UNIVERSIDADE DE LISBOA

ISEG – LISBON SCHOOL OF ECONOMICS AND MANAGEMENT

EVALUATION MODELS OF CUSTOMER LOYALTY

COMMUNICATION SOLUTIONS FOR THE STRATEGY OF A HOTEL GROUP

Pedro Gonçalo Tenazinha Pimpão

Orientadores: Professora Doutora Antónia de Jesus Henrique Correia

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Professor Doutor José Carlos das Dores Zorrinho

Tese especialmente elaborada para obtenção do grau de Doutor em Gestão

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Doutoramento em Gestão

Declaração de Autoria do Trabalho

Declaro ser o autor deste trabalho, que é original e inédito. Autores e trabalhos consultados estão devidamente citados no texto e constam da listagem de referências incluídas.

Pedro Gonçalo Tenazinha Pimpão

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(assinatura)

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ABSTRACT

Customer relationship management and a hotel loyalty program are ranked as one of the most important information sources when a hotel customer is making a purchase decision. These influences are especially important in the hospitality and tourism industry, whose intangible products are difficult to evaluate prior to their consumption. When word of mouth becomes a diffusion process, the online social network induces new ways of capturing, analysing, interpreting and managing the influence that one customer may have on another. This research evaluates the long-term effectiveness of a hotel chain's loyalty program from a behavioural perspective, comprising constructs that make feasible the likelihood that guests will recommend their loyalty program to their peers. The conceptual framework and its hypotheses have been tested by means of three approaches based on Dirichlet, Bass and Structural equation models. Secondary and primary data were gathered through a research online survey to assess purchase frequency and hotel choice, diffusion patterns of customers and non-customers and the contributing to retaining customers for hotels. The findings reveal that customers are loyal to the branded hotel chain. As the hotels are all part of the branded group, this polygamy is not only accepted but very welcome. There are also differences in the loyalty card's acceptance by nationality, which also indicates a need for innovation in the loyalty program in three years. Moreover, commitment and trust and word of mouth are crucial to enacting social diffusion; it also determined that segmented offers of customers by nationalities incentive hotel chain competitiveness to sustain long term relationships with customers. The study result may well be useful to hospitality practitioners who are considering creating and posting new trustworthy contents that might be beneficial for the hotel loyalty program in their efforts to provide a more valuable experience for guests. Consequently, hotels loyalty program managers should establish a higher satisfaction and trustworthiness level to create an online loyalty program community, in order to improve post-purchase customer behaviour.

Key words: Diffusion theory; customer loyalty; customer relationship management; hotel loyalty program; word of mouth.

RESUMO

O sistema de gestão e relacionamento com os clientes e o programa de fidelização de hotéis são considerados as fontes de informação mais importantes quando um hóspede se encontra em fase de decisão de uma compra. Estas tendências são deveras importantes na indústria da hospitalidade e do turismo em geral, cujos produtos intangíveis são difíceis de avaliar antes de seu consumo. Quando o "passa-a-palavra" se torna um processo de difusão, a rede social digital induz novas formas de captar, analisar, interpretar e gerir a influência que um cliente pode ter noutro. Esta tese avalia a eficácia do programa de fidelização de um grupo hoteleiro a longo prazo, numa perspectiva comportamental compreendendo conceitos que viabilizem a probabilidade de que os clientes irão recomendar o programa de fidelização que eles têm para os seus pares. O quadro conceptual, bem com as respetivas hipóteses de investigação foram testados, através de três abordagens, baseadas no modelo Dirichlet, no modelo Bass e no modelo de equações estruturais. De forma a avaliar a frequência de compra e a escolha de hotel, bem como os padrões de difusão dos clientes e dos não clientes, foram utilizados dados secundários e primários, através de um questionário digital, o qual contribuiu para a retenção dos clientes do grupo hoteleiro. Os resultados revelam que os clientes são leais ao grupo hoteleiro como um todo. Como os hotéis são todos parte do mesmo grupo, a poligamia demonstrada pelos clientes não é apenas aceite, mas muito bem-vinda. As diferenças na aceitação do cartão de fidelização por nacionalidade indicam também a necessidade de inovação do programa de fidelização num prazo de três anos. Além disso, os conceitos do compromisso e da confiança e do "passa-a-palavra" são cruciais para desenvolver a difusão social. O presente estudo também propõe que devem existir ofertas segmentadas de clientes por nacionalidades, de forma a manter a competitividade de longo prazo do grupo hoteleiro. O resultado da presente investigação pode ser útil para os gestores, no sentido de criar e publicar novos conteúdos de confiança e que possam ser benéficas para o programa de fidelização do hotel, de forma a proporcionar uma experiência mais valiosa para os clientes. Consequentemente, os gestores devem estabelecer um maior grau de satisfação e confiança incluídos na criação de uma comunidade digital, a fim de melhorar o comportamento pós-compra do cliente.

Palavras-chave: Teoria da difusão; Fidelização de clientes; sistema de gestão e relacionamento com os clientes; programa de fidelização de hotéis; "passa-a-palavra".

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LIST OF SYMBOLS AND ABBREVIATIONS

BPM – Brand Performance Measures

CFA – Confirmatory Factor Analysis

CRM – Customer Relationship Management

DMD – Dirichlet Multinomial Distribution

GNP – Gross National Product

LTV – Tagus Valley

NBD – Negative Binomial Distribution

SEM – Structural Equation Modelling

UTAUT – Unified Theory of Acceptance and Use of Technology

WOM – Word of mouth

CHAPTER 1
INTRODUCTION AND THESIS OVERVIEW

1.1 Introduction

The hospitality industry is directly related to tourism consumption. It takes place in social contexts, in which interactions and shared experiences with other tourists form a crucial part of the service experience (Rihova et al., 2015). Tourism consumption offers new opportunities and challenges for better understanding tourists' preferences and behaviours for effective planning and decision-making (Rong et al., 2012). If tourists that contribute to a better service experience for other tourists, these individuals are more likely to be satisfied with their own experiences and consequently become loyal to the organization (Rihova et al., 2015). In this way, interpersonal influence is important because of its intangible nature and the fact it cannot be evaluated before the purchase as it is with a loyalty program (Confente, 2014).

Hotels need to improve the quality of their services to gain new customers. It is not only the quality of their services but also the importance of guest relationships, particularly the relationship with existing loyal customers (Rahimi and Gunlu, 2016). In this sense, this research represents one of only a few empirical examinations of interrelationships between customers themselves and between hotels and customers for future behaviour intentions, in an online social environment, through a hotel chain loyalty program. Several studies measure attitudes, perceptions, and opinions of customers, but not necessarily linking these to actual customer behaviours (Williams and Naumann, 2011). The ways in which loyalty programs facilitate customer relationship management remain a topic of exploration (Xie and Chen, 2013). How users' online search behaviour (information search and choice) is influenced by the opinions of other people (and experiences) is a major problem in research nowadays (Herrero et al., 2015).

The present thesis focuses on measuring the impact of customer loyalty programs on customers' behaviours, such as hotel choice and purchase frequency. One of the reactions of the industry was to develop loyalty programs to sustain and enact repeat purchases. The most common loyalty programs are those of customer relationship management (the so-called CRM).

Firstly, the study provides tools for hotels to assess from a tangible perspective the effectiveness of loyalty programs and it builds on a dynamic performance behaviour Dirichlet model to elucidate market structure and it contributes to the hotel brand's market share positioning within the hotel chain.

Secondly, the study provides diffusion patterns tested by the Bass model in order to analyse and predict hotels' sales, this being a competitive loyalty diffusion tool. This is important to understand how diffusion patterns affect the acquisition and use of loyalty cards.

Thirdly, the study encompasses a social online diffusion model based on WOM for hotel loyalty programs to become more dynamic in the way hotels contribute to the creation and distribution of personalized information and communication. That is why this study is also important to practitioners, since it brings improvements in customer relationships over time, in guest loyalty and in the acquisition of new guests, and develops communication strategies which allow them to improve decision-making in hotels. In this sense, obtaining information from the experiences of others, potential guests could be attracted to the loyalty program, by analysing the likelihood of guests sharing hotel loyalty program contents among their friends and relatives.

The challenge of this research is to contribute to reaching a reasonable answer to the questions below in a specific context – one of the best-known Portuguese hotel chains worldwide.

1.2 Research problem and questions

The research problem of this thesis has been defined as "to understand the development of customers' behaviours within the CRM and loyalty approach in the hotel chain loyalty program".

In other words, the aim is to study new communication strategies in the hotel chain loyalty program by answering the following research questions:

1. How effective might loyalty programs be for positioning brands/hotels in customers' minds?

The objective is to depict the market structure and the performance assessment process as well to assess hotel choice and purchase frequency.

2. How do diffusion patterns affect the acquisition and use of loyalty cards?

The objective is to analyse and predict loyalty card sales in terms of behavioural and geographical measures and to assess the evolution of country effects and diffusion.

3. How can loyalty programs be supported by online WOM referrals for capturing new segments and made to last in a continuum relationship?

The objective is also to characterize customers' social motives and behaviours and to assess the likelihood of sharing experiences in the loyalty program among their friends and relatives.

The research problem presented is based on the assumption that an understanding of hotel loyalty programs can be enhanced when one takes into consideration both the interaction between customers, through WOM referrals, through the share of experiences in an online social network and the brand performance and diffusion patterns in which hotels are embedded. Several approaches are employed, individually or combined, to examine customers' loyalty to the hotel loyalty program: CRM approach (e.g. Boulding *et al.*, 2005); online social network (Barreda *et al.*, 2015); Diffusion approach (e.g. Mahajan *et al.*, 1990).

1.3 Theoretical background

The structure of consumers' loyalty is based on relationship marketing as a form of repeat behaviour resulting from long-term exchanges (Cugelman *et al.*, 2009). Relationship marketing is a key paradigm for establishing, developing and maintaining successful relational exchanges (Morgan and Hunt, 1994) for the competitiveness of tourism organizations (Buhalis and Law, 2008), as well for the industry as a whole (Frow *et al.*, 2011). Therefore, customers and hotels are both exposed to a large number of influences and behaviours from other parties or other observable phenomena and all those influences are interconnected. Relationship marketing must identify all aspects, developing customer insights and building customer relationships. In the hotel industry, those performances are measured by CRM systems, which constitutes a long-term strategic approach (Boulding *et al.*, 2005; Frow *et al.*, 2011; Lacey and Morgan, 2009; Liu, 2007).

CRM systems are crucial for monitoring loyalty programs in a micro-view, i.e., the key performance indicators (Frow *et al.*, 2011). Loyalty programs or frequency programs are considered one of the best ways of supporting a firm's knowledge base by forcing stronger relationships with customers (Buhalis, 2003; Buhalis and Law, 2008; Hansen *et al.*, 2010). Buhalis and Law (2008) argue that loyalty programs support and help to promote the customization of tourism products. Hence, Sharp and Sharp (1997) argue that loyalty programs have an effect on repeat purchases and that it is a first step to understanding the effectiveness of cause-and-effect relationships in the program's system. Taking repeat purchases as the focus of a loyalty program requires an instrument to measure it and to reinforce the knowledge about the effectiveness of the potential of such programs. This research is supported on Ehrenberg *et al.* (2004) and Sharp and Sharp's (1997) works who argue that the repeat purchase effect follows a Dirichlet distribution.

The Dirichlet model is based on the Stated Preference Theory, i.e., a theory about choice between competitive entities such as brands/hotels, which assumes that customers are able to order their preferences across different alternatives (Goodhardt *et al.*, 1984). The Dirichlet model is the best-known single statistical model to explain and describe various performance patterns (hotel choice and purchase frequency) of the loyalty program (see *paper 1*). The Dirichlet model is critical to this research as it provides a clear overview of how customers think about proposed and/or present hotels in a market (Brito and Pratas, 2013). This is essential for any hotel, including tourism destination brands, because it has effects on the purchasing decisions of customers (Brito and Pratas, 2013).

