and or being too close to a disgusting object or idea (Lazarus, 1991). Fear is covered by words such as anxiety, distress, distrust, restless and to-worry. Disgust is covered by words such as awful, dislike and terrible. Surprise can be categorized as a positive, neutral or negative emotion. In this study, surprise is categorized as a positive valenced emotion, where one feels amazement or wonder with words like admire, attractive, fantastic, magnificence. The next section will explain the method of data analysis.

3.4. Method of Data Analysis

In data mining there are, in general, four kinds of relationships sought: classes, clusters, associations and sequential patterns. The classes can be located in pre-determined groups, which are explicitly done in a dictionary approach. In the case of clustering, logical relationships or preferences are identified. For associations, different meanings are linked with each other. The sequential patterns can support anticipated behavior and trends. Through the use of Chi-square tests, the significance of association between rows and columns is measured. Hence, the Chi-square tests illustrate how the variables are related. However, it does not provide information about way in which individual associations exist between row-columns pairs. Therefore, dendrograms are especially useful for illustrative purposes to indicate the co-occurrence of items (dendrogram is a tree-structured graph) (De Moya & Jain, 2013). The tree-structured graph supports the visualization of hierarchical clustering. In other words, it is a follow-up technique for correspondence analysis (Lui, 2009). The dendrogram illustrates the similarity of distance between the categories as occurred in the correspondence analysis.

For this study, correlations will be performed between service settings and brand personality dimensions as well as for emotions. Moreover, analysis per TripAdvisor's rating indicator (negative, average and positive) will be performed. This will allow the understanding of which brand personality and emotions are used per rating group. Overall, this study aims to provide a hands-on example of which knowledge can be extracted from UGC, and trigger the development of modified and/or new elements as a part of a DMO's product/service offers.

4. Results

The first part of this section focuses on the main results of the brand personality dimensions and emotions. The subsections focus on all service settings together as well as on the separate discussion per service setting.

4.1. Analysis of Brand Personality Dimensions in Social Media

First, the three service settings are combined and the frequency analysis is performed based on the five dimensions of Aaker's brand personality scale. Overall, sincerity (39.9%) is the most mentioned dimension, followed by sophistication (20.6%) and excitement (18.8%). The dimensions of competence (12.7%) and ruggedness (7.9%) are the least mentioned dimensions (Table 5 provides an overview). Furthermore, the dendrogram supports the understanding of how the dimensions occur together in the reviews. Figure 9 illustrates how excitement and sincerity occur together, whereas ruggedness is often mentioned separately from the other dimensions.

Brand Personality Dimensions	Frequency	%	No. Cases
Sincerity	1416	39.9	622
Sophistication	732	20.6	452
Excitement	667	18.8	390
Competence	452	12.7	328
Ruggedness	281	7.9	207

Table 5. Brand Personality Dimensions - Overall Service Setting

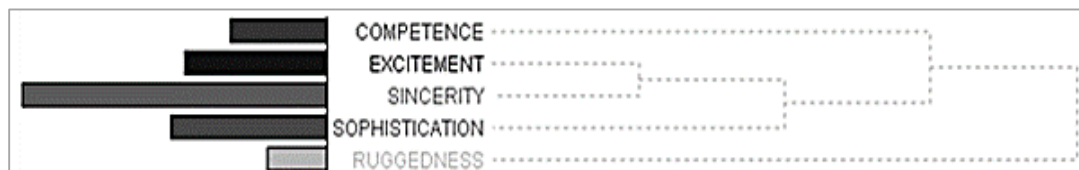


Figure 9. Dendrogram Brand Personality Dimensions - Overall Service Setting

Then, the different BPD per service setting are analyzed, an overview of which can be seen in Figure 10, with regard to how the different services are represented as well as compared to the overall representation of reviews. Chi-Square analysis show that sincerity and competence significantly differ

between the three service settings ($p < .005$). Excitement ($p = .393$), ruggedness ($p = .503$) and sophistication ($p = .246$) are not significantly different between the three service settings.

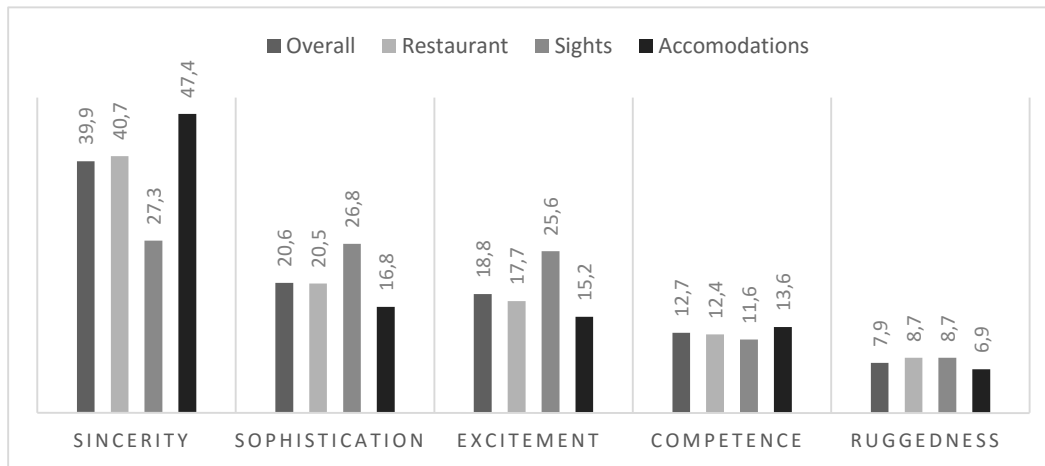


Figure 10. Brand Personality Dimensions % among the Service Settings

4.1.1. Restaurant – Brand Personality Dimensions

Tourists have the opportunity to review 2679 restaurants in Vienna, including every kind of restaurant and kitchen. The analyses are done on 376 reviews of restaurants; Table 6 provides an overview. The most dominant dimension is sincerity (40.7%) and is hereby the most expressed and mentioned as an important element of the experience in Viennese restaurants. Furthermore, sophistication (20.5%), excitement (17.7%) and competence (12.4%) are mentioned on an average level. Ruggedness (8.7%) is mentioned the least of all dimensions. For sights, the dimensions of sincerity (27.3%), sophistication (26.8%) and excitement (25.6%) are equally presented in reviews, whereas competence (11.6%) and ruggedness (8.7%) are close with regard to percentage and contain the lowest references. Lastly, in reviews of accommodation, the dimension of sincerity (47.4%) also occurs the most frequently. Sophistication (16.8%), excitement (15.2%) and competence (13.6%) are close in terms of percentage of mentions in the reviews. Ruggedness (6.9%) is the dimension that is mentioned the least. Specific examples are shown in appendix D.

Brand Personality Dimensions	Frequency	%	No. Cases
Sincerity	409	40.7	208
Sophistication	206	20.5	143
Excitement	178	17.7	119
Competence	125	12.4	94
Ruggedness	87	8.7	67

Table 6. Brand Personality Dimensions– Restaurants

The dendrogram (Figure 11) supports the illustration of excitement and sincerity being closely interlinked and mentioned in reviews of restaurants. Sophistication is subsequently linked with excitement and sincerity. Competence and ruggedness are the two dimensions that are rather loosely connected with the other dimensions. This can imply that tourists do not mention them with other dimensions, and discuss the elements individually. See appendix D for in-text examples.



Figure 11. Dendrogram of Brand Personality Dimensions - Restaurants

4.1.2. Sights – Brand Personality Dimensions

TripAdvisor allows tourists to review the many sights that Vienna has to offer by an extended list of 360 attractions ranging from museums, to landmarks, performances, amusements, sports and outdoor activities. The analyses are based on 363 reviews. Table 7 shows the percentage of brand personality dimensions. The dimensions of Sincerity (27.3%), Sophistication (26.8%) and Excitement (25.6%) are equally presented in reviews about sights. Competence (11.6%) and Ruggedness (8.7%) are close with regard to percentage and contain the lowest references.

Brand Personality Dimensions	Frequency	%	No. Cases
Sincerity	270	27.3	155
Sophistication	265	26.8	166
Excitement	253	25.6	141
Competence	115	11.6	90
Ruggedness	86	8.7	62

Table 7. Brand Personality Dimensions - Sights

The dendrogram (Figure 12) supports the visualization similarities between brand personality dimensions. As seen in Figure 12, brand personality dimension of excitement and sincerity are closely interlinked, implying that these two dimensions often occur in the same paragraph and /or whole review. This is closely followed by the dimension of sophistication. Competence is loosely related to dimensions of excitement, sincerity and sophistication. Ruggedness is the dimension that is mentioned the least.



Figure 12. Dendrogram of Brand Personality Dimensions - Sights

4.1.3. Accommodations– Brand Personality Dimensions

TripAdvisor has 1067 accommodations listed for Vienna. Among them are hotels, bed and breakfasts, lodgings, and vacation rentals. The analysis for the accommodations is based on 365 reviews. The dimension of sincerity (47.4%) occurs most frequently. Sophistication (16.8%), excitement (15.2%) and competence (13.6%) are close in terms of percentage of mentions in the reviews. Ruggedness (6.9%) is the dimension that is mentioned the least. Table 8 gives an overview.

Brand Personality Dimensions	Frequency	%	No. Cases
Sincerity	737	47.4	259
Sophistication	261	16.8	143
Excitement	236	15.2	130
Competence	212	13.6	139
Ruggedness	108	6.9	78

Table 8. Brand Personality Dimensions - Accommodations

The co-occurrence of the dimensions also shows how competence and sincerity are closely linked (see Figure 13). This implies that in reviews these two dimensions are often mentioned in the same review and /or paragraph. Furthermore, sophistication is linked to the aforementioned concepts. Finally, the dimensions of ruggedness and excitement have more distance to the other dimensions, also implying that ruggedness has been mentioned on its own in reviews about accommodations. Examples for accommodation reviews and brand personality dimensions can be found in appendix D.

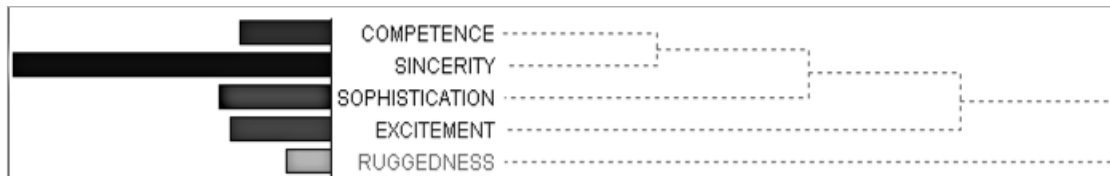


Figure 13. Dendrogram of Brand Personality Dimensions - Accommodations

4.1.4. Comparisons of TripAdvisor Rating Scales and Brand Personality Dimensions

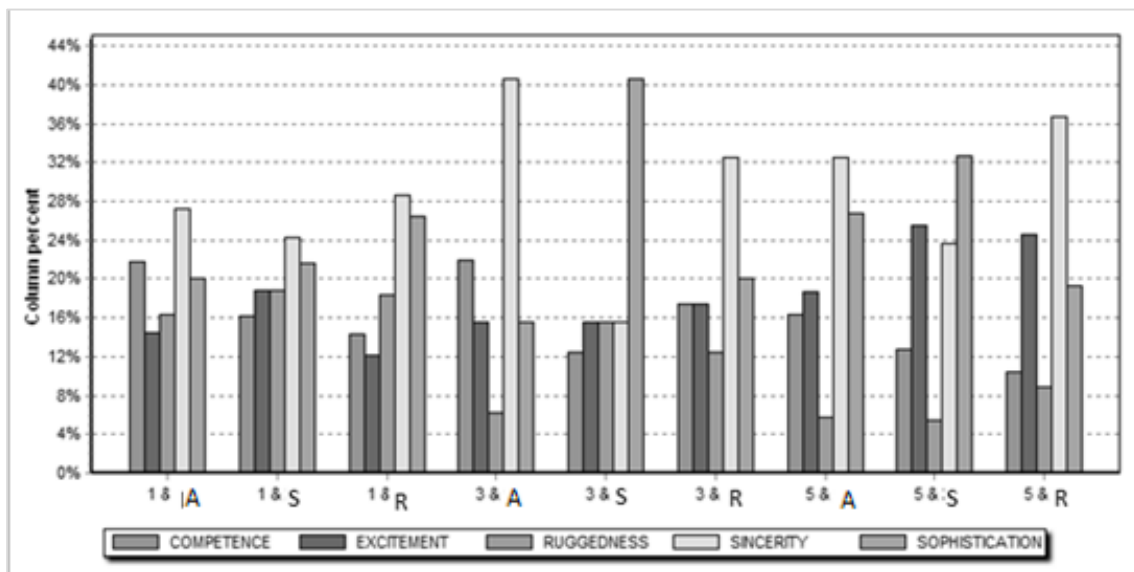
Further analyses are performed to indicate a significant difference between TripAdvisor rating scales and the five brand personality dimensions. TripAdvisor allows consumers to rate a service in three ranges: 'negative' (1), 'average' (3) and 'positive' (5). Besides competences, the brand personality dimensions are significantly distributed among the service settings (see Table 9). For example, excitement is significantly expressed in positive reviews (41.7%). Interestingly, negative rated reviews also receive comments including statements expressing excitement (25%). A similar pattern can be found for sincerity and sophistication. Ruggedness, a rather negative affective dimension, is represented with 45.9% in the negative rated reviews. Interestingly, 20.3% of the feelings related to ruggedness are present in positive rated reviews.

TripAdvisor Rating Scale				
	Negative	Average	Positive	P-value
Sincerity	29.0	33.9	37.1	.013
Sophistication	23.2	36.4	40.4	.023
Excitement	25.0	33.3	41.7	.000
Competence	32.4	36.6	32.0	.844
Ruggedness	46.2	34.6	19.2	.085

Note: Row %

Table 9. Brand Personality Dimensions - TripAdvisor Review Scales

In addition, analyses are performed to indicate the differences between the specific service settings, the rating scales and the brand personality dimensions. There are significant differences between the ranking and service settings based on excitement, sincerity and sophistication ($p < .05$). See Figure 14 for an overview.



Note: 1=negative, 2=average, 3=positive, A=accommodations, S=sights, R=restaurants

Figure 14. Brand Personality Dimensions - TripAdvisor Review Scales breakdown per Service Setting

The first observation of the graph illustrates similar dimensions in negative rated reviews (1) among the different service settings. Interestingly, users still mention feelings of competence, excitement and sophistication when negatively evaluating their experience. Interestingly, reviews of accommodations receive slightly more attention in the dimension competence than the other two service settings. For the

other dimensions, there are no large differences between the three service settings. The second observation refers to average rated reviews (2), where accommodation reviews receive high numbers of reviews with sincerity. Sights, on the contrary, receive a high number of reviews related to sophistication. Third, among the positive rated reviews (5), the differences between the service settings are relatively small. Sights-related reviews include relatively more content addressing words of sophistication, whereas restaurant reviews, compared to the other two settings, receive more reviews demonstrating sincerity. The analysis demonstrates in which way the three service settings have similar results on the dimension of ruggedness. Interestingly, average rated reviews (3) contain, for example, in the case of accommodation reviews, a higher number of sincerity words compared to the positive rated reviews (5). Hence, this would indicate that a dimension such as sincerity does not directly impact one's evaluating behavior. Excitement is significantly more present in positive rated reviews in all service settings. Thus, overall, these analyses provide an insight into how the various dimensions influence tourists' overall rating behavior.

4.2. Analysis of Emotions in Social Media

The next part of the analysis focuses on the emotions used in the reviews. The representation of emotions in all reviews shows that surprise (49.9%) is the most prominent emotion (see Table 10). Joy is the second prominent emotion reflected in the reviews with 30.2%. Smaller percentages are divided among sadness (6.9%), anger (7.4%), disgust (4.7%) and fear (0.9%). The dendrogram (Figure 15) illustrates how anger and joy are often mentioned in the same body of text; a similar pattern can be found between surprise and joy. Fear, in contrast, is not related to any other emotion

Emotions	Frequency	%	No.Cases
Surprise	2492	49.9	625
Joy	1505	30.2	691
Sadness	342	6.9	251
Anger	369	7.4	266
Disgust	237	4.7	134
Fear	46	0.9	34

Table 10. Emotions – Overall Service Setting



Figure 15. Dendrogram Emotions – Overall Service Setting

When analyzing the separate service settings according to their emotions differences are detected (see Figure 16). Besides sadness ($p=.067$), the emotions are significantly different between the service settings ($p<.05$). For restaurants, surprise is the most dominant emotion (49.9%), followed by joy (30.2%). The emotions of sadness, anger and fear are marginally represented (5%-7%), whereas fear is hardly mentioned (0.3%). For sights, similar patterns of emotions can be seen; fear is represented by 1.3%. Lastly, for accommodation, similar emotion patterns can be found. The next section will explain per service setting.

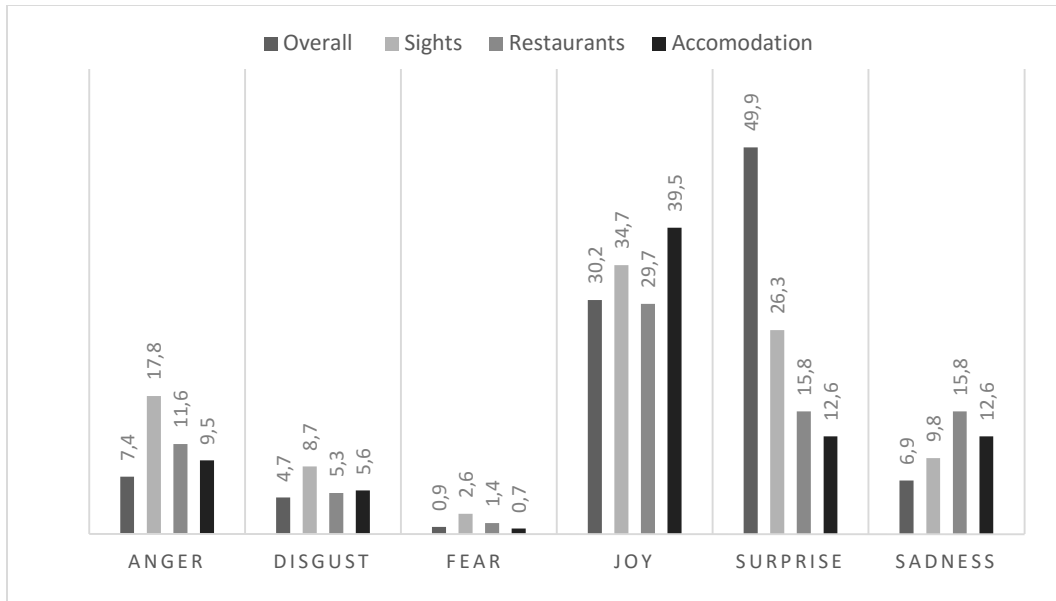


Figure 16. Emotions % among the Service Settings

4.2.1. Restaurants – Emotions

Emotions in reviews of restaurants are dominated by surprise (50.9%) and Joy (32%). Emotions of sadness (7%), anger (4.8%) and fear (5%) are only represented by a small percentage. The emotion fear is almost not present at all (.3%). Table 11 provides an overview and Figure 17 illustrates the different emotions used in the reviews of restaurants.

Emotions	Frequency	%	No. Cases
Surprise	760	50.9	198
Joy	478	32.0	245
Sadness	104	7.0	78
Anger	72	4.8	60
Disgust	74	5.0	36
Fear	5	0.3	4

Table 11. Emotions - Restaurants

The dendrogram (Figure 17) illustrates that emotions of Joy and Surprise are closely interrelated, followed rather closely by sadness. Anger and disgust are also rather connected, however the distance between the clusters is rather large compared to joy and surprise. The emotion of fear is loosely connected to the other five clusters, but connects the first with anger and disgust. Several examples are given of restaurant reviews per emotion and can be found in appendix D.

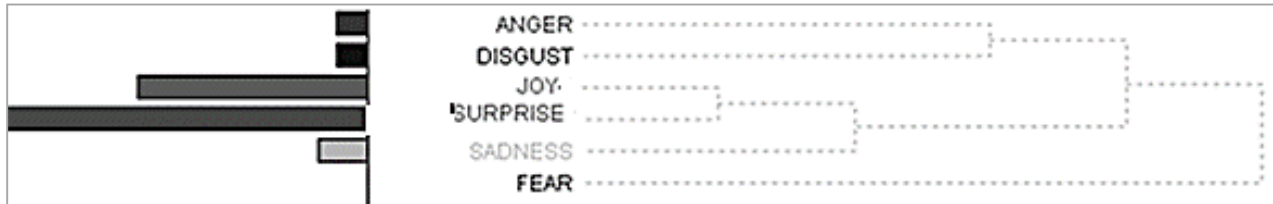


Figure 17. Dendrogram of Emotions - Restaurants

4.2.2. Sights – Emotions

Emotions used in sights are presented in Table 12. One can see that surprise (56.8%) is the most frequently mentioned emotion when reviewing a sight, closely followed by the emotion joy (23.8%). Interestingly, the emotion sadness is represented with 9.5% and more negative valenced emotions such as anger (6.5%), disgust (3.3%) and fear (1.0%) are also present. Figure 18 supports the visualization of the divisions of emotions in sight reviews. Considering the co-occurrence, Figure 18 illustrates the inter-relation between the emotions. Surprise and joy are also closely linked, meaning that tourists referred to them interchangeably. Interestingly, anger is also related to feelings of joy, surprise and sadness. Fear is present in reviews but does not consistently occur with other emotions.

Emotions	Frequency	%	No.Cases
Surprise	893	56.7	233
Joy	359	22.8	190
Sadness	153	9.7	101
Anger	102	6.5	74
Disgust	52	3.3	34
Fear	15	1.0	10

Table 12. Emotions - Sights



Figure 18. Dendrogram of Emotions - Sights

4.2.3. Accommodations – Emotions

Emotions in reviews of accommodations are dominated by surprise (43.7%) and Joy (34.5%). Emotions of sadness (4.4%), anger (6.9%) and disgust (6.0%) are present to a limited extent. The emotion of fear is the least mentioned (1.3%). Table 13 provides an overview. In order to understand how the emotions are used, the co-occurrence is shown in the dendrogram (see Figure 19). Here one can see that anger and joy are often mentioned together. A possible explanation for this can be that tourists start with different complaints, but then also close the review with some positive comments or vice versa. Often they also express their disappointment (sadness), which explains the link between joy, sadness and anger. Overall, fear is loosely linked to all the other emotions. TripAdvisor examples of accommodation reviews can be found in appendix D.

Emotions	Frequency	%	No. Cases
Surprise	867	43.7	199
Joy	683	34.5	263
Sadness	88	4.4	74
Anger	154	6.9	102
Disgust	118	6.0	66
Fear	26	1.3	20

Table 13. Emotions - Accommodations

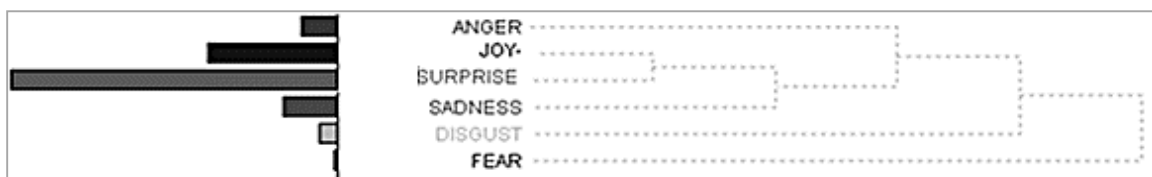


Figure 19. Dendrogram of Emotions - Accommodations

4.2.4. Comparisons of TripAdvisor Rating Scales and Emotions

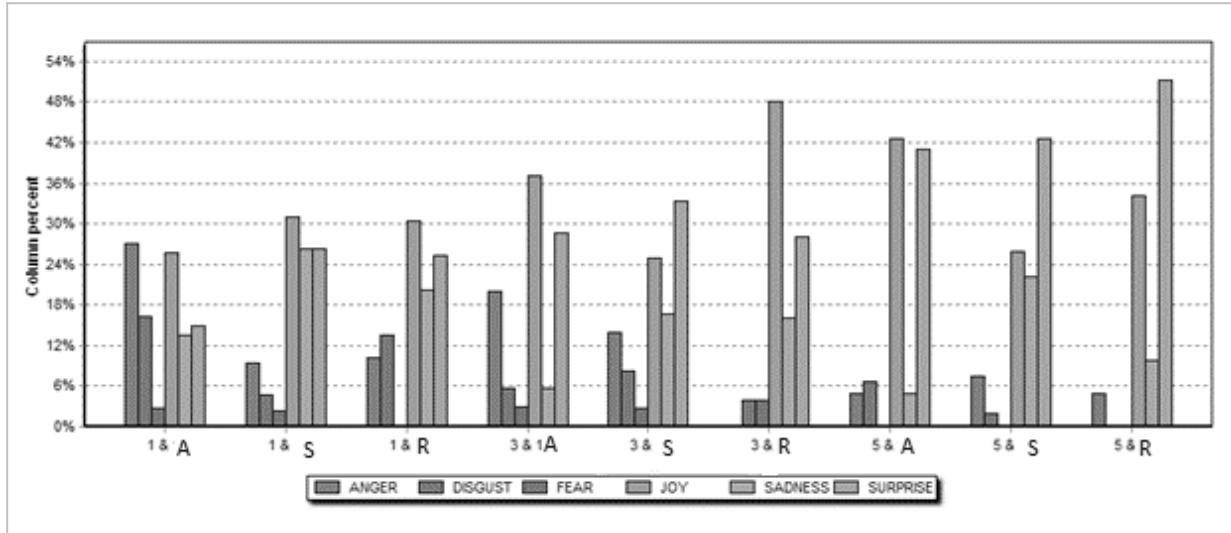
Also, for the emotions, the TripAdvisor rating scales are incorporated to understand how emotions impact one's experience. First, all reviews are analyzed and compared per emotion (see Table 14). Besides fear ($p=.933$), all emotions are significantly related to TripAdvisor rating scales ($p<.05$). For example, anger is significantly more represented with 51.7% in negative rated reviews than in average and positive rated reviews. A similar pattern can be found for disgust and sadness. Joy is significantly more represented in positive rated review. Interestingly, negative rated reviews and average reviews also reflect joyful words (30.2%, 28.2 %). A similar pattern can be found for surprise.

TripAdvisor Rating Scale				
	Negative	Average	Positive	P-value
Anger	51.7	29.3	19.0	.006
Disgust	54.5	15.2	30.3	.050
Joy	30.2	28.2	41.6	.050
Sadness	53.1	23.4	23.4	.000
Surprise	29.6	23.0	47.4	.000
Fear	40.0	20.0	40.0	.966

Note: Row %

Table 14. Emotions - TripAdvisor Reviews Scales

In order to understand how the different emotions impacts one's rating behavior and, thus, the service as well as the destination experience, the different service settings are further analyzed. In this case, fear ($p=.09$) and sadness ($p=.205$) are not significant.



Note: 1=negative, 2=average, 3=positive, A=accommodations, S=sights, R=restaurants

Figure 20. Emotions - TripAdvisor Review Scales breakdown per Service Setting

The first observation from Figure 20 refers to the negative rated reviews (1), where accommodation-related reviews received a significantly higher number of words expressing anger. Sights and restaurant reviews receive more words related to sadness and surprise than accommodation reviews. Then, looking at the average rated reviews (3), a similar pattern of represented emotions can be found. The only significant difference is the high number of joy-related words for restaurant reviews. Interestingly, accommodation reviews receive a high number of anger-related words. Lastly, the positive rated reviews (5) show some interesting results too. For example, fear has not been displayed at all. In restaurant reviews, disgust-related emotions are also not mentioned. Sights-related reviews show, in comparison with the other two service settings, a high level of sadness-related words in the reviews rated positively. Thus, these analyses indicate in which way specific emotions impact tourists' evaluation about specific services. Interestingly, the results indicate that the different rating scales are not always an indication of tourists' experienced emotions. Negative affect is also present in positive rated reviews. The analysis per service setting helps practitioners to understand in which settings the emotions support a positive or negative evaluation of the experience. Recommendations are given in the final remarks (next section).

5. Conclusion

5.1. Final Remarks

The importance of brand personality being an integral part of a DMO's branding strategy has been indicated by research linked with destination image and destination branding efficiency studies. Moreover, the importance of consumer attachment to a brand and the emotional links to a product and/or service has been proven to successfully develop a brand among its competitors. Also in tourism this trend has been recognized. In other words, there is a urgent call for DMOs to respond to this phenomenon. DMOs need to realize that ICT has a permanent role which creates new forms of consumer power. Furthermore, as Keller (2009) states, consumers aim for unique experiences including diverse values. In particular, affective feelings play an important role when creating value-based experiences. Thus, DMOs need to strive to develop innovative experiences that satisfy the modern tourist (Tussyadiah & Zach, 2012; Hosany et al., 2014). Experiences designed based on affective states will help DMOs to have effective branding strategies but also reach higher levels of consumer satisfaction resulting in positive word-of-mouth communication and future revisit intentions (Murphy et al., 2009; Yuksel et al., 2010).

Additionally, DMOs are required to respond to a quickly changing online world. In order to so, DMO's need to develop appropriate responses supported by creative crawling tools to get a hold on tourist-generated knowledge. This consumer-driven knowledge can be resourceful for effective experience design subsequently positively impacting DMOs' performances (Tussyadiah & Zach, 2013). Furthermore, from a competitive advantage perspective, absorbing external knowledge supports DMO's to manage a stable position in the hybrid competitive tourism industry (Shaw & Williams, 2009). Thus, continuous online reputation analysis allows marketers to fit effectively their products with the consumers' needs (Munar, 2012; Marchiori et al., 2012). This forces DMOs to shift towards emotional-based experiences and branding approaches based on user-driven recommendations. Therefore, this study questioned how the concept of brand personality is represented in UGC. Subsequently, the study aimed to demonstrate DMO's potential to systematically understand the users' knowledge and integrate it into innovative marketing strategies.

First, this study shows that consumers express their actual experiences in social media spaces. The topic of brand personality show to be significantly presented in all settings which represents the tourist experience. Tourists mention and feel these dimensions and subsequently consider them as an

integral part of their experiences. These results can be confirmed with previous studies using survey-based methods, analyzing the topic of brand personality (e.g., Hosany et al., 2006; Murphy et al., 2007). Furthermore, this study was able to provide additional insights into specific service settings (accommodations, sights, restaurants). For example, sincerity and sophistication are the two dimensions being consistent presented among all service settings. The negative valance dimension, ruggedness, is present especially in restaurant reviews. Marketers are, thus, provided by resourceful information in social media spaces as a tool to understand where and in which way to improve and/or steer the experience.

Furthermore, basic emotions were explored in the UGC, supplementing the brand personality dimensions and providing a holistic view of affective feelings of the tourists experience. Hosany et al. (2014) tested the DES-scale to analyze how consumers experience a destination surveying tourists. The DES-scale, however, only captures feelings of joy, love and positive surprise. This study also focused on negative emotions (disgust, fear and anger). In this case, this study was able to demonstrate the different emotions tourists experience analyzing user-driven reviews. In particular, negative emotions were significantly present in reviews related to accommodations and restaurants. Thus, improving consumers' experiences with the brand and overall re-visitation, analysis of negative emotions has to be included. Chen and Phou (2013) illustrate how brand personality facilitates a higher level of destination satisfaction. Hence, also for service providers consumers' satisfaction can be steered, if marketers are aware of the possible brand personality dimensions as well as emotions (negative and positive) experienced. The additional analysis of TripAdvisor's rating scales demonstrated how particular affective states impact the way consumer evaluate a service (i.e., disgust and surprise). Interestingly, for the brand personality dimensions, there is no direct effect on the negative rating of an experience. For example, ruggedness was also mention in positive rated reviews. Murphy et al. (2007) show how brand personality plays a positive role for consumers to connect to a city. Previous studies of brand personality indicate that there is a direct effect of brand personality on consumer satisfaction, value creation and re-visitation (Chen & Phou, 2013; Papadimitriou et al., 2013; Seljeseth & Korneliusen, 2013; Hultman et al., 2015). Interestingly, this study was able to indicate a stronger effect deviating from emotions than brand personality on tourists' satisfaction levels. For example, experienced negative emotions (i.e., disgust, anger) impacts one's rating behavior. This is in line with previous studies analyzing specifically hotel reviews (Dickinger & Lalicic, 2014; Melián-González, et al., 2013; Yoo & Gretzel, 2008). Thus, the combination of affective feelings shows to be an important strategic assets for marketers to integrate in

product design. This study shows that the extra information (i.e., rating scales) provided in social media spaces further helps marketers to indicate the need to improve and/or innovate the perceived value of the experience. In general, this study shows how user-driven reviews can provide marketers with fruitful input to develop and/or innovate their products and services.

5.2. Theoretical Contributions

The study has several theoretical contributions. Various tourism-related research has highlighted the importance of shifting to emotional-focused branding strategies. This study adds new insights to this by integrating Aakers' brand-personality and additionally the six basic emotions in a social media context. Various studies in tourism have used surveys to explore the brand-personality scale and hereby analyze users' perceptions of a destination (Murphy et al., 2007; Papadimitriou, et al., 2013; Seljeseth & Korneliussen, 2013). Furthermore, various studies analyze DMOs' communication documents, travel books and websites (Pitt et al., 2007; Sahin & Baloglu, 2009). However, to the researcher's knowledge no study in tourism has used user-driven reviews subject to the assessment of this topic. The study demonstrates the usefulness of the Aakers' theory to indicate new insights for generating innovative experiences. Emotions and feelings related to personality traits is often experienced in an unconscious manner. Thus, the integration of new methods that are able to capture these feelings in particular is needed (Chin, 2009). The integration of the dictionary-approach and text mining based on tourist-driven recommendations shows to be beneficial. Furthermore, previous studies only captured one part of the overall experience (i.e., hotel) which leaves a lot of questions what specifically should be improved to enhance the overall tourist experience. This paper demonstrates how the three dominant service settings significantly differ on the subjected affective dimensions represented in tourist-driven recommendations. Moreover, effectively combining the website features (i.e., rating scales) provide insights into which elements trigger specific evaluations. Thus, the study was able to extend theories on consumer satisfaction with a destination as well as innovative destination experience design.

5.3. Managerial Implications

As for the managerial implications the study provides marketers with several advices. First, given that emotional attachment is a necessary competitive advantage, marketers need to understand if consumers are talking about their products in an emotional manner, and if they do, which dimensions do they specifically talk about. The analysis of UGC helps marketers to reflect on their current branding strategies as well as their consumers' satisfaction. As Munar (2012) posits, UGC is a very effective tool to understand

how consumers form a specific image about your company. Companies need, thus, to consider if consumers are experiencing the right emotions, and subsequently develop strategies to steer future experiences. Thus, in case of developing innovative and improved experiences marketers have to compare their favorable identity and their customer online image. Subsequently, marketers can develop strategies to enhance or strengthen the representation of specific dimensions. For example, restaurant managers aiming to include 'competence' into guests experiences might want to consider to train their employees to demonstrate levels of devotion, self-confidence and trustworthiness. In case of low level of excitement in UGC, managers need to design a business model that enables to provide personalized experiences, which leads consumers to feel excited about their product and/or service. This shows that managers can have the power to trigger brand personality-feelings by consumers, subsequently steering a positive image and perceived value (Jensen & Prebensen, 2015).

Given the wealth and rich information in social media, marketers need to develop a structural approach to integrate user-driven recommendations (Munar, 2012). Tussyadiah and Zach (2013) demonstrate how DMOs can benefit from integrating UGC and designing pro-active social media strategies. This study illustrates how innovative methods support marketers to retrieve a diversity of information as fuel for new strategic marketing plans. On top of that, marketers have to develop approaches to deal with social media on a regular basis. In order to do so, marketers need to create an environment and optimally renew their business models that allows them to deal with these dynamic knowledge flows deriving from social media and subsequently fostering innovation. Furthermore, it requires an innovative mindset by DMOs to enhance their business performances (Munar, 2012; Grisseman et al., 2013). DMOs need to realize that the strategical integration of user-driven reviews will help them to enhance their profitability (Tussyadiah & Zach, 2012; Hjalager & Nordin, 2011; Munar, 2012) and, thus, maintain their competitive advantage.

5.4. Future Research and Limitations

This study also faces a set of limitations. First, on a theoretical level, it has to be acknowledged that brand personality dimensions and emotions are closely interlinked and are not necessarily expressed individually. This study analyzed these two concepts separately. Second, this study does not take the elements into account that can provide research an understanding of why tourists develop emotional connections. Thus, the need for triangulation of the research methods would enrich the understanding of

this topic. Third, study did not include hotel and restaurants brands, which possibly could interfere with the analysis of this study.

On a methodological level, this study uses the third-party review website, TripAdvisor. However, the use of other platforms could provide a richer understanding of the diversity of knowledge available in social media spaces for DMOs. The analysis would increase the robustness of this study dictionaries approach too. In addition, the dictionary-design used in this study could be verified by qualitative content analysis and hereby further improved.

In fact, this study opens a set of avenues for future research. First, as highlighted in the limitations, a qualitative perspective would enrich the understanding how the brand personality and emotions dimensions are exposed in social media spaces. Second, future studies need to analyze specific elements of the experiences that are closely linked to the brand personality dimensions and emotions. In particular the accommodation and gastronomy sector with leading brands could benefit from such analysis. Third, a comparison between various destinations could yield insights into how branding strategies steered by affective feelings generate competitive advantages. Such as comparison would help to generate insights into possible competitive advantages stemming from user-driven branding campaigns and products/service development. This could help practitioners designing experiences to understand which elements trigger specific emotions but also which elements are necessary to include into their marketing strategies. This leads to the fourth point; future studies need to analyze the long term effect of branding strategies steered by consumer evaluations. Given the recent development of this topic, longitudinal studies could help to analyze the success of this user-driven approach on DMO's business model and growth. Lastly, another interesting avenue for future studies would be to compare DMOs' marketing communication with user-driven evaluation content and hereby analyze DMOs' brand efficiency. Overall, the need to start analyzing the impacts of user-driven reviews on DMO's business model innovation.

Study 2.

The Role of Creativity in

Mobile User-Driven Innovative Travel Communities

1. Introduction

1.1. Problem Statement

Web 2.0 has broadened information access and the ability to produce content through simple code-free interfaces (Labrecque, Mathwick, Novak, & Hofacker, 2013). Hence, digital media participation has become easier, and evolving consumer empowerment can be observed (Labrecque, Mathwick, Novak, & Hofacker, 2013; Kozinets, Hemetsberger, & Schau, 2008). Consumers have network-based power and co-create content more easily through liking, commenting, tagging, or other forms of media enrichment (Labrecque et al., 2013). Kozinets et al. (2008) refer to Information- and Communication Technologies (ICT) as enablers of exposing consumers to new modes of thinking, doing and being. ICT and its dominance in everyday life established a discontinuous innovation and new behavioral patterns among consumers (MacKay & Vogt, 2012). Moreover, the emergence of smartphones reinforces this phenomenon. The design of Wi-Fi-spots, travel-applications and Web 2.0 mobile computing platforms allows consumers to use their mobile to support and enhance their consumption experiences. Especially in tourism, the development of ICT and mobile devices has started to show its impact. Tourists use their mobile on-the-go for a variety of purposes (i.e., navigation, entertainment, social sharing). Tussyadiah (2013) refers to mobile phones as new 'travel buddies'. Smartphones allow high levels of connectivity, communication, content consumption and creation (Wang, Park, & Fesenmaier, 2012). Subsequently, tourists are becoming active innovators due to diverse travel-applications and features of smartphones (Wang et al., 2012).

Smartphones have become the key interface in the shift from the traditional analogy paradigm to user-driven innovation paradigm (Richardson, Third, & MacColl, 2007). Hjalager and Nordin (2011) refer to the concept of user-driven innovation as consumers creating and innovating their own products driven by their needs, feelings of curiosity, enjoyment, creativity and locus of control (Von Hippel, 2007). There are many varieties of user-driven innovative behavior conducted and shared by tourists in Web 2.0 spaces, such as written reviews, rating peers' reviews, posting photographs and maintaining specialized blogs (Kozinets, Hemetsberger, & Schau, 2008). As a result, the arrival of digital media, social media spaces, computational and mobile-related tools has opened up new possibilities for creative practices and forms of user-driven innovations (Edmonds et al., 2005). Consumers are creative agents participating in the co-production of their own value, which sheds light on creative consumer behavior (Kozinets, Hemetsberger, & Schau, 2008; Von Hippel, Ogawa, & de Jong, 2011). Consequently, the developments of ICT supports the growth of creative consumers resulting in innovation-oriented online consumer communities

(Kozinets, Hemetsberger, & Schau, 2008; Berthon, Pitt, Plangger, & Shapiro, 2012). Hjalager and Nordin (2011) also refer to it as user-driven innovative communities.

The ability to create innovative content is fundamentally linked to a person's individual creativity (Faullant, Krajger, & Zanker, 2012; Berthon, Pitt, Plangger, & Shapiro, 2012). Amabile et al. (1996) refer to creativity as the starting point of innovation. Creativity comes first and provides the drive for many forms of innovation (Amabile et al., 1996). Thus, consumer creativity is determined to be an important indicator of consumers' innovative behavior (Bartels & Reinders, 2011; Vandecasteele & Geuens, 2014). Therefore, as Jaussi et al. (2007) posit, research has paid particular attention to determinants of the production of creativity in order to understand how to maximize innovation. There are multiple components that must converge in order for creativity to take place (Yeh, Yeh, & Chen, 2012). According to Karwowski et al. (2013), one's belief in creative abilities is a significant characteristic determining achievements of creative people.

Nevertheless, the creative contributors of user-driven innovative communities are a minority among the vast group of members seeking information. There are only a small number of community members that are very knowledgeable, highly skilled, and able to create their own virtual products with an impressively high quality and level of innovation (Füller, Jawecki, & Muhlbacher, 2007). Nielsen (2006), for example, proposes the 90-9-1 rule, illustrating that 90% of users only read the online content creation and never contribute, 9% of users contribute occasionally, and 1% actively create content online. Therefore, creative creators (only a minority of online users) are active contributors, who put in a certain amount of creative effort, created outside professional routines and platforms (van Dijck, 2009). However, these content creators have a persuasive power over the many passive readers who seek knowledge for different purposes. Especially in the field of tourism, peers search for information due to lack of first-hand experience (Sigala, 2009). Therefore, the need to understand what determines these content creators' creativity resulting into innovative-oriented communities in tourism is called for.

1.2. Research Question and Objectives

Despite the pertinent role of ICT and mobile devices enabling creativity, it is a relatively new and largely unexplored avenue of research (Edmonds et al., 2005). Tourism research has started to categorize the motivations of online content creators, the different types of online content creations, the influence of online social identity and personality traits on online content creation (Yoo & Gretzel, 2011; Wang & Fesenmaier, 2004; Munar & Jacobsen, 2014; Bronner & de Hoog, 2013). Nevertheless, explaining consumers' creative traits as an influence on the innovative travel-related content creation remains

unexplored. Additionally, creativity literature lacks an understanding of how consumers' creative traits support online creative achievement. According to Yoo and Gretzel (2011), future research should examine such additional factors to better understand travelers' creation behavior. Moreover, considering the integrated use of smartphones for tourists on-the-go, research needs to start understanding the phenomenon of mobile Web 2.0 platforms resulting in user-driven innovative travel communities (Lamsfus, Wang, Alzua-Sorzabal, & Xiang, 2014). Overall, there is a lack of studies on user-driven innovation in the field of tourism in combination with the current forms of ICT. Therefore, the overall purpose of this study is to empirically test whether consumers' creativity and Web 2.0 mobile platform engagement can explain how individual creativity in Web 2.0 mobile user-driven communities is reinforced. The research question of this study is:

In which way can consumers' creativity traits and involvement in Web 2.0 mobile communities explain the creative achievements resulting in forms of online user-driven innovation in tourism?

The main aims of this study are: (i) to explain how consumers' creativity facilitates online creative behavior, (ii) to explain how consumers' creative self-efficacy facilitates online creative behavior, (iii) to indicate intervening factors that enhances consumers' creativity resulting in online creative behavior, and (iv) to explain how the integrated use of the mobile while traveling enhances the different forms of user-driven innovation in Web 2.0 spheres.

The perspectives of creative consumer behavior resulting in sharing of online innovative content creation can shed light on user-driven innovation theories in the tourism domain. Marketers and practitioners need to understand in which way consumers are evolving into innovative creators. Given the increasing consumer power enhanced by many forms of ICT requires firms and research to start to understand the consumer empowering process. On the one hand, firms can support consumers' creativity and innovative outcomes by means of co-creation and enhancing value. On the other hand, companies can learn from their customers and integrate consumer creativity into their marketing strategies. Overall, firms should seek opportunities that are derived from this user-driven innovative shift. The possibilities are to enhance their innovative business models dealing with consumer empowerment, innovativeness and maintain their competitive advantage

2. Literature Review

The literature review will discuss different streams supporting the theoretical framework of this study. The first stream focuses on user-driven innovation and user innovativeness. The second stream will discuss consumer creativity, creative self-concepts and the links to user-driven innovation. Third, Web 2.0 mobile computing platforms, acting as communities where tourists meet, share and support each other, will be discussed. This will be supported by insights into motivations to share within communities. Fourth, the use of mobile phones while traveling will be discussed. The emergence of this topic in the field of tourism led this literature review to focus on the value of mobile use while traveling, the variety of functions and development of relationships with the mobile phone.

2.1. User-Driven Innovation

Von Hippel (2005) refers to user-driven innovation as a more democratized way of innovating. User innovation via toolkits is a different process than co-creation and co-innovation (Von Hippel, 2005). The toolkits enable a user-only service development and testing process carried out by the users in their own actual user environment (Von Hippel, 2005). However, the toolkits are provided by the firm, and subsequently restrict an open innovation sphere. User-driven innovation can range from providing feedback and support to creating entirely new products, services and systems (Fuglsang, Sundbo, & Sørensen, 2011). Therefore, user-driven innovation implies that users of products and services are able to innovate by and for themselves. Hjalager and Nordin (2011) describe user-driven innovation as a phenomenon where new products, services, concepts and processes are the result of needs, ideas and opinions derived from consumers. Due to the improved design capabilities of ICT and consumers' abilities to combine and coordinate their own innovation effect, the democratizing of innovation is supported (Von Hippel, 2005).

The user-driven innovation process creates value and supports consumer-learning from situations such as problem-solving (Von Hippel, 2005). Consumers want to find ways to combine and leverage efforts, such as engaging in forms of cooperation (i.e., direct and informal user-to-user communities) (Von Hippel, 2005). The consumer is the key-player of the innovation with minimum involvement of the organization (Desouza et al., 2008). However, firms can provide a stimulating environment that can act as an ingredient for consumers to create their own unique experiences (Fuglsang, Sundbo, & Sørensen, 2011). Franke and Von Hippel (2003) illustrate how consumers' ability to tailor their own needs often results in higher levels of satisfaction and enjoyment of the process. Thus, user-driven innovation explicitly

shows the independence of the consumer steering the innovation based upon his needs, creativity and locus of control (Von Hippel, 2005). Therefore, networks for user-driven innovation can work entirely without firm facilitation: i) if users have sufficient motivation to innovate, ii) if some users reveal their innovations, and iii) if the diffusion of the innovation is low cost, easy and competitive for commercial production and distribution (Von Hippel, 2007). Such types of innovation can be observed in free and open source software (Von Hippel, 2007), printed circuit software (Urban & Von Hippel, 1988), outdoor consumer products and also in highly specialized sports equipment (Franke & Shah, 2003; Lüthje, 2004; Hienerth, 2006). While sports can be considered part of the leisure industry, there seems to be little, if any evidence of user-driven innovations in tourism that is performed outside the control of firms. Especially in the field of tourism, a higher level of user-driven innovation is expected (Hjalager & Nordin, 2011). Given, on the one hand, the lack of first-hand experiences and the structure of the tourism product (combination of different products and services), this triggers consumers to adapt and modify their own travel experience. On the other hand, the facilitating role of tourism-related firms and available ICT devices can help tourists to tailor and innovate their experiences. However, in research there is a lack of theories related to user-driven innovation and tourist behavior. This study is one of the first to introduce user-driven innovation in the field of tourism enhanced by social media. The concept of user-driven innovation can be explained by the concept of use innovativeness and a person's creativity. Therefore, the following section will explain this in more detail.

2.2. Use Innovativeness

The need for consumers to adapt, modify and change the product to meet their own needs often derives from exploratory consumer behavior. According to Baumgartner and Steenkamp (1996), exploratory purchase behavior results in variety seeking that manifests in innovating the product or service. Consumers decide to use a previously adopted product in a novel way or in a variety of new ways (Hirschman, 1980; Price & Ridgway, 1983). Consumers also try to engage in variety seeking by using new or unfamiliar products (Baumgartner & Steenkamp, 1996). Hirschman (1980) refers to the concept of use innovativeness where consumers have an inherent desire to initiate novel functions for accepted products. The Five Factor Model of Personality has often been used to explain how consumers behave towards an innovation. In particular, the dimension of openness to experience is significantly linked with use innovativeness (Hemetsberger, 2005). This dimension describes how willing people are to make adjustments in activities in accordance with new ideas or situations. In general, personality traits can be

perceived as relatively enduring patterns of behavior that help researchers to distinguish between people (Hemetsberger, 2005; Hemetsberger, 2001).

Research has paid a lot of attention to the concept of consumer innovativeness. There are three main levels of consumer innovativeness discussed: (i) general personality trait, innate innovativeness, (ii) domain-specific innovativeness, and (iii) innovative behavior (Midgley & Dowling, 1978; Goldsmith & Hofacker, 1991; Goldsmith, Freiden, & Eastman, 1995; Steenkamp & Gielens, 2003; Im, Bayus, & Mason, 2003). The first dimension (innate innovativeness) of customer innovativeness categorizes innovativeness as a function of personality. Midgley and Dowling (1978) argue that every human has a degree of innovativeness. Venkatraman and Price (1990) explain innate innovations by consumers' emotions and personality traits. According to them, consumers with an innovative tendency tend to engage in new experiences that stimulate their feelings of pleasure. Wood and Swait (2002) measure innate innovativeness by the need for cognition and need for change. Im et al. (2003) categorize consumers on innate innovation based on the need for cognition, market mavenism and opinion leadership. Roehrich (2004) explains innovativeness as an expression of need for uniqueness. Lastly, according to Lüthje (2004), personality traits can largely explain innate innovativeness.

The second dimension, domain-specific innovativeness (DSI), perceives user ability and expertise as important elements for user innovation. Goldsmith and Hofacker (1991) were the first to actually state that the consumer needs to have discrete knowledge and skills to contribute to creativity. Goldsmith and Hofacker (1991) describe domain-specific innovativeness as an individual predisposition towards a specific product class that leads consumers to have a higher tendency to learn about new products and adopt new products in a specific domain. Hence, frequent product use leads consumers to i) increase their expertise, ii) systematically analyze problems and develop innovative solutions, and iii) enhance their product-related knowledge (Lüthje, 2004). Literature identified a list of characteristics related to DSI: product awareness, involvement, actualized novelty seeking, seeking information in media, expertise, domain-specific opinion leadership, and independent judgment making (Goldsmith & Flynn, 1992; Goldsmith & Hofacker, 1991; Grewal, Mehta, & Kardes, 2000).

The third dimension, innovative behavior, is a result of domain-specific innovation and innate innovativeness (Bartels & Reinders, 2013). Innovative behavior requires the consumer to be able (be creative) and to have an incentive (be curious) to innovate a product (Price & Ridgway, 1983). Creativity plays an important role in innovative consumer behavior, and subsequently in user-driven innovation (Kristensson et al., 2002). The following paragraph will explain consumer creativity.

2.3. Consumer Creativity

2.3.1. Definition of Consumer Creativity

Consumer creativity is the study of consumer problem solving with creativity traits explaining how consumers adapt, modify, or transform proprietary offerings (Berthon et al., 2012). Berthon et al. (2012) argue that creative consumers work with all types of offerings. Yet, it is important to distinguish between i) a person's creative potential (traits and abilities that make creativity possible) and ii) creative behavior of achievement (observable expressions of creative potential) (Ivcevic, 2009). In the literature, there is not one general definition of creativity or about creativity thinking of functioning (Karwowski, 2009). Creativity is perceived as a complex process and is discussed in a variety of ways.

For example, according to Maslow (1967), there is a primary and secondary style of creativity. The primary style refers to self-actualization and fulfillment in a person, whereas the secondary style will lead to creative achievement itself (Sternberg, 2005). Therefore, Day and Langevin (1969) state that curiosity and intelligence are factors that translate creative abilities into creative achievements. Kirton (1978) posits creativity as a definition of one's creative abilities and creative style. Subsequently, Kirton (1978) developed the Kirton Adoption-Innovation Inventory, where consumers can be ranked along a continuum from adaptors to innovators. Davison and Sternberg (1984) define three principles that enable the process for consumers' creativity: (a) selective encoding, the ability to separate relevant from irrelevant information, (b) selective comparison, the ability to link new information with previous knowledge, and (c) selective combination, the capacity to combine separate parts of information together in a novel and useful way. Runco and Bahleda (1987) identify several cognitive characteristics of a creative person, such as open-mindedness, intelligence, logical thinking, experimenting and problem-solving skills. According to Sternberg and Lubart (1993), creative thinking is facilitated by sources such as knowledge, personality, motivation and environmental context. Weick (1995) simply states that creativity is the ability to put old things in new combinations, and new things in old combinations, which either meets the requirements or obtains a specific value for the consumer. Liep (2001) defines creativity rather similarly to Weick's definition, stating that creativity is the activity that produces something new through the recombination and transformation of existing forms.

According to Sternberg (2005), consumers are capable of being creative because they seek novelty, uneasiness, and non-familiarity. Richards and Wilson (2007) follow up by arguing that creativity is a human activity of producing new meaning and linking things in new ways. Andriopoulos and Dawson

(2008) define creativity as the quality of originality developed by cognitive processes. Hence, Ivcevic (2009) argues that creativity is almost accessible to everyone. Conclusively, all authors agree that creativity is a mental phenomenon that results from the application of ordinary cognitive processes. Nevertheless, the creativity of human kind has different forms with a historical development. The next section will explain this in more detail.

2.3.2. Creativity Levels

Creativity can result on the following levels: i) everyday, ii) artistic, and iii) intellectual. According to Ivcevic and Mayer (2009), everyday creativity is characterized by cultural refinement, self-expressive creativity, interpersonal creativity and sophisticated media consumption. Everyday activities can provide the creative base needed for consumers to express their creativeness. Given the interest of this study, the emergence of ICT allows the expressiveness of creativity to occur more frequently.

Necka (2001) introduces four stages illustrating how consumers can become creative (fluid, crystallized, mature and eminent creativity) (Karwowski, 2009). First, in the fluid stage of creativity, consumers use their cognitive characteristics (i.e., originality of ideas), as discussed in the previous section. Second, the crystallized stage of creativity requires consumers to have experiences and personal engagement. The first two stages are categorized as little c-creativity (Karwowski, 2009). The stages of mature and eminent creativity are referred to as the big- C of creativity. The stages represent levels of social recognition, where visible and communicated products of creative activity are produced. The difference between the mature and eminent stage of creativity is social evaluation (Karwowski, 2009). Kaufman and Beghetto (2009) state that Necka's categorization can be refined by introducing: mini c-creativity, little-c creativity, pro-C creativity and big-C creativity. Kaufman and Beghetto (2009) posit the mini-c creativity as a dominant intrinsic motivation act of creativity. The little-c creativity is similar to mini-c, however social role and personal engagement is more important in this stage. The pro-C refers to a domain-specific creativity enhanced by intrinsic and extrinsic motivation of the consumer. Lastly, the big-C reflects the expertise in a specific domain, where significant innovation also emerges. In this study it is expected that consumers are creative due to their characteristics of pro-C as well as the big-C categories.

However, the development of someone's creativity has been perceived differently over the last decades. In the past, three paradigms were introduced to explain individual creativity (He-paradigm, I-paradigm and We-paradigm). The He-paradigm, the first paradigm in creativity research, refers to the lone genius. The lone genius refers to the creator being exclusive from others. The shift to the I-paradigm

illustrates a change from the genius to the normal person, while keeping the individual as a unit of analysis (Glaveanu, 2010). The I-paradigm categorizes a person as creative according to his or her personality traits and creative cognition (Glaveanu, 2010). This refers to the discussion in the previous section. According to Bilton (2007), the I-paradigm is a democratization of creativity compared to the He-paradigm. However, a critique of the I-paradigm as well as the He-paradigm refers to the de-contextualized view of both. Therefore, the We-paradigm is introduced. The We-paradigm perceives creativity as a result of human interaction and collaboration (Montuori, 2003). Especially in light of diverse social media spaces and forms of ICT, the We-paradigm is more present than ever before. This also leads to the discussion of perceived creativity from a more holistic perspective, where different factors interact. The next section will explain the complexity of creativity, which will help this study to understand the role of ICT impacting consumers' creativity.

2.3.3. Complexity of Creativity

Creativity is a complex concept influenced by factors outside the human being (Amabile, 1996). Amabile's Componential Theory of Creativity (see appendix E) shows how creativity is influenced by different factors. Different authors state (Csikszentmihalyi, 1999; Glaveanu, 2010) that the contextual nature of creativity and interconnectedness between the self, and environment is significant in order to understand person creativity (see appendix F). According to Shalley and Gilson (2004), individual creativity is a function of different facets, such as personality factors, cognitive style, ability relevant task domain expertise, motivation and social contextual influences. Therefore, Burselon (2005) stresses the importance of the right environment and conditions for creativity to emerge. Karwowski (2009) indicates the importance of three dimensions (people, product and process) influencing the level of creativity. Maher (2010) refers to the four P's of creativity and decomposes the complexity of creativity into separate but related influences: Person (characteristics of the individual), Product (an outcome focus on idea), Press (the environment and contextual factors), and Process (cognitive process and thinking techniques). The related influences illustrate the importance of cognitive processes as discussed previously. Maher's (2010) categorization illustrates the importance of the different factors that can stimulate consumers' creativity.

Thus, when analyzing creativity in a context such as social media, one needs to understand the interactivity of the different facets that influence creativity. The context-dependent factors in tourism are becoming increasingly dominated by ICT-related devices. Moreover, the mobile environment allows interaction with other creative peers. The context of a networked and interactive online world can allow

consumers to enhance their creativity, and subsequently the emergence of user-driven innovation. User-driven innovation is considered in this study as i) creative consumer behavior, ii) a result of collaboration and human interaction, and iii) influenced by interactive elements such as ICT-related context and the nature of the tourism product. Therefore, this study aims to understand how the 4 P's of creativity, referring to Person level of creativity (innovativeness), into Product (created content), the environment of mobile platform (Press) and creative self-efficacy (Process), can explain user-driven innovation in the field of tourism. The previous sections explained the person and product elements. The following sections will explain creative self-efficacy (process) and the environment of mobile platforms (press).

2.4. Creative Self-Efficacy

The way we see ourselves and who we think we are has a great deal to do with how we act (Farmer, Tierney, & Kung-Mcintyre, 2003). Consumers are motivated by their judgment about their abilities and expectations of the outcomes of performing a particular task (social cognitive theory) (Hsu et al., 2011). However, consumers' own judgment of their abilities and performances affects that. Bandura (1994) refers to the concept of self-efficacy as a capacity of judgment. According to Bandura (1994), one needs to distinguish self-efficacy from self-esteem, locus of control and outcome expectations. Cervone and Peake (1986) state that people high in self-efficacy are more efficient due to their confidence of handling problems and ability to control situations. Gist and Mitchell (1992) posit personal priorities and interest as influences on the level of self-efficacy. Compeau and Higgins (1995) define self-efficacy along three dimensions: magnitude (the level of task difficulty one believes is possible), strength (level of confidence about the judgment) and generalizability (extent to which perceptions of self-efficacy are limited by situations). Self-efficacy influences the course of action people pursue, the effort they put into a given activity and the outcomes they expect their efforts to produce (Bandura, 2006). Thus, efficacy beliefs influence whether people think strategically and optimistically (Bandura, 1997, 2006). Tierney and Farmer (2011) illustrate how self-efficacy increases when one experiences successful past experiences. Overall, self-efficacy has an influential role in human adaptation, development and change (Bandura, 1997).

Different researchers have defined the relationship between creativity beliefs about the self and performance under the concept of *creative self-efficacy* (Glaveanu & Tanggaard, 2014; Tierney & Farmer, 2011). Therefore, in the case of creative self-efficacy, it is about one's feeling about whether or not he or she can be creative (feels confident that he or she can be creative in a given task). Tierney and Farmer (2002) state that creative self-efficacy reflects an individual consideration of the capability while performing an innovative task. Tierney and Farmer (2011) confirm how creative self-efficacy enhances

over time in response to changes in individual, task and contextual factors. However, one needs to be motivated to share their knowledge and their creative content (Amabile, 1996). Therefore, the following section will explain the reasons consumers have to share within online travel communities.

2.5. Reasons to Share Innovative Knowledge

Consumers have a variety of reasons to share their knowledge, creative practices and personal-related information in social media spaces. First, the concept identified is consumers' self-image supporting consumers' own beliefs about the impact their knowledge-sharing activities has on the group (Wang & Fesenmaier, 2004). According to Munar and Jacobsen (2014), sharing practices in social networks may contribute to the staging of virtual personal identities. Due to the high levels of individualization of late modern societies, consumers aim to develop a sense of oneself from a group (Munar and Jacobsen, 2014). Therefore, online self-image and reputation contribute effectively to the sharing of knowledge (He & Wei, 2009). According to Stopfer et al. (2013), perceived popularity influences the way consumers share knowledge. Consumers who perceive themselves as popular frequently share and experiment in the community. They feel the need to satisfy their followers and keep their popularity high (Mangleburg, Doney, & Bristol, 2004; Stopfer et al., 2013). The level of knowledge contribution is determined by an actors' prestige, centrality and the amount of social ties he/she has in a network (Li & Du, 2011). Hence, Lee et al. (2010) refer to issues such as network strengths and homophily influencing online knowledge-sharing.

Online knowledge sharing is an act of volunteerism (Hemetsberger, 2002). Consumers often have feelings of moral obligation and fairness when sharing their knowledge (Hemetsberger, 2001). Hemetsberger (2001) shows how social significance has a major impact on behavioral involvement in online contribution. Furthermore, consumers often have community-related motivations to share their knowledge, such as i) helping the community to achieve its goals or to continue its operations, ii) sense of belonging, iii) equity, and iv) support of well-being of others (Yoo & Gretzel, 2011; Hemetsberger, 2012; Hsu, Ju, Yen, & Chang, 2007). The involvement theory (Richins & Root-Shaffer, 1988) shows how a person's desire for an object supports the consumer's involvement in a community. Moreover, moral obligation to serve the public good supports consumers in sharing their knowledge (Yoo & Gretzel, 2011). Consumers share knowledge because of feelings of joint-affirmation, community empowerment and social support (Munar & Jacobsen, 2014). Wang and Fesenmaier (2004) refer to altruism (caring for other humans) as an important factor facilitating knowledge sharing. Consumers often want to feel as though they have a place

of belonging, that they are useful, are fulfilling responsibilities, as well as giving to and caring for other consumers (Wang & Fesenmaier, 2004; Yoo & Gretzel, 2011).

Consumers, thus, derive many benefits from freely revealing their knowledge (product-related and related to their innovation) (Harhoff, Henkel, & Von Hippel, 2003). In fact, freely releasing knowledge also means that they give up all their intellectual property rights, and hereby give access to all interested parties. Von Hippel (2005) states that their knowledge becomes public property and he refers to 'user-only innovation networks'. These peer-to-peer networks facilitate the flow of peers' know-how and tacit expertise, such as human expertise, rules-of-thumb, and lessons learned (Tiwana, 2003). The peer-to-peer network facilitates ad-hoc knowledge exchange among peers. Hence, peer-to-peer networking naturally supports knowledge management. Knowledge for consumers is a combination of being a mix of experiences, contextual information and expert insights that allow consumers to evaluate and incorporate new experiences and information, and subsequently innovate a product of interest (Burselon, 2005).

Lastly, the principle for knowledge sharing is discussed under the influence of personality traits. The Five Factor Personality Model can explain how knowledge sharing is affected by personality traits including agreeableness, conscientiousness, openness, extraversion and neuroticism (Matzel, Renzl, Muller, Herting, & Mooradion, 2008). Agreeableness refers to acts of courtesy, helpfulness, generosity, and enthusiasm when helping others (Liao & Chuang, 2004). Conscientiousness refers to people being dependable, reliable, responsible, hard-working and achievement-oriented (Yoo & Gretzel, 2011). Openness refers to attentiveness, intellectual curiosity, originality. Consumers with high openness display creativity, flexible thinking and culture. Matzler et al.'s (2008) study shows that personal dispositions influence factors of knowledge sharing. Overall, the personality traits 'extraversion' and 'openness' increase the likelihood for consumers to be motivated to create online content and to communicate with an unknown audience (Matzel, Renzl, Muller, Herting, & Mooradion, 2008; Yoo & Gretzel, 2011). However, research does not provide theories about their skills that enable creative sharing, highlighting the importance of this study. Another current development is the use of mobile computing platforms that enable consumers to share on a more constant basis. Moreover, the different travel applications and toolkits allow consumers to be creative in social media spaces. The following section highlights the most important reasons for smartphone-use while travelling.

2.6. The Use of the Mobile Phone while Travelling

Tourists engage in mobile computing platforms to enhance their travel experiences; however, tourists also have other motivations for their engagement. Wang et al. (2012) categorize five dimensions explaining tourists' motivations to interact with mobile computing platforms. Tourists aim to search for information through mobile computing platforms to learn about the destination (functional), to look for innovative ways of traveling (innovative), to feel excited and experience local culture (hedonic), to form expectations (aesthetic) and to give advice to others (social). In particular, the first four dimensions support tourists to enlarge their knowledge pool about a destination and traveling in general. Engaging in information search supports tourists to feel secure and self-assured when traveling (Tussyadiah, 2013). According to Wang et al. (2012), elements such as convenience, connectivity and confidence contribute to enhancing the tourist experience. Different studies illustrate the impact of mobile devices on different aspects of the tourist experience, such as waiting time, documentation of experiences and on-site decision making (Wang, Park, & Fesenmaier, 2012). A recent study by Tussyadiah (2014) shows how tourists' beliefs of using mobile devices while traveling is influenced by: i) perceived social support of the mobile while traveling, ii) perceived intelligence of the mobile, iii) emotions towards the mobile, and iv) the perceived control of mobile devices. Tourists start to rely on their mobiles' assistance while traveling, which leads to higher levels of social attribution (Tussyadiah, 2014, 2013). Grant and O'Donohoe (2007) state that the mobile phone is not only a personal device to stay in contact with others but it is also an extension of personality and individuality. In fact, the different travel-applications can help consumers to personalize the device and respond to specific needs (Persaud & Azhar, 2012). Dickinson et al. (2014) refer to the development of tourist specific applications, social- and networking applications as 'things' consumers need when using the mobile phone. Travel-applications support the shift in tourism from place-based connectivity to person-to-person connectivity (Dickinson et al., 2014). Travel-applications provide tourists with the opportunity to coordinate activities of knowledge sharing (when and with whom) (Dickinson et al., 2014). Tourists interact with the destination through travel-related applications, such as Beachfinder, Metromaps, TravelBlogs, and LikeaLocal (Dickinson et al., 2014). Haldrup and Larsen (2006) posit smartphones as important attributes facilitating hybridized mobility. In other words, Web 2.0 mobile computing platforms are like social networks for tourists to integrate into their daily life and during their travels in a creative way. Research in tourism on how and in which way tourists interact with travel-applications, and thus Web 2.0 mobile computing platforms, is only in an embryonic stage. This illustrates the relevance of this study. The next chapter will introduce the hypothesis development

3. Hypothesis Development

3.1. Hypothesis Introduction

The availability of digital networked technologies turns consumers into active online participants (van Dijck, 2009). We see how consumers contribute knowledge in a variety of innovative ways. Examples of this are posting travel maps, sharing photos and personal information, and writing reviews (Kim, Zheng, & Gupta, 2011). Travelers want to store and keep a diary of their photos and stories, and subsequently share it within their social network on-the-go or when they return home (Wang et al., 2012; Dickinson et al., 2014). In these networks, new travel opportunities are provided for peers. As a result, we see how customers are becoming more creative when exposing their travel experiences in Web 2.0 mobile settings. Dawson and Andriopoulos (2014) posit that every online contribution is a form of innovation. Consumers' creative practices in the travel-app environment are resulting in innovative communities of peer-to-peer networks, where new travel opportunities are provided.

Psychology literature shows that creativity is the starting point of behaving or acting in an innovative way (Amabile, Conti, Coon, & Lazenby, 1996). Therefore, creativity is important in and of itself, and can be conceptualized as a necessary first step or precondition required for innovation (Scott & Bruce, 1994). In order to understand user-driven innovation in Web 2.0 mobile platforms, the focus needs to start on understanding creative consumers' behavior. Different researchers identified that some individuals are more creative than others. Creative performance requires a set of skills specific to creativity (Shalley & Gilson, 2004; Amabile, 1983). Subsequently, a person's creativity is dependent on his/her abilities and traits (Glaveanu, 2010). Kirton (1978) developed the Adaption-Innovation Inventory, arguing that adapters prefer to produce fewer original ideas, whereas innovators prefer original ideas. Creativity relevant skills are consumers' ability to think creatively, produce alternatives, and engage in divergent thinking (Shalley & Gilson, 2004). Research shows how characteristic traits and abilities have the strongest effect on individual creativity, and subsequently innovative behavior (Yeh, Yeh, & Chen, 2012). Moreover, consumers with higher levels of innovativeness are often trendsetters, and have higher levels of confidence creating their own products (Lüthje, 2003). Due to the fact that consumers are involved in creative tasks, they are expected to inform and gain expertise in the field. In addition, personality traits have an influence on the level of passion when involved in creative activities (Wang & Yang, 2008). Wang and Yang (2008) examine how extraversion, agreeableness, conscientiousness, neuroticism, and openness are linked to passion for the internet. Hence, it can be proposed that consumer innovativeness has different spill-over effects:

H1: Consumer innovativeness has a direct, positive effect on domain-specific innovativeness.

H2: Consumer innovativeness has a direct, positive effect on online creative self-efficacy.

H3: Consumer innovativeness has a direct, positive effect on passion for the mobile computing platform.

A producer must also have the perceived capabilities to complete his/her innovation. Creative performance is only evident when creativity skills build upon a base of domain expertise (Amabile et al., 1996). Creative consumers often generate ideas and innovate based upon a set of developed skills and relevant knowledge in the respective domain (Simonton, 2004). Domain-relevant knowledge is consumer knowledge of facts, circumstances and issues of a given problem and domain (Amabile et al., 1996). Domain-specific innovativeness shows how expertise and past-experience influences the level of innovativeness in a certain field (Goldsmith & Hofacker, 1991; Lüthje, 2004). Lüthje's (2004) study shows that use experience is an important variable to distinguish innovating from non-innovating consumers. Perkins (1986) states that if consumers educate themselves through a variety of experiences, viewpoints and knowledge bases, it will reinforce the use of experimentation and divergent problem solving skills. Consumers who are familiar with domain-specific travel-related apps know what to do with the newest features. In addition, they want to show they can use the newest feature and contribute more frequently. Users with a high level of domain-specific innovation are often opinion leaders and have a central position in a network. According to Stopfer et al. (2013), perceived popularity influences how often and in what way consumers contribute since they feel the need to satisfy their followers and keep their popularity high (Stopfer et al., 2013). According to Li and Du (2011), prestige, centrality and the amount of social ties in a network determine the level of knowledge contribution. Thus, creative-self efficacy of tourists is expected to be influenced by their solid expertise of online content creation. Moreover, consumers who have a high level of expertise and experience with the mobile computing platform interact more often and upload more often. Füller et al. (2008) argue that consumers with domain-specific skills may possess passionate feelings for the brand community. Thus, tourists who are actively engaged in mobile computing platforms may develop passionate feelings for their membership. Therefore, it is suggested that:

H4: Domain-specific innovativeness has a direct, positive effect on online creativity.

H5: Domain-specific innovativeness has a direct, positive effect on creative self-efficacy.

H6: Domain-specific innovativeness has a direct, positive effect on passion for the mobile computing platform.

The capacity of self-judgment, self-efficacy, of content creators will also significantly contribute to their creative endeavors (Tierney & Farmer, 2002). Self-efficacy is recognized as a critical determinant for a user's behavior in an ICT use context (Hsu et al., 2007). Hence, the level of participation increases when the consumer evaluates his own work more positively and is satisfied (Dong, Evans, & Zou, 2008). If consumers believe that they are capable of performing a task, they will be more likely to engage in that behavior (Dong et al., 2008). Therefore, self-efficacy is perceived as a major factor of self-motivation (Tierney & Farmer, 2002). In a longitudinal examination study in the workplace, Tierney and Farmer (2011) show that an increase of creative self-efficacy corresponds with an increase in creative performances. Hence, tourists who contribute their creative practices to Web 2.0 mobile computing platforms are also steered by their perceived creative self-efficacy. The following hypothesis is suggested:

H7: Creative self-efficacy has a direct, positive effect on online creativity.

In order to be innovative in a specific domain, consumers have to devote time, energy and hours of engaging to the activity (in the form of reading, creating and sharing). This often results in forms of consumers' devotion and the development of a strong emotional bond with objects. Consumers of this sort are more than just loyal and committed; devotees can be characterized by extremely high commitment leading to an outstanding level of emotional bonding with a brand (Pichler & Hemetsberger, 2008). Consumers become passionately involved with these activities. Ratelle et al. (2004) describe passion as a strong tendency towards an object or activity that a person likes and finds important, and in which he or she invests time and energy. The level of commitment decides how consumers behave towards a brand, a brand community and beloved products. According to Füller et al. (2008) passion has a positive effect on consumer behavior (i.e., productivity). Therefore, a passionate commitment to the mobile computing platform will enhance the expressed level of creativity in the platform. Hence, it is proposed that:

H8: Passion for the mobile computing platform has a direct, positive effect on online creativity.

A stimulating context and environment are important ingredients to foster consumers' creativity (Füller, Jawecki, & Muhlbacher, 2007). Shalley and Gilson (2004) stress the importance of organizational climate and context for employees' creativity. They argue that in a climate where employees' creativity is valued, employees: i) are willing to experiment, ii) are open to communication and seek input, and iii)

overall behave in a way that will lead to creative outcomes. Thus, context can support the facilitation of creativity. According to Csikszentmihalyi (1999), the necessary resources support individuals in performing their job and foster their creativity. For example, specific innovation tasks, like toolkits or virtual customer tools, can facilitate: i) participation, ii) knowledge transfer, and iii) knowledge management (Füller, Jawecki, & Muhlbacher, 2007).

Therefore, to utilize the full innovative potential of consumers, the virtual platform has to provide a stimulating environment that enriches customers' creativity and offers community functionality that enables participants to jointly work on a problem (Füller, Jawecki, & Muhlbacher, 2007). The perceived ease of use of the community has a positive effect on knowledge-sharing intentions and frequency (Kosonen, Gan, Olander, & Blomqvist, 2013). Thus, this effect is also expected in mobile computing platforms. Hence, the following hypothesis is suggested:

H9: Supporting platform conditions have a direct, positive effect on online creativity.