Notwithstanding, the possibility of withdrawal or turn-down of loyalty programs is present at any stage. At a later state, loyalty programs may be re-established with new communication strategies which encompass the need for innovation. For the measurement of that stage, diffusion perspective plays a major role for the model, as it represents the strength of the communications effects, such as flow of information, products and services (Gatignon and Robertson, 1985; Mahajan *et al.*, 1990). Despite the diffusion approach being originally intended for durable goods, nowadays it is widely used in the services market (Libai *et al.*, 2009). The diffusion processes provide a clear view that for modelling services there is a need to incorporate CRM in that diffusion process/framework (Peres *et al.*, 2010). However, linking diffusion processes

in services, such as hotel loyalty programs, with CRM systems, has been neglected. Forecasting diffusion processes (i.e., forecasting market potentials and sales growth patterns) are crucial for planning marketing programs (Pae and Lehman, 2003). However, they have to be empirically validated, because there are difficulties in observing individual behaviour at the brand level (Parker and Gatignon, 1994). Making use of diffusion, the hotel loyalty program requires an instrument to measure the level of spread of innovation. In this sense, the best-known and most widely used diffusion model of first-purchase demand of new product acceptance in marketing is that of Bass (1969).

The Bass model is a quantitative diffusion model focusing on aggregated data, representing the market penetration of a new process, product or technology (Lilien *et al.*, 2000) (see *paper 2*). The Bass model also represents a central aspect for verbal influence or interpersonal communication (WOM) (Mahajan *et al.,* 1990; Libai *et al.*, 2009; Peres *et al.*, 2010). This is crucial for any hotel loyalty program to implement a two-stage communication strategy, as the spread of WOM comprises a contagion process between those who have adopted the innovation and those who have not yet adopted (Lilien *et al.*, 2012). A good message content (what to say) and execution (how to say it) is also the creative strategy necessary for the success of hotels' loyalty programs.

Communications strategies are mainly developed between parties and they are crucial to identify the guests' engagement with the loyalty program, depicting the attitude the guests adopt in relation to the program (Cugelman *et al.*, 2009). The best way to communicate with customers in the hospitality context and interact virtually, form a social community, and recommend services, post comments and share experiences, is through online social network websites (Barreda et al., 2015).

Online services have grown rapidly and have emerged as the leading edge of the service industry (Brito and Pratas, 2013) and also have direct, positive effects in terms of perceived information quality and indirect effects on satisfaction and WOM intention with the aim of enhancing customer loyalty (Jiang *et al.*, 2013). Furthermore, online communication positively correlates with behavioural intentions (Jiang *et al.*, 2013). However, the quality of the electronic service (e-service) has become a key indicator of how well a company is likely to satisfy its customers (Udo *et al.*, 2010).

Online communication can be an important, strong determinant of trust and can be an important source of satisfaction and it is used to build and maintain stronger customer relationships (Garbarino and Johnsson, 1999; Barreda *et al.*, 2015). Satisfaction is considered the key mediating construct between component attitudes, such as commitment-trust evaluations and future intentions, and it is well established in predicting behavioural intentions (Garbarino and Johnsson, 1999). However, it is important to realize that satisfaction, whereby a guest reassures another about an experience or about his or her identifiability in a loyalty program, is a more powerful source to facilitate personalized communications (Lacey and Morgan, 2009). Besides satisfaction, trust and commitment are other critical factors in developing long-term relationships with customers in online contexts and are keys of antecedents of online customer satisfaction (Barreda *et al.*, 2015). The commitment-trust relational dimension resists short-term alternatives in favour of long-standing relationships with existing partners (Lacey and Morgan, 2009) (see *paper 3*).

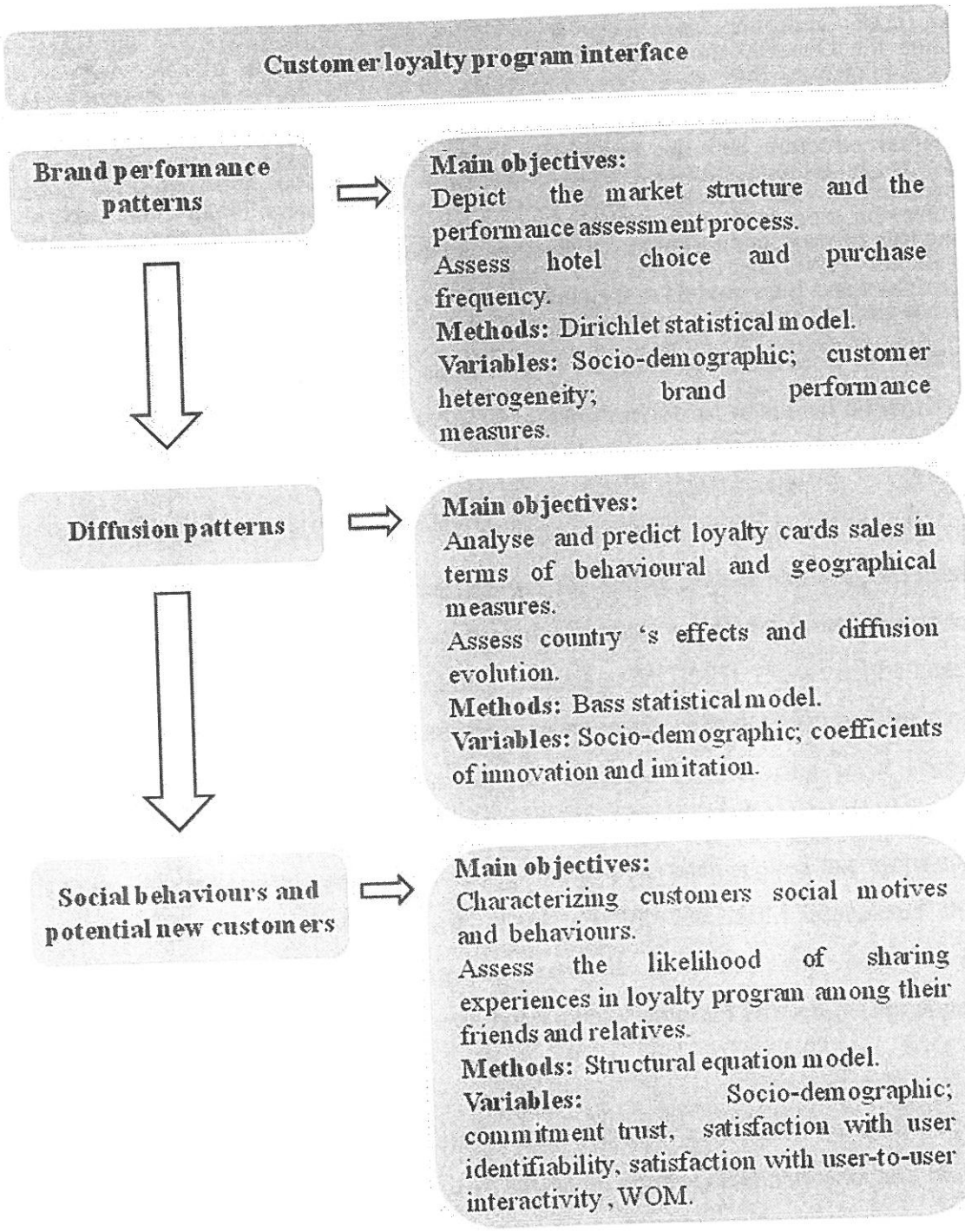
Therefore, the key goals of online social network marketing include satisfaction, trust and commitment as attitudinal factors and word of mouth as a behavioural factor to understand customers' behavioural intentions (Barreda *et al.*, 2015). However, the hotel loyalty program requires an instrument to measure such behavioural intentions of customers to assess their potential intentional behaviours of sharing in a social technology diffusion environment. In this sense, structural equation modelling (SEM) is the most feasible method to test this model. This method has been applied in a multitude of areas including marketing (Reinartz *et al.*, 2009). The SEM represents the understanding of the interrelationship between all attitudinal and behavioural components and how these relate to overall hotel loyalty program efficiency (see *paper 3*).

Finally, the online environment requires creative online communications, by also creating online communities to post positive WOM on online social networks and build long-lasting relationships with consumers (Barreda *et al.*, 2015). With the advancement of internet technology, one of the main challenges for tourism destinations and businesses is the rise of social media and networking platforms, which allows tourists to interact and share their views and experiences (Confente, 2014).

1.4 Conceptual framework

The present study builds a conceptual trade-off model for hotels' loyalty programs that integrates satisfaction, trust, commitment, WOM and behavioural intentions. Efforts to align the Dirichlet model with the Bass model with the goal of achieving customer loyalty have been pursued (Figure 1). In this sense, this study starts by depicting the market structure and the performance assessment of existing customers and then explains how the diffusion process potentiates new customers. Finally, this study shows the role of trust, commitment, satisfaction and WOM as relational mediators linking the Dirichlet and Bass models to the understanding of customer loyalty.

Figure 1.1: Conceptual Framework of the thesis



Source: Own elaboration.

This research follows one major element, which is the measurement process (Boulding *et al.*, 2005), through loyalty programs, presenting a taxonomy framework that categorizes hotel loyalty program members on the basis of involvement and a mix of behavioural outcome variables (Hansen et al., 2010). So, this research provides more evidence about the processes and relationships rather than transactions (Tronvoll et al., 2011), collecting data and estimating the various interrelations that a loyalty model comprises. Based on a literature review and the conceptual model in Figure 1, thirteen hypotheses were tested in a continuum of a three-step research that resulted in three papers, as illustrated in Table 1. This table evidences the sequence of research proposals in light of the papers produced along this research.

Table 1.1: Research stages

Research questions	Research purposes	Hypotheses	Paper
How effective might loyalty programs be for positioning the brands/hotels in customers' minds?	1. Depict the market structure and the performance assessment process. Assess hotel choice and purchase frequency.	H1: Socio-demographic characteristics of hotel loyalty program influence customers' purchase frequency. H2: Socio-demographic characteristics of hotel loyalty program influence customers' hotel choice.	**Covered in paper 1**
How do diffusion patterns affect the acquisition and use of loyalty cards?	2. Analyse and predict loyalty card sales in terms of behavioural and geographical measures. Assess country effects and diffusion evolution.	H3: Coefficient of innovation affects diffusion of hotel loyalty program. H4: Coefficient of imitation affects diffusion of hotel loyalty program.	**Covered in paper 2**
How can loyalty programs be supported by online word of mouth referrals for capturing new segments and made to last in a continuum relationship?	3. Characterizing customers' social motives and behaviours. Assess the likelihood of sharing experiences in a loyalty program among their friends and relatives.	H5: Satisfaction with user-to-user interactivity is influenced by satisfaction with user identifiability. H6: Commitment-trust is influenced by satisfaction with user identifiability. H7: Commitment-trust is influenced by satisfaction with user-to-user interactivity. H8: Word of mouth is influenced by satisfaction with user-to-user interactivity. H9: Word of mouth is influenced by commitment-trust. H10: Word of mouth is influenced by satisfaction with user identifiability. H11: Intentional sharing behaviour is influenced by satisfaction with user-to-user interactivity. H12: Intentional sharing behaviour is influenced by satisfaction with user identifiability. H13: Intentional sharing behaviour is influenced by word of mouth.	**Covered in paper 3**