Consumers' involvement in the task of being creative in the mobile platform will also enhance their online creativity. Therefore, besides passionate feelings towards the mobile computing platform, task involvement will determine the behavioral outcome. As a result, the feelings consumers develop with the brand community derive from consumer engagement (Füller, Matzler, & Hoppe, 2008). Moreover, Higie and Feick (1989) state that knowledgeable consumers have a tendency to be more willing to engage in creative practices. Consumers want to share their knowledge, enjoy social interactions and relate to the community. Therefore, consumers with a high level of task involvement in the mobile computing platform will have stronger, positive effects between passion, domain-specific innovativeness and creative self-efficacy. Hence the following hypotheses are proposed:

H10a: For consumers with high levels of task involvement, the relationship between self-efficacy and online creativity is stronger and more positive than for other consumers.

H10b: For consumers with high levels of task involvement, the relationship between domain-specific innovativeness and online creativity is stronger and more positive than for other consumers.

H10c: For consumers with high levels of task involvement, the relationship between passion for the mobile computing platform and online creativity is stronger and more positive than for other consumers.

Conclusively, the different constructs identified can explain online creativity in mobile computing platforms (Figure 21). This study predicts direct, indirect and moderating effects; see Table 15 for an overview of the hypothesized relationships.

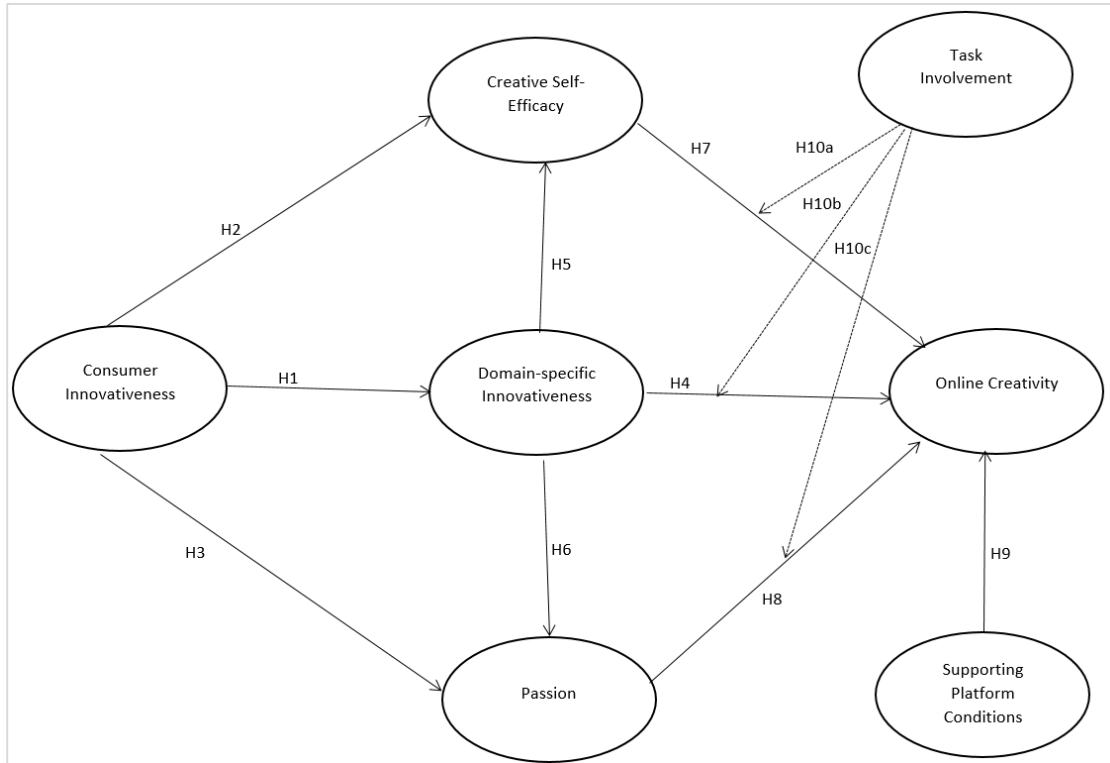


Figure 21. Conceptual Model Study 2

Main Effects			
<i>Hypothesis</i>	<i>Independent Variable</i>	<i>Dependent Variable</i>	<i>Expected Effect</i>
1	Consumer Innovativeness	Domain-Specific Innovativeness	Positive
2	Consumer Innovativeness	Creative Self-Efficacy	Positive
3	Consumer Innovativeness	Passion	Positive
4	Domain-Specific Innovativeness	Online Creativity	Positive
5	Domain-Specific Innovativeness	Creative Self-Efficacy	Positive
6	Domain-Specific Innovativeness	Passion	Positive
7	Passion	Online Creativity	Positive
8	Creative Self-Efficacy	Online Creativity	Positive
9	Supporting Platform Conditions	Online Creativity	Positive
Moderating Effects Of Consumer Trait: Task Involvement			
<i>Hypothesis</i>	<i>Moderated Relationship</i>		<i>Expected Effect</i>
10a	Creative Self-Efficacy → Online Creativity		Stronger Positive
10b	Domain-Specific Innovativeness → Online Creativity		Stronger Positive
10c	Passion → Online Creativity		Stronger Positive

Table 15. Summary of Hypothesized Relationships

4. Method

This chapter will explain the research design, sampling technique, unit of analysis, method design and method of analysis.

4.1. Research Design

The importance of the research design depends on the overall research structure. In order to achieve a solid structure, researchers have several steps to complete: i) formulation of the research question, ii) preparation of the research design, iii) measurement, iv) sampling to data collection, v) data processing, and vi) data analysis and interpretation (Singleton & Straits, 2013; Creswell, 2003). The research process is a dynamic process where flexibility of the researcher is expected. The interactivity between the research steps illustrates this. Overall, the research question steers the research design and research purposes. The three main research purposes can be explorative, explanatory or descriptive. Studies can often have more than one purpose and researchers design their research accordingly. Subsequently, the purpose of the research influences the use of qualitative and/or quantitative research method(s). In general, qualitative research supports exploratory research settings whereas quantitative research methods support explanatory and descriptive purposes. In addition, the researcher has to decide on whether the study will be examined at one point in time (cross-sectional design) or multiple points in time (longitudinal, time-series). Based on these decisions the researcher can design the research method, the sampling process and data analysis. Given the descriptive and explanatory nature of this study, a survey is chosen as the most appropriate research method with a cross-sectional design. In survey design, a cross-sectional design is commonly used (Singleton, Straits, & Straits, 1993; Creswell, 2003). The following section will explain the argument for a survey method and the design of the survey in more detail.

4.2. Survey

Surveys are commonly used for explanatory and descriptive purposes (Singleton & Straits, 2013). According to Singleton and Straits (2013), surveys are the most effective means for descriptive social research. Surveys can typically examine a large population and provide detailed and precise information (Babbie, 1998). Questions about social background, attitudes and behavioral intentions can be captured by surveys. Therefore, surveys can address a much broader range of research topics than experiments can (Singleton & Straits, 2013). In addition, surveys are categorized by a systematic procedure of asking pre-

defined questions, which are subsequently coded and analyzed numerically. Moreover, researchers can opt to test and retest surveys easily because of the use of standard questions and predetermined response options (Singleton & Straits, 2013). Lastly, Singleton and Straits (2013) argue that because researchers have a large number of variables at their disposal, they can carefully examine the relative importance of each. The generalizability of the results is supported by the survey design.

However, cause-effect relationships cannot be established by surveys as one can do in experiments. Only during statistical analysis can one exercise control over variables, and hereby simulate cause-effect relationships. According to Singleton and Straits (2013), in a survey it is a matter of the researcher's interpretation. The crucial design features can support the researcher in achieving optimal results and stimulating cause-effect relationships. According to Flick (2011), a survey can be a very successful tool if well designed. The design of a survey develops along the steps of planning, field administration and data processing and analysis. The planning phase is dominated by selecting and identifying the key variables, the development of a sampling plan and the distribution of the survey. The following subsection will explain the steps in more detail.

4.3. The Sample

The overall purpose is to seek knowledge about a whole population of creative people creating online content. The aim is to reach a high number of the objects of the population (sample). Therefore, before the actual measurements are taken, researchers must select an appropriate unit of analysis (sample). The sample can support the researcher to extend the results to the entire population afterwards (Singleton & Straits, 2013; Creswell, 2003).

The target population of this study is content creators for travel-related mobile computing platforms. The content creators must be members of a specific travel-related mobile computing platform and submit (i.e., on a regular basis, like monthly) travel-related knowledge to the mobile computing platform. The mobile computing travel platform must allow members to create their own account and work independently from firms offering services and or products in the tourism industry. In other words, the mobile computing community is founded by travelers and allows other travelers to work within the community (peer-to-peer network). The community allows members to upload their experiences in a variety of forms (travel maps, blogs, booklets and photographs). Members can share their content on the go and/or store it for their private purposes.

The mobile computing travel platform used for this study is Journi (www.journiapp.com) (see illustration Figure 22). Journi has existed for two years, and is an actively used travel-related mobile computing platform, originating in Vienna, Austria. Tourists can download the travel application through the iPhone store (iOS operating system) for free. Journi allows tourists to make an account and create their own network within the platform. They can select whom they want to follow and who follows them. Also, members can create group accounts and upload group-travel related content. Members can upload, create and share their content at any given time within Journi and to other social media platforms. Journi has approximately 30,000 international members, mainly based in Europe and the US.

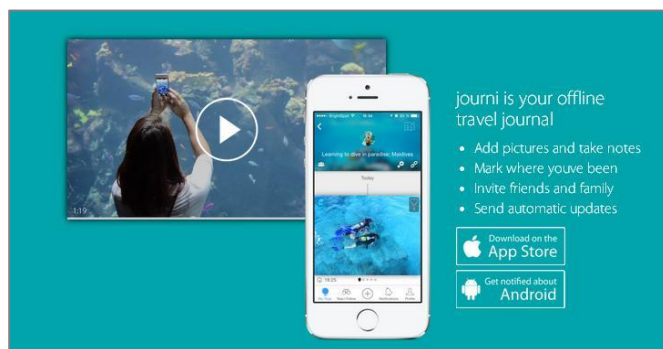


Figure 22. Illustration Journi Mobile Phone Application

The next step is the sampling design. The sampling design explicitly shows how the cases are selected for observation (Singleton & Straits, 2013). In this case, the member list is available to the researcher. Members of the Journi mobile platform will be invited by e-mail to participate in the web-survey (self-administered).

Web-surveys have been employed successfully in recent marketing research (Yoo & Gretzel, 2011). According to Vehovar and Manfreda (2008), a web-survey is efficient in achieving high response rates, due to the flexibility of the questionnaire design, as well as a more dynamic interaction between respondent and survey. The user-friendly design, respondents' daily use of ICT and the rich information available enable web-surveys to be an efficient data collection tool. The survey will be facilitated through the Internet software tool Sawtooth. Sawtooth provides an easy interface, is user-friendly and offers a customized design. Members will be informed that their participation is voluntary and that the data will be handled in a confidential and anonymous manner. Respondents will be incentivized with fifty vouchers. Prices and lotteries are effective stimuli to increase response rates in online surveys (Vehovar & Manfreda, 2008). However, one must be careful with regard to respondents' motivation to fill in the survey (Krosnick,

1999). Therefore, the survey design is crucial to get accurate results and to motivate respondents to complete the survey. The following paragraph will explain the survey design.

4.4. Survey Design

Researchers have to pay attention to different elements when designing a survey. Firstly, appropriate instructions for the survey, the format of the questions, and the order of the questions can increase response rates (Babbie, 1998). Second, the use of questions plays a distinct role. In survey research, a distinction can be made between open-ended questions and closed-ended questions. An open-ended question requires respondents to answer in their own words, whereas a closed-ended question requires the respondents to choose a response from those provided. The open-ended questions can provide the researcher with much valuable information. Closed-ended questions enhance the standardization by creating the same frame of reference for all respondents. For closed-ended questions, ordinal response scales are commonly used to measure the strengths or intensity of respondents' feelings (Likert scale) (Babbie, 1998).

The survey for this study is designed based on seven main sections, with questions related to: i) socio-demographic information, ii) their behavior in the platform, iii) motivations to use mobile computing platforms, iv) creative traits and self-efficacy, v) domain-specific knowledge about travel-app features, vi) their passion regarding their membership of the mobile computing platform, and vii) the perceived support of the mobile computing platform. The survey is designed primarily with closed-ended questions and ordinal response scales. In section 4.4.2 the specific measures will be explained.

Before the actual survey was sent out, a pre-test was done to improve the research instrument. In contrast to a pilot-study, a pretest is not focused on a specific target population (Babbie, 2008). A pretest of a sample design can provide insights into whether the design is possible and if the survey is too difficult to complete (Babbie, 1998;2008). Furthermore, the pretest can help to develop and organize the coding of open-ended questions (Babbie, 1998). Questions that participants had to answer were, for example, 'Are the questions and question formats varied enough to retain respondents' interest and attention?' and 'Are the choice options to closed questions clear and exhaustive?' (Singleton & Straits, 2013). The feedback was taken into account and the survey was adapted accordingly. Consequently, it was sent out to the Journi-members.

4.4.1. Key Constructs in the Survey

The key constructs, along with their definitions, of this study are presented in Table 16. The definitions used in this study are explained along with the used abbreviation and expected effects as shown in the conceptual model (Figure 23).

Construct	Abbreviation	Definition	Position	Effects
Consumer Innovativeness	CI	Cognitive style of consumers' creativity processes	Self-Perception Attribute	Direct And Indirect Effect
Domain-Specific Innovativeness	DSI	The knowledge someone has about mobile operating features that enhances their creative behavior	Self-Perception Attribute	Direct And Indirect Effect
Creative Self-Efficacy	CSE	The level of confidence about sharing creative content in mobile computing platform	Self-Perception Attribute	Direct Effect
Passion	P	The devotion, time and effort spent on interacting with the mobile operating platform	Behavioral Attribute	Direct Effect
Task Involvement	TI	The level of involvement when performing a task (creating a journal) in the platform	Behavioral Attribute	Mediator
Supporting Platform Conditions	SPC	Conditions that can support content creation to be creative and upload their creative content	Perception Attributes	Direct Effect
Online Creativity	OC	The level of creativity reflected in content shared in the mobile operating platform	Behavioral Outcome	

Table 16. Key Constructs used in Survey Design

4.4.2. Measures of the Constructs

As discussed in the previous section, the survey is designed based on closed-ended questions about different themes. The conceptual model is now operationalized by the specific measures and scales. Overall, different multi-item self-response 5-point Likert type scales are used (anchors from 1= completely disagree to 5= completely agree). The scales used are selected from an extensive literature review, and the scales have been validated by previous studies in different settings. The scales have been adapted to fit the setting of this study.

The *innovativeness* construct is based on scales measuring consumers' cognitive style for being creative (Kirton, 1978). This study uses six items adapted from Pallister and Foxall's (1998) innovation

scale. For *domain specific innovativeness*, a scale of four items adapted from Agarwal and Prasad's (1997) scale is used. They used a shorter scale based on Hofacker and Goldsmith's domain-specific innovativeness scale. For the *creative self-efficacy* construct, four items are adapted from Tierney and Farmers' (2002) scale of creative self-efficacy. The *passion* construct is based on Sternberg's (Sternberg, 1997) passion scale with five items. The *online creativity* construct is measured with four items adapted from Scott and Bruce (1994) and Kim et al. (2011) about creative behavior. The *supportiveness of the platform* is measured based on a scale by Bhattacharjee and Premkumar (2004) with four items. Lastly, Füller et al. (2008) state that consumers enjoy feelings of pleasure when being involved in free-time Internet activities. Hence, for this study three items of hedonic task involvement are included. Thus, *task involvement* construct is based on Higie and Feick's (1989) scale for internet-specific innovation, specifically the hedonic task involvement. Moreover, control questions (socio-demographics and membership related questions) are asked (see appendix G for an overview of the whole survey). Table 17 provides an overview of the constructs used in this study. Figure 23 illustrates the measurement models as well as the structured model.

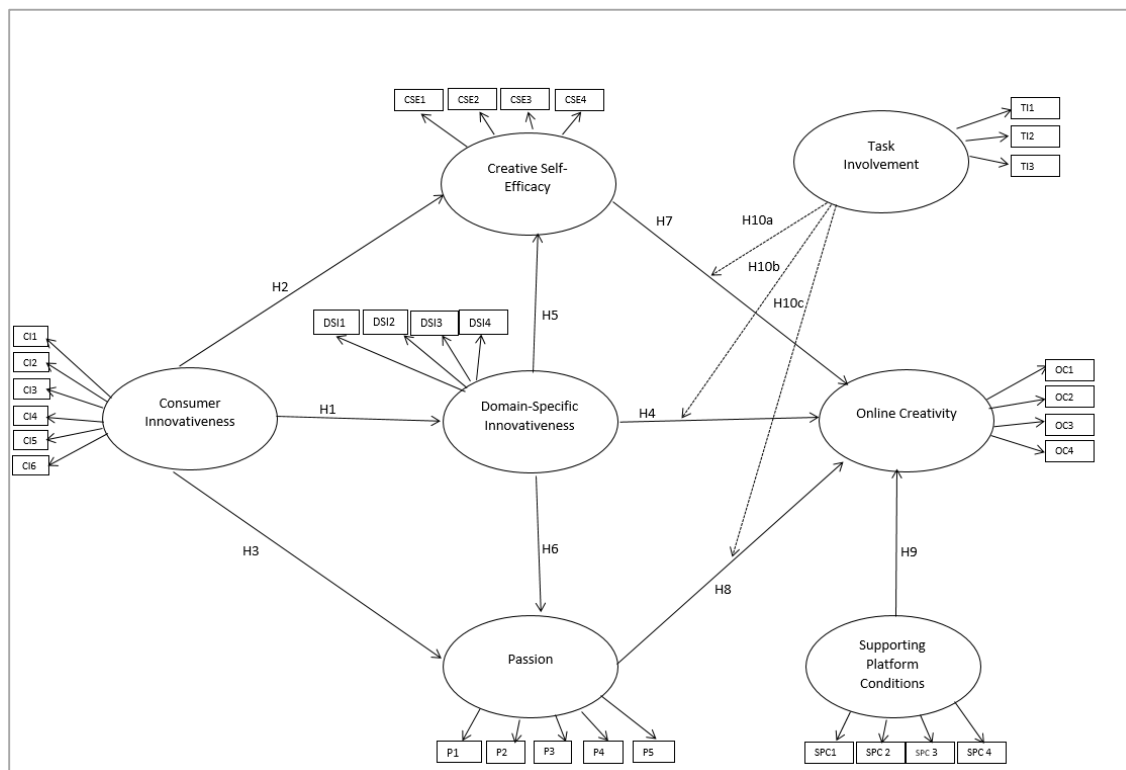


Figure 23. Conceptual Model with Latent and Manifest Variables

Construct	Items	Sources	Scale
Consumer Innovativeness	CI1. I am an innovative person	Pallister and Foxall (1998)	Ordered categorical
	CI2. I consider myself to be creative and original in my thinking and behavior		
	CI3. I have novel ideas		
	CI4. I seek out new ways to do things		
	CI5. I can hold my ground in a disagreement with a group		5.Likert-scale
	CI6. I create sooner than I improve		
Domain-Specific Innovativeness	DSI 1. If I heard about a travel app feature, I would look for ways to experiment with it	Agarwal and Prasad (1997)	Ordered categorical
	DSI 2. Among my peers, I am usually the first to try out new travel app features		
	DSI 3. In general, I am hesitant to try out new travel app features for my content		
	DSI 4. I like to experiment with new travel app features to create my content		5.Likert-scale
Creative Self-Efficacy	CSE1. I believe that I am good at creating creative journals in Journi	Tierney and Farmer (2003)	Ordered categorical
	CSE 2. I have confidence that I am good in creating journals in Journi		
	CSE 3. I have the ability to develop creative journals in Journi		
	CSE4. I am good at designing creative journals in Journi		5.Likert-scale
Passion	P1. Nothing could make me as happy as my membership with Journi does	Sternberg (1997) Füller et al. (2008)	Ordered categorical
	P2. I cannot image my life without Journi		
	P3. I think about Journi several times a day		
	P4. Being online in Journi inspired me to create new journals		
	P5. Journi makes me feel excited about travelling		5.Likert-scale
Task Involvement	TI1. Working with Journi is inspiring	Higie and Feick (1989) Füller et al. (2008)	Ordered categorical
	TI2. Working with Journi is pleasurable		
	TI3. Working with Journi is exciting		5.Likert-scale
Supporting Platforms Conditions	SPC1. Journi supports me to present my journals in a beautiful/creative/professional way	Bhattacharjee and Premkumar (2004)	Ordered categorical
	SPC2. Journi supports me to increase the quality of my journals		
	SPC3. Journi supports me to easily create great journals		
	SPC4. Journi is useful for communicating my journals in a creative manner		5.Likert-scale
Online Creativity	OC1. I like to experiment with new ways of creating journals	Scott and Bruce (1994) Kim et al. (2011)	Ordered categorical
	OC2. I often try new things in Journi		
	OC3. I like to do something different every time when I create a journal		
	OC4. I like to create journals that are new, creative and inspiring		5.Likert-scale

Table 17. Survey Items

4.5. Method of Analysis

The last step is deciding on the method of analysis. The first interest of analysis is the degree of association or correlation between two variables. However, the aim of this research is to go beyond that and provide evidence about the direction of influence of different variables. An appropriate statistical technique is Structural Equation Modeling (SEM). SEM is a well-known method used in many disciplines. SEM uses various types of models to depict relationships among observed variables, with the basic goal of providing quantitative tests of a theoretical model (Schumacker & Lomax, 2004). Therefore, SEM is an appropriate method for investigating issues related to consumer behavior as discussed in this study (i.e., peer dynamics, self-concept, and self-efficacy) (Kaplan, 2009). The next section will explain SEM in more detail.

4.5.1. Structural Equation Modeling

SEM supports the representation, estimation and testing of a theoretical model of linear relationships between variables. Direct and indirect relationships between variables can be specified and estimated. According to Rigdon (1998), SEM tests theoretical models using the scientific method of hypothesis testing to advance our understanding of the complex relationships among constructs (regression, confirmatory factor analysis and path analysis). Moreover, SEM can be useful for construct validation, testing hypotheses, group comparisons of model structures and exploration of data structures. Therefore, SEM can provide a convenient and powerful way to analyze complex relationships (Kaplan, 2009). The SEM method became popular for the following reasons. First, researchers became aware of using multiple observed variables. Second, SEM integrates measurement error when analyzing data (Schumacker & Lomax, 2004). Therefore, SEM involves recognition of validity and reliability of the observed scores (Schumacker & Lomax, 2004; Bagozzi & Yu, 1988). Third, the advanced theoretical models can be assessed in SEM (multi-group SEM, interaction terms). Fourth, the development of SEM software programs allows user-friendly interfaces. Lastly, SEM takes a confirmatory approach to the analysis of a structural theory about a phenomenon. Schumacker and Loxall (2004) state that the goal of SEM analysis is to determine the extent to which the theoretical model is supported by sample data. Overall, the goal of SEM is to determine and validate a proposed causal model (as introduced in Chapter 3). In order to provide a clear understanding of how SEM is similar and different to other models, the following chapter will provide insights.

4.5.2. Differences and Similarities between other Methods and SEM

The history of SEM lies in the chronological development of the following models; regression, path analysis, and confirmatory factor analysis (Schumacker & Lomax, 2004). The methods are all based on linear statistical modeling. Factor analysis in SEM is used to discover patterns among variables through the generation of factors that correlate with several real variables (Babbie, 1998). Regression analysis supports SEM in estimating relationships between variables (linear and multiple regression analysis). Although regression assumes normal distribution, path analysis performed in SEM (as done in SEM) assumes multivariate normality. Therefore, SEM can specify explicit relationships rather than a default model as is done in regression, and recognizes the imperfect nature of the measures. Moreover, SEM incorporates latent and observed variables. Hence, to understand the basis models within SEM, one needs to be introduced to the SEM-specific terminology.

4.5.3. SEM Terminology

Variables: SEM has a typology for four variables: *exogenous and endogenous, latent and manifest variables*. Exogenous variables are independent variables that cause variance in values of endogenous variables. An exogenous variable is any variable from which arrows begin. Therefore, the endogenous variable, also the dependent variable, never regresses on other variables (Kaplan, 2009). The second distinction can be made between latent and manifest variables. The latent variables can be exogenous and endogenous variables, which are not directly observable. Manifest variables (also referred to as indicators) directly measure the latent variables (also called factors). In models, manifest variables are presented in rectangles, and latent variables are represented in circles. Moreover, SEM takes measurement errors into account for every observed variable. Therefore, one can find ovals under each rectangle illustrating the measurement errors. Finally, the arrows represent the estimated paths between manifest and latent variables, and endogenous and exogenous variables. The relations among the variables are clarified by the path diagrams. *Path diagrams* are fundamental in structural modeling. The researcher can diagram the hypothesized set of relations in the model. This links to the second terminology part of SEM, where different models are used.

Models: SEM distinguishes between the measurement and the structural model. The part of the model that relates the latent variables to the manifest variables is called the *measurement model*. In other words, the measurement model shows the latent variables and linked manifest variables (indicators) (see Figure 24). SEM has a measurement model for the latent exogenous and latent endogenous variables. In

the measurement model, confirmatory factor analysis (CFA) is a commonly used analysis. CFA estimates the measurement models and support issues such as the validity of scale structures. Thus, SEM consists of an: i) exogenous factor model, and ii) an endogenous factor model (Schumacker & Lomax, 2004).

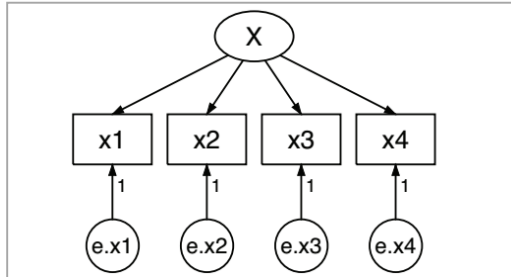


Figure 24. Measurement Model in SEM - Manifest Variables to Latent Variables (Geiser, 2013)

In the measurement model, one can operationalize the relationships between manifest variables and latent variables in two ways: reflective and formative measurement models (see Figure 25). In the formative measurement model the indicators point to the latent variables, whereas in the reflective measurement model the latent variable points to the indicators. The decision of using one or the other model is based on theoretical considerations (Hair et al., 2009). This study uses the reflective measurement model.

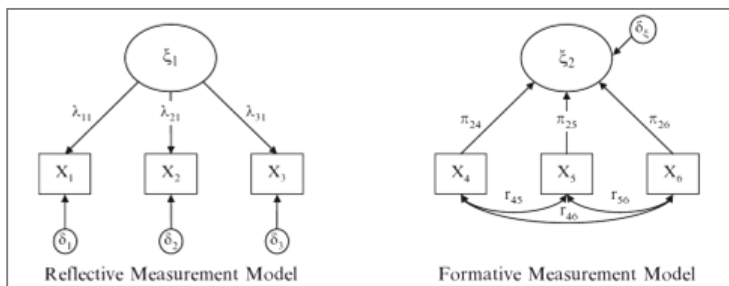


Figure 25. Reflective and Formative Measurement Models (Schumacker & Lomax, 2004)

The structural model will show the relationship between the latent variables. Hair et al. (2009) state that the structural model differs from the measurement model because of a shifting focus to the magnitude of the relationship between constructs rather than items to the construct. Structural models have paths that reflect causal dependencies between endogenous variables (see Figure 26).

There has been some discussion in SEM literature about whether the measurement and structural models need to be measured simultaneously or need to be analyzed separately. James and Brett (1984) proposed a two-step model to illustrate the relationship between the measurement and structural model. The two-step model perceives the two models as two conceptually distinct models. According to Anderson

and Gerbing (1988), the one-step approach, where the measurement and structural model are estimated simultaneously, will suffer from ‘interpretational confounding’, subsequently affecting the interpretability of the constructs. Interpretational confounding occurs when the defined meaning of an unobservable variable may change depending on the empirical meaning assignment. Therefore, according to Anderson and Gerbing (1988), there is much more to be gained from the two-step approach, compared to the one-step approach in the model-building process. According to Anderson and Gerbing (1988), there is much to achieve in theory testing and the assessment of construct validity from a separate estimation of the measurement model prior to the simultaneous estimation of the measurement and structural sub models. Hence, a two-step approach is considered. Conclusively, SEM includes all that has been measured, observed or manipulated with the selected variables.

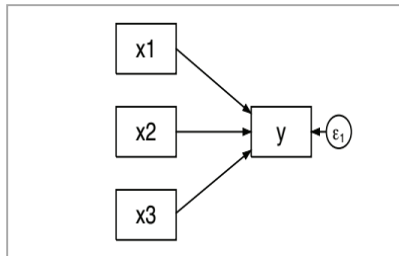


Figure 26. Structural Model (Geiser, 2013)

4.5.4. Relationships between Variables in SEM

In SEM, variables often *mediate or moderate* the relationship between two latent variables (see Figure 27). In moderation, there are three or more variables where the presence of one changes the relationship between the other two. In other words, the relationship between two variables is not the same due to a third variable. In *mediation* there is a causal process between all three variables (James & Brett, 1984). Namely, there can be a *direct effect* between independent (exogenous variables) and dependent variables (endogenous variable), and an *indirect effect* between an independent variable and a mediating variable.

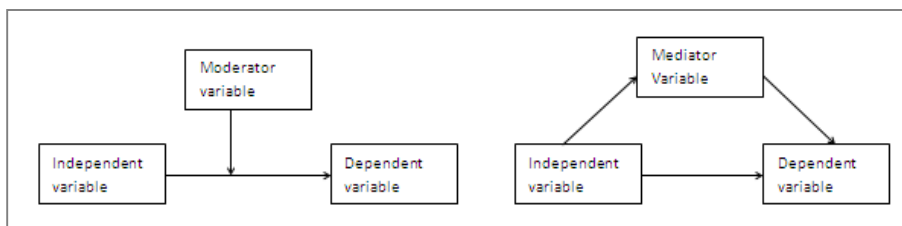


Figure 27. Moderating and Mediating Relationships (author’s own)

The relationship between manifest variables and latent variables and between latent variables is indicated with parameters. In SEM, three types of parameters can be indicated: *directional effects*, *variances and covariances*. *Directional effects* are relationships between observed indicators and latent variables, indicated by factor loadings. The relationship between latent variables and other latent variables is indicated by path coefficients. In addition, in SEM one uses *variances*, which are estimators for independent latent variables whose path loadings have been set to 1.0. *Covariances* are nondirectional associations among independent variables (double-headed arrows) and these exist when two factors are correlated. This will be explained in more detail under the section of model specification (Section 4.5.6).

4.5.5. Software Supporting SEM

A variety of programs have been developed for SEM. Popular ones are AMOS (Arbuckle, 2006), LISREL (Jöreskog & Sörbom, 2006), *Mplus* (Muthén & Muthén, 2010), and EQS (Bentler, 2006). Each program has its strengths and weaknesses, but all programs estimate the required fit indices (see section 4.5.6 for more information). According to Geiser (2013), it is up to the researchers' personal preferences which program to use. This study uses *Mplus*. *Mplus* has estimates that allow analysis of categorical and continuous data. In addition, it can handle incomplete data, complex surveys and non-normality (Geiser, 2013).

4.5.6. Stages in SEM

The researcher must specify a priori a model that will undergo validation testing. SEM can then provide insights into: i) how adequate the model is, ii) the amount of variance in dependent variables both manifest and latent variables caused by the independent variables, iii) reliability of each measured variance, iv) mediation and moderation of direct effects, and v) group difference and comparing the results (Kaplan, 2009). Therefore, in SEM literature, five steps are recognized in testing a SEM model: model specification, identification, estimation, evaluation, and modification (i.e., Kline, 2005; Schumacker & Lomax, 2004).

Model Specification: in this phase the researcher needs to design the model. This implies that the hypothesized relationships are specified, which are often based on an extensive literature review. Thus, the researcher decides on the relationship between latent variables (parameters). In addition, the researcher decides on constructs for the endogenous and exogenous latent variables in the measurement model.

Model Identification: the researcher needs to resolve any identification problem before estimating the parameters (Schumacker & Lomax, 2004). The model identification depends on the choice of the model and the specification of types of parameters. This will be discussed in the next section. A researcher has three ways to identify the model: 1) just-identified, 2) over-identified, and 3) under-identified (Schumacker & Lomax, 2004). Kaplan (2009) states that models need to be overidentified to estimate and test hypotheses about the relationships among variables. In other words, there needs to be enough information covering the parameter estimation. Kaplan (2009) states that the degree of freedom, which also represents the differences between the number of elements and parameters, is a reference for the researcher to decide on identifying the model. A positive number of degrees of freedom illustrates an over-identified model. If the degree of freedom is zero then the model is just-identified, if the degree of freedom is negative, the model is under-identified (Kaplan, 2009). Kaplan (2009) states that a large degree of freedom represents a parsimonious model.

Model Estimation: in this phase the estimation of parameters will be done. In SEM, specifying the pathways in the model can result in two types of relationships: i) free pathways that hypothesize causal relationships between variables that are tested and are free to vary, and ii) relationships between variables that have an estimated relationship (based on previous studies) and are fixed in the model (Kaplan, 2009). Based on the model and unknown parameters, SEM generates a *covariance matrix*. The matrix represents the building blocks of how the data will be presented. The matrix in SEM is essential because it will include the relationship between two variables that are not necessarily causal. Moreover, the co-variance estimates between variables allow one to better estimate direct and indirect effects with other variables. The researcher's goal is, thus, to determine the best possible model that produces the sample co-variance matrix. The aim is to know if the true model deviates from the implied theoretical model. The estimation of free parameters is obtained through the numerical maximization of fit criterion, such as the maximum likelihood estimation (ML), generalized least squares (GLS), and weighted least squares (WLS) (Kaplan, 2009). The path estimators indicate how variable A increases by one standard deviation from its means, then variable B would be expected to increase with x-value coefficients from its own standard deviations from its own means, while holding all other relevant regional connections constant (Kaplan, 2009). In addition, model estimation involves determining the value of the unknown parameters and the error associated with the estimated value. The ML is used in normal distribution of the residuals. In cases where there is non-normality, different robust estimators need to be analyzed depending on the use of categorical and continuous variables. For categorical variables, the Weighted

Least Squares, (WLS) approach, or Robust Weighted Least Squares (WLSM, WLSMV) or Unweighted Least Squares (ULS) can be used (Geiser, 2013). The robust WLSMV Chi-square used by *Mplus* performs in an adequate way (Flora & Curran, 2004). In case one deals with only continuous variables, one can perform the Maximum Likelihood (ML), or the robust statistics, such as, Maximum Likelihood with Robust Standard Errors and Chi-square (MLM, MLMV), Generalized Least Squares (GLS), and Weighted Least Squares (WLS).

Model Evaluation: SEM relies on several statistical tests to determine the adequacy of the model to fit to the data (Kaplan, 2009; Bagozzi & Yu, 1988). The researcher has to check on several parts. The measurement model is evaluated by five basic evaluation types: i) content validity, ii) indicator reliability, iii) construct reliability, as well as composite reliability and Cronbach's alpha (higher for all items than .60), iv) convergent validity, also calculating the scale reliability, based on average variance extracted (AVE) (which should be higher than the cut-off value of .50), and v) discriminant validity (shown if the latent variable is AVE is bigger than variance of this latent variable (Field et al., 2012). Then the overall fit of the model is checked based on its goodness of fit. Moreover, in order to determine the statistical significance of a theoretical model, three criteria need to be checked: i) non-statistical significance of the chi-square test, ii) statistical significance of each parameter estimate for the paths in the model, and iii) the magnitude and direction of the parameter estimates to ensure that they are consistent with the substantive theory (Schumacker & Lomax, 2004).

In the case of reporting on the analysis of SEM, researchers need to provide fit indices. The fit indices fall into three categories: absolute fit, model comparison, and parsimonious fit (Kaplan, 2009; Schumacker & Lomax, 2004). The absolute fit measures how well the specified model reproduces the data and how well the researcher's theory fits the data. The indicators of Goodness-of-Fit index (GFI) should be larger than .095 as well as the adjusted goodness-of-fit-index (AGFI), which should be equal to or higher than .090. The Tucker-Lewis Index (TLI) is also an incremental fit index (values higher than 0.95 are acceptable), also called the non-normed fit index (NNFI) (Rigdon, 1998). Moreover, the Root Mean Square Error of Approximation (RMSEA) illustrates the goodness of fit, if lower than .05, reasonable fit between .05 and .08. RMSEA is also called 'badness of fit index' (Rigdon, 1998). Similar is the SRMR indices, which calculate the differences between observed and predicted residuals (a fit lower than .05 is good) (Geiser, 2013). Also for categorical variables, research remains unclear about which fit indices can be used. Muthén and Muthén (2010) argue that the use of RMSEA, CFI and TLI are applicable. According to Templin

(2012), RMSEA performs reasonably in the case of categorical model estimation (less than .06), as well as the Weighted Root Mean Square Residual (WRMR) (less than 1).

Lastly, the researcher can perform analysis on the comparative fit. The hypothesized model is assessed on whether it is better than a competing model and the latter is often a baseline model (null model). The Comparative Fit Index (CFI) indicates the relative lack of fit of a specified model versus the baseline model (Bollen, 1989). Values can range between zero and one, but higher values represent a better fit ($>.95$) and, thus, a good model. Parsimony ratio (PR), the ratio of degree of freedom used by the model to the total degree of freedom available, is calculated (Kaplan, 2009). In addition, in SEM one is also interested in comparing different models to obtain the best represented model. Once the models are compared, one can decide to present one final model or to introduce one or two alternative models explaining the observed phenomenon. This process becomes an exploratory exercise and goes beyond hypothesis testing. However, this process can provide new theoretical models that can be used for future research studies (Geiser, 2013).

5. Results

5.1. Profile of Sample

The invitation to the survey and a reminder resulted in 314 members participating, whereof 179 members fully completed the whole survey. This also counts for the 1.5% response rate. The sample consisted of slightly more women (53.6%) than men (46.4%). The members were rather diverse with regard to nationality. The majority originated from Europe (50.7%), and North America (30.4%), Asia (8.7%), South America (5.8%) and Oceania (4.4%). The majority of the respondents were between 21 and 35 years old (31.5%), 9.6% were older than 50 years old. Many of the respondents completed an undergraduate degree (40.5%). Furthermore, 51.9% were in paid employment, 19.1% were still studying, 14.2% were self-employed, and the remaining members were either looking for a job, retired or homemakers (<6%). See Table 18, and appendix H for detailed overview.

Characteristics (N=183)	Frequency	%
Gender		
Male	85	46.4
Female	98	53.6
Age		
Under 16	4	1.3
16-20	10	3.2
21-25	36	11.5
26-30	33	10.5
31-35	33	10.5
36-40	19	6.1
40-45	4	1.3
46-50	14	4.5
>50 years	30	9.6
Education Level		
Primary school	2	1.1
High school	21	11.5
Technical school	20	10.9
Undergraduate	74	40.5
Graduate	52	28.4
Post graduate	9	4.9
Other (Associate)	5	2.7
Nationality		
European	70	50.7
North American	42	30.4
South American	8	5.8
Oceania	6	4.4
Asian	12	8.7
Job Position		
Employed for pay	95	51.9
Self-employed	29	14.2
Out of work and looking for work	8	4.4
Out of work but not looking for work	5	2.7
A homemaker	6	3.3
A student	35	19.1
Retired	6	3.3
Other (au pair, travelling)	2	1.1

Table 18. Sociodemographic Characteristics of the Respondents

5.2. Membership Characteristics

In this section the membership characteristics are discussed. The majority of the members indicated that they had been members for less than half a year (54.2%). Many respondents (33.9%) became a member by searching through the Apple App Store, recommendations from existing members (21.4%), through search engines (14.3%) or social media (10%). A smaller percentage (7.6%) indicated that they knew the team of the mobile computing platform, Product Hunt (7.8%), or other reasons (5%) (i.e., magazines, printed media).

Many respondents use the mobile computing platform to create their own trip journal (66.5%), whereas the other users use the mobile computing platform to follow others' trip journals (33.5%). Then, members indicated that they create their trips on an individual basis (71.9%). Smaller percentages indicated that they use the platform's option to create journals together with friends and/or family. The majority of the respondents have one trip journal (40%) or between two to five journals (38.5%). Only a few respondents have more than six trip journals (4.5%) or even more than ten journals (4.5%). The respondents primarily share travel-related content (89.9%) when creating their entries. Interestingly, they also use it to share daily life activities (19.8%), special happenings in their lives (i.e., a wedding) (15.2%) or things of interest (e.g., fashion, food, art) (12.7%), see appendix I for detailed overview.

Primarily, 49% of members share their trip journals during their holiday and wait till the end of the day, whereas 37.9% share while being on the go and 12.3% of the users wait till the end of the trip. In the platform, members can choose how to share their journals. The majority states they actively ask friends to follow their journals (42.6%) or they are asked by friends to be followed (13.7%). Quite a few members also keep the journals for themselves (28.4%). A minority of members chooses to make journals open to the whole community (10.7%) or publicly shares the link to their profile in other social media spaces (4.6%).

Then, respondents were asked to indicate their past, current and future usage of the platform. First, users dominantly state that they have used the platform only occasionally (43%) or on a daily basis (23.8%) in the past. Then, the majority states that they currently use the platform only occasionally (56.1%). Then, when respondents were asked to indicate their future usage with the platform, the majority plans to use the platform only occasionally (47%). Table 19 provides a detailed overview.

Characteristics	Frequency	%
Membership with Journi (N=251)		
< half a year	136	54.2
Between half a year – one year	115	45.8
How Did You Become a Member of Journi (N=251)		
Recommendations of friends who are members	54	21.4
Through search engines	36	14.3
I know the team of Journi	19	7.6
On Social Media	25	10
Product Hunt	20	7.8
Apple App Store	85	33.9
Other (i.e., magazine, print media)	12	5.0
Purpose of Membership (N=251)		
To follow other trip journals	84	33.5
To create trip journals	167	66.5
Number of Journals (N=251)		
0	36	14.8
1	100	40.0
2-5	94	38.5
6-10	11	4.5
11-15	3	4.5
>15	-	-
Kind of Information Shared in The Community (N=197)		
Travel-related content	177	89.9
Special happenings in my life	30	15.2
Daily life stuff	39	19.8
Things of interest (DIY, fashion, food)	25	12.7
Other (diary, exchange program, photos)	8	4.1
Moment of Uploading Trip Journals (N=203)		
On the go	77	37.9
At the end of each day	101	49.0
At the end of your trip	25	12.3
The Manner of Sharing the Trip Journals (N=197)		
I keep the journals for me	56	28.4
I just make my trip public, so everyone who likes can follow my trip journals	21	10.7
My friends on Journi ask me actively if they can follow my trip journals	27	13.7
I invite friends using the invited features on Journi	84	42.6
I publicly share the link to my Journi	9	4.6
Creating Journals Together with Friends/Family (N=203)		
Yes	57	28.1
No	146	71.9
Usage Behavior (N=193)		
<i>Past:</i> Daily	46	23.8
Weekly	33	17.1
Monthly	31	16.1
Occasionally	83	43.0
<i>Currently:</i> Daily	20	10.4
Weekly	29	15.0
Monthly	35	18.1
Occasionally	109	56.5
<i>Future:</i> Daily	29	15.0
Weekly	30	15.5
Monthly	38	19.7
Occasionally	96	49.7

Table 19. Membership Characteristics

Then, respondents were asked to indicate specifically why they share their travel related content in the mobile computing platform (i.e., Yoo & Gretzel, 2008; Wang & Fesenmaier, 2004). The majority create journals and use the mobile computing platform because: 1) it is an easy way to save their travel memories (84.2%), 2) to help others with travel experiences (81%), 3) to communicate with friends (56.7%), 4) to find out what their friends are doing (55.5%), 5) to share their memories with their family and/or friends (49.4%), 6) to get inspiration from other journals (46.8%), or 7) to see the reaction of followers (37.3%). See Figure 28 for visual support.

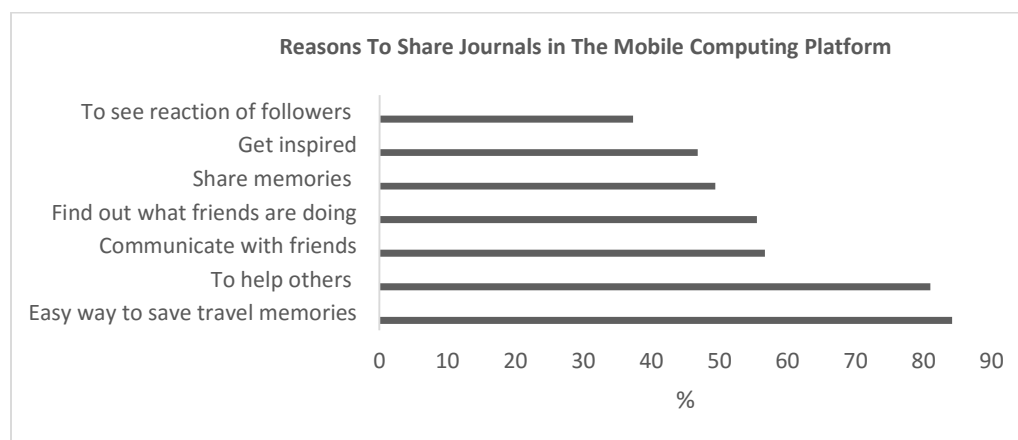


Figure 28. Reasons to Share Journals in the Mobile Computing Platform

Hsu et al. (2007) indicate that consumers often share due to their personal outcomes. Hence, respondents were asked to indicate ways in which their membership with a platform helps them to increase their personal outcomes. A minority of the members perceive their membership as a way i) to gain recognition and/or respect (11%), ii) to make more friends (7%), and iii) to be seen as trustworthy (13%). Slightly more members agree that their membership helps them to strengthen the relationship between their friends (32%) and see it as a tool to also receive information so they can plan their future holidays (37%). See the pie chart (Figure 29) for visual support and appendix J for a detailed overview.

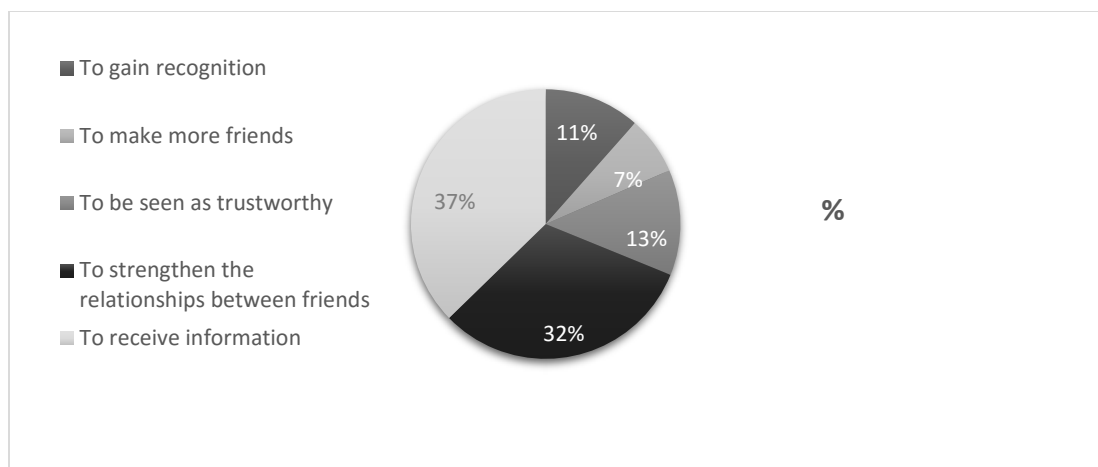


Figure 29. Personal Outcomes To Share Content In The Platform

Lastly, the respondents were asked to indicate their overall satisfaction with their online trip journals. The majority is satisfied (58%) or very satisfied (25.9%) with the trip journals they created, whereas 8.6% seem to be somewhat unsatisfied with the trip journals, and a minority of respondents (%) seems to be completely unsatisfied. See appendix K for a detailed overview. The next section will explain the creative behavior of the members in the platform.

5.3. Creative Behavior in The Mobile Computing Platform

Respondents were asked to indicate how they create their journals. The majority of the respondents indicate that they include several photos (84%), use text (78.8%) and use the geo-tag feature, which allows them to display where exactly the trip took place (76.6%). Furthermore, many users indicated that they use the country stamps (a feature offered by the mobile computing platform) (65.4%) when creating journals. Relatively fewer members indicated that they manipulate their photos by inserting elements and text or they make a collage (25.3%) or use filters for their photos (25.6%). See Figure 30 for an overview and appendix L for a detailed overview. Furthermore, respondents were asked about how they upload their photos. The majority of the members indicated that they use photos taken by a camera (54.3%), use photos from their phone (6.7%), or take photos from the internet (2.4%). These frequencies indicate that users have a variety of options when creating their journals. Users prefer to show their own photos and integrate features offered by the platform. It appears that the users do extensively manipulate their photos or insert text in order to make their journals more creative or to make them stand out. In order to analyze if there is a difference between the respondents and their creative online behavior, various independent sample t-tests were performed.

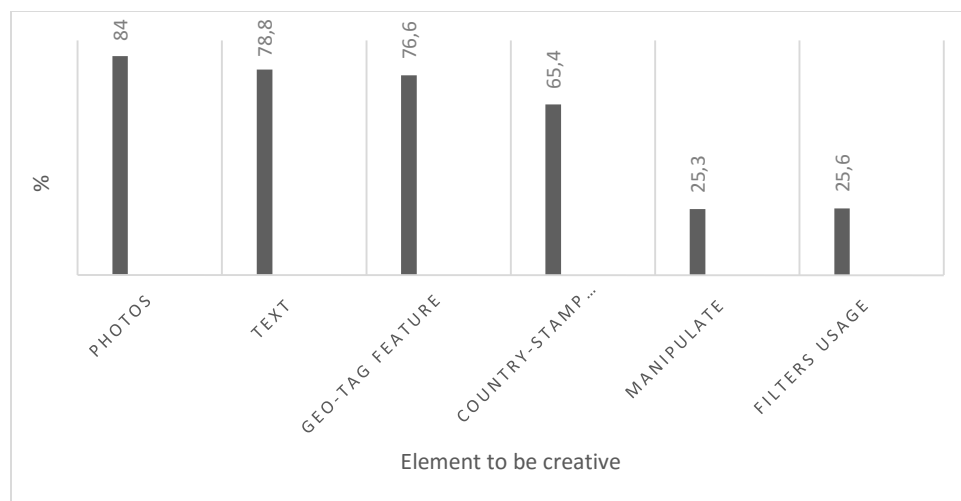


Figure 30. Chart of Elements to Make Creative Journals

5.3.1. Independent T-Tests Users' Creative Behavior

The creative behavior is analyzed based on the several actions users take to create their journals. Respondents have been grouped according to factors to indicate differences of creative behavior, gender, age, the moment when they create journals, how they share their journals and according to their satisfaction level. First, differences between females and males were analyzed. Table 20 provides an overview. Only one significant difference between females and males is indicated. Males tend to use the geo-tag feature more when creating their trip journals (female, $M=3.90$, $St.D= 1.23$, male $M=4.32$, $St.D=1.09$, $t= -2.29$ ($p<.05$)). The other items show rather similar behavior between female and male users.

Items	Female (N=81) Mean (St.D)	Male (N=68) Mean (St.D)	Mean Difference	t-value (Sig.)Df=
Most of the time I include texts in my moments in Journi	4.10 (.93)	3.91 (1.014)	.139	.884 (.38) 147
I often post text-only moments in Journi	2.69 (1.13)	2.84 (1.18)	.147	-.772 (.44) 147
I often include more than one picture in my moments that I post in Journi	4.27 (.922)	4.13 (1.00)	.187	1.154 (.25) 147
I allow geo-tagging so that my moments are visible on the map	3.90 (1.23)	4.32 (.97)	-.422	-.229 (.02) 147
I love the stamps that are included in the timeline when I enter a country	3.81 (1.14)	3.85 (1.04)	-.038	-.213 (.83) 147
I manipulate my photos before I upload them on Journi e.g., make collages	2.77 (1.13)	2.66 (1.13)	.104	.558 (.57) 147
I often use filters for my photos on Journi	2.83 (1.03)	2.81 (1.07)	.018	.106 (.916) 147

Table 20. Independent t-test Gender - Creative Content Behavior

Second, respondents' creative content behavior was analyzed after splitting them into two groups; 35 years and younger and older than 35 years (Von Hippel et al., 2011). Table 21 provides an overview of all items and differences between the two groups. As the overview indicates, there is only one significant difference between the different age groups. The younger respondents tend to use the country stamp feature more than the older respondents (younger than 35 years, $M=4.00$, $St.D=1.15$, 35 years and older, $M=3.70$, $St.D=.95$, $t=-.171$ ($p<.10$). Besides that, all the respondents have the same behavior when creating journals.

Items	≤ 35 years (N=81) Mean (St.D)	>35 years (N=68) Mean (St.D)	Mean Difference	t-value (Sig.)Df=
Most of the time I include texts in my moments in Journi	4.19 (.95)	4.23 (.97)	-.035	-.217 (.82) 147
I often post text-only moments in Journi	2.84 (1.12)	2.67 (1.19)	.192	1.00 (.315) 147
I often include more than one picture in my moments that I post in Journi	4.04 (.95)	3.98 (1.03)	.051	.314 (.75)147
I allow geo-tagging so that my moments are visible on the map	4.11 (1.07)	4.08 (1.12)	.033	.174 (.86) 147
I love the stamps that are included in the timeline when I enter a country	3.70 (1.15)	4.00 (.95)	-.301	-.171 (.09) 147
I manipulate my photos before I upload them on Journi e.g., make collages	2.64 (1.07)	2.82 (1.18)	-.180	-.966 (.36) 147
I often use filters for my photos on Journi	2.84 (1.05)	2.79 (1.04)	.05	.321 (.75) 147

Table 21. Independent t-test Age - Creative Content Behavior

Then, the level of satisfaction with the trip journal is analyzed for differences in the users' creative content behavior. Table 22 provides an overview, which indicates three significant differences between the groups. First, members who are satisfied with their journals use the geo-tag feature significantly more than unsatisfied members (satisfied members, $M=4.29$, $St.D=.89$, unsatisfied members $M=3.08$, $St.D=1.70$, $t=-2.53$ ($p<.05$)). Second, satisfied members seem to use more text in their journals compared to unsatisfied members (satisfied members, $M=4.18$, $St.D=.84$, unsatisfied members $M=3.31$, $St.D=1.37$, $t=-2.25$ ($p<.05$)). Third, satisfied members use the country stamp significantly more than unsatisfied members (satisfied members, $M=4.02$, $St.D=.95$, unsatisfied members $M=3.08$, $St.D=1.48$, $t=-.938$ ($p<.05$)). These differences indicate that using the special features offered by the platform leads to higher level of satisfaction. For the rest, there are no differences between the groups with regard to the remaining elements.

Items	Unsatisfied (N=13) Mean (St.D)	Satisfied (N=131) Mean (St.D)	Mean Difference	t-value (Sig.)Df=
Most of the time I include texts in my moments in Journi	3.31 (1.37)	4.18 (.84)	-.876	-2.251 (.04) 142
I often post text-only moments in Journi	2.46 (1.45)	2.83 (1.10)	-.371	-1.15 (.26) 142
I often include more than one picture in my moments that I post in Journi	3.69 (1.43)	4.32 (.83)	-.628	-1.552 (.15) 142
I allow geo-tagging so that my moments are visible on the map	3.08 (1.70)	4.29 (.89)	-1.213	-2.53 (.03) 142
I love the stamps that are included in the timeline when I enter a country	3.08 (1.48)	4.02 (.95)	-.938	-2.215 (.04) 142
I manipulate my photos before I upload them on Journi e.g., make collages	2.54 (1.50)	2.75 (1.10)	-.210	-.489 (.63) 142
I often use filters for my photos on Journi	3.00 (1.68)	2.85 (.98)	.145	.306 (.76) 142

Table 22. Independent t-test Satisfaction - Creative Content Behavior

Then, the differences were analyzed for respondents uploading journals at different times: on the go, at the end of the day or at the end of the trip. The three groups are significantly different when using text ($p=.005$), including pictures ($p=.020$), using the geo-tag feature ($p=.027$), and using filters ($p=.002$). See Table 23 for an overview.

Moment of Interacting with the Platform				
Items		Sig.	Chi-Square	Df
Most of the time I include texts in my moments in Journi		.005	10.448	2
I often post text-only moments in Journi		.095	4.698	2
I often include more than one picture in my moments which I post in Journi		.020	7.822	2
I allow geo-tagging so that my moments are visible on the map		.027	7.209	2
I love the stamps that are included in the timeline when I enter a country		.548	1.202	2
I manipulate my photos before I upload them on Journi e.g., make collages		.284	2.515	2
I often use filters for my photos on Journi		.002	7.761	2

Table 23. Kruskal-Wallis Tests - Interacting With The Platform And Creative Content Behavior

Further post-hoc analyses were performed to indicate which groups significantly differ from each other. Users on the go tend to use more text in their journals than users creating journals at the end of the trip (on the go $M=4.07$, $St.D=3.41$, end of the trip $M=3.41$, $St.D=1.09$, $t=2.51$, $p<.001$). Also, users creating journals at the end of the day use text more often than users who upload journals at the end of the trip (end of day $M=4.15$, $St.D=.975$, end of the trip $M=3.41$, $St.D=1.09$, $t=3.03$, $p<.001$). Thus, users who are traveling, either while on the go or at the end of the day, tend to use text more when creating their journals. Additionally, users who create journals at the end of each day (while traveling) use the geo-tag feature significantly more than users who create journals at the end of their trips (end of the day

$M=4.28$, $St.D=1.06$, end of the trip $M=3.55$, $St.D=1.53$, $t=2.58$, $p<.001$). Further analysis between the groups indicate that users on the go use the geo-tag feature significantly more than members who create journals at the end of the day (on the go, $M=4.05$, $St.D=.96$, end of a trip, $M=3.55$, $St.D=1.50$, $t=1.79$, $p<.10$). Thus, the geo-tag feature also seems to be used more by members while traveling, especially users who are on the go. Furthermore, members uploading their journals on the go also tend to use filters for their photos significantly more ($M=3.0$ $St.D=.97$) than those uploading their photos at the end of the day ($M=2.59$, $St.D=1.07$) ($t=2.267$, $p<.05$). Hence, the moment of creating the journal significantly influences how users implement specific elements to be creative in the mobile computing platform.

In addition to the moment of creating the journal, the usage of elements can also be influenced by the way members share their journals. Therefore, analyses were performed to indicate if there is a difference between the way members share their journals and creative content. Table 24 provides an overview of the possible ways of sharing and displays the differences between the groups. As demonstrated, there are three significant differences that influence the usage of including text ($p=.013$), the geo-tag feature ($p=.02$), and manipulating the photos ($p=.02$).

Sharing Behavior				
Items	Sig.	Chi-Square	Df	
Most of the time I include texts in my moments in Journi	.013	12.688	4	
I often post text-only moments in Journi	.498	3.370	4	
I often include more than one picture in my moments that I post in Journi	.214	5.810	4	
I allow geo-tagging so that my moments are visible on the map	.021	11.538	4	
I love the stamps that are included in the timeline when I enter a country	.334	4.577	4	
I manipulate my photos before I upload them on Journi e.g., make collages	.022	11.437	4	
I often use filters for my photos on Journi	.634	2.560	4	

Table 24. Kruskal-Wallis Tests - Sharing Behavior and Creative Content Behavior

Again, extra analyses were performed to indicate where exactly the difference occurs. In fact, users who have a private profile, in particular, use text less often compared to those who invite friends (private profile $M=3.70$, $St.D=.89$, inviting friends $M=4.26$, $St.D=.82$, $t=-383$, $p<.05$). Furthermore, users who invite friends compared to users who have a private profile use the geo-tag significantly more (private profile $M=3.86$, $St.D=1.18$, inviting friends $M=4.31$, $St.D=1.04$, $t=-2.094$, $p<.05$). Additionally, users who invite friends to follow their profile use the geo-tag significantly more compared to users who are asked to follow friends (asked by friends $M=3.65$, $St.D=1.20$, inviting friends $M=4.31$, $St.D=1.04$, $t=-2.278$, $p<.05$). Lastly, users who publicly share their profile compared to users who invite friends manipulate their photos

significantly more (public profile $M=3.67$, $St.D=.51$, inviting friends $M=5.46$ $St.D=1.04$, $t=-1.21$, $p<.05$). Thus, these analyses also indicate how users' intention to share their profile influences the way they intend to use elements when creating journals. In particular, the users who have public journals or invite friends seem to be significantly affected by using specific features (geo-tag, manipulate photos).

Overall, these analyses indicate that the way users interact with the platform, their demographics and satisfaction influences their creative content behavior. However, users' perception of how they are creative in the platform can also influence the way they use specific elements. Given that this study is interested in users' online creativity, several analyses are performed to indicate differences between respondents based on the hypothesized latent constructs leading to online creativity. The next section will explain this in more detail.

5.3.2. Independent T-Test Construct Online Creativity

In this section the construct online creativity and the respective latent variables will be compared between the different respondents. First, members' self-perceptions of online creative behavior and usage of elements to be creative are analyzed. The respondents are divided based on their agreements with the statement representing online creativity; thus, respondents agreeing versus respondents not agreeing with these statements. Table 25 provides an overview. As the results demonstrate, there is a highly significant difference between the groups. The only item that is not significant is categorized under the dimension 'I like to do something different every time when I create a journal'. Here, both groups do not differ regarding their behavior when manipulating photos they intend to upload ($t=-1.19$, $p<.05$).

The remaining differences are rather distinctive. The first interesting significant difference lies in the dimension of 'I like to experiment with new ways of creating journals'. Members who perceive themselves as significant experimenters use the country stamp feature ($M=4.36$, $St.D=.72$) more than those members who do not perceive themselves as experimental in the platform ($M=1.17$, $St.D=.40$) ($t=-10.25$, $p<.001$). A similar significant difference is detected for the implementation of the geo-tag feature. Members who perceive themselves as highly experimental use this feature ($M=4.45$, $St.D=.85$) much more than members who state that they do not experiment a lot in the mobile computing platform ($M=1.33$, $St.D=.51$) ($t=-.843$, $p<.001$).

Items	Low (N=8) Mean (St.D)	High (N=23) Mean (St.D)	Mean Difference	t-value (Sig.)Df=
I like to experiment with new ways of creating journals				
Most of the time I include texts in my moments in Journi	1.83 (1.16)	4.32 (.96)	-2.49	-5.23 (.00) 26
I often post text-only moments in Journi	1.17 (.40)	2.95 (1.29)	-1.78	-3.30 (.00) 26
I often include more than one picture in my moments that I post in Journi	2.00 (1.26)	4.64 (.49)	-2.64	-.80 (.00) 26
I often use filters for my photos on Journi	1.67 (1.21)	3.32(1.25)	-1.65	-2.88 (.00) 26
I allow geo-tagging so that my moments are visible on the map	1.33 (.51)	4.45 (.85)	-3.32	-8.43 (.00) 26
I manipulate my photos before I upload them on Journi e.g., make collages	2.00 (1.59)	3.14 (1.39)	-1.14	-1.73 (.09) 26
I love the stamps that are included in the timeline when I enter a country	1.17 (.40)	4.36(.72)	-3.19	-10.25 (.00) 26
I often try new things in Journi				
Most of the time I include texts in my moments in Journi	2.38 (1.40)	4.75 (.45)	-2.37	-5.61(.00) 18
I often post text-only moments in Journi	1.50 (1.09)	3.25 1.54)	-1.75	-2.99 (.00) 18
I often include more than one picture in my moments that I post in Journi	2.75 (1.73)	4.58 (.51)	-1.83	-2.87 (.00) 18
I often use filters for my photos on Journi	2.00 (1.19)	3.42 1.44)	-1.42	-2.29 (.03)18
I allow geo-tagging so that my moments are visible on the map	2.38 (1.76)	4.50 (.90)	-2.12	-3.55 (.00) 18
I manipulate my photos before I upload them on Journi e.g., make collages	1.75 (1.16)	3.50 (1.38)	-1.75	-2.94 (.00) 18
I love the stamps that are included in the timeline when I enter a country	2.38 (1.50)	4.58 (.66)	-2.20	-3.89 (.00) 18
I like to do something different every time when I create a journal				
Most of the time I include texts in my moments in Journi	2.88 (1.80)	4.70 (.48)	-1.82	-2.77(.00) 16
I often post text-only moments in Journi	1.75 (1.03)	3.60 (1.17)	-1.85	-3.49 (.00) 16
I often include more than one picture in my moments that I post in Journi	2.88 (1.88)	4.50 (.52)	-1.62	-2.36 (.01)16
I often use filters for my photos on Journi	2.13 (1.12)	3.40 (1.43)	-1.27	-2.05 (.05) 16
I allow geo-tagging so that my moments are visible on the map	2.63 (1.99)	4.30 (1.05)	-1.67	-2.14 (.03) 16
I manipulate my photos before I upload them on Journi e.g., make collages	2.50 (1.69)	3.40 (1.50)	-.90	-1.19 (.25) 16
I love the stamps that are included in the timeline when I enter a country	2.13 (1.53)	2.88 (1.80)	-.75	-5.37 (.00) 16
I like to create journals that are new, creative and inspiring				
Most of the time I include texts in my moments in Journi	2.00 (1.72)	4.43 (.811)	-2.43	-4.76 (.00) 24
I often post text-only moments in Journi	1.20 (.447)	3.19 (1.29)	-1.99	-3.57 (.00) 24
I often include more than one picture in my moments that I post in Journi	2.40 (1.9)	4.62 (.59)	-2.22	-2.51 (.00) 24
I often use filters for my photos on Journi	1.60 (1.34)	3.43 (1.32)	-1.83	-2.76 (.01) 24
I allow geo-tagging so that my moments are visible on the map	2.00 (1.73)	4.38 (.85)	-2.38	-4.51 (.00) 24
I manipulate my photos before I upload them on Journi e.g., make collages	1.20 (.447)	3.14 (1.31)	-1.94	-3.21 (.00) 24
I love the stamps that are included in the timeline when I enter a country	1.80 (1.78)	4.52 (.68)	-2.72	-4.76 (.00) 24

Table 25. Independent T-Tests among Online Creativity and Creative Behavior

The second major difference can be found in the dimension 'I often try new things in Journi'. Members who perceive themselves as often doing something new tend to include text in their journals more often compared to those who do not perceive themselves as often trying new things (agree $M=4.75$, $St.D=.45$, disagree $M=2.38$, $St.D= 1.40$, $t= -2.37$, $p<.05$). The third significant difference can be found in the dimension 'I like to do something different every time when I create a journal'. The members perceiving themselves as doing something different state that they use more than one picture compared to those who do not use different ways to create content often (agree $M=4.50$, $St.D=.52$, disagree $M=2.88$, $St.D= 1.88$, $t=-2.36$, $p<.05$). The fourth interesting difference is between members who perceive themselves as creators of new and inspiring journals compared to members who do not perceive themselves as such. Also here members who perceive themselves as creators of journals that are new and inspiring use the geo-tag feature significantly more compared to those users (agree $M=4.8$, $St.D=.85$, disagree $M=2.00$, $St.D= 1.73$) ($t=-2.51$, $p<.001$). Similar effects on this factor are indicated for the usage of the country stamp feature ($t=-4.76$, $p<.001$).

Overall, these analyses indicate important insights into the usage of elements of creative members. In particular, the unique features offered by the platform (geo-tag and country stamp) are used by members who perceive themselves to be highly creative online. These analyses indicate that usage of these features helps users to distinguish themselves from other users. The next section will explain the constructs hypothesized to influence online creativity and users' perceptions. Again, several independent t-tests are performed to detect differences.

5.3.3. Independent T-Test Main Latent Constructs and Respondents Characteristics

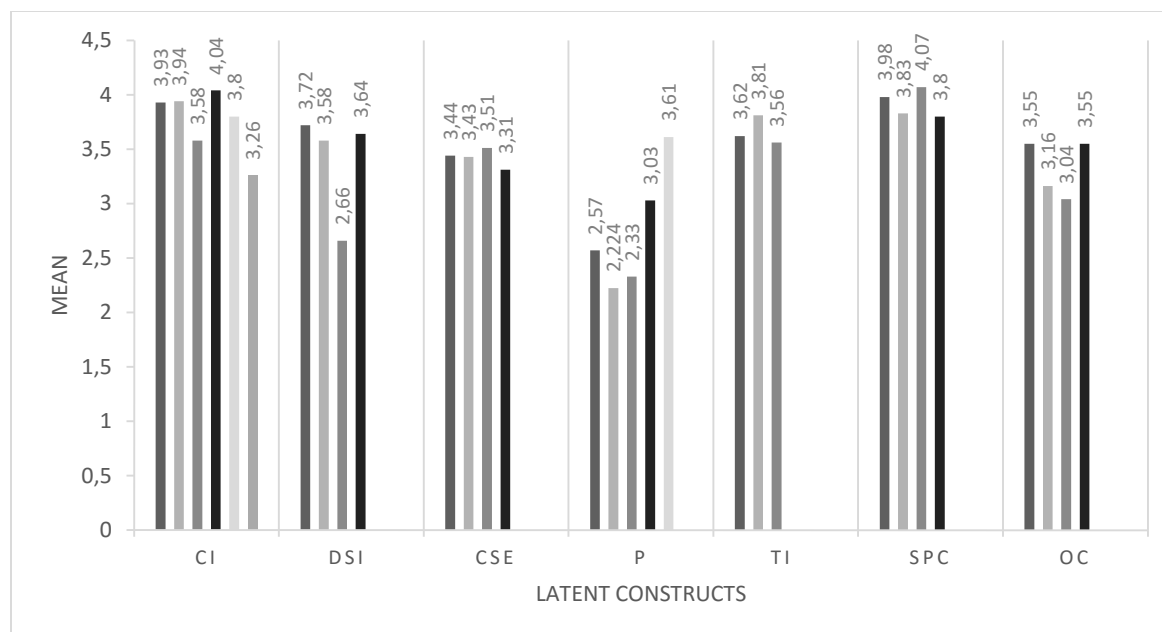
In this section the suggested latent variables are analyzed and compared between the different groups of respondents divided by characteristics (age and gender). First, female and male respondents were compared. A few significant differences are detected between the two groups. First, males perceive themselves as more innovative than women do (men $M=4.41$, $St.D=.72$, women $M=3.76$, $St.D=.80$, $t=-3.39$, ($p<.001$)). Furthermore, males like to experiment more with new travel app features than women (men $M=3.81$, $St.D=.98$, women $M=3.47$, $St.D= 1.07$, $t=.168$ ($p<.05$)). Interestingly, women find interaction with the mobile computing platform slightly more pleasurable than males (women $M=3.72$, $St.D=.96$, men $M=3.47$, $St.D=.85$, $t=.367$, ($p=.07$)). Women also argue they feel excited about traveling due to their interaction with the platform compared to male participants (women $M=3.80$, $St.D=1.01$, men $M=3.75$, $St.D=.86$, $t=.073$ ($p<.05$)). See appendix M for a detailed overview.

Second, respondents were grouped according to their age: younger than 35 years and 35 years old and above. Interestingly, the two groups hardly differ. Only one significant difference is apparent. Respondents younger than 35 years old are more passionate about their membership for the mobile computing platform ($M=2.76$, $St.D=.96$) compared to respondents older than 35 years old ($M=2.40$, $St.D=1.059$) ($t=-.2014$, $p<.05$). See appendix N for a complete overview.

Hence, the perceptions of users regarding issues related to the latent constructs mainly differ between male and females. Interestingly, the analysis indicating creative behavior and usage of specific elements demonstrate one significant effect (geo-tag feature). Men perceive themselves as experimental and innovative and, as seen in the previous analysis, this refers to their usage of the geo-tag feature. Younger users state that they use the country-stamp more often and, as a result, they feel more passionate about their involvement with the platform. Again, the various independent t-tests were able to indicate the different usage and perceptions. In order to analyze how the various latent constructs relate to the construct of online creativity, the measurement and structural model will be analyzed in the next section.

5.4. Analysis of Items Representing the Latent Constructs

In this section the main constructs used in this study are analyzed. First, general analyses are performed to indicate how respondents perceive themselves on the indicators of the main latent constructs: consumer innovativeness (CI), domain-specific innovativeness (DSI), creative self-efficacy (CSE), passion (P), task involvement (TI), supporting platform conditions (SPC) and online creativity (OC). As Figure 31 illustrates, the mean values of each item represents its latent construct. Appendix O provides a detailed overview. The first observation refers to respondents who perceive themselves rather highly on the following constructs: consumer innovativeness, task involvement and supporting platform conditions. Respondents perceive themselves as mediocre on domain-specific innovativeness and online creativity. Interestingly, respondents did not perceive themselves as highly passionate towards the platform. Shapiro-Wilk tests of all items confirm the non-normal distribution of the data ($p>.05$) (see appendix P). Furthermore, the standardized values of skewness and kurtosis illustrates that almost all items are negatively skewed to the left. This hereby confirms that participants self-evaluate themselves highly. The following items are positively skewed: DSI3, OC2, P2, P3, P4 and P5. Thus, on these items participants did not evaluate themselves very highly.



Note: CI= Consumer Innovativeness, DSI= Domain-Specific Innovativeness, CSE= Creative Self-Efficacy, P= Passion, TI= Task Involvement, SPC= Supporting Platforms Conditions, OC= Online Creativity

Figure 31. Mean of the Items Representing Latent Constructs

Further investigations of the standardized kurtosis levels of the items demonstrate that some items are outside the recommended range (<.3 or >.3). The following items have values higher than 3, representing a ‘leptokurtic’ distribution; CI4, TI2, SPC1 and SPC3. The leptokurtic distribution indicates i) a sharper peak than in a normal distribution, ii) that values are highly concentrated around its means, and iii) that there is a high probability for extreme values (Field et al., 2012). Visual inspection of the items’ box plots illustrates that these four items have a set of extreme values (see appendix Q). Outlier diagnostics show that these cases, if removed, do not significantly influence the distribution of the overall data and do not influence the item itself. After the inspection of item distribution and if the extreme values will influence latent constructs, the next step is testing of the hypothesized model, which will be explained in the next section.