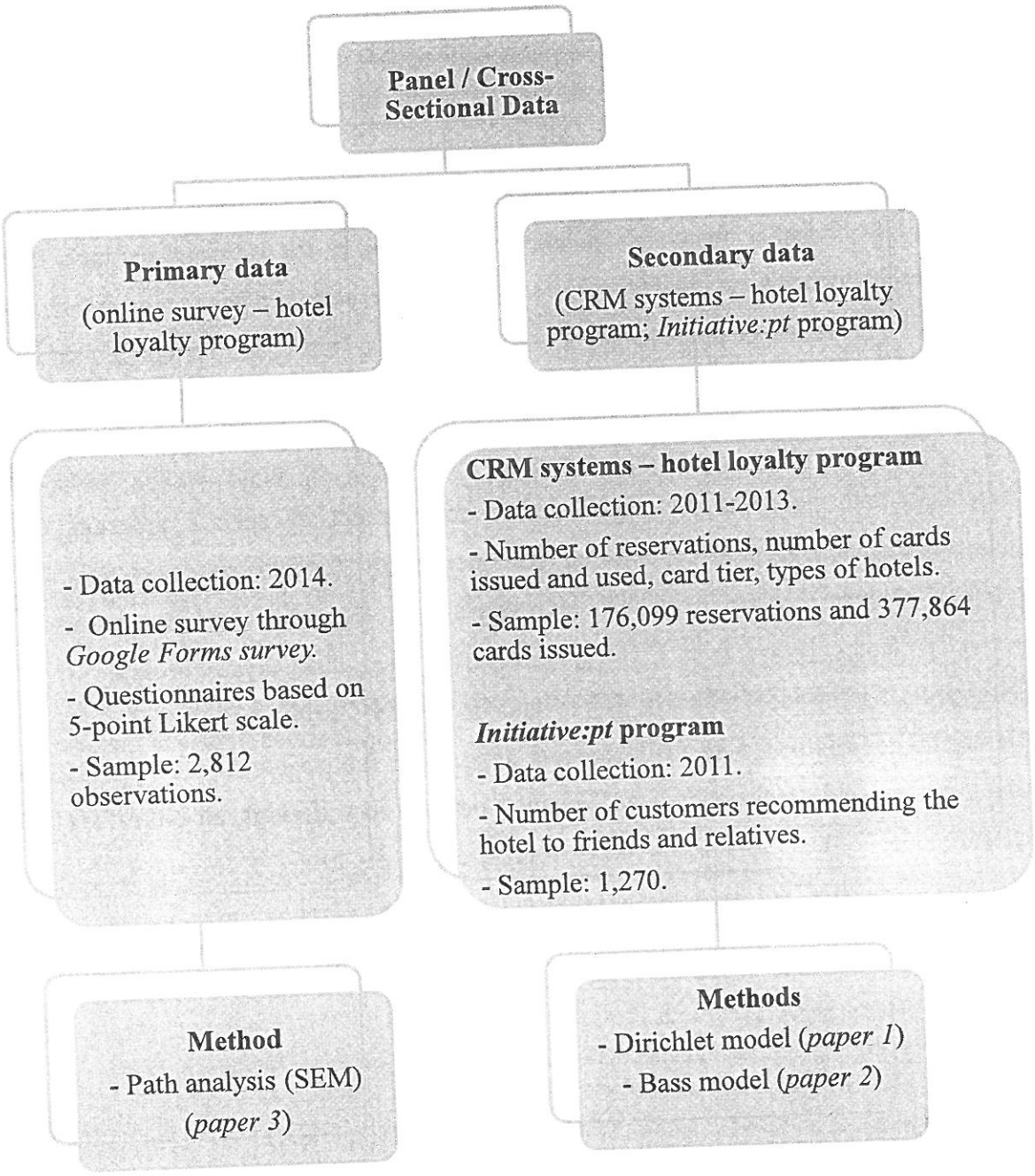
Source: Own elaboration

1.5 Methodology overview

This study follows a positivistic paradigm for mainly practical issues with managerial relevance as in the present service research work. According to Tronvoll et al. (2011), positivism is assumed when used in formal propositions, quantifiable measures of variables, hypothesis testing and inferences about a phenomenon drawn from a representative sample of the stated population. It tends to be driven by theory and assumes that reality is objectively given. As mentioned in the previous sections, this work started to test two models using secondary data and then tests a model using primary data, i.e., using questionnaires given by beliefs, values and techniques shared by the members of the hotel chain loyalty program community.

This study examines quantitative observed behaviours of hotel loyalty program customers and the influence of the online environment of such a program. To understand such behaviours for attaining customer loyalty, the data is supported by two types of sources (Figure 2). In the first stage a panel data was organized based on secondary data collected from CRM systems of the hotel chain loyalty program, from 1st April 2011 to 31st March 2013, and from the *Initiative:pt* Program from questionnaires conducted in all Portuguese airports for the period of one year (2011) (see *paper 1 and 2*). Secondly, we collected primary data through an online survey questionnaire to the hotel chain loyalty program customers from 1st November 2014 to 31st December 2014. All the data was collected online via a *Google Forms Survey*.

Figure 2.1: Research methodological procedures



Source: Own elaboration.

For this research, paper 1 follows the interactive estimation method adapted from Bassi's Technical Note (2011) to test the Dirichlet model. This procedure assumes geographical and chain effects of a long-term nature. In paper 2, we use the nonlinear least square (NLS) to test the Bass model due to several advantages: the NLS helps to minimize the sum of squared errors; it is widely used for forecasting purposes with at least four observations of $N(t)$ and provides the best predictive validity for the Bass model (Schmittlein and Mahajan, 1982; Lilien *et al.*, 2012). Finally, for paper 3, this study applied the maximum likelihood estimation method in order to estimate a set of model parameters that maximize the likelihood of observing the true value of the population, with normal distribution (Hair *et al.*, 2011; Marôco, 2010; Reinartz *et al.*, 2009). This method was used for testing SEM because it allows the estimation of causal interrelations between latent factors measured with multi-item scales (Herrero et al., 2015).

1.6 Organization of the thesis

The thesis is organized into three papers that structure the study in order to answer the research questions and purposes of the research (Figure 3).

The first paper allows an elucidation on the hotel chain loyalty program market structure, through several key brand performance patterns among different hotels and therefore countries in the world. The paper used the Dirichlet model in order to explain the hotel brand's market share positioning within the hotel chain by geographical and type-of-hotel penetration rates by linking CRM systems with loyalty programs. By performing such a model in the loyalty program, it was possible to illustrate a chain effect between different localizations and types of hotels evolving from the variety integrated effect and heterogeneity among customers. Based on the analysis of brand performance measures in each hotel it was possible to set a geographic scope to develop this research further – the hotel chain loyalty program.

The second paper was structured to provide an understanding of how diffusion patterns of a new loyalty program a hotel chain affect the acquisition and use of loyalty cards. The paper used the Bass model in order to explain the behavioural and geographical

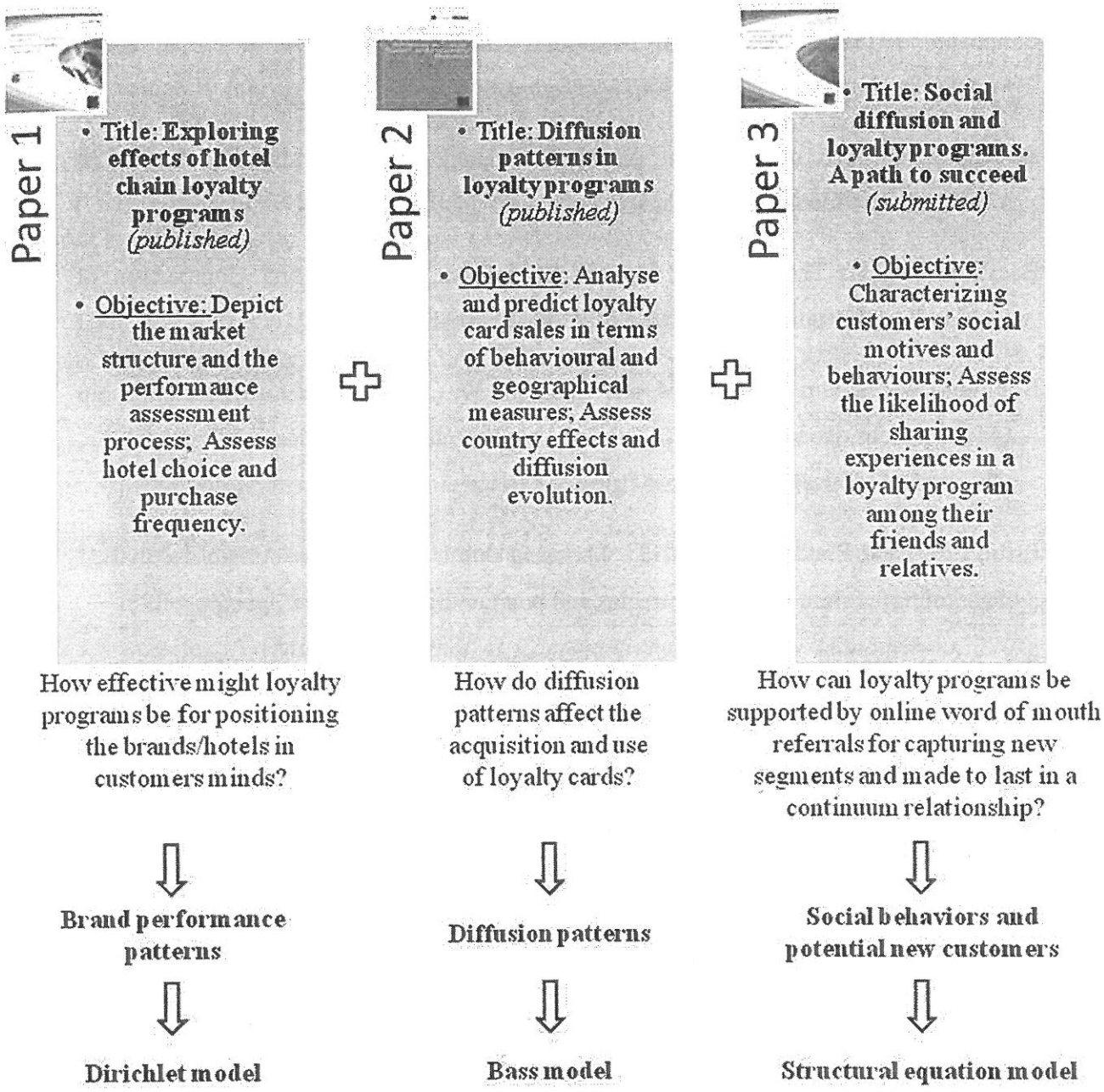
measures across the different customers' nationalities and different kinds of hotels of the group by linking diffusion theory through CRM systems and loyalty programs in hotels. Based on this analysis it was possible to predict the speed of diffusion and therefore the necessity of marketing actions in order to achieve faster penetration to secure a quick investment return.

Further *paper 3* establishes social behaviours among customers by analysing the likelihood of guests sharing hotel loyalty program contents among their friends and relatives. Through several attitudinal components, this study gives us the importance and influence of commitment-trust, satisfaction with user-to-user interactivity, satisfaction with user identifiability and WOM as the factors to leverage and create social media platforms inside hotel loyalty programs by encompassing the expectations of guests' self-behaviour intentions, as this is crucial to understanding hotels loyalty programs.

In summary, the thesis is composed by three papers: the first is the combination of purchasing rates and purchasing hotel behaviour on a long-term or/and geographical level; the second forecasts the development of a hotel base around a new location under different strategies to track the WOM networking process through diffusion stages; and the final one is to track consumers' behavioural intentions, as loyalty programs need to embed service in customers' existing and future contexts, activities and experiences.

The driving question in the present thesis is to assess customer's attitudes and behaviours and how these behaviours potentiate new communications strategies to achieve new customers through the loyalty of existing customers' hotel chain loyalty program. Each of the three studies that assemble this thesis plays a specific role in answering the research questions and purposes of the research at the theoretical, empirical and strategic level.

Figure 3.1: Structure of the thesis



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CHAPTER 2. PAPER 1

EXPLORING EFFECTS OF HOTEL CHAIN LOYALTY PROGRAM

EXPLORING EFFECTS OF HOTEL CHAIN LOYALTY PROGRAM

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Abstract

Purpose – The main purpose of this work is to evaluate the long-term effectiveness of a hotel's chain loyalty program from a behavioural perspective.

Design/methodology/approach – A Dirichlet model was estimated to assess purchase frequency and hotel choice within one of the biggest hotel chains in Portugal. The sample comprises hotels where a loyalty program was implemented, with a total of 176.099 reservations. Data were extracted from the customer relationship management (CRM) systems of the hotel Group.

Findings – The results suggest that instead of being loyal to a certain hotel, customers are loyal to the branded hotel chain. As the hotels are all part of the branded group, this polygamy is not only accepted but very welcome.

Research limitations/implications – The level of penetration and purchase frequency of CRM was measured. Nevertheless a thorough understanding of these will be critical for the success of this program.