5.5. Model Test

In this section the suggested model will be tested. As explained in the method chapter, there are several measurement models and one structural model. First, the issue of missing data has to be taken care of. Missing data is often a problem for researchers using SEM (Enders, 2001). In order to deal with missing values, the Full Information Maximum Likelihood Estimator (FIML) is used (Enders & Bandalos, 2001). Enders and Deborah (2001) show that the FIML estimator is superior when dealing with missing

values compared to other missing data methods, such as list wise deletion, pair wise deletion and similar response pattern imputation. However, apart from being unbiased and efficient across missing completely at random (MCAR) and missing at random (MAR) simulations, the FIML estimator assumes multivariate normality (Enders & Bandalos, 2001; Enders, 2001). As illustrated before, the study has a non-normal distribution. Thus, in order to deal with non-normality of the data, *Mplus* provides estimators that rectify that. In this case, the Weighted Least Squares Mean Variance Adjusted Estimator (WLSMV) is applied. This estimator supports analysis in a categorical and non-normally distributed setting. Furthermore, Hair et al. (2003) recommend a minimum sample size of 100-150 to ensure a stable solution. Other authors argue that five observations per parameter is sufficient. This study has 37 parameters and, thus, a minimum of 180 observations is required. In the case of applying the FIML estimation in *Mplus*, this results in 208 useable observations, thus exceeding the minimum cut-off level.

Second, the measurement models are analyzed based on a confirmatory factor analysis (CFA). The CFA reflects the appropriateness of the indicators from its latent construct. Table 26 provides an overview. The CFA can be judged based on the model fit indices. The recommended fit indices are: $RMSEA < .08$, $CFI > .95$, $TLI > .95$, $p > .001$. For this study the CFA model fit indices respond in a mediocre way: $RMSEA = .097$, $CFI = .88$, $TLI = .87$, $p < .001$. Then, the items are analyzed based on their significant coefficients. All items significantly respond to their latent constructs ($p < .005$). The items are further analyzed based on their factor loadings. A recommended cut-off point is .70 (Hair et al., 2003). The following item SPC1 (.180) fails to respond to that cut-off level and items DSI4 (.650) CSE4 (.657) are borderline cases. Furthermore the items are checked with respect to the explained variance (R^2). This should be at least 50 % (Hair et al., 2003). In the case of this criterion, the following items fail to respond positively as SPC1 (.032) and OC3 (.307) and OC4 (.293) and DSI1 (.422) and CSE4 (.432) are poorly explained. The CFA results indicate that some modifications are needed to purify the measurement models. In order to analyze construct validity, Cronbach's alpha (CA) and composite reliability (CR) are calculated. For both measures, all latent constructs have a recommended minimum value of .70 (Hair et al., 2003). For the latent constructs, domain-specific innovativeness (.50) and online creativity (.63), the Cronbach's alphas are not fully up to the recommended cut-off level. However, all latent constructs respond positively to the composite reliability value. Lastly, discriminant validity is checked by calculating average variance extracted (AVE), which needs to exceed .50 to be positively assessed. As Table 26 demonstrates, the latent constructs 'supporting platform conditions' and 'online creativity' miss this recommended value marginally (.47).

Variables	Factor Loadings	R ²	CA	CR	AVE
Consumer Innovativeness			.83	.92	.67
CI1. I am an innovative person	.849	.721			
CI2. I consider myself to be creative and original in my thinking and behavior	.825	.680			
CI3. I have novel ideas	.750	.563			
CI4. I seek out new ways to do things	.799	.639			
CI5. I can hold my ground in a disagreement against a group	.847	.718			
CI6. I create sooner so than I improve	.799	.638			
Domain-Specific Innovativeness			.50	.83	.55
DSI1. If I heard about a travel app feature, I would look for ways to experiment with it	.739	.422			
DSI2. Among my peers, I am usually the first to try out new travel app features	.742	.546			
DSI3. In general, I am hesitant to try out new travel app features for my content	.827	.550			
DSI4. I like to experiment with new travel app features to create my content	.650	.684			
Creative Self-Efficacy			.94	.86	.60
CSE1. I believe that I am good at creating creative journals in Journi	.761	.579			
CSE2. I have the confidence that I am good in creating journals in Journi	.825	.681			
CSE3. I have the ability to develop creative journals in Journi	.848	.718			
CSE4. I am good at designing creative journals in Journi	.657	.432			
Passion			.83	.93	.72
P1. Nothing could make me as happy as my membership with Journi	.886	.784			
P2. I cannot imagine my life without Journi	.799	.639			
P3. I think about Journi several times a day	.865	.749			
P4. Being online in Journi inspired me to create new journals	.873	.763			
P5. Journi makes me feel excited about traveling	.813	.662			
Task Involvement			.78	.93	.82
TI1. Working with Journi is inspiring	.952	.906			
TI2. Working with Journi is pleasurable	.883	.780			
TI3. Working with Journi is exciting	.886	.785			
Supporting Platform Conditions			.82	.75	.47
SPC1. Journi supports me to present my trip journals in a beautiful/ creative/professional manner	.180*	.032**			
SPC2. Journi supports me to increase the quality of my created trip journals	.703	.494			
SPC3. Journi supports me to easily create great trip journals	.801	.642			
SPC4. Journi is useful for communicating my travel journals in a creative manner	.849	.721			
Online Creativity			.63	.77	.47
OC1. I like to experiment with new ways of creating journals	.789	.622			
OC2. I often try new things in Journi	.811	.657			
OC3. I like to do something different every time when I create a journal	.554	.307			
OC4. I like to create journals that are new, creative and inspiring	.541	.293			

Note: $\chi^2=6807.65$, $p\text{-value}=.000$, $df=435$ RMSEA=.097, CFI=.88, TLI=.87, N=208, β significant at $<.01$ ** not significant ($p>.10$)

Table 26. CFA - Measurement Models

To further explore the discriminant validity, the squared correlations between the constructs and AVE are compared (Henseler et al., 2015). Thus, average communality and shared variances are compared. The AVE should be higher than the squared variance with other latent constructs. Closely observing Table 27, there are three instances that can be problematic. First, creative self-efficacy is higher (.86) than the AVE of domain-specific innovativeness (.55). Second, passion is higher (.79) than creative-self efficacy (.60). Third, online creativity (.94) is higher than the AVE of supporting platform conditions (.47). This can indicate that these items possibly share content and/or respondents did not interpret the questions correctly.

	CI	DSI	CSE	P	TI	SPC	OC
CI	.67						
DSI	.62	.55					
CSE	.67	.86	.60				
P	.36	.52	.79	.72			
TI	.26	.35	.55	.38	.82		
SPC	.10	.16	.25	.33	.48	.47	
OC	.08	.10	.24	.17	.47	.94	.47

Note: CI= Consumer Innovativeness, DSI= Domain-Specific Innovativeness, CSE= Creative Self-Efficacy, P= Passion, TI= Task Involvement, SPC= Supporting Platforms Conditions, OC= Online Creativity

Table 27. AVE (Diagonal) With Squared Correlations of the Latent Constructs

In the next step, the fully specified structural model is analyzed. In the case of analyzing a structural equation model, *Mplus* adjusts the parameters in an iterative manner in order to minimize the difference between the predicted and observed variance-covariance matrices (James et al., 2009; Muthén & Muthén, 2008; Rigdon, 1998). *Mplus'* iterative process either leads to adjusting the parameters until convergence is reached, thus improving the model, or the process exceeds a predefined number of iterations which then leads to non-convergence of model fit (James et al., 2009).

In this study the second option occurred; *Mplus* estimation failed with this iterative process, as it did not converge after 54 iterations (see appendix R for full output of the *Mplus* analysis). Moderating effects can cause problems for convergence processes given the high amount of iterations needed (Hair et al., 2014). Then, the basic model (without interaction effects) was subjected to *Mplus* estimation to see whether the basic model can be explained. In this case, *Mplus* was able to converge when running the

model without the moderating effects. However, another problem occurred; *Mplus* reports negative variance estimates for the variable 'creative self-efficacy' (see appendix R for full output of *Mplus* analysis). In the literature this is also referred to as a *Heywood case*. Koleninok and Bollen (2012) explain a Heywood case as a negative value of variances of correlation estimates greater than one in absolute value. Reasons for the occurrence of Heywood cases can be outliers, non-convergence, under-identification, empirical under-identification, mis-specified models or sampling fluctuations (i.e., Bollen, 1987; Anderson & Gerbing, 1988; Kline, 2011; Kolenikov & Bollen, 2012; Chen et al., 2001; Newson, 2015).

Non-convergence and empirical under-identification are one of the common cases for improper solutions for SEM (Newson, 2015; Chen et al., 2001). Non-convergence is often a problem related to empirical under-identification (Newson, 2015). Chen et al. (2001) refer to empirical under-identification in SEM as situations where a model should be identified based on a model's structure. However, it cannot be identified based on the sample data used for analyzing it. Newson (2015) explains empirical under-identification as a model that has positive degrees of freedom (fully specific model=*not indicated*, basic model=348). However, there is insufficient covariance information in a portion of the model for *Mplus* to generate valid estimates (Newson, 2015). These improper solutions tend to occur with relatively small samples, which is the case for this study.

Newson (2012) recommends that researchers can prevent such problems by carefully specifying the model, using larger samples, and/or having at least three indicators per latent variable with high factor loadings. Furthermore, Gagne and Hancock (2006) refer to outliers or violations of regression assumptions such as heteroscedasticity, or poor factor loadings that cause improper solutions. In this case outliers and regression assumptions are checked and can be dismissed for this study for causing non-convergence. The study developed the model based on sound theoretical arguments and pre-tested the survey instruments. However, the sample size seems to cause problems. Furthermore, the previous analyses demonstrate some weaknesses in the indicator systems. Deleting these indicators would lead to indicator systems with less than three indicators. In covariance-based SEM this raises problems for continuing in a confirmatory manner. Furthermore, if continuing, it would neither improve the model nor would it prevent providing biased solutions. This leads to a situation where the model cannot be tested and/or confirmed through latent-variable modeling using *Mplus*.

In order to continue the analysis, various authors recommend other techniques that assist researchers in revealing patterns and/or testing suggested paths between constructs (Rigdon, 2005).

However, given the lack of a hold-out sample to confirm suggestions deriving from these analyses, the next suggested approaches are considered strictly exploratory. First, the partial least squares (PLS)-SEM approach is explained and applied. Second, the Inferred-Causation (IC) theory-based approach is applied and explained. Then, the two methods are compared and provisional insights are provided.

5.6. Exploratory Analysis using SmartPLS

5.6.1. SEM-PLS versus CB-SEM

As discussed before, a popular approach used for testing cause-effect relationship models with latent variables is SEM (Hair et al., 2003). SEM helps researchers to predict or explain a specific phenomenon (Hair et al., 2014; Hair et al., 2011). However, the technique chosen by the majority of researchers is the covariance-based (CB)-SEM. This approach dominantly supports them in explaining their theory. In general, there is little familiarity with other SEM-approaches such as the partial least square (PLS)-SEM approach. PLS-SEM can be a good methodological alternative for theory testing and prediction (Hair et al., 2014; Henseler et al. 2009). Also, in the case of the CB-SEM, assumptions are violated due to non-normality of distribution, minimum sample size. In the case of related methodological matters, such as Heywood cases or non-convergence, PLS-SEM is a reasonable alternative (Hair et al., 2014). However, PLS-SEM and CB-SEM approaches need to be perceived as complementary methods rather than competing methods (Hair et al., 2014).

The two approaches have some differences one has to be aware of. The basis for PLS-modeling is prediction specification. Hair et al. (2012) refer to prediction specification as an equivalent to the distributional assumptions in CB-SEM. PLS-SEM is often categorized as a soft modeling approach. However, the 'soft' characteristics lie only in the distributional assumptions (Chin, 2010). PLS-SEM does not i) make distributional assumptions other than predictor specification in its procedure for estimating parameters and ii) make assumptions on the structure of the residual covariance (Chin, 2010; Hair et al., 2012).

PLS-SEM proceeds in a different way than CB-SEM to specify and analyze models. First, in PLS-SEM the estimated loadings are based on their predictions of the endogenous variables and, thus, the loadings of the indicators indirectly explain their contribution to the path loadings, whereas in CB-SEM indicators are analyzed based on their shared variance among indicators variables. PLS-SEM proceeds in an iterative way to maximize the explained variance of endogenous construct. In fact, PLS SEM can be perceived as

being similar to multiple regressions, whereas CB-SEM aims to reproduce the theoretical covariance matrix without focusing on explained variances as PLS-SEM does (Hair et al., 2012). Second, CB-SEM provides the researchers with goodness-of-fit statistics, whereas in PLS-SEM prediction-oriented measures are applied (Chin, 2010). AVE measure and bootstrap cross validation are used to assess predictiveness and confidence intervals via resampling procedures (Chin, 2010). The next section will explain this in more detail. Third, PLS-SEM allows researchers to work with smaller sample sizes without losing their statistical power and convergence behavior (Henseler et al., 2009). A minimum sample size for PLS-model should be approximately ten times the largest numbers of reflective indicators to measure the latent construct (Lowry & Gaskin, 2014). Fourth, PLS-SEM is also less stringent when working with non-normal data. The PLS algorithm transforms non-normal data in accordance with the central limit theorem (Hair et al., 2014), which states that if the sample size is large enough the sample distribution will be nearly or even normal. In the case of heavily non-normalized data, the jackknifing algorithm assists the PLS-algorithm in proceeding with non-normal data. Lastly, in PLS-SEM the measurement models can have fewer items (e.g., 2 items) compared to CB-SEM requirements (e.g., 3 items). Thus, also in case the measurement models need adjustments in order to continue analyzing the data, PLS-SEM can be perceived as an attractive alternative to CB-SEM (Hair et al., 2014). The next section will explain PLS-algorithms and the application of PLS-SEM in this study.

5.6.2. PLS-SEM Algorithms

Researchers have various programs available for PLS-SEM. This study uses the '*SmartPLS*' version 3.0 developed by Ringle et al. (2015). The application of PLS-SEM proceeds in a different way than CB-SEM. PLS-SEM follows a multi-stage process involving specification and evolution of inner and outer model. The inner model refers to the structural paths in CB-SEM terminology, and the outer model refers to measurement models in CB-SEM terminology. The inner model evaluation is different from the CB-SEM approach. PLS-SEM uses the sample data to obtain parameters that minimize the difference between the observed sample covariance matrix and the covariance matrix estimated by the model (Chin, 2010; Hair et al., 2014).

As highlighted before, PLS-SEM lacks an output of fit statistics (Hair et al., 2014). Researchers instead evaluate the model quality based on the predictions of the endogenous constructs with the following three criteria: i) coefficient of determination, which reflects the model predictive accuracy (R^2), ii) cross-validated redundancy (Q^2), which is a mean for assessing the inner model predictive relevance, iii) path

coefficients (in a similar way as in CB-SEM), and iv) effect size f^2 (for this measure the researcher needs two PLS-path models) (Chin, 2008; Hair et al., 2014; Henseler et al., 2009). The Cohen f^2 measures the effect size of extra endogenous variable and its effect on the model is calculated. Thus, the effect size tells us how important this one variable is to the model (Hair et al., 2014).

In order to analyze the inner and outer models, PLS-SEM implies a basic algorithm. Table 28 provides an overview of the stages and steps in the PLS-SEM basic algorithm, following a two-stage approach (Hair et al., 2011). As indicated before it is an iterative process. Thus, during the first stage, four steps are done in order to measure the construct scores. First, the algorithm analyzes the latent constructs' value by its linked indicators (step 1 of stage 1). Then, path coefficients between the latent constructs are analyzed (step 2 of stage 1). The third step measures the explained variance of the latent constructs based on the proxies from the first two steps. Lastly, the indicators are again calculated using the latent construct. Thus, the indicators behave as variables dependent on the independent variable, namely their latent construct. The four steps of stage one are repeated until the sum of the outer weights' changes between two iterations is sufficiently low. If the algorithm converges in step 4 of stage one, then the final outer weights (indicator loadings) are used to compute the final construct score for stage two. Thus, in stage two these latent construct scores are used to run the ordinary least squares regressions for each construct to determine the structural model relationships estimates (path coefficients). These two stages demonstrate the PLS-SEM algorithms' iterative process between the outer and inner models. The next section will explain the application for this study.

Stages And Steps Calculating the Basic PLS-SEM Algorithm	
Stage One	
Step 1	Outer approximation of latent constructs scores (based on indicator scores and outer coefficients of step 4)
Step 2	Estimation of proxies for structural model relationships between latent constructs
Step 3	Inner approximation of latent constructs scores (based on scores from step 1 and step 2) (explained variance per latent construct)
Step 4	Estimation of proxies for coefficients in the measurement models (new mode of step 1)
Stage Two	Final estimates of coefficients (outer weights and loadings, structural model relationships) are determined by the OLS-method for each partial regression in the PLS-SEM model

Table 28. Basic PLS-SEM Algorithm (based upon Hair et al., 2011)

5.6.3. Application of PLS-SEM

Both models, the fully specified and the basic model, were subjected to the PLS-SEM analysis. In this case, missing values were dealt with by pairwise deletion. First, the basic algorithm of PLS-SEM was used to provide factor loadings and outer weights. Furthermore, Cronbach's alpha, composite reliability and average variance extracted (AVE) were calculated. Appendix S provides a detailed overview of both models' outer model measures. Chin (2010) recommends a narrow range between .70 and .90, which reflects a convergent validity of items to its underlying construct. Nearly all items apply to this range but CI5 (.582) and CI6 (.617). Item DSI3 completely failed to respond to this range (.130) and did not significantly ($p < .005$) contribute to its latent construct 'domain-specific innovativeness'. Checking the latent constructs validity and reliability values, all items satisfy the recommended minimum values. Only domain-specific innovativeness has lower Cronbach's alphas (basic model = .55, full model = .64).

Then, the inner model is analyzed. Table 29 provides an overview of the path coefficients of the fully specified model and the basic model without the moderation effects. Applying the bootstrap approach in SmartPLS provides a list of *t*-statistics. Bootstrapping is a nonparametric approach for estimating the precision of path estimates (Chin, 2010; Henseler & Fassott, 2010). In this case, a 300 sample set was used to obtain the optimal parameter coefficients. Increasing the number of samples supports a smaller data set to increase significant paths and decreases the error (Lowry & Gaskin, 2014). However, in this case, resampling numbers of 300, 600, and 900 did not influence the statistics. These *t*-statistics need to be above 1.96 in order to demonstrate a significant path.

	Full model		Basic model	
	Paths coefficients	T-statistics	Paths coefficients	T-statistics
CI > CSE	.408	3.709	.408	3.801
CI > DSI	.533	6.820	.533	6.914
CI > P	.005	0.051	.005	0.051
DSI > P	.351	2.985	.351	3.097
DSI > CSE	.306	3.070	.306	3.170
DSI > OC	.341	4.567	.327	4.419
CSE > OC	.100	1.138	.106	1.160
P > OC	.259	2.818	.353	4.709
SPC > OC	.090	0.792	.166	1.819
Moderation effect 1 (CSE*TI)	.009	0.119	-	-
Moderation effect 2 (DSI*TI)	-.017	0.191	-	-
Moderation effect 3 (P*TI)	.035	0.502	-	-

Table 29. PLS-SEM Path Coefficients Full Versus Basic Model

The first observation of Table 29 relates to the similar paths being non-significant for both models. First, the path from consumer innovativeness to passion is not significant (full model $t=.051$, basic model $t=.510$). Furthermore, creative self-efficacy does not relate to online creativity (full model $t=.1318$ basic model $t=1.160$). Interestingly, the supporting platform condition does not significantly relate to online creativity in the fully specified model ($t=1.138$), but in the basic model it gets closer to becoming significant in a 95% confidence range ($t=1.819$). Lastly, all three suggested moderating effects are not significant (t -values between .109 and .502).

Lastly, in order to understand the explained variance, the R^2 per path was calculated. Also, Cohen's Q^2 values were measured, which indicate the predictive applicability of the latent constructs (Chin, 2010). Again, the fully specified and basic models are compared; see Table 30. This comparison will help to indicate the moderating effects. The first observation relates to the identical explained variances of the latent constructs of the two models. Online creativity can be rather well explained by both models (full model, $R^2= .523$, basic model $R^2= .383$). In order to measure the effects of three moderating paths on the fully specified model, the effect size is calculated. The following formula is applied:

$$f^2 = \frac{R^2 \text{ full model} - R^2 \text{ basic model}}{1 - R^2 \text{ full model}}$$

This results in an effect size f^2 of .005. In other words, the moderating effects have only a very small effect on online creativity. Chin (2010) notes that an effect size of lower than .20 indicates a small effect. Then, the effect size of Q^2 is obtained by applying the blindfolding procedure in 'SmartPLS'. For that purpose, a similar formula is applied as for calculating the effect size of R^2 . Chin (2010) furthermore states that a minimum effect size of .50 and larger indicates constructs that significantly support the predictiveness of the model. Also, the effect of the moderating effects on the predictive relevance of online creativity is calculated. There is a small difference indicated by a Q^2 effect size of .008. Thus, the predictive power of online creativity is hardly influenced by incorporating the moderating effects.

	Full Model		Basic model	
	R^2	Q^2	R^2	Q^2
CSE	.389	.302	.389	.302
DSI	.282	.134	.282	.134
P	.120	.057	.120	.057
OC	.523	.383	.519	.383

Table 30. PLS-SEM Inner Model Versus Basic Model

The application of PLS-SEM proceeded in a different manner than the CB-SEM approach. The less restrictive assumptions of the PLS-SEM approach demonstrate that the measurement models represent the latent constructs fairly well. In this case, only one indicator showed to have non-significant factor loadings as well as outer weights. The visualization of indicator contributions to the path coefficients is complementary to the CB-SEM analysis. In PLS-SEM, the models are judged based on their predictive value and explained variance of the latent constructs. In this case, both models demonstrate rather satisfying values. Interestingly, there is only a very small difference between the models. The effect size furthermore demonstrates the minor influence of the moderating paths on the hypothesized model. Surprisingly, the analysis also shows two paths to be non-significant (creative self-efficacy and the supporting platforms condition to online creativity). Those two paths were highly confirmed by previous studies. Hence, the falsification of these paths indicates that either a third unknown variable is interfering and/or possible adjustment within the model is required. Ridgón (2005) states that if researchers aim to proceed with a pre-specified model to find new paths one might employ tetrad analysis. These analyses will allow researchers to test structural equation models without estimating model parameters. The next paragraph will explain the application of this approach in more detail.

5.7. Exploratory Analyses Using TETRAD

5.7.1. Discovering Causal Relationships Through TETRAD

According to Lee et al. (1997), confirmatory tools such as *Mplus* (also based on factor analytic assumptions) are likely to not detect violations of causal assumptions in the exploratory as well as in the confirmatory mode (Lee et al., 1997). Furthermore, instead of focusing on satisfactory model fit indices, researchers have to carefully treat their data in order to detect true patterns in the data. Researchers require flexible tools and analysis techniques that enable them to detect causal relationships in a scientifically acceptable manner (Lee et al., 1997). There are several software packages, such as MIM, TETRAD, and WineMine, available that can assist researchers in exploring their data. These tools can provide guidance, are complementary to researchers' domain knowledge, and, hence, can contribute to the development of new theories (Lee et al., 1997). Houghton et al. (2006) state that these software packages are ideal environments where the causal structure of the variables is unknown to the researcher. The software packages are comparable, all free of charge, and offer user-friendly interfaces. This study uses the TETRAD software.

5.7.2. TETRAD Software

The TETRAD Software was developed by Glymour, Scheines & Spirtes (1982), who are researchers at Carnegie Mellon University. At present, there are four versions available for free; TETRAD II, III, IV and V. The versions differ, in that the interfaces are either command-driven or menu-driven. This heuristic search software supports researchers in discovering causal relationships between variables operating in a suggested model.

Various studies show how TETRAD is a useful tool supporting researchers to develop and uncover new potential theoretical relationships (Lui, 2009; Hafidz, 2011; Mazanec, 2007a). The TETRAD tool is built on the principles of Inferred Causation Theory (IC). The IC Theory relies upon; 1) causal graphs, also called DAGs, and 2) conditional independence in order to suggest causal relationships (Mazanec, 2007a,b). Furthermore, IC theory supports researchers to detect causality by combining building blocks from graph theory, statistics, logic and artificial intelligence research in computer science (Mazanec, 2007a). TETRAD incorporates these elements according to the principles of IC theory. It proposes a causal model as a labeled directed graph (Lee et al., 1997). Directed acyclic graphs (DAG's) are causal graphs that represent a directed edge going from a vertex X to a vertex Y ($X \rightarrow Y$) (Glymour et al., 1988). Thus, the acyclic paths represent a causal structure (Pearl & Verma, 1990; Scheines et al., 1988). TETRAD helps researchers to investigate causal structure between observed variables in an illustrative way.

Another pillar of IC theory, the conditional independent relationship reference, can be explained as follows. If two variables are conditionally independent given a third variable X, the correlation between the two variables vanishes when variable X is controlled (Whittaker, 1990; Lui, 2009). Thus, this third variable can help the researcher to test if there is a causal relationship between the two variables in a wider system (Pearl & Verma, 1990). The so called blocking of a third variable that intervenes with the relationship of two variables assists in detecting causal structure (Mazanec, 2007a). TETRAD searches for vanishing 'tetrads', which in fact are vanishing partial correlations. Therefore, it is the strategy of TETRAD to identify causal relationships by determining if the tetrads hold in the data. In case this is not true, the supposed theory needs to be falsified (Lee et al., 1997). Also, TETRAD provides patterns of tetrads that were not suggested by the researcher in the first place. Thus, TETRAD supports researchers in the theory building stage by providing additional considerations to the suggested causal model (Lee et al., 1997; Mazanec, 2007b; Lui, 2009).

Lastly, TETRAD seeks to represent the model class. IC theory assumes a variety of possible alternative equivalent models capable of representing the observed data. TETRAD helps to identify the model class, which represents relationships that hold in every model (Mazanec, 2007a,b). The directed links (cause-effect relationship) that appear in all suggested models hint at a causal structure (Mazanec, 2007b). Lee et al. (1997) argue that TETRAD's flexibility for model representation and lack of untested statistical assumptions diminishes the pitfalls that are possible in factor-analytic approaches. IC theory-based tools such as TETRAD can help researchers to build the bridge from the exploratory to the confirmatory research stages. The next section will explain the various algorithms used in TETRAD.

5.7.3. Algorithms in TETRAD

In TETRAD, researchers can take several subroutines or search algorithms to detect causal relationships. The input for TETRAD's algorithms is (i) raw data, or (ii) a covariance or correlation matrix among variables and sample size, and/or (iii) a graph that specifies the known causal connections among the variables (Scheines et al., 1998). In general, there are two routines that help researchers to complement their hypothesized models and to generate hypotheses: *search and build*.

The *search* procedure modifies a fully specified model and provides suggestions on how to extend the model. The final model represents 'tetrads', which in fact are covariance pairs of variables (Mazanec, 2007a). The *search* procedure looks for 'tetrads' that threaten the model fit and subsequently gives inferences on the originally specified model and suggests new relationships. Mazanec (2007b) posits that researchers have to pose the following question when using the search procedure: 'Which extensions should be added to the model given the data and the researchers' background knowledge?' The output of the *search* procedure is a list of models which all contain an initial graph with possible additional edges compatible with the background knowledge provided by the researcher (Scheines et al., 1998). Compared with confirmatory techniques as with *Mplus*, where an extension of the initial causal model is suggested, TETRAD provides a number of different causal models. The suggestions help to improve the goodness of fit of the initial model and assist researchers in complementing their system of hypotheses (Mazanec, 2007a).

The *build* procedure is based on a model with partially specified relationships. The elementary model is based on basic background knowledge provided by the researcher. In this case researchers have to pose themselves the following question: 'Does the entire model class support the suggested hypotheses?'

(Mazanec, 2007). Thus, TETRAD performs a causal detection algorithm and examines a set of conditional independence relationships as observed in the data (Mazanec, 2007b). TETRAD helps the researchers add relationships (that are represented in the model class) and hereby build a causal model. Generally, the two procedures require researchers to shift their attention from ‘how’ variables are related to ‘why’ and ‘under which circumstances’ the variables are related (Lee et al., 1997). This theoretical perspective lets researchers explore novel explanations about their hypothesized paths and suggests exploratory causal insights. The next section will explain the application of TETRAD algorithms in this study.

5.7.4. Application of TETRAD

First, a re-specification of the variables is executed in order to demonstrate the IC-theory based analysis. Latent variables with their linked indicator set are excluded and only the best reflective indicator per latent variable are used to explore causal relationships. Thus, the selected indicators are treated as separate singleton variables (Mazanec, 2007a). In this case, the following variables are used for the TETRAD demonstration:

- CI1: I am an innovative person
- DSI4: I like to experiment with new travel app features to create my content
- CSE3: I have the ability to develop creative journals in Journi
- P1: Nothing could make me as happy as my membership with Journi
- TI1: Working with Journi is inspiring
- SPC4: Journi is useful for communicating my travel journals in a creative manner
- OC2: I often try new things in Journi

The indicators are selected based on their factor loadings on the underlying latent variable. All the selected indicators have factor loadings of .77 or higher. Second, missing values were taken care of, given that TETRAD does not deal with them as *Mplus* does by default. Hence, the missing values are replaced using the estimation maximization procedure in SPSS. Third, the correlation matrix as input for the TETRAD procedures was prepared. The moderator effects (based on the variable ‘task involvement’) were included by means of the multiplicative interaction terms. In order to analyze whether the interaction effects influence the suggested path, the *search* and *build* procedures are executed for both models (basic model and fully specified model). The next section will explain this in more detail.

Search Procedure

The search procedure is extremely useful in situations where researchers deal with linear SEM, which is assumed to be plausible, but when the coefficients are estimated it fails a statistical test or the model may be incomplete (Scheines et al., 1998). A similar situation occurred in the study at hand. The suggested model failed to estimate the coefficients as hypothesized. Thus, the search procedure might provide insights into the ways in which variables are related to each other. The input for the *search* algorithm is the graph representing the suggested model. The TETRAD scores help the researcher to compare alternative models; a score closer to 100 represents a model where every constraint passes the statistical tests. In cases where TETRAD provides a symbol like ‘ \subset ’, this implies that the variables are possibly related to each other due to a common (unmeasured) variable. In cases where there is a symbol like ‘ \Rightarrow ’, TETRAD indicates a causal relationships between the variables. Table 31 provides an overview of possible extensions provided by the TETRAD *search* procedure for the basic model. TETRAD suggests one alternative model where two extra extensions are considered for model improvement. In this case, the variable ‘domain-specific innovativeness’ as well as ‘passion’ have a link to the variable ‘supporting platform conditions’, but there is an unknown variable.

Model	Extensions	Number of Edges added	Tetrad Score
I	DSI \subset SPC P \subset SPC	2	58.22

Table 31. TETRAD Search Outcomes – Basic Model

Then, in Table 32 the full model *search* outcomes are presented. The overview demonstrates the three suggested models with slightly similar TETRAD scores, which means that the added edges to the model are compatible. All the three models have one edge similar, namely a link between consumer innovativeness and a moderating effect of task involvement and passion. Hence, TETRAD neither specifies the direction nor does it indicate a possible third variable that causes this effect. In model II, TETRAD does not define the direction of the relationship and hints at a third unknown variable. Here it shows that, as suggested in the model domain, specific innovativeness and passion are related. In the third model, TETRAD interestingly suggested that domain-specific innovativeness influences passion.

The *search* procedure illustrates several new links for the two models. Interestingly, both models seem to be influenced by unknown variables explaining the hypothesized relationships. Especially in the

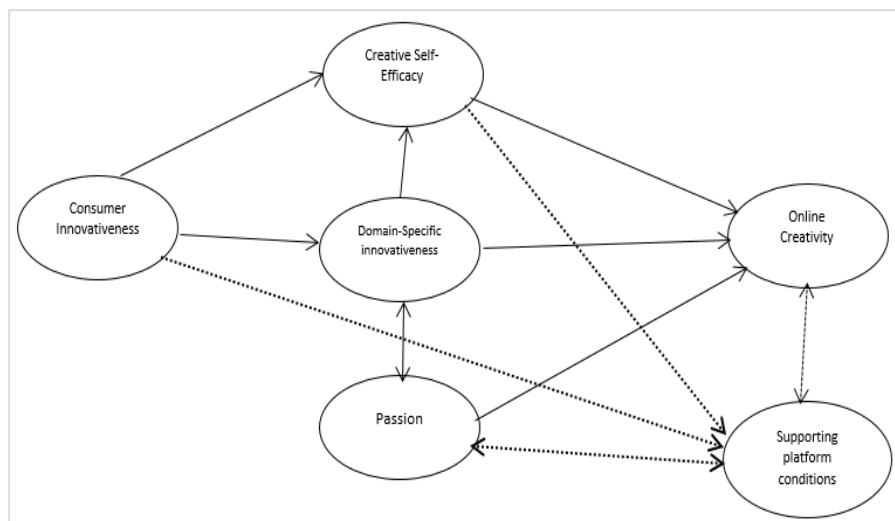
full model, the interactions effects seem to be affected by a third unknown variable. The next section will explain the *build* procedure.

Model	Extensions	Number of Edges added	Tetrad Score
I	CI \subset INT3 (TI*P)	1	67.43
II	CI \subset INT3 (TI*P)	3	67.20
	DSI \subset P		
III	DSI \Rightarrow P	3	66.70
	CI \Rightarrow INT3 (TI*P)		

Table 32. TETRAD Search Outcomes - Full Model

Build Procedure

In the *build* algorithm the researcher only provides elementary variables. In this case, the question of whether the model class supports the suggested hypotheses needs to be answered. TETRAD will characterize and reconstruct the model class by the causal detection algorithm. In cases where TETRAD provides the symbol ‘—’ between two variables, this hints at a possible relationship. The symbol ‘ \Rightarrow ’ points to a directed causal relationship between the two variables. Lastly, TETRAD indicates recursive causal relationships with the symbol ‘ \Leftrightarrow ’. Based on this information, the researcher can identify the relationships. For the basic model, the following sequence based on a-priori knowledge was provided: 1) CI, 2) CSE, DSI, P 3) OC. This means that only forward causal links between levels or edges within one of the levels are permitted. Figure 32 illustrates the inferred causal model derived from the *build* algorithm. Three important observations can be made. First, there is no relationship between consumer innovativeness and passion. Second, it is suggested that consumer innovativeness and creative self-efficacy are related to consumers’ perception of the platform conditions. Third, two recursive links are recommended (passion – domain-specific innovativeness; supporting platform conditions – online creativity). This might hint at a third unknown variable interfering with these relationships.



Note: small dotted lines represents suggested links

Figure 32. TETRAD Build Outcomes - Basic Model

Then, the full model is subjected to the *build* algorithm. The following sequence was given as input: 1) CI, 2) DSI, P, CSE, INT1, INT2, INT3, 3) OC. Table 33 lists the fully specified model and the modifications given by TETRAD. Table 34 illustrates new and/or modified links provided by TETRAD.

Hypothesized Paths	TETRAD Build Procedure
CI ⇒ DSI	CI ⇒ DSI
CI ⇒ CSE	CI ⇒ CSE
CI ⇒ P	-
DSI ⇒ P	-
DSI ⇒ CSE	-
DSI ⇒ OC	-
P ⇒ OC	-
CSE ⇒ OC	-
SPC ⇒ OC	SPC ⇔ OC
Interaction 1: TI * CSE ⇒ OC	-
Interaction 2: TI * DSI ⇒ OC	Interaction TI * DSI ⇒ OC
Interaction 3: TI * P ⇒ OC	Interaction TI * P ⇒ OC

Table 33. Build Algorithm versus Original Hypothesized Full Model

Suggested Paths To the Hypothesized Model

CI ⇒ SPC

CI ⇒ Interaction TI*DSI

CI ⇒ Interaction TI*CSE

CSE ⇒ Interaction TI*DSI

P ⇒ Interaction TI*DSI

SPC ⇒ Interaction TI*CSE

Table 34. Build Algorithm - Suggested Paths to Hypothesized Full Model

In this fully specified model, the *build* algorithm provides several interesting insights. First, passion is not influenced by consumer innovativeness or domain-specific innovativeness. Passion only has an influence on online creativity in combination with task involvement. Second, TETRAD suggests that creativity is only influenced through the two interaction effects online (domain-specific innovativeness*task involvement and passion*task involvement). Third, the interaction effect between creative self-efficacy and task involvement does not involve online creativity directly. Interestingly, TETRAD illustrates how creative-self efficacy* task involvement is influenced by consumer innovativeness and perceived supporting platform conditions. Furthermore, TETRAD illustrates how consumer innovativeness influences the interaction effect of domain-specific innovativeness*task involvement. Fourth, a recursive link between online creativity and supporting platform conditions is suggested instead of a directed path. This recursive link hints at a third unknown variable interfering with the hypothesized paths. Lastly, passion is suggested to influence the interaction effect of domain-specific innovativeness*task involvement. TETRAD also suggests that creative self-efficacy influences the interaction effect of domain-specific innovativeness*task involvement.

Next, the two models are compared based on the *build* algorithm outcomes. First, there are some similarities between the two models. Both models show that consumer innovativeness affects the user’s perception of supporting platform conditions. Both models contain a recursive link between supporting platform conditions and online creativity. Both, thus, indicate that there is a link; however an unknown variable might interfere when explaining this relationship. Furthermore, both models indicate how consumer innovativeness is related to creative self-efficacy and domain-specific innovativeness. In both models the relationship between consumer innovativeness and passion has been dismissed. Also, the

build algorithm for the basic model identifies a link between domain-specific innovativeness and passion, whereas the fully specified model demonstrates no relationship. Furthermore, incorporating the moderating variables shows relationships leading to online creativity that are not present in the basic model. All direct effects to online creativity as demonstrated in the basic model do not hold for the full model. Thus, the suggested moderating variable 'task involvement' seems to influence these paths. Interestingly, creative-self efficacy*task involvement do not influence online creativity. However, TETRAD suggests creative-self efficacy directly as well as via the interaction effect (creative self-efficacy*task involvement) to be influenced by consumer innovativeness. In addition, perceived supporting platform conditions influences creative self-efficacy*task involvement, whereas in the basic model a direct effect from creative-self efficacy to supporting platform conditions was suggested. Interestingly, TETRAD depicts a recursive link between supporting platform conditions and online creativity. Hence, the fully specified model hints at the wider system of variables possibly explaining this. For example, TETRAD build procedure outcomes for the full model also demonstrates, compared to the basic model, how creative self-efficacy as well as passion seem to be influenced by the interaction effect of domain-specific innovativeness*task involvement.

Thus, these analyses were able to illustrate the different relationships between the variables and the possible interference of a third or more unknown variable(s). This could lead to a new system of relationships. In particular, the position of supporting platform conditions receives a new consideration. Hence, the perception of supporting platform conditions derives (as TETRAD suggested) from consumer innovativeness, but also influences how confident users might feel when creating journals (creative self-efficacy). Furthermore, the platform conditions might have a direct effect on users' involvement with their task. For example, in cases where the platform is very inconvenient to work with, their involvement might be harmed, subsequently influencing online creative behavior. Then, task involvement might be framed as a mediating variable instead of a moderator variable. Furthermore, task involvement might have a direct effect on online creativity.

See Figure 33 for a suggested model based on these previous analyses. In this case, domain-specific innovativeness and passion are not modeled as if they would influence each other. However, a third variable might change the position of these two variables. The nature of this third variable might possibly take the position of 'users' attachment' or 'bonding' to the platform. For example, Ren et al. (2012) show how consumers bonding with a platform can derive from being actively involved and up-to-date with the platform, leading users to connect to a platform, its members and/or larger community.

Thus, a variable such as that could explain the connection between domain-specific innovativeness and passionate feelings towards the platform. The next section will compare the PLS-SEM and TETRAD.

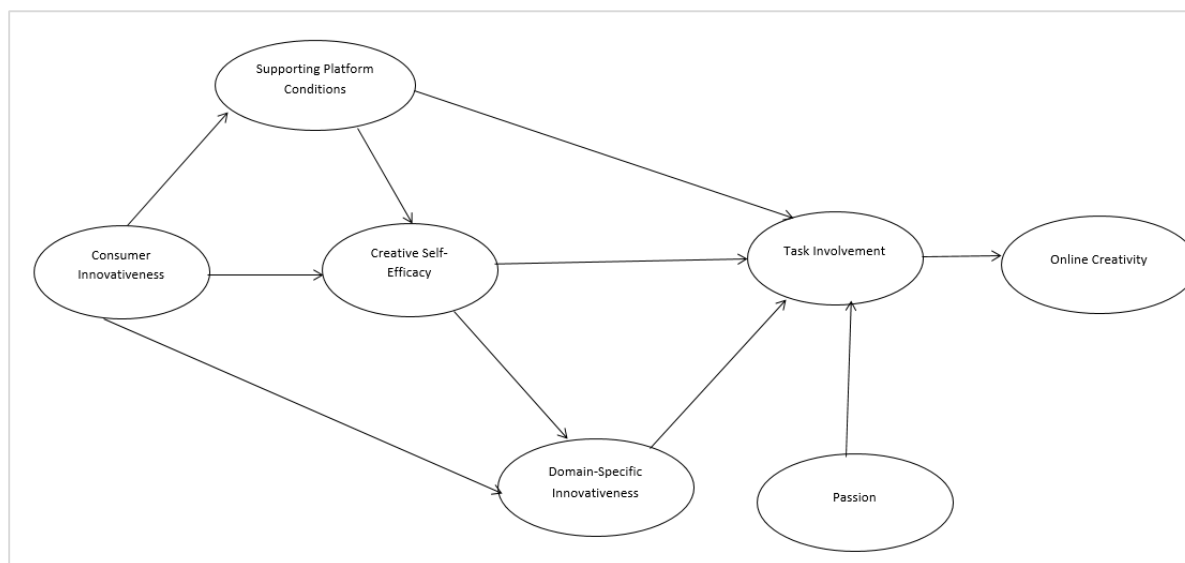


Figure 33. Suggested New Systems of Relationships

5.8. Comparison Between Two Alternatives Approaches

Given that *Mplus* failed at estimating the hypothesized SEM, two methods were introduced to continue and deepen the analysis: PLS-SEM and IC-based Theory. PLS-SEM judges data based on explained variance and predictability, whereas IC-based Theory relies on conditional independence and vanishing tetrads to expose relationships. Both approaches have less rigorous assumptions about distributional variance and sample size requirement than CB-SEM.

The PLS-SEM approach fits the study given the small sample size. Hair et al. (2011) stress the advantage of PLS-SEM dealing with smaller sample size and softer distributional assumptions. The outcomes indicate how the factor loadings and outer weights (besides 1 item) supported the latent constructs. The explained variance judgment of PLS-SEM indicates the various paths contributing to the principal dependent variable, online creativity. The bootstrapping approach and the calculation of the effect size further indicated a rather small impact originating from the interaction effects on online creativity. However, PLS-SEM analysis could not provide insights into specifically why this occurred. Therefore, the IC-based analysis visualized the complex system of variables and new links between variables (i.e., supporting platform influencing creative self-efficacy). Furthermore, IC-based analysis

demonstrated how the full model is influenced by unknown variables that derive the changes in the path structures. In particular, the interaction effects seem to be a part of a wider complex system of variables. The IC-based analyses demonstrated the links between the variables owing to the moderating effects. To sum up, the PLS-SEM approach supported the study in analyzing the measurement models and their contribution to the suggested paths, whereas the IC-based analysis supported insights into the relationships between variables, and a wider system of unknown variables that would improve the explanation of consumers' behavior in the platform. In the next chapter future research opportunities are further discussed.

6. Conclusion

6.1. Final Remarks

The variety of social media spaces available and new designs of mobile phones triggered an emerging development of mobile computing platforms. Consumers use these mobile computing platforms to enhance their consumption experiences and/or interact with their peers. These platforms extend the functionalities of the mobile phone in a variety of manners. Research in the field of tourism shows how mobile phones and their linked functionalities support tourists while traveling (Wang et al., 2014; Tussyadiah, 2015; Lamsfus et al., 2014). However, research is still in an emerging state on this topic. Specifically, there is still a lack of insights into these mobile computing platforms, in particular related to its users. Three important facts force research and marketers to focus on users of mobile computing platforms. First, research needs to increase the knowledge about these users and their characteristics and behavior when interacting with the platform, given the dominant usage of mobile computing platform while traveling. Second, if practitioners know how users interact with their platform, they can develop tailor-made mobile computing platforms and thereby effectively steer consumption experiences. Third, continuously growing peer-to-peer networks and the number of active users exchanging knowledge and their creative practices call for attention from marketers. Interactions in peer-to-peer networks have led to a development of user-driven innovations in the field of tourism. Especially in the field of tourism, peers seek for other peers' opinions, detailed information and visual support before booking a holiday (Daugherty et al., 2008; Sigala, 2008). As a result, these interactions create inspirational vibes in these mobile computing travel platforms for non-active members. Subsequently, these effective knowledge sharing practices lead to qualitative innovative output and/or practices outside the community (Kozinets et al., 2008), changing the design of the tourist experience.

In other fields, the concept of 'user-driven innovation' is used to illustrate users' independency and creativity while interacting with a product and/or service to satisfy their needs. However, in the field of tourism, this concept has not been fully integrated along with technological devices available to tourists. Furthermore, tourism practitioners do not know precisely how to deal with this new phenomenon and/or effectively manage it as a part of their marketing strategies.

Therefore, the starting point of this study was to understand how the concept of user-driven innovation can be explained by consumers' creativity and involvement in the mobile computing travel-

related platform. Furthermore, the study aimed to identify different factors that contribute to consumers' creativity in mobile computing travel-related platforms. Subsequently, the study aimed to support the explanation of user-driven innovation in the field of tourism.

The analysis within a mobile computing travel platform provided various interesting outcomes. However, the suggested confirmatory approach, factor-analytic modeling through *Mplus*, did not support this study to reveal insights about the suggested hypotheses. The continuation, guided by the PLS-SEM and IC-based approaches, provided new insights. For example, the exploratory approach assisted by the IC-based tool TETRAD demonstrated the various possible causal relationships between the variables used in this study. The innate trait of innovativeness, used as a starting point to analyze online creativity, was shown to influence creative-self efficacy, domain-specific innovativeness variables. The study hereby confirms previous studies indicating these relationships (i.e., Goldsmith & Hofacker, 1991; Sternberg, 2005). Additionally, this study illustrates that the dominant role of consumer innovativeness influencing the suggested interaction effects of task involvement. This hints at the dominant influence of consumers' innate traits on their online behavior. Furthermore, Couture et al. (2015) demonstrate how domain-specific innovativeness positively influences tourists' average time on a platform, their downloads, and their online purchase behavior. This study illustrates the interaction effect of task involvement with domain-specific innovativeness and passion together leading to users behaving in a creative manner.

Second, various previous studies show how users' sufficient knowledge, confidence and commitment lead to performing in creative ways (Amabile, 1996; Tierney & Farmer, 2011; Füller et al., 2008). However, this study was not able to confirm that creative self-efficacy leads to online creativity, as supposed by other studies (i.e., Tierney & Farmer, 2002). However, creative self-efficacy in this context was influenced by other variables. In particular, the IC-based approach indicates how creative self-efficacy rather influences one's perception of the effective working environment of the platform.

This leads to the third finding of this study. Previous studies have demonstrated how context is a steady independent factor explaining consumers' online behavior (Füller et al., 2007; Burlison, 2005; Von Hippel & Katz, 2002). However, in this case, context, also operationalized as supporting platform conditions, seems to be influenced by various variables too. Consumer innovativeness and creative self-efficacy in this study influence consumers' perceptions of platform conditions. Thus, this shows a positive association of users' confidence and attitude. These results lead to the first step of explaining why these networks are highly innovation focused, leading to users' driven-innovative behavior.

6.2. Theoretical Contributions

The study has several contributions to the tourism literature. First, the study indicates that socio-demographic characteristics do not affect users' behavior. Interestingly, there are no significant differences between the characteristics of users, like gender and age, on online creative behavior. Furthermore, the study provides insights into users' perception about themselves as an influence on their behavior with specific features and how they upload their journals. Furthermore, users' satisfaction and their content behavior positively influence the level of online creativity. Moreover, this study demonstrates how the moment of interacting with the platform influences users' online behavior. Lamsfus et al. (2014) already posed how smartphones would change the interaction with the destination. This study shows how the moment of interacting with the platform influences in which way users create their journals, subsequently influencing user-driven innovative outcomes in mobile computing platforms. Thus, this study hereby adds new insights to the body of knowledge on tourists' usage of mobile phones and mobile computing travel platforms.

Another insight deriving from this study expands the theories explaining users' community behavior in tourism. This study was able to indicate how online creativity is stimulated by users' perception about the mobile computing platform environment. Furthermore, innate consumer innovativeness plays a significant role in users' perceptions of the platform. Hence, this study complements theories of users' innovative and engagement behavior as heavily influenced by consumers' perception of the platform's atmosphere. Then, this study highlights the complexity of passion and task involvement when explaining online creativity. Thus, the study also illustrates the gap in research to provide an understanding of the different psychological traits interfering with one another. Therefore, the attempt to integrate creativity theory and consumer involvement revealed the need to continue developing theories explaining user-driven innovative communities in tourism. The various opportunities for future research will be explained later.

6.3. Managerial Implications

This study provides two important lessons for practitioners. The first lesson that can be derived from this study is that practitioners need to carefully analyze their functionalities and design of their mobile computing platforms. This study shows that an effective environment reinforces consumers' creative behavior. Given that consumers' creativity can be integrated into marketers' strategies and/or innovation strategies, marketers are advised to create an effective 'working' environment for their

members. Furthermore, firms need to understand the importance of employing creative consumers as they have better attitude/evaluations on supporting platforms. Subsequently, supporting platform conditions can help to stimulate highly qualitative output from the users and, thus, support user-driven innovations. This study shows that the integration of special features (e.g., the geo-tag feature) is popular among users aiming to be creative online. This indicates the need to develop a platform environment that provides features motivating users to actively contribute. However, the study also shows that marketers are advised to go beyond offering a functional working environment to continue their success. This study shows how i) users responded marginal to items reflecting passion, ii) the majority had, on average, one or two journals, and iii) the majority of the users used the platform occasionally. Previous studies demonstrate how, for example, community design leads to extended duration of membership, more frequent visits and active participation (Ren et al., 2012; Ren & Kraut, 2014). Given the continuously growing numbers of members, practitioners have to aim to facilitate frequent visitation by their members. Furthermore, the facilitation of users' creative contribution and an effective feature design will shape members' experience with the platform and, thus, can lead to a stable number of users (Ren & Kraut, 2014). Additionally, this can lead to a more vibrant atmosphere where users want to bond and become attached to the platform and other members more intensively. Subsequently, the number of user-driven innovative outcomes will be affected by that and, as a result, the platform's profitability can be ensured.

The second lesson taken from this study refers to a specific kind of user active in the mobile computing platforms. Namely, the majority of the users who actively create content can also be grouped as lead-users, as defined in the field of innovation management (Von Hippel, 1998). Lead-users are characterized by their high level of innate innovativeness and domain-specific innovativeness, which leads them to be (highly) creative (Lüthje, 2004; Von Hippel & Katz, 2002). Thus, also in this study, this concept is of use when explaining user-driven innovations emerging in mobile computing travel-related platforms. Revealing lead-users' characteristics may be plausible given the minority of tourists being active in mobile computing platforms. Van Dijck (2006) introduced the 90/9/1 rule explaining the ratio of users using the internet. The ratio illustrates the minority of active users creating and publishing online content, which leads them to influence the behavior of mainstream users. Thus, also in the field of tourism, this minority responds to lead-users' characteristics, as illustrated by this study. Again, marketers have to closely observe how the different types of users respond to new features. Marketers have to be sensitive to their core members when drastically changing the platform environment (Ren & Kraut, 2014; Ren et al., 2012).

Therefore, close observations of members' interaction behavior with the platform and between members is necessary to maintain platform' success.

6.4. Future Research and Limitations

This study recognizes a set of limitations. First, the study uses self-report measures related to online creativity and its related constructs, which can lead to over-scoring from the respondents. Furthermore, the self-evaluative items can also bias the understanding of 'true' user-driven innovative outcomes. Therefore, future research needs to integrate research approaches like netnography, to be able to analyze objectively user-driven innovative communities. Moreover, further studies are advised to analyze user-assessments of mobile computing travel platforms to indicate what precisely hinders them when creatively creating content.

Second, given the size of the master sample, there was no possibility for a hold-out sample in order to test the suggested model for its stability and reproducibility. Future studies, thus, need to validate and confirm the model suggested in this paper with a larger sample. The refinements and adjustments provided by the two approaches can be the subject of future exploration and characterization of individual variables, in particular online creativity and domain-specific innovativeness. Also, the results deriving from IC-based theory indicate that researchers need to carefully analyze relationships between variables when aiming for detecting causality.

Third, creativity literature is still lacking an understanding of how creative abilities are translated into online creative behavior. Given the rise of possibilities for creative practices in the online world, the need to understand this process is called for (Edmonds et al., 2005). Different authors argue that context plays an important role in explaining creativity (de Acedo Lizarraga et al., 2014; Glaveanu & Tanggaard, 2014; Csikzentmihalyi, 1998). This study fully concentrated on neither context nor on other psychological traits. Thus, on the one hand, this study needs to be extended by variables, such as personality and task motivation, to explain the concept of online creativity in a more robust manner. On the other hand, context needs to be explored as an impact on facilitating creative content behavior. For example, Jawecki et al. (2011) refer to the social environment affecting individual creativity. Especially in online peer-to-peer networks, the role of the social environment might impact the outcome of user-driven innovative content behavior. Interesting variables like peer pressure, group identity, attachment and engagement might help to further explain online creativity. As highlighted in the practical implications, consumer attachment (group and member-based) influences the success of a platform (Ren et al., 2014). The usage

of passion and task involvement is closely related to this. However, future studies might operationalize engagement in a different way to reveal users' connection to the platform. Ren and Kraut (2011) demonstrate how community-based and member-based bonding also result in different forms of interaction behavior. Hence, this might also be an interesting avenue of future research further explaining the facilitation of user-driven innovations. Füller et al. (2008) make the distinction between 'need-driven' innovators and 'excitement-driven' innovators. Future studies could also use this distinction to determine users' characteristics and their effects on different outcomes of user-driven innovations. Such a distinction can help research to further shape the concept of user-driven innovation in the field of tourism.

Then, the issue of culture needs to be integrated. Jawecki et al. (2011) shows how culture influences innovation in online communities. This study did not consider culture as an explaining variable to analyze content behavior. Thus, future studies could consider integrating the distinction (Western vs. Eastern communities), which would further enrich theories explaining user-driven innovative behavior in mobile computing platforms. Lastly, more in-depth analysis is needed to explain the link between the integrated use of mobile phones while traveling and online creative behavior. In particular, the construct of task involvement can be the subject of these analyses. This would support the understanding of how interactions with the online community while traveling impacts members' behavioral patterns and creative contributions. Thus, there is a lot to be explored in the field of tourism related to user-driven innovations.

Study 3.

Open Innovation Platforms in Tourism: A Case Study of a Destination Management Organization.

1. Introduction

1.1. Problem Statement

Today's competitive environment demands go beyond simply importing the voice of the consumer (Bughin, 2008). Firms have started to see that collaboration with consumers is the key to successful innovation (Sloane, 2011a). Hence, according to Chesbrough (2006), the next promising step is Open Innovation (OI). OI replaces the vertical integration of processes within a company, and integrates a network of external collaborators working together on innovation (Sloane, 2011a). Using outside sources, firms can speed up their innovation processes, reduce their costs but also introduce additional innovative ideas (Sloane, 2011a). Nowadays, consumer engagement in collaborative innovation is possible through a variety of Internet-based mechanisms (Sawhney, Verona, & Prandelli, 2005). Engaging with consumers through internet-based devices supports companies in gaining insights into social generated knowledge. Consumers' potential to contribute knowledge and value for innovation purposes has been acknowledged by different studies (Nambisan, 2002).

Evidence from companies suggests that consumer participation in communities offers important innovation-related benefits to the company that hosts them (Füller, Jawecki, & Muhlbacher, 2007). Methods ranging from idea competitions, toolkits of user innovation, virtual worlds and communities arranged by the firm are examples of how the Internet opens up many avenues to i) explore users' needs, ii) integrate users into the innovation process, and iii) interactively communicate with users (Faullant, Krajger, & Zanker, 2012). Hence, Howe (2008) introduced the topic of crowdsourcing, which refers to outsourcing the function of idea generation to the crowd (i.e., consumers). Crowdsourcing has gained popularity among practitioners and in research over the last couple of years. The increasing literature on crowdsourcing shows that firms can improve supply chains that subsequently enhance customers' experiences and innovation strategies. According to Sloane (2011a), crowdsourcing is a powerful recourse for firms' innovations. Boudreau and Lakhani (2013) state that the crowd has become a fixed institution that is available on demand: *"for certain types of problems, crowds can outperform your company. You just need to know when- and how to use them."* (p.10)

A new technique increasingly used by companies is inviting consumers to join an innovation contest (Hutter, Hautz, Füller, Mueller, & Matzler, 2011; Walter & Back, 2013). Idea contests are, on the one hand, useful for solving problems in a creative way, and on the other hand, they allow companies to develop innovative solutions based on customers' evaluations (Boudreau & Lakhani, 2013). Therefore, a

contest needs to be designed in a way that attracts qualified participants and receives enough attention from the crowd (Boudreau & Lakhani, 2013). Moreover, companies can stimulate the quality of ideas in forms of awards or recognition (Walter & Back, 2013). Hutter et al. (2011) states that participants often join to collaborate with peers. Ideas generated in this manner are often enriched with solution information, which represent consumer needs, wants and suggestions about how to transfer the ideas into marketable products (Blohm, Bretschneider, Leimeister, & Krcmar, 2011; Von Hippel, 1998). The mix of appropriate design elements can, thus, effectively influence customer engagement and subsequently determine the success of open innovation platforms.

Consumer engagement has also received attention in tourism. In particular, concepts of co-creation and mass-customization have largely been explored by tourism research. However, the topic of innovation and tourism businesses is still limited (Hjalager, 2010). In fact, tourist organizations hardly innovate, and if they do, it is an internal activity (Zach, 2013). Nevertheless, tourism organizations have started to recognize the credibility of open innovation strategies and crowdsource activities with their positive spillover effects. Tourists are often asked to contribute their creative insights and problem-solving skills to create, conceptualize and experience new products and/or services through social media spaces (Tussyadiah & Zach, 2013). Especially in tourism, where stakeholders are distanced and globally spread, social media can serve as a playing field for crowdsourcing or social content creation for DMOs (Tussyadiah & Zach, 2013).

1.2. Research Question and Objectives

Poetz and Schreier (2012) state that the ability to come up with new ideas depends on the underlying industry or product category. In cases where the knowledge is linked to user experiences, it will be easier for participants to formulate their ideas (Poetz & Schreier, 2012). Considering tourism as experience products and services, where consumers co-create by definition, effectiveness and success of idea contests is expected. However, there is hardly any research on crowdsourcing activities for experiential goods and services such as tourism. Moreover, there is also no research on the effectiveness, usefulness and novelty of ideas deriving from an idea contest held in tourism. Hutter et al. (2011) state that research is needed to deepen the understanding of the relationship between the type of participant and the quality of the contribution. Currently, innovation research fails to understand which measurements can, or should be applied to analyze and evaluate submissions (Walter & Back, 2013). Given the lack of research on tourism and idea contests, this study aims to understand how effective

innovation idea contests are for DMOs to enhance and develop future innovation strategies. Moreover, this study will focus on the role of participants and their quality of contribution, leading to the success of DMOs' idea contests. Therefore, the study sheds lights on the following research question:

How effective are innovation idea contests for Destination Management Organizations to enhance and develop innovation strategies?

The research aims to (i) indicate the kind of participants attracted by idea contests organized by DMOs, (ii) measure the quality of the ideas sent in, and (iii) provide insights into which participants and contest design elements support the quality of ideas, subsequently leading to the success of open platform initiatives by DMOs. For research, this study can enhance the understanding of effectiveness of open innovation platforms. In addition, this study can provide insights into the usefulness of customer engagement in the form of idea contests. Practitioners in the field of tourism need to understand how to implement idea contests to support the development of innovation strategies. Issues such as the design of competition tools that will enhance the quality of the ideas sent in and subsequently lead to a high success ratio of open innovation initiatives need to be discussed. Moreover, this study can provide decision support to expert committees analyzing and evaluating submissions to crowdsourcing websites in tourism. Integrating the external knowledge from consumers is, thus, of great relevance for practitioners who want to retain competitive advantages (Shaw & Williams, 2008; Chesbrough, 2006). The following chapter will highlight the most important literature streams. Then, the method will be introduced, followed by results and final remarks.

2. Literature Review

Consumers' knowledge has been recognized by companies as valuable support for developing their innovation strategies. There are different ways in which consumers have been integrated into a company's innovation process, and different forms of consumer knowledge have been used. The literature reviews present the concepts of lead-user method, open innovation, virtual communities, crowdsourcing and idea contests as used by companies to enhance co-operation between users and themselves (Hutter et al., 2011). Moreover, issues regarding how and who should measure idea quality and creativity in idea contests will be discussed.

2.1. Lead-Users

Lead-user integration into new product development has been an important research field in innovation management (Morrison, Roberts, & Von Hippel, 2000; Lilien et al., 2002; Franke, Von Hippel, & Schreier, 2006; Schreier, Oberhauser, & Prügl, 2007; Faullant, Krajger, & Zanker, 2012). Often users are early developers of what later become new products or processes (Franke & Shah, 2003). For example, we see that in snowboarding equipment, development comes directly from users, as is the case for basketball shoes (i.e., Füller et al., 2007). Therefore, companies have started to realize that listening to consumers can be beneficial for new product development. However, listening to consumers can be problematic, since consumers tend to repeat old procedures rather than provide radical innovations (Lüthje, 2003). Hence, there are some users with distinctive characteristics, who are different than the majority of users that are recognized by firms as valuable (Lüthje, 2003). Herstatt and Von Hippel (1992) refer to them as lead-users.

Lead-users are highly oriented innovative consumers supporting the generation of new ideas and concepts within a firm (Füller, Jawecki, & Muhlbacher, 2007). Kozinets (2002) states that lead-users have product or service needs that are often ahead of others in a market. Lüthje (2003) describes them as trendsetters. Therefore, lead-users can develop their own solutions since they are ahead of the entire adoption curve (Von Hippel & Katz, 2002). Oliveira and von Hippel (2011) state that it is reasonable that lead-users will tend to be the first to develop novel services because i) they have the needed information, and therefore they understand their needs better than producers do, ii) lead-users encounter a need for novel functionalities first because they are situated at the leading edge of markets, and iii) some users face a given leading-edge need, which will enable them to develop a product and/or service innovation for themselves at a very low cost (Oliveira & von Hippel, 2011). Often lead-users encounter limits when

using existing products that do not fulfill their current needs. Therefore, Franke et al. (2006) argue that dissatisfaction characterizes lead-users. They deeply feel a need to come up with a better solution (Schuhmacher & Kuester, 2012). Franke and Shah (2002) call it “high benefit from innovation”.

Lead-users are also recognized by their innate innovativeness, creativity and cognitive style, domain-specific knowledge as well as the ability to communicate their needs (Bilgram, Brem, & Voigt, 2008; Franke, Von Hippel, & Schreier, 2006). Subsequently, they are able to deliver highly innovative suggestions for new product development. Moreover, lead-users expect to benefit from the obtained solution (Faullant, Krajger, & Zanker, 2012). As a result those lead-users are motivated to fully provide their skills and abilities (Schuhmacher & Kuester, 2012). The use expertise of lead-users derives from their i) use experience, ii) frequency of use with product related knowledge, and iii) their professional background or hobby interest (Bilgram, Brem, & Voigt, 2008). Lead-users are active in their word-of-mouth and online commitment, which makes them ambassadors for firms. Lead-users are also defined by their intrinsic and extrinsic motivation, their extreme needs regarding product use and their opinion leadership (Bilgram, Brem, & Voigt, 2008). Intrinsic motivation of lead-users positively impacts the originality and relevance of generated solutions and ideas (Burroughs et al., 2011). Füller et al. (2011) state that incentives can encourage intrinsically motivated lead-users to contribute more and better. However, Von Hippel (2005) states that only between 10-40% of users are contributing to new product development through the use of their know-how, creativity and expertise for innovative problem solutions. In the field of tourism the contribution of users is hardly quantified. Lead-users’ techniques have barely been applied; often users are left out of the process related to new product development. Given the fact that the tourism product is an experience good, companies often do not know how to integrate users (Hjalager & Nordin, 2011). The open innovation paradigm provides insights into how users can be integrated into the innovation process for tourism products and/or services. The following paragraph will explain the paradigm in more detail.

2.2. Open Innovation Paradigm

In the closed innovation model, firms have control, generate their own ideas, and are self-reliant (Chesbrough, 2006). Chesbrough (2012b; 2012a) refers to this as a vertically integrated model of innovation. However, Sloane (2011a) posits that any firm that ignores ideas from external sources risks overlooking good ideas that can help the firm to grow and differentiate. Therefore, Chesbrough (2003) introduced the open innovation paradigm (OI). The open innovation paradigm is the contrast of traditional

activities leading to internally developed products and services that are then distributed by the firm (Chesbrough, 2012a). Chesbrough (2003) explicitly states that companies can and should use external ideas and take external paths. The open innovation paradigm uses external sources, such as consumers, for the creation of innovation by drawing on ideas for firms' own innovation facilities (Frey, Lüthje, & Haag, 2011). Baldwin and von Hippel (2009) state that the key advantage of open innovation is that each contributor can undertake some of the work but rely on the firm to do the rest.

Chesbrough (2012b) distinguished between two important kinds of open innovation: outside-in and inside-out. The outside-in part of open innovation involves opening up a company's innovation process to many kinds of external inputs and contributions. The inside-out open innovation requires firms to allow unused and underutilized ideas to go outside the firms and for others to use in their business (Chesbrough, 2012a). This study focuses on the outside-in kind of open innovation.

Gassmann et al. (2010) argue that open innovation can be analyzed from nine different levels of open innovation: spatial, structural, user, supplier, leveraging, process, tool, institutional and cultural. The perspectives indicate how broad open innovation can be for companies. However, open innovation should not be confused with open-source software (Von Hippel, 2005). Open-source software is related to open innovation, but ignores the business model. According to Chesbrough (2012a), open innovation should have legal regimes and business models to enable the open process. This is not the case in the free software paradigm from Von Hippel. Von Hippel (2005) refers to open innovation since users can share their knowledge freely within the community and benefit from it. Nevertheless, both concepts share the same views of openness to third-party source as a powerful mechanism stimulating innovation (Chesbrough, 2012a).

2.3. Forms of Customer Engagement in Open Innovation

Companies noticed that involving third parties, especially consumers, saves them resources by merely embracing consumers' expertise (Nambisan, 2002). Walter and Back (2013) argue that open innovation often refers to the existence of a collective intelligence or the wisdom of the crowds, so to speak. However, according to Pillar (2010), companies need to start thinking from the end of the production process when implementing open innovation strategies. In other words, understanding which desires need to be met and what external sources need to be attracted will enable firms to have effective IO outcomes.

In addition, companies need to consider which role consumers need to play. There are different roles companies can consider. First, the consumer can act as an *ideator*, acting as a source of inspiration for companies. Second, the consumer can act as a *designer*; the consumer designs his/her own version, or co-designs with the company, which is popular in the software industry (Nambisan, 2002). Third, the consumer acts as a *product tester* and the feedback is valuable knowledge for further improvements. Fourth, the consumer can act as *marketer* for other peers based on his/her expertise (Nambisan, 2002). According to Füller et al. (2007), users can provide fresh ideas and novel concepts during the idea generation phase. In the design and engineering phase, consumers can co-design and co-create the design of new innovations. In addition, Edvardsson and Tronvoll (2013) state that overall consumers are the engines of innovation, and their knowledge and skills, integrated with tangible sources, are the fuel of a company. Magnusson et al. (2002) refer to users giving fresh injections to the company innovation process.

According to Walter and Back (2013), open innovation is an active process of collaboration between producers and users. Piller (2010) refers to innovation as a dynamic and social activity, requiring collaboration between different parties. During the acts of company-to-consumer interactions the consumer takes part in the design of their own products (Piller, Ihl, & Vossen, 2010). According to Reichwald and Piller (2006), consumers are becoming active participants in the creation of value. Different authors refer to the concept of working consumers, describing a new division of labor between firms and consumers (Cova & Dall'Aglio, 2009). However, participants often enjoy collaborating with the company. Since they receive different types of value during their participation in open innovation strategies, ranging from receiving recognition from the organization and from their peers, receiving monetary awards, a chance to do good, getting the competitive drive, getting a chance to belong, to collaborate, to bring something new into the world and they can use their latent skills or passions (Piller, 2010). Hence, consumers often have a variety of motivations to accept open innovation invitations. There are different innovation typologies firms can consider when designing open innovation strategies and inviting consumers. The next section will explain them in more detail.

2.4. Open Innovation Typologies

OI depends on a 'business empathy' that builds upon the foundation of mutual understanding and generates trust between the different parties (Piller, 2010). The 5 P's of innovation (purpose, process, people, partners, and performance) supports firms in building innovation strategies aligned with an overall business strategy (Piller, 2010) However, OI is only a generic phase with different implementations

depending on the invitees and kind of problems the firm needs to solve (Sloane, 2011a). Sloane (2011a) states that an OI typology is characterized by four different OI Methods. The focus of the typology is on how the topic of the innovation program is conveyed, and how the participants are invited. This can range from i) participative or invitational (i.e., third parties are invited or it is open to the public) to ii) suggestive and directed (i.e., the ideas are influenced or are there no boundaries or conditions) (see Figure 34) (Sloane, 2011a).

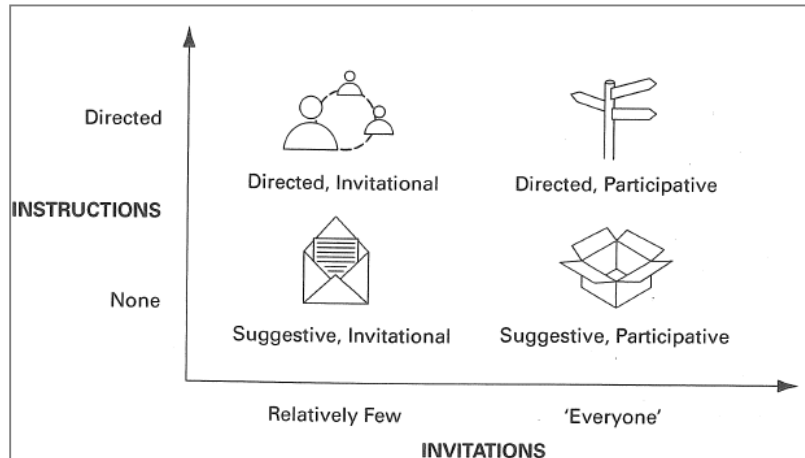


Figure 34. Typologies of Open Innovations (Sloane, 2011, p.25)

However, Sloane (2011a) states that OI should be perceived as an innovation toolkit. Companies can decide upon activities fitting the OI typologies, such as crowdsourcing techniques, virtual worlds, web-based toolkits and idea-contest (Hutter et al., 2011). The following sections will explain this in more detail.

2.5. Crowdsourcing

Crowdsourcing is a critical building block of successful OI (Sloane, 2011b). Howe (2008) introduced the term ‘crowdsourcing’ and refers to it as a pool of cheap labor. Sloane (2011a) states that crowdsourcing is an extrapolation of OI in which a firm throws out a challenge to a group of people that may or may not have a solution and solicit their ideas for the firms’ issues. Hence, the concept of crowdsourcing is that a crowd of people collaboratively contributes to an aspect of the product, process or solution of a design issue (Reichwald & Piller, 2006). According to Jeppesen and Lakhani (2010), crowdsourcing is a viable approach for firms to disclose innovation-related problems via platforms and use the crowd as a source of innovation. Therefore, crowdsourcing refers to the function of idea generation of large groups of external contributors who are often unknown or undefined (Howe, 2008). Crowdsourcing is different to normal user communities. In this case, users are invited to contribute to solving predefined innovation challenges and it is a competition-like setting where contributors expect to

receive predefined monetary prizes. Reichwald and Piller (2006) refer to crowdsourcing as an interaction value creation activity. Estellés-Arolas and González-Ladrón-de-Guevara (2012, p.10), who performed a meta-analysis on the concept of crowdsourcing, define crowdsourcing as:

'A type of participative online activity in which an individual, institution, a non-profit organization, or company proposes to a group of individuals of varying knowledge and heterogeneity via flexible open call to voluntarily undertaking a task. The undertaking of the task of complexity and modularity, and in which the crowd should participate bringing their work, money, knowledge or experience, always entail mutual benefit. The participant will receive the satisfaction of a given type of need (economic, social recognition, self-esteem), while the crowdsourcer will obtain and utilize to their advantage what the user has brought to the venture.' (Estellés-Arolas & González-Ladrón-de-Guevara, 2012, p.10)

The types of crowdsourcing can vary from participation of consumers in product development, product design, competitive bids on defined tasks, permanent open calls, community reporting, product rating by consumers to consumer-to-consumer support (Reichwald & Piller, 2006). The different types show how consumers are finding new ways to influence corporate decision-making processes (Reichwald & Piller, 2006). Howe (2008) states that crowdsourcing seeks to mobilize competence and expertise being distributed among the crowd of consumers. Crowdsourcing offers companies access to a wide range of complementary information and data (Howe, 2008). Therefore, crowdsourcing can be used to achieve complex tasks within innovation projects but also for routine and creative tasks, such as data collection (Howe, 2008). Crowdsourcing among the users of products and services is particularly suitable for yielding solutions for breakthrough innovations (Von Hippel, 2005). Frey et al. (2011) state that since the invitation to enter the contest is directed at the public, the participants may come from different backgrounds, age groups and disciplinary fields. Frey et al. (2011) also state that these same participants may even gain no benefit from the potential innovation, but due to their expertise in the field they want to participate. In addition, Poetz and Schreier (2012) show that while ideas by professionals in the firm tend to be more feasible, user ideas exhibit a higher degree of novelty and promise clearer customer benefits.

Therefore, companies need to ask themselves: i) which attributes should consumers have to be able to support the innovation processes and ii) in which communities are these consumers likely to be found (Füller, Jawecki, & Muhlbacher, 2007)? Poetz and Schreier (2012) state that users can identify unmet needs, but they cannot identify promising ideas to solve them. Therefore, users can provide need-based and solution-based information. This also heavily depends on the industry or product/service category and nature of the problem (Poetz & Schreier, 2012). According to Kosonen et al. (2013), user-generated ideas can offer a valuable source of knowledge. Kosonen et al. (2013) refers to members becoming innovation facilitators. A new trend for companies is to invite consumers to join an innovation

contest. In the contest only the best submissions will receive an award or recognition. This aims to foster and encourage user innovation. In the next section this is discussed in more detail.

2.6. Innovation Idea Contests

The idea of innovation contests has a long history. There are numerous historical innovation contests in fields such as agriculture, mathematics, software and navigation (Adamczyk, Bullinger, & Möslein, 2012). Innovation contests are proven to be a great alternative for generating new ideas. Nowadays, by using Information Communication Technologies (ICT), firms can easily generate online idea contests, which function as a crowdsourcing competitive mechanism (Schuhmacher & Kuester, 2012). Walter and Back (2013) refer to it as innovation tournaments. The main differences between traditional and online idea contests lie in the dynamic entering process and the feedback process (companies can provide online feedback in between which can increase the performance) (Zheng, Li, & Hou, 2011).

Online idea contests are an explicit way to foster and encourage user innovation input and enhance creative solutions (Faullant, Krajger, & Zanker, 2012; Bullinger, Neyer, Rass, & Moeslein, 2010; Schuhmacher & Kuester, 2012). A firm invites a public or target group to submit contributions about a specific topic in a specific timeline (Schuhmacher & Kuester, 2012). Companies hereby try to obtain the wisdom of the crowds and integrate creative people into their innovation processes (Surowiecki, 2004). Bullinger et al. (2010) refer to idea contests as IT-based competitions where participants can use their skills and creativity to provide a solution to online contest challenges. Schuhmacher and Kuester (2012) state that companies can either ask participants to provide ideas concerning new products or services or ask consumers to tell them the challenges they are facing.

Different studies show how idea quality increases when consumers can collaborate during the contest (Jeppesen, 2005; Blohm et al., 2011; Poetz & Schreier, 2012). Peer-based comments help consumers to improve their problem-solving skills. According to Hutter et al. (2011), participants of community-based contests may compete and collaborate with other participants at the same time. They categorize the participants as: *competitors* (they aim to showcase their talent and win), *collaborators* (active engagement and quality), *communicators* (combination of the previous two) and *observers* (browsing out of curiosity but do not contribute). Therefore, Hutter et al. (2011) introduce the concept of 'communitition', referring to the elements of competitive behavior, but also discussion-based interactions to enhance the quality of the submitted ideas. The different types of participants in idea contests are attracted by different forms of motivation, which can explain the final idea quality and form of

participation (Blohm et al., 2011). Hence, the following section will explain motivations for participants to submit their ideas.

2.7. Motivations to Join Idea Contests

Consumers have a variety of reasons to join idea contests, which can be divided into intrinsic and extrinsic motivations. Subsequently, the motivations can be related to the level of quality of the submissions. Amabile (1996) argues that intrinsic motivation has a positive effect on performed creativity, while extrinsic motivation has a negative impact on performed creativity. For example, Frey et al. (2011) show that incentives are related to the level of creativity and innovativeness of the given solution. Moreover, Frey et al. (2011) illustrate how the benefit from monetary awards can affect the amount of attracted participants and achievement of a large set of offered solutions. According to Blohm et al. (2011), cash prizes, non-cash prizes, status, earned privileges, publicity and opportunities are extrinsic motivations to engage in idea contests. This patron can be found in virtual interactions, where the producer and participant need to be rewarded (Von Hippel, 2005). Therefore, Howe (2008) states that crowdsourcing works because it satisfies self-actualization needs of Maslow's (1967) hierarchy (creativity, spontaneity, and problem-solving). In addition, engaged and loyal customers often join the contest to help or improve the company product (i.e., lead-users). Consumers can also have a personal interest in seeing improvements caused by their input in the idea contest (Blohm et al., 2011). For example, consumers like the idea of achievement and increasing personal status. Often, consumers compare themselves in idea contests with others to confirm their personality and/or enhance their social status. However, consumers also enjoy the social interaction with other members with similar interests (Blohm et al., 2011). According to Hutter et al. (2011), consumers share and cooperate during the idea contest. Lastly, aspects of efficacy and learning explain consumers' contribution. Consumers like to show their ability to solve a request (efficacy) and to have the ability to make an impact (Schuhmacher & Kuester, 2012).

However, Hutter et al. (2011) state that the participants of large idea contests are also aware that they only have a small chance of winning the contest. This can subsequently impact the participants' investment and quality of the submission. Therefore, companies need to be cautious when attracting an average but large crowd. This might often result in highly innovative solutions but low feasibility (Hutter et al., 2011). Borst (2010) illustrates that companies face the challenge of receiving high numbers of low-quality ideas. One way to enhance the level of idea quality is derived from the design of the contest. According to Frey et al. (2011), a good idea contest has two essential qualities: 1) an understandable

request of the community, and 2) obviously identified actionable outcomes for the submissions. Firms should, thus, consider the different elements that ensure the attraction of the right crowd and determines the quality of an idea contest design. The following paragraph will explain this in more detail.

2.8. Design of the Idea Contest

The design criteria can enhance the quality and quantity of submissions (Bullinger et al., 2010). There are ten design elements recognized by research that enhance the success of an idea contest (Adamczyk, Bullinger, & Möslin, 2012). First, firms need to consider which kind of *media* they will use to run the innovation contest (ranging from offline to online). Second, the contest can be *organized* by a firm who are hosting the contest. Third, the firm needs to decide upon the *task* of the innovation contest (ranging from very open to very specific) (Frey, Lüthje, & Haag, 2011). Fourth, the innovation contest can differ based on the *degree of elaboration* (requirement of task). Fifth, the organizer needs to indicate a *target group* that is suited to the contest (everyone or specific users). Sixth, the organizer must decide the *form of participation* (group or individual). Seventh, the firm needs to decide upon the *contest period* (i.e., a week, month). Eight, the firm needs to consider the *reward system* of the contest (ranging from monetary to non-monetary rewards). Nine, the contest could be enriched by *community functionalities* that allow interaction and communication between participants. Ten, the firm needs to decide upon the form of *evaluation* (i.e., by peers, jury). Table 35 provides an overview of the design elements.

In addition, Adamczyk et al. (2012) indicated five design elements that enhance the quality of a good crowdsourcing activity (attraction, facilitation, sponsorship, content phase and replication). Companies need to think about how to inform participants of the contest (i.e., e-mail, social networking sites). Then, companies need to think about how to *facilitate* the participants while the contest is running (i.e., encouraging them to contribute). In addition, firms can get assistance from other firms, such as in the form of *sponsorship*. Lastly, the firms need to consider how many different *contest phases* the contest should have, and if it can be *replicated* annually or biannually. After designing the idea contest and receiving the ideas, firms need to start analyzing and assessing the quality of the ideas. The following section will explain that in more detail.

Design Element	Attributes					
1. Media	Online		Mixed		Offline	
2. Organizer	Company	Public Organization		Non-Profit		Company
3. Task/Topic Specificity	Low		Defined		High	
4. Degree Of Elaboration	Idea	Sketch	Concept	Idea	Sketch	Concept
5. Target Group	Specified			Unspecified		
6. Participation As	Individual		Team		Both	
7. Contest Period	Very Short Term	Short Term	Long Term		Very Short Term	
8. Reward	Monetary		Non-Monetary		Mixed	
9. Community Functionality	Given			Not Given		
10. Evaluation	Jury Evaluation	Peer Review	Self-Assessment		Jury Evaluation	

Table 35. Design Elements for Idea Contest (Bullinger, Neyer, Rass, & Moeslein, 2010)

2.9. Evaluation and Assessment of Idea Quality

The idea contest supports the measurement of idea quality and creativity. The evaluation of the quality of submitted ideas in the idea contest is related to the assessment of their creativity (Blohm et al., 2011). According to Kristensson et al. (2004), all innovation begins with creative ideas and, thus, the assessment of ideas is related to creativity (Blohm et al., 2011). However, due to the fuzziness between creativity and innovativeness, there are different evaluation methods assessing idea quality (Blohm et al., 2011). In general, the case of measuring creativity is a rather continuous problem in creativity research.

According to Amabile (1983), there is no clear explicit statement on how to evaluate creativity. Some authors, such as Jackson and Messicks (1965), distinguished between internal criteria and external criteria. The internal criteria refer to aspects such as logic and harmony among elements of the product and pleasantness, whereas the external criteria refer to usefulness. Taylor (1975) developed the Creative Product Inventory (CPI) that measures the dimensions of generation, reformulation, originality, relevancy, hedonics, complexity and condensation. Besemer and O'Quin (1987) developed a scale with three dimensions, referring to it as the Creative Semantic Scale (CSS). The CSS has three dimensions: 1) novelty (if the product is original, surprising and germinal), 2) resolution (the product is valuable, logical, useful and understandable), and 3) elaboration and synthesis (if the product is organic, elegant and complex).

Amabile (1983) developed the Consensual Assessment Technique (CAT), which enables assessment of the creativity of a group of experts that are knowledgeable in the field. The CAT is rather popular among creativity researchers (Kaufman, Baer, Cole, & Sexton, 2008). The CAT has been applied to stories, art, poetry, and other products. Reis and Renzulli (1991) developed the student product assessment form, assessing the quality of a child's process of working (i.e., early statement of purpose and appropriateness of resources used) as well as the final product (i.e., variables as originality of the idea, quality beyond grade level, and time and effort invested in the work). Sternberg (1999) developed the propulsion model, which illustrates eight propelling effects that the creative product will have in a field (Kaufman, Baer, Cole, & Sexton, 2008). Cropley and Cropley (2005) developed a hierarchical four-criterion model of functional creativity resulting in a Creative Solution Diagnosis Scale (CSDS), with 30 items. Cropley and Cropley (2005) developed the scale based upon product creativity and functional creativity with five dimensions of relevance, novelty, elegance and genesis. Hence, we can see that creativity has been discussed along different dimensions. However, in general, the extensive literature uses four main dimensions assessing the idea quality: *novelty, feasibility, strategic relevance and elaboration*.

The dimension novelty refers to an idea being new, unique and original. According to Blohm et al. (2011), original ideas can also be surprising, imaginative, uncommon and unexpected. Therefore, when analyzing novelty, researchers often consider if an idea overcomes the established structures (Besemer & O'Quin, 1986). The dimension relevance refers to the usefulness of an idea and ability to respond to a problem. Magnusson (2009) states that the relevance of an idea should respond in an affective way to solve the problem. Especially in new product development, this dimension reflects an idea's financial potential (Blohm et al., 2011; Lillien et al., 2002). Subsequently, the dimension feasibility will illustrate if the firm is able to develop it into a new product (Kristensson et al., 2004). In addition, feasibility refers to how the idea fits the organization's image, strategies and resources. The last dimension of idea quality refers to the completeness of the submission (elaboration). Moreover, the idea needs to be understandable, detailed and established (Franke & Shah, 2003; Blohm et al., 2011). The four dimensions help firms to distinguish between the different ideas. However, as seen before, in an idea contest one can choose who will decide upon a 'good' or 'bad' idea. Research shows that there is a significant difference in cases where the jury panel exists of experts, quasi-experts and novices who evaluate product creativity. Therefore, the following section is introduced.

2.10. Judging the Idea within Idea Contest

In idea contests a jury, consisting of experts in the given domain, often evaluates the ideas (Blohm et al., 2011). The role of expertise in assessing creativity plays an important part, but it is by no means settled in research. The information about the specific level of expertise of the raters to make full conclusions explains the differences between experts, quasi-experts and novices (Amabile, 1996). Different studies show that quasi-experts in general show agreement with experts. In cases where people are asked to rate the creativity of products globally, novices typically show a lower level of reliability than experts (Kaufman, Baer, Cole, & Sexton, 2008; Plucker, Kaufman, Temple, & Qian, 2009). Kaufman et al. (2005) show that gifted novices have a high level of inter-rater reliability (in the case of rating poems). Kaufman et al.'s (2005) study shows that non-experts can assess the creativity of products when given the right tools (i.e., assessment criteria). Subsequently, they are able to recognize and quantify accepted characteristics of creative products. This also implies that very little domain knowledge may be required to form a reasonable judgment of appropriateness. Even those raters with no domain-specific knowledge can recognize if an artifact will do what it is supposed to do (Kaufman, Gentile, & Baer, 2005; Horn & Salvendy, 2006).

Therefore, the core criterion that defines creativity in terms of novelty and appropriateness can be more independent from the level of expertise of the observer (Kaufman, Gentile, & Baer, 2005). The level of expertise of the observer namely influences how domain-dependent criteria are evaluated (i.e., elegance and genesis) (Kaufman et al., 2008). However, literature on product appearance illustrates that experts and novices often derive the same observations from the objects of interest (Mugge & Schoormans, 2012; Plucke et al., 2009; Horn & Salvendy, 2006). However, Mugge and Schoormans (2012) find that non-experts identify fewer categories to analyze creativity due to their relatively lower level of product-related knowledge. Moreover, non-experts categorize on different abstraction levels than experts. This can also be explained by novices' limited knowledge of the vocabulary linked to the product. In general, novices and experts see communality in what attributes are important to enhance product quality (Hsu et al., 2007). Firms need to consider how to format the jury panel that assesses the idea contest. The reflection of the literature illustrates, thus, that the success of an idea contest, as well as its outcomes and the effectiveness of innovation strategies depends upon a variety of aspects. Nevertheless, this heavily depends on firms' products, the maturity of the market the firm is operating in, and its stakeholders. Hence, the observation of idea contests needs to be done on a firm-level (Blohm et al., 2011). The following chapter will introduce the case study and method employed by this study.

3. Method

This chapter will introduce the method for this study. This study aims to explain how idea contests operate in a tourism setting. However, as previously stated, idea contests are firm-specific, which leads to the design of a case study. By using a case study, one can understand the research phenomenon in a specific situation. Case studies are extremely supportive for research in exploratory and explanatory phases, when aiming to illustrate and map the situation (Creswell, 2003). This study aims to explain and describe how idea contests can be an effective tool for DMOs' open innovation strategies. Hence, this study is designed based upon an explanatory case study. The next section explains the chosen case in this study.

3.1. Case Study Vienna Tourist Board

The case study used for this study is the Vienna Tourist Board (VTB). The VTB initiated an idea contest in February 2014 till March 2014. The idea contest "Now or Never: Your idea for #Vienna2020" was initiated through a social media platform inviting all possible stakeholders. VTB aimed to co-create a shared and commonly accepted tourism strategy for the city of Vienna, stemming out of the tourism industry and its stakeholders. The open innovation platform was initiated in two phases (VTB, 2014).

In the first phase, VTB invited 650,000 guests (inhabitants, travel agents, employees, students, tourists) to idea contest. VTB explained that they were aiming to develop a new tourism strategy entitled "Vienna2020". They provided examples of questions users could answer, such as "How would I like to get there?", "Which means of transport would I like to use and where would I like to stay?", "What would I like to experience?", "What is missing in the city?", "What could enrich my travel experiences even more?", etc. Participants were allowed to submit more than one idea in the areas of unconventional events, new services, accommodation, meals, and use of technology. In addition, users were allowed to browse through others' ideas, make comments and refine their existing submissions as well as cast their vote for their favorite initiative(s). Participants could submit ideas in English and German.

In total, 818 users registered on the website, resulting in 546 ideas from 43 countries. Moreover, on average, each user viewed 10.3 ideas, and stayed for 19 minutes on the open innovation platform. A panel of five experts in the field of tourism evaluated the ideas. The ideas were evaluated based upon four criteria; innovativeness, feasibility, clarity of the proposal and benefits for the visitors and residents of Vienna. According to VTB, an idea was innovative when it was creative. In cases where the idea was

easy to implement it would score high on feasibility. Moreover, the idea should illustrate how residents and tourists can benefit from the suggested idea. Lastly, the clarity of the proposed idea was analyzed based upon transparency and easiness to understand the idea. Finally, one winner was selected. The winning idea received a voucher valid for a weekend trip for 2 persons in Vienna including a return flight, 4-star hotel including breakfast, dinner and two Vienna cards. In addition, the ten best rated ideas received a Vienna goody bag and ten voters received a Vienna goody bag out of a draw.

The second phase of the open innovation initiative addressed 2,500 local stakeholders (i.e., policymakers, students, employees of VTB, politicians, etc.). In total, 260 local stakeholders registered, discussing 551 ideas (546 from phase one and 5 new submissions). The stakeholders voted for 74 ideas to contribute: i) financially, ii) with active participation, or iii) by tackling legislation and policies that would allow the implementation of the ideas. The stakeholders were invited to join online discussion forums with special themes (i.e., transportation, gastronomy). In these online discussion forums the ideas from phase one were discussed based on identified threats and opportunities. In addition, the stakeholders could submit their own ideas. In the discussion forums they could indicate the priority of the ideas and vote for active collaboration and partnership to visualize the suggested ideas. The stakeholders could analyze the ideas with 'smiles'-icons, indicating if the idea would serve i) just tourists' basic needs, ii) satisfaction, or iii) create a 'wow' effect. In particular, the second phase aimed to develop an inclusive model of tourism governance. According to the Vienna Tourist Board, the second phase of the open innovation platform initiative is useful for professionalization and further development of the tourism industry. An overview of all design elements of VTB's open innovation initiative can be found in Table 36.

Since the study aims to understand how idea contests are effective tools supporting open innovation initiatives by tourism firms, only phase one will be used for the data analysis. The first phase predominantly focuses on consumers (tourists and direct users) of the city of Vienna as a tourist destination. Especially in open innovation platforms firms aim to gather ideas that are directed at user experiences (Poetz & Schreier, 2012). Therefore, this study is highly interested in the quality of the 546 ideas sent in during the idea contest. The next section will explain this in more detail.

Idea Contest Design Elements	“Now or Never: Your idea for #Vienna2020” Idea Contest
Media	Online: Website initiated by VTB
Organized	Directly by VTB
Task	Specific – steered by several questions
Degree Of Elaboration	The description of the task was rather elaborated (provided example questions)
Target	Every possible stakeholder (locals, students, tourists, etc.)
Form Of Participation	Individual level
Contest Period	1 month (February – March 2014)
Reward System	Weekend Trip to Vienna and 20x goodie bags
Community Functionalities	Comment and refine peers’ ideas and vote
Evaluation	Jury (experts in tourism industry)
Attraction	Social media spaces (FB), e-mail list and newsletter
Facilitation	VTB provided comments and Q&A support to participants.
Sponsorship	No extra sponsorship
Content Phases	Two phases: Phase I: idea contest for all stakeholders Phase II: “buy-in” phase discussion panels with selected stakeholders
Replication	First time initiated – no future plans yet

Table 36. Design of Idea Contest Elements VTB

3.2. Data Analysis

The units of analysis for this paper are the 546 ideas sent in for the idea contest. The dataset of the VTB contains i) submitted ideas categorized according to questions answered, ii) user name and nationality, iii) date of submission, iv) number of submissions, and v) if participant received comments or votes. This study aims to 1) assess the idea quality, 2) categorize the kind of participants, and 3) understand which kind of participants deliver a specific idea quality. Therefore, the data analysis will take place in two main phases; first a quantitative content analysis will be performed. Second, different statistical inferences will be performed.

3.2.1. Quantitative Content Analysis

This study applies a quantitative content analysis to investigate the data set of ideas. Content analysis is a technique that analyzes the content of the text, including words, meanings, pictures, themes and messages that can be communicated. Content analysis has the overall aim to code the text into various categories (Stepchenkova, Kirilenko, & Morrison, 2009). According to Hsieh and Shannon (2005), content analysis is used in social science to analyze communication. Insch et al. (1997) state that content analysis is capable of capturing a richer sense of concepts within the data due to its qualitative basis. In addition, they argue that content analysis can be subject to quantitative data analysis techniques. Hence, in the social sciences, the distinction is made between qualitative and quantitative content analysis. Stepchenkova et al. (2009) refer to qualitative content analysis as an exploratory and non-statistical method. Quantitative content analysis can provide statistical inferences from text (Roberts, 2000).

This study is interested in quantitative content analysis. Quantitative content analysis is a scientific method that describes communication content in an objective, systematic way (Stepchenkova, Kirilenko, & Morrison, 2009). Weber (1983) distinguished between a substitution and correlation model. The substitution model analyzes the text with a priori established categories, with words having similar meanings. The correlation model extracts themes from the matrix of words found in the text. Through data-reduction techniques, categories can be defined. Therefore, according to Rourke and Anderson (2004), quantitative content analysis is a process where the researcher assigns each observed unit (can be a word, sentence, or theme) into a category. The coding scheme will help the researcher to make decisions when analyzing the content (Hsieh & Shannon, 2005). Hsieh and Shannon (2005) differentiate among three approaches in content analysis (see Table 37). Depending on the theoretical framework, the researcher will decide which coding process will be used during quantitative content analysis.

This study uses a directed content analysis, where the codes are derived from theory. This also means that codes are defined before the data analysis, and if necessary adapted during the analysis. The next section will explain how the study conceptualizes the coding for the quantitative content analysis.

Type of Content Analysis	Study Starts With	Timing of Defining Codes of Keywords	Source of Codes or Keywords
Conventional Content Analysis	Observation	Codes are defined during data analysis	Codes are derived from data
Directed Content Analysis	Theory	Codes are defined before and during data analysis	Codes are derived from theory or relevant research findings
Summative Content Analysis	Keywords	Keywords are identified before and during data analysis	Keywords are derived from interest of researchers or review of literature

Table 37. Coding Differences among Three Approaches to Content Analysis (Hsieh & Shannon, 2005)

3.2.2. Operationalization

This study is interested in the effectiveness of an idea contest. Walter and Back (2013) argue that the effectiveness of an idea contest can be measured by: 1) the number of submitted ideas in total and per participant 2) the quality of the ideas, 3) the rarity of the ideas, and 4) the number and type of participants.

The content analysis will be supported by the measurement scale of Amabile (1996), who introduced the Consensual Assessment Technique (CAT). CAT has been extensively used for evaluating customer generated new product ideas (i.e., Hienerth, 2006; Magnusson, 2009; Blohm et al., 2011; Kristensson, Gustafsson, & Archer, 2004). The CAT is a highly reliable and valid measurement tool to assess idea contest outcomes (Blohm et al., 2010). The CAT is categorized along the dimensions: (1) novelty, (2) relevance, (3) feasibility, and (4) elaboration. In addition, the overall idea quality of the submission will be evaluated. Each dimension will be measured by different items (see Table 11) (Blohm et al., 2011). All items will be rated on a scale ranging from 1 (lowest) to 5 (highest).

In order to understand what kind of participants the idea contest attracted, different behavioral measurements are taken into account. The measurements will provide an understanding of how participants' attitude during the idea contest enhanced the idea quality. First, the participants will be analyzed based upon their participation behavior. Hutter et al. (2011) refer to collaborative and competitive behavior in idea contests. Collaborative behavior means that the participant commented on other ideas, whereas the competitive behavior indicates that the participant did not comment on other ideas. Second, the ideas will be analyzed based upon if it received comment(s) during the contest. Hutter et al. (2011) illustrate how competitive behavior in contrast to collaborative behavior influences the number of submissions as well as the numbers of comments received. Thus, third, the participants will be

categorized into two groups based upon the number of submissions. Hutter et al. (2011) posits that depending on the behavior, the idea quality as well as the overall effectiveness of the idea contest can be impacted. Fourth, the ideas will be analyzed according to the moment of submitting. According to Walter and Back (2013), an idea can become mature throughout the contest. Moreover, participants can browse through other ideas first before submitting their own ideas, hence affecting the idea quality. In addition, user information will be categorized, such as gender, age, language of submitting and nationality, to understand the effect on idea quality. National participants can possibly, through their knowledge related to their home country, indicate different kinds of needs and wants than international participants, which can subsequently lead to a different level of idea quality. Moreover, gender can play a distinct role determining idea quality (Kosonen et al., 2013). Based upon the previous discussion, several hypotheses are developed that will guide the analysis:

- H1: There is a significant difference between national and international participants and the overall idea quality.
- H2: There is a significant difference between the ideas submitted during the last half of the contest and the ideas submitted during the first half of the idea contest.
- H3: There is a significant difference between gender and the overall idea quality.
- H4: There is a significant difference between age of the participants and the overall idea quality.
- H5: There is a significant difference between the ideas that received comments than ideas that did not receive any comments during the idea contest.
- H6: There is a significant difference between the participants submitting only one idea than for participants submitting more than one idea.

The categorization is based upon a panel of judges. The judges evaluating the ideas will consist of one researcher and two students handling the English as well as the German ideas. Each person evaluated the ideas independently from the others. Afterwards, the outcomes will be merged. Table 38 provides an overview.

Content Analysis Categorization		
Idea Quality	Items	Measure
Overall idea quality	OIQ. The overall idea quality	Ordinal Likert 5.scale (1 very low, 2= low, 3= average, 4= high, 5 = very high)
Novelty	N1. The idea is novel N2. The idea is unique or at least rare N3. The idea is imaginative, uncommon or surprising N4. The idea is revolutionary N5. The idea is radical N6. The idea is trendy	Ordinal Likert 5.scale (1 very low, 2= low, 3= average, 4= high, 5 = very high)
Relevance	R1. The idea has a clearly described customer benefit R2. The idea enables the initiator to realize an attractive market potential R3. The idea enables the initiator to build up strategic competitive advantages	Ordinal Likert 5.scale (1 very low, 2= low, 3= average, 4= high, 5 = very high)
Feasibility	F1. The idea is technically feasible F2. The idea is economically feasible F3. The idea fits the initiator image	Ordinal Likert 5.scale (1 very low, 2= low, 3= average, 4= high, 5 = very high)
Elaboration	E1. The idea is precise, complete and exactly described E2. The idea is mature E3. The idea's utility is clearly described	Ordinal Likert 5.scale (1 very low, 2= low, 3= average, 4= high, 5 = very high)
Behavioral measures	Items	Measure
Comments	C0. Idea received no comment (s) C1. Idea received comment (s)	Binary (0= absence, 1= present)
Number of submission	1 submission 2 submissions 3 submissions 4 or more submissions	Nominal
Behavior in Platform	C0. Collaborative > commented on other ideas C1. Competitive > did not comment on other ideas V0. Collaborative > voted on other ideas V1. Competitive > did not voted on other ideas	Binary (0= absence, 1= present)
Time of submission	TS1= within the first 15 days of the idea contest TS2=between 16 th and last day of the idea contest	Binary
User information	Items	
Gender	Female Male	Binary
Nationality	Country	Categorical
Age	Age	Categorical
Language	English – German	Categorical

Table 38. Categorization of Content Analysis

3.3. Method of Analysis

3.3.1. Introduction to the Method of Analysis

After the categorization, different statistical inferences will be performed. Content analysis allows researchers to combine ideas, create taxonomy of user profiles and finally compare and analyze the different genres (Walter & Back, 2013). A set of methods to analysis the data will be used; Table 39 provides an overview of the planned statistical inferences. The methods of analysis will be explained in the following sections.

Items	Method of Analysis
- Novelty	Descriptive analysis
- Relevance	Inter-rater reliability
- Feasibility	Exploratory Factor Analysis
- Elaboration	Construct reliability
- Overall idea quality	
- Novelty / Relevance / Feasibility / Elaboration → Idea Quality	Multiple regression analysis
- Number of comments and votes	Descriptive analysis
- Number of submissions	Frequency tables
- Behavior in platform	Inter-rater reliability
- Gender	
- Nationality	
- Age	
- Time of submission	
Idea Quality (low / high) with variables:	One-way, two-way and three-way ANOVA
- Number of comments and votes	
- Number of submissions	
- Behavior in platform	
- Gender	
- Nationality	
- Age	
- Time of submission	

Table 39. Overview of Statistical Inferences

Descriptive analysis: By the use of frequency tables, mean-values, and standard deviations, the data will be described.

Inter-rater reliability: the inter-rater reliability among the results of three coders will be calculated. This will be calculated by Kappa's coefficient. The coefficient should be higher than 0.7 to reflect sufficient degree of inter-rater reliability (Blohm et al., 2011).

Exploratory factor analysis: in order to test whether the idea quality is represented by the four pre-selected dimensions, exploratory factor analysis (EFA) will be performed. EFA estimates if the four

factors of idea quality are represented by their items. Subsequently, one needs to determine the validity of the scale structures.

Construct reliability: first, the individual item reliability will be measured. This indicates which part of the indicator can explain the latent variable (a threshold of 50% is desirable). The most commonly used measure for scale reliability is Cronbach's alpha, with an alpha higher than .7 indicating an acceptable value for internal consistency (Tavakol & Dennick, 2011).

3.3.2. Multiple Regression Analysis

Multiple regression can be performed among the four levels of idea quality regressed upon the overall idea quality. The purpose of multiple regression analysis is to indicate and observe a relationship between several independent variables and one dependent variable. Therefore, in multiple regression analysis the following equation is central:

$$Y_i = \beta_0 + \beta_1 X_i + \varepsilon_i \quad i = 1, \dots, n$$

The 'B' coefficients (also regression coefficients) represent the contribution of each independent variable to the prediction of the dependent variable (Field, Miles, & Field, 2012). In general, in regression analysis one aims to create a model, where the predicted and observed values of the variable are to be predicted as similarly as possible. Hence, the ordinary least square method (OLS) is used to find the estimated regression equation. By the use of scatter plots one can visualize OLS. The least square method uses the sample data to provide values of coefficients that minimize the sum of squares of the deviations between the observed values of the independent variables and dependent variables (Field et al., 2012).

In order to know how well the estimated regression estimator fits the data, the coefficient of determination provides an indication of goodness of fit. The sum of squares due to error (SSE) illustrates the measure of error in the estimated regression equation. In addition, the total sum of squares (SST) as well as the sum of squares due to regression (SSR) are computed. Subsequently, the formula for SST is equal to SSR and SSE. In the case of a perfect model fit, the SSE should be zero, where the ratio between SSR and SST will indicate the multiple coefficient of determinant. This is also referred to as the R^2 (SSR/SST) for multiple regression analysis (Anderson et al., 2005). However, many researchers prefer the adjusted R^2 , which helps researchers to overestimate the impact of adding an independent variable. The estimated regression equation can, thus, tell the researcher how one variable's absence or presence in the model affects the overall fit (Anderson et al., 2005). In addition, one measures the correlation coefficient of the different variables. This is a descriptive measure of the strength of linear association between two

variables ranging from -1 till +1. The -1 indicates a negative relationship whereas +1 indicates a positive relationship. Values closer to zero indicate that variables are not related (Anderson et al., 2005). After these two steps, there are several steps in multiple regressions one needs to consider; model building, model adequacy, model assumption, modeling problems and model validation (Field et al., 2012).

Model Building: the researcher decides how the independent variables contribute to the model; first, second order, interaction terms of dummy variables (Field et al., 2012). Then, the researcher can proceed in different ways regarding how to build the model. This can be done in the following ways; stepwise, forward selection and backward elimination (Anderson et al., 2005). In the stepwise selection, the researcher discards in a stepwise way the variables that do not contribute to explaining the variability in the dependent variable(s). In contrast to that, one can also start with only one independent variable. By the forward selection the researcher adds new variables until a significant model fit is reached. Backward elimination is similar to the stepwise selection but does not allow the variable to re-enter the analysis again (Field et al., 2012). Moreover, in regression models one has to be careful with categorical data, since one cannot enter them directly into the regression model. Hence, by creating dichotomous variables from categorical variables (also called dummy coding), one can enter the variable into the regression model (Field et al., 2012). After defining the model one can proceed with testing the adequacy of the model.

Model Adequacy: testing the significance of the multiple regression models can be done with the *F*-test; which determines if there is an overall significant relationship between the dependent variable and all independent variables. In order to reject the 0 hypothesis (no relationship), the p-value needs to be less than .01. Then, the t-test is used to determine if each individual independent variable is significant. In other words, a separate t-test for each independent variable is performed, determining individual significance (Anderson et al., 2005). The different analysis will provide the researcher with insights into how the independent variables contribute to the prediction of the dependent variable.

Model Assumption: analysis of the residuals is an important step in determining if the assumption of the relationships between variables is appropriate. The following residual analyses are the most common: i) a plot of the residuals against values of the independent variable, ii) a plot of residuals against the predicted values of the independent variable, iii) a standardized residual plot, and iv) a normal probability plot. Note that standard residuals are each residual divided by its standard deviation. The residual plots can be used to detect violations of assumptions about the error term in the regression model (Anderson et al., 2005).

In addition, one has to analyze outliers, which is a data point that does not fit the trend of the remaining data points. By the use of a scatter diagram as well as the observation of the standardized residuals, the outlier can be detected. Lastly, one needs to check upon influential observations, which are data points that have extra influence on the rest of the data. It can be an outlier or have an extreme x value. Field et al. (2012) also refer to them as high leverage points (hat leverages) (Field et al., 2012). Using the diagnostic procedures, such as Cook's D distance and DFFITs measure, one can understand which contribution the observation has to the regression line (Anderson et al., 2005).

Potential Modeling Problems and/or Solutions: when modeling, one needs to consider issues of multicollinearity and missing data. Multicollinearity exists when two variables are highly correlated because they share the same information. The Variance Inflation Factor (VIF) indicates whether this is the case (values higher than 1.0). The problem with multicollinearity is that it increases the standard errors of the coefficient, whereas it seems that they do not significantly contribute to the model (Field, et al., 2012; Anderson et al., 2005).

Model Validation: in the last step, the models need to be validated based upon different techniques. The data splitting technique provides significant results about how predictive the data is, and is the independent t-test. Moreover, in order to test the appropriateness of the multiple regression models, F -test ANOVA (Analysis of Variance) can be performed (Anderson, et al., 2008). This is similar to the phase that indicates the adequacy of the model. In cases where there is a significant F , one can indicate that there is a linear relationship between dependent and at least one of the independent variables (Field et al., 2012). The following section will explain this in more detail.

3.3.3. Analysis of Variance (ANOVA)

In order to test how idea quality is different among the participants and their behavioral measures, different ANOVAs will be performed. ANOVA analyses are built upon six assumptions: 1) the dependent variable needs to be measured on interval or ratio scale 2) the independent variable should be categorical, 3) the observations should be independent from each other, 4) there should be no significant outlier, 5) the variables should be normally distributed, and 6) there needs to be homogeneity of variance for each combination of the independent variables. For example, the Levene's test for homogeneity of variances can determine if this is the case (Field et al., 2012; Anderson et al., 2005).

There is a distinction between a one-way ANOVA, two-way ANOVA and three-way ANOVA. In the one-way ANOVA, there is an interval or ratio level continuous dependent variable, and there is one categorical independent variable (factor) that has two or more different levels. A one-way ANOVA aims to compare the means of two or more samples. It tests the null hypothesis based upon populations with the same mean values. The ratio of variance will be calculated (F -statistics), indicating if the variance between the groups' means is lower than the variance of the sample. A higher value for F implies that the samples are from populations with different means. Hence, within the one-way ANOVA there are two different types of mean comparisons i) between groups ANOVA, where one compares two or more different groups; (independent design), and ii) repeated measures ANOVA, where one group of subjects is exposed to two or more conditions (within-subjects design) (Field et al., 2012) (see Figure 35).

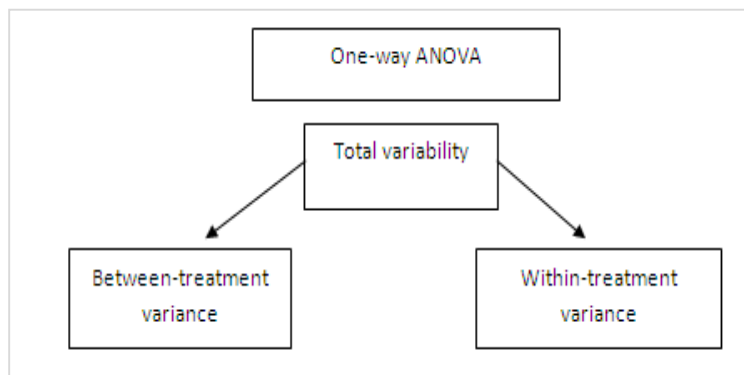


Figure 35. One-Way ANOVA (author's own)

The two-way analysis of variance (ANOVA) is an extension of the one-way ANOVA. Here the influence of two different categorical independent variables is examined on one continuous dependent variable (Field et al., 2012). In addition, the two-way ANOVA aims to assess the main effect of each independent variable as well as the interaction effects between the independent variable. In other words, in the two-ways ANOVA the researcher wants to understand if there is an interaction between the two independent variables on the dependent variable. This interaction effect can indicate if the effect of independent variable number 1 on the dependent variables is the same under all conditions of independent variable number 2, and vice versa (Field et al., 2010). Therefore, in a two-way ANOVA one compares the mean differences between groups that have been split into two independent variables (called factors), and the interaction effect can be determined (see Figure 36).

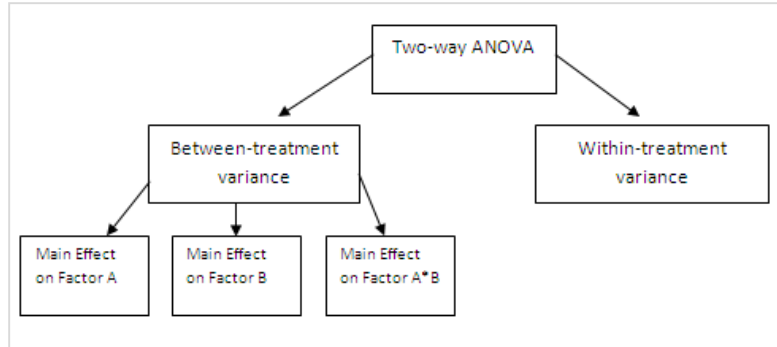


Figure 36. Two-Way ANOVA (author's own)

One can perform a three-way ANOVA, where an interaction effect between three independent variables on a continuous dependent variable is determined (i.e., if a three-way interaction exists) (Field et al., 2012). Possibly, if interested in interaction effects between and on two dependent variables and one or two factors MANOVA and / or a covariance MANCOVAs are of interest to the researcher (Field et al., 2012). Overall, the analysis aim to indicate the effectiveness of idea contests held by DMO.

4. Results

4.1. Sample Description

In total, 818 users registered for the idea contest resulting in 551 idea submissions. However, some ideas were entered twice or were removed by VTB due to inappropriate content. This resulted in a final set of 489 ideas. There were slightly more registrations from men (54.7%) than women (45.3%). The idea contest attracted participants from different age groups. Group I (1926-1950) was represented by 16.5%, group II (1951-1976) by 47.2%, and group III (1977-1998) by 36.3% of the participants. The majority of participants originated from Austria (19.1%), Germany (18.3%), USA (4%), Romania (3.7%), Serbia (3%), Australia (2.7%), UK (2.3%), Italy (2.3%), Russia (1.4%), whereas other nationalities were represented by less than 1%, such as the Netherlands, India, Denmark, France, Finland, Czech Republic and Switzerland.

Among the registered users, 42.6% (348 users) submitted at least one idea, while the remaining users commented, voted or stayed inactive. Among the users who submitted at least one idea, the majority of these users (82.3%) submitted one idea, 11.7% submitted two ideas and 2.9% submitted three ideas. A small percentage of the users (0.6%) submitted four, five or seven ideas. Two outstanding individuals submitted 11 ideas and one user submitted 99 ideas. See Table 40 for an overview.

Number of Ideas Submitted	Frequency (N=348)	%
1 idea	286	82.3
2 ideas	41	11.7
3 ideas	10	2.9
4 ideas	2	.6
5 ideas	2	.6
7 ideas	2	.6
11 ideas	1	.3
99 ideas	1	.3

Table 40. Numbers of Ideas Submitted

The majority of the ideas were submitted in German (68.5%), 0.2% in French and the rest in English. Participants could submit their ideas under a predefined theme; see Figure 37 for an overview. Many ideas were sent in regarding the theme of “Culture & Events” (29.4%), “Sightseeing” (17.1%), “City Image & Green Areas” (13.5%), “Accessibility & Mobility” (15.0%), “Orientation & Information” (12.2%), “Gastronomy & Shopping” (6.7%), “Accommodation” (1.8%) and “Fairs & Conferences” (1.8%). Lastly, the participants could submit their idea in a timeframe of 28 days; 71.5% of the ideas were submitted during the first half of the contest and 28.5% during the second half of the contest.

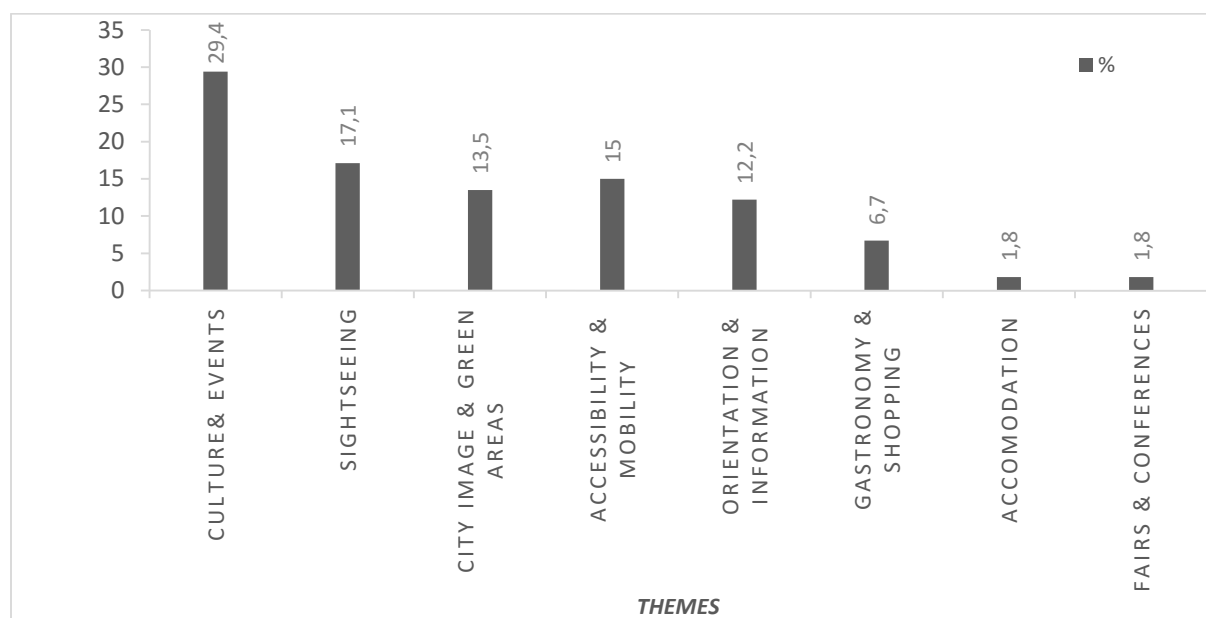


Figure 37. Ideas Submitted to Pre-Defined Categories

The demographic information of the participants submitting the ideas shows that 40% were men and 60% were women. 48.9% were represented by group II (1951-1976), and the other two groups were equally represented (approximately 25%). Among the active participants the nationalities have an identical profile as for all users (as presented in the previous section). The nationalities were equally represented among the three groups.

4.2. Behavior of the Participants

Users were able to comment and vote on other users' submissions. According to Hutter et al. (2011), users' behavior towards others participants can indicate if there is a competitive or community-like atmosphere among the participants. In order to examine the atmosphere among the users, the voting and commenting behavior is analyzed.

First, from all registered users, 4.4% commented on at least one idea, which resulted in 53 comments. From the users who commented, the majority (58.6%) commented once, 24% provided two comments, and the remaining users commented between four and seven comments. Concerning the voting behavior, 12.9% of all registered users voted for at least one idea, which resulted in 107 votes. The majority of these voters (38.3%) voted only once, 25% voted twice, 11.1% voted three times, 6.5% provided four votes, 2.7% provided eleven votes and smaller percentages (<1%) voted between fourteen and twenty one times. In general, the voting and commenting behavior was not very popular among the registered users. The voting behavior shows a more community-like atmosphere compared to the low percentage of users commenting on other users' ideas.

Second, in order to understand which users commented and voted, analyses are performed among the two groups; users who submitted an idea (active participants) versus users who did not submit an idea (passive participants). Among the passive participants, only a small minority provided comments (3.8%), which resulted in 18 comments. This also counts for 34% of all comments submitted. Furthermore, 13.9% of the passive participants voted, which resulted in 65 votes. In other words, the passive participants contributed 60% of all votes. The active participants, in contrast, were very passive in commenting, with only 5% commenting. Still, the active participants provided more comments than the passive participants did, namely a total of 45 comments were given, which counts for 66% of all comments. Also, the active participants were active in voting, with 25.6% of the active participants voting at least once, which resulted in 42 votes. However, as seen in Table 41, this only counts for 40% of all votes given. Thus, the voting behavior was more popular among the passive participants, whereas the commenting behavior was more popular among the active participants.

Votes	Frequency	%	Comments	Frequency	%
All votes:	107	100	All comments:	53	100
Passive participants	65	60	Passive participants	18	34
Active participants	42	40	Active participants	35	66

Table 41. Voting and Commenting Behavior

Third, the behavior of the passive participants is carefully analyzed. As introduced before, they provided 65 votes in total. From these voters, the majority (38.1%) voted only once, 28.7% voted twice, 11% voted three times and smaller percentages voted up to eighteen times (<8%). In terms of their commenting behavior, the majority of the passive participants commented only once (67%), while 33% provided two or four comments. The comments mainly contained words such as “great idea”, “nice idea” and a few times it was mentioned that the idea was already known or not new. Table 42 provides a detailed overview.

Behavior of Passive Participants during the Contest			
Voting (N=65)	%	Comments (N=18)	%
1 vote	38.1	1 comment	67
2 votes	28.7	2 comments	16.5
3 votes	11	4 comments	16.5
> 3 votes	22.2		

Table 42. Behavior of Passive Participants during the Contest

Fourth, in order to carefully understand which of the active participants voted and commented, a distinction is made between the number of ideas submitted. Table 43 provides an overview. As the idea contest allowed users to submit more than one idea, it is interesting to observe how participants behaved when commenting or voting, besides their contribution(s) (Hutter et al., 2011). Among the users submitting one idea, the majority (90%) did not comment on other ideas, 4.1% provided one comment, 1.7% provided three comments and a small percentage (<1%) commented between three up to nine comments. The users submitting one idea also had a low percentage of voting, with only 10.1% voting. From these, 4.6% voted once and a minority (<2%) voted between two and 21 times. Out of the users who

submitted two ideas, 39.9% provided a comment and, from these, 28% provided one comment, while 11.9% provided two comments. Among the users submitting two ideas, 17.1% voted, 7.3% of which voted once and the remaining users (<5%) voted between two and five votes. Then, of the users who submitted three ideas, the majority did not comment (80%). The remaining 20% provided between one and three comments. Among these users, 10% voted only once or twice. Of the users submitting four or five ideas, none commented and 33% voted once or twice. Users submitting seven ideas neither commented nor voted. The user providing eleven ideas only provided one vote. Lastly, the user submitting 99 ideas provided one comment and one vote. Participants submitting one or two ideas voted and commented more compared to participants submitting more than three ideas. The participants submitting more ideas did not comment at all, indicating a rather individual participation behavior.

Behavior of Active Participants during the Contest								
	1 idea (n=286) %	2 idea (n=41) %	3 ideas (n=10) %	4 ideas (n=2) %	5 ideas (n=2) %	7 ideas (n=2) %	11 ideas (n=1) %	99 ideas (n=1) %
% Voted	10.1	17.1	10	33	33	0	100	100
whereof:								
1 vote	4.6	7.3	5	16.5	16.5		100	100
2 votes	2	5	5	16.5	16.5			
3 votes	0	2						
>3 votes	4	2						
% Commented	10	39.9	20	0	0	0	0	100
whereof:								
1 comment	4.1	28.0	10					100
2 comments	1.7	11.9						
3 comments	4.2		10					
>3 comments								

Table 43. Behavior of Active Participants during the Contest

Overall, the active commenting and voting by the active participants is not indicated, contrasting the average time on the platform (18 minutes). Plausibly, participants screened other ideas and did not actively participate in side activities (commenting and voting) during the contest and/or interacted with their peers. Hence, the atmosphere of the idea contest reflects a rather individualistic user activity. The small number of voting and commenting demonstrates that the community had little involvement in activities that supported other submitted ideas.

4.3. Overall Idea Quality

The second part of the analysis focuses on the idea quality of the submitted ideas. Two independent coders evaluated the 489 ideas, based on the CAT measurement and the overall idea quality (as explained in the method chapter). Cohen's κ is measured to determine if there was an agreement between the two raters' judgment on the CAT dimensions and the overall idea quality of the ideas. There was a moderate agreement between the two coders' judgments, $\kappa = .754$ ($p < .005$).

The distribution of idea quality scores centralizes around an average score of '3'; representing an average overall idea quality ($M=2.88$, $St.d=0.81$, $n=489$). Figure 38 illustrates the high concentration of the overall idea quality scores around 'average', only a few ideas are represented by 'very high' overall idea quality or 'very low' overall idea quality.

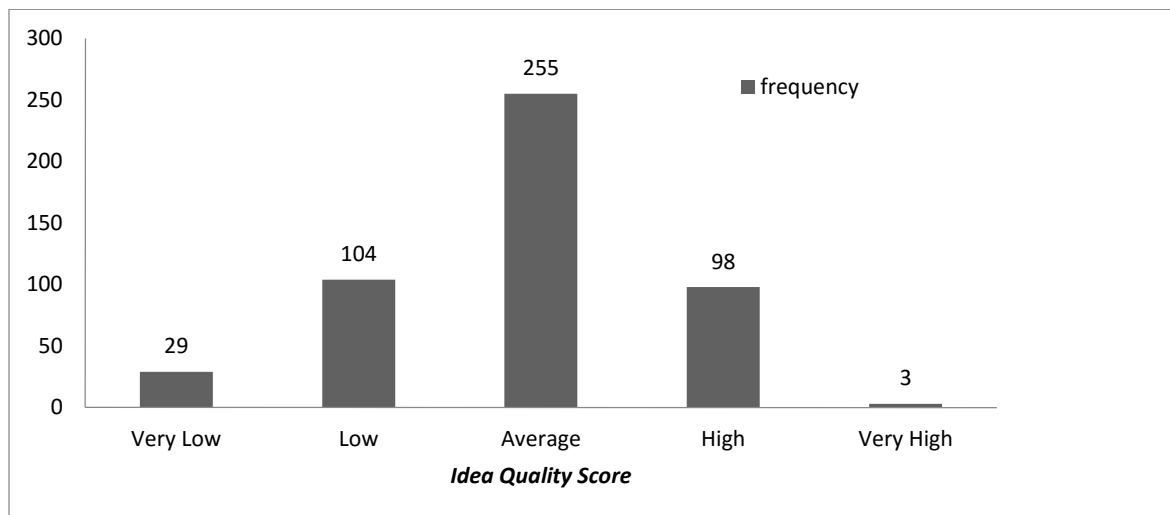


Figure 38. Distribution of Idea Quality Scores

Then, explanatory factor analysis (EFA) was performed with SPSS 22.0. The data was first checked to be appropriate for explanatory factor analysis by measuring the sample adequacy measures (MSA) for the overall data structure as well as individual items. The overall data structure exhibits a satisfying KMO criterion (.926) and Bartlett-test of specificity significance ($p < .001$). Also the individual items are all above the threshold of 0.60, thus explanatory factor analysis is appropriate (Field et al., 2012). The factor structure illustrates that the first factor, 'novelty', has the highest explained variance of 61.2%, the second factor, 'elaboration', has an explained variance of 10.2%, the third factor 'feasibility', 5%, and the fourth factor 'relevance' has 4.3% explained variance. Hence, overall, the factors were able to explain 81.2% of the variance extracted. Consequently, the supposed item structure identified in literature holds true for

this sample. Furthermore, in order to check for the stability of the factor structure, the sample was randomly split into two and the EFA results were compared (Field et al., 2012). The results were highly similar, hinting at generalizability of the factor structure. Then, the reliability of the factors was checked by Cronbach's alpha, subsequently, all factors were above the threshold of 0.70 (Field et al., 2012). Table 44 provides an overview.

Item	Factor				Cronbach's alpha
	Novelty	Elaboration	Feasibility	Relevance	
	1	2	3	4	
N1: The idea is novel	.744	.489	.230	.189	.944
N2: The idea is unique	.786	.454	.224	.151	
N3: The idea is imaginative	.728	.450	.199	.194	
N4: The idea is revolutionary	.878	.131	.158	.187	
N5: The idea is radical	.840	.084	.087	.231	
N6: The idea is trendy	.660	.212	.314	.376	
E1: The idea is precise	.216	.352	.439	.548	.873
E2: The idea is mature	.308	.301	.258	.806	
E3: The idea utility is clearly described	.330	.262	.263	.787	
F1: The idea is technically feasible	.289	.161	.853	.186	.857
F2: The idea is economically feasible	.126	.364	.760	.260	
F3: The idea fits the initiator image	.203	.379	.608	.421	
R1: The idea has a clearly described customer benefit	.274	.758	.246	.255	.892
R2: The idea enables the initiator to realize an attractive market potential	.294	.736	.318	.298	
R3: The idea enables the initiator to build up strategic competitive advantage	.292	.731	.284	.284	
Eigen Values	<i>9.18</i>	<i>1.54</i>	<i>0.75</i>	<i>0.65</i>	
Explained Variance	<i>61.2 %</i>	<i>10.3%</i>	<i>5.0%</i>	<i>4.3%</i>	

Note: Principal Component Analysis; Varimax-Rotation, N=489, *Italic bold items belong to the specific factor

Table 44. Exploratory Factor Analysis - Idea Quality

Subsequently, multiple regression analysis was performed to understand which items, representing the factors, contribute to the overall idea quality. Initially all items were included in one model resulting in a R^2 of .88 ($p < .001$), though several items had beta coefficients which were not significant ($p > .05$). Moreover, multicollinearity checks illustrated that items N1 and N2 had a significant overlap ($VIF > 10$, Field et al., 2012). After removing item N2 and Enter-deletion procedure, the final regression method resulted in a R^2 of .75 ($p < .001$) with the following significant items ($p < .05$): N1, N3, N6, R1, F1, F3, E1 and E3. See Table 45 for detailed description of the items and the Beta Coefficients (β). The regression analysis shows how the ideas appear to be rather novel, imaginative and trendy. Furthermore, the ideas are precisely described. Participants were also able to clearly illustrate customer benefits of their suggested idea(s), to deliver idea(s) that were technically feasible and ideas that fit with the VTB's image.

Items	β -Coefficient	P-value
N1: The idea is novel	.161	.002
N3: The idea is imaginative	.174	.000
N6: The idea is trendy	.151	.000
E1: The idea is precise	.172	.000
F1: The idea is technically feasible	.103	.002
F3: The idea fits the initiator image	.138	.000
R1: The idea has a clearly described customer benefit	.181	.000

Table 45. Multiple Regression ($R^2 = .75$ $p < .001$)

The diagnostic analysis and residual analysis illustrated that possible outliers and/or influential cases are non-influential to the regression model (Field et al., 2012). Nevertheless, one interesting unit was analyzed based upon its influence. Hence, similar analysis has been performed with the participant submitting the extreme number of submissions, namely 99, 87 of which were accepted by VTB (i.e., overlaps or inappropriate content was removed). However, after performing the influential residual analysis, no significant effect on the regression model was indicated. The next section will analyze the differences between specific groups and the overall idea quality based upon the suggested hypothesis introduced in the previous section.

4.4. Overall Idea Quality and Participant Characteristics

4.4.1. One-Way ANOVA

In order to understand how participants' characteristics and the idea contest environment influenced the level of overall idea quality, various non-parametric tests were performed (Wilcoxon-test, Kruskal-Wallis tests). A Shapiro-Wilk test ($p > 0.5$) and a visual inspection of histograms, normal Q-Q Plots and box plots illustrated non-normality with a skewness of -0.375 ($SE = 0.110$) and kurtosis of 0.010 ($SE = 0.220$). Hence, non-parametric tests can rectify this. In addition, a critical note has to be made before interpreting the test results. Participants who sent in more than one idea might distort these tests. Therefore, mean averages of the overall idea quality of their ideas were calculated and, thus, these participants only entered the tests once. The following section will test the hypotheses as introduced in the method chapter.

The first hypothesis suggested a significant difference between national and international participants and the overall idea quality. However, there is no significant difference between the groups ($p = 0.178$). Hence, hypothesis one is rejected. Then, hypothesis two was tested. Hypothesis two hypothesized a significant difference between the ideas submitted in the first half of the contest and the ideas submitted during the second half of the contest. According to Blohm et al. (2011), a maturing effect of idea quality throughout a contest is possible, since participants can learn from earlier submissions. However, in this study this trend is not indicated. In fact, no significant differences were indicated ($p = 0.617$) and, thus, hypothesis two is rejected. As a visual support, Figure 39 illustrates the development of idea quality throughout the contest.

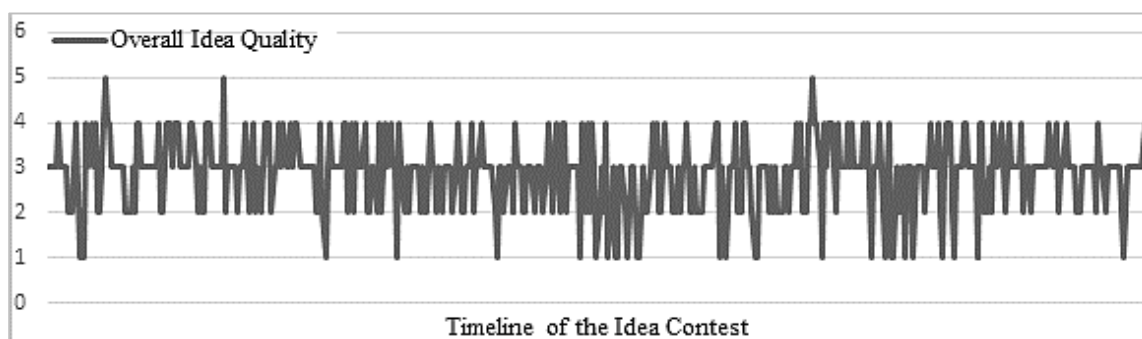


Figure 39. Overall Idea Quality of Ideas during the Idea Contest Time Line

Then, the difference between male and female participants submitting ideas were suggested to significantly differ in overall idea quality (hypothesis 3). However, there is no significant difference ($p=.182$) and, thus, hypothesis 3 is hereby rejected. Hypothesis 4 suggested a significant difference between age of the participants and the overall idea quality. Age shows to be a significant factor distinguishing idea quality. Namely, the three groups show significant differences in the overall idea quality ($p<.001$). Thus, hypothesis 4 is accepted. Then, hypothesis 5 was tested based upon the assumption of the suggested significant difference between the ideas that received comments and ideas that did not receive any comments during the idea contest. However, there seems to be no significant difference between participants receiving comments and those who did not receive any comments ($p=.844$). Hypothesis 5 is not accepted. Lastly, hypothesis 6 was tested, suggesting a significant difference between the participants submitting only one idea and those submitting more than one idea. However, there is a no significant difference between the groups ($p=.794$) and, thus, hypothesis 6 is hereby rejected. Accordingly, age shows to be the only relative factor distinguishing participants and their submission quality. The remaining hypothesized direct effects do not appear to influence the level of idea quality. In order to understand if age in combination with the suggested factors influences the overall idea quality, the next section will explain the results of two and three-way ANOVA analysis.

4.4.2. Two-way and Three-way ANOVA

In this section the various behavioral measures are analyzed based on their interaction with each other and subsequently how they influence the overall idea quality. Table 46 provides an overview of the fifteen two-way interaction effects measured regarding whether they were significant or not. Due to table space restrictions, the specific values explaining the interaction effects will be explained in the next section.

First, various interaction effects with gender are analyzed. There is no significant interaction effect between gender and the number of ideas submitted ($F=.247$, $df=4$, $p=.911$) nor does it show significant main effects. Similar patterns are identified for gender and the moment of submission, given that there is no significant interaction effect ($F=.038$, $df=1$, $p=.854$) and no significant main effects. There is no significant interaction effect detected between the interaction of gender and participants' origin on the overall idea quality ($F=2583$, $df=2$, $p=.109$), and also here there are no significant main effects. The number of comments received and gender also does not appear to influence the overall idea quality ($F=.364$, $df=8$, $p=.940$).

Two-Way Factorial ANOVA Overall Idea Quality						
	Gender	Age	Origin	Moment of submission	Number of comments received	Number of Ideas
Gender	-					
Age	n.s. *	-				
Origin	n.s.	n.s. *	-			
Moment of submission	n.s.	n.s.	significant	-		
Number of comments received	n.s.	n.s. *	n.s.	n.s.	-	
Number of Ideas	n.s.	n.s.	n.s.	n.s.	n.s.	-

Note = *Variable 'age' is a significant main effect, n.s. = not significant

Table 46. Two-Way Factorial ANOVA Overall Idea Quality

Second, two-way ANOVAs were conducted to examine the effect of age and the other listed factors on the overall idea quality. There was no statistically significant magnitude effect of gender and age on the delivery of idea quality ($F=.774$, $df=2$, $p=.462$). Nonetheless, age as a main effect appears to be significantly different between the groups ($F=9.231$, $df=2$, $p<.001$). Also, no statistically significant interaction effect between the origin (national vs. international) and the age of the participants influencing the delivery of idea quality was indicated ($F=1.550$, $df=2$, $p=.214$). Also here there is a significant main effect from age ($F=9.178$, $df=2$, $p<.001$). The number of ideas and age were considered as an interaction effect, but no significant interaction effect ($F=.915$, $df=7$, $p=.495$) or significant main effects were detected. The moment of submission (first vs. second half of contest) together with the age of the participant shows no significant interaction effect on the submitted overall idea quality ($F=.322$, $df=2$, $p=.725$) neither does it show significant main effects. Furthermore, the numbers of comments received in combination with age is not a significant interaction effect ($F=.669$, $df=10$, $p=.753$) neither does it show significant main effects.

Third, the origin of the participants is considered. First, the number of ideas shows no significant interaction effect on the overall idea quality ($F=.383$, $df=4$, $p=.821$) neither does it reflect direct main effects. Then, the origin of the participants and the moment of submitting the idea is analyzed. This shows a significant interaction effect on the overall idea quality ($F=10.776$, $df=1$, $p<.001$). This interaction can, however, only marginally be explained with 3%. See Figure 40 for illustrative support. Last, the origin of

the participant and numbers of comments received does not show a significant interaction effect ($F=1.136$, $df=8$, $p=.337$).

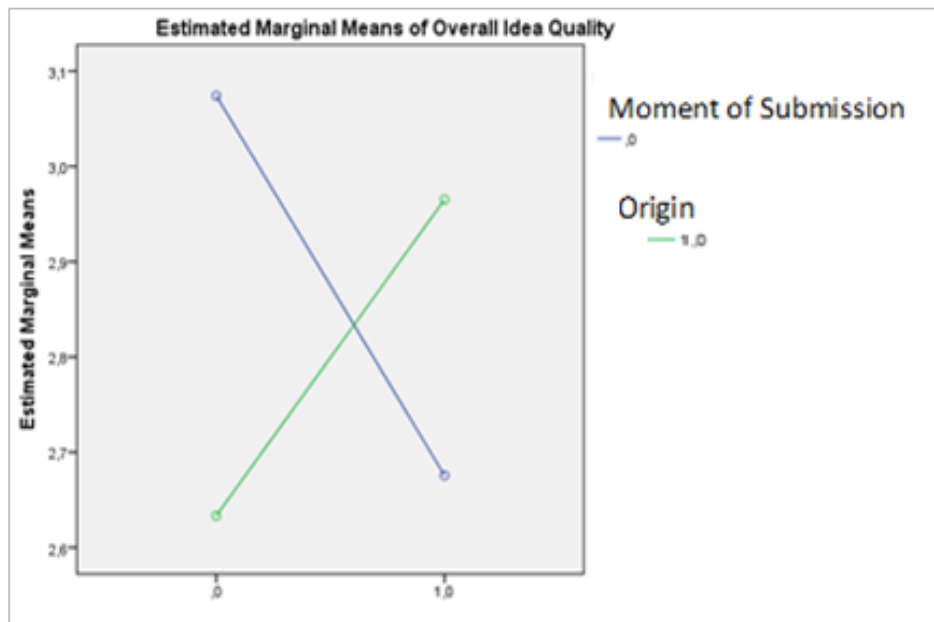


Figure 40. Estimated Marginal Means displaying Interaction Effect Origin * Moment of Submission

Fourth, the moment when the idea is submitted together with number of comments received shows no significant interaction effect ($F= .059$, $df=2$, $p=.943$). Also the interaction effect between the moment of submission and the number of ideas submitted is not significant ($F= .932$, $df=7$, $p=.489$).

Fifth, the number of comments received and the number of ideas together does not appear to influence the overall idea quality ($F=.138$ $df=9$, $p=.999$). Overall, apart from one indicated marginal interaction effect, the two-way ANOVAs demonstrate that the different factors together do not contribute to the overall idea quality. Additionally, three-way ANOVAs were performed in order to detect possible interaction effects between the various factors. However, no significant three-way interaction effects are detected. The next section will demonstrate the post hoc analysis performed in order to explain the interaction effect and the direct effect of 'age'.

4.4.3. Post Hoc Analysis

The previous analyses show two significant effects: i) an interaction effect between 'origin' and 'the moment of submission', and ii) a main effect of the variable 'age'. Pairwise comparisons (Least Significant Differences (LSD)) are performed to illustrate where the effects occur. The first pairwise comparison shows that during the first half of the contest, national participants submitted significantly higher quality ideas than international participants (Mean difference .398, $p=.003$). The national participants have an average mean of 3.05 ($St.d=.836$, $n=46$), whereas international participants have an average mean of 2.67 ($St.d=.90$, $n=164$). For the second half of contest, there is a slight significant difference between the two groups (Mean difference .332, $p=.066$). The national participants' overall idea quality decreased compared to their ideas submitted during the first part of the contest ($M=2.65$, $St.d=.886$, $n=20$). The international participants contribute marginally better to the idea contest during the second half of the contest ($M=2.93$, $St.d=.749$, $n=55$). Hence, these post hoc analyses were able to indicate where international and national participants specifically differ.

The second pairwise comparisons focus on the factor 'age'. These comparisons illustrate that group III (youngest group) significantly contributes with higher levels of idea quality compared to group I (Mean difference .508, $p<.001$) and group II (Mean difference, .330, $p=.002$). In fact, the differences of the means show that group I (oldest age group) generates the lowest idea quality ($M=2.53$, $St.d=.86$, $n=73$), group II contributes in a mediocre way ($M=2.73$, $St.d=.81$, $n=129$) and group III (youngest age group) contributes with the highest idea quality ($M=3.08$, $St.d=.88$, $n=83$). Hence, these post hoc analyses demonstrate the differences between the three groups. Given that age shows to be a steady factor throughout the analyses that significantly distinguishes the overall idea quality, additional analyses are performed.

First, exploratory factor analyses are performed for the three groups. In appendix T, a detailed overview can be found. Interestingly, group I and II show a similar factor structure and explained variance compared to the analysis done for all participants. Group III has several items loading to other factors, which indicates a different item structure. Also, factors are not as clearly defined compared to the other two groups since some items load at different factors. Thus, this also hints at different items contributing at the overall idea quality per group.

Then, further explorative analyses were performed to visualize the item structure among the three groups. In this case, Multi-Dimensional Scaling (MDS) is applied. MDS is a method that is often used

to indicate differences and/or similarities between items. Items are illustrated on a two dimensional space, see Figure 41 for a comparison per age group.

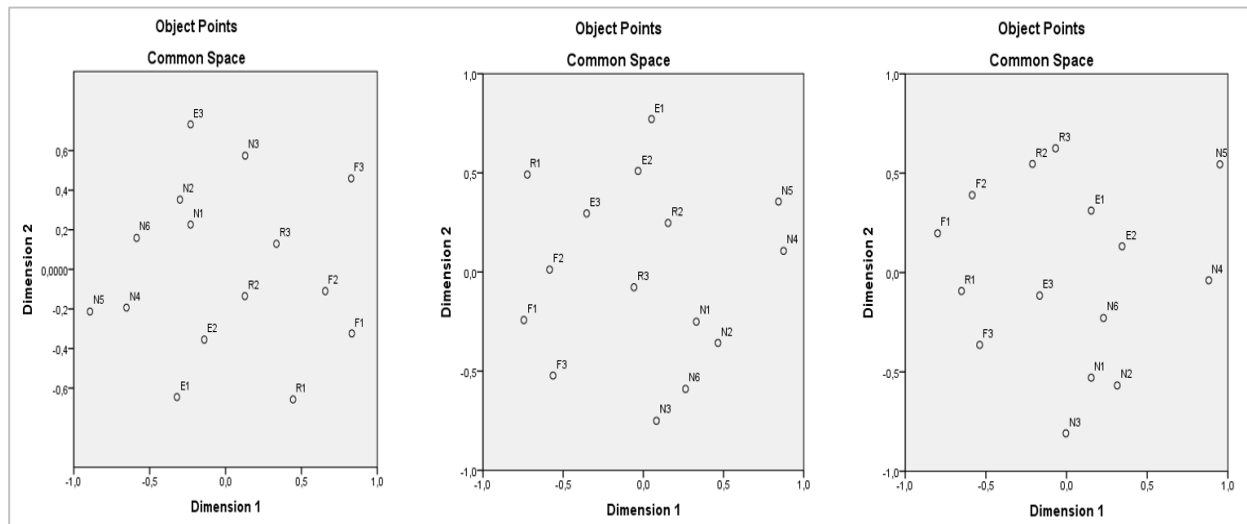


Figure 41. MDS Visualization (Left to Right: group I, group II and group III)

The MDS visualization shows how the items are close to and/or distanced from each other. The representation of items demonstrates the structure of the ideas per group. The distance illustrates how likely it is that these items are represented in the overall idea quality of the group (i.e., the space of group 1 demonstrates that items N5 and N4 are close together and it is, therefore, likely that the idea is often novel and revolutionary).

Figure 39 illustrates the MSD visualization of the three groups. The first interesting insights from the MSD visualization is the similar distance between the items of group I and II representing ‘novelty’ and ‘feasibility’. Also, these two groups have a short distance between the items representing the dimension ‘relevance’. However, the three groups also show a difference between the positions of the items. Group II, for example, has item E1 (“idea is precise”) and R1 (“clearly described customer benefit”) distanced from the other items. Also, two items representing novelty (N4, N5) are close to each other but distanced from the other items. Furthermore, as the visualization shows, group II idea item structure is dominated with items that are ‘novel’ and two items representing ‘relevance’ (R2, R3). Thus, ideas stemming from this group can be revolutionary and radical. When looking into group III, a bigger contrast of the item positions is demonstrated compared to the other two groups. In particular, the ideas from this group have item clusters represented by feasibility items (F1, F2, F3) and relevance items (R1, R2, R3).

Thus, MSD visualization is the first step in understanding how the three groups have different item positions responding to overall idea quality.

Then, in order to understand where the differences exactly occur, mean values are calculated per item and compared per group. Table 47 provides an overview of the mean values per item per group. Several interesting insights are discussed. First, all groups were able to score high on item F3 ('idea that fits VTB's image'). Interestingly, all groups did not score extremely high on delivering radical ideas (N4). Second, group I and group III have, on almost all items, the largest mean differences. Group II scores rather averagely compared to the other two groups on all items. In fact, the scores illustrate that group I was very low on items like 'indicating the benefit for users' (R1) ($M=2.30$) and ideas that could help VTB to build a strategic competitive advantage (R3) ($M=2.43$). Third, Table 47 shows that group III scores especially high on items N1 ($M=3.09$), N2 ($M=3.04$), N4 ($M=3.65$) and F2 ($M=3.90$) compared to the other two groups.

Therefore, comparing the means of the items per age group also illustrates how each group has different items representing the overall idea quality. Group I, for example, appears to be able to provide ideas that reflect VTB's image and ideas that are technically feasible. Group II is rather similar to group I, but in addition they were able to contribute ideas that were more imaginative and precisely explained. Group III, as indicated before, scores higher on all items, but in particular they were able to provide ideas that were revolutionary and economically feasible. Thus, the mean values were an indication of every group's item response. However, as seen in the previous section, multiple regression analysis, which is perceived as a more robust technique, can support these analyses in indicating a set of items that represent the overall idea quality per group (Field et al., 2012). Therefore, the next paragraph will introduce this method and results.

Item	Group I		Group II		Group III	
	Mean	St.d	Mean	St.d	Mean	St.d
N1: The idea is novel	2.56	1.06	2.76	.97	3.09	1.10
N2: The idea is unique	2.59	1.10	2.77	.96	3.04	1.10
N3: The idea is imaginative	2.74	1.10	2.90	1.04	3.21	1.10
N4: The idea is revolutionary	2.27	1.10	2.38	.81	3.65	.88
N5: The idea is radical	2.13	.85	2.26	.75	2.43	.75
N6: The idea is trendy	2.38	.90	2.75	.94	3.03	.94
E1: The idea is precise	2.80	1.11	2.96	.96	3.21	.94
E2: The idea is mature	2.58	.88	2.63	.81	3.09	.89
E3: The idea utility is clearly described	2.70	.93	2.77	.83	3.12	.86
F1: The idea is technically feasible	2.89	1.04	2.93	.83	3.18	.91
F2: The idea is economically feasible	2.76	1.00	2.79	.82	3.90	.88
F3: The idea fits the initiator image	2.94	1.12	2.96	.93	3.34	.92
R1: The idea has a clearly described customer benefit	2.30	.96	2.48	.86	2.97	.99
R2: The idea enables the initiator to realize an attractive market potential	2.45	.92	2.51	.80	2.97	1.01
R3: The idea enables the initiator to build up a strategic competitive advantage	2.43	.98	2.71	.87	3.03	.98

Table 47. Mean Values Differences per item among Groups

The separate multiple regressions illustrate which items significantly contribute to the overall idea quality per group (See Table 48/49/50). The same diagnostic procedures for multiple regression analysis are performed as those used for the core multiple regression model, as presented in the previous section. Also, items N1 and N2 failed the multicollinearity checks ($VF > 10$) in all groups and, subsequently, item N2 has been excluded from the multiple regression analyses too. After performing the regression analysis, three different models are demonstrated. Interestingly, the R^2 of the three models is rather similar with a relatively high percentage of explained variance (75% and higher). However, the three models distinctly differ on their item structure. Table 48 illustrates the multiple regression model for group I, which consists of four items ($R^2 = .80$, $p < .001$). The ideas submitted by this group are radical and technically feasible. Furthermore, they were able to indicate ideas that fit VTB's image and they explained the ideas in an

elaborated way. Here one can already detect differences between the previous analyses. On an individual level, group I scored low on radical ideas. Interestingly, in combination with several other items, this item supports their overall idea quality. In contrast, group II submitted ideas that were imaginative, trendy, mature and economically feasible ($R^2=.75, p<.001$). The multiple regression model of group III includes the highest number of items contributing to the overall idea quality ($R^2 =.75, p<.001$). Their ideas were trendy and clearly described. This group was also able to provide ideas that allow VTB to build strategic competitive advantages and create an attractive market potential. Hence, these post hoc analyses demonstrate how the three groups differ. In other words, the analyses illustrated that each group has different capabilities to contribute to an open innovation initiative in the field of tourism.