Practical implications – This research is a step towards assessing hotel chain competitiveness, by improving and suggesting segmented groups of brands/hotels and to induce cross-selling products accepting polygamous loyalty as the only way to sustain long term relationships with customers.

Originality/value – This is one of the few researches, if not the only one, to assess loyalty with tangible indicators, as such as purchase frequency. Further, the results suggest that loyalty programs are more effective if multiple options are available as such cross-selling is perhaps the only way to fix customers.

Key words: CRM; loyalty program; Dirichlet model; repeat purchase behaviour; customer loyalty.

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2.1 Introduction

Internet marketing, as one of the most powerful technological tools, hugely increases competition across products and even more for tourism destinations, and it has changed travellers' behaviour. It has enabled customers to engage directly with hotels, without intermediaries (Buhalis and Law, 2008). One of the reactions of the industry was to develop loyalty programs to sustain and enact repeat purchases. These programs, which are supported on one-to-one relationships, provide accurate knowledge of customers' needs and wants (Sharp and Sharp, 1997).

The most common loyalty programs are those of customer relationship management (the so-called CRM). CRM systems have emerged to focus on customer-centric technologies, helping the implementation of loyalty programs, as an 'info-structure' to support its interoperability, its personalization and its constant networking (Buhalis, 2003; Buhalis and Law, 2008). CRM studies have been applied in several industries, in particular in airline alliances (Boland *et al.*, 2002), although none of these researches rely on Dirichlet Assumptions. In this sense, loyalty programs could be important in increasing the expected response from hotels to customers, since the data transmitted through the Internet has rapidly increased in recent years. However, it is costly to initiate and maintain those loyalty programs, because of their long-term commitment (Liu, 2007). The cost-effectiveness of these programs is very controversial. This controversy has been discussed since Cunningham (1957) but no one till now has reached a reasonable answer to the main question that is embedded in CRM philosophy – is it worth spending hundreds of thousands of euros to implement CRM? How effective might these programs be for positioning the brands/hotels in customers' minds? For this discussion, Mägi (2003) argues that membership in loyalty programs increases a customer's share of wallet for four out of seven programs and decreases shares of competitors. This is valid at the chain level and not at the store level.

The challenge of this research is to contribute to reaching a reasonable answer to these questions in a specific context – one of the best-known Portuguese hotel chains worldwide. Loyalty is assumed to be a behavioural construct that can be measured in light of purchase measures (Liu, 2007; Reichheld, 1993; Sharp and Sharp, 1997). Hence, it is assumed that repeat purchase and loyalty are somewhat connected (Dick and Basu, 1994). From an empirical point of view, the study provides tools for hotels to

assess from a tangible perspective the effectiveness of loyalty programs. Repeat purchase behaviours are assessed in a temporal and geographical context. Temporal or strength context is used to account for loyalty persistence (Dick and Basu, 1994; Liu, 2007), whereas geographical or differentiation context (Dick and Basu, 1994) comprises the chain effect of this program across the different kinds of hotels of the Group.

This article builds on a dynamic performance behaviour Dirichlet model to elucidate market structure. The model is able to describe the various brand performance patterns; and in that sense, it also helps explain and estimate them (Ehrenberg *et al.*, 2004). The Dirichlet model estimates these patterns, where big and small brands/hotels differ greatly in how many buyers they have, but usually far less in how loyal these buyers are (Ehrenberg *et al.*, 2004). In this sense, this work blends hotel choice and purchase frequency in a performance assessment process, monitoring results of brands'/hotels' performance, through several key performance indicators. It contributes to hotel brand's market shares positioning within the hotel chain, where geographical and type of hotel penetration rates are estimated.

We first describe the research in a theoretical framework, linking CRM systems with loyalty programs and a Dirichlet model and then develop and estimate the brand performance measures (BPM). The results illustrate how a chain effect between different localizations and types of hotels evolves from the variety integrated effect and heterogeneity among customers to being in a loyalty program which helps maintain the polygamy of its customers in order to achieve customer loyalty. The study has important implications for managers who are charged with allocating resources to improve service benefits and customer relationships over time.

2.2 Theoretical framework

Management of customer relationships is a key activity for the competitiveness of tourism organizations (Buhalis and Law, 2008), as well for the industry as a whole (Frow *et al.*, 2011). CRM constitutes a long-term strategic approach that addresses all aspects of identifying customers, developing customer insights and building customer

relationships (Boulding *et al.*, 2005; Frow *et al.*, 2011; Lacey and Morgan, 2009; Liu, 2007).

In any CRM system of the hotel industry, one major element is the measurement process (Boulding *et al.*, 2005). This opens the door to the performance assessment process, one of the five key processes of CRM identified by Frow *et al.* (2011). The performance assessment process ensures that firms' strategic objectives are being delivered in an appropriate and acceptable way, providing firms with the opportunity to gain deeper insights into their customers for future improvements (Boulding *et al.*, 2005; Frow *et al.*, 2011). Enabling performance monitoring in a micro-view, such as key performance indicators, has become an integral part of the CRM system and, specifically, loyalty programs (Frow *et al.*, 2011).

The idea that loyalty programs are an important component of firms' CRM strategy is widely accepted in marketing and tourism areas (Buhalis and Law, 2008; Hansen *et al.*, 2010; Lacey and Morgan, 2009; Liu, 2007). Loyalty programs or frequency programs are considered one of the best ways of supporting a firms' knowledge base by forcing stronger relationships with customers (Buhalis, 2003; Buhalis and Law, 2008; Hansen *et al.*, 2010).

Traditionally, loyalty programs are identified by their degree of indirect defensive orientation and their two-stage behaviour time nature (Liu, 2007; Sharp and Sharp, 1997). The indirect defensive orientation means building a closer program with current customers (Dowling and Uncles, 1997), through points rewards systems or special offers. Clearly, a first short-term effect result in the program points to the time of purchase and secondly to a long-term behaviour commitment effect through redeeming points for free rewards and consequently, increasing profits (Dowling and Uncles, 1997; Hansen *et al.*, 2010; Liu, 2007; Sharp and Sharp, 1997).

It is not clear that the long-term nature of loyalty programs ends with customer attrition. However, loyalty programs, supported in dynamic processes and internet communications technology (Buhalis and Law, 2008), such as CRM systems, give rise to service firms and help them to identify possible 'defectors', i.e., find customers who are leaving and trying to win them back (Czepiel and Rosenberg, 1992; Liu, 2007; Reichheld and Sasser, 1990).

Every hotel's performance should be effectively measured on how well performance targets are met (Reichheld, 1993; Reichheld and Sasser, 1990) – the key performance measures. This is why a customer crisis occurs when the service goes unperformed (Czepiel and Rosenberg, 1992). Thus, behaviour performance measures are actions which individuals adopt and which change their relationship with their environment. Buhalis and Law (2008) argue that loyalty programs support and help to promote the customization of tourism products. Hence, Sharp and Sharp (1997) argue that loyalty programs have an effect on repeat purchases and that is a first step to understanding the effectiveness of cause-and-effect relationships in the program's system.

Taking repeat purchases as the focus of a loyalty program requires an instrument to measure it and to make this study aware of the effectiveness of the potential of such programs. In this sense, we followed Ehrenberg *et al.* (2004) and Sharp and Sharp's (1997) works who argue that the repeat purchase effect follows a Dirichlet distribution.

The Dirichlet model is based on the Stated Preference Theory, i.e., a theory about choice between competitive entities such as brands/hotels, which assumes that customers are able to order their preferences across different alternatives (Goodhardt *et al.*, 1984). Moreover, the Dirichlet model does more than explain and describe hotel choice and purchase frequency simultaneously. It also includes estimates of them, allowing the use of various performance patterns over a time-span (Goodhardt *et al.*, 1984; Sharp and Sharp, 1997). However, customer characteristics are not included in this stationary model, because these effects are already incorporated in each brand performance measure (BPM) and it is not influenced by previous purchases (Ehrenberg *et al.*, 2004).

Using a single statistical model, such as a Dirichlet model, it is comparatively uncomplicated to describe the various performance patterns of the loyalty program, and to specify the distribution of purchases by a population of customers of each of the hotels (Ehrenberg *et al.*, 2004; Goodhardt *et al.*, 1984). The Dirichlet model is particularly relevant for elucidating these purchase behaviours, i.e., market structure, and follows a combination of two probability density functions, the negative binomial distribution (NBD) and the Dirichlet multinomial distribution (DMD).

Hence, the Dirichlet is a parsimonious model, because it only needs four numerical inputs – b (brand penetration), w (average purchase frequency), B (market penetration),

and W (market purchase frequency) (Ehrenberg *et al.*, 2004). These inputs give the opportunity to estimate several key BPMs (e.g. penetration, frequency of purchase, repeat buying, 100% loyal) and postulate that each customer has a certain propensity to buy a given brand, i.e., making a reservation at a given hotel. This propensity is assumed to be steady for the time being but to differ across heterogeneous customers (Ehrenberg *et al.*, 2004). Such heterogeneous behaviour aggregates to BPMs (Ehrenberg *et al.*, 2004).

Finally, the Dirichlet model also provides benchmarks when analysing data for another year, country (geographical extensions) or category (Ehrenberg *et al.*, 2004). These benchmarks help in exploring marketing issues, such as customer loyalty programs as an empirical example. The patterns of observed customer purchase behaviour associated with this model and study are the most important information for estimating customer behaviour (Lacey and Morgan, 2009) and are slowly being recognized over the years, followed by many replications across different hotels, years and countries to develop their generalizability.

2.3 Data and methodology

2.3.1 Dirichlet assumptions

This work considers five assumptions, following Dirichlet Assumptions and in line with Bassi (2011), Ehrenberg *et al.* (2004) and Goodhardt *et al.* (1984). The first aims to specify the probability vector of the *i*th customer card making any specific combination $\{r_j\}$ of reservations in the $j = 1,...,g$ types of hotels with the length T (succession of reservations). It can be modelled by a multinomial distribution with parameters r, $p_1, \dots, p_g$:

$$P(r_1, \dots, r_g) = r! \prod_{j=1}^{g} \left(\frac{p_j^{rj}}{rj!} \right)$$

where r is the amount of reservations (quantity) made with card i in Year 1.

The second assumption considers that the probabilities p_j vary among customers' cards according to a Dirichlet distribution with parameters $\alpha_1,\ldots,\alpha_g$, i.e.,

$$f(p_1,\ldots,p_{g-1}|\alpha_1,\ldots,\alpha_g)=\frac{\Gamma(\alpha_1+\cdots+\alpha_g)}{\Gamma(\alpha_1)\ldots\Gamma(\alpha_g)}p_1^{\alpha_1-1}\ldots p_{g-1}^{\alpha_{g-1}-1}(1-p_1-\ \ldots-p_{g-1})\alpha_{g-1}$$

Successive reservations by the *i*th customer card are independent. These first two assumptions capture the customer heterogeneity for purchase frequency and for hotel choice (Ehrenberg *et al.*, 2004). As a third assumption, the number of reservations n_i made by *i*th customer card in each of a succession of equal non-overlapping periods of length *T*, follows a Poisson distribution with mean $u_i\,T$. The fourth assumption considers a Gamma distribution with parameters *m* and *K*, which characterizes the variance between mean purchasing rates and each customer card. Assumptions three and four show the probabilistic incidence of specific purchases of the hotel (Ehrenberg *et al.*, 2004). As for the last assumption, customers' hotel-choice probabilities and average-purchase-frequencies are distributed independently (i.e. statistical independence of these two aspects) over the loyalty program customers.