Multiple Regression Group I $R^2= .80 (p<.001)$ N=86		
Items	β Coefficient	P-value
N5: The idea is radical	.273	.000
F1: The idea is technically feasible	.265	.001
F3: The idea fits the initiator image	.301	.000
E3: The idea utility is clearly described	.269	.000

Table 48. Multiple Regression Group I

Multiple Regression Group II $R^2= .75 (p<.001)$ N=160		
Items	β Coefficient	P-value
N3: The idea is imaginative	.268	.000
N6: The idea is trendy	.214	.001
R1: The idea has a clearly described customer benefit	.169	.008
F2: The idea is economically feasible	.242	.000
E2: The idea is mature	.180	.006

Table 49. Multiple Regression Group II

Multiple Regression Group III $R^2=.75 (p<.001)$ N=103		
Items	β Coefficient	P-value
N3: The idea is imaginative	.171	.046
N6: The idea is trendy	.265	.002
R2: The idea enables the initiator to realize an attractive market potential	.265	.043
R3: The idea enables the initiator to build up strategic competitive advantage	.383	.004
E3: The idea utility is clearly described	.427	.000

Table 50. Multiple Regression Group III

4.4.4. Chi-Square Tests

Lastly, additional Chi-square analyses are performed to indicate which areas of interest (themes) received the highest number of ideas and by whom. First, the overall idea quality can be explained according to the theme under which the idea has been submitted ($p < .05$). The ideas receiving the highest idea quality value (score 5) were clustered in the themes of “Culture & Events” and “City Image & Green Areas”. Ideas with a high idea quality (score 4) were clustered in the themes of “Orientation & Information” and “Sightseeing”, whereas the ideas with the lowest idea quality (score 1) were also found in the themes of “Culture & Events” and “Sightseeing”.

Second, international participants submitted significantly more ideas related to themes such as “Accessibility & Mobility”, “Culture & Events” and “Gastronomy & Shopping” ($p < .001$). In contrast, the national participants submitted significantly more ideas to the categories of ‘City Image & Green Areas’ and “Sightseeing” ($p < .001$).

Third, the three age groups significantly differed in the number of ideas submitted to different themes ($p < .001$). For example, group I submitted significantly more ideas related to the theme of “Culture & Events”, group II to the category of “Accessibility & Mobility”, whereas group III contributed significantly more ideas to the theme of “Sightseeing” and “Orientation & Information”. All groups submitted a similar amount of ideas related to the theme of “Accommodation” and “Fairs & Events”.

Overall, these analyses indicate target groups’ future needs and wants for an enjoyable experience in the city of Vienna. The distinction between national and international participants and age groups reveals the different segmentation profiles. These insights can support DMOs in developing segment-based innovative products, services and overall experiences. Furthermore, these outcomes provide insights into the capabilities of the crowd to respond to the requested themes of the idea contest. The popular themes can reflect either a high need for innovative products in this area or people could easily respond to these themes and thus develop ideas. The next section will provide final remarks, recommendations for practitioners and future research opportunities.

5. Conclusion

5.1. Final Remarks

Users are known for their ‘fresh injections’ for firms’ innovation strategies (Magnussen et al., 2003). Chesbrough (2003) introduced the open innovation paradigm and stresses the importance of using external sources. The open innovation paradigm opens up various ways to include consumers in innovation strategies. ICT and social media help companies to easily facilitate initiatives under the umbrella of open innovation (Boudreau & Lakhani, 2013). However, in the field of tourism, the development of open innovation initiatives is only in an emerging state. Up till now there has hardly been any research that illustrates the effectiveness of open innovation projects in tourism. Therefore, this study aimed to analyze the effectiveness of an open innovation initiative organized by a DMO.

In order to analyze the effectiveness of an idea contest, two criteria have been established based on previous research; (i) the amount of ideas sent in and (ii) the quality of the ideas (Walter & Back, 2013; Blohm et al., 2011; Frey et al., 2011). With regard to the first criterion, the presented case study proved to be successful given the 818 registrations and 489 submitted ideas. These numbers indicate that VTB was able to reach a large and diverse crowd (international and various age groups). Therefore, the idea contest can be regarded as successful due to the amount of ideas and attention generated.

With regard to the second criterion, the quality of the ideas, VTB received a high number of ideas with average idea quality and a few outstanding ideas. Borst’s (2010) study shows that this is often the case in open innovation initiatives. According to Hutter et al. (2011), participants of large idea contests are aware of the small chance of winning something in the contest, which impacts their time and effort of providing high quality ideas. In this case, participants had the chance to win one main prize and twenty smaller prizes. Hence, this element could have possibly harmed the involvement of participants. Furthermore, Frey et al. (2011) outline the importance of providing participants with an understandable request, and obviously identified actionable outcomes to increase the quality of the submission. In this case, the pre-defined themes supported the users in developing innovative ideas.

Additionally, various authors argue that the design elements, like voting features, can help participants to deliver high quality ideas (Walter & Back, 2012; Füller et al., 2011). The voting and commenting features in the idea contest analyzed in this study did not significantly impact the judgement of the quality of the ideas. Hutter et al. (2011) state that the atmosphere in the community can explain

users' contributions and the success of an open innovation initiative. However, this study demonstrated no significant effect from peers' support on the overall idea quality of ideas submitted.

Moreover, Poetz and Schreier (2012) state if the knowledge is linked to users' experiences, it will be easier for participants to formulate their ideas. Therefore, Admaczyk et al. (2011) stress the fact that firms need to seriously consider whom to invite for which challenge. VTB invited all possible stakeholders to contribute to the idea contest aiming to develop new strategies for the city to develop into an enjoyable tourist destination. Their campaign, facilitated predominantly through social media, reached a large crowd. However, the study shows that the invited crowd was not able to approach ideas that were either economically feasible or had possible market potential. Various studies state that only specific users can help firms to develop innovative strategies (lead-users) (Lüthje, 2004; Magnussen et al., 2003; Oliveira & von Hippel, 2011). Lüthje (2004) refers to specific characteristics of users that help firms detect the newest trends needed to push innovation forward. In this study, age proves to be a factor that distinguishes users regarding their capabilities to contribute to the development of effective innovation strategies. In particular, the youngest group of participants appears to be able to think on a strategic level compared to the other two groups. Hence, this study shows that it can be beneficial to approach particular users when developing specific orientated ideas (i.e., market potential-driven ideas). In other words, the results indicate the importance of designing an idea contest that fits the crowd's capabilities.

Therefore, the study suggests that future initiatives need to consider design elements that either fit a large crowd, or adapt the contest to a specific crowd to increase users' contribution quality. In tourism this can be challenge since there is not one type of tourist and/or experience. However, as Blohm et al. (2011) state, there are other ways in which firms can design contests and create successful outcomes. Generally, firms need to understand the importance of integrating appropriate idea contest elements and their effect on users' contribution. VTB was able to organize an open innovation initiative and receive a high amount of ideas. The high number of ideas can be a challenge to filter and sort out (Blohm et al., 2011). Schulze et al. (2011) state that companies often overuse open innovation initiatives for marketing purpose. Thus, to overcome this, firms also need to consider the purpose and possible outcome of an open innovation initiative when designing one.

5.2. Theoretical Contributions

The theoretical implications for this study are manifold. First, the study integrated the theory of open innovation and creative assessment theory to analyze open innovation initiatives in the field of tourism. The use of these two theories was demonstrated to be appropriate in the context of tourism. However, it also revealed gaps where theory can be further refined or extended. For example, insights from the post hoc analysis illustrate that tourism research needs to develop new theories related to suitable open innovation initiatives for various target groups. There is a need to develop guidelines to approach the appropriate crowd, which might increase the success of an open innovation initiative in tourism.

The study shows how CAT can be an effective tool to measure and analyze users' contributions. Hence, measuring tourists' contributions in an idea contest is hereby possible. The study further indicates the creativity stemming from the crowd. Furthermore, the study demonstrates tourists' creativity and enthusiasm when responding to an open innovation call. Thus concepts such as tourists' engagement and contributions can further support theories aiming to understand the topic of open innovation in tourism. Further, this study provides insights into the role of community atmosphere and members. For example, this study illustrated no specific effect of the atmosphere in the community and moderators' roles on the users' contribution. Theories developing open innovation communities in tourism need to further explore the role of community, members and moderators.

Further theoretical contributions relate to the importance of designing an open innovation initiative. The study was able to identify the importance of specific design elements explaining users' contribution. In this case, pre-defined themes were shown to support users' contribution, given the significant higher levels of idea quality submitted to specific themes. Also the study provides new insights into segmentation opportunities deriving from open innovation initiatives (age and national and international target groups). In addition, the study shows the manifold opportunities destination management organizations have when implementing open innovation initiatives.

5.3. Managerial Implications

The findings of this study have important implications for tourism companies who are aiming at integrating the open innovation paradigm into their business models. First, the accessibility of social media creates various opportunities to manage the open innovation paradigm. Marketers can reach a

large crowd and effectively handle contributions and steer participants' involvement. However, as often seen, open innovation initiatives are often only used for branding-related activities and/or marketing practices (Sloane, 2011; Schulze et al., 2012). Marketers should decide for which reasons they will employ, for example, an idea contest. This study demonstrates the possibilities marketers have to optimize the outcome of an open innovation initiative and move away from the marketing approach. Furthermore, this study illustrates that through social media it is possible to reach a large crowd and receive a high number of registrations.

Second, the study implies the need to carefully analyze the target group of the idea contest based upon their capabilities and interest before designing the contest. The study illustrates how effective design elements can be used to increase users' submissions. As VTB steered users' submissions with three questions and pre-defined themes, the analysis illustrates a positive effect on the delivered idea quality. Thus, again, the design elements play a crucial role in receiving high quality ideas. Third, the study shows that destination management organizations have various opportunities to integrate the open innovation initiatives given the various possible products, services, and target groups. Hence, marketers can also decide to manage open innovation initiatives with regard to specific elements of the tourists' experience. This would also prevent marketers from receiving "too" many ideas when they do not have the ability to filter them (Poetz & Schreier, 2012). The study overall demonstrates that idea contests can be very effective in the field of tourism if managed for the right crowd.

5.4. Future Research and Limitations

Despite the insights, the study faces some limitations. First, this study uses the CAT scale (Amabile, 1996) to measure the level of idea quality. However, one can also use other scales and compare the scales as well as to provide recommendations regarding their reliability to measure idea quality (i.e., Creative Solution Diagnosis Scale (CSDS) from Cropley & Cropley (2005)). This study looked purely into the idea quality and participants' behavior. As Hutter et al. (2011) state, a network analysis could also enrich studies of this kind, which would give an understanding of how participants are linked with each other and how this affects the outcome of an idea contest.

Furthermore, this study lacks an understanding of participants' relationship with the destination and their motivations to join the idea contest as well as the outcome expectations of the idea contest. This would help marketers to invite a selected crowd and use specific contest elements This also leads to

another interesting aspect for future research; participants' reward expectations and their impact on the quantity and quality of ideas delivered in the field of tourism. Various factors like encouragement, challenge, adequate pressure, support, group diversity and cultural norms impact users' creativity (Amabile et al., 1996; Jawecki et al., 2011). Jawecki et al. (2011) refer to encouragement as a determining factor for stimulating creativity. The analysis did not demonstrate a significant effect of other users' comments on the overall idea quality. However, future research thus needs a more in-depth explanation of how factors like participants' diversity and community encouragement can enhance users' output.

Further, given the quantitative setting of this study, a qualitative approach is needed to analyze the feasibility of the ideas for purposes such as innovative branding strategies. The qualitative approach can also reveal underlying issues (i.e., emotional needs or image components) that can subsequently help DMO's to design new experiences. Lastly, this study only analyzed the first phase of VTB's open innovation initiative. In the second phase, selected stakeholders (i.e., policy makers) were invited to start implementing a number of selected ideas from phase I. Therefore, analysis of the second phase can provide insights into the feasibility of selected ideas. Beyond that, it can also provide insights into new collaborations between stakeholders.

4. Overall Conclusion

4.1. Final Remarks

The introduction of ICT initiated in major shifts in media consumption, consumer behavior and marketing practices (Labrecque et al., 2013). First, consumers started to direct their attention from traditional media towards interactive media. This gave consumers the possibility to use traditional media entertainment alongside interactive media (Daugherty et al., 2008). Second, consumers started to use the interactive media as a way to express themselves, engage in networks and create and share their knowledge, resulting in user-driven innovative communities (Kozinets et al., 2008). As a result, consumers started to obtain power related to marketing and branding practices (Seraj, 2012). In fact, their online creations now have more impact than marketers' marketing efforts on consumers' choices (Labrecque et al., 2013). Thirdly, marketers are confronted with integrating consumers' (online) creativity into their offerings. Due to continuously growing markets and fierce competition, marketers are forced to innovate their products and/or services based on the needs of their consumers. Different studies show how consumers' creativity can play a significant role in the front-end innovation phase, where consumers' competence and involvement can greatly contribute to innovation projects (Kristensson et al., 2002; Füller et al., 2008). The transparency of UGC and the ease of use of social media enable practitioners to integrate consumers effectively into their innovation strategies. Several studies show how consumers' interaction through social media fosters companies' abilities to recognize, understand and analyze information as useful for innovation strategies (Hjalager & Nordin, 2011; Munar, 2012; Tussyadiah & Zach, 2013; Shaw & Williams, 2009).

However, in the field of tourism, despite the active role tourists play in co-creating their experiences, marketers and practitioners still take the lead when designing experiences (Tan et al., 2013). Tourists' involvement and competence are often not recognized and/or optimally used by practitioners. Thus, an imperative task for tourism practitioners is the identification of knowledgeable and experienced consumers who will help them to stimulate product/service development (Hjalager & Nordin, 2011). Consequently, the aim of this dissertation was to understand how tourism marketers can effectively use social media spaces to understand and use consumers' creativity to develop innovation strategies. Through three research perspectives, the dissertation illustrated the various opportunities tourism practitioners have to retain their competitive advantages.

Various authors refer to three elements that are necessary for companies to develop new and/or modified products to enhance their profitability (Moscardo, 2008; Hauser, Tellis, & Griffin, 2006). The first element requires a new way of thinking and acting. In particular, the dissertation illustrated how websites, such as TripAdvisor, prove to be structured user-driven recommendation

websites that offer a wealth of valuable knowledge for companies. Through innovative research methods, marketers are able to detect and analyze users' recommendations as input for innovation. In fact, the richness of UGC offers DMOs the possibility to innovate products/services representing the tourist experience. The first study also indicates the importance of analyzing these reviews with a different focus and thus, moves away from a tangible-based focus towards an emotional-based focus. This dissertation illustrated the tourists' emotional links to a destination hidden in reviews. Thus, if DMOs also strive for innovative branding strategies, UGC can be perceived as a quality asset to do so.

The second element refers to creating environments that support creativity (Hauser et al., 2006). This dissertation demonstrated users' active involvement with mobile computing platforms while traveling and its effects on online creativity. The dissertation illustrated the high number of innovative members active in travel-related communities. The members have lead-user characteristics supporting them to create high levels of creativity exposed in the community. Furthermore, a significant effect of platform conditions on users' output and platform behavior is confirmed. Users' interaction and output behavior are influenced by the moment of interaction (i.e., while traveling, on the go). Thus, designing an effective working environment helps marketers to steer consumers' innovative platform involvement as well as their travel behavior when interacting with the platform. Interestingly, this study reveals another possibility for marketers. Füller et al. (2008) state that consumers' creativity as well as involvement and innovativeness determine the willingness for consumers to engage in open innovation projects. Hence, this study illustrates that these consumers are also present in mobile computing travel platforms. Thus, this dissertation was also able to visualize the potential of inviting tourists who are active in mobile computing platforms to future open innovation initiatives in tourism.

The third element implies problem-solving skills (Hauser, Tellis & Griffin, 2006). In particular, this dissertation shows how social media spaces can serve as an effective meeting place for marketers and their consumers to collaboratively solve problems. Furthermore, social media is an effective platform to facilitate open innovation strategies. Open innovation initiatives such as idea contests, as analyzed in this dissertation, are shown to influence a DMO's innovating marketing and product development strategies in a variety of ways. Furthermore, idea contests attract the attention of many different stakeholders, which resulted in a large number of registered users. Besides the wealth of ideas offered, important design lessons were indicated regarding the organization of future open innovation initiatives. For example, inviting a specific crowd can boost the quality of the ideas (i.e., specific age group). Additionally, the thematic division of ideas provided useful insights into segmentation strategies as well as the design of segment-based experiences.

Overall, it can be stated that the dissertation was able to demonstrate how the effective usage of social media helps marketers to respond to three basic elements necessary to facilitate innovation to ensure sustainable growth.

4.2. Theoretical Contributions

As for theoretical contributions, the dissertation applies interdisciplinary theories to indicate the effective usage of social media for practitioners. First, the dissertation integrates theories from the field of marketing, specifically with regard to branding and consumers' emotional experiences. The application of these concepts in a social media environment adds the generalizability of marketing concepts in the field of tourism. This dissertation extends these theories by illustrating the context as dependent factor experiencing specific emotions (i.e., restaurants accommodations and sights). Second, the dissertation draws upon theories related to creativity, lead-users and brand community attitudes to understand the concept of user-driven innovations in the field of tourism. By applying these concepts in a real life setting (surveying members of a mobile computing travel platform), the theories are adapted to a travel context and extended. The complexity of innate innovativeness in an online world is illustrated, and provides new insights for tourism research related to technology. Subsequently, the study demonstrates the usefulness of these concepts for explaining user-driven innovative practices in travel-related communities. The theory of user-driven innovation is also by this study expended, for example new links between variables such as supporting platform conditions and creative self-efficacy are illustrated. The dissertation, furthermore, integrates theories from open innovation and assessment of creativity in product development. These theories supports this research by providing insights into open innovation initiatives in the field of tourism. Open innovation in tourism shows to be heavily depending on users (tourists) characteristics rather than their involvement. In addition, the application of these theories to a real case (Austrian DMO) reveals the usefulness and generalizability in other fields such as tourism. The specific design elements and significant influences of users' characteristics support the development of new theories related to open innovation in tourism. Lastly, through the use of various methods, ranging from data mining to survey-based and quantitative coding, the dissertation is furthermore able to effectively analyze, integrate and modify various theories adapt and extend from other fields. In addition, the research approaches illustrates the possibility to create opportunities to extract and transform UGC into strategic innovative assets. Overall, the three studies supports the development of new theories explaining tourists' usage of social media and spill-over effects for the tourism industry to innovate their offerings.

4.3. Managerial Implications

As for the managerial implications, this dissertation demonstrated how social media can offer a plethora of possibilities to i) receive valuable information about consumers and their experiences, ii) directly steer consumers' experiences through effective mobile computing platform design, and iii) receive a high number of quality ideas as effective input for innovative strategies for product development and marketing. This dissertation was able to provide an understanding of the usability of social media spaces for marketers. Furthermore, the dissertation provided a solid understanding of the benefits of innovating marketers' existing products and/or services based on user-driven recommendations. Marketers have to understand that the internet is about consumer centricity and the creation of an effective connection between the physical and digital worlds. Additionally, practitioners have to optimize the power that the internet creates, namely the power of connecting minds. As shown in this dissertation, open innovation platforms are one way to successfully achieve that.

The dissertation demonstrated how the dynamics of the internet force marketers to exploit their resources in order to achieve stable growth. Given the fast evolving nature of consumers' needs and wants, companies are required to quickly adapt their strategies. On top of that, consumers work independently and ask for advice from like-minded peers. The integration of social media replaces various operational flows and interactions with external stakeholders. Thus, marketers need to start dealing with social media as a crucial element in their marketing and innovation strategies. Moreover, an innovative mindset can support marketers in achieving their goals (Moscardo, 2008; Grisseemann et al., 2013). Likewise, besides using consumers as external stakeholders to push innovation forward, companies are advised to use innovative research methods to retrieve information available in the online world as well as to develop new techniques to steer tourists' experiences. Marketers have to structurally implement user-driven knowledge into their business processes. Given the wealth of knowledge available in social media, new approaches are also required to analyze the large amount of consumer-driven data in a continuous manner. Big data techniques become increasingly important and open up new avenues for future research. The following section will provide more detailed suggestions. Furthermore, this dissertation did not specifically analyze the types of innovation triggered and, hence, future research should analyze spill-over effects from integrating social media into innovation strategies.

4.4. Future Research

The internet and the fast growing markets of ICT tools offer a wealth of opportunities to innovate, especially in the field of tourism. Tourism research needs to start investigating the effects of customer integration for innovation purposes. For example, open innovation, a rather new topic in the field of tourism, clearly asks consumers to contribute. On the one hand, research lacks an understanding of consumers' attitudes, expectations and the outcomes of these collaborations. On the other hand, future research needs to integrate metrics that can calculate the impacts and outcomes (i.e., revenues, number of visits generated) due to innovations triggered by the integration of social media absorptive capacities. Hereby, the value of firms' absorptive capacity and spillover effects to the business model can be measured. This also means that research is required to work on an interdisciplinary level in order to reveal the effects on business models.

With regards to research methods, future research is recommended to apply case studies that can help to provide an in-depth analysis of the different layers of innovation triggered by new forms of ICT (Schumpeter five types of innovation). This also implies that longitudinal studies are highly recommended to trace the developments within a company and to measure the long-term effects on a business model.

Furthermore, research needs to determine the concept of user-driven innovation triggered by ICT and its effect on the experience network. The concept has only been recently integrated into the tourism context. Solid theoretical grounds and empirical outcomes are limited. This concept can support the understanding of tourists' integrated usage of ICT and its effects on the tourist experience. Preferably, theories from other fields, such as innovation management and sociology, are needed to support the exploration of this topic. Lastly, as mentioned before, another challenge is in front of us - big data. The ability to deal with big data and transform it into strategic knowledge for innovation needs to be on the tourism research agenda. Hence, also in this case, interdisciplinary work is required. Researchers are challenged to use new methods to analyze and develop new theories.

Overall, the development of ICT has drastically changed and is still changing the tourism landscape. This also means that the research agenda has to be adapted accordingly. The tourist experience cannot, and should not, be analyzed only in a funnel. In order to move forward and expand our horizons, research needs to continuously adapt and integrate theories from other fields to develop accurate theories in the field of tourism. Thus, research is also required to have an innovative approach dealing with this fast changing environment.

4.5. Concluding Remarks

As stated before, there is a need to continue developing theories explaining the integrated use of ICT in tourism research. This dissertation aimed to contribute to this continuous development. However, as mentioned before, there is a set of limitations and avenues for future research. As Popper (2005, p.28) states, 'the game of science is without end'. In particular, the field of tourism is slowly becoming dominated by ICT, which forces researchers to continuously integrate and merge theories from other fields. The emergence of new theories depends on researchers' attitude towards science. This dissertation aimed to share Popper's (2005) argument of the need to constantly challenge existing beliefs. Despite the fact that findings that challenge existing beliefs are perceived as unpopular or even controversial, research is able to grow. Popper (2005) states that if researchers challenge existing theories, theories can be falsified and, by doing so, new, hidden knowledge structures can be discovered. In fact, he states that theories must be falsified and is meant to be replaced by new insights and thoughts. Popper (2005) refers to the degree of 'corroboration' ('Bewährung'). Meaning that theories can be tested on how they are able to prove its fitness to survive by standing up to the test (Popper, 2005, p.248). It is, thus, our task as researchers to live-up to these standards and also challenge our role in science.

This also leads to the question of whether this dissertation was able contribute its importance to science. Principles such as challenging beliefs, surprising results, usefulness and reproducibility can be used to reflect on this. This dissertation evaluated concepts in a context with fast evolving practices related to ICT. Therefore, this research project did not directly challenge general practices, but the concepts used to operationalize these practices are critically analyzed. The dissertation, for example, critically analyzed the systems of variables explaining users' online creativity. Hereby, the dissertation aimed to contribute the evolving field of ICT-enhanced tourist experiences as well as support previous studies in the field. Furthermore, the dissertation tackled some interesting surprises. First, in particular, the second study provided some surprising results and hereby challenges engagement-theory and open innovation. On top of that, the dissertation visualized the importance of methods as justifying tools for challenging theories. In particular, the issue of causality in the second study was visualized. In line with the discussion of many philosophers (i.e., Hume, Kant), one has to be very careful making statements about cause and effect. In fact, the dissertation highlights the complex and wider systems of variables that researchers have to be aware of when aiming to claim for causality. The dissertation aimed to select the most appropriate tools and research design to challenge the position of the selected variables, and hereby prove, to some extent, the hypothesized relationships.

Moreover, the dissertation aimed to provide transparency in the research process, which allows the reader to replicate the studies. The managerial and theoretical contribution per study as well as the overall dissertation demonstrates the usability for researchers, marketers and students to materialize. Given the emergence of the topic of this dissertation, the usefulness of the contributions cannot be directly measured. In fact, it might only be valuable at a later stage and/or have indirect effects on marketers' practices performances.

The author furthermore acknowledges the limitations of this research in hand. However, the limitations have been deliberately discussed and future studies have the chance to continue to extend and challenge theories suggested in this dissertation. Overall, tourism research has the difficult challenge of integrating new methods, dealing with a large amount of data, and encountering concepts from other fields that may be useful for tourism, which leaves us with an exciting future research agenda.

REFERENCES

References Introduction PhD Dissertation Framework

- Aldebert, B., Dang, R., & Longhi, C. (2011). Innovation in the Tourism Industry: The Case of Tourism@. *Tourism Management, 32*(5), 1204-1213.
- Benkler, Y. (2006). *The Wealth of Networks: How Social Production Transforms Markets and Freedom*. Yale University Press.
- Berthon, P. R., Pitt, L. F., McCarthy, I., & Kates, S.M. (2007). When Customers Get Clever: Managerial Approaches to Dealing With Creative Consumers. *Business Horizons, 50*(1), 39-47.
- Berthon, P. R., Pitt, L. F., Plangger, K., & Shapiro, D. (2012). Marketing Meets Web 2.0, Social Media and Creative Consumers: Implications for International Marketing Strategy. *Business Horizons, 55*(3), 261-271.
- Bruns, A. (2007). Producers, Generation C, and Their Effects on The Democratic Process. In *Proceeding Media In Transition 5*, MIT, Boston, USA.
- Chae, B. K. (2012). An Evolutionary Framework For Service Innovation: Insights of Complexity Theory For Service Science. *International Journal of Production Economics, 135*(2), 813-822.
- Chesbrough, H. W. (2003). *Open Innovation: The New Imperative for Creating and Profiting from Technology*. Harvard Business Press. Boston.
- Cova, B., & Dallı, D. (2008). Working Consumers: The Next Step in Marketing Theory? *Marketing Theory, 9*(3), 315-339.
- Cova, B., Dallı, D., & Zwick, D. (2011). Critical Perspectives on Consumers' Role as 'Producers': Broadening The Debate on Value Co-Creation in Marketing Processes. *Marketing Theory, 11*(3), 231-241.
- Denegri-Knott, J., Zwick, D., & Schroeder, J. E. (2006). Mapping Consumer Power: An Integrative Framework for Marketing and Consumer Research. *European Journal of Marketing, 40*(9/10), 950-971.
- Edvardsson, B., & Tronvoll, B. (2013). A New Conceptualization of Service Innovation Grounded in SD-Logic and Service Systems. *International Journal of Quality and Service Sciences, 5*(1), 19-31.
- Fisher, D., & Smith, S. (2001). Cocreation Is Chaotic: What It Means for Marketing When No One Has Control. *Marketing Theory, 11*(3), 325-350.
- Gebauer, H., Worch, H., & Truffer, B. (2012). Absorptive Capacity, Learning Processes and Combinative Capabilities as Determinants of Strategic Innovation. *European Management Journal, 30*(1), 57-73.
- Gensler, S., Völckner, F., Liu-Thompkins, Y., & Wiertz, C. (2013). Managing Brands in the Social Media Environment. *Journal of Interactive Marketing, 27*(4), 242-256.
- Gustafsson, A., Kristensson, P., & Witell, L. (2012). Customer Co-Creation in Service Innovation: A Matter of Communication. *Journal of Service Management, 23*(3), 311-327.
- Hanna, R., Rohm, A., & Crittenden, V. L. (2011). We're All Connected: The Power of The Social Media Ecosystem. *Business Horizons, 54*(3), 265-273.
- Hauser, J., Tellis, G.J., & Griffin, A. (2006). Research on Innovation: A Review and Agenda For Marketing Science. *Marketing Science, 25*(6), 687-717.
- Hennig-Thurau, T., Malhotra, E. C., Friege, C., Gensler, S., Lobschat, L., Rangaswamy, A., & Skiera, B. (2010). The Impact of New Media on Customer Relationships. *Journal of Service Research, 13*(3), 311-330.
- Hjalager, A. M. (2010). A Review of Innovation Research in Tourism. *Tourism Management, 31*(1), 1-12.
- Hjalager, A. M., & Nordin, S. (2011). User-driven Innovation in Tourism—A Review of Methodologies. *Journal of Quality Assurance in Hospitality and Tourism, 12*(4), 289-315.
- Kaplan, A. M., & Haenlein, M. (2011). Users of The World, Unite! The Challenges and Opportunities of Social Media. *Business Horizons, 53*(1), 59-68.
- Kietzmann, J. H., Hermkens, K., McCarthy, I. P., & Silvestre, B. S. (2011). Social Media? Get Serious! Understanding the Functional Building Blocks of Social Media. *Business Horizons, 54*(3), 241-251.
- Kozinets, R. V., & Hemetsberger, A. (2008). Creative Consumers in Online Consumer Networks: Exploration of Theoretical Implications. *European Advances in Consumer Research, 7*, 364-365.
- Kozinets, R. V., Hemetsberger, A., & Schau, H. J. (2008). The Wisdom of Consumer Crowds Collective Innovation in the Age of Networked Marketing. *Journal of Macromarketing, 28*(4), 339-354.
- Labrecque, L. I., von Esche, J., Mathwick, C., Novak, T. P., & Hofacker, C. F. (2013). Consumer Power: Evolution in the Digital Age. *Journal of Interactive Marketing, 27*(4), 257-269.
- Liu-Thompkins, Y., & Rogerson, M. (2012). Rising To Stardom: An Empirical Investigation of The Diffusion of User-Generated Content. *Journal of Interactive Marketing, 26*(2), 71-82.
- Mollick, E. (2005). Tapping Into The Underground. *MIT Sloan Management Review, 46*(4), 21-24.
- Moscardo, G. (2008). Sustainable Tourism Innovation: Challenging Basic Assumptions. *Tourism and Hospitality Research, 8*(1), 4-13.
- Munar, A. M. (2010). Tourist-Created Content; Rethinking Destination Branding. *International Journal of Culture, Tourism and Hospitality Research, 5*(3), 291-305.
- Pitt, L. F., & Berthon, P. (2011). Just When You Thought it Was Safe To Go Back Into The Web: Marketing Meets Web 2.0, Social Media, and Creative Consumers. *Business Horizons, 54*(3), 181-183.
- Richardson, I., Third, A., & MacColl, I. (2007). Moblogging And Belonging: New Mobile Phone Practices and Young People's Sense of Social Inclusion. In *Proceedings DIMEA207 Second International Conference on Digital Interactive Media in Entertainment and Arts*. Perth, Australia: Murdoch University.
- Schumpeter, J. (1934). *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest and the Business*. Harvard University Press, Cambridge, MA.

- Seraj, M. (2012). We Create, We Connect, We Respect, Therefore We Are: Intellectual, Social, And Cultural Value in Online Communities. *Journal of Interactive Marketing, 26*(4), 209-222.
- Shaw, G., & Williams, A. (2009). Knowledge Transfer and Management in Tourism Organisations: An Emerging Research Agenda. *Tourism Management, 30*(3), 325-336.
- Sloane, P. (2011a). *A Guide To Open Innovation and Crowdsourcing: Advice From Leading Experts*. Kogan Page.
- Sloane, P. (2011b). The Brave New World of Open Innovation. *Strategic Direction, 27*(5), 3-4.
- Sundbo, J., Sørensen, F., & Fuglsang, L. (2010). *Innovation in the Experience Sector*. Center for Service Studies, Roskilde University Denmark.
- Tiwana, A. (2003). Affinity to Infinity in Peer-to-Peer Knowledge Platforms. *Communications of the ACM, 46*(5), 76-80.
- Tussyadiah, I. (2013). When Cell Phones Become Travel Buddies: Social Attribution to Mobile Phones in Travel. In L. Cantoni & Z. Xiang (Eds.) *Information and Communication Technologies in Tourism 2013*, Springer Berlin Heidelberg, 82-93.
- Tussyadiah, I. & Fesenmaier, D. R. (2008). Marketing Places Through First-Person Stories—an Analysis of Pennsylvania Roadtripper Blog. *Journal of Travel and Tourism Marketing, 25*(3-4), 299-311.
- Tussyadiah, I. & Zach, F. (2012). The Role of Geo-based Technology in Place Experiences. *Annals of Tourism Research, 39*(2), 780-800.
- Tussyadiah, I., & Zach, F. (2013). Social Media Strategy and Capacity For Consumer Co-Creation among Destination Marketing Organizations. In L. Cantoni and Z. Xiang (Eds.), *Information and Communication Technologies in Tourism 2013*, Springer Berlin Heidelberg, 242-253.
- Van den Bulte, C., & Wuyts, S. (2007). *Social Networks and Marketing*. Marketing Science Institute, Cambridge, MA.
- Van Heck, E., & Vervest, P. (2007). Smart Business Networks: How the Network Wins. *Communications of the ACM, 50*(6), 29-37.
- Von Hippel, E. (2005). Democratizing Innovation: The Evolving Phenomenon of User Innovation. *Journal Für Betriebswirtschaft, 55*(1), 63-78.
- Von Hippel, E. A., Ogawa, S., & De Jong, J. (2011). The Age of The Consumer-Innovator. *MIT Sloan Management Review, 53* (1), 1-16.
- Walls, A., Okumus, F., Wang, Y., & Kwun, D. J. (N.D.). Understanding The Consumer Experience: An Exploratory Study of Luxury Hotels. *Journal of Hospitality Marketing and Management, 20*(2), 166-197.
- Wang, D., Park, S., & Fesenmaier, D. R. (2012). The Role of Smartphones in Mediating the Touristic Experience. *Journal of Travel Research, 51*(4), 371-387.
- Yu, S. H. (2013). Social Capital, Absorptive Capability, and Firm Innovation. *Technological Forecasting and Social Change, 80*(7), 1261-1270.

References Study 1

- Aaker, A. (1991). *Managing Brand Equity*. New York: Fere Press.
- Aaker, A. (1996). Measuring Brand Equity Across Products and Markets. *California Management Review*, 38(3), 102-120.
- Aaker, J. L. (1997). Dimensions of Brand Personality. *Journal of Marketing Research*, 347-356.
- Ashworth, G., & Kavaratzis, M. (2010). *Towards Effective Brand Place Management; Branding European Cities and Regions*. Edward Elgar Publishing Limited, Cheltenham.
- Audia, P. G., & Goncalo, J. A. (2007). Past Success And Creativity Over Time: A Study Of Inventors In The Hard Disk Drive Industry. *Management Science*, 53(1), 1-15.
- Baloglu, S., & Brinberg, D. (1997). Affective Images of Tourism Destinations. *Journal of Travel Research*, 35(4), 11-15.
- Baloglu, S., & McCleary, K. W. (1999). A Model Of Destination Image Formation. *Annals of Tourism Research*, 26(4), 868-897.
- Beerli, A., & Martin, J. D. (2004). Factors Influencing Destination Image. *Annals of Tourism Research*, 31(3), 657-681.
- Berry, L. L. (1995). Relationship Marketing of Services—Growing Interest, Emerging Perspectives. *Journal of the Academy of Marketing Science*, 23(4), 236-245.
- Bigne, A., Sánchez García, I., & Blas, S. (2001). The Functional-Psychological Continuum in the Cognitive Image of a Destination: A Confirmatory Analysis. *Tourism Management*, 30(5), 715-723.
- Blain, C., Levy, S. E., & Ritchie, N. (2005). Destination Branding; Insights and Practices From Destination Management Organizations. *Journal of Travel Research*, 43(4), 328-338.
- Boulin, J. L. (2008). Institutional Tourism Does Not Elude Web 2.0. *Tourisme & Loisirs*, 265, 30-34.
- Cai, L. A. (2002). Cooperative Branding For Rural Destinations. *Annals of Tourism Research*, 29(3), 720-742.
- Çakmak, E., & Isaac, R. K. (2012). What Destination Marketers Can Learn From Their Visitors' Blogs: An Image Analysis of Bethlehem, Palestine. *Journal of Destination Marketing & Management*, 1(1), 124-133.
- Caldwell, N., & Freire, J. R. (2004). The Difference Between Branding a Country, A Region And A City; Applying The Brand Box Model. *Brand Management*, 12(1), 50-61.
- Camprubí, R., Guia, J., & Comas, J. (2013). The New Role of Tourists in Destination Image Formation. *Current Issues In Tourism*, 16(21), 203-209.
- Caprara, G. V., Barbaranelli, C., & Guido, G. (2001). Brand Personality: How To Make The Metaphor Fit? *Journal of Economic Psychology*, 22(3), 377-395.
- Chen, C., & Phou, S. (2013). A Closer Look at Destination; Image Personality, Relationship and Loyalty. *Tourism Management*, 36, 269-278.
- Chen, Y., Tsai, F. S., & Chan, K. L. (2008). Machine Learning Techniques for Business Blog Search and Mining. *Expert Systems With Applications*, 35(3), 581-590.
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, 128-152.
- Dsigngo (2013). Destination Image and Brand Identity. Retrieved from <http://dsigngo.com/> on 4th of May 2013.
- De Moya, M., & Jain, R. (2013). When Tourists Are Your "Friends": Exploring the Brand Personality of Mexico and Brazil on Facebook. *Public Relations Review*, 39(1), 23-29.
- Dickinger, A., & Lalicic, L. (2013). *How Emotional Do We Get? A Closer Look into the Trip Advisor Dialogue*. In Z. Xiang and Tussyadiah, I. (Eds). *Information and Communication Technologies in Tourism 2014*. Springer International Publishing, 239-252.
- Dwyer, L., Forsyth, P., & Spurr, R. (2004). Evaluating Tourism's Economic Effects: New and Old Approaches. *Tourism Management*, 25(3), 307-317.
- Echtner, C. M., & Ritchie, J. B. (1993). The Measurement of Destination Image: An Empirical Assessment. *Journal of Travel Research*, 31(4), 3-13.
- Ekinci, Y. (2003). From Destination Image to Destination Branding: An Emerging Area of Research. *E-Review of Tourism Research*, 1(2), 21-24.
- Ekinci, Y., & Hosany, S. (2006). Destination Personality: An Application of Brand Personality To Tourism Destinations. *Journal of Travel Research*, 45(2), 127-139.
- Ekinci, Y., Sirakaya-Turk, E., & Baloglu, S. (2007). Host Image and Destination Personality. *Tourism Analysis*, 1(2), 433-446.
- Esch, F. R., Langner, T., Schmitt, B. H., & Geus, P. (2006). Are Brands Forever? How Brand Knowledge And Relationships Affect Current And Future Purchases. 15(2), 98-105. *Journal of Product & Brand Management*, 15(2), 98-105.
- Ferns, B. H., & Walls, A. (2012). Enduring Travel Involvement, Destination Brand Equity, and Travelers' Visit Intentions: A Structural Model Analysis. *Journal of Destination Marketing & Management*, 1(1), 27-35.
- Garcia, J. A., Gomez, M., & Molina, A. (2012). A Destination-Branding Model; An Empirical Analysis Based on Stakeholders. *Tourism Management*, 33(3), 646-661.
- Gebauer, H., Worch, H., & Truffer, B. (2012). Absorptive Capacity, Learning Processes and Combinative Capabilities as Determinants of Strategic Innovation. *European Management Journal*, 30(1), 57-73.
- Geuens, M., Weijters, B., & De Wulf, K. (2009). A New Measure of Brand Personality. *International Journal of Research In Marketing*, 26(2), 97-107.
- Grissmann, U., Plank, A., & Brunner-Sperdin, A. (2013). Enhancing Business Performance of Hotels: The Role of Innovation and Customer Orientation. *International Journal of Hospitality Management*, 33, 347-356.
- Gunn, C. (1972). *Vacationscape*. Austin, TX: Bureau of Business Research, University of Texas.
- Han, H., & Jeong, C. (2013). Multi-Dimensions of Patrons' Emotional Experiences in Upscale Restaurants and Their Role in Loyalty Formation; Emotion Scale Improvement. *International Journal of Hospitality Management* 32(2), 59-70.

- Hankinson, G. (2010). Place Branding Research: A Cross-Disciplinary Agenda and the Views of Practitioners. *Place Branding and Public Diplomacy*, 6(4), 300-315.
- Hanna, S., & Rowley, J. (2008). An Analysis of Terminology Use in Place Branding. *Place Branding and Public Diplomacy*, 4(1), 61-75.
- Hayes, J. B. (1999). *Antecedents and Consequences of Brand Personality*. Doctoral Dissertation., Mississippi State University., College of Business and Industry.
- He, B., Macdonald, C., He, J., & Ounis, I. (2008). An Effective Statistical Approach To Blog Post Opinion Retrieval. In *Proceedings of the 17th ACM Conference on Information and Knowledge Management*, 1063-1072.
- Hernández, B., Martín, A. M., Ruiz, C., & del Carmen Hidalgo, M. (2010). The Role of Place Identity and Place Attachment in Breaking Environmental Protection Laws. *Journal of Environmental Psychology*, 30(3), 281-288.
- Hjalager, A. M., & Nordin, S. (2011). User-Driven Innovation In Tourism—A Review Of Methodologies. *Journal of Quality Assurance in Hospitality & Tourism*, 12(4), 289-315.
- Hosany, S., Ekinci, Y., & Uysal, M. (2006). Destination Image And Destination Personality; An Application of Branding Theories To Tourism Places. *Journal of Business Research*, 59(5), 638-642.
- Hosany, S., Prayag, G., Deesilatham, S., Causevic, S. & Odeh, K. (2014). Measuring Tourists' Emotional Experiences: Further Validation of Destination Emotion Scale. *Journal of Travel Research*, 59(5), 483-495.
- Hou, J. S., Lin, C. H., & Morais, D. B. (2005). Antecedents of Attachment to a Cultural Tourism Destination: The Case of Hakka and Non-Hakka Taiwanese Visitors To Pei-Pu, Taiwan. *Journal of Travel Research*, 44(2), 221-233.
- Hsu, C., & Cai, L. A. (2009). Brand Knowledge, Trust and Loyalty-A Conceptual Model Of Destination Branding. In *Proceedings of the International Chrie Conference-Refereed Track*, 12-16.
- Hultman, M., Skarmeas, D., Oghazi, P., & Beheshti, H. M. (2015). Achieving Tourist Loyalty Through Destination Personality, Satisfaction, and Identification. *Journal of Business Research*. doi:10.1016/j.jbusres.2015.06.002
- Hung, J. L., & Zhang, K. (2008). Revealing Online Learning Behaviors and Activity Patterns and Making Predictions With Data Mining Techniques in Online Teaching. *MERLOT Journal of Online Learning and Teaching*, 4(4), 426-436.
- Jalilvand, M., Samiei, N., Dini, B., & Manzari, P. (2012). Examining The Structural Relationships of Electronic Word of Mouth, Destination Image, Tourist Attitude Toward Destination and Travel Intention; An Integrated Approach, *Journal of Destination Marketing and Management*, 1(1), 134-143.
- James, W. (1884). II-What is an Emotion? *Mind*, 34, 188-205.
- Jensen, Ø., & Prebensen, N. (2015). Innovation and Value Creation in Experience-based Tourism. *Scandinavian Journal of Hospitality and Tourism*, 15(1), 1-8.
- Kaplan, A. M., & Haenlein, M. (2010). Users of The World, Unite! The Challenges and Opportunities of Social Media. *Business Horizons*, 53(1), 59-68.
- Keller, K. (1993). Conceptualizing, Measuring, and Managing Customer-Brand Equity. *Journal of Marketing*, 57(1), 1-22.
- Keller, K. L. (2003). Understanding Brands, Branding and Brand Equity. *Interactive Marketing*, 5(1), 7-20.
- Keller, K. L. (2009). Building Strong Brands in A Modern Marketing Communications Environment. *Journal of Marketing Communications*, 15(2-3), 139-155.
- Knox, S., & Bickerton, D. (2003). The Six Conventions of Corporate Branding. *European Journal of Marketing*, 37(7/8), 998-1016.
- Költringer, C. (2012). *Evaluating Destination Online Representation Measurement: Leveraging Online Media for Market Research*. Phd Disertation, Vienna University of Economics and Business, Vienna.
- Költringer, C., & Dickinger, A. (2015). Analyzing Destination Branding And Image From Online Sources: A Web Content Mining Approach. *Journal of Business Research*, 68 (9), 1836-1843.
- Kozak, M., & Tasci, A. D. (2006). Intentions and Consequences Of Tourist Complaints. *Tourism Analysis*, 11(4), 231-239.
- Krešić, D., & Prebežac, D. (2011). Index Of Destination Attractiveness As A Tool for Destination Attractiveness Assessment. *Turizam: Znanstveno-Stručni Časopis*, 59(4), 497-517.
- Labrecque, L. I., vor dem Esche, J., Mathwick, C., Novak, T. P., & Hofacker, C. F. (2013). Consumer Power: Evolution in the Digital Age. *Journal of Interactive Marketing*, 27(4), 257-269.
- Lazarus, R. S. (1991). Cognition and Motivation in Emotion. *American Psychologist*, 46(4), 352-367.
- Laros, F. L. M., & Steenkamp, J.-B., E.M. (2005). Emotions in Consumer Behaviour: A Hierarchical Approach. *Journal of Business Research*, 58(10), 1437-1445.
- Law, R., Qj, S., & Buhalis, D. (2010). Progress in Tourism Management; A Review of Website Evaluation In Tourism Research. *Tourism Management*, 31(3), 297-313.
- Lee, C., & Allen, L. (1999). Understanding Individual's Attachment To Selected Destinations; An Application of Destination Attachment. *Tourism Analysis*, 4(3/4), 173-185.
- Lichtenthaler, U., & Lichtenthaler, E. (2010). Technology Transfer Across Organizational Boundaries: Absorptive Capacity and Desorptive Capacity. *California Management Review*, 53(1), 154-170.
- Lui, B. (2009). *Web Data Mining, Exploring Hyperlinks, Contents and Usage Data*. Springer-Verlag, Berlin.
- Marchiori, E., Pavese, G., & Cantoni, L. (2012). Etcomm—Etourism Communication Maturity Model. A Framework to Evaluate The Maturity Of A DMO When It Comes To The Online Communication Management. The Case of Canton Ticino and Lombardy. In M. Fuchs et al. (Eds.) *Information and Communication Technologies in Tourism 2012*, Springer-Verlag, Vienna.
- Melián-González, S., Bulchand-Gidumal, J., & López-Valcárcel, B. G. (2013). Online Customer Reviews of Hotels as Participation Increases, Better Evaluation is Obtained. *Cornell Hospitality Quarterly*, 54(3), 274-283.

- Morgan, N., & Pritchard, A. (2004). Meeting the Destination Branding Challenge. *Destination Branding*, 59-79.
- Morgan, N., Pritchard, A., & Pride, R. (2011). *Destination Brands: Managing Place Reputation*. Routledge.
- Morgan, R. M., & Hunt, S. D. (1994). The Commitment-Trust Theory of Relationship Marketing. *The Journal of Marketing*, 58(July) 20-38.
- Munar, A. M. (2010). Tourist-Created Content; Rethinking Destination Branding. *International Journal of Culture, Tourism And Hospitality Research*, 5(3), 291-305.
- Munar, A. M. (2012). Social Media Strategies And Destination Management. *Scandinavian Journal of Hospitality And Tourism*, 12(2), 101-120.
- Murphy, L., Moscardo, G., & Benckendorff, P. (2007). Using Brand Personality to Differentiate Regional Tourism Destination. *Journal of Travel Research*, 46(1), 5-14.
- Murphy, L., Moscardo, G., & Benckendorff, P. (2009). Linking Travel Motivation, Tourist Self-Image and Destination Brand Personality. *Journal of Travel and Tourism Marketing*, 22(2), 45-59.
- Palmatier, R. W., Dant, R. P., Grewal, D., & Evans, K. R. (2006). Factors Influencing the Effectiveness Of Relationship Marketing: A Meta-Analysis. *Journal of Marketing*, 70(4), 136-153.
- Pan, B., & Li, X. (2011). The Long Tail Of Destination Image and Online Marketing. *Annals of Tourism Research*, 38(2), 132-152.
- Papadimitriou, D., Apostolopoulou, A., & Kaplanidou, K. (2013). Destination Personality, Affective Image, and Behavioral Intentions In Domestic Urban Tourism. *Journal of Travel Research*, 0047287513516389.
- Pearce, P. L. (1982). *The Social Psychology Of Tourist Behaviour*. Pergamon Press, Oxford.
- Petz, G., Karpowicz, M., Fürschuß, H., Auinger, A., Střiteský, V., & Holzinger, A. (2013). Opinion Mining on the Web 2.0—Characteristics of User Generated Content and Their Impacts. In *Human-Computer Interaction and Knowledge Discovery in Complex, Unstructured, Big Data*. Springer Berlin Heidelberg. 35-46.
- Pike, S. (2008). *Destination Marketing, An Integrated Marketing Communication Approach*. Elsevier, Oxford.
- Pike, S., & Ryan, C. (2004). Destination Positioning Analysis Through a Comparison of Cognitive, Affective, and Conative Perceptions. *Journal of Travel Research*, 42(2), 333-342.
- Pitt, L. F., & Berthon, P. (2011). Just When You Thought It Was Safe To Go Back Into The Web: Marketing Meets Web 2.0, Social Media, and Creative Consumers. *Business Horizons*, 54(3), 181-183.
- Pollach, I. (2011). Software Review; Wordstat 5.0. *Organizational Research Methods*, 14(4), 741-744.
- Prayag, G. (2007). Assessing International Tourists' Perceptions Of Service Quality at Air Mauritius. *International Journal of Quality & Reliability Management*, 24(5), 492-514.
- Prayag, G., & Ryan, C. (2011). The Relationship Between the 'Push' and 'Pull' factors of a Tourist Destination: The Role of Nationality—an Analytical Qualitative Research Approach. *Current Issues in Tourism*, 14(2), 121-143.
- Prebensen, N. K. (2014). Facilitating For Value Co-Creation in Tourist Experiences. In S. McCabe (Ed.), *Handbook of Tourism Marketing*, Oxon: Routledge, 154–167.
- Qu, H., Kim, L. H., & Im, H. H. (2011). A Model Of Destination Branding; Integrating the Concepts of the Branding and Destination Image. *Tourism Management*, 32(3), 465-467.
- Ritchie-Brent, & Ritchie, R. (1998). The Branding of Tourism Destinations: Past Achievements And Future Challenges. In proceedings of *Annual Congress of International Association of Scientific Experts in Tourism*.
- San Martin, H., & Del Bosque, I. A. R. (2008). Exploring The Cognitive-Affective Nature Of Destination Image and the Role of Psychological Factors in its Formation. *Tourism Management*, 29(2), 263-277.
- Schmunk, S., Höpken, W., Fuchs, M., & Lexhagen, M. (2014). Sentiment Analysis: Extracting Decision-Relevant Knowledge From UGC. In Z. Xiang & I. Tussyadiah (Eds.) *Information And Communication Technologies in Tourism 2014*, Springer International Publishing, Zwitersland, 253-265.
- Selby, M. (2004). Consuming The City: Conceptualizing and Researching Urban Tourist Knowledge. *Tourism Geographies*, 6(2), 186-207.
- Seraj, M. (2012). We Create, We Connect, We Respect, Therefore We Are: Intellectual, Social, and Cultural Value In Online Communities. *Journal of Interactive Marketing*, 26(2), 209-222.
- Shaw, G., & Williams, A. (2009). Knowledge Transfer and Management in Tourism Organisations: An Emerging Research Agenda. *Tourism Management*, 30(3), 325-336.
- Sirgy, M. J. (1982). Self-Concept in Consumer Behavior: A Critical Review. *Journal of Consumer Research*, 9(3) 287-300.
- Sundbo, J., Orfila-Sintes, F., & Sørensen, F. (2007). The Innovative Behaviour of Tourism Firms—Comparative Studies of Denmark and Spain. *Research Policy*, 36(1), 88-106.
- Sundbo, J., Sørensen, F., & Fuglsang, L. (2010). *Innovation in the Experience Sector*. Centre for Service Studies, Roskilde University.
- Tapscott, D., & Williams, A. (2006). *Wikinomics: How Mass Collaboration Changes Everything*. Portfolio, Penguin Group.
- Tasci, A. D., & Kozak, M. (2006). Destination Brands Vs. Destination Images: Do We Know What We Mean? *Journal of Vacation Marketing*, 14(2), 299-317.
- Thomson, M., Macinnis, D. J., & Whan Park, C. (2005). The Ties that Bind: Measuring The Strength of Consumers' Emotional Attachments to Brands. *Journal of Consumer Psychology*, 15(1), 77-91.
- Tsytarau, M., & Palpanas, T. (2012). Survey on Mining Subjective Data on The Web. *Data Mining and Knowledge Discovery*, 24(3), 478-514.

- Tussyadiah, I., & Zach, F. (2013). Social Media Strategy And Capacity for Consumer Co-Creation among Destination Marketing Organizations. In L. Cantoni And Z. Xiang (Eds.) *Information And Communication Technologies in Tourism 2013*, Springer Berlin Heidelberg, 242-253.
- Usakli, A., & Baloglu, S. (2010). Brand Personality of Tourist Destination; an Application of Self-Congruity Theory. *Tourism Management*, 32(1), 114-127.
- Van Den Berg, L., & Braun, E. (1999). Urban Competitiveness, Marketing and the Need for Organising Capacity. *Urban Studies*, 36(5-6), 987-999.
- Veasna, S., Wu, W.-Y., & Huang, C.-H. (2012). The Impact of Destination Source Credibility on Destination Satisfaction; The Mediating Effect of Destination Attachment and Destination Image. *Tourism Management*, 36(4) 1-16.
- Zomerdijk, L. G., & Voss, C. A. (2010). Service Design For Experience-Centric Services. *Journal of Service Research*, 13(1), 67-82.
- Watson, J. B. (1913). Psychology as the Behaviorist. *Psychological Review*, 20(2), 158-177.
- Witten, I. H., & Frank, E. (2005). *Data Mining: Practical Machine Learning Tools And Techniques*. Morgan Kaufmann.
- Woodside, A. G., & Lysonski, S. (1989). A General Model of Traveller Destination Choice. *Journal of Travel Research*, 27(4), 8-14.
- Ye, Q., Zhang, Z., & Law, R. (2009). Sentiment Classification of Online Reviews to Travel Destination by Supervised Machines Learning Approaches. *Expert Systems With Applications*, 36(3), 6527-6536.
- Yoo, K. H., & Gretzel, U. (2009). Comparison Of Deceptive And Truthful Travel Reviews. In Höpken, W., Gretzel U., and Law., R (Eds.) *Information And Communication Technologies In Tourism 2009*, Publisher Springer Amsterdam, 37-47.
- Yu, L., & Goulden, M. (2006). A Comparative Analysis of International Tourists' Satisfaction in Mongolia. *Tourism Management*, 27(6), 1331-1342.
- Yu, S. H. (2013). Social Capital, Absorptive Capability, And Firm Innovation. *Technological Forecasting and Social Change*, 80(7), 1261-1270.
- Yuksel, A., Yuksel, F., & Bilim, Y. (2010). Destination Attachment: Effects on Customer Satisfaction and Cognitive, Affective And Conative Loyalty. *Tourism Management*, 31(2), 274-284.
- Zeithaml, V. A. (2000). Service Quality, Profitability, And The Economic Worth of Customers: What We Know And What We Need To Learn. *Journal of The Academy of Marketing Science*, 28(1), 67-85.

References Study 2

- Amabile, T. M. (1983). The Social Psychology of Creativity: A Componential Conceptualization. *Journal of Personality and Social Psychology*, 45(2), 357-367.
- Amabile, T. M. (1996). *Creativity In Context: Update To The Social Psychology of Creativity*. Westview Press, Boulder, CO.
- Amabile, T. M., Conti, R., Coon, H., & Lazenby, J. (1996). Assessing The Work Environment for Creativity. *Academy of Management Journal*, 39(5), 1154-1184.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach. *Psychological Bulletin*, 103(3), 411-423.
- Andriopoulos, C., & Dawson, P. (2008). *Managing Change, Creativity and Innovation*. Sage: New York.
- Arbuckle, J. L. (2006). *Amos 7.0 User's Guide*. AMOS Development Corporation, Spring House, PA.
- Arruda-Filho, E. J., Cabusas, J. A., & Dholakia, N. (2010). Social Behavior and Brand Devotion Among Iphone Innovators. *International Journal of Information Management*, 30(6), 475-480.
- Babbie, E. (1998). *Survey Research Methods*. Wadsworth Publishing Company, Belmont, MA.
- Babbie, E. A. (2008). *The Basics of Social Research*. Thomson Learning. Inc. USA.
- Bagozzi, R. P., & Yi, Y. (1988). On The Evaluation of Structural Equation Models. *Journal of The Academy of Marketing Science*, 16(1), 74-94.
- Bandura, A. (1994). *Self-Efficacy*. John Wiley & Sons, Inc, New York.
- Bandura, A. (2006). Guide for Constructing Self-Efficacy Scales. *Self-Efficacy Beliefs of Adolescents*, 5, 307-337.
- Bartels, J., & Reinders, M. J. (2011). Consumer Innovativeness and Its Correlates: A Propositional Inventory for Future Research. *Journal of Business Research*, 64(9), 601-609.
- Baumgartner, H., & Steenkamp, J. B. (1996). Exploratory Consumer Buying Behavior: Conceptualization and Measurement. *International Journal of Research in Marketing*, 13(2), 121-137.
- Bentler, P. (2006). *Eqs 6 Structural Equations Program Manual*. BMDP Statistic Software, Los Angeles, 86-102.
- Berthon, P. R., Pitt, L. F., Plangger, K., & Shapiro, D. (2012). Marketing Meets Web 2.0, Social Media, And Creative Consumers: Implications for International Marketing Strategy. *Business Horizons*, 55(3), 261-271.
- Bhattacharjee, A., & Premkumar, G. (2004). Understanding Changes in Belief and Attitude Toward Information Technology Usage: A Theoretical Model And Longitudinal Test. *Mis Quarterly*, 28(2), 229-254.
- Bilton, C. (2007). *Management And Creativity: From Creative Industries To Creative Management*. Blackwell Publishing.
- Bollen, K. A. (1987). Outliers and Improper Solutions: A Confirmatory Factor Analysis Example. *Sociological Methods And Research*, 15 (4), 375 - 84.
- Bronner, F., & De Hoog, D. (2013). Vacationers and Ewom; Who Posts, And Why, Where And What? *Journal of Travel Research*, 50(1), 15-26.
- Burselon, W. (2005). Developing Creativity, Motivation, And Self-Actualization With Learning Systems. *International Journal Human-Computer Studies*, 63(4), 436-451.
- Chen, F., Bollen, K. A., Paxton, P., Curran, P., & Kirby, J. (2001). Improper Solutions. Structural Equation Models: Causes, Consequences, And Strategies. *Sociological Methods And Research*, 29, 468-508.
- Chin, W. W. (2010). How to Write Up and Report PLS Analyses. In V. E. Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of Partial Least Squares Concepts, Methods and Applications*, Berlin: Springer-Verlag, 650-690.
- Chung, E., Beverland, M. B., Farrelly, F., & Quester, P. (2008). Exploring Consumer Fanaticism: Extraordinary Devotion in the Consumption Context. *Advances in Consumer Research*, 35(1), 333-340.
- Compeau, D. R., & Higgins, C. A. (1995). Computer Self-Efficacy: Development of a Measure and Initial Test. *MIS Quarterly*, 4, 189-211.
- Csikszentmihalyi, M. (1999). 16 Implications Of A Systems Perspective for the Study of Creativity. In M. Csikszentmihalyi (Ed.) *Handbook Of Creativity*, 313.
- Creswell, J. W. (2003). *Research Design. Qualitative, Quantitative and Mixed Methods Approaches*, Second Edition. SAGE Publications Ltd. London.
- Daugherty, T., Eastin, M. S., & Bright, L. (2008). Exploring Consumer Motivations for Creating User-Generated Content. *Journal of Interactive Advertising*, 8(2), 16-25.
- Davidson, J. E., & Sternberg, R. J. (1984). The Role of Insight In Intellectual Giftedness. *Gifted Child Quarterly*, 28(2), 5-9.
- Dawson, P., & Andriopoulos, C. (2014). *Managing Change, Creativity and Innovation*. SAGE Publications Ltd, London.
- Day, H. I., & Langevin, R. (1969). Curiosity And Intelligence: Two Necessary Conditions for a High Level of Creativity. *The Journal of Special Education*, 3(3), 263-268.
- de Acedo Lizarraga, M. L. S., de Acedo Baquedano, M. T. S., & Closas, A. H. (2014). An Explanatory Model Regarding the Relationships Between Psychological Traits And Creativity. *Anales De Psicología*, 30(1), 355-363.
- Desouza, K. C., A. Y., J. S., D. C., Papagari, S., Baloh, P., & Kim, J. (2008). Customer-Driven Innovation. *Research-Technology Management*, 51(3), 35-44.
- Dickinson, J. E., Ghali, K., Cherrett, T., Speed, C., Davies, N., & Norgate, S. (2014). Tourism And The Smartphone App: Capabilities, Emerging Practice And Scope In The Travel Domain. *Current Issues In Tourism*, 17(1), 84-101.
- Dong, B., Evans, K. R., & Zou, S. (2008). The Effects Of Customer Participation In Co-Created Service Recovery. *Journal of The Academy Of Marketing Science*, 36(1), 123-137.
- Edmonds, E. A., Weakley, A., Candy, L., Fell, M., Knott, R., & Pauletto, S. (2005). The Studio As Laboratory: Combining Creative Practice And Digital Technology Research. *International Journal Of Human-Computer Studies*, 63(4), 452-481.

- Enders, C. K. (2001). A primer on maximum likelihood algorithms available for use with missing data. *Structural Equation Modeling*, 8(1), 128-141.
- Enders, C. K., & Bandalos, D. L. (2001). The Relative Performance Of Full Information Maximum Likelihood Estimation For Missing Data In Structural Equation Models. *Structural Equation Modeling*, 8(3), 430-457.
- Farmer, S. M., Tierney, P., & Kung-Mcintyre, K. (2003). Employee Creativity In Taiwan: An Application of Role Identity Theory. *Academy of Management Journal*, 46(5), 618-630.
- Faullant, R., Krajger, I., & Zanker, M. (2012). Identification of Innovative Users For New Service Development in Tourism. In M. Fuchs et al. (Eds.) *Information And Communication Technologies in Tourism 2012*, Springer Vienna, 426-436.
- Flick, U. (2011). *Introducing Research Methodology: A Beginner's Guide To Doing A Research Project*. Sage Publications, London.
- Flora, D.B., & Curran, P.J. (2004). An Empirical Evaluation of Alternative Methods of Estimation For Confirmatory Factor Analysis with Ordinal Data. *Psychological Methods*, 9(4), 466-491.
- Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models With Unobservable Variables and Measurement Error. *Journal Of Marketing Research*, 18(1), 39-50.
- Franke, N., & Hippel, von E. (2003). Satisfying Heterogeneous User Needs Via Innovation Toolkits: The Case of Apache Security Software. *Research Policy*, 32(7), 1199-1215.
- Franke, N., & Shah, S. (2003). How Communities Support Innovative Activities: An Exploration of Assistance and Sharing Among End-Users. *Research Policy*, 32(1), 157-178.
- Fuglsang, L., Sundbo, J., & Sørensen, F. (2011). Dynamics of Experience Service Innovation: Innovation as a Guided Activity—Results From a Danish Survey. *The Service Industries Journal*, 31(5), 661-677.
- Füller, J., Jawecki, G., & Muhlbacher, H. (2007). Innovation Creation by Online Basket Communities. *Journal of Business Research*, 60(1), 60-71.
- Füller, J., Matzler, K., & Hoppe, M. (2008). Brand Community Members as a Source of Innovation. *Journal of Product Innovation Management*, 25(6), 608-619.
- Gagne, P. E., & Hancock, G. R. (2006). Measurement Model Quality, Sample Size, and Solution Propriety in Confirmatory Factor Models. *Multivariate Behavioral Research*, 41, 65-83.
- Geiser, C. (2013). *Data Analysis With Mplus*. The Guilford Press, New York.
- Gerbing, D.W., & Anderson, J.C. (1987). Improper Solutions in the Analysis Of Covariance Structures: Their Interpretability And A Comparison of Alternate Respecifications. *Psychometrika*, 52, 99-111.
- Gist, M. E., & Mitchell, T. R. (1992). Self-Efficacy: A Theoretical Analysis Of Its Determinants and Malleability. *Academy of Management Review*, 17(2), 183-211.
- Glaveanu, V. P. (2010). Paradigms In The Study of Creativity: Introducing The Perspective Of Cultural Psychology. *New Ideas In Psychology*, 28(1), 79-93.
- Glaveanu, V. P., & Tanggaard, L. (2014). Creativity, Identity and Representation: Towards A Socio-Cultural Theory of Creativity Identity. *New Ideas in Psychology*, 34(4), 12-21.
- Goldsmith, R. E., & Hofacker, C. F. (1991). Measuring Consumer Innovativeness. *Journal of Academy of Marketing Sciences*, 19(3), 209-221.
- Goldsmith, R. E., Freiden, J. B., & Eastman, J. K. (1995). The Generality/Specificity Issue in Consumer Innovativeness' Research. *Technovation*, 5(10), 601-612.
- Goldsmith, R., & Flynn, L. (1992). Identifying Innovators In Consumer Product Markets. *European Journal of Marketing*, 26(12), 42-55.
- Grant, I., & O' Donohoe, S. (2007). Brand in The Hand or Sand In The Hand? A Contextualized Account of Adolescents' Mobile Phone Consumption. *Advances in Consumer Research*, 34, 280-285.
- Grewal, R., Mehta, R., & Kardes, F. R. (2000). The Role of The Social-Identity Function of Attitudes in Consumer Innovativeness and Opinion Leadership. *Journal of Economic Psychology*, 21(3), 233-252.
- Glymour, C., & Scheines, R. (1986). Causal Modeling With the TETRAD Program. *Synthese*, 68(1), 37-63.
- Glymour, C., Scheines, R., Spirtes, P., & Kelly, K. (1988). TETRAD: Discovering Causal Structure. *Multivariate Behavioral Research*, 23(2), 279-280.
- Hafidz, I. (2011) Application Of TETRAD In *Information Systems Theory Development Using Knowledge Sharing Literature: Case-Study Based Approach*. Master Thesis University of Twente, The Netherlands.
- Hair, J.F., Black, W.C., Babin, B.J. & Anderson, R.E. (2003) *Multivariate Data Analysis*. 7th Edition. Pearson.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139-152.
- Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An Assessment of The Use of Partial Least Squares Structural Equation Modeling in Marketing Research. *Journal of The Academy of Marketing Science*, 40(3), 414-433.
- Hair, J., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial Least Squares Structural Equation Modeling (PLS-SEM) An Emerging Tool In Business Research. *European Business Review*, 26(2), 106-121.
- Haldrup, M., & Larsen, J. (2006). Material Cultures of Tourism. *Leisure Studies*, 25(3), 275-289.
- Harhoff, D., Henkel, J., & Von Hippel, E. (2003). Profiting from Voluntary Information Spillovers: How Users Benefit By Freely Revealing Their Innovations. *Research Policy*, 32(10), 1753-1769.
- Haughton, D., Kamis, A., & Scholten, P. (2006). A Review of Three Directed Acyclic Graphs Software Packages: MIM, Tetrad, And Winmine. *The American Statistician*, 60(3), 272-286.

- He, W., & Wei, K.-K. (2009). What Drives Continued Knowledge Sharing? An Investigation of Knowledge-Contribution and -Seeking Beliefs? *Decision Support Systems*, 46(4), 826-838.
- Hemetsberger, A. (2001). Fostering Cooperation on The Internet: Social Exchange Processes in Innovative Virtual Consumer Communities. *Advances in Consumer Research*, 29(1), 234-356.
- Hemetsberger, A. (2005). Creative Cyborgs: How Consumers Use the Internet for Self-Realization. *Advances in Consumer Research*, 32(1), 653-659.
- Hemetsberger, A. (2012). The Democratization Of Markets Through Participative And Collaborative Practices. In W.G. Weber et al. (Eds.) *Democratic Competences and Social Practices in Organizations*, Verlag Für Sozialwissenschaften, 17-33.
- Hemetsberger, A., & Pieters, R. (2001, May). When Consumers Produce on The Internet: An Inquiry into Motivational Sources Of Contribution To Joint-Innovation. In *Proceedings of the Fourth International Research Seminar on Marketing Communications and Consumer Behavior*. La Londe, 274-291.
- Henseler, J., & Fassott, G. (2010). Testing Moderating Effects In PLS Path Models: An Illustration of Available Procedures. In V. E. Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of Partial Least Squares Concepts, Methods and Applications*, Berlin: Springer-Verlag, 713-735.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A New Criterion for Assessing Discriminant Validity in Variance-Based Structural Equation Modeling. *Journal of the Academy of Marketing Science*, 43 (1), 115-135.
- Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The Use of Partial Least Squares Path Modeling in International Marketing. *Advances in International Marketing (AIM)*, 20, 277-320.
- Hienerth, C. (2006). The Commercialization of User Innovations: The Development of the Rodeo Kayak Industry. *R&D Management*, 36(3), 273-294.
- Higie, R. A., & Feick, L. (1989). Enduring Involvement: Conceptual and Measurement Issues. *Advances in Consumer Research*, 16(1), 690-696.
- Hirschman, E. C. (1980). Innovativeness, Novelty Seeking, and Consumer Creativity. *Journal of Consumer Research*, 7(3), 283-295.
- Hjalager, A. M., & Nordin, S. (2011). User-Driven Innovation In Tourism—A Review Of Methodologies. *Journal of Quality Assurance in Hospitality and Tourism*, 12(4), 289-315.
- Houston, M. J., & Rothschild, M. L. (1978). Conceptual and Methodological Perspectives On Involvement. *Research Frontiers in Marketing: Dialogues and Directions*, 184(187), 262-270.
- Hsu, M., Ju, T. L., Yen, C., & Chang, C. (2007). Knowledge Sharing Behavior in Virtual Communities; The Relationship Between Trust, Self-Efficacy and Outcome Expectations. *International Journal Human-Computer Studies*, 65(2), 153-169.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff Criteria For Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55.
- Im, B., Bayus, B. L., & Mason, C. H. (2003). An Empirical Study of Innate Consumer Innovativeness, Personal Characteristics, And New-Product Adoption Behavior. *Journal of The Academy Of Marketing Science*, 31(1), 61-73.
- Ivcevic, Z. (2009). Creativity Map: Toward The Next Generation of Theories of Creativity. *Psychology of Aesthetics, Creativity, And The Arts*, 31(1), 17.
- Ivcevic, Z., & Mayer, J. D. (2009). Mapping Dimensions of Creativity In The Life-Space. *Creativity Research Journal*, 21(2-3), 152-165.
- Jawecki, G., Füller, J., & Gebauer, J. (2011). A Comparison of Creative Behaviours In Online Communities Across Cultures. *Creativity and Innovation Management*, 20(3), 144-156.
- James, L. R., & Brett, J. M. (1984). Mediators, Moderators, and Tests For Mediation. *Journal of Applied Psychology*, 69(2), 307.
- James, G. A., Kelley, M. E., Craddock, R. C., Holtzheimer, P. E., Dunlop, B. W., Nemeroff, C. B., Mayberg, H.S. & Hu, X. P. (2009). Exploratory Structural Equation Modeling Of Resting-State Fmri: Applicability of Group Models To Individual Subjects. *Neuroimage*, 45(3), 778-787.
- Jaussi, K. S., Randel, A. E., & Dionne, S. D. (2007). I Am, I Think I Can, And I Do: The Role of Personal Identity, Self-Efficacy, and Cross-Application Of Experiences in Creativity at Work. *Creativity Research Journal*, 19(2-3), 247-258.
- Jöreskog, K., & Sörbom, D. (2006). *Lisrel 8.8 for Windows [Computer Software]*. Scientific Software International, Inc., Skokie, IL.
- Kaplan, D. (2008). *Structural Equation Modelling, Foundations and Extensions*, Second Edition, SAGE Publications, New York.
- Karwowski, M. (2009). I'm Creative, But Am I Creative? Similarities and Differences Between Self-Evaluated Small and Big-C Creativity In Poland. *Korean Journal of Thinking And Problem Solving*, 19(2), 7.
- Karwowski, M., L. I., Wisniewska, E., & Gralewski, J. (2013). Big Five Personality Traits as the Predictors of Creative Self-Efficacy and Creative Personal Identity: Does Gender Matter?. *The Journal of Creative Behavior*, 47(3), 215-232.
- Kaufman, J. C., & Beghetto, R. A. (2009). Beyond Big And Little: The Four C Model Of Creativity. *Review of General Psychology*, 13(1), 1-12.
- Kim, H.-W., Zheng, J. R., & Gupta, S. (2011). Examining Knowledge Contribution from the Perspective of an Online Identity in Blogging Communities. *Computers in Human Behavior*, 27(5), 1760-1770.
- Kirton, M. (1978). Have Adaptors And Innovators Equal Levels Of Creativity?. *Psychological Reports*, 42(3), 695-698.
- Kline, R.B. (2005). *Principles and Practice of Structural Equation Modeling* (2nd Edition ed.). The Guilford Press, New York.
- Kline, R. B. (2011). *Principles and Practices of Structural Equation Modeling* (3rd Edition ed.). The Guilford Press, New York.