The model follows a negative-binomial distribution with mean mT and exponent *k*, from that of Bassi's (2011) work: the number of reservations of the hotel category made by all customers, in a certain time period (Year 1; Year 2); and the number of reservations a customer makes of each of the *g* geographical types of hotels in a period of time *T*. This is called the NBD-Dirichlet model:

$$f_{k,m,\alpha_1,\ldots,\alpha_g}(r_1,\ldots,r_g)=f(r|m,k)\ f_{\alpha_1,\ldots,\alpha_g}(r_1,\ldots,r_g|r_1+\ \ldots+\ r_g=r)=$$

$$\frac{(k+r-1)!}{r!\,(k-1)!}\left(\frac{k}{m+k}\right)^k\left(1-\frac{k}{m+k}\right)^r\frac{\Gamma(\alpha_1,\ldots,\alpha_g)k!}{\Gamma\left(\sum_{j=1}^g\alpha_j+r\right)}\prod_{j=1}^g\frac{\Gamma(\alpha_j+r_j)}{r_j!\Gamma(\alpha_j)}$$

Finally, to activate the model, g+2 reservations need to be estimated: m, k, $\alpha_1,\ldots,\alpha_g$. With the g observed per card purchase rates m_j, the iterative estimation procedure calculates the hotel category purchase rate as $m=\sum_{j=1}^g m_j$ and equals the theoretical and observed hotel chain market shares:

$$\frac{\alpha_j}{\sum_{J=1}^g\alpha_j}=\frac{m_j}{\sum_{j=1}^g m_j}$$

Further, the hotel chain's market shares must add up to 1, so there are g-1 equations to be solved. Parameter K is calculated by fitting the NBD model to the distribution of reservations of the hotel category.

There are two aspects of customer diversity in the Dirichlet model included in this work, namely how customers differ from each other in: (a) their purchasing rates; and (b) their hotel choice preferences (Goodhardt *et al.*, 1984). Thus, the methodology used in this research follows the Dirichlet model basic lines, which directly or indirectly describe the buying behaviour patterns and also analyse differences in customers' preferences for the twelve hotels included in the same chain group.

2.3.2 Data and estimation procedures

Based on the Dirichlet model, this research rests on quantitative observed behaviour and confirms the influence of the environment of brands/hotels and customers. Therefore, this research is based on data drawn from a hotel chain's loyalty program (CRM systems) and covers purchases during the first two years of the program, from 1st April 2011 to 31st March 2012 (Year 1), and from 1st April 2012 to 31st March 2013 (Year 2). The loyalty program membership is free. For each euro spent, the program reverts ten points for a silver card, twelve points for a gold card and fifteen points for a platinum card, and other offers are also included. For this study there were 23,817 cards issued, 6,057 cards used and 7,532 reservations for Year 1, and 50,358 cards issued, 31,701 cards used and 44,274 reservations for Year 2. This sample comprises domestic and international customers for the two years of analysis. Table 1 show that customers come from Portugal (mainly Year 1) and Europe (mainly Year 2) and are mostly men (70%) of 50 years old, on average. Traditionally the customers of this hotel chain tend to have three or more short breaks along the year, in particular the ones who have a loyalty card.

Table 1.2: Socio-demographic characteristics for Year 1 and Year 2

	Year 1		Year 2	
Age (years)	49, 61		50,71	
Country	Portugal	38%	Great Britain	25%
	Great Britain	22%	Portugal	19%
	Germany	7%	Spain	8%
Gender	M - 72%	F - 28%	M - 70%	M - 30%

Source: Own elaboration.

Bearing in mind that the aim of the research is to assess the repeat purchase behaviour, all the cards with less than two purchases were discarded even because most of them never used the loyalty card after the first purchase. Data were analysed using Dirichlet.xls software (Kearns, 2009), after a previous validation. The Dirichlet model is usually applied using package software, in order to generate estimates of the brand performance measures (Rungie, 2003). Hence, panel data provide all the necessary inputs to calculate the Dirichlet model and to compare observed data to Dirichlet estimations.

In this work, the iterative estimation method adapted from Bassi's Technical Note (2011) assumes geographical and chain effects of a long-term nature. The iterative procedures adopted require only aggregated data as input, i.e., only input values are needed, such as hotel penetrations b_i and average purchase rates m_j in this work. Hence, this study's specification derives from Bassi's (2011) and from Goodhardt's (1984) works, which indicate n customers making purchases in a market (loyalty program) with g brands/hotels. The present work considers g geographical hotels - the ones belonging to the hotel Group. We consider twelve hotels (five "Historical & Cultural"; and seven "Resorts") from a total of eighty-two hotels, belonging to the same hotel Group. The five "Historical & Cultural Hotels" are located in Portugal (Algarve, Alentejo, Lisbon and the Tagus Valley (here after LTV), Centre and North regions) and the seven "Resort Hotels" are located in Portugal (Algarve, LTV and Madeira regions), in Brazil, in Europe, in America and in Africa. Table 2 indicates that at seven of the twelve hotels in the sample, the majority of customers in Year 2 come from a country other than that of the hotel.

Table 2.2: Other socio-demographic characteristics for Year 1 and Year 2

	Year 1	Year 2
1 Madeira Resort Hotel	Europe	Europe
2 LTV Resort Hotel	Portugal	Europe
3 Europe Resort Hotel	Europe	Europe
4 Algarve Resort Hotel	Portugal	Europe
5 North Historical & Cultural Hotel	Portugal	Portugal
6 Centre Historical & Cultural Hotel	Portugal	Portugal
7 LTV Historical & Cultural Hotel	Brazil	Europe
8 Africa Resort Hotel	Portugal	Portugal
9 Alentejo Historical & Cultural Hotel	Portugal	Brazil
10 Algarve Historical & Cultural Hotel	Portugal	Europe
11 Brazil Resort Hotel	Brazil	Brazil
12 America Resort Hotel	America	America

Source: Own elaboration

Further, the number of countries of customers' origin increased from 67 to 119 from Year 1 to Year 2, due to the promotion efforts to establish the loyalty card among different nationalities.

2.4 Results and discussion

The results suggest that this type of hotel chain loyalty program plays a role in customers' repeat purchases over time, contributing to their loyalty behaviour. Hence, results suggest that this loyalty program has contributed to holding some polygamy across the hotels of this Group, which is a pattern of hotel customers (member of more than one loyalty scheme), called 'polygamous loyalty' by Dowling and Uncles (1997).

In this sense, we illustrate and summarize the common patterns of repeat purchase and hotel choice characterized in the Dirichlet model in the three subsections that follow. The first gives results for the customer heterogeneity and analyses the parameters of the Dirichlet model. The patterns observed and analysed of the seven brand performance measures (i.e., brand penetration, average purchase frequency, repeat buying, 100% loyal, buying once, buying five or more times and market share) are given in the second

subsection. The third and last subsection analyses the nature and degree of variety on offer in each hotel and the effect of customers' types of purchases on hotel segmentation.

2.4.1 Customer heterogeneity in the hotel chain loyalty program

With data on cards issued/used and reservations in twelve hotels in a hotel chain loyalty program, the Dirichlet model was estimated using the iterative method. This model uses observed market penetration and purchase frequency to estimate m and K and observed brand penetrations and market shares to estimate S.

Table 3 shows the results of parameters m, k and S for the two years.

Table 3.2: Parameters m, k and S for Year 1 and Year 2

Parameter	Year 1	Year 2
m	2.9	3.3
k	1.921	1.540
S	7.8	5.4

Source: Own elaboration

Parameter m represents the mean purchase rate, i.e., it reflects the size of the market (Ehrenberg *et al.*, 2004). This parameter increased from 2.9 in Year 1 to 3.3 in Year 2, meaning that market penetration does not vary greatly among customers in the different brands/hotels. This result suggests the extending effect of time of loyalty program, i.e., that they do not have an immediate effect on customer behaviour.

The parameter k reflects the extent to which overall purchasing offers differ from the mean, i.e., how often they buy (Stern and Hammond, 2004). Results reveal that parameter k decreased from 1.921 in Year 1 to 1.540 in Year 2, and this means that purchasing frequencies vary greatly among customers (Bassi, 2011), mostly in the second year, where penetration rate is higher. Further, parameter S also decreases in Year 2 (5.4) comparing with Year 1 (7.8), suggesting that purchase probabilities differ greatly among customers (Bassi, 2011). Overall, these results, in accordance with Bassi, 2011, pointed out that these customers are heterogeneous and this heterogeneity removes the need for differential strategies (Ehrenberg *et al.*, 2004).

Thus, parameters m, k and S make estimations of the loyalty program behaviour by estimating some brand performance measures (BPM).

2.4.2 The two-year effects on brand performance measures (BPM)

In Table 4 below, we present the observed values derived from the brand performance measures, along with their Dirichlet benchmarks (estimated values) for two years. Brand penetration (b*j*) is the key factor that changes when sales increase and is one of the most important BPMs (Ehrenberg *et al.*, 2004). This performance measure indicates the percentage of customers buying (reservation) at least once in a specified time period for the total of existing clients (cards issued) in the loyalty program (Sharp and Sharp, 1997). The average purchase frequency (w*j*) is the number of purchases per customer (reservation) in a specified time for the total of cards used in the loyalty program (Sharp and Sharp, 1997). The 100% loyal BPM is the one where the customer returns to the same hotel in two equal-length time periods and repeat buying is the BPM where the customer returns not to the same hotel, but to the same hotel chain. To examine differences between brands/hotels in the two equal-length time periods (years), brand performance measures were adopted, the results of which are shown in Table 4.

Table 4.2: Brand Performance Measures for Year 1 and Year 2 – Comparative Table (observed and estimated)

Year 1	bj %		wj		Market share	100% loyal		Repeat buying %		wpj	Once %		5 or more %	
	observed	estimated	observed	estimated	observed	observed	estimated	observed	estimated	estimated	observed	estimated	observed	estimated
1 Madeira Resort Hotel	2.07%	1.84%	1.11	1.24	9.86%	2.40%	9.49%	2.44%	28.36%	4.95	88.98%	82.41%	0.34%	0.40%
2 LTV Resort Hotel	0.54%	1.27%	2.89	1.23	2.59%	13.05%	9.43%	13.21%	27.94%	4.96	22.19%	82.69%	5.22%	0.39%
3 Europe Resort Hotel	0.64%	1.03%	1.98	1.23	3.06%	16.57%	9.41%	16.71%	27.77%	4.96	34.12%	82.81%	4.01%	0.38%
4 Algarve Resort Hotel	1.09%	0.98%	1.12	1.23	5.18%	6.20%	9.41%	6.20%	27.73%	4.96	84.58%	82.84%	0.33%	0.38%
5 North Historical & Cultural Hotel	0.68%	0.58%	1.05	1.23	3.25%	2.34%	9.37%	2.99%	27.44%	4.97	93.38%	83.04%	0.00%	0.37%
6 Centre Historical & Cultural Hotel	0.53%	0.50%	1.16	1.23	2.54%	7.33%	9.36%	8.83%	27.38%	4.97	80.83%	83.08%	0.17%	0.37%
7 LTV Historical & Cultural Hotel	0.33%	0.30%	1.10	1.23	1.57%	2.42%	9.34%	2.96%	27.23%	4.97	93.55%	83.18%	0.00%	0.36%
8 Africa Resort Hotel	0.11%	0.28%	3.24	1.23	0.51%	10.00%	9.34%	11.67%	27.22%	4.97	19.17%	83.19%	2.50%	0.36%
9 Alentejo Historical & Cultural Hotel	0.32%	0.28%	1.08	1.23	1.51%	4.75%	9.34%	5.59%	27.22%	4.97	88.83%	83.19%	0.00%	0.36%
10 Algarve Historical & Cultural Hotel	0.24%	0.21%	1.12	1.23	1.12%	6.77%	9.33%	7.14%	27.17%	4.97	85.34%	83.22%	0.00%	0.36%
11 Brazil Resort Hotel	0.09%	0.19%	2.44	1.23	0.44%	13.33%	9.33%	14.29%	27.15%	4.97	26.67%	83.24%	3.81%	0.36%
12 America Resort Hotel	0.04%	0.04%	1.22	1.23	0.19%	15.56%	9.32%	15.56%	27.04%	4.98	66.67%	83.31%	0.00%	0.36%
Year 2														
1 Madeira Resort Hotel	6.67%	6.59%	1.40	1.42	8.07%	11.78%	9.27%	11.96%	39.61%	5.65	64.45%	73.61%	1.61%	1.57%
2 Algarve Resort Hotel	3.74%	3.41%	1.27	1.39	4.52%	10.67%	8.96%	11.34%	37.69%	5.70	68.10%	75.09%	1.16%	1.39%
3 LTV Resort Hotel	2.95%	3.03%	1.42	1.39	3.57%	13.73%	8.92%	14.17%	37.46%	5.70	56.94%	75.27%	1.84%	1.37%
4 North Historical & Cultural Hotel	2.72%	2.79%	1.42	1.38	3.29%	8.73%	8.90%	10.72%	37.31%	5.71	73.58%	75.38%	0.32%	1.36%
5 Europe Resort Hotel	1.18%	2.01%	2.36	1.38	1.42%	15.18%	8.83%	16.11%	36.85%	5.72	27.50%	75.73%	4.71%	1.32%
6 Centre Historical & Cultural Hotel	1.80%	1.80%	1.38	1.38	2.17%	9.06%	8.81%	11.75%	36.72%	5.72	69.10%	75.83%	0.79%	1.31%
7 LTV Historical & Cultural Hotel	1.75%	1.53%	1.20	1.37	2.12%	8.84%	8.78%	10.48%	36.55%	5.73	75.19%	75.95%	0.31%	1.29%
8 Alentejo Historical & Cultural Hotel	1.23%	1.01%	1.12	1.37	1.48%	5.21%	8.74%	6.89%	36.24%	5.73	85.37%	76.19%	0.04%	1.27%
9 America Resort Hotel	0.44%	0.90%	2.78	1.37	0.53%	18.35%	8.73%	18.35%	36.17%	5.73	18.60%	76.24%	4.80%	1.26%
10 Algarve Historical & Cultural Hotel	0.80%	0.80%	1.36	1.37	0.97%	8.96%	8.72%	13.57%	36.11%	5.74	66.21%	76.28%	0.68%	1.26%
11 Brazil Resort Hotel	0.37%	0.56%	2.06	1.37	0.45%	12.48%	8.70%	15.09%	35.97%	5.74	35.85%	76.39%	3.63%	1.24%
12 Africa Resort Hotel	0.36%	0.43%	1.62	1.36	0.44%	5.65%	8.69%	7.13%	35.90%	5.74	54.98%	76.45%	1.78%	1.24%

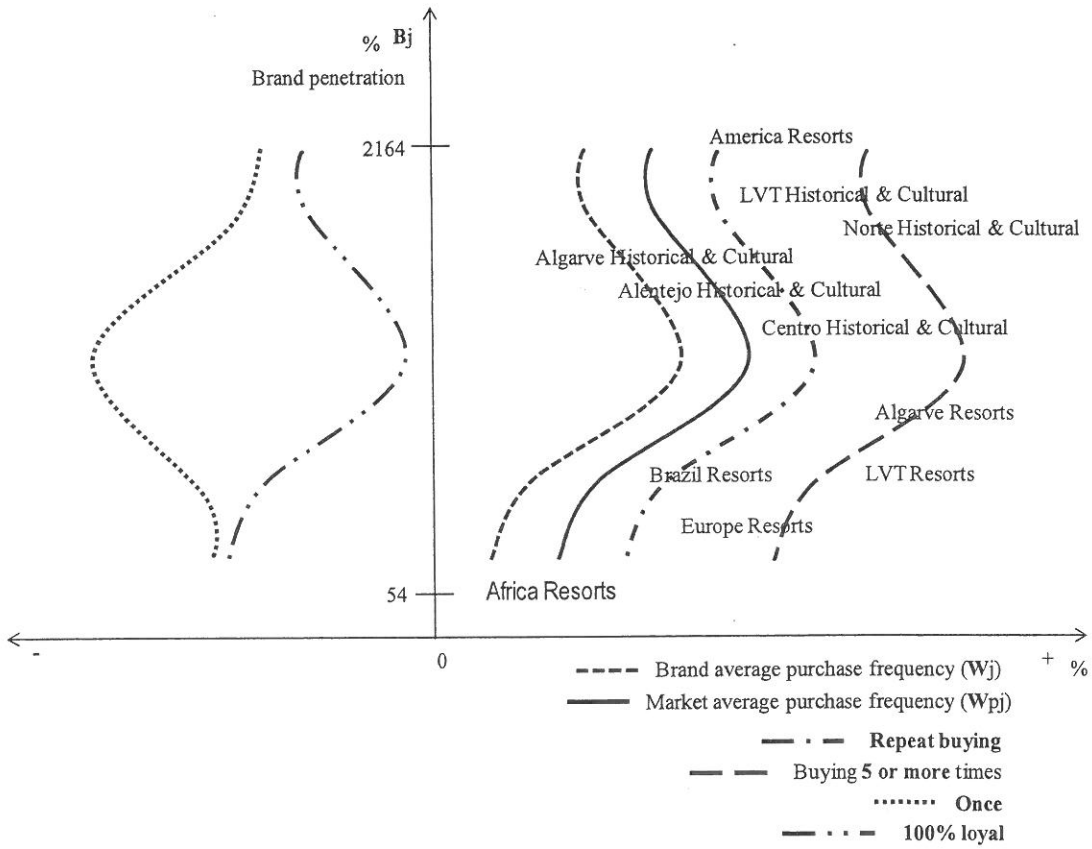
Source: Own elaboration

According to the Figures shown in Table 4, there are no significant differences between observed and estimated values, mainly in the 2nd year of the loyalty program, due to the fact of the 1st year being the beginning of the loyalty program. Table 4 was built following observed brand penetration (b*j*) from the highest to the lowest value. All of the twelve hotels analysed have an increased observed penetration rate from Year 1 to Year 2. Results also show the connection between observed average purchase frequency (w*j*) and observed buying five or more times – higher values of the former correspond to higher values of the latter (e.g. LTV Resort Hotel with 2.89 of w*j* corresponding to 5.22% of buying five or more times in Year 1; Africa Resort Hotel with 3.24 of w*j* corresponding to 2.50% of buying five or more times in Year 1; and Brazil Resort Hotel with 2.44 and 2.06 of w*j* corresponding to 3.81% and 3.63% of buying five or more times in Year 1 and Year 2, respectively).

Furthermore, we analyse groups of brands/hotels by comparing estimated and observed values. Results indicate that four types of groups exist: the 'small trend' group in almost all BPMs (Alentejo and Algarve Historical & Cultural Hotels; Africa Resort Hotel); the 'med/big trend' group in almost all BPMs (LTV, Centre and North Historical & Cultural Hotels; America and LTV Resort Hotels); the 'logged hotels' group (Brazil and Europe Resort Hotels); and the 'stabilized hotels' group (Madeira and Algarve Resort Hotels). The 'small trend' group is identified when: the estimated brand penetration is lower than observed brand penetration (Eb*j* < Ob*j*); and estimated average purchase frequency is higher than observed average purchase frequency (Ew*j* > Ow*j*). The 'med/big trend' group follows the opposite pattern (Bassi, 2011). Although results indicate that Centre and LTV Historical & Cultural Hotels have an Eb*j* > Ob*j*, the fact is that both increased their market share opposed to Alentejo and Algarve Historical & Cultural Hotels and Africa Resort Hotel. LTV Resort Hotel and North Historical & Cultural Hotel tend towards being 'stabilized hotels', as do Madeira and Algarve Resort Hotels. These last hotels have the highest market shares, although Eb*j* > Ob*j*. Finally, it is implied that the frequency with which customers of a brand/hotel bought the whole category (wp*j*) increases slightly from ten to thirteen with decreasing market share. Table 4 results indicate that this is the typical trend which was called "natural monopoly" by McPhee (1963). This effect is more evident in Madeira and Algarve Resorts, which suggests that these ones 'monopolize' light category customers (Ehrenberg *et al.*, 2004). In this sense, Figure 1 helps us to compare these findings with

a dynamic analysis through a growth evolution [(Year 2 – Year 1)/ Year 1] of brand performance measures (BPM).

Figure 1.2: Brand Penetration associations with different repeat purchase patterns for Year 1 and Year 2 – (observed and estimated)



Source: Own elaboration

Figure 1 was initially designed in terms of brand penetration (b) (y-axis) and later according to other BPMs, such as brand and market average purchase frequency (w and wp*j*), 100% loyal, repeat buying, buying once and five or more times (x-axis). Figure 1 analysis mostly focuses on the effects of correlations/synergies between BPMs.

Firstly, as the brand penetration goes up, all the other BPMs identified go up to a certain point and then go down, except buying once, which goes down more and more. However, there is an 'optimal point' at the Madeira Resort Hotel, where all these BPM's reach their maximum of growth evolution, except buying once, which reaches its maximum of decline.

Secondly, Figure 1 shows that on the one hand Algarve, LTV and America Resort Hotels; North, Centre and LTV Cultural & Historical Hotels follow the same path of Madeira Resort, a way to reach the 'optimal point'. On the other hand, Algarve and Alentejo Cultural & Historical Hotels; Brazil, Europe and Africa Resort Hotels have to make an effort in order to increase the frequency of purchase and brand penetration, respectively.

Finally, Figure 1 indicates a decrease in small brands/hotels, with lower average purchase frequency, meaning a tendency for their customers to buy less often (Ehrenberg *et al.*, 2004). This kind of 'punished twice' effect just for being small was called the "double jeopardy effect" by McPhee (1963), who explained it as a statistical selection effect. This behavioural effect, clearly identified in the Africa Resort Hotel, means that the less popular a hotel is, the less loyal its customers tend to be (Ehrenberg *et al.*, 2004). If a customer buys little from the firm, he or she will need to wait a long time for a reward (Liu, 2007). Thus, the customer of the Africa Resort Hotel may not consider the loyalty program relevant. However, if a customer repeatedly buys it is because they are truly fond of the program (Stern and Hammond, 2004). In this sense, it is important to analyse these effects on customers' behaviours and compare them with the variety of hotels.

2.4.3 The persistence effect of the types of customers' purchases and seeking a variety of hotels

In these first two years of the loyalty program, brands/hotels present differences in observed and estimated brand performance measures. There are hotels with a higher observed average purchase frequency than would be expected and a lower observed penetration than estimated (Africa, Brazil, Europe and LTV Resort Hotels), i.e., selling more often to the same customer than would be the norm, called excess loyalty by Sharp and Sharp (1997). However, almost all twelve hotels have increased 100% loyal (BPM), showing the opposite defended by Sharp and Sharp (1997), which they called "divided loyalty", a generalized decrease in 100% loyal (BPM).

Despite the heterogeneity among customers, they are widely expected to fall into relatively homogeneous and recognizable sub groupings (Ehrenberg *et al.*, 2004), giving the opportunity for segmentation between brands/hotels.

Results also show an increase in the repeat purchase item, which could be a non-loyal attitude towards the recently opening hotels, i.e., an inability to distinguish advantages or that all competing hotels are seen as similar (Dick and Basu, 1994). However, the reason for the increase in repeat purchase is likely to be inertia, defined as spurious loyalty or true loyalty, i.e., the customer perceives little differentiation among alternative hotels (Cunningham, 1957; Dick and Basu, 1994).

2.5 Conclusions and strategic implications

2.5.1 Conclusions

The Dirichlet model offers feasible methodological paths to explain BPM patterns, as it allows a combination of purchasing rates and purchasing hotel behaviour in a long-term or/and geographical level. This model considers three parameters (m, k, S), where m reflects the market share, k refers to the repeat frequency and S the purchase probabilities. Thus the hotels' positioning, the purchase frequency heterogeneity at geographical and temporal level, and future choice patterns are underlined by comparing the coefficients of these parameters by themed hotel. Empirically, the results suggest that heterogeneity increases along the two years of the hotel chain loyalty program, as at themed hotels, voiding the need for segmentation efforts in the execution of the program design and communication strategies. In fact customer behaviour differs according to localizations (in Portugal – North, Centre, LTV, Alentejo and Algarve and outside Portugal – America, Africa, Europe and Brazil) and type of hotel (Resort Hotels or Historical & Cultural Hotels). These heterogeneities suggest that loyalty programmes tend to intensify purchase frequency.

Further, the hotel chain's loyalty program may result in an increase of penetration mainly at Historical & Cultural Hotels (low before the program's implementation) and

in more purchase frequency (low before the program's implementation) mainly at Resort Hotels. There is also an increased return buying rate for any hotel and a decrease in the 100% loyal rate. In this sense, the low permeability between hotels helps to achieve a chain effect between hotels and therefore helps to plug the polygamy which exists inside customers.