- Kolenikov, S. & Bollen, K. A. (2012). Testing Negative Error Variances: Is a Heywood Case a Symptom Of Misspecification? *Sociological Methods and Research*, 41, 124-167.
- Kosonen, M., Gan, C., Olander, H., & Blomqvist, K. (2013). My Idea Is Our Idea! Supporting User-Driven Innovation Activities in Crowdsourcing Communities. *International Journal of Innovation Management*, 17(3), 1-18.
- Kozinets, R. V., Hemetsberger, A., & Schau, H. J. (2008). The Wisdom Of Consumer Crowds Collective Innovation In The Age Of Networked Marketing. *Journal of Macromarketing*, 28(4), 339-354.
- Kristensson, P., Magnusson, P. R., & Matthing, J. (2002). Users As A Hidden Resource For Creativity: Findings From an Experimental Study on User Involvement. *Creativity and Innovation Management*, 11(1), 55-61.
- Krosnick, J. A. (1999). Survey Research. *Annual Review of Psychology*, 50(1), 537-567.
- Labrecque, L. I., vor dem Esche, J., Mathwick, C., Novak, T. P., & Hofacker, C. F. (2013). Consumer Power: Evolution in the Digital Age. *Journal of Interactive Marketing*, 27(4), 257-269.
- Lamsfus, C., Wang, D., Alzua-Sorzabal, A., & Xiang, Z. (2014). Going Mobile Defining Context for On-The-Go Travelers. *Journal of Travel Research*, 0047287514538839.
- Lee, B., Barua, A., & Whinston, A. B. (1997). Discovery And Representation of Causal Relationships in MIS Research: A Methodological Framework. *MIS Quarterly*, 109-136.
- Lee, S. H., Cotte, J., & Noseworthy, T. J. (2010). The Role of Network Centrality in the Flow of Consumer Influence. *Journal of Consumer Psychology*, 20(1), 66-77.
- Lehmann, D.R. (1987). Pumping Iron III: An Examination of Compulsive Lifting. *Advances in Consumer Research*, 14(1), 129-131.
- Li, F., & Du, T. C. (2011). Who Is Talking? An Ontology-Based Opinion Leader Identification Framework for Word-Of-Mouth Marketing In Online Social Blogs. *Decision Support Systems*, 51(1), 190-197.
- Liao, H., & Chuang, A. (2004). A Multilevel Investigation of Factors Influencing Employee Service Performance and Customer Outcomes. *Academy of Management Journal*, 47(1), 41-58.
- Liep, J. (2001). *Locating Cultural Creativity*. Pluto Press, New York.
- Liu, L. (2009). Technology Acceptance Model: A Replicated Test Using TETRAD. *International Journal of Intelligent Systems*, 24(12), 1230-1242.
- Lowry, P. B., & Gaskin, J. (2014). Partial Least Squares (PLS) Structural Equation Modeling (SEM) For Building and Testing Behavioral Causal Theory: When To Choose it and How To Use It. *Professional Communication, IEEE Transactions on*, 57(2), 123-146.
- Lüthje, C. (2004). Characteristics of Innovating Users in a Consumer Goods Field: An Empirical Study of Sport-Related Product Consumers. *Technovation*, 24(9), 683-695.
- Mackay, K., & Vogt, C. (2012). Information Technology in Everyday and Vacation Contexts. *Annals of Tourism Research*, 39(3), 1380-1401.
- Maher, M. L. (2010). Evaluating Creativity In Humans, Computers, and Collectively Intelligent Systems. In *Proceedings Of The 1st Desire Network Conference On Creativity And Innovation In Design*. 22-28.
- Mangleburg, T. F., Doney, P. M., & Bristol, T. (2004). Shopping With Friends and Teens' Susceptibility to Peer Influence. *Journal of Retailing*, 80(2), 101-116.
- Maslow, A. H. (1967). A Theory Of Metamotivation: The Biological Rooting if The Value-Life. *Journal of Humanistic Psychology*. 7(2), 93-127.
- Matzel, K., Renzl, B., Muller, J., Herting, S., & Mooradion, T. A. (2008). Personality Traits and Knowledge Sharing. *Journal of Economic Psychology*, 29(3), 301-313.
- Mazanec, J. A. (2007a). Exploring Tourist Satisfaction With Nonlinear Structural Equation Modeling and Inferred Causation Analysis. *Journal of Travel and Tourism Marketing*, 21(4), 73-90.
- Mazanec, J. A. (2007b). New Frontiers in Tourist Behavior Research: Steps toward Causal Inference from Non-experimental Data. *Asia Pacific Journal of Tourism Research*, 12(3), 223-235.
- Midgley, D. F., & Dowling, G. R. (1978). Innovativeness: The Concept and its Measurement. *Journal of Consumer Research*, 4(4), 229-242.
- Montuori, A. (2003). The Complexity Of Improvisation and The Improvisation of Complexity: Social Science, Art And Creativity. *Human Relations*, 56(2), 237-255.
- Munar, A. M., & Jacobsen, J. S. (2014). Motivations for Sharing Tourism Experiences Through Social Media. *Tourism Management*, 43(4), 46-54.
- Muthén, L., & Muthén, B. (2010). *Mplus Users Guide*. Sixth Edition, Los Angeles, CA.
- Newson. (2015). Improper Solutions in SEM. Structural Equation Modeling Winter. Retrieved from http://www.upa.pdx.edu/IOA/newsom/semclass/ho_improper.pdf (Last Accessed: Augustus 4, 2015).
- Nielsen, J. (2006). The 90-9-1 Rule For Participation Inequality In Social Media And Online Communities. Retrieved From <http://Articles/Participation-Inequality>. (Last Accessed: April 15, 2014).
- Pallister, J. G., & Foxall, G. R. (1998). Psychometric Properties of The Hurt–Joseph–Cook Scales for the Measurement of Innovativeness. *Technovation*, 18(11), 663-675.
- Pearl, J., & Verma, T. (1991). *A Theory of Inferred Causation*. San Mateo, CA: Morgan Kaufmann, 441-452.
- Perkins, D. N. (1986). Thinking Frames. *Educational Leadership*, 43(8), 4-10.
- Perry-Smith, J. E., & Shalley, C. E. (2003). The Social Side of Creativity: A Static and Dynamic Social Network Perspective. *Academy of Management Review*, 28(1), 89-106.

- Persaud, A., & Azhar, I. (2012). Innovative Mobile Marketing Via Smartphones: Are Consumers Ready? *Marketing Intelligence & Planning*, 30(4), 418-443.
- Pichler, E. A., & Hemetsberger, A. (2008). Driven By Devotion-How Consumers Interact With Their Objects of Devotion. *Advances in Consumer Research*, 35, 439-443.
- Price, L. L., & Ridgway, N. M. (1983). Development of A Scale to Measure Use Innovativeness. *Advances in Consumer Research*, 10(1), 679-684.
- Ratelle, C. F., Vallerand, R. J., Mageau, G. A., Rousseau, F. L., & Provencher, P. (2004). When Passion Leads to Problematic Outcomes: A Look At Gambling. *Journal of Gambling Studies*, 20(2), 105-119.
- Ren, Y., & Kraut, R. E. (2011). A Simulation For Designing Online Community: Member Motivation, Contribution, and Discussion Moderation. *Information Systems Research*. (http://www.ee.oulu.fi/~vassilis/courses/socialweb10F/reading_material/2/ren07-SimulatingOnlineCommunity4.6-rek.pdf).
- Ren, Y., & Kraut, R. E. (2014). Agent-Based Modeling To Inform Online Community Design: Impact of Topical Breadth, Message Volume, And Discussion Moderation On Member Commitment and Contribution. *Human-Computer Interaction*, 29(4), 351-389.
- Ren, Y., Harper, F. M., Drenner, S., Terveen, L. G., Kiesler, S. B., Riedl, J., & Kraut, R. E. (2012). Building Member Attachment in Online Communities: Applying Theories of Group Identity and Interpersonal Bonds. *Mis Quarterly*, 36(3), 841-864.
- Richardson, I., Third, A., & Maccoll, I. (2007). Moblogging And Beloging: New Mobile Phone Practices And Young People's Sense Of Social Inclusion. In Proceeding *Second International Conference On Digital Interactive Media In Entertainment And Arts*, Perth, Australia: Murdoch University.
- Richards, G., & Wilson, J. (2007). *Tourism, Creativity and Development*. Routledge, London.
- Richins, M. L., & Root-Shaffer, T. (1988). The Role of Involvement and Opinion Leadership In Consumer Word-Of-Mouth: An Implicit Model Made Explicit. *Advances in Consumer Research*, 15(1), 32-36.
- Rigdon, E. E. (1998). The Equal Correlation Baseline Model For Comparative Fit Assessment In Structural Equation Modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, 5(1), 63-77.
- Rigdon, E. E. (2005). Structural Equation Modeling: Nontraditional Alternatives. *Wiley StatsRef: Statistics Reference Online*.
- Ringle, C. M., Wende, S., and Becker, J.-M. (2015). "SmartPLS 3." Bönningstedt: SmartPLS GmbH.
- Roehrich, G. (2004). Consumer Innovativeness, Concepts and Measurements. *Journal of Business Research*, 57(6), 671-677.
- Runco, M. A., & Bahleda, M. D. (1987). Birth-Order and Divergent Thinking. *The Journal of Genetic Psychology*, 148(1), 119-125.
- Scheines, R., Spirtes, P., Glymour, C., Meek, C., & Richardson, T. (1998). The TETRAD Project: Constraint Based Aids to Causal Model Specification. *Multivariate Behavioral Research*, 33(1), 65-117.
- Schumacker, R., & Lomax, R. (2004). *A Beginner's Guide to Structural Equation Modelling*. Lawrence Erlbaum Associates, London.
- Scott, S. G., & Bruce, R. A. (1994). Determinants of Innovative Behavior: A Path Model of Individual Innovation in the Workplace. *Academy Of Management Journal*, 37(3), 580-607.
- Shalley, C. E., & Gilson, L. L. (2004). What Leaders Need To Know: A Review of Social And Contextual Factors That Can Foster or Hinder Creativity. *The Leadership Quarterly*, 1(15), 33-53.
- Sigala, M. (2009). E-Service Quality And Web 2.0: Expanding Quality Models to Include Customer Participation and Inter-Customer Support. *The Service Industries Journal*, 29(10), 1341-1358.
- Simonton, D. K. (2004). Creativity As A Constrained Stochastic Process. In R. J. Sternberg, E. L. Grigorenko, & J. L. Singer (Eds.), *Creativity: From potential to realization*, American Psychological Association, Washington, DC, 83-101.
- Singleton, R. A., Straits, B. C., & Straits, M. (1993). *Approaches To Social Research*. Oxford University Press.
- Singleton, R., & Straits, B. (2013). *Approaches To Social Research*. Oxford Publishing.
- Steenkamp, J. B., & Gielens, K. (2003). Consumer and Market Drivers of The Trial Probability of New Consumer Packaged Goods. *Journal of Consumer Research*, 30(3), 368-384.
- Sternberg, R. J. (2005). Creativity or Creativities?. *International Journal of Human-Computer Studies*, 63(4), 370-382.
- Sternberg, R. J., & Lubart, T. I. (1993). Creative Giftedness: A Multivariate Investment Approach. *Gifted Child Quarterly*, 37(1), 7-15.
- Stopfer, J. M., Eglhoff, B., Nestler, S., & Back, M. (2013). Being Popular In Online Social Networks; How Agentic, Communal, and Creativity Traits Relate To Judgments Oo Status And Liking. *Journal of Research In Personality*, 47(5), 592-598.
- Tan, S. K., Kung, S. F., & Luh, D. B. (2013). A Model of 'Creative Experience'in Creative Tourism. *Annals of Tourism Research*, 41, 153-174.
- Tierney, P., & Farmer, S. M. (2002). Creative Self-Efficacy: Its Potential Antecedents And Relationship to Creative Performance. *Academy of Management Journal*, 46(8), 1137-1148.
- Tierney, P., & Farmer, S. M. (2011). Creative Self-Efficacy Development and Creative Performance over Time. *Journal of Applied Psychology*, 96(2), 277-293.
- Tiwana, A. (2003). Affinity to Infinity In Peer-To-Peer Knowledge Platforms. *Communications of The ACM*, 46(5), 76-80.
- Tussyadiah, I. (2013). When Cell Phones Become Travel Buddies: Social Attribution To Mobile Phones In Travel. In L. Cantoni And Z. Xiang (Eds.), *Information And Communication Technologies In Tourism 2013*, Springer Berlin Heidelberg, 82-93.

- Tussyadiah, I. (2014). Social Actors Attribution To Mobile Phones: The Case of Tourists. *Journal of Information Technology and Tourism*, 41(1), 21-47.
- Urban, G., & Von Hippel, E. (1988). Lead User Analyses for the Development of New Industrial Products. *Management Science*, 34(5), 569-582.
- Van Dijck, J. (2009). Users Like You? Theorizing Agency in User-Generated Content. *Media, Culture And Society*, 31(1), 41-58.
- Vandecasteele, B., & Geuens, M. (2014). Motivated Consumer Innovativeness: Concept, Measurement, and Validation. *International Journal of Research In Marketing*, 27(4), 308-318.
- Vehovar, V., & Manfreda, K. (2008). Overview: Online Surveys. In N. Fielding, R. Lee, & G. Blank (Eds.) *The Sage Handbook of Online Research Methods*. Sage Publishing, London, 177-194.
- Vehovar, V., & Manfreda, K. L. (2008). Overview: Online Surveys. *The Sage Handbook of Online Research Methods*, 177-194.
- Venkatraman, M. P., & Price, L. L. (1990). Differentiating Between Cognitive and Sensory Innovativeness: Concepts, Measurement, And Implications. *Journal of Business Research*, 20(4), 293-315.
- Von Hippel, E. (1998). Economics of Product Development By Users: The Impact of "Sticky" Local Information. *Management Science*, 44(5), 629-644.
- Von Hippel, E., & Katz, R. (2002). Shifting Innovation To Users Via Toolkits. *Management Science*, 48(7), 821-833.
- Von Hippel, E. (2005). Democratizing Innovation: The Evolving Phenomenon of User Innovation. *Journal Für Betriebswirtschaft*, 55(1), 63-78.
- Von Hippel, E. (2007). Horizontal Innovation Networks—By And For Users. *Industrial and Corporate Change*, 15(2), 293-315.
- Von Hippel, E. A., Ogawa, S., & De Jong, J. (2011). The Age of The Consumer-Innovator. *MIT Sloan Management Review*, 53(1), 1-16.
- Wang, C. C., & Yang, H. W. (2008). Passion For Online Shopping: The Influence of Personality and Compulsive Buying. *Social Behavior and Personality: An International Journal*, 36(5), 693-706.
- Wang, D., Park, S., & Fesenmaier, D. R. (2012). The Role of Smartphones in Mediating the Touristic Experience. *Journal of Travel Research*, 51(4), 371-387.
- Wang, Y., & Fesenmaier, D. R. (2004). Understanding the Motivation of Contribution in Online Communities, and Empirical Investigation of an Online Travel Community. *Tourism Management*, 25(6), 709-722.
- Weick, K. E. (1995). Creativity and The Aesthetics of Imperfection. In C.M Ford & D. A. Goia (Eds.), *Creative Action In Organizations: Ivory Tower Visions And Real World Voices*, 187-192.
- Wood, S. L., & Swait, J. (2002). Psychological Indicators Of Innovation Adoption: Cross-Classification Based on Need For Cognition and Need For Change. *Journal of Consumer Psychology*, 12(1), 1-13.
- Yeh, Y., Yeh, Y., & Chen, Y.-H. (2012). From Knowledge Sharing To Knowledge Creation: A Blended Knowledge Management Model For Improving University Students' Creativity 7, 245-257. *Thinking Skills and Creativity*, 7(3), 245-257.
- Yoo, H., & Gretzel, U. (2011). Influence of Personality on Travel-Related Consumer-Generated Media Creation. *Computers in Human Behavior*, 27(2), 609-621.

References Study 3

- Adamczyk, S., Bullinger, A. C., & Möslin, K. M. (2012). Innovation Contests: A Review, Classification and Outlook. *Creativity And Innovation Management*, 21(4), 335-360.
- Amabile, T. M. (1983). The Social Psychology of Creativity: A Componential Conceptualization. *Journal of Personality And Social Psychology*, 45(2), 357-367.
- Amabile, T. M. (1996). *Creativity and Innovation In Organizations*. Harvard Business School, Boston, MA.
- Anderson, D. R., Sweeney, D., & Williams, T. (2005). *Statistics For Business And Economics*. 9th Edition, South-Western College Publisher, Mason, OH.
- Baldwin, C. Y., & Von Hippel, E. (2009). Modeling A Paradigm Shift: From Producer Innovation To User and Open Collaborative Innovation. *Journal Organization Science*, 22(6), 1399-1417.
- Besemer, S. P., & O'quin, K. (1987). Creative Product Analysis: Testing A Model By Developing A Judging Instrument. In S. Isaksen (Ed). *Frontiers of Creativity Research: Beyond The Basics Buffalo*. New York: Bearly, 367-389.
- Bilgram, V., Brem, A., & Voigt, K. I. (2008). User-Centric Innovations In New Product Development—Systematic Identification Of Lead Users Harnessing Interactive and Collaborative Online-Tools. *International Journal of Innovation Management*, 12(3), 419-445.
- Blohm, I., Bretschneider, U., Leimeister, J. M., & Krcmar, H. (2011). Does Collaboration Among Participants Lead To Better Ideas In It-Based Idea Competitions? An Empirical Investigation. *International Journal of Networking and Virtual Organisations*, 9(2), 106-122.
- Borst, W. A. (2010). Understanding Crowdsourcing: Effects of Motivation and Rewards on Participation and Performance In Voluntary Online Activities. *Doctoral Dissertation, Erasmus Research Institute Of Management, Rotterdam*.
- Boudreau, K. J., & Lakhani, K. R. (2013). Using The Crowd As An Innovation Partner. *Harvard Business Review*, 4(91), 60-69.
- Bughin, J. (2008). Web2. 0 As A Platform For User Co-Creation: A view From Social Virtual Worlds. In J. Bughin (Ed.) *Web 2.0. Eine Empirische Bestandsaufnahme*, 259-275.
- Bullinger, A. C., Neyer, A. K., Rass, M., & Moeslein, K. (2010). Community-Based Innovation Contests: Where Competition Meets Cooperation. *Creativity and Innovation Management*, 19(3), 290-303.
- Burroughs, J. E., Dahl, D. W., Moreau, C. P., Chattopadhyay, A., & Gorn, G. J. (2011). Facilitating and Rewarding Creativity During New Product Development. *Journal of Marketing*, 75(4), 53-67.
- Chesbrough, H. (2012a). Why Companies Should Have Open Business Models. *Mit Sloan Management Review*, 48(2), 1-6.
- Chesbrough, H. (2012b). Open Innovation: Where We've Been And Where We're Going. *Research-Technology Management*, 55(4), 20-27.
- Chesbrough, H. W. (2003). *Open Innovation: The New Imperative For Creating and Profiting From Technology*. Harvard Business Press,
- Chesbrough, H. W. (2006). The Era Of Open Innovation. *Managing Innovation and Change*, 127(3), 34-41.
- Cova, B., & Dalli, D. (2009). Working Consumers: The Next Step In Marketing Theory? *Marketing Theory*, 9(3), 315-339.
- Creswell, J. W. (2003). *Research Design. Qualitative, Quantitative And Mixed Methods Approaches*. Second Edition, SAGE Publications, London.
- Cropley, D. H. & Cropley, A. J. (2005). Engineering Creativity: A Systems Concept of Functional Creativity. In J. C. Kaufman And J. Baer (Eds.), *Creativity Across Domains: Faces Of The Muse..* New Jersey: Lawrence Erlbaum Associates Inc, 169-185.
- Edvardsson, B., & Tronvoll, B. (2013). A New Conceptualization of Service Innovation Grounded in SD-Logic And Service Systems. *International Journal of Quality And Service Sciences*, 5(1), 19-31.
- Estellés-Arolas, E., & González-Ladrón-De-Guevara, F. (2012). Towards an Integrated Crowdsourcing Definition. *Journal of Information Science*, 38(2), 189-200.
- Faullant, R., Krajger, I., & Zanker, M. (2012). Identification of Innovative Users For New Service Development In Tourism. In Fuchs et al. (Eds.) *Information And Communication Technologies In Tourism 2012*. Springer Helsingborg, Sweden, 426-436.
- Field, A., Miles, J., & Field, Z. (2012). *Discovering Statistics Using R*. Sage Publications, London.
- Franke, N., & Shah, S. (2003). How Communities Support Innovative Activities: An Exploration of Assistance and Sharing Among End-Users. *Research Policy*, 32(1), 157-178.
- Franke, N., Von Hippel, E., & Schreier, M. (2006). Finding Commercially Attractive User Innovations: A Test of Lead-User Theory. *Journal of Product Innovation Management*, 23(4), 301-315.
- Frey, K., Lüthje, C., & Haag, S. (2011). Whom Should Firms Attract To Open Innovation Platforms? The Role of Knowledge Diversity and Motivation. *Long Range Planning*, 44(5), 397-420.
- Füller, J., Hutter, K., & Faullant, R. (2011). Why Co-Creation Experience Matters? Creative Experience and Its Impact on The Quantity and Quality of Creative Contributions. *R&D Management*, 41(3), 259-273.
- Füller, J., Jawecki, G., & Muhlbacher, H. (2007). Innovation Creation By Online Basket Communities. *Journal of Business Research*, 60(1), 60-71.
- Gassmann, O., Enkel, E., & Chesbrough, H. (2010). The Future of Open Innovation. *R&D Management*, 40(3), 213-221.
- Herstatt, C., & Von Hippel, E. (1992). From Experience: Developing New Product Concepts Via The Lead User Method: A Case Study in a "Low-Tech" Field. *Journal of Product Innovation Management*, 9(3), 213-221.
- Hjalager, A. M. (2010). A Review Of Innovation Research In Tourism. *Tourism Management*, 31(1), 1-12.
- Hjalager, A. M., & Nordin, S. (2011). User-Driven Innovation In Tourism—A Review Of Methodologies. *Journal of Quality Assurance In Hospitality & Tourism*, 12(4), 289-315.

- Horn, D., & Salvendy, G. (2006). Consumer-Based Assessment of Product Creativity: A Review And Reappraisal. *Human Factors And Ergonomics In Manufacturing & Service Industries*, 16(2), 155-175.
- Howe, J. (2008). *Crowdsourcing: How The Power of The Crowd Is Driving The Future of Business*. Penguin Random House.
- Hsieh, H. F., & Shannon, S. E. (2005). Three Approaches to Qualitative Content Analysis. *Qualitative Health Research*, 15(9), 1277-1288.
- Hsu, M., Ju, T. L., Yen, C., & Chang, C. (2007). Knowledge Sharing Behavior in Virtual Communities; The Relationship Between Trust, Self-Efficacy and Outcome Expectations. *International Journal Human-Computer Studies*, 65(2), 153-169.
- Hutter, K., Hautz, J., Füller, J., Mueller, J., & Matzler, K. (2011). Communitition: The Tension Between Competition and Collaboration In Community-Based Design Contests. *Creativity and Innovation Management*, 20(1), 3-21.
- Insch, G. S., Moore, J. E., & Murphy, L. D. (1997). Content Analysis In Leadership Research: Examples, Procedures, and Suggestions For Future Use. *The Leadership Quarterly*, 8(1), 1-25.
- Jackson, P. W., & Messick, S. (1965). The Person, The Product, And The Response: Conceptual Problems in the Assessment Of Creativity. *Journal Of Personality*, 33(3), 309-329.
- Jawecki, G., Füller, J., & Gebauer, J. (2011). A Comparison of Creative Behaviours in Online Communities Across Cultures. *Creativity and Innovation Management*, 20(3), 144-156.
- Jeppesen, L. B. (2005). User Toolkits For Innovation: Consumers Support Each Other. *Journal Of Product Innovation Management*, 22(4), 347-362.
- Jeppesen, L. B., & Lakhani, K. R. (2010). Marginality and Problem-Solving Effectiveness In Broadcast Search. *Organization Science*, 21(5), 1016-1033.
- Kaufman, J. C., Baer, J., Cole, J. C., & Sexton, A. (2008). A Comparison of Expert And Nonexpert Raters Using The Consensual Assessment Technique. *Creativity Research Journal*, 20(2), 171-178.
- Kaufman, J. C., Gentile, C. A., & Baer, J. (2005). Do Gifted Student Writers And Creative Writing Experts Rate Creativity The Same Way?. *Gifted Child Quarterly*, 49(3), 260-264.
- Kosonen, M., Gan, C., Olander, H., & Blomqvist, K. (2013). My Idea Is Our Idea! Supporting User-Driven Innovation Activities In Crowdsourcing Communities. *International Journal of Innovation Management*, 17(3), 1-18.
- Kozinets, R. V. (2002). Can Consumers Escape The Market? Emancipatory Illuminations From Burning Man. *Journal of Consumer Research*, 29(1), 20-38.
- Kristensson, P., Magnusson, P. R., & Matthing, J. (2002). Users As A Hidden Resource For Creativity: Findings From An Experimental Study On User Involvement. *Creativity And Innovation Management*, 11(1), 55-61.
- Lilien, G. L., Morrison, P. D., Searls, K., Sonnack, M., & Hippel, E. V. (2002). Performance Assessment of The Lead User Idea-Generation Process For New Product Development. *Management Science*, 48(8), 1042-1059.
- Lüthje, C. (2003). Customers As Co-Inventors: An Empirical Analysis of The Antecedents of Customer-Driven Innovations in The Field Of Medical Equipment. In *Proceedings of The 32th EMAC Conference*, Glasgow, UK.
- Magnusson, P. R. (2009). Exploring The Contributions of Involving Ordinary Users in Ideation of Technology-Based Services. *Journal of Product Innovation Management*, 26(5), 578-593.
- Maslow, A. H. (1967). A Theory Of Metamotivation: The Biological Rooting of The Value-Life. *Journal of Humanistic Psychology*, 7(2), 93-127.
- Morrison, P. D., Roberts, J. H., & Von Hippel, E. (2000). Determinants of User Innovation and Innovation Sharing in a Local Market. *Management Science*, 46(12), 1513-1527.
- Mugge, R., & Schoormans, J. P. (2012). Product Design And Apparent Usability. The Influence of Novelty In Product Appearance. *Applied Ergonomics*, 43(6), 1081-1088.
- Nambisan, S. (2002). Designing Virtual Customer Environment For New Product Development: Toward A Theory. *Academy of Management Review*, 27(3), 392-413.
- Oliveira, P., & Von Hippel, E. (2011). Users As Service Innovators: The Case Of Banking Services. *Research Policy*, 40(6), 806-818.
- Piller, F. (2010). Open Innovation With Customers: Crowdsourcing And Co-Creation At Threadless. In P. Sloane (Ed.), "A Guide To Open Innovation And Crowdsourcing: Advice from Leading Experts". Kogan Page, London. 106-111.
- Piller, F. T., Ihl, C., & Vossen, A. (2010). A Typology Of Customer Co-Creation In The Innovation Process. Available at SSRN 1732127.
- Plucker, J. A., Kaufman, J. C., Temple, J. S., & Qian, M. (2009). Do Experts And Novices Evaluate Movies The Same Way?. *Psychology & Marketing*, 26(5), 470-478.
- Poetz, M. K., & Schreier, M. (2012). The Value Of Crowdsourcing: Can Users Really Compete With Professionals In Generating New Product Ideas?. *Journal Of Product Innovation Management*, 29(2), 245-256.
- Reichwald, R., & Piller, F. (2006). *Open Innovation, Individualisierung Und Neue Formen Der Arbeitsteilung*, Wiesbaden: Gabler Verlag.
- Reis, S. M., & Renzulli, J. S. (1991). The Assessment Of Creative Products In Programs For Gifted And Talented Students. *Gifted Child Quarterly*, 35(3), 128-134.
- Roberts, C. W. (2000). A Conceptual Framework For Quantitative Text Analysis. *Quality And Quantity*, 34(3), 259-274.
- Rourke, L., & Anderson, T. (2004). Validity In Quantitative Content Analysis. *Educational Technology Research And Development*, 52(1), 5-18.
- Sawhney, M., Verona, G., & Prandelli, E. (2005). Collaborating To Create: The Internet As A Platform For Customer Engagement In Product Innovation. *Journal of Interactive Marketing*, 19(4), 4-17.

- Schreier, M., O. S., & Prügl, R. (2007). Lead Users And The Adoption And Diffusion Of New Products: Insights From Two Extreme Sports Communities. *Marketing Letters*, 18(1-2), 15-30.
- Schuhmacher, M. C., & Kuester, S. (2012). Identification Of Lead User Characteristics Driving The Quality Of Service Innovation Ideas. *Creativity And Innovation Management*, 21(4), 427-442.
- Sloane, P. (2011a). *A Guide To Open Innovation And Crowdsourcing: Advice From Leading Experts*. Kogan Page, London.
- Sloane, P. (2011b). The Brave New World Of Open Innovation. *Strategic Direction*, 27(5), 3-4.
- Spann, M., Ernst, H., Skiera, B., & Soll, J. H. (2009). Identification of Lead Users for Consumer Products via Virtual Stock Markets*. *Journal of Product Innovation Management*, 26(3), 322-335.
- Stepchenkova, S., Kirilenko, A. P., & Morrison, A. (2009). Facilitating Content Analysis In Tourism Research. *Journal of Travel Research*, 47(4), 454-469.
- Sternberg, R. J. (1999). A Propulsion Model of Types of Creative Contributions. *Review Of General Psychology*, 3(2), 83-100.
- Surowiecki, J. (2004). *Wisdom of The Crowds*. Anchor, New York .
- Tavakol, M., & Dennick, R. (2011). Making Sense Of Cronbach's Alpha. *International Journal Of Medical Education*, 2(4), 53-55.
- Taylor, I. A. (1975). A Retrospective View Of Creativity Investigation. *Perspectives In Creativity*, 1-36.
- Tussyadiah, I., & Zach, F. (2013). Social Media Strategy And Capacity For Consumer Co-Creation Among Destination Marketing Organizations. In Cantoni & Z. Xiang (Eds.), *Information And Communication Technologies In Tourism 2013*. Berlin: Springer, 242–253.
- Vienna Tourist Board (2014). Internal Report "Open Innovation Platform Vienna 2020#", Version 26th Of October 2014.
- Von Hippel, E. (2005). Democratizing Innovation: The Evolving Phenomenon Of User Innovation. *Journal Fur Betriebswirtschaft*, 55(1), 63-78.
- Von Hippel, E., & Katz, R. (2002). Shifting Innovation To Users Via Toolkits. *Management Science*, 48(7), 821-833.
- Walter, T. P., & Back, A. (2013). A Text Mining Approach To Evaluate Submissions To Crowdsourcing Contests. In *Proceedings of 46th Hawaii International Conference In System Sciences*. 3109-3118.
- Weber, R. P. (1983). Measurement Models For Content Analysis. *Quality And Quantity*, 17(2), 127-149.
- Zach, F. (2013). Collaboration For Innovation In Tourism Organizations: Leadership Support, Innovation Formality, And Communication. *Journal of Hospitality & Tourism Research*. 1096348013495694.
- Zheng, H., Li, D., & Hou, W. (2011). Task Design, Motivation, And Participation In Crowdsourcing Contests. *International Journal of Electronic Commerce*, 15(4), 57-88.

References List Overall Conclusion

- Daugherty, T., Eastin, M. S., & Bright, L. (2008). Exploring Consumer Motivations For Creating User-Generated Content. *Journal of Interactive Advertising, 8*(2), 16-25.
- Füller, J., Matzler, K., & Hoppe, M. (2008). Brand Community Members As A Source Of Innovation. *Journal Of Product Innovation Management, 25*(6), 608-619.
- Hauser, J., Tellis, G. J., & Griffin, A. (2006). Research On Innovation: A Review And Agenda For Marketing Science. *Marketing Science, 25*(6), 687-717.
- Hjalager, A. M. & Nordin, S., 2011. User-driven Innovation in Tourism—A Review of Methodologies. *Journal of Quality Assurance in Hospitality & Tourism, 12*(4), pp. 289-315.
- Kozinets, R. V., Hemetsberger, A., & Schau, H. J. (2008). The Wisdom Of Consumer Crowds Collective Innovation In The Age Of Networked Marketing. *Journal of Macromarketing, 28*(4), 339-354.
- Kristensson, P., Magnusson, P. R., & Matthing, J. (2002). Users As A Hidden Resource For Creativity: Findings From An Experimental Study On User Involvement. *Creativity and Innovation Management, 11*(1), 55-61.
- Labrecque, L. I., vor dem Esche, J., Mathwick, C., Novak, T. P., & Hofacker, C. F. (2013). Consumer Power: Evolution In The Digital Age. *Journal Of Interactive Marketing, 27*(4), 257-269.
- Moscardo, G. (2008). Sustainable Tourism Innovation: Challenging Basic Assumptions. *Tourism And Hospitality Research, 8*(1), 4-13.
- Munar, A. M. (2012). Social Media Strategies And Destination Management. *Scandinavian Journal Of Hospitality And Tourism, 12*(2), 101-120.
- Popper, K. (2005). *The Logic of Scientific Discovery*. Routledge Francis e-Library, New York.
- Seraj, M. (2012). We Create, We Connect, We Respect, Therefore We Are: Intellectual, Social, And Cultural Value In Online Communities. *Journal of Interactive Marketing, 26*(4), 209-222.
- Shaw, G. & Williams, A., 2009. Knowledge Transfer And Management In Tourism Organisations: An Emerging Research Agenda.. *Tourism Management, 30*(3), 325-336.
- Tan, S. K., Kung, S. F., & Luh, D. B. (2013). A Model Of 'Creative Experience'in Creative Tourism. *Annals of Tourism Research, 41*, 153-174.
- Tussyadiah, I., & Zach, F. (2013). Social Media Strategy And Capacity For Consumer Co-Creation Among Destination Marketing Organizations. In L. Cantoni And Z. Xiang (Eds.) *Information and Communication Technologies In Tourism 2013*, Springer Berlin Heidelberg, 242-253.

APPENDICES

A. Destination Branding Definitions

Authors	Destination Branding Definitions
Gardner & Levy (1995)	A technical capability (performance of the product) and a personality dimension (self-concept).
Gnoth (2002)	Functional, experiential and symbolic. These three levels can be formed through tourist interactions with the destination attributes.
Morgan et al. (2004)	Rich emotional meaning, great conversation value and provide high anticipation for their potential tourists.
Caldwell & Freier (2004)	Representational (attributes linked to individuals self-expression) and functional (utilitarian aspects of the destination; sun reefs, sky, culture).
Hankison (2004)	A brand is a combination of perceptual entity, tool for relationships, communicate tool, value enhancers.
Asworth & Kavararitz (2010)	Functional, emotional, relational and strategic elements that collectively generate a unique set of associations with the place in the public mind (Kavararitz & Asworth, 2005; Kavararitz & Asworth, 2010 p.4).
Kozak & Tasci (2006)	A memorable bond or an emotional link between the target marketer and the destination identifying, simplifying, distilling and focusing on the core values and assets that are unique, appealing, distinct and non-substitutable at the destination, while respecting the broader values and goals of the community, that is keeping the sense of the place.
Qu et al. (2011)	Function of identification and differentiation of the destination.

Table A. Definitions of Destination Branding

B. Overview of Studies on Destination Brand Personality

Authors	Method	Dimensions found	Major findings
Ekinci & Hosany (2006)	Structured: 27 items of Aaker's (1996) BPS, 5.Likert-type scale	3 dimensions; sincerity, excitement and conviviality	<ul style="list-style-type: none"> - Tourist attribute personality characteristics to tourism destination. - BPS is applicable to tourism destination. - DP has positive impact on intention to recommend.
Hosany et al. (2006)	Structured: 27 items of Aaker's (1996) BPS, 5.Likert-type scale	3 dimensions; sincerity, excitement and conviviality	<ul style="list-style-type: none"> - DI and DP are two different, but related concepts, while DI is encompassing, DP is more related to affective component of DI.
Ekinci et al. (2007)	Structured: 20 items of Aaker's (1996) BPS, 5.Likert-type scale	3 dimensions; sincerity, excitement and conviviality	<ul style="list-style-type: none"> - Host image has a positive impact on DP. - DP has a positive impact on intention to return and word-of-mouth.
Murphy, Moscardo & Beckendorff (2006)	Structured: 20 items of Aaker's (1996), BPS, 5.Likert-type scale Unstructured: open-ended questions	Cairns (3 dimensions) Sincere, sophisticated, and outdoorsy Whitsunday island (4 dimensions); upper class, honest, exciting and tough	<ul style="list-style-type: none"> - The open-ended responses of personality descriptors were not as common as Aaker's (1997) personality traits. - The findings provide some evidence that BP can be used to differentiate tourism destinations.
Murphy, Moscardo & Beckendorff (2007)	Structured: 20 items of Aaker's (1996), BPS, 5..Likert-type scale	4 dimensions: sophistication and competence, sincerity, excitement and ruggedness	<ul style="list-style-type: none"> - Provides evidence of a relationship between travel motivation and DP. - Provides evidence of a link between DP and SC. - Found a relationship between DP and actual and intended visitation.
Murphy, Beckendorff, & Moscardo (2009)	Structured: 20 items of Aaker's (1996), BPS, 5.Likert-type scale	4 dimensions: sophistication and competence, sincerity, excitement and ruggedness	<ul style="list-style-type: none"> - Tourist need and DP perceptions are associated with higher level SC levels. - Higher level SC are related to satisfaction with destination but not related to intention to visit.
Pitt et al. (2007)	Content analysis: a list of 922 synonyms to Aaker's (1996) 42 personality traits were collected, and then, categorized according to Aaker's BPS dimensions	Each country was evaluated on Aaker's (1997) BPS dimensions	<ul style="list-style-type: none"> - Demonstrated a research method that show how brand communicate their brand personalities online. - Found that some countries focus on specific dimensions of Aaker's (1997) BP dimensions at al.
Prayag (2007)	Unstructured; project techniques, in-depth interview	No dimensions	<ul style="list-style-type: none"> - Projective technique were found effective to elicit dimensions-specific personality traits.
D'Astous & Boujbel (2007)	Structured: previous personality scales, 5.point bipolar scales unstructured: interview	6 dimensions: agreeableness, wickedness, snobbism, assiduousness, conformity and unobtrusiveness	<ul style="list-style-type: none"> - Developed a country scale - Scale is less useful for prediction people's prediction countries as travel destination.

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Sahin & Baloglu (2009)	Structured: 23 items from Aaker's (1996) BPS, 5 items bases on content analysis of travel brochures and internet sites, 5.Likert-scale Unstructured: open-ended questions	5 dimensions: competence and modernity, originality and vibrancy, sincerity cool and trendy, and conviviality	- Perceptions differences across nationalities of DP dimensions.
Usakli & Baloglu (2011)	Structured: 29 items of Aaker's (1996) BPS on 5.Likert-type scale	Five dimensions: vibrancy, sophistication, competence, contemporary and sincerity	- All dimensions have a positive influence on BI. - Self-congruity have an impact in BI. - Self-congruity is mediator of BP and BI.
Chen & Phou (2013)	Structured: 20 items of Aaker's (1996), BPS, 5.Likert-type scale	Five dimensions; excitement, sincerity sophistication, ruggedness and contemporary	- DI has direct effect in DP and tourist- destination relationship. - DP direct positive effect on destination satisfaction and trust. - DP mediates DI and destination relationship.
De Moya & Jain (2013)	Structured: Pitt et al. (2007) list 43 personality traits based upon Aaker's (1996), corresponding analysis	3 dimensions popular; sincerity, excitement, sophistication	- Demonstrates Aaker's brand personality as good theoretical framework. - Evidence of salience dimensions sincerity and excitement.
Padadimitriou, Apostolopoulou & Kaplanidou (2013)	Structured: 16 items from Hosany et al (2006) study DBPS, 5.Likert-type scale	Two dimensions: sincerity and excitement	- Critical role of affective and BP on DI and BI. - DP is antecedent of DI. - Urban tourism BP two measures.
Seljeseth & Korneliusen (2013)	Structured; 20 items based on Murphy (2007) and Aaker's BPS (1996) 5.Likert-type scale	4 dimensions: ruggedness, sophistication, naturalness, activeness	- Tourists associate themselves through personality traits. - Preferred DBP enhance co-creation and experience value.

Note; DP= Destination Personality, DI= Destination Image, BI= Brand Identity, SC=Self-Congruity

Table B. Overview Studies in Tourism Research Brand Personality

C. WordStat Dictionaries

Brand Personality Dimensions

To be continued on next page

Competence	Sincerity	Excitement	Ruggedness	Sophistication
ability	accommodative	active	abrasion	a_la_mode
accomplish	accommodating	adventurous	accented	advanced
allegiance	accomodativly	aggravation	active	alluring
aptitude	accurate	aggressive	al-fresco	allurement
assertive	actual	absorbing	alfresco	amiable
assured	affable	activity	al_fresco	angelic
assurance	affectionate	adolescent	animal	appeal
award-winning	affiliated	amazing	animals	appealing
authentic	affiliation	animate	arduous	aristocracy
brilliance	approachable	animation	austerity	aristocrat
brilliant	approaching	anticipation	bad	aristocratic
buoyant	artless	appreciate	badly	aristocrats
beneficial	authentic	appreciable	beefy	aristocratically
booming	beneficial	arduous	biting	attract
blooming	benevolent	artistic	boisterous	attraction
bright	benign	arty	bleakness	attractive
capability	blithe	audacious	bristly	avant-garde
certified	blithesome	audaciously	brutal	alluring
collective	blunt	audaciousness	brutally	baronial
committed	bonafide	awesome	bumpy	blue_blood
competence	bright	awe-inspiring	challenging	brush_up
concrete	buoyant	avant-garde	challenge	beautiful
confident	beaming	ballsy	chewy	beautify
constant	blithesome	bold	coarse	carprivate
convinced	candid	boldness	coarsely	captivating
corporate	carefree	bouncing	coarseness	celebrated
courteous	careless	brave	confrontation	charismatic
courteous	caring	bravery	cowboy	charming
dedicated	charitable	breathhtaking	convincing	charm
dedication	cheerful	brisk	convince	cherubic
dependable	cheery	brand-new	coriaceous	chic
dependable	chipper	brash	cragged	chivalrous
detailed	chirpy	bubbly	craggy	civil
devoted	civil	challenge	crap	civility
devotion	civilized	characteristic	crappy	civilly
diligent	civility	childish	crimson	classic
diligently	civilized	childlike	crudeness	classy
elaborate	clean-cut	chill	crudity	compel
elaborate	close	colour	cruel	compelling
endorsed	companionable	color	crusty	complicatedness
enduring	compassionate	colorful	crushing	cosmopolitan
exhaustive	complete	colourful	cunctation	cosmopolitans
experienced	conscientious	contemporary	dangerous	couture
expert	congenial	cool	dare	courtier
expert	content	courage	daunting	cultivated
exultant	conventional	courageous	defeated	cultured
expert	contemporary	courageousness	demanding	cute
faithful	contempory	crazy	determined	courteous
faithful	contend	creativity	desert	decorous
fidelity	contended	creative	difficult	delightful
firm	convivial	crisp	difficulty	delicate
flawless	cordial	current	durable	desirable
flourishing	cordially	daredevil	effortful	desirableness
forward	correct	distinctive	endeavor	de_luxe
for_certain	courteous	daring	endeavour	deluxe
genius	creative	daintiness	endure	distinguished
genially	creditable	dazzling	energetic	dignified
genial	customary	dynamic	external	distinction
genial	decent	determined	extinct	distinguished
gift	defensible	determine	extreme	diversity
gifted	devoted	energetic	extremum	divine
guarantee	direct	energy	face	dulcet
hardworking	distinctive	energize	facing	edification
hard-working	down-to-earth	energizing	fiendish	elaborateness
industrious				elaborate
intimate				easy
intimacy				easiness
intelligent				efficient
intricate				effortless
insightful				
jubilant				
judicious				
joint				
knowing				
knowledgeable				

lasting	delight	energize	fierce	elegant
leader	delighted	energizing	ferocious	elegancy
leading	earnest	enlivened	forceful	elevated
license	earthy	enliven	forcible	eloquent
legend	easygoing	enlivening	formidable	enchant
logical	ebullient	enthusiasm	forbidden	enchanting
long-lasting	ecstatic	enterprising	fresco	endearing
long-lived	emotional	exalt	frontier	ennobling
loyal	emotionally	exalting	furrowed	enthral
lucrative	enlightening	exasperation	furrow	enthraling
marketable	enlighten	excite	glutinous	entice
meticulous	enjoyable	excited	godforsaken	enticing
nice	expedient	excitement	granite like	entrancing
organized	fact-based	exciting	granitic	enrapture
outstanding	faithful	exhilarate	grating	esthetic
overqualified	factual	exhilarating	gravel	esteemed
outcome	familiar	exuberant	grueling	executive
palmy	family-oriented	fearlessness	gruel	expensive
perceptive	family-friendly	feisty	hard	exclusivity
permanent	favorable	fiery	hard-hitting	exclusive
perceptual	first	fresh	hardened	excessive
persistent	fecund	freshness	hardy	excellent
persistence	forthcoming	frustration	hard-boiled	excellency
persistence	frank	frustration	hardness	exceptional
positive	frankly	fantastic	harsh	expensive
precise	friendly	fashionable	hazardous	exquisite
predicate	generous	goad	heartless	exquisitely
production	genial	greatly	heavy	extravagant
productive	genuine	great	heavy-duty	eye-catching
productiveness	genuinely	hasty	hostile	fair
proficient	gladsome	headlong	hunt	fabulous
proficiency	good	heart	hunting	fantabulous
profit	good-hearted	heedless	huskiness	fancy
profitable	good-humorous	heroic	indestructible	fascinate
promising	gracious	heroism	inflexible	fascinating
prosper	graciously	high-spirited	inhumane	fashionable
prospering	graciousness	hip	inconsiderate	female
prosperous	gregarious	hot	insensitive	feminine
protected	happy	hot_heated	instinctual	feminist
proud	healthful	hottest	insufferable	feminists
proudly	healthily	idiotic	insupportable	fine-looking
prudent	heartfelt	imaginative	intolerable	first-class
punctilious	hearty	impudent	intemperate	first-rate
qualified	helpful	impetuous	irregular	flossy
qualification	honest	imprudent	jagged	fragile
rational	honestly	incautious	jerking	fragrant
reasonable	honorable	incentive	jerky	fulgid
rakish	honorableness	incredible	jungle	funky
reliable	honourable	impulsive	jolty	futuristic
remain	honourablenesss	independent	jolting	gallant
remaining	hopeful	individual	knobby	genteel
resolved	humane	inducement	lumpy	gentle
responsible	humble	ingenious	laborious	gentlemanlike
result	hospitable	inimitable	leathery	gentlemanly
roaring	imagitive	innovative	macho	girlish
robust	impressionable	insane	male	glamorous
safe	indisputable	inspired	manlike	glamour
sagacious	inexperience	inspiring	manfully	glamorous
sage	ingenious	inspiration	manly	glib
salable	inimitable	inspirational	mannish	glib-tongued
saleable	innocent	instigation	maverick	glittering
savvy	innovative	interest	muscular	glossy
scientific	insouciant	interested	masculine	good-looking
schooled	inspired	interesting	mighty	gorgeous
secure	jaunty	intriguing	mountain	grace
self-assured	jolly	inventive	mountains	grateful
self-confident				grand
self-made				grasping
sellable				great-hearted
sensible				great
sharp				handsome

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sheltered	joyful	invigorate	mountainous	haut-couture
shrewed	joy	irreplaceable	nerve-racking	high-profile
skill	joyable	irrational	nerve-wracking	high-status
skilled	joyful	irritant	onerous	high-quality
skillful	joyous	juvenile	open-air	high-class
smart	kind	jog	outdoor	honor
solid	kindly	latest	outdoorsy	honour
solidity	kinship	liberated	outdoors	impressive
staunch	legimate	lifting	outer	impressively
steady	legimatly	living_up	overwhelming	incomparable
steadfast	legitimize	liven-up	persuasive	incredible
strong	legitimize	lone	persuasively	in-style
success	legitimize	liveliness	perdurable	in-vogue
successful	lightsome	lively	perilous	indulgent
superior	likeable	loud	physical	inexplicability
systematic	liking	modern	physically	inexplicable
systematically	lively	modern-day	potent	lavish
talent	loving	modernist	potently	lovely
talented	lucky	modernistic	powerful	lush
technical	modern	modernness	potholed	luxurious
technically	malleable	modish	pointy	luxury
thorough	matchless	motivate	prairie	magic
thoroughgoing	maudlin	motivating	problematic	magnanimousness
thoroughness	merciful	motivation	problematical	magnetism
thoroughly	merry	moving	pugnacious	magnificent
thriving	mirthful	nerve	precarious	marvelous
trade	modest	nervous	prohibited	mellifluous
trained	neighborly	nerved	punishing	merit
triumphal	new	nervily	rampageous	mesmerize
triumphant	neat	new	resilient	modish
tireless	natural	newly	rigid	neat
trustworthy	nourishing	newly_arisen	rigorous	nice-looking
trusty	nourtusiring	nifty	robust	noble
untiring	novel	nuisance	rocklike	nobility
attackable	obliging	personalized	rocky	noble-minded
unbeatable	old-fashionedopen-	personalize	rough	nobleness
unbeaten	hearted	peppy	roughly	noblesse
unbendable	optimistic	peppery	roughness	noblewomen
undeviating	ordinary	pest	rowdy	outstanding
unfailing	original	plucky	rude	patrician
unfaltering	originality	popular	ruffian	photogenic
unshakable	outgoing	popularity	rugged	picturesque
unwavering	perky	pristine	ruggedness	pleasant
vendible	pleasant	prevailing	ruttet	pleasing
venture	pleasantly	predominant	ruthless	plush
venturous	plain	present	sadistic	polite
victorious	plainspoken	provoke	safari	politeness
winning	polite	provocation	saloon	polished
wise	politeness	rare	savanna	posh
witty	positive	rarity	savannah	precious
workmanlike	practical	recent	scraggy	preeminence
	practically	refreshen	scratchy	prestigious
	pragmatic	refreshed	serrated	prettify
	pragmatically	refreshful	severe	pretty
	praiseworthy	represent	severity	princely
	proper	resourceful	solid	princely
	properness	resourcefulness	solidly	profligate
	referential	remarkable	starkness	profligately
	prototype	romance	stiff	prominent
	pure	rousing	stiffness	queenlike
	real	risky	streaky	queenly
	real-valued	sensational	stressed	refined
	realistic	sensation	stress	remarkable
	relation	sexy	spartan	renowned
	relations	singular	stimulating	righteous
	relationship	shake up	stony	royal
				respect
				respectful
				rich
				satın
				salinity

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reliable	sharp	sticky	scintillate
remarkable	smashing	straining	scintillating
reputable	sole	strenuous	seraphic
respectable	solitary	strict	seamless
responsive	sovereign	stringy	sensational
responsiveness	solo	strong	seasoned
right	sparkling	strongly	shiny
scrupulous	sparkle	strong-arm	silk
self-effacing	specific	struggle	silky
self-efficient	spice	stubborn	smart
sentimental	spicy	sturdy	smooth
shy	spirit	survivor	smoothness
simple	spirited	task	snobbish
simple-minded	spur	tedious	snob
sincere	spunky	temper	snappy
sincereness	spirited	textured	soft
single	stimulation	test	sophistication
single-minded	stimulate	testing	sophisticated
small town	stimulant	thick-skinned	sophisticate
smiling	stimulation	timberland	spectacular
small town	stimulating	toughie	stunning
sociable	storming	toughness	suave
social	stormy	tough	superior
sprightliness	stirring	toughened	superlatively
sprightly	stout	tough-minded	supremacy
straightforward	strong-willed	trek	supreme
straightness	thrill	treking	tasteful
sympathetic	thrilled	trekking	upper-class
suitable	thrilling	trial	upper-classes
sunny	tonic	tiring	uppercases
tender	trendy	tricky	nobility
town	unique	unassailable	vain
transparency	uniquely	uncaring	velvety
trust	unseasoned	uncharitable	velvet
trustful	unusual	uncivilized	well-mannered
trustworthy	unmarked	uncivilised	well-dressed
trusty	unmatched	uncomforted	womanly
truthful	unrestricted	uncomfortable	women
typical	uplifting	uncovered	
upright	value	undomesticated	
up-to-date	valiant	unresolved	
unadulterated	valliant	unsentimental	
unaffected	venturesome	uneven	
unalloyed	venturous	unfeeling	
unassuming	vivacious	unfriendly	
unblemished	vibrant	unforgiving	
unchanging	vibrate	unkind	
unconcerned	welcome	unpadded	
understanding	welcomy	unpleasant	
undiluted	voguish	unpolished	
upright	young	unrefined	
utter	youngish	unrelenting	
valid	youthful	unrestrained	
veritable		unruly	
verity		unsolved	
vigorous		unsmooth	
virtuous		unsteady	
vivacious		unyielding	
warm		untamed	
warmhearted		vicious	
welcoming		violent	
well founded		venturous	
well-mannered		western	
wholesome		westerly	
		weatherworn	
		westerly	

whole hearted worthy	wild wildlife woodland
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Note: all words have the rule "NOT" near, within the range of 2 words maximum.

Table C. Dictionary Brand Personality

Emotions

Anger	Disgust	Sadness	Joy	Fear	Surprise
abhor	abhorrence	affront	agreeability	agitation	admire
abuse	abomination	aggrieved	affable	awkwardness	adore
abusive	abstain	alas	easygoing	aghast	adorable
accuse	affliction	bemoan	amuse	alarm	admirable
afflict	anathema	bewail	amusement	alarming	adventured
aggress	agonize	bittersweet	amiable	alert	alarmed
aggressive	agony	blue	appreciate	alerting	almighty
anger	allergy	boredom	attentive	angst	amaze
angry	anguish	bothersome	beaming	anguish	amazing
angrier	animosity	cheerless	beamish	anxiety	applaud
annihilate	animus	comfortless	blessed	afraid	applause
annoy	antipathy	cry	blissful	apprehension	attract
annoying	antagonism	crying	blithe	apprehensive	attractive
annoyance	atrocious	deject	calmness	awe	astonish
annoyed	abysms	dejection	carefree	baleful	astound
antagonize	appall	depress	celebrate	bafflement	audacity
arrogance	appalling	depressed	cheer	bemusement	awesome
arrogant	aversion	depression	cheerful	bewilderment	beautiful
assault	avoid	despair	cheery	bouncy	beloved
beaten	awful	desperation	chuckle	burden	be loving
bellicosity	bypass	despondency	comfortable	chagrin	boast
betray	blush	despondent	compliments	cautious	boastful
bitter	crummy	dishearten	content	chary	bright
blade	circumvent	disheartening	contentment	chilling	brilliance
blame	curse	disappoint	cordial	chickenheartedness	brilliant
to blame	censure	disappointment	delight	cold_sweat	commendation
bloody	dangerous	disconsolate	delightful	confrontation	creditable
bother	deflect	discourage	disregard	concern	crown
brawl	depressing	dishearten	elate	concerns	confound
broken	desperate	dismal	enjoy	confuse	dazzle
brutal	deprecation	dissatisfied	enjoyable	confusion	delicate
chide	detestation	dissatisfy	enjoyment	consternation	devotion
combat	disapprove	distraught	enjoying	cowardice	dignified
complain	disapproval	distress	enliven	creep	distinction
complaint	disapprovement	distressful	entertain	creeps	dumbfound
complaining	disapprobation	disrespect	entertainment	creepy	dumbfounding
condemn	disfavor	disratous	enthusiasm	cynical	elite
conflict	disgust	despicable	enthusiastic	despair	eminence
controversial	disgusting	disgraceful	euphoric	dismay	emperor
controversy	disheveled	doleful	exult	disillusion	empire
critic	dislike	doomed	exultant	disillusionment	enamor
critique	disoblige	doubt	fateful	disquietude	enamour
cruel	distress	downcast	familiar	disquieting	enormous
deceit	distaste	elegy	fancy	disconcerting	exalt
defeat	disinclination	faithful	favor	distrust	excellent
demolish	disliking	forlorn	favour	disquiet	excellency
deride	discontent	frown	favourable	doubt	exhibit
despise	displeasure	frustration	feel pleasure	doubts	exhilarate
destroy	distaste	frustrated	felicitous	doubtful	exquisite
destruct	dire	funeral	friendly	dread	extraordinary
destructive	dirty	gloomy	fond	embarrassment	fame
detest	dread	glum	fond of	faintheartedness	famed
disagree	dreadful	grieve	fondness	fear	famous
disagreement	dreadfulness	grief	fortunate	fearing	fantastic
disparage	dolor	grievous	fortunately	foreboding	foremost
dispute	dodge	groan	fun	fright	flabbergasted
disturb	enemy	grumble	gaiety	frightening	flabbergast
disturbing	enmity	guilty	genial	frisson	genius

To be continued on next page

discouragement	evade	guilt	glad	hesitate	glory
enrage	evil	hapless	gladly	hesitation	golden
exasperate	envy	heavyhearted	gladness	horror	gold
exasperation	evade	hopeless	glee	horrendous	grace
exploit	fecal	humiliate	gleeful	horrendos	gracious
exterminate	fetid	inconvenience	golden	horrific	graciousness
feud	filthy	ill-fated	good	horrify	grand
fight	formidable	ill-stared	goodness	horrified	grandeur
fought	frantic	lament	gratify	hostility	grateful
furious	fret	lamented	grin	guarded	great
fury	fright	lamentation	happiness	grisly	haughty
gash	frightful	lone	happy	jitters	hero
growl	fury	loneliness	harmonious	looming	huge
gruff	foul	lost	hilarious	misgiving	homage
grumpy	ghastly	luckless	hope	mistrustful	honor
harm	gall	melancholy	humor	menacing	illustrious
harass	gloom	miserable	humorous	melancholy	incredible
hassle	grim	misery	humour	misery	inconceivable
hit	grimy	miseries	humoros	nightmare	impose
howling	gruesome	mistreat	hurray	nightmarish	imposing
infuriate	grubby	mistreated	jocund	nervousness	kingdom
insult	grubbily	mistreating	jovially	nerve-wracking	kicking
insulted	grungy	moan	jovial	ordeal	kick
irritate	hate	mourn	joy	outlandish	love
irritation	hateful	mournful	joyeas	pain	loveable
jealously	harrowing	nervousness	joyful	panic	loving
jealous	hideous	offend	joyous	panicking	majestic
mad	horror	pain	kind	petrify	magnificence
madly	horrendous	painful	kindly	presentiment	magnificent
malice	horrible	pathetic	laugh	premonitory	majestic
obliterate	inferior	pitiful	laughter	perturbing	majesty
outrage	inexcusable	plaint	lighthearted	perplexity	manor
protest	indisposition	prickly	lightsome	perplexing	mellowness
provoke	limit	regret	like	puzzlement	mercy
quarrel	loathing	regretful	luck	ominous	noble
rage	loath	regrettable	merriment	unpromising	notable
raging	lousy	remorse	merry	qualm	outrival
relentless	malicious	repent	mirth	quaking	outstand
reproach	mean	repentance	mirthful	quiver	outstanding
resent	mess	rue	nice	restless	palace
resentment	messy	rueful	optimism	restlessness	popular
retribution	mucky	sad	overjoy	reverence	popularity
revenge	muddy	sadden	peace	suspicion	praise
ridicule	nasty	sadly	peaceful	shaky	praising
ridiculous	nausea	sadness	pleasant	shiver	preeminence
rile	nauseate	shameful	pleasure	shuddering	preeminent
rip	nervous	sensitive	pleasantness	shock	prestige
rip-off	nervousness	spiteful	pleased	shocking	prestigious
rob	obscene	sob	pleasantry	shudder some	pride
rugged	offensive	somber	pleasurable	shudder	prince
sarcasm	outrageous	sorrow	proactive	scare	princely
sarcastic	odium	sorrowful	prosperous	scared	prominent
scoff	pain	sorrowfulness	recommend	scares	proud
scourge	panic	sorrowing	regale	scary	proudly
severity	phobia	sorry	rejoice	shame	radiant
slain	plague	stun	relief	startle	remarkable
slander	prejudice	suffer	relish	suspicious	renown
slap	polluted	tearful	rollick	sorrow	resplendent
slaughter	poor-quality	tragedy	sociable	terror	rich
slay	reluctance	tragic	satisfy	terrorize	royalty
slew	repugnance	troubles	satisfied	timid	royal
smash	revulsion	troublesome	sensation	timidity	royalist

To be continued on next page

snarl	revolute	unfortunate	shine	timorous	significant
spurn	repel	unfortunately	smile	terrible	scorn
sword	repulsive	uncheerful	smiling	terrify	splendid
taunt	repulsion	uncomfortable	sparkle	trepidation	splendor
temper	repugnance	unglad	sparkling	tepidity	spectacular
tension	ruffled	unhappy	thanks	trauma	stately
threat	shun	unluckily	thank you	trouble	strut
threaten	shudder	unlucky	thrill	trembling	stun
tiff	shoddy	unpleasant	thrilling	tremble	stunning
tore	sicken	unpleased	twinkle	tremendous	success
tortment	sickness	unsuccessful	twinkling	tremor	successful
torn	sinister	unsuccessfully	vivacious	tremulous	sublime
torture	shame	yowl	vivacity	torture	superior
traitor	shabby	wailing	welcoming	threaten	superiority
treacherous	slob	weep		threatening	supreme
treachery	smeared	weeping		uncertain	surpass
tyrant	soiled	wept		unconvinced	surprise
umbrage	sore	whin		unease	surprised
unfriendly	squalid	wistful		uneasiness	surprise
unkind	sticking	woe		unsettling	triumph
unsatisfied	tacky	woes		unnerving	vivid
vengeance	tainted	wretched		unsure	victor
vengeful	terrible	worthless		warning	victory
vex	torment	make sorry		wary	victorious
vexation	though	bring down		worry	wealth
vexing	unbearable	make unhappy		worrying	wonderful
vindictive	uneasiness			do-hesitate	worth it
violate	uneasy				worth
violence	ugly				worthy
violent	unpleasant				
warring	unspeakable				
wrath	unworthy				
	unwillingness				
	vacillate				
	vile				
	venom				
	worthless				
	ward_off				
	keep_away_from				
	stay_away_from				
	pass up				
	make_sick				

Note: all words have the rule "NOT" near, within the range of 2 words maximum.

Table D. Dictionary Emotions

D. Examples TripAdvisor Reviews

Band Personality Dimensions

Restaurants

Dimension	Examples
Competence	<p><i>"The staff are absolutely BRILLIANT meeting your every need without being obtrusive. We will definitely visit again."</i></p> <p><i>"The service was very prompt, COURTEOUS, and intensely precise and proper."</i></p> <p><i>"The food is good and offers many choices. As far as we could tell it's also VERY AUTHENTIC. The staff is very keen to provide excellent service to."</i></p>
Sophistication	<p><i>"We walked into a very DELIGHTFUL host (ended up being the owner of the restaurant) who sat us down and explained all the different varieties of wine that come from Georgia."</i></p> <p><i>"We were in the restaurant with my boys. Great experience! The duck was prepared the way I have never had before! ABSOLUTELY AMAZING. Even my picky kids were so satisfied that we had to go back next day for lunch."</i></p> <p><i>"We had a very nice dining experience with friends in the courtyard of this LOVELY restaurant."</i></p>
Sincerity	<p><i>"Design is MODERN and different from the other restaurants in Vienna. I recommend this restaurant, it's culmination of taste !!!"</i></p> <p><i>"So, good service, friendly and HOSPITABLE (with two offers for free)."</i></p> <p><i>"A little crowded, busy when I visited. Difficulty sometimes in translating, yet striving to be HELPFUL and accommodating. Lamb was good and deserts very good. Prices seem fair."</i></p>
Excitement	<p><i>"This was a great find and a REALLY COOL atmosphere!"</i></p> <p><i>"Incredible Atmosphere, History and Piano" Loved every second of our afternoon coffee at cafe central. This is a must do experience of Vienna. INCREDIBLY professional and friendly staff, lovely live piano in the background, awesome decor and architecture with the history of famous names eating here."</i></p> <p><i>"Amazing food and price" For a couple I can guarantee that any xxl plate is more than enough. We ate the spare ribs! I can only describe as SUPER AWESOME!</i></p>
Ruggedness	<p><i>"Great atmosphere, good food and beer but the wait staff had very little personality. Loved the OUTDOOR seating area."</i></p> <p><i>"Once in the restaurant that I (but that is a matter of taste) was totally UNCOMFORTABLE, we decided to sit outside, mainly for Wiener conditions, particularly homey was quite nice, but really do not."</i></p> <p><i>"Arrogant staff" On speaking to the staff serving on the night we wished to eat, and despite the restaurant appearing to be mostly empty, the two MALE staff members were RUDE and boorish at an enquiry about the menu."</i></p>

Table E. Examples of TripAdvisor Reviews - Restaurants

Sights

Dimensions	Examples
Competence	<p><i>"The Prater is one of Vienna's many great parks. The calmer locations around the small lakes are NICE. Also VERY HELPFUL staff at booth inside."</i></p> <p><i>"I felt SAFE walking around doing the tourist thing everywhere. Beware the people trying to sell you tickets to the musical shows at night."</i></p> <p><i>"What a fantastic building and beautifully lit up at night. Fantastic Christmas market, the smells and the atmosphere was BRILLIANT"</i></p>
Sophistication	<p><i>"Belvedere is such a STUNNING PLACE, but somehow the Christmas Market does not represent the typical Viennese Christmas Flair It is a bunch of kiosks, with a rather bad mix of products, not only for your eyes but also for your nose"</i></p> <p><i>"The Marble carved entrance to the palace is as GRAND AND BEAUTIFUL ENTRANCE to a building anywhere in the world."</i></p> <p><i>"My friends and I wandered past this as we were exploring, and we were floored. It is easily one of the most IMPRESSIVE CITY halls that I've ever seen."</i></p>
Sincerity	<p><i>"Beautiful and AUTHENTIC architecture Also very close to other sights. A great place to start a walking/tram tour of the Ringstrasse where you will see many of Vienna's top attractions."</i></p> <p><i>"I had an ENJOYABLE few hours walking around looking at the exhibits and reading the descriptions; most of which were in German and English, which was a PLEASANT SURPRISE. "</i></p> <p><i>"The museum is a GENUINE AND REALLY CHARMING slice of eccentric modern Vienna...and i think will put almost any person in a good mood. ..Especially loved the wooden school chairs placed in front of pictures, inviting you to sit and look longer."</i></p>
Excitement	<p><i>" We work in the Zoo world and have seen too many to count. This zoo was FANTASTIC's and considering the limits on expansion, historic building permits and the original framework from which the zoo grew out of."</i></p> <p><i>If you have time, we would recommend a quick trip to get some AMAZING pictures of the palace, if pressed for time, you could give it a miss."</i></p> <p><i>"We were extremely blessed to get front row seats on the upper level facing the entrance of where the horses come into the arena (highly recommend sitting down that end) lighting is SENSATIONAL."</i></p>
Ruggedness	<p><i>"I have to strongly caution against visiting Vienna. It is a VERY DIRTY CITY with graffiti; trash all over. The people are UNFRIENDLY AND CRAP; the food isn't notable other than the desserts. "</i></p> <p><i>"The staff is KIND OF RUDE and makes the place seem UNCOMFORTABLE, but it wouldn't be a proper art museum if it wasn't uncomfortable."</i></p> <p><i>"My only disappointment was that the staff in all the museums was STIFF."</i></p>

Table F. Examples of TripAdvisor Reviews - Sights

Accommodations

Dimensions	Examples
Competence	<p><i>"We enjoyed our stay in hotel, its INTIMACY and smart design, its great location and the surroundings of bohemian bars and restaurants! Fully recommend it for any purpose stay in Vienna! also great value for money!"</i></p> <p><i>"LOVELY LOCATION close to the historic centre, trams, and train. Good amenities in the hotel. Everything was clean and tidy and the kitchenette was most welcome with a small supermarket just down the road. The staff was pleasant and helpful. The only thing that went wrong was a small issue with the shower in our room. Thoroughly enjoyed the stay."</i></p> <p><i>"I thoroughly enjoyed my week-long stay at the Hotel Rathaus in April. The staff was FLAWLESS and provided friendly, helpful and prompt service. My room was clean, bright, modern and very comfortable. The breakfast service was great, with a wide array of options and good coffee."</i></p>
Sophistication	<p><i>"I have been to Vienna on Business a couple of times and decided to try this hotel because I heard about its "good" service from my friend who stayed there. The staff members were mostly NICE AND COURTEOUS. "</i></p> <p><i>"Hotel was close to city center and to most historic sites, near parks and shopping districts > we were on Maria Theresia suite, it was BEAUTIFUL, comfortable, clean and perfect for family."</i></p> <p><i>"It was a real MARVELOUS stay. Very friendly and very helpful stuff, great breakfast, with a very good view to the Stephansdom. We will surely stay at another time again in this hotel.."</i></p>
Sincerity	<p><i>"The service in the hotel overall was great. The rooms were VERY MODERN & clean and it seems each room has a funky theme to it."</i></p> <p><i>"This hotel is in a fairly decent neighborhood. Breakfast was very CHEERY and ample; supper was just ok."</i></p> <p><i>"The breakfast was nice, everything was tasty and fresh. And the staff is very friendly and ACCOMODATIVE I'd highly recommend this hotel to anybody."</i></p>
Excitement	<p><i>"VERY FRESH, HIP HOTEL WITH a super cool bar on the top floor...which is also the breakfast room on mornings. all I liked the hotel very much. Staff was very friendly."</i></p> <p><i>"It was a real SENSATIONAL stay. Very friendly and very helpful stuff, great breakfast, with a very good view to the stephansdome. We will surely stay at another time again in this hotel. It's very central located."</i></p>
Ruggedness	<p><i>"When we complained to the front desk, they agreed that it was very hot inside, but that management had decided not to turn on the air conditioning until May. VERY BAD IDEA if you want return customers. We also HATED the pillows."</i></p> <p><i>"There is no real front desk - you are pretty much on your own here. So if you are a tourist, no help with maps, directions, or recommendations. TOO BAD, the rooms are cute and the location is great."</i></p>

Table G. Examples of TripAdvisor Reviews - Accommodations

Emotions

Restaurants

Emotion	Examples
Anger	<p><i>"RUDE AND A RIP OFF!!!"Food was ok, tiny portions. Wine list was passable. The waiters had an ongoing battle with each other for some reason. Service was terrible. We had to ask for every course and for drinks when we had finished our glass. Just AWFUL all round really."</i></p> <p><i>The room is gloomy, the terrace is noisy, the staff did not give you an inch, plates are beautiful but RIDICULOUSLY small portions, overpriced wines, only good surprise"</i></p>
Joy	<p><i>"In the centre of Vienna you will suddenly appear in Georgia as you step to this warm and cosy atmosphere DELICIOUS , UNFORGETTABLE, FABULOUS, SWEET, GENEROUS , ... The kind words for this place you can write continuously... And what a service with wight gloves and smiling faces... "</i></p> <p><i>" There was a simple cheese course and a very nice sorbet. Overall the service was superb, the food DELIGHTFUL AND THE wine excellent .Perhaps even the very best dining we have ever enjoyed."</i></p>
Surprise	<p><i>" If you want to try EXCELLENT Georgian cuisine in Vienna - this is the place. I was recommended to try this restaurant to experience proper Georgian cuisine and WOW - it was great."</i></p> <p><i>" Don't get me wrong the food is good but so is the service. But from good to EXTRAORDINARY GOES a huge leap. You guys looking for a fancy restaurant this might just be it, and it won't disappoint, but don't expect the best in town."</i></p> <p><i>"Food is EXQUISITE with above expectation level of quality. They served part of our appetizer with real veggie on the pot with fresh condiments. The service is also excellent and they explained in quite details. Bread has so many variation that you could imagine. It's pricy though as expected from no 6th ranked best restaurant in the world. If you could afford to pay for a nice set lunch, you should pay a visit."</i></p>
Sadness	<p><i>"The food was well prepared but UNFORTUNATE not to our tastes (maybe Georgian food just isn't our favorites), and the presentation really lacked any imagination. Maybe it was the fact that we've not had much Georgian food but I ended up with just a beef stew; no rice, potatoes or salad.. Felt strange and although it tasted well, the meal felt incomplete."</i></p> <p><i>" It does not include the judgment of some enthusiastic readers, obviously seduced by the environment and by the kindness of the staff!. the result is DISAPPOINTING."</i></p> <p><i>"Does not merit its ranking. We were gladly welcome (+) and quickly entertained by an amusebuche (+). Drinks were late to arrive, though (-), and we had to ask for water three times (--). The first course was splendid (octopus salad) (++) ; the MAIN SADLY DISAPPOINTING."</i></p>
Fear	<p><i>" While there's no DOUBT THAT the food was delicious and there was plenty of it, the waiting staff were OK but not great and quite difficult to attract, but most disappointingly the inside of the restaurant is dull, characterless, very simple and with no atmosphere. Tables were small and cramped and we were surprised to see one group arrive with a large dog which stayed in the restaurant."</i></p>
Disgust	<p><i>"We were very excited about being able to eat at Silvio Nickol's new restaurant during our recent visit to Vienna. It was terribly disappointing, form minute we arrived at Silvio Nickol's new restaurant it WAS TERRIBLE."</i></p> <p><i>" First of all, I can't comment on the food, because we didn't eat here. The very rude server shrugged his shoulders, then told us we would have to wait and motioned us towards the line outside the front door. AWFUL ATTITUDE."</i></p> <p><i>" HORRIBLE PLACE - Mr Fabios is really arrogant and offish man, booking service do not keep reservation, the prices is like 3 Michelin star restaurant... And noise - terrible!"</i></p>

Table H. Examples of TripAdvisor Reviews - Restaurants

Sights

Emotion	Examples
Anger	<p><i>"The people are UNFRIENDLY the food isn't notable other than the desserts. Anything that you can visit there has an equivalent in other European cities the others are more visitor-friendly. And the staff at my hotel showed no sympathy"</i></p> <p><i>" The entire experience lasted about 3 hours. The audio guide is almost impossible to hear since there are numerous tour guides giving their personal tour in their language, sometimes on microphones! VERY ANNOYING! Why not make everyone pay for audio tour guides? Management."</i></p>
Joy	<p><i>'the grounds are like a SENSATION. If you can organize it, Eating outside on a nice day is a must. Just soak up your surroundings. There's also a couple of mazes for adults and kids, which are an amusing diversion. The HIGHLIGHT OF THE DAY for me, though, was the view from the Gloriette, which is absolutely stunning."</i></p> <p><i>"This museum is located in the heart of the "museum district", offers DELIGHTFUL classic art, from all over the world. The layout makes it a bit dark and heavy after 1-2 hours looking at it. Cafe inside the museum is new and cakes are just perfect! Price for one adult is around 12€, worth every penny. The Egyptian exhibition IS NICE, a little old. Overall a GOOD WAY to spend a rainy Sunday afternoon"</i></p>
Surprise	<p><i>"Well I must say this is THE MOST BEAUTIFUL church ive been to besides in Rome. The architecture is simply unique and its so GRAND AND AMAZING, that even if you are not a Christian, you will still be amazed."</i></p> <p><i>"The Rathaus is AWESOME on the outside and even on the inside! We had an organized function and we all had a lot of fun and excellent value for money""What a fantastic building and beautifully lit up at night. Fantastic Christmas market, the smells and the atmosphere was BRILLIANT"</i></p>
Sadness	<p><i>"You will be HIGHLY DISAPPOINTED if you go to the morning exercises. It wasn't that much money, but still one of the worst value purchases of my life. Research the show to see if it is worth it"</i></p> <p><i>There was a feeling of dilapidation and resignation, it was a SORROWFUL SIGHT overall. I think it is rather very expensive for what it is currently, plus it's far away. A visit to Shonebrunn is a much better idea."</i></p>
Fear	<p><i>"Waste of time!"I didn't think much of it- but one good, no; great thing came of it- I was persuaded to buy a combined ticket which included the Kunsthistorisches Museum which was fantastic, and the Ephesus Museum for which I couldn't make time. But back to the Imperial Treasury-nothing here that you can't miss. I DOUBT I'D visit if it were on offer free."</i></p> <p><i>" if you've been curious to see artwork in church domes up close as this is a rare opportunity, however really avoid if you even have the slightest fear of heights as it's pretty nerve racking especially if there's a larger number of people running up and down the stairs and slightly shaking the scaffolding while you're standing there!"</i></p>
Disgust	<p><i>" I have now seen 7 productions at the Staatsoper over 3 trips in the last 5 years. MISERABLE productions, mediocre singing, horrible problems of coordination between pit and stage. The WORST lighting you will ever see in a professional opera house - productions look under-rehearsed, actors and chorus wandering about."</i></p> <p><i>"My husband and i paid as a large banner outside proclaimed a panoramic view. The lift only takes you part of the way up and then you have to climb some stairs on scaffolding only to find that there is a TERRIBLE view. You can't even take a good picture because of the mesh over the windows. It was a great disappointment."</i></p>

Table F. Examples of TripAdvisor Reviews - Sights

Accommodations

Emotion	Examples
Anger	<p><i>"I really do not recommend to anyone to make a reservation in this hotel. if they make a mistake in their booking system they do not offer you any help, instead they are rather rude and BLAME you as a customer for their mistake."</i></p> <p><i>"I stayed here for three nights while on a business trip, the hotel and the room itself were good, room was clean, spacous and the hotel is located few minutes' walk from the metro. What ruined my stay was the impolite rather AGRESSIVE STAFF of this hotel. I felt almost THREATENED by their attitude at the time of check out"</i></p> <p><i>"In addition, if you are a couple and want to stay in this hotel, be aware of their bedding configuration. I found this configuration RIDICULOUS and unacceptable for a 5 star hotel."</i></p>
Joy	<p><i>"Lovely location close to the historic centre, trams, and train. GOOD amenities in the hotel. Everything was clean and tidy and the kitchenette was most welcome with a small supermarket just down the road. The STAFF were PLEASANT and helpful. The only thing that went wrong was a small issue with the shower in our room. Thoroughly ENJOYED the stay."</i></p> <p><i>"We had a 4 day stay in September and thoroughly ENJOYED the hotel. From the moment we arrived we were looked after by very friendly, SMILING and helpful STAFF. That includes all the STAFF – reception, breakfast and room cleaning. Our accommodation was roomy, clean, And COMFORTABLE and overlooked the Theater an der Wien." "All very GOOD, we have been very HAPPY for all and ENJOYED the unconventional and friendly urban atmosphere. I'm HAPPY to suggest to friends this hotel"</i></p>
Surprise	<p><i>"It was FANTASTIC, the room was clean, the breakfast buffet was very good with a wide range of choice and there was good internet access."</i></p> <p><i>"The restaurant is among the most EXTRAORDINARY restaurants. The view from the restaurant and the food is par excellence. The staff of the hotel is utmost cordial and is ready to offer little favors to you. "</i></p> <p><i>"They checked us in early and had the crib ready in the room with a little welcome stuffed animal for him. That alone made me gives these hotel top marks! The room was great and we had everything we needed. The staff was AMAZING and very warm and helpful. Overall, great experience! "</i></p>
Sadness	<p><i>"The hotel DISAPPOINTED me a little. It turned to be absolutely different thing than that shown on official photos. The frontward wall was under repair, with a huge and dirty garbage container standing close to the entrance. That entire staff produced a lot of dust and noise."</i></p> <p><i>"The rooms had stable and heavy tobacco smell. The view from the rooms was very UNPLEASANT. A half of rooms were directly facing the windows of the neighbor building.."</i></p> <p><i>"We booked a superior 4 star triple room, but were thoroughly DISAPPOINTED with both the room and the service provided at the hotel."</i></p>
Fear	<p><i>"Our SUSPICION that pets were being allowed in this hotel despite their "no pets allowed" policy as advertised on the website, was confirmed when we had to spend the whole night hearing a brief but strong growl from a dog every 15- 20 minutes from the adjacent room. At around 3:00 AM, with both of us sleepless and could no longer tolerate this disturbing noise, we called the front desk to complain.. Nice bar on roof top amazing view. CREEPY clowns panted in the room we were in. if you don't like clowns request room without. Under construction but not that big of a deal. close to museum quarter night life impressive. Would stay here again. Tram right outside the door. Parking was a task but for the price a home runs."</i></p>
Disgust	<p><i>"We also booked a double room and got 2 single beds instead. We also witnessed the manager shouting his head off at his African employee in the breakfast room. A HORRIBLE place I wouldn't recommend."</i></p> <p><i>"First, the photos are misleading. The rooms are horrible, very old looking and small. Second, The front desk service is TERRIBLE. When paying by visa upon check out, they ask if want to pay in Euro or your local currency with terrible exchange rate.."</i></p>

Table G. Examples of TripAdvisor Reviews - Accommodations

E. Componential Theory of Creativity (Amabile, 1996, p.113)

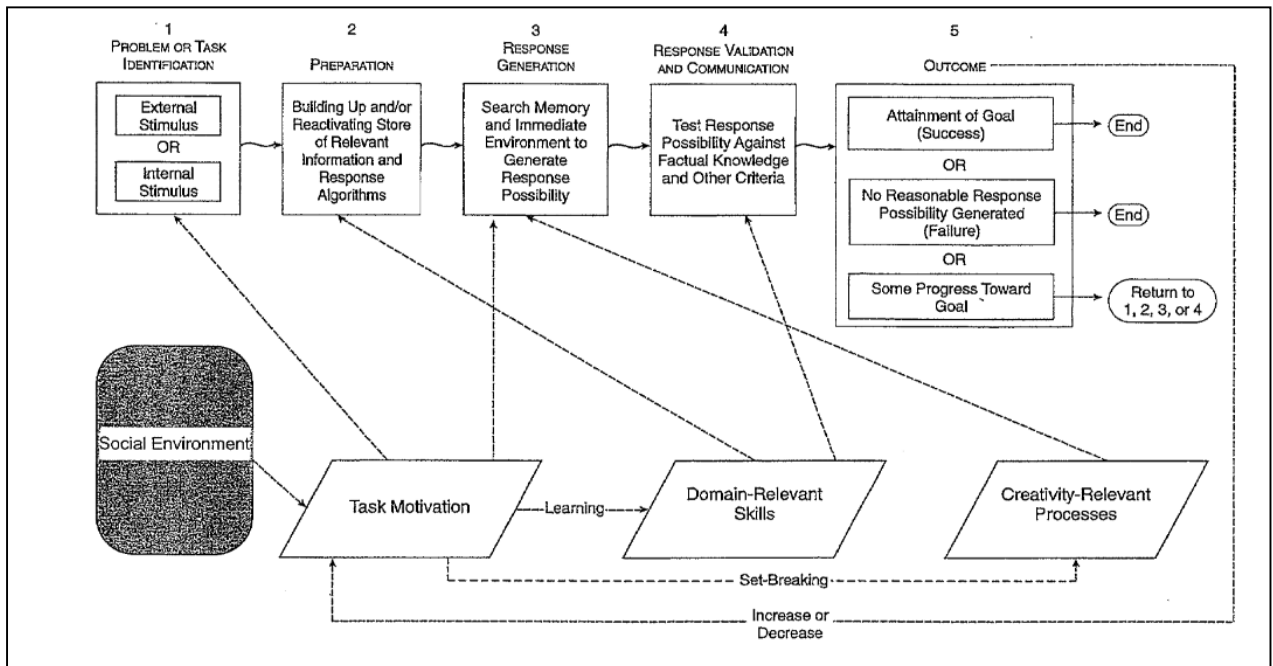


Figure A. Overview of Componential Theory of Creativity

F. Streams of “Creativity Complexity” in Literature

Authors	Model	Details of Creativity Traits
Gruber & Davis (1988)	Evolving System Model of Creativity	<ul style="list-style-type: none"> - The creative person is unique. - Development change is multidimensional. - The creative person is an evolving system. - Creative ideas are influenced by an individual’s expertise, motivation, emotions and environment.
Isaken & Puccio (1988)	Torrance Test of Creative Thinking revised	<ul style="list-style-type: none"> - Level and style dimensions.
Csikszentmihalyi (1999)	Systems Model of Creativity	<ul style="list-style-type: none"> - They proposed three systems that highlight creativity: the interaction with the field, the domain and the person. - The model emphasizes that individuals create within a particular domain and that domain knowledge is required.
Gander (1993)	Interactive Perspective of Creativity	<ul style="list-style-type: none"> - The interaction of three core elements: the individual, other persons, and the work.
Amabile et al. (1996)	Componential Model of Creativity	<ul style="list-style-type: none"> - Creativity as the production of responses or works that are reliable assessed by judged being original. - Three components are essential: (1) domain-relevant skill, (2) creativity-relevant producers, (3) task motivations.
Sternberg & Lubart (1995)	Investment Theory of Creativity	<ul style="list-style-type: none"> - People have a six interrelated resources required for creativity; intellectual ability, knowledge, particular style of thinking, personality motivation, and the environment.
Yeh (2002)	Ecological Systems Model of Creativity	<ul style="list-style-type: none"> - 4 ecological systems, each individually representing personal characteristic, the family and school experiences, organizational environment, and the social milieu on creative ability off staff.
Crawford & Brophy (2006)		<ul style="list-style-type: none"> - Creativity requires a basic level of expertise and fluency within a specific knowledge domain and subject.