Changing the fundamental repeat purchase patterns of markets is very difficult. However, it is clearly possible to alter repeat purchase patterns, at least to a small degree, and loyalty programs are probably the only marketing effort which deliberately focuses on bringing about such a change. In this work, these changes in patterns by the hotel loyalty program are achieved through a 'chain loyalty' (with different types of hotels and localizations), through the willingness of the hotel to institute a loyalty program that consists of a 'village-type networking of polygamous customers', helping to achieve customer loyalty.

2.5.2 Practical implications

The findings of the study reveal the need and importance of consolidating the hotel Group's loyalty program to continuously improve the segmented offers.

In this work, results show the level of importance of increasing the number of customers. Therefore, the data obtained in this work suggested four main groups ('small trend'; 'med/big trend'; 'logged hotels'; and 'stabilized hotels'). These groups represent the hotels' market share tendency in the Hotel Chain based on the results of the brand performance measures (BPM). Specifically, 'small trend' is a group containing the smaller hotels (Alentejo and Algarve Historical & Cultural Hotels; and Africa Resort Hotel) and 'med/big trend' the opposite (LVT, Centre and North Historical & Cultural Hotels; and America and LVT Resort Hotel). The 'logged' group (Brazil & Europe Resort Hotels) has a huge potential for growth, but it has not increased their penetration rate enough, which happens with the 'stabilized' group (Madeira & Algarve Resort Hotels).

Furthermore, results also reflect the need to increase the average amount bought at each reservation occasion and to induce cross-product buying by existing customers. Due to these results and based on the four main groups' classification, we propose reinforcing

communications by creating four segment groups (1 – Algarve, Alentejo, LTV, Centre and North Historical & Cultural Hotels; 2 – Africa, Europe and Brazil Resort Hotels; 3 – Algarve, Madeira and America Resort Hotels; 4 – LTV Resort Hotel) in order to segment suitable packages of services. In this sense, groups 1 and 4 need more 'heavy buyers', i.e., increasing the number of times of returning, and groups 2 and 3 need more 'recent non-buyers and light buyers', i.e., more customers. In order to make this possible, the Hotel Group should implement intensive extra-product promotions in group 1 (e.g. cross-product coupons and 'stay-in coupons' to be discounted on the next reservation), intensive price-related promotions in group 2 (e.g. site sales and 'on-time coupons' to be discounted at check-out and after subscription to the loyalty program), some price-related promotions in group 3 (e.g. site sales or 'on-time coupons') and some extra-product promotions in group 4 (e.g. cross-product coupons or 'stay-in coupons'). These four segmented groups will help justify the importance of a hotel chain's loyalty program.

2.5.3 Limitations

This paper adopted the iterative estimation model. The principle of aggregation, i.e., penetration rate and purchase frequency, however, does not explain behavioural variability across the twelve hotels nor does it permit prediction of a specific behaviour in a given hotel. It is necessary to study thoroughly the frequencies estimated to perform a given behaviour. In addition, this paper only focused on the best hotel in each region/localization, independently of its dimension. This research is also limited by the time frame; further research should consider more years and even assess the impact of these loyalty programmes in other competitors. Further, comparing these results with the financial achievements of the hotel chain may provide an insightful contribution about the cost effectiveness of implementing loyalty programmes.

Although this study focused on a behavioural perspective, it does not imply that customer loyalty is entirely explained. It would help to consider various possible causal sources such as socio-demographic and attitudinal factors, such as those measuring satisfaction, commitment, trust and quality relationship (and also the influence of the Internet). These attitudinal ingredients also contribute to understanding customers'

behaviour, choices, concerns and determinants. Finally, conducting a comparative study with other hotel groups may provide more insights about segmentation procedures.

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CHAPTER 3. PAPER 2
DIFFUSION PATTERNS IN LOYALTY PROGRAMS

DIFFUSION PATTERNS IN LOYALTY PROGRAMS

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Abstract

This chapter aims to assess how effective loyalty programs are in contributing to retaining guests for hotels. The effectiveness is measured by means of a Bass model which allows the measurement of the diffusion patterns of adopters within potential adopters. The data used to perform this model allow the depiction of the effect of geographical localization over a time frame of three years. Results suggest that the loyalty card's acceptance was measured from the internal and external parameters, based on the concept of diffusion theory. The results indicated a need for innovation of the loyalty program from 2019. Due to the existence of several hotels with different typologies in different countries, a segmentation of clients by nationalities is suggested with a "waterfall" strategy being placed in the hotel chain loyalty program.

Key words: Diffusion theory; diffusion processes; Bass model; customer relationship management; hotel loyalty programs.

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3.1 Introduction

Developments in modelling, computing and communication strategies during recent decades have provided the ingredients which allow marketing models to improve decision-making in modern organizations. The ultimate aim of loyalty programs is to increase reservations and enact word of mouth (WOM), the most effective and inexpensive marketing strategy.

These topics are covered by diffusion theory, which is the understanding of the spread of innovation from the perspective of communication and adopter (user) perceptions and interactions (Peres, Muller & Mahajan, 2010). This theory has been tested with the Bass model (Lilien, Rangaswamy & De Bruyn, 2012) and is solely concerned with demand size (Jain, Mahajan & Muller, 1991). Over the years, the Bass model has been improved to accommodate the main moderate effects on diffusion patterns, mainly through the parameters p and q. These parameters constitute the diffusion of innovation and imitation respectively (representing WOM effects) (Pae and Lehman, 2003; Peres *et al.*, 2010).

Most loyalty programs are based on a card which offers the client a number of benefits that may increase as the number of reservations grows. The effectiveness of these cards are stored in a customer relationship management (CRM) program and randomly assessed. To revert this tendency, this research uses a CRM database to assess diffusion patterns, and uses an *Initiative:pt* Program to assess the WOM communication diffusion. These two databases include clients from one of Portugal's biggest and best-known hotel chains worldwide.

Diffusion patterns of hotel clients are assessed throughout a hotel chain loyalty program based on a CRM system and via enquiries made at all airports of Portugal and based on the *Initiative:pt* Program. The data comprises 377,864 card holders for the former and 1,270 enquiries (i.e., referring to every person who has stayed at that hotel group) for the latter. The Bass model was performed to analyse and predict hotels' sales, being a competitive loyalty diffusion tool.

This research aims to contribute to an understanding of how diffusion patterns (e.g. a new loyalty program at a hotel chain) affect the acquisition and use of loyalty cards. Furthermore, this may contribute to bringing diffusion theory and its processes to

discussion, as well as the main advantages of testing this through the Bass model, as a quantitative method to assess the diffusion model.

Finally, this study attempts to add significantly to the body of tourism and hospitality areas, testing empirically, with the Bass model, the link between diffusion theory through the CRM systems and loyalty programs at hotels. A very large database is used to analyse behavioural and geographical measures across the different adopters' nationalities and different kinds of hotels of the Group.

3.2 Theoretical considerations

The diffusion perspective was introduced into consumer behaviour literature in the mid-60s and it represents the strength of communications effects, such as flow of information, products and services (Gatignon and Robertson, 1985; Mahajan, Muller & Bass 1990). The term "diffusion" involves the communication channels with users' interactions, through the understanding of the spread of innovations – a view increasingly supported in diffusion theory (Peres *et al.*, 2010).

Over the years, diffusion theory has often been used to model the first-purchase sales growth of a new product or service over time and space (Mahajan and Muller, 1979; Mahajan, Muller & Bass, 1995). The clarity of a need for a new product or service is first shown by the adoptions of a few innovators who, in turn, influence others to adopt it, this behaviour being called personal influence (Gatignon and Robertson, 1985). It is a basic underlying component of diffusion theory and diffusion models and has, mostly, a shape of verbal influence or interpersonal communication (WOM) (Mahajan et al., 1990; Libai, Muller & Peres, 2009; Peres *et al.*, 2010). This "interaction" between adopters (users) and non-adopters (non-users) is posited to account for the shape and rapid growth stage in the diffusion process (Gatignon and Robertson, 1985; Schmittlein and Mahajan, 1982).

With respect to diffusion processes, the literature differentiates the *rate of diffusion*, the *pattern of diffusion* and the *potential penetration level* as the three dimensions (Gatignon and Robertson, 1985). The *rate of diffusion* reflects the speed at which sales

occur over time (Van den Bulte, 2002) and represents the intensity of diffusion of that product or service. The *pattern of diffusion* concerns the shape of the diffusion curve (s-shaped) (Gatignon and Robertson, 1985). This diffusion dimension relates the time interval between the time service or product introduction and the time of a potential reformulation of that service or product. The *potential penetration level* is a separate dimension indicating the size of the potential market and is related to all of the interpersonal or personal influences among users and non-users (Peres *et al.*, 2010).

Despite the diffusion approach being originally intended for durable goods, nowadays it is widely used in the services market (Libai *et al.*, 2009). The diffusion processes provide a clear view that for modelling services there is a need to incorporate CRM in that diffusion process/framework (Peres *et al.*, 2010). However, linking diffusion processes in services, such as hotel loyalty programs, with CRM systems, has been neglected. Forecasting diffusion processes (i.e., forecasting market potentials and sales growth patterns) is crucial for planning marketing programs (Pae and Lehman, 2003). However, they have to be empirically validated, because there are difficulties in observing individual behaviour at the brand level (Parker and Gatignon, 1994). The greater the sensitivity of the marketing program to the changing characteristics of segments at different stages of the diffusion process, the faster the rate of diffusion and the greater the penetration level (Gatignon and Robertson, 1985).

The CRM, a highly popular (long-term) relationship theory is easy to develop and execute (in a system) and provides a simple, detailed assessment of the importance of various components of user knowledge and the diffusion of that knowledge (Mahajan et al., 1990). An awareness of this modelling of diffusion represents the level of spread of an innovation. Thus, the purpose of a diffusion model is to depict the successive increase in the number of adopters (users) and predict the continued development (in a long-term view) of a diffusion process already in progress (Mahajan and Muller, 1979; Landsman and Givon, 2010).

The best-known and most widely used diffusion model of first-purchase demand of new product acceptance in marketing is that of Bass (1969). Due to its modelling requirements, the Bass model is a quantitative diffusion model focusing on aggregated data, representing the market penetration of a new process, product or technology (Lilien, Rangaswamy & Van den Bulte, 2000). The Bass model provides a framework

for guessing the long-term sales behaviour of a product based on early sales data (Dodds, 1973; Schmittlein and Mahajan, 1982; Lilien *et al.*, 2000). One of the advantages of the Bass model is that it permits a forecast of a long-term penetration pattern, measuring the timing of adoption of an innovation, the timing of a turndown in sales and the timing of subsequent developments (Dodds, 1973; Lilien *et al.*, 2000).

Moreover, the Bass model can be thought of as a two-stage communication diffusion model (Mahajan and Muller, 1979; Jain *et al.*, 1991). It represents the strength of WOM from potential adopters to adopters (Krishnan, Bass & Kumar, 2000) and assumes that potential adopters are influenced by two means of communication: mass media and WOM (Mahajan *et al.*, 1990). However, Rogers (1983) suggests that, although mass media communication (i.e., external influence) is more important during the early stages of an innovation's implementation, it is the internal influence (i.e., WOM) which dominates the later sales. In this sense, a key feature of this model is that its "embeds" a contagion process to characterize the spread of WOM between those who have adopted the innovation and those who have not yet adopted (Lilien *et al.*, 2012). WOM is an internal influence and can be incorporated into the Bass model by specifying the coefficient of internal influence as systematically varying over time as a function of penetration level (Mahajan *et al.*, 1990). Thus, this contagion or imitation process of WOM contributes to the underlying behavioural theory in the Bass model for new product acceptance (Mahajan and Muller, 1979).

In this sense, this discussion underscores the importance of measuring patterns of users already using a loyalty card from a diffusion perspective within a contagion process. It also encourages the use of the Bass model in a service context, such as a hotel chain loyalty program.