Table I. Literature Streams on Complexity of Creativity

G. Survey

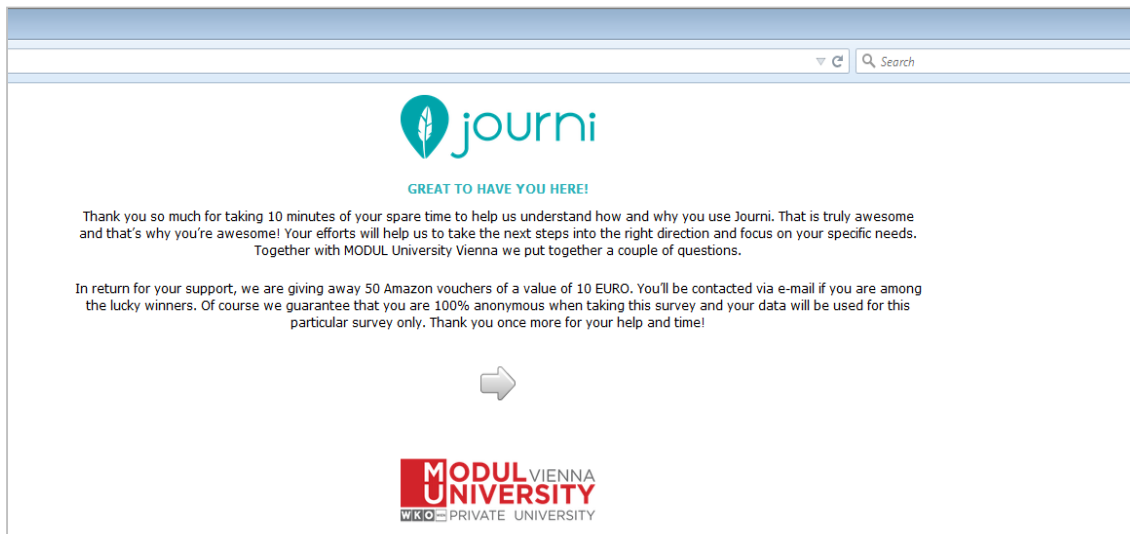


Figure B. Screenshot Online Survey Starting Page

YOUR MEMBERSHIP WITH JOURNI

- 1) **How long have you been a member of Journi?**
 - Less than half a year
 - Between half a year and 1 year

- 2) **How did you become a member of Journi?**
 - Recommendations of friends who are members
 - Through search engines
 - I know the team of Journi
 - On Social Media
 - Product Hunt
 - Apple App Store
 - Other _____

- 3) **How do you use Journi?**
 - I mainly use Journi to follow other trip journals
 - I mainly use Journi to create trip journals

- 4) **How many journals do you have?**
 - 0 (skip logic to question nr. 22)
 - 1
 - 2-5
 - 6-10
 - 11-15
 - > 15

- 5) **When do you upload most of your content?**
 - On the go
 - At the end of each day
 - At the end of your trip

- 6) **Do you create trip journals with family/friends using the travel companion features in your trip settings?**
 - Yes
 - No

To be continued on next page

7) How do you share tip journals usually?

- I keep my journals just for me
- I just make my trips public, so everyone who likes can follow my trip journals
- My friends on Journi ask me actively if they can follow my trip journals
- I invite friends using the invite features on Journi (i.e., email, sms, link, Facebook, Twitter)
- I publicly share the link to my Journi

8) What kind of information do you share when using Journi (choose as many as apply)

- Travel-related content
- Special happenings in my life (wedding, baby, graduation etc..)
- Daily life stuff
- Things of interest (DIY, fashion, food)
- Other, _____

9) Your behavior in Journi

	Daily	Weekly	Monthly	Occasionally (i.e. when I follow someone else who is travelling)
How often have you used Journi in the past?				
How often do you use Journi currently?				
How often do you intend to use Journi in the future?				

YOUR MOTIVATION TO USE JOURNI

10) The Journi App is great to ...

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
... save my travel memories easily					
... share my travel moments with my family/friends					
... communicate with my friends/family being on the go					
... search for information related to my travels					
... get inspired from other journals for my future travel plans					
... follow my friends trips					
... find out about my friend's travel (s)					
... see the reactions of followers					
... help others with my travel experience					

11) If I share my content within my network on Journi ...

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
... I will gain more recognition and respect					
... I will make more friends					
... I will be seen as trustworthy					
... the relationship between my friends/followers and me will be strengthened					
... they will in return also share their trips and experiences with me					

YOUR SATISFACTION WITH JOURNI

12) How satisfied are you with the content you create using Journi?

- Very unsatisfied
- Unsatisfied
- Neither dissatisfied not satisfied
- Satisfied
- Very satisfied

To be continued on next page

13) In which way does the Journi App supports you to create your journals?

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
Journi supports me to present my trip journals in a beautiful/creative/professional way					
Journi supports me to increase the quality of my created trip journals					
Journi supports me to easily create great trip journals					
Journi is useful for communicating my trip journals in a creative manner					

YOUR BEHAVIOR IN JOURNI APP

14) Please indicate what you relate the most too

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
Nothing could me as happy as my membership with Journi does					
I cannot imagine my life without Journi					
I think about Journi several times a day					
Being online in Journi inspires me to create new journals					
Journi makes me feel excited about travelling					

15) Using Journi is ...

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
... Inspiring					
... Pleasurable					
... Exciting					

16) Please indicate what you relate the most too

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
I enjoy creating journals in Journi					
I enjoy contributing new journals to Journi					
I enjoy improving the way I create journals in Journi					

17) Describe the way you are using Journi

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
I like to experiment with new ways of creating journals					
I often try new things in Journi					
I like to do something different every time (i.e., use of new elements/writing style) when I create a journal					
I like to create journals that are new, creative and inspiring					

18) In which way are currently presenting your moments in Journi (multiple choice)

- I make collages of my pictures
- I include elements in my pictures
- I use symbols in my texts
- I use emoticons in my texts
- I upload drawings
- I upload screenshots
- I upload pictures from my DSRL/camera
- I upload pictures from the internet, that are not made by myself
- Anything else, _____

To be continued on next page

19) Please indicate to what you refer the most too

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
Most of the time I include texts in my moments in Journi					
I often post text-only moments in Journi					
I often include more than one picture in my moments that I post in Journi					
I allowed geo-tagging that moments are visible on the map in Journi					
I often use filters for my photos on Journi					
I manipulate my photos before I upload them on Journi e.g., make collages, include elements or text					
I love the stamps that are included in the timeline when I enter a country					

20) Your confidence in creating journals

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
I believe that I am good at creating creative journals in Journi					
I have the confidence that I am good in creating journals in Journi					
I have the ability to develop creative journals in Journi					
I am good at designing creative journals in Journi					

21) Your knowledge about features in Journi

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
If I heard about a new travel app feature, I would look for ways to experiment with it					
Among my friends, I am usually the first to try out new travel app features					
In general, I am hesitant to try new travel app features					
I like to experiment with new travel app features to create my content					

22) If you have only one wish to make a change in Journi, what would that be?

SAVING YOUR JOURNI MEMORIES

23) Apart from Journi, are there any other ways you save and/or share your travel memories

24) Do you create/order photo books from time to time?

- Yes
- No

25) What services or apps do you use to create photo books?

26) What are the major pain points in using this service/apps

To be continued on next page

ABOUT YOU

27) About you as a person

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
I am an innovative person					
I consider myself to be creative and original in my thinking and behavior					
I have novel ideas					
I seek out new ways to do things					
I can hold my ground in a disagreement against a group					
I create sooner than I improve					

SOCIODEMOGRAPHICS

Gender: Female Male

28) How old are you? Please tick of the right age-range category:

- < 16 years
- 16-20 years
- 21- 25 years
- 26 - 30 years
- 31- 35 years
- 36-40 years
- 41-45 years
- 46-50 years
- > 50 years

29) What is your nationality? _____

30) What is your highest obtained degree?

- Primary school
- High school
- Vocational / technical school
- Bachelor's degree
- Master's degree
- Doctoral degree
- Other _____

31) Employment Status: You are currently...

- Employed for pay
- Self-employed
- Out of work and looking for work
- Out of work but not currently looking for work
- A homemaker
- A student
- Military
- Retired
- Unable to work
- Other _____

CLOSING QUESTIONS

32) Do you have any other comments? If so, please list them here _____

33) If you want to participate in the lottery for the Amazon vouchers please list your email address here ☺ (the email cannot be related to the survey and will be saved separately)!

34) Do you want to receive a summary of the results when the research is complete?

- No
- Yes, please provide your email: _____

*You have completed the survey!
 Thank you very much for your time and effort.
 We really appreciate it.*

H. Respondents Characteristics

Characteristics	Frequency (N=)	%
Gender	N=181	
Male	85	46.4
Female	98	53.6
Age	N=183	
Under 16	4	1.3
16-20	10	3.2
21-25	36	11.5
26-30	33	10.5
31-25	33	10.5
36-40	19	6.1
40-45	4	1.3
46-50	14	4.5
>50 years	30	9.6
Education Level	N=183	
Primary school	2	1.1
High school	21	11.5
Technical school	20	10.9
Undergraduate	74	40.5
Graduate	52	28.4
Post graduate	9	4.9
Other (Associate)	5	2.7
Nationality	N=183	
Argentinean	2	.6
Australian	3	1.0
Austrian	31	9.9
Belgian	2	.6
Brazilian	1	.3
British	5	1.6
Bulgaria	1	.3
Canadian	8	2.5
Caucasian	1	.3
Chilean	2	.6
Chinese	1	.3
Colombian	1	.3
Croat	1	.3
Dutch	8	2.5
Estonian	1	.3
Filipino	2	.6
French	3	1.0
German	22	7.0
Hong Kong	2	.6
Hungarian	3	1.0
Indian	6	1.9
Irish	1	.3
Israeli	1	.3
Italian	3	1.0
Korean	1	.3
New Zealander	1	.3
Peruvian	1	.3
Portuguese	1	.3
Romanian	1	.3
Russian	2	.6
Salvadorian	1	.3
Saudis	1	.3
Singaporean	2	.6
Spanish	7	2.2
Swedish	4	.3
Swiss	4	1.3

To be continued on next page

Turkish	3	1.0
North American	33	10.5
Job Position	N=183	
Employed for pay	95	51.9
Self-employed	29	14.2
Out of work and looking for work	8	4.4
Out of work but not looking for work	5	2.7
A homemaker	6	3.3
A student	35	19.1
Military	-	-
Retired	6	3.3
Unable to work	-	-
Other (au pair, travelling)	2	1.1

Table J. Characteristics of Respondents

I. Motivations to Use the Mobile Computing Platform

Motivations to Share (N=184)	Frequency	%	Mean (St.D)
To save my travel memories easily			4.36 (.877)
Strongly disagree	5	3.8	
Disagree	3	3.3	
Neither disagree nor agree	10	8.7	
Agree	68	40.2	
Strongly agree	98	44.0	
To share my travel moments with my family/friends			4.17 (.987)
Strongly disagree	7	3.8	
Disagree	6	1.9	
Neither disagree nor agree	16	5.1	
Agree	74	23.6	
Strongly agree	81	25.8	
To communicate with my friends/family being on the go			3.54 (1.12)
Strongly disagree	10	5.4	
Disagree	23	12.5	
Neither disagree nor agree	47	15.5	
Agree	65	35.5	
Strongly agree	39	21.2	
To search for information related to my travels			2.96 (1.14)
Strongly disagree	23	12.5	
Disagree	38	20.7	
Neither disagree nor agree	64	34.8	
Agree	42	22.8	
Strongly agree	17	9.2	
To get inspired from other journals for my future travel plans			3.26 (1.14)
Strongly disagree	15	8.2	
Disagree	33	17.9	
Neither disagree nor agree	50	27.2	
Agree	61	33.2	
Strongly agree	25	13.6	
To get follow my friends trips			3.51 (1.14)
Strongly disagree	13	7.1	
Disagree	20	10.9	
Neither disagree nor agree	49	26.6	
Agree	64	34.8	
Strongly agree	38	20.7	
To find out about my friend's travel (s)			3.39 (1.13)
Strongly disagree	12	6.5	
Disagree	25	13.6	
Neither disagree nor agree	63	34.2	
Agree	48	26.1	
Strongly agree	36	19.6	
To see the reactions of followers			3.08 (1.14)
Strongly disagree	20	10.9	
Disagree	34	18.5	
Neither disagree nor agree	61	33.2	
Agree	50	27.2	
Strongly agree	19	10.3	
To help others with my travel experience			3.15 (1.12)
Strongly disagree	19	10.3	
Disagree	26	14.1	
Neither disagree nor agree	68	37	
Agree	50	27.2	
Strongly agree	31	11.4	

Table K. Motivations To Share Their Online Content

J. Personal Outcomes of the Membership

Personal Outcomes for Sharing Content (N=181)	Frequency	%	Mean (St.D)
I will gain more recognition and respect			2.63 (.91)
Strongly disagree	24	13.3	
Disagree	44	24.3	
Neither disagree nor agree	93	51.4	
Agree	15	8.3	
Strongly agree	5	2.8	
I will make more friends			2.56 (.91)
Strongly disagree	26	14.4	
Disagree	51	28.2	
Neither disagree nor agree	83	26.4	
Agree	18	5.7	
Strongly agree	3	1.0	
I will be seen as trustworthy			2.61 (.92)
Strongly disagree	27	14.9	
Disagree	41	22.7	
Neither disagree nor agree	91	50.3	
Agree	19	10.5	
Strongly agree	3	1.7	
The relationship between my friends/followers and me will be strengthen			3.01 (1.02)
Strongly disagree	18	9.9	
Disagree	29	16.0	
Neither disagree nor agree	79	43.6	
Agree	44	24.3	
Strongly agree	11	6.1	
They will in return also share their trips and experiences with me			3.14 (.97)
Strongly disagree	15	8.3	
Disagree	19	10.5	
Neither disagree nor agree	82	45.3	
Agree	55	30.4	
Strongly agree	10	5.5	

Table L. Personal Outcomes for Sharing Content

K. Satisfaction with Content Creation

Satisfaction with Content Creating in Journi	(n=174)	Mean =3.96 St.d =.97)
Strongly disagree	9	5.2
Disagree	6	3.4
Neither disagree nor agree	13	7.5
Agree	101	58
Strongly agree	45	25.9

Table M. Characteristics of Respondents

L. Elements to be Creative and Creative Content Behavior

Items (N=156)	Frequency	%	Mean (St.D)
Most of the time I include texts in my moments in Journi			4.01 (.099)
Strongly disagree	4	2.6	
Disagree	11	7.1	
Neither disagree nor agree	18	11.5	
Agree	69	44.2	
Strongly agree	54	34.6	
I often include more than one picture in my moments that I post in Journi			4.20 (.94)
Strongly disagree	4	2.6	
Disagree	6	3.8	
Neither disagree nor agree	15	9.6	
Agree	61	39.1	
Strongly agree	70	44.9	
I often use filters for my photos in Journi			2.83 (1.05)
Strongly disagree	21	13.5	
Disagree	34	21.8	
Neither disagree nor agree	56	35.9	
Agree	40	25.6	
Strongly agree	5	3.2	
I allow geo-tagging so that it appears on my travel map			4.09 (1.12)
Strongly disagree	8	5.1	
Disagree	8	5.1	
Neither disagree nor agree	19	12.2	
Agree	48	30.8	
Strongly agree	73	46.8	
I manipulate my photos before I upload them on Journi e.g., make collages			2.73 (1.13)
Strongly disagree	24	15.4	
Disagree	44	28.2	
Neither disagree nor agree	48	30.8	
Agree	30	19.2	
Strongly agree	10	6.1	
I love the stamps that are included in the timeline when I enter a country			3.83 (1.094)
Strongly disagree	8	5.1	
Disagree	7	4.5	
Neither disagree nor agree	39	25.0	
Agree	51	32.7	
Strongly agree	51	32.7	

Table N. Creative Content Behavior in the Mobile Computing Platform

M. Independent T-test Gender Respondents - All Constructs

	Female Mean (St.D)	Male Mean (St.D)	Mean Differences	T(Sig.) DF=
Consumer Innovativeness	N= 98	N=85		
CI1. I am an innovative person	3.76 (.80)	4.41 (.72)	-.38	-3.39 (.001) 181
CI2. I consider myself to be creative and original in my thinking and behavior	3.92 (.75)	3.98 (.70)	-.06	-.519 (.60) 181
CI3. I have novel ideas	3.50 (.81)	3.67 (.91)	-.17	-1.331 (.18) 181
CI4. I seek out new ways to do things	4.01 (.65)	4.08 (.80)	-.07	-.660 (.50) 181
CI5. I can hold my ground in a disagreement against a group	3.77 (.71)	3.86 (.81)	-.09	-.825 (.41)181
CI6. I create sooner so than I improve	3.20 (.88)	3.33(.83)	-.13	-.980 (.32) 181
Domain-Specific Innovativeness	N=81	N=68		
DSI1. If I heard about a travel app feature, I would look for ways to experiment with it	3.67 (1.05)	3.76 (1.00)	-.09	-.578 (.56) 147
DSI2. Among my peers, I am usually the first to try out new travel app features	3.43 (1.17)	3.72 (1.18)	-.29	-1.529 (.13) 147
DSI3. In general, I am hesitant to try out new travel app features for my content	2.69 (1.172)	2.57 (1.18)	.12	.627(.53) 147
DSI4. I like to experiment with new travel app features to create my content	3.47 (1.07)	3.81 (.98)	-.34	.168 (.04) 147
Creative Self-Efficacy	N=81	N=68		
CSE1. I believe that I am good at creating creative journals in Journi	3.43 (1.04)	3.46 (.92)	-.03	-.146 (.88) 147
CSE2. I have the confidence that I am good in creating journals in Journi	3.43 (1.03)	3.41 (.92)	.02	.126 (.90) 147
CSE3. I have the ability to develop creative journals in Journi	3.47 (1.06)	3.54 (.90)	-.07	-.459 (.65) 147
CSE4. I am good at designing creative journals in Journi	3.23 (1.02)	3.37 (.93)	.13	-.822 (.42) 147
Passion	N=81	N=68		
P1. Nothing could make me as happy as my membership with Journi	2.64 (1.05)	2.46 (.99)	.18	.879 (.27) 147
P2. I cannot imagine my life without Journi	2.31 (1.07)	2.07 (.96)	.23	.206 (.165) 147
P3. I think about Journi several times a day	2.35 (1.16)	2.22 (1.10)	.12	.669 (.50)147
P4. Being online in Journi inspired me to create new journals	3.15 (1.07)	2.84 (1.10)	.31	.434 (.09) 147
P5. Journi makes me feel excited about traveling	3.80 (1.03)	3.43 (1.13)	.37*	.073 (.03) 147
Task Involvement	N=81	N=68		
TI1. Working with Journi is inspiring	3.72 (.96)	3.47 (.85)	.25	.662 (.10) 147
TI2. Working with Journi is pleasurable	3.81 (1.01)	3.75 (.78)	.06	.367 (.07)* 147
TI3. Working with Journi is exciting	3.64 (.94)	3.41 (.86)	.23	.942 (.23) 147
Supporting Platform Conditions	N= 81	N=68		
SPC1. Journi supports me to present my trip journals in a beautiful/ creative/professional manner	3.98 (.92)	4.00 (.93)	-.02	-.162 (.87) 147
SPC2. Journi supports me to increase the quality of my created trip journals	3.81 (.92)	3.82 (.88)	-.009	-.059 (.95) 147
SPC3. Journi supports me to easily create great trip journals	4.07 (1.03)	4.07 (.90)	.001	.003 (.99) 147
SPC4. Journi is useful for communicating my travel journals in a creative manner	3.77 (1.00)	3.81 (.95)	-.043	.868 (.78) 147
Online Creativity	N= 81	N=68		
OC1. I like to experiment with new ways of creating journals	3.47 (.97)	3.59 (.96)	-.12	-.74 (.45) 147
OC2. I often try new things in Journi	3.02 (.90)	3.25 (1.10)	-.23	-1.431 (.15) 147
OC3. I like to do something different every time when I create a journal	3.04 (.95)	2.99 (.98)	.05	.325 (.74) 147
OC4. I like to create journals that are new, creative and inspiring	3.57 (.94)	3.51 (.88)	.05	.351 (.73) 147

Note=* significant $p < .01$

Table O. Independent Samples t-test for the Items – Gender of Respondents

N. Independent T-Test Age Respondents - All Constructs

	<35 years Mean (St.D)	≥ 35 years Mean (St.D)	Mean Differences	T(Sig.) DF=
Consumer Innovativeness	N= 98	N=85		
CI1. I am an innovative person	3.98 (.76)	3.90 (.78)	-.076	-.647(.52) 181
CI2. I consider myself to be creative and original in my thinking and behavior	3.96 (.77)	3.93 (.74)	-.034	-.302 (.76) 181
CI3. I have novel ideas	3.53 (.87)	3.62 (.86)	-.090	.689 (.49) 181
CI4. I seek out new ways to do things	4.01 (.75)	4.07 (.70)	-.058	.537(.59) 181
CI5. I can hold my ground in a disagreement against a group	3.75(.82)	3.86 (.71)	-.11	.996 (.32) 181
CI6. I create sooner so than I improve	3.27 (.87)	3.26 (.86)	-.005	-.039 (.96) 181
Domain-Specific Innovativeness	N=63	N=83		
DSI1. If I heard about a travel app feature, I would look for ways to experiment with it	3.71 (.98)	3.71 (1.06)	0	-.008 (.94) 147
DSI2. Among my peers, I am usually the first to try out new travel app features	3.59 (1.17)	3.54 (1.14)	-.05	-.256 (.79) 147
DSI3. In general, I am hesitant to try out new travel app features for my content	2.59 (1.10)	2.67 (1.17)	-.08	.444 (.65) 147
DSI4. I like to experiment with new travel app features to create my content	3.67 (.96)	3.59 (1.10)	-.08	-.442 (.69) 147
Creative Self-Efficacy	N=66	N=83		
CSE1. I believe that I am good at creating creative journals in Journi	3.47 (.95)	3.42 (1.03)	-.05	-.293 (.77) 147
CSE2. I have the confidence that I am good in creating journals in Journi	3.47 (.98)	3.39 (.98)	-.05	-.519 (.65) 147
CSE3. I have the ability to develop creative journals in Journi	3.47 (.94)	3.30 (1.03)	-.017	.369 (.71) 147
CSE4. I am good at designing creative journals in Journi	3.38 (.97)	3.23 (.99)	-.15	-.924 (.36) 147
Passion	N=66	N=83		
P1. Nothing could make me as happy as my membership with Journi	2.76 (.96)	2.40 (1.059)	-.360	-.214 (.03) 147
P2. I cannot imagine my life without Journi	2.36 (1.02)	2.07 (1.03)	-.291	-1.72 (.08) 147
P3. I think about Journi several times a day	2.33 (1.10)	2.25 (1.16)	-.080	-.428 (.66) 147
P4. Being online in Journi inspired me to create new journals	3.14 (1.03)	2.90 (1.13)	-.233	-1.29 (.19) 147
P5. Journi makes me feel excited about traveling	3.79 (1.01)	3.51 (1.14)	-.282	-1.57 (.12) 147
Task Involvement	N=66	N=83		
TI1. Working with Journi is inspiring	3.64 (.89)	3.58 (.95)	.06	-.38 (.70) 147
TI2. Working with Journi is pleasurable	3.85 (.96)	3.73 (.96)	.12	-.76 (.49) 147
TI3. Working with Journi is exciting	3.56 (.93)	3.52 (.90)	.04	-.282 (.77) 147
Supporting Platform Conditions	N=66	N=83		
SPC1. Journi supports me to present my trip journals in a beautiful/ creative/professional manner	3.89 (.99)	4.06 (.86)	-.17	1.094 (.27) 147
SPC2. Journi supports me to increase the quality of my created trip journals	3.74 (.86)	3.88 (.92)	-.14	.922 (.36) 147
SPC3. Journi supports me to easily create great trip journals	4.02 (1.03)	4.12 (.92)	-.10	.655 (.51) 147
SPC4. Journi is useful for communicating my travel journals in a creative manner	3.67 (.98)	3.88(.95)	-.21	1.33 (.18) 147
Online Creativity	N=66	N=83		
OC1. I like to experiment with new ways of creating journals	3.53 (1.06)	3.52 (.92)	-.012	-.076 (.93) 147
OC2. I often try new things in Journi	3.02 (1.03)	3.22 (.89)	.202	1.276 (.20) 147
OC3. I like to do something different every time when I create a journal	2.92 (1.09)	3.08 (.58)	.160	.97 (.32) 147
OC4. I like to create journals that are new, creative and inspiring	3.48(.94)	3.59 (.89)	.106	.695 (.48) 147

Table P. Independent Samples t-test for the Items – Age of Respondents

O. Indicators Breakdown Overview

Variables N=		%				
Consumer Innovativeness N=184	Mean (St.D)	Completely Disagree	Disagree	Neutral	Agree	Completely Agree
CI1. I am an innovative person	3.93 (.79)	.6	1.3	12.7	30.9	13.1
CI2. I consider myself to be creative and original in my thinking and behavior	3.94 (.75)	.3	1.9	10.8	33.4	12.1
CI3. I have novel ideas	3.58 (.85)	.3	7.0	16.6	28.0	6.7
CI4. I seek out new ways to do things	4.04 (.72)	.3	1.6	7.6	35.0	14.0
CI5. I can hold my ground in a disagreement against a group	3.80 (.76)	.3	2.5	14.3	32.5	8.9
CI6. I create sooner so than I improve	3.26 (.86)	1.3	8.0	27.7	17.5	4.1
Domain-Specific Innovativeness N=154						
DSI1. If I heard about a travel app feature, I would look for ways to experiment with it	3.72 (1.10)	1.9	3.8	11.1	21.3	10.8
DSI2. Among my peers, I am usually the first to try out new travel app features	3.58 (1.14)	3.2	5.1	12.1	17.2	11.5
DSI3. In general, I am hesitant to try out new travel app features for my content	2.66 (1.14)	8.0	15.6	14.0	8.0	3.5
DSI4. I like to experiment with new travel app features to create my content	3.64 (1.04)	1.6	6.1	10.8	20.7	9.9
Creative Self-Efficacy N=154						
CSE1. I believe that I am good at creating creative journals in Journi	3.44 (.97)	1.9	5.4	16.9	18.8	6.1
CSE2. I have the confidence that I am good in creating journals in Journi	3.43 (.69)	1.9	5.7	16.2	19.7	5.4
CSE3. I have the ability to develop creative journals in Journi	3.51 (.97)	2.9	3.2	14.6	22.9	5.4
CSE4. I am good at designing creative journals in Journi	3.31 (.97)	2.5	5.7	19.4	16.9	4.5
Passion N=171						
P1. Nothing could make me as happy as my membership with Journi	2.57 (1.05)	11.8	10.2	23.2	8.0	1.3
P2. I cannot imagine my life without Journi	2.24 (1.03)	16.2	15.3	17.8	3.8	1.3
P3. I think about Journi several times a day	2.33 (1.13)	16.6	14.0	14.6	7.6	1.6
P4. Being online in Journi inspired me to create new journals	3.03 (1.09)	6.4	9.2	18.5	17.2	3.2
P5. Journi makes me feel excited about traveling	3.61 (1.08)	2.9	6.4	10.2	24.5	10.5
Task Involvement N=171						
TI1. Working with Journi is inspiring	3.62 (.98)	1.3	3.8	17.5	23.6	8.3
TI2. Working with Journi is pleasurable	3.81 (.89)	1.9	2.2	9.6	31.5	9.2
TI3. Working with Journi is exciting	3.56 (.90)	1.6	3.5	19.7	22.3	7.3
Supporting Platform Conditions N=174						
SPC1. Journi supports me to present my trip journals in a beautiful/creative/professional manner	3.98 (.90)	1.3	2.9	6.7	29.3	15.3
SPC2. Journi supports me to increase the quality of my created trip journals	3.83 (.86)	1.3	1.9	12.7	28.3	11.1
SPC3. Journi supports me to easily create great trip journals	4.07 (.93)	1.6	2.5	4.8	27.7	18.8
SPC4. Journi is useful for communicating my travel journals in a creative manner	3.80 (.95)	2.2	2.2	11.5	27.7	11.8
Online Creativity N=165						
OC1. I like to experiment with new ways of creating journals	3.55 (.95)	1.9	4.5	16.2	22.9	7.0
OC2. I often try new things in Journi	3.16 (.95)	2.5	8.9	22.6	14.6	3.8
OC3. I like to do something different every time when I create a journal	3.04 (.97)	2.5	13.1	20.1	13.7	3.2
OC4. I like to create journals that are new, creative and inspiring	3.55 (.92)	1.6	4.1	17.5	22.6	6.7

Table Q. Mean Values of Indicators

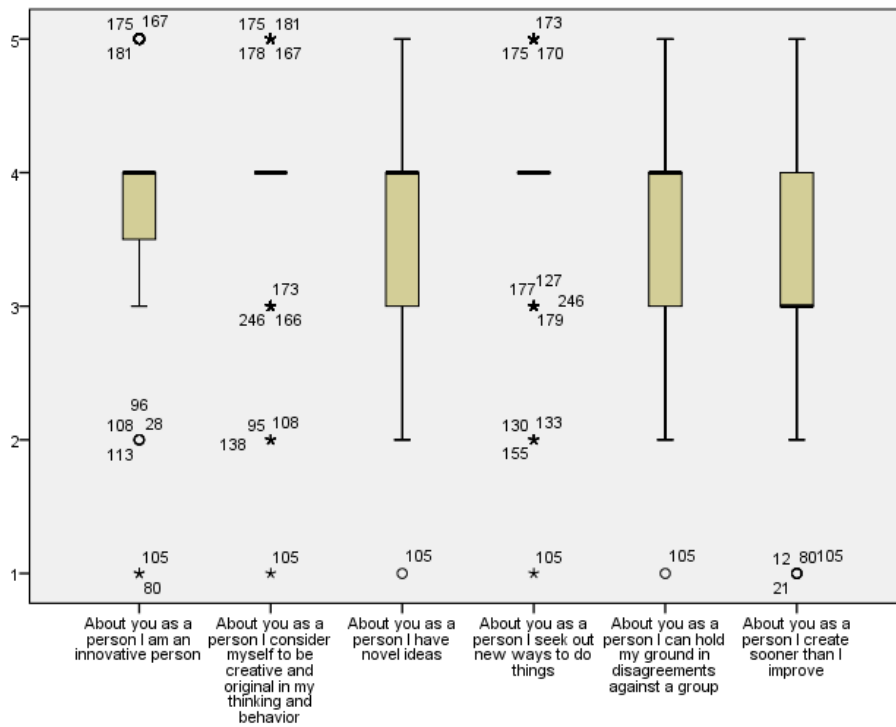
P. Schapiro-Wilk Normality Tests Results And Outliers Identification

	Skewness St. Value (SE)	Kurtsois St.Value (SE)	Shapiro Test Chi (df) Sig,
CI1	-3.81 (.179)	3.12 (.356)	.831 (165) .00
CI2	-3.74 (.179)	2.86 (.356)	.821 (184) .00
CI3	-2.81 (.179)	-.78 (.356)	.866 (184) .00
CI4	-2.14 (.179)	4.88 (.356)	.792 (184) .00
CI5	-3.027 (.179)	1.78 (.356)	.835 (184) .00
CI6	-.351(.179)	.21 (.356)	.881 (184) .00
DSI1	-3.92 (.195)	.79 (.389)	.866 (154) .00
DSI2	-3.09 (.195)	8.30 (.389)	.883 (164) .00
DSI3	1.65 (.195)	-.937 (.389)	.907 (154) .00
DSI4	-3.07 (.195)	-.53 (.389)	.897 (154) .00
CSE1	-2.21 (.195)	.06 (.389)	.892 (154) .00
CSE2	-2.42 (.195)	-.02 (.389)	.859 (154) .00
CSE3	-4.02 (.195)	1.63 (.389)	.852 (154) .00
CSE4	-1.98 (.195)	.08 (.389)	.892 (154) .00
P1	-.39 (.186)	1.98(.369)	.880 (171) .00
P2	2.23 (.186)	1.19 (.369)	.870 (171) .00
P3	2.05 (.186)	-2.24 (.369)	.878 (171) .00
P4	1.78 (.186)	1.65 (.369)	.896 (171) .00
P5	-3.99 (.186)	.015 (.369)	.684 (171) .00
TI1	-2.71 (.186)	-6.34 (.369)	.876 (171) .00
TI2	-6.34 (.186)	5.36 (.369)	.796 (171) .00
TI3	-2.56 (.186)	1.10 (.369)	.877 (171) .00
SPC1	-6.29 (.184)	4.39 (.366)	.802 (174) .00
SPC2	-4.36 (.184)	3.76 (.366)	.837 (174) .00
SPC3	-7.42 (.184)	5.97 (.366)	.744 (174) .00
SPC4	-5.51 (.184)	1.274 (.366)	.831 (174) .00
OC1	-3.18(.189)	.80 (.376)	.875 (165) .00
OC2	-.80 (.189)	.99 (.376)	.901 (165) .00
OC3	.003 (.189)	1.21 (.376)	.906 (165) .00
OC4	-.285 (.189)	.092 (.376)	.876 (165) .00

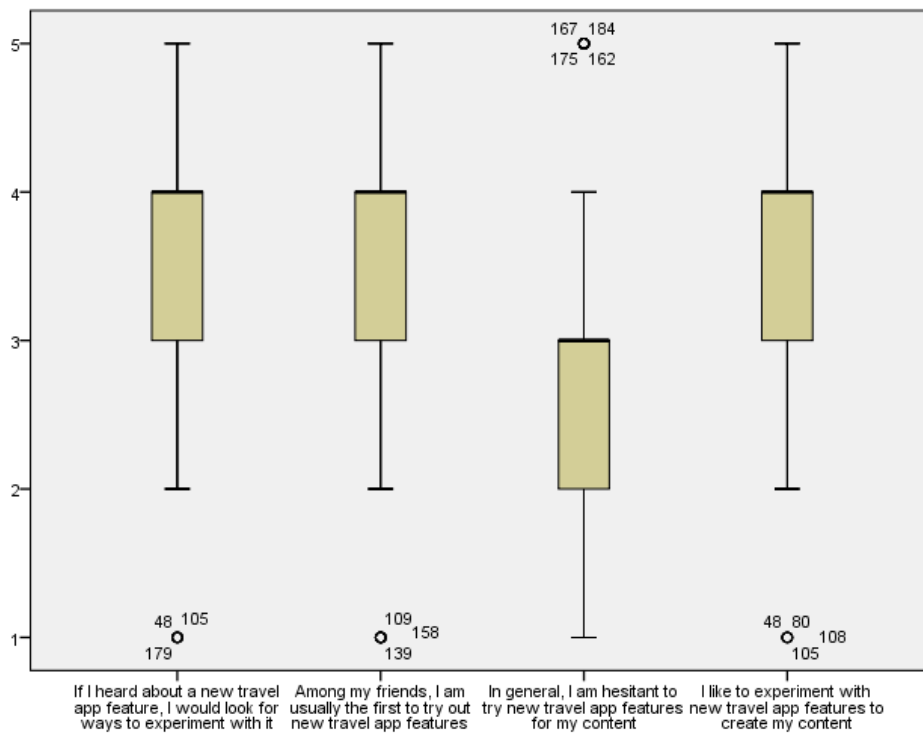
Table R. Schapiro-Wilk Normality Tests Results And Outliers Identification

Q. Boxplots Per Latent Variable – Represented By Its Items

Consumer Innovativeness

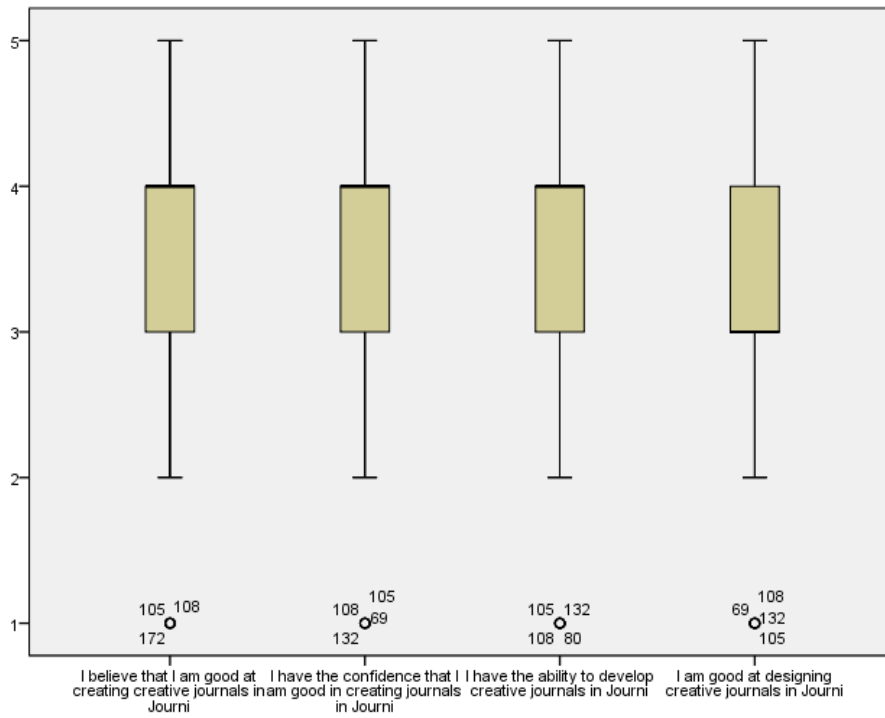


Domain-Specific Innovativeness

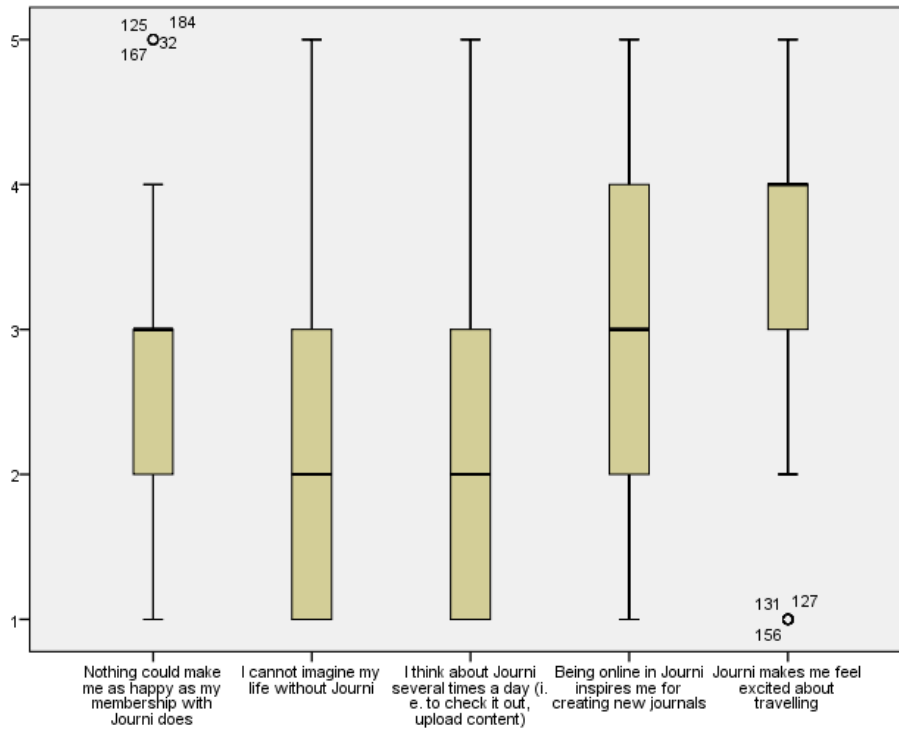


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Creative Self-Efficacy

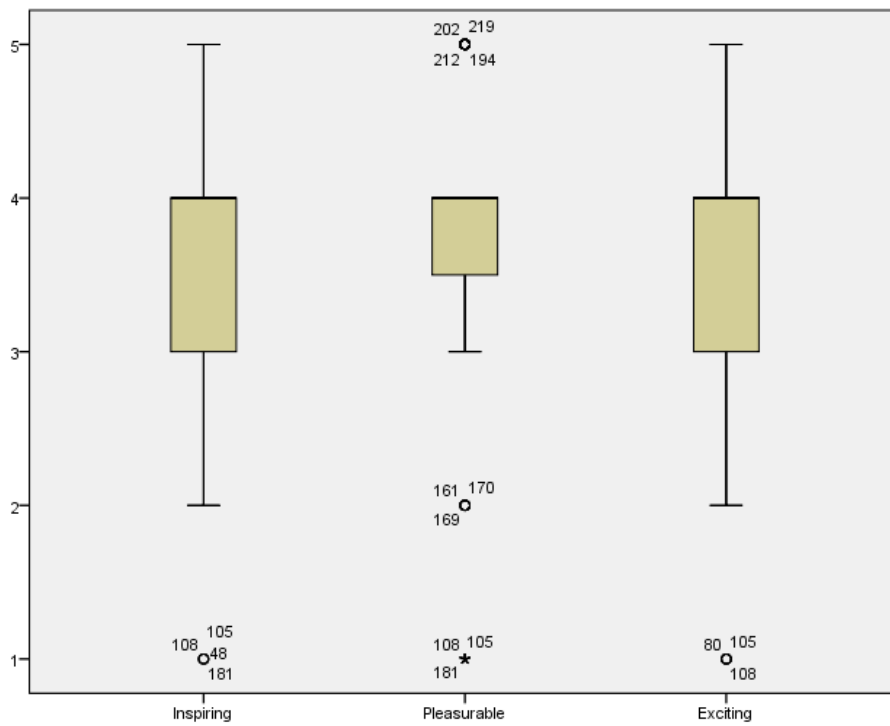


Passion

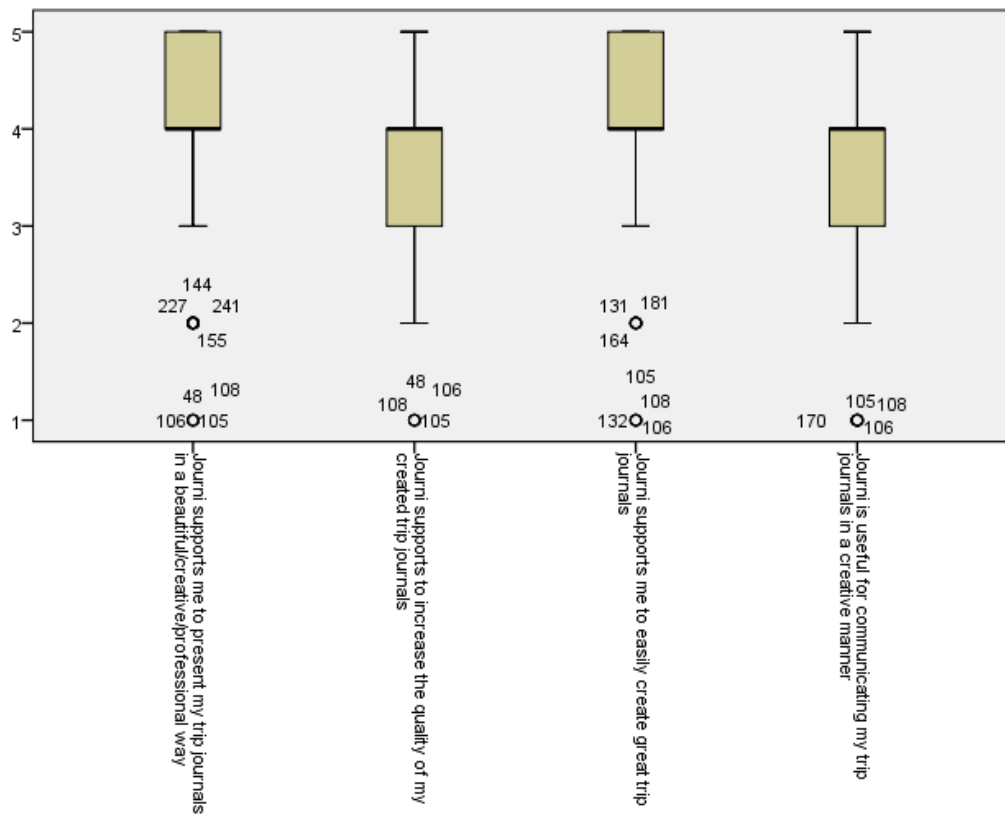


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Task Involvement

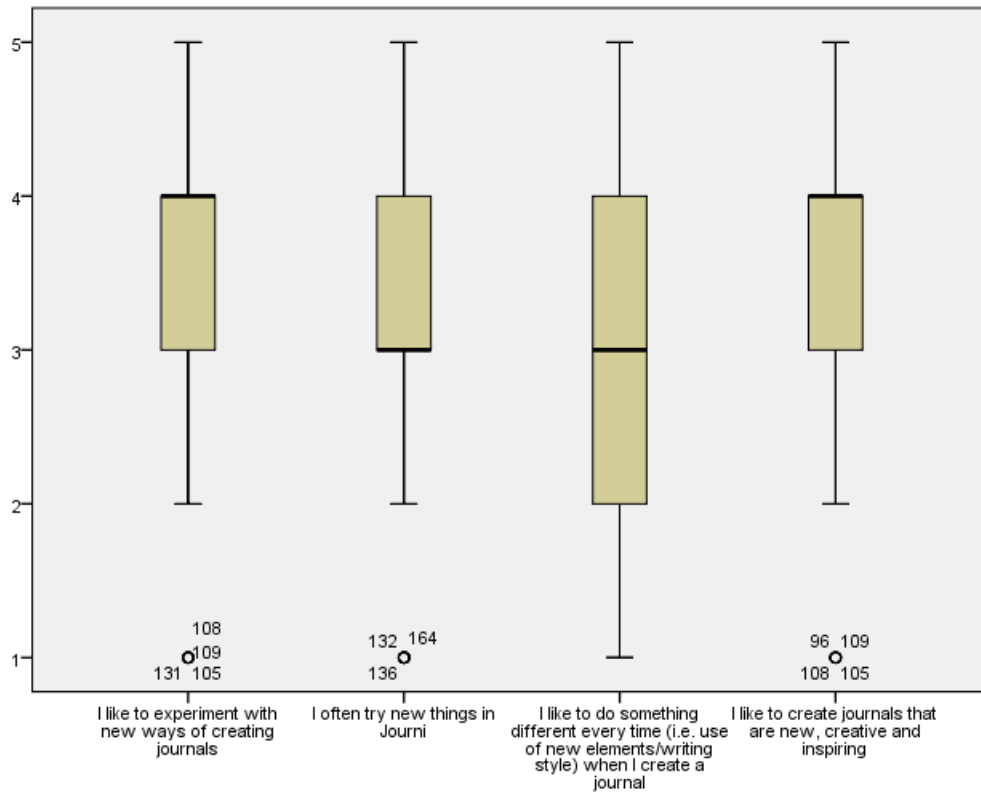


Supporting Platform Conditions



To be continued on next page

Online Creativity



R. MPLUS OUTPUTS

Full model

```
Mplus VERSION 7.2
MUTHEN & MUTHEN
08/13/2015 12:15 PM
INPUT INSTRUCTIONS
DATA:
FILE IS "C:\Users\ljalic\Desktop\journalsem.dat";
FORMAT IS FREE;
!LISTWISE IS ON;
VARIABLE:
  NAMES ARE
  CI1 CI2 CI3 CI4 CI5 CI6
  DSI1 DSI2 DSI3 DSI4
  CSE1 CSE2 CSE3 CSE4
  P1 P2 P3 P4 P5
  TI1 TI2 TI3
  TM1 TM2 TM3
  SPC1 SPC2 SPC3 SPC4
  OC1 OC2 OC3 OC4 ;
  CATEGORICAL ARE
  CI1 CI2 CI4 CI5 CI6 CI3
  DSI1 DSI2 DSI3 DSI4
  CSE1 CSE2 CSE3 CSE4
  P1 P2 P3 P4 P5
  TI1 TI2 TI3
  SPC4 SPC2 SPC3 SPC1
  OC1 OC2 OC3 OC4;
  USEVARIABLES ARE
  CI1 CI2 CI4 CI5 CI6 CI3
  DSI1 DSI2 DSI3 DSI4
  CSE1 CSE2 CSE3 CSE4
  P1 P2 P3 P4 P5
  TI1 TI2 TI3
  SPC4 SPC2 SPC3 SPC1
  OC1 OC2 OC3 OC4;
  MISSING ARE ALL (99);
ANALYSIS:
  ESTIMATOR IS WLSMV;
  ALGORITHM IS INTEGRATION;
  INTEGRATION IS MONTECARLO;
  STITERATIONS = 5000;
  MITERATIONS = 1000;
  STARTS = 500 100;

MODEL:
  CI BY CI1 CI2 CI4 CI5 CI6 CI3;
  DSI BY DSI2 DSI3 DSI4 DSI1;
  CSE BY CSE1 CSE2 CSE3 CSE4;
  P BY P1 P2 P3 P4 P5;
  TI BY TI1 TI2 TI3;
  SPC BY SPC4 SPC2 SPC3 SPC1;
  OC BY OC1 OC2 OC3 OC4;

P ON CI;
CSE ON CI;
DSI ON CI;
CSE ON DSI;
P ON DSI;
OC ON DSI;
OC ON P;
OC ON CSE;
OC ON SPC;
intTI1 | DSI XWITH TI;
intTI2 | CSE XWITH TI;
intTI3 | P XWITH TI;
OC ON intTI1;
OC ON intTI2;
OC ON intTI3;
OUTPUT:
  STANDARDIZED;
  SAMPSTAT;
  TECH4;
*** WARNING in ANALYSIS command
Estimator WLSMV is not allowed with TYPE=RANDOM.
```

To be continued on next page

Default will be used.
 *** WARNING in OUTPUT command
 STANDARDIZED (STD, STDY, STDYX) options are not available for TYPE=RANDOM.
 Request for STANDARDIZED (STD, STDY, STDYX) is ignored.
 *** WARNING in OUTPUT command
 SAMPSTAT option is not available when all outcomes are censored, ordered
 categorical, unordered categorical (nominal), count or continuous-time
 survival variables. Request for SAMPSTAT is ignored.
 *** WARNING in OUTPUT command
 TECH4 option is not available for TYPE=RANDOM.
 Request for TECH4 is ignored.
 *** WARNING
 Data set contains cases with missing on all variables.
 These cases were not included in the analysis.
 Number of cases with missing on all variables: 106
 5 WARNING(S) FOUND IN THE INPUT INSTRUCTIONS

SUMMARY OF ANALYSIS

Number of groups 1
 Number of observations 208
 Number of dependent variables 30
 Number of independent variables 0
 Number of continuous latent variables 10
 Observed dependent variables
 Binary and ordered categorical (ordinal)
 C1 C2 C4 C5 C6 C3
 DS1 DS2 DS3 DS4 CSE1 CSE2
 CSE3 CSE4 P1 P2 P3 P4
 P5 T1 T2 T3 SPC4 SPC2
 SPC3 SPC1 OC1 OC2 OC3 OC4
 Continuous latent variables
 CI DS1 CSE P T1 SPC
 OC INTT1 INTT2 INTT3

Estimator MLR
 Information matrix OBSERVED
 Optimization Specifications for the Quasi-Newton Algorithm for
 Continuous Outcomes
 Maximum number of iterations 100
 Convergence criterion 0.100D-05

Optimization Specifications for the EM Algorithm
 Maximum number of iterations 1000
 Convergence criteria
 Loglikelihood change 0.100D-02
 Relative loglikelihood change 0.100D-05
 Derivative 0.100D-02

Optimization Specifications for the M step of the EM Algorithm for
 Categorical Latent variables
 Number of M step iterations 1
 M step convergence criterion 0.100D-02
 Basis for M step termination ITERATION

Optimization Specifications for the M step of the EM Algorithm for
 Censored, Binary or Ordered Categorical (Ordinal), Unordered
 Categorical (Nominal) and Count Outcomes
 Number of M step iterations 1
 M step convergence criterion 0.100D-02
 Basis for M step termination ITERATION
 Maximum value for logit thresholds 15
 Minimum value for logit thresholds -15
 Minimum expected cell size for chi-square 0.100D-01
 Maximum number of iterations for H1 200
 Convergence criterion for H1 0.100D-03
 Optimization algorithm EMA

Integration Specifications
 Type MONTECARLO
 Number of integration points 700
 Dimensions of numerical integration 7
 Adaptive quadrature ON
 Monte Carlo integration seed 0
 Random Starts Specifications
 Number of initial stage random starts 500
 Number of final stage optimizations 100
 Number of initial stage iterations 5000
 Initial stage convergence criterion 0.100D+01
 Random starts scale 0.500D+01
 Random seed for generating random starts 0

To be continued on next page

Link LOGIT
 Cholesky ON
 Input data file(s)

C:\Users\lalic\Deskto\journalsem.dat
 Input data format FREE

SUMMARY OF DATA

Number of missing data patterns 6

COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value 0.100

PROPORTION OF DATA PRESENT FOR U

Covariance Coverage

	CI1	CI2	CI4	CI5	CI6
CI1	0.837				
CI2	0.837	0.837			
CI4	0.837	0.837	0.837		
CI5	0.822	0.822	0.822	0.822	
CI6	0.822	0.822	0.822	0.822	0.822
CI3	0.837	0.837	0.837	0.822	0.822
DSI1	0.822	0.822	0.822	0.822	0.822
DSI2	0.822	0.822	0.822	0.822	0.822
DSI3	0.822	0.822	0.822	0.822	0.822
DSI4	0.822	0.822	0.822	0.822	0.822
CSE1	0.822	0.822	0.822	0.822	0.822
CSE2	0.822	0.822	0.822	0.822	0.822
CSE3	0.793	0.793	0.793	0.793	0.793
CSE4	0.793	0.793	0.793	0.793	0.793
P1	0.793	0.793	0.793	0.793	0.793
P2	0.793	0.793	0.793	0.793	0.793
P3	0.793	0.793	0.793	0.793	0.793
P4	0.793	0.793	0.793	0.793	0.793
P5	0.793	0.793	0.793	0.793	0.793
TI1	0.740	0.740	0.740	0.740	0.740
TI2	0.740	0.740	0.740	0.740	0.740
TI3	0.740	0.740	0.740	0.740	0.740
SPC4	0.721	0.721	0.721	0.721	0.721
SPC2	0.740	0.740	0.740	0.740	0.740
SPC3	0.721	0.721	0.721	0.721	0.721
SPC1	0.740	0.740	0.740	0.740	0.740
OC1	0.721	0.721	0.721	0.721	0.721
OC2	0.721	0.721	0.721	0.721	0.721
OC3	0.721	0.721	0.721	0.721	0.721
OC4	0.721	0.721	0.721	0.721	0.721

Covariance Coverage

	CI3	DSI1	DSI2	DSI3	DSI4
CI3	0.837				
DSI1	0.822	0.822			
DSI2	0.822	0.822	0.822		
DSI3	0.822	0.822	0.822	0.822	
DSI4	0.822	0.822	0.822	0.822	0.822
CSE1	0.822	0.822	0.822	0.822	0.822
CSE2	0.822	0.822	0.822	0.822	0.822
CSE3	0.793	0.793	0.793	0.793	0.793
CSE4	0.793	0.793	0.793	0.793	0.793
P1	0.793	0.793	0.793	0.793	0.793
P2	0.793	0.793	0.793	0.793	0.793
P3	0.793	0.793	0.793	0.793	0.793
P4	0.793	0.793	0.793	0.793	0.793
P5	0.793	0.793	0.793	0.793	0.793
TI1	0.740	0.740	0.740	0.740	0.740
TI2	0.740	0.740	0.740	0.740	0.740
TI3	0.740	0.740	0.740	0.740	0.740
SPC4	0.721	0.721	0.721	0.721	0.721
SPC2	0.740	0.740	0.740	0.740	0.740
SPC3	0.721	0.721	0.721	0.721	0.721
SPC1	0.740	0.740	0.740	0.740	0.740
OC1	0.721	0.721	0.721	0.721	0.721
OC2	0.721	0.721	0.721	0.721	0.721
OC3	0.721	0.721	0.721	0.721	0.721
OC4	0.721	0.721	0.721	0.721	0.721

To be continued on next page

Covariance Coverage

	CSE1	CSE2	CSE3	CSE4	P1
CSE1	0.822				
CSE2	0.822	0.822			
CSE3	0.793	0.793	0.793		
CSE4	0.793	0.793	0.793	0.793	
P1	0.793	0.793	0.793	0.793	0.793
P2	0.793	0.793	0.793	0.793	0.793
P3	0.793	0.793	0.793	0.793	0.793
P4	0.793	0.793	0.793	0.793	0.793
P5	0.793	0.793	0.793	0.793	0.793
TI1	0.740	0.740	0.740	0.740	0.740
TI2	0.740	0.740	0.740	0.740	0.740
TI3	0.740	0.740	0.740	0.740	0.740
SPC4	0.721	0.721	0.721	0.721	0.721
SPC2	0.740	0.740	0.740	0.740	0.740
SPC3	0.721	0.721	0.721	0.721	0.721
SPC1	0.740	0.740	0.740	0.740	0.740
OC1	0.721	0.721	0.721	0.721	0.721
OC2	0.721	0.721	0.721	0.721	0.721
OC3	0.721	0.721	0.721	0.721	0.721
OC4	0.721	0.721	0.721	0.721	0.721

Covariance Coverage

	P2	P3	P4	P5	TI1
P2	0.793				
P3	0.793	0.793			
P4	0.793	0.793	0.793		
P5	0.793	0.793	0.793	0.793	
TI1	0.740	0.740	0.740	0.740	0.740
TI2	0.740	0.740	0.740	0.740	0.740
TI3	0.740	0.740	0.740	0.740	0.740
SPC4	0.721	0.721	0.721	0.721	0.721
SPC2	0.740	0.740	0.740	0.740	0.740
SPC3	0.721	0.721	0.721	0.721	0.721
SPC1	0.740	0.740	0.740	0.740	0.740
OC1	0.721	0.721	0.721	0.721	0.721
OC2	0.721	0.721	0.721	0.721	0.721
OC3	0.721	0.721	0.721	0.721	0.721
OC4	0.721	0.721	0.721	0.721	0.721

Covariance Coverage

	TI2	TI3	SPC4	SPC2	SPC3
TI2	0.740				
TI3	0.740	0.740			
SPC4	0.721	0.721	0.885		
SPC2	0.740	0.740	0.721	0.740	
SPC3	0.721	0.721	0.885	0.721	0.885
SPC1	0.740	0.740	0.721	0.740	0.721
OC1	0.721	0.721	0.885	0.721	0.885
OC2	0.721	0.721	0.885	0.721	0.885
OC3	0.721	0.721	0.885	0.721	0.885
OC4	0.721	0.721	0.885	0.721	0.885

Covariance Coverage

	SPC1	OC1	OC2	OC3	OC4
SPC1	0.740				
OC1	0.721	0.885			
OC2	0.721	0.885	0.885		
OC3	0.721	0.885	0.885	0.885	
OC4	0.721	0.885	0.885	0.885	0.885

To be continued on next page

UNIVARIATE PROPORTIONS AND COUNTS FOR CATEGORICAL VARIABLES

CI1

Category 1	0.023	4.000
Category 2	0.052	9.000
Category 3	0.121	21.000
Category 4	0.529	92.000
Category 5	0.276	48.000

CI2

Category 1	0.023	4.000
Category 2	0.034	6.000
Category 3	0.230	40.000
Category 4	0.511	89.000
Category 5	0.201	35.000

CI4

Category 1	0.040	7.000
Category 2	0.040	7.000
Category 3	0.207	36.000
Category 4	0.500	87.000
Category 5	0.213	37.000

CI5

Category 1	0.216	37.000
Category 2	0.187	32.000
Category 3	0.427	73.000
Category 4	0.146	25.000
Category 5	0.023	4.000

CI6

Category 1	0.298	51.000
Category 2	0.281	48.000
Category 3	0.327	56.000
Category 4	0.070	12.000
Category 5	0.023	4.000

CI3

Category 1	0.029	5.000
Category 2	0.046	8.000
Category 3	0.086	15.000
Category 4	0.500	87.000
Category 5	0.339	59.000

DSI1

Category 1	0.304	52.000
Category 2	0.257	44.000
Category 3	0.269	46.000
Category 4	0.140	24.000
Category 5	0.029	5.000

DSI2

Category 1	0.117	20.000
Category 2	0.170	29.000
Category 3	0.339	58.000
Category 4	0.316	54.000
Category 5	0.058	10.000

DSI3

Category 1	0.053	9.000
Category 2	0.117	20.000
Category 3	0.187	32.000
Category 4	0.450	77.000
Category 5	0.193	33.000

DSI4

To be continued on next page

Category 1	0.023	4.000
Category 2	0.070	12.000
Category 3	0.322	55.000
Category 4	0.433	74.000
Category 5	0.152	26.000

CSE1

Category 1	0.035	6.000
Category 2	0.041	7.000
Category 3	0.175	30.000
Category 4	0.579	99.000
Category 5	0.170	29.000

CSE2

Category 1	0.029	5.000
Category 2	0.064	11.000
Category 3	0.363	62.000
Category 4	0.409	70.000
Category 5	0.135	23.000

CSE3

Category 1	0.024	4.000
Category 2	0.036	6.000
Category 3	0.164	27.000
Category 4	0.545	90.000
Category 5	0.230	38.000

CSE4

Category 1	0.036	6.000
Category 2	0.079	13.000
Category 3	0.333	55.000
Category 4	0.436	72.000
Category 5	0.115	19.000

P1

Category 1	0.030	5.000
Category 2	0.073	12.000
Category 3	0.279	46.000
Category 4	0.497	82.000
Category 5	0.121	20.000

P2

Category 1	0.036	6.000
Category 2	0.085	14.000
Category 3	0.309	51.000
Category 4	0.436	72.000
Category 5	0.133	22.000

P3

Category 1	0.048	8.000
Category 2	0.170	28.000
Category 3	0.430	71.000
Category 4	0.279	46.000
Category 5	0.073	12.000

P4

Category 1	0.048	8.000
Category 2	0.248	41.000
Category 3	0.382	63.000
Category 4	0.261	43.000
Category 5	0.061	10.000

P5

Category 1	0.030	5.000
Category 2	0.079	13.000
Category 3	0.333	55.000
Category 4	0.430	71.000
Category 5	0.127	21.000

To be continued on next page

TI1

Category 1	0.039	6.000
Category 2	0.110	17.000
Category 3	0.344	53.000
Category 4	0.383	59.000
Category 5	0.123	19.000

TI2

Category 1	0.039	6.000
Category 2	0.117	18.000
Category 3	0.331	51.000
Category 4	0.403	62.000
Category 5	0.110	17.000

TI3

Category 1	0.058	9.000
Category 2	0.065	10.000
Category 3	0.299	46.000
Category 4	0.468	72.000
Category 5	0.110	17.000

SPC4

Category 1	0.005	1.000
Category 2	0.033	6.000
Category 3	0.185	34.000
Category 4	0.571	105.000
Category 5	0.207	38.000

SPC2

Category 1	0.032	5.000
Category 2	0.123	19.000
Category 3	0.221	34.000
Category 4	0.422	65.000
Category 5	0.201	31.000

SPC3

Category 1	0.011	2.000
Category 2	0.022	4.000
Category 3	0.217	40.000
Category 4	0.527	97.000
Category 5	0.223	41.000

SPC1

Category 1	0.162	25.000
Category 2	0.318	49.000
Category 3	0.286	44.000
Category 4	0.162	25.000
Category 5	0.071	11.000

OC1

Category 1	0.005	1.000
Category 2	0.120	22.000
Category 3	0.283	52.000
Category 4	0.478	88.000
Category 5	0.114	21.000

OC2

Category 1	0.005	1.000
Category 2	0.027	5.000
Category 3	0.130	24.000
Category 4	0.598	110.000
Category 5	0.239	44.000

OC3

Category 1	0.005	1.000
Category 2	0.043	8.000
Category 3	0.245	45.000

To be continued on next page

Category 4 0.554 102.000
 Category 5 0.152 28.000

OC4

Category 1 0.022 4.000
 Category 2 0.136 25.000
 Category 3 0.473 87.000
 Category 4 0.299 55.000
 Category 5 0.071 13.000

RANDOM STARTS RESULTS RANKED FROM THE BEST TO THE WORST LOGLIKELIHOOD VALUES

Final stage loglikelihood values at local maxima, seeds, and initial stage start numbers:

Unperturbed starting value run did not converge. 99 perturbed starting value run(s) did not converge.

THE MODEL ESTIMATION DID NOT TERMINATE NORMALLY DUE TO AN INSUFFICIENT
 NUMBER OF E STEPS. INCREASE THE NUMBER OF ITERATIONS. ESTIMATES
 CANNOT BE TRUSTED.

MODEL RESULTS

Estimate

CI BY

CI1 1.000
 CI2 -171.027
 CI4 -195.698
 CI5 -187.346
 CI6 -172.144
 CI3 -147.577

DSI BY

DSI2 1.000
 DSI3 33.540
 DSI4 47.566
 DSI1 25.188

CSE BY

CSE1 1.000
 CSE2 64.003
 CSE3 35.090
 CSE4 26.887

P BY

P1 1.000
 P2 -28.816
 P3 -39.364
 P4 -45.485
 P5 -31.375

TI BY

TI1 1.000
 TI2 212.388
 TI3 449.057

SPC BY

SPC4 1.000
 SPC2 0.587
 SPC3 1.438
 SPC1 -0.022

OC BY

OC1 1.000
 OC2 0.740
 OC3 0.393
 OC4 0.318

P ON

CI 17.540
 DSI 1.649

CSE ON

CI 2.397
 DSI 1.414

To be continued on next page

DSI ON
 CI -5.507

OC ON

DSI 145.138
 P 19.687
 CSE -126.676
 SPC 1.706
 INTT1 257.592
 INTT2 -156.631
 INTT3 185.922

TI WITH
 CI 0.000
 SPC WITH
 CI -0.008
 TI 0.014

Thresholds

CI1\$1 -3.749
 CI1\$2 -2.516
 CI1\$3 -1.415
 CI1\$4 0.963
 CI2\$1 -4.634
 CI2\$2 -3.358
 CI2\$3 -1.006
 CI2\$4 2.082
 CI4\$1 -4.205
 CI4\$2 -3.164
 CI4\$3 -1.101
 CI4\$4 2.131
 CI5\$1 -1.628
 CI5\$2 -0.370
 CI5\$3 2.529
 CI5\$4 5.325
 CI6\$1 -0.969
 CI6\$2 0.663
 CI6\$3 3.219
 CI6\$4 5.014
 CI3\$1 -4.206
 CI3\$2 -2.911
 CI3\$3 -1.834
 CI3\$4 1.053
 DSI1\$1 -0.880
 DSI1\$2 0.516
 DSI1\$3 2.189
 DSI1\$4 4.403
 DSI2\$1 -2.025
 DSI2\$2 -0.909
 DSI2\$3 0.527
 DSI2\$4 2.801
 DSI3\$1 -3.777
 DSI3\$2 -1.920
 DSI3\$3 -0.533
 DSI3\$4 2.334
 DSI4\$1 -5.818
 DSI4\$2 -3.307
 DSI4\$3 -0.238
 DSI4\$4 3.361
 CSE1\$1 -3.321
 CSE1\$2 -2.502
 CSE1\$3 -1.089
 CSE1\$4 1.604
 CSE2\$1 -6.924
 CSE2\$2 -4.171
 CSE2\$3 0.059
 CSE2\$4 4.518
 CSE3\$1 -5.000
 CSE3\$2 -3.632
 CSE3\$3 -1.580
 CSE3\$4 1.957
 CSE4\$1 -3.946
 CSE4\$2 -2.349
 CSE4\$3 -0.129
 CSE4\$4 2.715
 P1\$1 -3.455
 P1\$2 -2.161
 P1\$3 -0.490
 P1\$4 1.958

To be continued on next page

P2\$1	-5.535
P2\$2	-3.045
P2\$3	-0.198
P2\$4	3.654
P3\$1	-6.035
P3\$2	-2.446
P3\$3	1.693
P3\$4	6.121
P4\$1	-6.926
P4\$2	-1.740
P4\$3	2.205
P4\$4	7.388
P5\$1	-6.160
P5\$2	-3.560
P5\$3	-0.199
P5\$4	3.969
TI1\$1	-3.208
TI1\$2	-1.741
TI1\$3	-0.025
TI1\$4	1.965
TI2\$1	-5.087
TI2\$2	-2.692
TI2\$3	0.049
TI2\$4	3.849
TI3\$1	-7.881
TI3\$2	-5.675
TI3\$3	-0.594
TI3\$4	7.263
SPC4\$1	-6.918
SPC4\$2	-4.537
SPC4\$3	-1.833
SPC4\$4	2.24
SPC2\$1	-3.820
SPC2\$2	-1.924
SPC2\$3	-0.537
SPC2\$4	1.795
SPC3\$1	-7.497
SPC3\$2	-5.745
SPC3\$3	-1.952
SPC3\$4	2.612
SPC1\$1	-1.644
SPC1\$2	-0.077
SPC1\$3	1.189
SPC1\$4	2.564
OC1\$1	-8.974
OC1\$2	-3.814
OC1\$3	-0.827
OC1\$4	4.737
OC2\$1	-7.411
OC2\$2	-5.096
OC2\$3	-2.640
OC2\$4	2.177
OC3\$1	-5.851
OC3\$2	-3.459
OC3\$3	-1.062
OC3\$4	2.237
OC4\$1	-4.178
OC4\$2	-1.920
OC4\$3	0.629
OC4\$4	3.045

Variances

CI	0.000
TI	0.000
SPC	3.724

Residual Variances

DSI	0.000
CSE	0.000
P	0.002
OC	0.000

MODEL COMMAND WITH FINAL ESTIMATES USED AS STARTING VALUES

```
intti1 | dsi XWITH ti;
intti2 | cse XWITH ti;
intti3 | p XWITH ti;
ci BY ci1@1;
ci BY ci2*-171.02663;
ci BY ci4*-195.69838;
```

To be continued on next page

ci BY ci5*-187.34618;
ci BY ci6*-172.14388;
ci BY ci3*-147.57700;
dsi BY dsi2@1
dsi BY dsi3*33.54002;
dsi BY dsi4*47.56631;
dsi BY dsi1*25.18810;
cse BY cse1@1;
cse BY cse2*64.00293;
cse BY cse3*35.08973;
cse BY cse4*26.88653;
p BY p1@1;
p BY p2*-28.81606;
p BY p3*-39.36423;
p BY p4*-45.48528;
p BY p5*-31.37532;
ti BY ti1@1;
ti BY ti2*212.38763;
ti BY ti3*449.05652;
spc BY spc4@1;
spc BY spc2*0.58701;
spc BY spc3*1.43776;
spc BY spc1*-0.02245;
oc BY oc1@1;
oc BY oc2*0.73956;
oc BY oc3*0.39326;
oc BY oc4*0.31763;
p ON ci*17.54023;
p ON dsi*1.64904;
cse ON ci*2.39703;
cse ON dsi*1.41376;
dsi ON ci*-5.50699;
oc ON dsi*145.13782;
oc ON p*19.68677;
oc ON cse*-126.67590;
oc ON spc*1.70587;
oc ON intti1*257.59225;
oc ON intti2*-156.63104;
oc ON intti3*185.92215;
ti WITH ci*-0.00003;
spc WITH ci*-0.00789;
spc WITH ti*0.01444;
[ci1\$1*-3.74857];
[ci1\$2*-2.51601];
[ci1\$3*-1.41544]
[ci1\$4*0.96291];
[ci2\$1*-4.63391];
[ci2\$2*-3.35820];
[ci2\$3*-1.00551];
[ci2\$4*2.08164];
[ci4\$1*-4.20527];
[ci4\$2*-3.16367];
[ci4\$3*-1.10054];
[ci4\$4*2.13086];
[ci5\$1*-1.62751];
[ci5\$2*-0.37026];
[ci5\$3*2.52933];
[ci5\$4*5.32506];
[ci6\$1*-0.96927]
[ci6\$2*0.66336];
[ci6\$3*3.21891];
[ci6\$4*5.01373];
[ci3\$1*-4.20606];
[ci3\$2*-2.91132];
[ci3\$3*-1.83417];
[ci3\$4*1.05261];
[dsi1\$1*-0.87967];
[dsi1\$2*0.51599];
[dsi1\$3*2.18864];
[dsi1\$4*4.40311];
[dsi2\$1*-2.02512];
[dsi2\$2*-0.90908];
[dsi2\$3*0.52685];
[dsi2\$4*2.80104];
[dsi3\$1*-3.77669];
[dsi3\$2*-1.92028];
[dsi3\$3*-0.53258];
[dsi3\$4*2.33355];
[dsi4\$1*-5.81784];
[dsi4\$2*-3.30657];
[dsi4\$3*-0.23763];

To be continued on next page

[dsi4\$4*3.36113];
[cse1\$1*-3.32091];
[cse1\$2*-2.50157];
[cse1\$3*-1.08911];
[cse1\$4*1.60446];
[cse2\$1*-6.92424];
[cse2\$2*-4.17103];
[cse2\$3*0.05881];
[cse2\$4*4.51762];
[cse3\$1*-4.99988];
[cse3\$2*-3.63211];
[cse3\$3*-1.58007];
[cse3\$4*1.95662];
[cse4\$1*-3.94565];
[cse4\$2*-2.34879];
[cse4\$3*-0.12885];
[cse4\$4*2.71467];
[p1\$1*-3.45547];
[p1\$2*-2.16108];
[p1\$3*-0.49038];
[p1\$4*1.95782];
[p2\$1*-5.53481];
[p2\$2*-3.04507];
[p2\$3*-0.19763];
[p2\$4*3.65384];
[p3\$1*-6.03472];
[p3\$2*-2.44612];
[p3\$3*1.69326];
[p3\$4*6.12094];
[p4\$1*-6.92607];
[p4\$2*-1.73963];
[p4\$3*2.20487];
[p4\$4*7.38849];
[p5\$1*-6.16018];
[p5\$2*-3.55996];
[p5\$3*-0.19895];
[p5\$4*3.96887];
[ti1\$1*-3.20817];
[ti1\$2*-1.74139];
[ti1\$3*-0.02516];
[ti1\$4*1.96489];
[ti2\$1*-5.08722];
[ti2\$2*-2.69240];
[ti2\$3*0.04897];
[ti2\$4*3.84930];
[ti3\$1*-7.88130];
[ti3\$2*-5.67548];
[ti3\$3*-0.59402];
[ti3\$4*7.26304];
[spc4\$1*-6.91841];
[spc4\$2*-4.53678];
[spc4\$3*-1.83272];
[spc4\$4*2.24651];
[spc2\$1*-3.81998];
[spc2\$2*-1.92422];
[spc2\$3*-0.53723];
[spc2\$4*1.79496];
[spc3\$1*-7.49683];
[spc3\$2*-5.74518];
[spc3\$3*-1.95179];
[spc3\$4*2.61240];
[spc1\$1*-1.64432];
[spc1\$2*-0.07688];
[spc1\$3*1.18946];
[spc1\$4*2.56410];
[oc1\$1*-8.97413];
[oc1\$2*-3.81395];
[oc1\$3*-0.82684];
[oc1\$4*4.73717];
[oc2\$1*-7.41069];
[oc2\$2*-5.09614];
[oc2\$3*-2.64008];
[oc2\$4*2.17670];
[oc3\$1*-5.85072];
[oc3\$2*-3.45863];
[oc3\$3*-1.06223];
[oc3\$4*2.23654];
[oc4\$1*-4.17772];
[oc4\$2*-1.92011];
[oc4\$3*0.62884];
[oc4\$4*3.04470];

To be continued on next page

```
ci*0.00002;  
dsi*0.00000;  
cse*0.00000;  
p*0.00192;  
ti*0.00006;  
spc*3.72406;  
oc*0.00001;
```

DIAGRAM INFORMATION

Use View Diagram under the Diagram menu in the Mplus Editor to view the diagram.
If running Mplus from the Mplus Diagrammer, the diagram opens automatically.

Diagram output

```
c:\users\lalicic\desktop\mplus study 2\fullimodel_intactions_13aug.dgm  
Beginning Time: 12:15:42  
Ending Time: 11:11:38  
Elapsed Time: 70:55:56
```

MUTHEN & MUTHEN

3463 Stoner Ave.

Los Angeles, CA 90066 Tel: (310) 391-9971, Fax: (310) 391-8971, Web: www.StatModel.com, Support: Support@StatModel.com, Copyright (c) 1998-2014

Muthen & Muthen

Basic model

```
Mplus VERSION 7.2
MUTHEN & MUTHEN
07/22/2015 10:15 AM
INPUT INSTRUCTIONS
DATA: FILE IS "C:\Users\lalicic\Desktop\journalism.dat";
FORMAT IS FREE;
!LISTWISE IS ON;
VARIABLE:
NAMES ARE
CI1 CI2 CI3 CI4 CI5 CI6
DSI1 DSI2 DSI3 DSI4
CSE1 CSE2 CSE3 CSE4
P1 P2 P3 P4 P5
TI1 TI2 TI3
TM1 TM2 TM3
SPC1 SPC2 SPC3 SPC4
OC1 OC2 OC3 OC4 ;
CATEGORICAL ARE
CI1 CI2 CI4 CI5 CI6 CI3
DSI1 DSI2 DSI3 DSI4
CSE1 CSE2 CSE3 CSE4
P1 P2 P3 P4 P5
TI1 TI2 TI3
SPC4 SPC2 SPC3 SPC1
OC1 OC2 OC3 OC4;
USEVARIABLES ARE
CI1 CI2 CI4 CI5 CI6 CI3
DSI1 DSI2 DSI3 DSI4
CSE1 CSE2 CSE3 CSE4
P1 P2 P3 P4 P5
TI1 TI2 TI3
SPC4 SPC2 SPC3 SPC1
OC1 OC2 OC3 OC4;
MISSING ARE ALL (99);

ANALYSIS:
ESTIMATOR IS WLSMV;
MODEL:
CI BY CI1 CI2 CI4 CI5 CI6 CI3;
DSI BY DSI2 DSI3 DSI4 DSI1;
CSE BY CSE1 CSE2 CSE3 CSE4;
P BY P1 P2 P3 P4 P5;
TI BY TI1 TI2 TI3;
SPC BY SPC4 SPC2 SPC3 SPC1;
OC BY OC1 OC2 OC3 OC4;

P ON CI;
CSE ON CI;
DSI ON CI;
CSE ON DSI;
P ON DSI;
OC ON CSE;
OC ON DSI;
OC ON P;
OC ON SPC;
OUTPUT:
STANDARDIZED;
SAMPSTAT;
TECH4;
*** WARNING
Data set contains cases with missing on all variables.
These cases were not included in the analysis.
Number of cases with missing on all variables: 106
1 WARNING(S) FOUND IN THE INPUT INSTRUCTIONS
```

SUMMARY OF ANALYSIS

To be continued on next page

Number of groups 1
 Number of observations 208
 Number of dependent variables 30
 Number of independent variables 0
 Number of continuous latent variables 7
 Observed dependent variables
 Binary and ordered categorical (ordinal)
 CI1 CI2 CI4 CI5 CI6 CI3
 DSI1 DSI2 DSI3 DSI4 CSE1 CSE2
 CSE3 CSE4 P1 P2 P3 P4
 P5 TI1 TI2 TI3 SPC4 SPC2
 SPC3 SPC1 OC1 OC2 OC3 OC4
 Continuous latent variables
 CI DSI CSE P TI SPC OC
 Estimator WLSMV
 Maximum number of iterations 1000
 Convergence criterion 0.500D-04
 Maximum number of steepest descent iterations 20
 Maximum number of iterations for H1 2000
 Convergence criterion for H1 0.100D-03
 Parameterization THETA

Input data file(s)
 C:\Users\ljalic\Desktop\journalism.dat
 Input data format FREE
 SUMMARY OF DATA
 Number of missing data patterns 6
 COVARIANCE COVERAGE OF DATA
 Minimum covariance coverage value 0.100
 PROPORTION OF DATA PRESENT
 Covariance Coverage

	CI1	CI2	CI4	CI5	CI6
CI1	0.837				
CI2	0.837	0.837			
CI4	0.837	0.837	0.837		
CI5	0.822	0.822	0.822	0.822	
CI6	0.822	0.822	0.822	0.822	0.822
CI3	0.837	0.837	0.837	0.822	0.822
DSI1	0.822	0.822	0.822	0.822	0.822
DSI2	0.822	0.822	0.822	0.822	0.822
DSI3	0.822	0.822	0.822	0.822	0.822
DSI4	0.822	0.822	0.822	0.822	0.822
CSE1	0.822	0.822	0.822	0.822	0.822
CSE2	0.822	0.822	0.822	0.822	0.822
CSE3	0.793	0.793	0.793	0.793	0.793
CSE4	0.793	0.793	0.793	0.793	0.793
P1	0.793	0.793	0.793	0.793	0.793
P2	0.793	0.793	0.793	0.793	0.793
P3	0.793	0.793	0.793	0.793	0.793
P4	0.793	0.793	0.793	0.793	0.793
P5	0.793	0.793	0.793	0.793	0.793
TI1	0.740	0.740	0.740	0.740	0.740
TI2	0.740	0.740	0.740	0.740	0.740
TI3	0.740	0.740	0.740	0.740	0.740
SPC4	0.721	0.721	0.721	0.721	0.721
SPC2	0.740	0.740	0.740	0.740	0.740
SPC3	0.721	0.721	0.721	0.721	0.721
SPC1	0.740	0.740	0.740	0.740	0.740
OC1	0.721	0.721	0.721	0.721	0.721
OC2	0.721	0.721	0.721	0.721	0.721
OC3	0.721	0.721	0.721	0.721	0.721
OC4	0.721	0.721	0.721	0.721	0.721

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Covariance Coverage

	CI3	DSI1	DSI2	DSI3	DSI4
CI3	0.837				
DSI1	0.822	0.822			
DSI2	0.822	0.822	0.822		
DSI3	0.822	0.822	0.822	0.822	
DSI4	0.822	0.822	0.822	0.822	0.822
CSE1	0.822	0.822	0.822	0.822	0.822
CSE2	0.822	0.822	0.822	0.822	0.822
CSE3	0.793	0.793	0.793	0.793	0.793
CSE4	0.793	0.793	0.793	0.793	0.793
P1	0.793	0.793	0.793	0.793	0.793
P2	0.793	0.793	0.793	0.793	0.793
P3	0.793	0.793	0.793	0.793	0.793
P4	0.793	0.793	0.793	0.793	0.793
P5	0.793	0.793	0.793	0.793	0.793
TI1	0.740	0.740	0.740	0.740	0.740
TI2	0.740	0.740	0.740	0.740	0.740
TI3	0.740	0.740	0.740	0.740	0.740
SPC4	0.721	0.721	0.721	0.721	0.721
SPC2	0.740	0.740	0.740	0.740	0.740
SPC3	0.721	0.721	0.721	0.721	0.721
SPC1	0.740	0.740	0.740	0.740	0.740
OC1	0.721	0.721	0.721	0.721	0.721
OC2	0.721	0.721	0.721	0.721	0.721
OC3	0.721	0.721	0.721	0.721	0.721
OC4	0.721	0.721	0.721	0.721	0.721

Covariance Coverage

	CSE1	CSE2	CSE3	CSE4	P1
CSE1	0.822				
CSE2	0.822	0.822			
CSE3	0.793	0.793	0.793		
CSE4	0.793	0.793	0.793	0.793	
P1	0.793	0.793	0.793	0.793	0.793
P2	0.793	0.793	0.793	0.793	0.793
P3	0.793	0.793	0.793	0.793	0.793
P4	0.793	0.793	0.793	0.793	0.793
P5	0.793	0.793	0.793	0.793	0.793
TI1	0.740	0.740	0.740	0.740	0.740
TI2	0.740	0.740	0.740	0.740	0.740
TI3	0.740	0.740	0.740	0.740	0.740
SPC4	0.721	0.721	0.721	0.721	0.721
SPC2	0.740	0.740	0.740	0.740	0.740
SPC3	0.721	0.721	0.721	0.721	0.721
SPC1	0.740	0.740	0.740	0.740	0.740
OC1	0.721	0.721	0.721	0.721	0.721
OC2	0.721	0.721	0.721	0.721	0.721
OC3	0.721	0.721	0.721	0.721	0.721
OC4	0.721	0.721	0.721	0.721	0.721

Covariance Coverage

	P2	P3	P4	P5	TI1
P2	0.793				
P3	0.793	0.793			
P4	0.793	0.793	0.793		
P5	0.793	0.793	0.793	0.793	
TI1	0.740	0.740	0.740	0.740	0.740
TI2	0.740	0.740	0.740	0.740	0.740

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TI3	0.740	0.740	0.740	0.740	0.740
SPC4	0.721	0.721	0.721	0.721	0.721
SPC2	0.740	0.740	0.740	0.740	0.740
SPC3	0.721	0.721	0.721	0.721	0.721
SPC1	0.740	0.740	0.740	0.740	0.740
OC1	0.721	0.721	0.721	0.721	0.721
OC2	0.721	0.721	0.721	0.721	0.721
OC3	0.721	0.721	0.721	0.721	0.721
OC4	0.721	0.721	0.721	0.721	0.721

Covariance Coverage

	TI2	TI3	SPC4	SPC2	SPC3
TI2	0.740				
TI3	0.740	0.740			
SPC4	0.721	0.721	0.885		
SPC2	0.740	0.740	0.721	0.740	
SPC3	0.721	0.721	0.885	0.721	0.885
SPC1	0.740	0.740	0.721	0.740	0.721
OC1	0.721	0.721	0.885	0.721	0.885
OC2	0.721	0.721	0.885	0.721	0.885
OC3	0.721	0.721	0.885	0.721	0.885
OC4	0.721	0.721	0.885	0.721	0.885

Covariance Coverage

	SPC1	OC1	OC2	OC3	OC4
SPC1	0.740				
OC1	0.721	0.885			
OC2	0.721	0.885	0.885		
OC3	0.721	0.885	0.885	0.885	
OC4	0.721	0.885	0.885	0.885	0.885

UNIVARIATE PROPORTIONS AND COUNTS FOR CATEGORICAL VARIABLES

CI1

Category 1	0.023	4.000
Category 2	0.052	9.000
Category 3	0.121	21.000
Category 4	0.529	92.000
Category 5	0.276	48.000

CI2

Category 1	0.023	4.000
Category 2	0.034	6.000
Category 3	0.230	40.000
Category 4	0.511	89.000
Category 5	0.201	35.000

CI4

Category 1	0.040	7.000
Category 2	0.040	7.000
Category 3	0.207	36.000
Category 4	0.500	87.000
Category 5	0.213	37.000

CI5

Category 1	0.216	37.000
Category 2	0.187	32.000
Category 3	0.427	73.000

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Category 4 0.146 25.000
Category 5 0.023 4.000

CI6

Category 1 0.298 51.000
Category 2 0.281 48.000
Category 3 0.327 56.000
Category 4 0.070 12.000
Category 5 0.023 4.000

CI3

Category 1 0.029 5.000
Category 2 0.046 8.000
Category 3 0.086 15.000
Category 4 0.500 87.000
Category 5 0.339 59.000

DSI1

Category 1 0.304 52.000
Category 2 0.257 44.000
Category 3 0.269 46.000
Category 4 0.140 24.000
Category 5 0.029 5.000

DSI2

Category 1 0.117 20.000
Category 2 0.170 29.000
Category 3 0.339 58.000
Category 4 0.316 54.000
Category 5 0.058 10.000

DSI3

Category 1 0.053 9.000
Category 2 0.117 20.000
Category 3 0.187 32.000
Category 4 0.450 77.000
Category 5 0.193 33.000

DSI4

Category 1 0.023 4.000
Category 2 0.070 12.000
Category 3 0.322 55.000
Category 4 0.433 74.000
Category 5 0.152 26.000

CSE1

Category 1 0.035 6.000
Category 2 0.041 7.000
Category 3 0.175 30.000
Category 4 0.579 99.000
Category 5 0.170 29.000

CSE2

Category 1 0.029 5.000
Category 2 0.064 11.000
Category 3 0.363 62.000
Category 4 0.409 70.000
Category 5 0.135 23.000

CSE3

Category 1 0.024 4.000
Category 2 0.036 6.000

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Category 3 0.164 27.000
Category 4 0.545 90.000
Category 5 0.230 38.000

CSE4

Category 1 0.036 6.000
Category 2 0.079 13.000
Category 3 0.333 55.000
Category 4 0.436 72.000
Category 5 0.115 19.000

P1

Category 1 0.030 5.000
Category 2 0.073 12.000
Category 3 0.279 46.000
Category 4 0.497 82.000
Category 5 0.121 20.000

P2

Category 1 0.036 6.000
Category 2 0.085 14.000
Category 3 0.309 51.000
Category 4 0.436 72.000
Category 5 0.133 22.000

P3

Category 1 0.048 8.000
Category 2 0.170 28.000
Category 3 0.430 71.000
Category 4 0.279 46.000
Category 5 0.073 12.000

P4

Category 1 0.048 8.000
Category 2 0.248 41.000
Category 3 0.382 63.000
Category 4 0.261 43.000
Category 5 0.061 10.000

P5

Category 1 0.030 5.000
Category 2 0.079 13.000
Category 3 0.333 55.000
Category 4 0.430 71.000
Category 5 0.127 21.000

TI1

Category 1 0.039 6.000
Category 2 0.110 17.000
Category 3 0.344 53.000
Category 4 0.383 59.000
Category 5 0.123 19.000

TI2

Category 1 0.039 6.000
Category 2 0.117 18.000
Category 3 0.331 51.000
Category 4 0.403 62.000
Category 5 0.110 17.000

TI3

To be continued on next page

Category 1	0.058	9.000
Category 2	0.065	10.000
Category 3	0.299	46.000
Category 4	0.468	72.000
Category 5	0.110	17.000

SPC4

Category 1	0.005	1.000
Category 2	0.033	6.000
Category 3	0.185	34.000
Category 4	0.571	105.000
Category 5	0.207	38.000

SPC2

Category 1	0.032	5.000
Category 2	0.123	19.000
Category 3	0.221	34.000
Category 4	0.422	65.000
Category 5	0.201	31.000

SPC3

Category 1	0.011	2.000
Category 2	0.022	4.000
Category 3	0.217	40.000
Category 4	0.527	97.000
Category 5	0.223	41.000

SPC1

Category 1	0.162	25.000
Category 2	0.318	49.000
Category 3	0.286	44.000
Category 4	0.162	25.000
Category 5	0.071	11.000

OC1

Category 1	0.005	1.000
Category 2	0.120	22.000
Category 3	0.283	52.000
Category 4	0.478	88.000
Category 5	0.114	21.000

OC2

Category 1	0.005	1.000
Category 2	0.027	5.000
Category 3	0.130	24.000
Category 4	0.598	110.000
Category 5	0.239	44.000

OC3

Category 1	0.005	1.000
Category 2	0.043	8.000
Category 3	0.245	45.000
Category 4	0.554	102.000
Category 5	0.152	28.000

OC4

Category 1	0.022	4.000
Category 2	0.136	25.000
Category 3	0.473	87.000
Category 4	0.299	55.000
Category 5	0.071	13.000

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SAMPLE STATISTICS

ESTIMATED SAMPLE STATISTICS

MEANS/INTERCEPTS/THRESHOLDS

	CI1\$1	CI1\$2	CI1\$3	CI1\$4	CI2\$1
1	-1.996	-1.442	-0.858	0.595	-1.996

	CI2\$2	CI2\$3	CI2\$4	CI4\$1	CI4\$2
1	-1.576	-0.561	0.838	-1.748	-1.402

	CI4\$3	CI4\$4	CI5\$1	CI5\$2	CI5\$3
1	-0.561	0.797	-0.784	-0.244	0.956

	CI5\$4	CI6\$1	CI6\$2	CI6\$3	CI6\$4
1	1.988	-0.529	0.199	1.319	1.988

	CI3\$1	CI3\$2	CI3\$3	CI3\$4	DSI1\$1
1	-1.900	-1.442	-0.991	0.415	-0.513

	DSI1\$2	DSI1\$3	DSI1\$4	DSI2\$1	DSI2\$2
1	0.155	0.956	1.892	-1.190	-0.563

	DSI2\$3	DSI2\$4	DSI3\$1	DSI3\$2	DSI3\$3
1	0.321	1.568	-1.620	-0.956	-0.367

	DSI3\$4	DSI4\$1	DSI4\$2	DSI4\$3	DSI4\$4
1	0.867	-1.988	-1.319	-0.214	1.028

	CSE1\$1	CSE1\$2	CSE1\$3	CSE1\$4	CSE2\$1
1	-1.811	-1.432	-0.670	0.956	-1.892

	CSE2\$2	CSE2\$3	CSE2\$4	CSE3\$1	CSE3\$2
1	-1.319	-0.110	1.105	-1.973	-1.550

	CSE3\$3	CSE3\$4	CSE4\$1	CSE4\$2	CSE4\$3
1	-0.758	0.738	-1.795	-1.200	-0.129

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MEANS/INTERCEPTS/THRESHOLDS

	CSE4\$4	P1\$1	P1\$2	P1\$3	P1\$4
1	1.200	-1.876	-1.264	-0.301	1.169

MEANS/INTERCEPTS/THRESHOLDS

	P2\$1	P2\$2	P2\$3	P2\$4	P3\$1
1	-1.795	-1.169	-0.176	1.111	-1.660

MEANS/INTERCEPTS/THRESHOLDS

	P3\$2	P3\$3	P3\$4	P4\$1	P4\$2
1	-0.778	0.381	1.456	-1.660	-0.533

MEANS/INTERCEPTS/THRESHOLDS

	P4\$3	P4\$4	P5\$1	P5\$2	P5\$3
1	0.464	1.550	-1.876	-1.231	-0.145

MEANS/INTERCEPTS/THRESHOLDS

	P5\$4	TI1\$1	TI1\$2	TI1\$3	TI1\$4
1	1.139	-1.763	-1.039	-0.016	1.158

MEANS/INTERCEPTS/THRESHOLDS

	TI2\$1	TI2\$2	TI2\$3	TI2\$4	TI3\$1
1	-1.763	-1.012	-0.033	1.224	-1.568

MEANS/INTERCEPTS/THRESHOLDS

	TI3\$2	TI3\$3	TI3\$4	SPC4\$1	SPC4\$2
1	-1.158	-0.197	1.224	-2.547	-1.774

MEANS/INTERCEPTS/THRESHOLDS

	SPC4\$3	SPC4\$4	SPC2\$1	SPC2\$2	SPC2\$3
1	-0.763	0.819	-1.846	-1.012	-0.314

MEANS/INTERCEPTS/THRESHOLDS

	SPC2\$4	SPC3\$1	SPC3\$2	SPC3\$3	SPC3\$4
1	0.837	-2.295	-1.844	-0.674	0.763

MEANS/INTERCEPTS/THRESHOLDS

	SPC1\$1	SPC1\$2	SPC1\$3	SPC1\$4	OC1\$1
1	-0.985	-0.049	0.726	1.465	-2.547

MEANS/INTERCEPTS/THRESHOLDS

	OC1\$2	OC1\$3	OC1\$4	OC2\$1	OC2\$2

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1 -1.150 -0.234 1.205 -2.547 -1.844

MEANS/INTERCEPTS/THRESHOLDS

OC2\$3 OC2\$4 OC3\$1 OC3\$2 OC3\$3

1 -0.982 0.709 -2.547 -1.655 -0.543

MEANS/INTERCEPTS/THRESHOLDS

OC3\$4 OC4\$1 OC4\$2 OC4\$3 OC4\$4

1 1.027 -2.019 -1.004 0.333 1.471

CORRELATION MATRIX (WITH VARIANCES ON THE DIAGONAL)

CI1 CI2 CI4 CI5 CI6

	CI1	CI2	CI4	CI5	CI6
CI1					
CI2	0.827				
CI4	0.613	0.555			
CI5	0.316	0.405	0.332		
CI6	0.280	0.352	0.322	0.846	
CI3	0.722	0.769	0.562	0.215	0.189
DSI1	0.220	0.290	0.302	0.605	0.697
DSI2	0.352	0.294	0.368	0.518	0.569
DSI3	0.403	0.352	0.447	0.442	0.429
DSI4	0.531	0.474	0.564	0.609	0.534
CSE1	0.558	0.554	0.715	0.419	0.482
CSE2	0.614	0.593	0.658	0.601	0.571
CSE3	0.560	0.549	0.533	0.319	0.254
CSE4	0.364	0.353	0.351	0.300	0.312
P1	0.533	0.481	0.503	0.204	0.216
P2	0.492	0.393	0.392	0.410	0.319
P3	0.341	0.324	0.459	0.466	0.453
P4	0.354	0.336	0.496	0.498	0.489
P5	0.363	0.333	0.431	0.510	0.496
TI1	0.481	0.449	0.405	0.294	0.373
TI2	0.379	0.422	0.333	0.238	0.332
TI3	0.450	0.333	0.466	0.111	0.243
SPC4	0.293	0.207	0.270	0.078	0.076
SPC2	0.283	0.165	0.250	0.205	0.174
SPC3	0.252	0.158	0.339	0.072	0.021
SPC1	0.106	0.137	0.025	0.363	0.404
OC1	0.289	0.249	0.340	0.058	0.133
OC2	0.284	0.270	0.288	0.060	0.084
OC3	0.153	0.147	0.211	-0.060	-0.149
OC4	0.101	0.006	0.117	0.104	0.136

CORRELATION MATRIX (WITH VARIANCES ON THE DIAGONAL)

CI3 DSI1 DSI2 DSI3 DSI4

	CI3	DSI1	DSI2	DSI3	DSI4
DSI1	0.133				
DSI2	0.329	0.493			
DSI3	0.439	0.433	0.621		
DSI4	0.369	0.400	0.596	0.645	
CSE1	0.525	0.488	0.464	0.548	0.655
CSE2	0.567	0.526	0.617	0.645	0.776
CSE3	0.582	0.209	0.430	0.480	0.500
CSE4	0.253	0.330	0.378	0.358	0.361
P1	0.522	0.216	0.449	0.557	0.518
P2	0.366	0.239	0.418	0.406	0.477
P3	0.268	0.403	0.422	0.369	0.442
P4	0.253	0.523	0.462	0.487	0.541

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P5	0.323	0.444	0.599	0.440	0.489
TI1	0.411	0.373	0.459	0.420	0.403
TI2	0.362	0.401	0.445	0.398	0.329
TI3	0.385	0.263	0.473	0.425	0.397
SPC4	0.187	0.022	0.216	0.279	0.274
SPC2	0.070	0.205	0.303	0.263	0.238
SPC3	0.140	0.102	0.173	0.264	0.257
SPC1	0.039	0.284	0.165	0.196	0.271
OC1	0.213	0.098	0.146	0.149	0.258
OC2	0.215	0.060	0.247	0.363	0.334
OC3	0.221	-0.070	0.052	0.046	0.151
OC4	0.093	0.063	0.243	0.179	0.179

CORRELATION MATRIX (WITH VARIANCES ON THE DIAGONAL)

	CSE1	CSE2	CSE3	CSE4	P1
CSE2	0.729				
CSE3	0.593	0.527			
CSE4	0.477	0.387	0.675		
P1	0.634	0.578	0.831	0.661	
P2	0.411	0.477	0.606	0.550	0.550
P3	0.489	0.547	0.606	0.554	0.573
P4	0.439	0.598	0.504	0.558	0.560
P5	0.372	0.506	0.539	0.517	0.486
TI1	0.537	0.469	0.703	0.423	0.594
TI2	0.483	0.383	0.660	0.445	0.559
TI3	0.488	0.429	0.637	0.445	0.647
SPC4	0.236	0.294	0.345	0.225	0.322
SPC2	0.185	0.193	0.449	0.454	0.402
SPC3	0.224	0.282	0.397	0.325	0.305
SPC1	0.135	0.138	0.087	0.120	0.083
OC1	0.302	0.251	0.352	0.200	0.293
OC2	0.284	0.394	0.371	0.239	0.384
OC3	0.190	0.156	0.323	0.289	0.266
OC4	0.152	0.196	0.213	0.212	0.245

CORRELATION MATRIX (WITH VARIANCES ON THE DIAGONAL)

	P2	P3	P4	P5	TI1
P3	0.788				
P4	0.716	0.841			
P5	0.696	0.719	0.786		
TI1	0.439	0.486	0.492	0.494	
TI2	0.319	0.398	0.390	0.434	0.876
TI3	0.407	0.479	0.454	0.469	0.787
SPC4	0.319	0.347	0.277	0.300	0.483
SPC2	0.479	0.444	0.449	0.505	0.388
SPC3	0.378	0.328	0.270	0.344	0.467
SPC1	0.248	0.155	0.207	0.119	0.133
OC1	0.294	0.340	0.302	0.214	0.500
OC2	0.165	0.238	0.241	0.264	0.492
OC3	0.135	0.182	0.090	0.112	0.373
OC4	0.249	0.314	0.210	0.181	0.337

CORRELATION MATRIX (WITH VARIANCES ON THE DIAGONAL)

	TI2	TI3	SPC4	SPC2	SPC3
TI3	0.762				
SPC4	0.461	0.574			
SPC2	0.346	0.556	0.410		
SPC3	0.415	0.519	0.759	0.531	
SPC1	0.140	0.130	0.042	-0.021	0.017
OC1	0.459	0.491	0.761	0.297	0.613
OC2	0.412	0.487	0.693	0.478	0.648

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OC3	0.367	0.399	0.447	0.206	0.453
OC4	0.277	0.419	0.515	0.292	0.455

CORRELATION MATRIX (WITH VARIANCES ON THE DIAGONAL)

	SPC1	OC1	OC2	OC3	OC4
OC1	-0.086				
OC2	-0.073	0.624			
OC3	0.007	0.447	0.570		
OC4	0.212	0.404	0.321	0.284	

THE MODEL ESTIMATION TERMINATED NORMALLY

WARNING: THE LATENT VARIABLE COVARIANCE MATRIX (PSI) IS NOT POSITIVE DEFINITE. THIS COULD INDICATE A NEGATIVE VARIANCE/RESIDUAL VARIANCE FOR A LATENT VARIABLE, A CORRELATION GREATER OR EQUAL TO ONE BETWEEN TWO LATENT VARIABLES, OR A LINEAR DEPENDENCY AMONG MORE THAN TWO LATENT VARIABLES. CHECK THE TECH4 OUTPUT FOR MORE INFORMATION.
 PROBLEM INVOLVING VARIABLE CSE.

MODEL FIT INFORMATION

Number of Free Parameters	162
Chi-Square Test of Model Fit	
Value	1274.470*
Degrees of Freedom	393
P-Value	0.0000

* The chi-square value for MLM, MLMV, MLR, ULSMV, WLSM and WLSMV cannot be used for chi-square difference testing in the regular way. MLM, MLR and WLSM chi-square difference testing is described on the Mplus website. MLMV, WLSMV, and ULSMV difference testing is done using the DIFFTEST option.

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.104
90 Percent C.I.	0.098 0.110
Probability RMSEA <= .05	0.000

CFI/TLI

CFI	0.862
TLI	0.847

Chi-Square Test of Model Fit for the Baseline Model

Value	6807.296
Degrees of Freedom	435
P-Value	0.0000

WRMR (Weighted Root Mean Square Residual)

Value	1.721
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MODEL RESULTS Two-Tailed

	Estimate	S.E. Est./S.E.	P-Value	
CI BY				
CI1	1.000	0.000	999.000	999.000
CI2	0.914	0.092	9.900	0.000
CI4	0.829	0.070	11.897	0.000
CI5	0.881	0.129	6.858	0.000
CI6	0.996	0.153	6.488	0.000
CI3	0.734	0.086	8.574	0.000
DSI BY				
DSI2	1.000	0.000	999.000	999.000
DSI3	1.002	0.139	7.213	0.000
DSI4	1.260	0.164	7.694	0.000
DSI1	0.793	0.108	7.339	0.000
CSE BY				
CSE1	1.000	0.000	999.000	999.000
CSE2	1.243	0.136	9.166	0.000
CSE3	1.377	0.190	7.254	0.000
CSE4	0.737	0.095	7.795	0.000

P BY

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P1	1.000	0.000	999.000	999.000
P2	0.685	0.109	6.266	0.000
P3	0.883	0.159	5.567	0.000
P4	0.919	0.161	5.711	0.000
P5	0.720	0.121	5.975	0.000

TI BY

TI1	1.000	0.000	999.000	999.000
TI2	0.612	0.141	4.332	0.000
TI3	0.623	0.124	5.023	0.000

SPC BY

SPC4	1.000	0.000	999.000	999.000
SPC2	0.603	0.117	5.149	0.000
SPC3	0.852	0.132	6.466	0.000
SPC1	0.126	0.050	2.515	0.012

OC BY

OC1	1.000	0.000	999.000	999.000
OC2	1.076	0.225	4.786	0.000
OC3	0.517	0.091	5.692	0.000
OC4	0.500	0.099	5.038	0.000

P ON

CI	0.085	0.244	0.349	0.727
DSI	1.547	0.441	3.511	0.000

CSE ON

CI	0.140	0.078	1.801	0.072
DSI	1.076	0.199	5.418	0.000

DSI ON

CI	0.665	0.082	8.059	0.000
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OC ON

CSE	-3.571	1.995	-1.790	0.073
DSI	3.744	2.580	1.451	0.147
P	0.265	0.132	2.008	0.045
SPC	0.985	0.168	5.872	0.000

TI WITH

CI	2.818	0.660	4.269	0.000
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SPC WITH

CI	1.032	0.225	4.581	0.000
TI	3.362	0.797	4.216	0.000

Thresholds

CI1\$1	-3.275	0.356	-9.207	0.000
CI1\$2	-2.366	0.239	-9.907	0.000
CI1\$3	-1.408	0.182	-7.718	0.000
CI1\$4	0.977	0.159	6.124	0.000
CI2\$1	-3.101	0.350	-8.854	0.000
CI2\$2	-2.450	0.260	-9.414	0.000
CI2\$3	-0.872	0.160	-5.461	0.000
CI2\$4	1.302	0.167	7.816	0.000
CI4\$1	-2.572	0.252	-10.195	0.000
CI4\$2	-2.063	0.201	-10.268	0.000
CI4\$3	-0.826	0.148	-5.563	0.000
CI4\$4	1.173	0.150	7.823	0.000
CI5\$1	-1.194	0.165	-7.243	0.000
CI5\$2	-0.372	0.148	-2.506	0.012
CI5\$3	1.454	0.174	8.373	0.000
CI5\$4	3.025	0.338	8.944	0.000
CI6\$1	-0.867	0.167	-5.203	0.000
CI6\$2	0.326	0.159	2.048	0.041
CI6\$3	2.159	0.242	8.921	0.000

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CI6\$4	3.254	0.374	8.707	0.000
CI3\$1	-2.626	0.290	-9.056	0.000
CI3\$2	-1.993	0.213	-9.374	0.000
CI3\$3	-1.370	0.167	-8.203	0.000
CI3\$4	0.574	0.132	4.352	0.000
DSI1\$1	-0.649	0.127	-5.123	0.000
DSI1\$2	0.196	0.122	1.606	0.108
DSI1\$3	1.211	0.139	8.690	0.000
DSI1\$4	2.397	0.238	10.088	0.000
DSI2\$1	-1.667	0.178	-9.363	0.000
DSI2\$2	-0.789	0.143	-5.535	0.000
DSI2\$3	0.449	0.138	3.254	0.001
DSI2\$4	2.196	0.215	10.197	0.000
DSI3\$1	-2.271	0.242	-9.392	0.000
DSI3\$2	-1.340	0.169	-7.916	0.000
DSI3\$3	-0.515	0.141	-3.650	0.000
DSI3\$4	1.215	0.152	7.993	0.000
DSI4\$1	-3.161	0.349	-9.065	0.000
DSI4\$2	-2.097	0.206	-10.157	0.000
DSI4\$3	-0.340	0.155	-2.202	0.028
DSI4\$4	1.634	0.177	9.214	0.000
CSE1\$1	-2.821	0.294	-9.595	0.000
CSE1\$2	-2.232	0.217	-10.262	0.000
CSE1\$3	-1.044	0.163	-6.416	0.000
CSE1\$4	1.489	0.168	8.887	0.000
CSE2\$1	-3.387	0.379	-8.940	0.000
CSE2\$2	-2.361	0.252	-9.383	0.000
CSE2\$3	-0.197	0.173	-1.139	0.255
CSE2\$4	1.979	0.207	9.540	0.000
CSE3\$1	-3.799	0.479	-7.937	0.000
CSE3\$2	-2.984	0.348	-8.567	0.000
CSE3\$3	-1.459	0.219	-6.671	0.000
CSE3\$4	1.421	0.203	7.008	0.000
CSE4\$1	-2.391	0.242	-9.864	0.000
CSE4\$2	-1.598	0.168	-9.539	0.000
CSE4\$3	-0.172	0.130	-1.325	0.185
CSE4\$4	1.598	0.164	9.733	0.000
P1\$1	-4.098	0.566	-7.247	0.000
P1\$2	-2.762	0.377	-7.327	0.000
P1\$3	-0.657	0.223	-2.944	0.003
P1\$4	2.553	0.327	7.802	0.000
P2\$1	-2.987	0.325	-9.200	0.000
P2\$2	-1.945	0.206	-9.424	0.000
P2\$3	-0.292	0.165	-1.775	0.076
P2\$4	1.849	0.185	9.978	0.000
P3\$1	-3.294	0.400	-8.241	0.000
P3\$2	-1.545	0.229	-6.743	0.000
P3\$3	0.757	0.204	3.706	0.000
P3\$4	2.889	0.348	8.293	0.000
P4\$1	-3.395	0.418	-8.132	0.000
P4\$2	-1.091	0.215	-5.075	0.000
P4\$3	0.950	0.214	4.436	0.000
P4\$4	3.170	0.398	7.956	0.000
P5\$1	-3.226	0.350	-9.224	0.000
P5\$2	-2.117	0.223	-9.491	0.000
P5\$3	-0.249	0.169	-1.476	0.140
P5\$4	1.959	0.220	8.891	0.000
TI1\$1	-5.712	0.999	-5.718	0.000
TI1\$2	-3.368	0.530	-6.355	0.000
TI1\$3	-0.053	0.329	-0.161	0.872
TI1\$4	3.753	0.634	5.916	0.000
TI2\$1	-3.764	0.462	-8.142	0.000
TI2\$2	-2.160	0.271	-7.972	0.000
TI2\$3	-0.070	0.216	-0.322	0.748
TI2\$4	2.614	0.317	8.248	0.000
TI3\$1	-3.393	0.367	-9.255	0.000
TI3\$2	-2.506	0.316	-7.920	0.000
TI3\$3	-0.425	0.221	-1.925	0.054
TI3\$4	2.650	0.300	8.823	0.000
SPC4\$1	-4.603	0.754	-6.109	0.000

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SPC4\$2	-3.207	0.398	-8.066	0.000
SPC4\$3	-1.379	0.212	-6.498	0.000
SPC4\$4	1.480	0.210	7.032	0.000
SPC2\$1	-2.493	0.318	-7.829	0.000
SPC2\$2	-1.366	0.180	-7.608	0.000
SPC2\$3	-0.425	0.142	-2.996	0.003
SPC2\$4	1.130	0.157	7.189	0.000
SPC3\$1	-3.733	0.453	-8.246	0.000
SPC3\$2	-2.999	0.324	-9.262	0.000
SPC3\$3	-1.097	0.176	-6.250	0.000
SPC3\$4	1.241	0.160	7.778	0.000
SPC1\$1	-1.002	0.125	-8.043	0.000
SPC1\$2	-0.050	0.103	-0.483	0.629
SPC1\$3	0.739	0.113	6.554	0.000
SPC1\$4	1.491	0.154	9.691	0.000
OC1\$1	-4.149	0.640	-6.482	0.000
OC1\$2	-1.874	0.201	-9.314	0.000
OC1\$3	-0.381	0.154	-2.479	0.013
OC1\$4	1.963	0.215	9.135	0.000
OC2\$1	-4.347	0.684	-6.356	0.000
OC2\$2	-3.147	0.416	-7.562	0.000
OC2\$3	-1.676	0.255	-6.569	0.000
OC2\$4	1.210	0.188	6.432	0.000
OC3\$1	-3.058	0.442	-6.915	0.000
OC3\$2	-1.988	0.199	-9.977	0.000
OC3\$3	-0.652	0.119	-5.479	0.000
OC3\$4	1.233	0.130	9.474	0.000
OC4\$1	-2.400	0.261	-9.213	0.000
OC4\$2	-1.194	0.141	-8.442	0.000
OC4\$3	0.396	0.112	3.519	0.000
OC4\$4	1.749	0.177	9.898	0.000

Variances

CI	1.693	0.323	5.236	0.000
TI	9.501	3.294	2.884	0.004
SPC	2.267	0.573	3.960	0.000

Residual Variances

DSI	0.214	0.074	2.889	0.004
CSE	-0.059	0.036	-1.643	0.100
P	1.159	0.415	2.789	0.005
OC	0.527	0.501	1.051	0.293

STANDARDIZED MODEL RESULTS

STDYX Standardization

Two-Tailed

	Estimate	S.E.	Est./S.E.	P-Value
CI BY				
CI1	0.793	0.028	28.199	0.000
CI2	0.765	0.032	23.827	0.000
CI4	0.734	0.034	21.779	0.000
CI5	0.754	0.035	21.588	0.000
CI6	0.792	0.035	22.550	0.000
CI3	0.690	0.040	17.153	0.000
DSI BY				
DSI2	0.700	0.042	16.789	0.000
DSI3	0.701	0.045	15.558	0.000
DSI4	0.777	0.028	27.971	0.000
DSI1	0.614	0.048	12.786	0.000
CSE BY				
CSE1	0.767	0.030	25.760	0.000
CSE2	0.829	0.026	31.346	0.000
CSE3	0.855	0.028	30.972	0.000
CSE4	0.661	0.039	17.132	0.000

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P BY					
P1	0.889	0.028	31.814	0.000	
P2	0.799	0.027	29.662	0.000	
P3	0.864	0.026	33.307	0.000	
P4	0.872	0.026	34.025	0.000	
P5	0.813	0.029	27.640	0.000	
TI BY					
TI1	0.951	0.016	60.571	0.000	
TI2	0.884	0.023	38.786	0.000	
TI3	0.887	0.024	37.189	0.000	
SPC BY					
SPC4	0.833	0.032	25.878	0.000	
SPC2	0.672	0.055	12.271	0.000	
SPC3	0.789	0.029	26.847	0.000	
SPC1	0.186	0.067	2.764	0.006	
OC BY					
OC1	0.789	0.035	22.274	0.000	
OC2	0.810	0.045	18.097	0.000	
OC3	0.553	0.051	10.932	0.000	
OC4	0.541	0.065	8.292	0.000	
P ON					
CI	0.057	0.162	0.351	0.726	
DSI	0.782	0.162	4.818	0.000	
CSE ON					
CI	0.153	0.083	1.833	0.067	
DSI	0.883	0.071	12.479	0.000	
DSI ON					
CI	0.882	0.031	28.702	0.000	
OC ON					
CSE	-3.318	1.776	-1.868	0.062	
DSI	2.855	1.753	1.629	0.103	
P	0.400	0.178	2.255	0.024	
SPC	1.154	0.070	16.499	0.000	
TI WITH					
CI	0.703	0.040	17.356	0.000	
SPC WITH					
CI	0.527	0.059	8.959	0.000	
TI	0.724	0.046	15.850	0.000	
Thresholds					
CI1\$1	-1.996	0.209	-9.567	0.000	
CI1\$2	-1.442	0.141	-10.208	0.000	
CI1\$3	-0.858	0.109	-7.881	0.000	
CI1\$4	0.595	0.101	5.870	0.000	
CI2\$1	-1.996	0.209	-9.567	0.000	
CI2\$2	-1.576	0.153	-10.289	0.000	
CI2\$3	-0.561	0.101	-5.575	0.000	
CI2\$4	0.838	0.108	7.742	0.000	
CI4\$1	-1.748	0.172	-10.159	0.000	
CI4\$2	-1.402	0.138	-10.152	0.000	
CI4\$3	-0.561	0.101	-5.575	0.000	
CI4\$4	0.797	0.107	7.462	0.000	
CI5\$1	-0.784	0.107	-7.306	0.000	
CI5\$2	-0.244	0.097	-2.521	0.012	
CI5\$3	0.956	0.114	8.415	0.000	
CI5\$4	1.988	0.209	9.508	0.000	
CI6\$1	-0.529	0.101	-5.248	0.000	
CI6\$2	0.199	0.097	2.063	0.039	
CI6\$3	1.319	0.133	9.900	0.000	
CI6\$4	1.988	0.209	9.508	0.000	
CI3\$1	-1.900	0.193	-9.847	0.000	
CI3\$2	-1.442	0.141	-10.207	0.000	
CI3\$3	-0.991	0.114	-8.685	0.000	

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CI3\$4	0.415	0.098	4.233	0.000
DSI1\$1	-0.513	0.101	-5.098	0.000
DSI1\$2	0.155	0.096	1.605	0.108
DSI1\$3	0.956	0.114	8.415	0.000
DSI1\$4	1.892	0.193	9.782	0.000
DSI2\$1	-1.190	0.125	-9.515	0.000
DSI2\$2	-0.564	0.102	-5.547	0.000
DSI2\$3	0.321	0.098	3.283	0.001
DSI2\$4	1.568	0.154	10.200	0.000
DSI3\$1	-1.620	0.159	-10.191	0.000
DSI3\$2	-0.956	0.114	-8.415	0.000
DSI3\$3	-0.367	0.098	-3.738	0.000
DSI3\$4	0.867	0.110	7.870	0.000
DSI4\$1	-1.988	0.209	-9.508	0.000
DSI4\$2	-1.319	0.133	-9.899	0.000
DSI4\$3	-0.214	0.097	-2.216	0.027
DSI4\$4	1.028	0.117	8.806	0.000
CSE1\$1	-1.811	0.182	-9.965	0.000
CSE1\$2	-1.432	0.142	-10.108	0.000
CSE1\$3	-0.670	0.104	-6.436	0.000
CSE1\$4	0.956	0.114	8.415	0.000
CSE2\$1	-1.892	0.193	-9.782	0.000
CSE2\$2	-1.319	0.133	-9.900	0.000
CSE2\$3	-0.110	0.096	-1.147	0.251
CSE2\$4	1.105	0.120	9.175	0.000
CSE3\$1	-1.973	0.210	-9.386	0.000
CSE3\$2	-1.550	0.155	-10.016	0.000
CSE3\$3	-0.758	0.108	-6.987	0.000
CSE3\$4	0.738	0.108	6.840	0.000
CSE4\$1	-1.795	0.183	-9.818	0.000
CSE4\$2	-1.200	0.128	-9.379	0.000
CSE4\$3	-0.129	0.098	-1.323	0.186
CSE4\$4	1.200	0.128	9.379	0.000
P1\$1	-1.876	0.195	-9.647	0.000
P1\$2	-1.264	0.132	-9.583	0.000
P1\$3	-0.301	0.099	-3.032	0.002
P1\$4	1.169	0.126	9.269	0.000
P2\$1	-1.795	0.183	-9.818	0.000
P2\$2	-1.169	0.126	-9.269	0.000
P2\$3	-0.176	0.098	-1.790	0.073
P2\$4	1.111	0.123	9.036	0.000
P3\$1	-1.660	0.166	-9.989	0.000
P3\$2	-0.778	0.109	-7.134	0.000
P3\$3	0.381	0.100	3.805	0.000
P3\$4	1.456	0.146	9.957	0.000
P4\$1	-1.660	0.166	-9.988	0.000
P4\$2	-0.533	0.103	-5.187	0.000
P4\$3	0.464	0.101	4.575	0.000
P4\$4	1.550	0.155	10.016	0.000
P5\$1	-1.876	0.195	-9.647	0.000
P5\$2	-1.231	0.130	-9.483	0.000
P5\$3	-0.145	0.098	-1.479	0.139
P5\$4	1.139	0.124	9.154	0.000
TI1\$1	-1.763	0.185	-9.535	0.000
TI1\$2	-1.039	0.124	-8.412	0.000
TI1\$3	-0.016	0.101	-0.161	0.872
TI1\$4	1.158	0.130	8.915	0.000
TI2\$1	-1.763	0.185	-9.536	0.000
TI2\$2	-1.012	0.122	-8.277	0.000
TI2\$3	-0.033	0.101	-0.322	0.747
TI2\$4	1.224	0.134	9.141	0.000
TI3\$1	-1.568	0.162	-9.680	0.000
TI3\$2	-1.158	0.130	-8.915	0.000
TI3\$3	-0.197	0.102	-1.933	0.053
TI3\$4	1.224	0.134	9.141	0.000
SPC4\$1	-2.547	0.348	-7.317	0.000
SPC4\$2	-1.774	0.170	-10.406	0.000
SPC4\$3	-0.763	0.103	-7.415	0.000
SPC4\$4	0.819	0.105	7.827	0.000
SPC2\$1	-1.846	0.197	-9.387	0.000
SPC2\$2	-1.012	0.122	-8.277	0.000

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SPC2\$3	-0.314	0.103	-3.057	0.002
SPC2\$4	0.837	0.115	7.280	0.000
SPC3\$1	-2.295	0.267	-8.605	0.000
SPC3\$2	-1.844	0.180	-10.265	0.000
SPC3\$3	-0.675	0.100	-6.715	0.000
SPC3\$4	0.763	0.103	7.415	0.000
SPC1\$1	-0.985	0.121	-8.141	0.000
SPC1\$2	-0.049	0.101	-0.484	0.629
SPC1\$3	0.726	0.111	6.527	0.000
SPC1\$4	1.465	0.152	9.628	0.000
OC1\$1	-2.547	0.348	-7.318	0.000
OC1\$2	-1.150	0.118	-9.713	0.000
OC1\$3	-0.234	0.093	-2.504	0.012
OC1\$4	1.205	0.121	9.923	0.000
OC2\$1	-2.547	0.348	-7.318	0.000
OC2\$2	-1.844	0.180	-10.265	0.000
OC2\$3	-0.982	0.111	-8.882	0.000
OC2\$4	0.709	0.101	6.996	0.000
OC3\$1	-2.547	0.348	-7.318	0.000
OC3\$2	-1.656	0.157	-10.551	0.000
OC3\$3	-0.543	0.098	-5.570	0.000
OC3\$4	1.027	0.112	9.131	0.000
OC4\$1	-2.019	0.207	-9.759	0.000
OC4\$2	-1.004	0.111	-9.008	0.000
OC4\$3	0.333	0.094	3.532	0.000
OC4\$4	1.471	0.140	10.530	0.000

Variiances

CI	1.000	0.000	999.000	999.000
TI	1.000	0.000	999.000	999.000
SPC	1.000	0.000	999.000	999.000

Residual Variiances

DSI	0.222	0.054	4.106	0.000
CSE	-0.041	999.000	999.000	999.000
P	0.307	0.050	6.179	0.000
OC	0.319	0.282	1.130	0.259

R-SQUARE

Observed Variable	Estimate	S.E.	Two-Tailed Est./S.E.	Scale P-Value	Factors
CI1	0.629	0.045	14.100	0.000	0.609
CI2	0.586	0.049	11.914	0.000	0.643
CI4	0.538	0.049	10.890	0.000	0.680
CI5	0.568	0.053	10.794	0.000	0.657
CI6	0.627	0.056	11.275	0.000	0.611
CI3	0.477	0.056	8.577	0.000	0.723
DSI1	0.377	0.059	6.393	0.000	0.790
DSI2	0.490	0.058	8.394	0.000	0.714
DSI3	0.491	0.063	7.779	0.000	0.713
DSI4	0.604	0.043	13.985	0.000	0.629
CSE1	0.588	0.046	12.880	0.000	0.642
CSE2	0.688	0.044	15.673	0.000	0.559
CSE3	0.730	0.047	15.486	0.000	0.519
CSE4	0.437	0.051	8.566	0.000	0.751
P1	0.790	0.050	15.907	0.000	0.458
P2	0.639	0.043	14.831	0.000	0.601
P3	0.746	0.045	16.654	0.000	0.504
P4	0.761	0.045	17.012	0.000	0.489
P5	0.662	0.048	13.820	0.000	0.582
TI1	0.905	0.030	30.286	0.000	0.309
TI2	0.781	0.040	19.393	0.000	0.468
TI3	0.786	0.042	18.594	0.000	0.462
SPC4	0.694	0.054	12.939	0.000	0.553
SPC2	0.452	0.074	6.136	0.000	0.740
SPC3	0.622	0.046	13.424	0.000	0.615
SPC1	0.035	0.025	1.382	0.167	0.982
OC1	0.623	0.056	11.137	0.000	0.614
OC2	0.657	0.073	9.048	0.000	0.586
OC3	0.306	0.056	5.466	0.000	0.833
OC4	0.292	0.071	4.146	0.000	0.841

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Latent Variable	Estimate	Two-Tailed		
		S.E.	Est./S.E.	P-Value
DSI	0.778	0.054	14.351	0.000
CSE	Undefined	0.10412E+01		
P	0.693	0.050	13.923	0.000
OC	0.681	0.282	2.417	0.016

QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix (ratio of smallest to largest eigenvalue) 0.218E-05

TECHNICAL 4 OUTPUT

ESTIMATES DERIVED FROM THE MODEL

ESTIMATED MEANS FOR THE LATENT VARIABLES

	CI	DSI	CSE	P	TI
1	0.000	0.000	0.000	0.000	0.000

ESTIMATED MEANS FOR THE LATENT VARIABLES

	SPC	OC
1	0.000	0.000

ESTIMATED COVARIANCE MATRIX FOR THE LATENT VARIABLES

	CI	DSI	CSE	P	TI
CI	1.693				
DSI	1.125	0.962			
CSE	1.448	1.193	1.427		
P	1.885	1.584	1.968	3.770	
TI	2.818	1.873	2.410	3.138	9.501
SPC	1.032	0.686	0.882	1.149	3.362
OC	0.559	0.438	0.760	1.032	2.550

ESTIMATED COVARIANCE MATRIX FOR THE LATENT VARIABLES

	SPC	OC
SPC	2.267	
OC	1.955	1.653

ESTIMATED CORRELATION MATRIX FOR THE LATENT VARIABLES

	CI	DSI	CSE	P	TI
CI	1.000				
DSI	0.882	1.000			
CSE	0.931	1.018	1.000		
P	0.746	0.832	0.849	1.000	
TI	0.703	0.620	0.655	0.524	1.000
SPC	0.527	0.464	0.490	0.393	0.724
OC	0.334	0.347	0.494	0.413	0.643

ESTIMATED CORRELATION MATRIX FOR THE LATENT VARIABLES

	SPC	OC
SPC		
OC		

To be continued on next page

SPC	1.000	
OC	1.010	1.000

ESTIMATES DERIVED FROM THE MODEL

S.E. FOR ESTIMATED MEANS FOR THE LATENT VARIABLES

	CI	DSI	CSE	P	TI
1	0.000	0.000	0.000	0.000	0.000

S.E. FOR ESTIMATED MEANS FOR THE LATENT VARIABLES

	SPC	OC
1	0.000	0.000

EST./S.E. FOR ESTIMATED MEANS FOR THE LATENT VARIABLES

	CI	DSI	CSE	P	TI
1	0.000	0.000	0.000	0.000	0.000

EST./S.E. FOR ESTIMATED MEANS FOR THE LATENT VARIABLES

	SPC	OC
1	0.000	0.000

TWO-TAILED P-VALUE FOR ESTIMATED MEANS FOR THE LATENT VARIABLES

	CI	DSI	CSE	P	TI
1	1.000	1.000	1.000	1.000	1.000

TWO-TAILED P-VALUE FOR ESTIMATED MEANS FOR THE LATENT VARIABLES

	SPC	OC
1	1.000	1.000

S.E. FOR ESTIMATED COVARIANCE MATRIX FOR THE LATENT VARIABLES

	CI	DSI	CSE	P	TI
CI	0.323				
DSI	0.201	0.225			
CSE	0.225	0.185	0.269		
P	0.408	0.326	0.370	1.130	
TI	0.660	0.477	0.546	0.843	3.294
SPC	0.225	0.161	0.190	0.282	0.797
OC	0.156	0.139	0.163	0.275	0.632

S.E. FOR ESTIMATED COVARIANCE MATRIX FOR THE LATENT VARIABLES

	SPC	OC
--	-----	----

To be continued on next page

SPC 0.573
 OC 0.380 0.394

EST./S.E. FOR ESTIMATED COVARIANCE MATRIX FOR THE LATENT VARIABLES

	CI	DSI	CSE	P	TI
CI	5.236				
DSI	5.612	4.279			
CSE	6.427	6.442	5.306		
P	4.618	4.859	5.321	3.335	
TI	4.269	3.926	4.417	3.720	2.884
SPC	4.581	4.249	4.655	4.067	4.216
OC	3.570	3.162	4.663	3.757	4.035

EST./S.E. FOR ESTIMATED COVARIANCE MATRIX FOR THE LATENT VARIABLES

	SPC	OC
SPC	3.960	
OC	5.148	4.197

TWO-TAILED P-VALUE FOR ESTIMATED COVARIANCE MATRIX FOR THE LATENT VARIABLES

	CI	DSI	CSE	P	TI
CI	0.000				
DSI	0.000	0.000			
CSE	0.000	0.000	0.000		
P	0.000	0.000	0.000	0.001	
TI	0.000	0.000	0.000	0.000	0.004
SPC	0.000	0.000	0.000	0.000	0.000
OC	0.000	0.002	0.000	0.000	0.000

TWO-TAILED P-VALUE FOR ESTIMATED COVARIANCE MATRIX FOR THE LATENT VARIABLES

	SPC	OC
SPC	0.000	
OC	0.000	0.000

S.E. FOR ESTIMATED CORRELATION MATRIX FOR THE LATENT VARIABLES

	CI	DSI	CSE	P	TI
CI	0.000				
DSI	0.031	0.000			
CSE	0.020	0.012	0.000		
P	0.031	0.031	0.028	0.000	
TI	0.040	0.046	0.042	0.043	0.000
SPC	0.059	0.057	0.056	0.052	0.046
OC	0.070	0.081	0.062	0.072	0.056

S.E. FOR ESTIMATED CORRELATION MATRIX FOR THE LATENT VARIABLES

	SPC	OC
SPC	0.000	
OC	0.027	0.000

EST./S.E. FOR ESTIMATED CORRELATION MATRIX FOR THE LATENT VARIABLES

To be continued on next page

	CI	DSI	CSE	P	TI
CI	999.000				
DSI	28.702	999.000			
CSE	46.988	86.629	999.000		
P	23.993	26.584	30.825	999.000	
TI	17.356	13.576	15.688	12.262	999.000
SPC	8.959	8.123	8.770	7.514	15.850
OC	4.778	4.303	7.932	5.768	11.558

EST./S.E. FOR ESTIMATED CORRELATION MATRIX FOR THE LATENT VARIABLES

	SPC	OC
SPC	999.000	
OC	37.161	999.000

TWO-TAILED P-VALUE FOR ESTIMATED CORRELATION MATRIX FOR THE LATENT VARIABLES

	CI	DSI	CSE	P	TI
CI	0.000				
DSI	0.000	0.000			
CSE	0.000	0.000	0.000		
P	0.000	0.000	0.000	0.000	
TI	0.000	0.000	0.000	0.000	0.000
SPC	0.000	0.000	0.000	0.000	0.000
OC	0.000	0.000	0.000	0.000	0.000

TWO-TAILED P-VALUE FOR ESTIMATED CORRELATION MATRIX FOR THE LATENT VARIABLES

	SPC	OC
SPC	0.000	
OC	0.000	0.000

DIAGRAM INFORMATION

Use View Diagram under the Diagram menu in the Mplus Editor to view the diagram.
 If running Mplus from the Mplus Diagrammer, the diagram opens automatically.

Diagram output

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 Beginning Time: 10:15:57
 Ending Time: 10:15:58
 Elapsed Time: 00:00:01

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S. PLS-SEM OUTPUT

Full Model – Outer Models

Variables	Factor Loadings	Outer Weights	CA	CR	AVE
Consumer Innovativeness			.83	.88	.56
CI1. I am an innovative person	.821	.267			
CI2. I consider myself to be creative and original in my thinking and behavior	.858	.259			
CI3. I have novel ideas	.771	.223			
CI4. I seek out new ways to do things	.771	.232			
CI5. I can hold my ground in disagreement against a group	.617	.166			
CI6. I create sooner that I improve	.582	.181			
Domain-Specific Innovativeness			.55	.80	.63
DSI 1. If I heard about a travel app feature, I would look for ways to experiment with it	.813	.369			
DSI 2. Among my peers, I am usually the first to try out new travel app features	.859	.395			
DSI 3. In general, I am hesitant to try out new travel app features for my content	.151*	.153*			
DSI 4. I like to experiment with new travel app features to create my content	.875	.386			
Creative Self-Efficacy			.93	.95	.84
CSE1. I believe that I am good at creating creative journals in Journi	.921	.280			
CSE2. I have the confidence that I am good in creating journals in Journi	.899	.240			
CSE3. I have the ability to develop creative journals in Journi	.894	.296			
CSE4. I am good at designing creative journals in Journi	.940	.279			
Passion			.87	.89	.60
P1. Nothing could make me as happy as my membership with Journi	.809	.252			
P2. I cannot image my life without Journi	.834	.243			
P3. I think about Journi several times a day	.744	.230			
P4. Being online in Journi inspired me for creating new journals	.787	.282			
P5. Journi makes me feel excited about travelling	.717	.279			
Task Involvement			.85	.90	.60
TI1. Working with Journi is inspiring	.879	.385			
TI2. Working with Journi is pleasurable	.835	.334			
TI3. Working with Journi is exciting	.913	.219			
Supporting Platform Conditions			.87	.90	.71
SPC1. Journi supports me to present my trip journals in a beautiful/ creative/professional manner	.876	.301			
SPC2. Journi supports me to increase the quality of my created trip journals	.867	.274			
SPC3. Journi supports me to easily create great trip journals	.846	.263			
SPC4. Journi is useful for communicating my travel journals in a creative manner	.796	.350			
Online Creativity			.89	.92	.76
OC1. I like to experiment with new ways of creating journals	.850	.270			
OC2. I often try new things in Journi	.889	.279			
OC3. I like to do something different every time when I create a journal	.892	.292			
OC4. I like to create journals that are new, creative and inspiring	.801	.304			

Table S. PLS-SEM | Full Model – Outer Models

Basic Model – PLS SEM – Outer Models

Variables	Factor Loadings	Outer Weights	CA	CR	AVE
Consumer Innovativeness			.83	.88	.56
CI1. I am an innovative person	.821	.267			
CI2. I consider myself to be creative and original in my thinking and behavior	.858	.259			
CI3. I have novel ideas	.771	.223			
CI4. I seek out new ways to do things	.771	.232			
CI5. I can hold my ground in disagreement against a group	.617	.166			
CI6. I create sooner than I improve	.582	.181			
Domain-Specific Innovativeness			.64	.80	.56
DSI 1. If I heard about a travel app feature, I would look for ways to experiment with it	.813	.369			
DSI 2. Among my peers, I am usually the first to try out new travel app features	.859	.395			
DSI 3. In general, I am hesitant to try out new travel app features for my content	.151*	.153*			
DSI 4. I like to experiment with new travel app features to create my content	.875	.386			
Creative Self-Efficacy			.93	.95	.84
CSE1. I believe that I am good at creating creative journals in Journi	.921	.280			
CSE2. I have the confidence that I am good in creating journals in Journi	.899	.240			
CSE3. I have the ability to develop creative journals in Journi	.894	.296			
CSE4. I am good at designing creative journals in Journi	.940	.279			
Passion			.84	.89	.60
P1. Nothing could make me as happy as my membership with Journi	.809	.252			
P2. I cannot imagine my life without Journi	.834	.243			
P3. I think about Journi several times a day	.744	.230			
P4. Being online in Journi inspired me for creating new journals	.787	.282			
P5. Journi makes me feel excited about travelling	.717	.279			
Supporting Platform Conditions			.87	.90	.71
SPC1. Journi supports me to present my trip journals in a beautiful/ creative/professional manner	.876	.301			
SPC2. Journi supports me to increase the quality of my created trip journals	.867	.274			
SPC3. Journi supports me to easily create great trip journals	.846	.263			
SPC4. Journi is useful for communicating my travel journals in a creative manner	.796	.350			
Online Creativity			.89	.92	.76
OC1. I like to experiment with new ways of creating journals	.850	.270			
OC2. I often try new things in Journi	.889	.279			
OC3. I like to do something different every time when I create a journal	.892	.292			
OC4. I like to create journals that are new, creative and inspiring	.801	.304			

Table T. PLS SEM | Basic Model – Outer Models

T. Factor Analysis per Age Group

FACTORS	Group I (N=86)				Group II (N=160)				Group III (N=103)			
	N/ 1	F/2	R/3	E/4	N/ 1	F/2	R/3	E/4	N/1	F/2	R/3	E/4
	KMO= .918, Bartlett's test= 1561.76, df=105, p=.000				KMO= .915, Bartlett's test = 2501.06, df=105, p=.000				KMO= .904, Bartlett's test = 1911.64, df=105, p=.000			
Cronbach's alpha	.957	.904	.908	.918	.936	.884	.876	.872	.938	.908	.914	.937
N1: The idea is novel	.713	.478	.329	.190	.579	.696	.265	.201	.701	.189	.423	.454
N2: The idea is unique	.776	.407	.316	.224	.649	.652	.211	.172	.732	.136	.428	.435
N3: The idea is imaginative	.699	.382	.305	.294	.594	.598	.368	.114	.747	.169	.389	.336
N4: The idea is revolutionary	.860	.275	.126	.268	.923	.158	.114	.153	.831	.249	.116	.290
N5: The idea is radical	.776	.208	.151	.353	.901	.128	.190	.085	.794	.400	.225	.184
N6: The idea is trendy	.711	.132	.494	.225	.662	.144	.431	.332	.511	.356	.224	.595
E1: The idea is precise	.376	.785	.200	.256	.104	.632	.285	.460	.377	.349	.759	.212
E2: The idea is mature	.443	.626	.338	.378	.116	.638	.411	.425	.422	.334	.719	.243
E3: The idea utility is clearly described	.289	.781	.354	.215	.229	.483	.338	.562	.445	.297	.610	.441
F1: The idea is technically feasible	.360	.158	.315	.811	.284	.100	.249	.868	.129	.407	.399	.674
F2: The idea is economically feasible	.310	.380	.252	.787	.074	.394	.342	.749	.080	.616	.531	.322
F3: The idea fits the initiator image	.203	.235	.612	.553	.127	.296	.580	.549	.313	.628	.501	.312
R1: The idea has a clearly described customer benefit	.372	.284	.453	.582	.154	.267	.706	.353	.267	.414	.236	.767
R2: The idea enables the initiator to realize an attractive market potential	.327	.368	.757	.312	.336	.299	.768	.264	.321	.779	.214	.350
R3: The idea enables the initiator to build up a strategic competitive advantage	.285	.310	.802	.307	.384	.243	.741	.270	.341	.788	.263	.285
Eigen Values	10.47	1.11	.75	.56	9.19	1.79	.74	.61	10.23	1.26	.71	.60
Explained Variance	63.83	7.44	4.99	3.74	61.20	11.95	4.93	4.06	68.59	8.41	4.78	4.00

Note: * Italics item belong to factor

Table U. Exploratory Factor Analysis per Age Group

U. Research Projects and Publications related to PhD Dissertation

An overview of related research reports and publications to the PhD dissertation:

Dickinger, A. & Lalovic, L. (forthcoming) "Tourist-Driven Innovations In Social Media: An Opportunity For Tourism Organizations." In Sigala, M., Christou, E. & Gretzel, U. (Eds). *Advances In Social Media For Travel, Tourism And Hospitality: New Perspectives, Practice And Cases*.

Dickinger, A, & Lalovic, L. (2015) "This City is absolutely Fun and Trendy" A Destination Brand Personality Analysis in a Web 2.0 setting. In Tussyadiah, I. & Inversini, A. (Eds.) *Information and Communication Technologies in Tourism 2015*, Springer International Publishing 321-333.

Dickinger, A., & Lalovic, L. (2014). How Emotional Do We Get? A Closer Look into the Trip Advisor Dialogue. In Xiang, Z. & Tussyadiah I. (Eds). *Information and Communication Technologies in Tourism 2014*, Springer International Publishing, 239-252.

V. Research Grants and Awards related to PhD Dissertation

- Wirtschaftskammerpreis 2012 – Research Grant

Institution: Vienna Chamber of Commerce, Austria
Project: Vienna the Image of Vienna in User Generated Content: An Analysis of Brand Personality and Emotions
Project manager: PD. Dr. Astrid Dickinger
Project assistant: MSc. Lidija Lalicic

- PhD Scholarship

Institution: Internet Foundation Austria, 'Netidee Call 09'
Project: User-driven Innovation for Tourism in Social Media Spaces
Links: https://www.netidee.at/die_netidee_2014/geofoerderte_stipendien_2014/

- Nominee for Best Paper Award

Institution: Travel and Tourism Research Association (TTRA) European Chapter
Conference 'Service Innovation & Experiences in Tourism'
Innsbruck, 22-24th of April 2015
Paper: Open Innovation Platforms in Tourism: A Case Study of an Austrian DMO

- Wirtschaftskammerpreis 2015 – Research Grant

Institution: Vienna Chamber of Commerce, Austria
Project: Open Innovation Web 2.0 Platforms: A Case Study of Vienna Tourist Board
Project Manager: MSc. Lidija Lalicic
Links: <https://www.wko.at/Content.Node/Interessenvertretung/Aus--und-Weiterbildung/w/Wirtschaftskammerpreis-2015.html>