3.3 Method

Model formulation is defined in the key behavioural and mathematical assumptions of the Bass model: i) over the period of three years there are m initial reservations in the loyalty program and there are no repeat purchases; ii) the behavioural forces are represented by parameters p, q and m (Dodds, 1973; Mahajan *et al.*, 1995). In our

work, we follow the Bass model statement of Jain *et al.* (1991), Pae and Lehman (2003) and Lilien et al. (2012):

(1) $\frac{dN(t)}{dt} = p[m - N(t)] + \frac{q}{m}N(t)[m - N(t)]$, where $N(t)$ is the cumulative number of adopters (users) at time t with two or more reservations; m is the total population of potential adopters who have one or less reservations; p is the coefficient of innovation and represents the fraction of unmet potential users that adopt in each period (i.e., the number of reservations by card divided by total population of adopters and potential adopters) (Pae and Lehman, 2003; Peres *et al.*, 2010); and q is the coefficient of imitation or coefficient of conformity (i.e., the intention to recommend) (Gatignon and Robertson, 1985; Peres *et al.*, 2010) since its effects increase as more people adopt, thus representing effects such as WOM (Pae and Lehman, 2003).

In recent years, a number of estimation procedures have been suggested to estimate the parameters p, q and m of the Bass model. The main question is which estimation procedures should be used and how. There are several estimation methods, such as ordinary least squares estimation (initiated by Bass, 1969), maximum likelihood estimation (introduced by Schmittlein and Mahajan, 1982) nonlinear least square estimation (Srinivasan and Mason, 1986), among others. For this study, we use the nonlinear least square (NLS) estimation to estimate parameter values (m, p, q) due to several advantages. The NLS helps to minimize the sum of squared errors, it is widely used for forecasting purposes with at least four observations of $N(t)$ and provides the best predictive validity for the Bass model (Schmittlein and Mahajan, 1982; Lilien *et al.*, 2012).

The data was provided by CRM systems from the hotel chain loyalty program and by the *Initiative:pt* Program from questionnaires administered in all Portuguese airports. Although only three data points are utilized to estimate these parameters, the study, in order to calibrate the Bass model, concentrates on two different data sets for the values of p, q and m. The parameters m and p are provided by CRM systems for a period of three years (2011, 2012 and 2013) with a total of 377,864 cards issued and refer to every guest or customer who adopts a new loyalty card. The parameter q is provided by the *Initiative:pt* Program for a period of one year (2011) with a total of 1,270 enquiries and refers to every person who has stayed with that hotel group.

For the sake of validity of parameter q, since the data is provided by another source, we compare ages from the *Initiative:pt* Program (with 1,270 respondents) and the CRM systems (with 9,750 clients) in the same year (2011).

Table 1.3: Validation of parameter q

Ages	*Initiative:pt* (%)	Loyalty Program (%)
30-40	16.2	19.3
41-50	20.8	22.6
51-60	25.1	22.5
61-75	21.6	22.7

Source: Own elaboration

Table 1 shows that ages do not differ significantly from each other. This evidence is very important for the adoption of data available for estimation.

In this sense, the three unknown parameters are estimated from real data using the solver tool embedded within Excel developed by Sundar (2006, retrieved on www.faculty.washington.edu/sundar site). This software was built to forecast sales and forecasts and is very sensitive to estimated WOM effects. As such, assessing the most reliable determinants of WOM is critical to apply the Bass model.

3.4 Findings

This study focuses on the diffusion patterns of a hotel chain loyalty program in order to estimate the three parameters' values (m, p, q). It also examines the relation between the speed of diffusion, as well as the diffusion process by market segment (i.e., by the hotel's typology and the hotel's country of origin).

Turning our attention to the parameter values, Table 2 shows a higher value of q, which indicates that the rate or speed of diffusion of this loyalty program had a slow start (i.e., it takes longer to realize sales growth for the innovation, but accelerates after a while) (Van den Bulte, 2002; Lilien *et al.*, 2012).

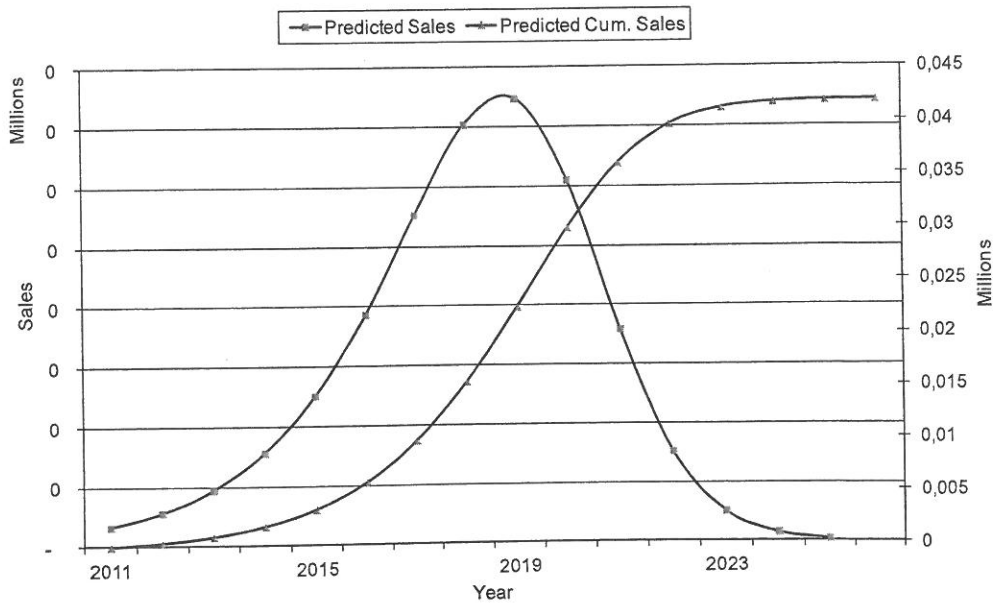
Table 2.3: Simulation of parameters M, N, p and q

Parameter	Value
M	244.436
N	41.807
p	0.008
q	0.704

Source: Own elaboration

When $q > p$, the plot has an inverted U-shape (see Figure 1) showing its pattern of diffusion of this product. This evidence indicates that a higher value of q means a less heterogeneous population and higher maximum penetration level (Gatignon and Robertson, 1985). This means that the loyalty program has the potential to have more adopters at different hotels of the Group supported by the strength of WOM for product acceptance. Therefore, predicting total adopters (users) or sales is crucial for the sake of the program. In this way, Figure 1 shows this evolution in time from the year 2010 (year 0) to the year 2022, by presenting the total of adopters and cumulative total of adopters.

Figure 1.3: Forecast of the diffusion of hotel chain loyalty program



Source: *Bass Simulation.xls*

In this sense, Figure 1 represents the forecast of the hotel chain loyalty program. It follows Table 1 confirming the "low speediness" of accepting the program. However, it shows the existence of a turndown in the year 2019. Before reaching that point (two or three years before), the hotel chain should modify or innovate its loyalty program. It is important to consider the country effect given past experiences with a product, such as the loyalty card since 2011, in order to explain and to continue to have higher values of penetration level (Talukdar, Sudhir & Ainslie, 2002). The country effect is also crucial for evaluating attractiveness of markets; specifically this effect disappears from the loyalty program from 2019.

Another important issue concerns the market segment of the loyalty program's diffusion. The intensity of diffusion among adopters (users) of some nationalities and between different typologies of hotels is shown in Table 3.

Table 3.3: Simulation of parameter $\boldsymbol{p}$ by hotel's typology and clients' nationalities

Country	p (4 stars)	p (5 stars)	p total
Great Britain	0.30	0.50	0.79
Norway	0.30	0.48	0.78
Sweden	0.31	0.45	0.76
Portugal	0.16	0.15	0.31
Spain	0.23	0.17	0.40
Ireland	0.54	0.31	0.85

Note: Accumulated data from 2011 to 2013

Source: Own elaboration

Table 3 shows that for values of p by hotel typology (four and five stars), results are different in the six nationalities presented. Adopters from Great Britain, Norway and Sweden indicated having a quicker diffusion (i.e., acceptance) in five-star hotels than in four-star hotels. Adopters from Portugal, Spain and Ireland indicated the opposite. These results show how well some brands grow in relation to other brands of the hotel chain in terms of country of origin (Krishnan *et al.*, 2000).

In terms of total values of p by country's origin, Table 3 shows that a higher value of p corresponds to countries with higher purchasing power *per capita* (Van den Bulte,

2002). This is the case for all, including Portugal for example, which has a lower value of p and a lower gross national product (GNP) *per capita*. When p and purchasing power *per capita* are higher, it makes it easier to adopt new services or products immediately (Van den Bulte, 2002).

The hotel's typology and country of origin findings highlight the importance of the product's effects (i.e., past experiences with different nationalities explaining the coefficients of external and internal influence) (Talukdar *et al.*, 2002). These effects help to explain the influence of parameters p and q on the diffusion of the loyalty card.

In order to differentiate the country's origin influence from adopters (users) and hotels, Table 4 shows the effects of hotel localization on the diffusion process.

Table 4.3: Diffusion evolution by hotel localization

Year	Loyalty Program has Started (%)	2012-2013 Evolution (%)
Portugal	1.380	49
Europe	1.685	105
Brazil	1.491	576
Other America	4.250	249
Central America	-	6.400

Source: Own elaboration

This table shows the "loyalty program has started", which means the growth rate between p 2012 and p 2011, and the same meaning for the "2012-2013 evolution", between p 2013 and p 2012. Thus, the results in Table 4 show that the hotel in Central America, which introduced the loyalty program later, has increased more than others, indicating a lead-lag effect (Peres *et al.*, 2010). This effect indicates countries which introduce a given innovation later show a faster diffusion process and a shorter time to takeoff (Peres *et al.*, 2010). Due to these results, it is suggested that the hotel chain should enter all of its markets sequentially (i.e., a "waterfall" strategy) (Peres et al., 2010). Because of the higher maximum penetration levels, the hotel chain should increase the number of adopters in each hotel which has already implemented the program. It is shown that almost all different hotels which belong to the hotel chain are located in countries with costs and risks and a low competitive pressure, which means a

higher lead-lag effect. In this sense, results indicate that the hotel chain needs marketing actions in order to achieve faster penetration to secure a quick investment return.

3.5 Conclusions and implications

Diffusion processes should be an important subject of study for both academicians and managers of the tourism and hospitality industry. A wide range of retail activities, including a loyalty program, generate various types of diffusion consequences. Such studies could range from forecasting the development of a hotel base around a new location under different launch strategies to tracking the WOM networking process.

The present work related the Bass model, intended originally for durable goods, nowadays widely used in services market, to a hotel chain loyalty program. This model gives us a conceptually appealing and mathematically solid structure of how a new loyalty card diffuses through a target population of adopters, used for long-term forecasting.

Furthermore, the Bass model gives consistent results in order to implement a 'strategic necessity'. First, the Bass model analyses the speed at which sales occur. Results show a higher value of q, indicating a slow start with acceleration after a while. Second, the shape of the diffusion curve is analyzed. Due to its inverted U-shape, it is estimated that the year 2019 is the turndown point, meaning a necessity for marketing actions and strategic planning for the loyalty program. Third, the study also focuses on the user's behaviour according to their country of origin and the hotel's typology. However, this analysis is restricted to parameter p. Results show that, for example, a British client who stays at a five-star hotel is more likely to adopt a loyalty card than another British client who stays at a four-star hotel. And the diffusion of a loyalty card is quicker among clients belonging to a country with a higher GNP *per capita*. Fourth, the study also points out the relation between user behaviour and hotel localization. Results indicate that hotels which introduce the loyalty program later have a faster diffusion process, meaning a lead-lag effect.

In this sense, these results lead to important implications about more effective launch strategies for this loyalty program. This study provides us the suggestion to implement and develop long-term relationship measures based on a "waterfall" strategy. This strategy should be conceptualized more multidimensionally, where repeat purchase is the key. The hotel chain loyalty program needs higher penetration and this is attained by intensifying the speed of a WOM networking strategy.

Although results show a higher WOM, the sample procedure adopted was restricted to 2011, due to inclusion of *Initiative:pt* Program to calculate the parameter q. In this sense, future research should focus on a thorough analysis of how and why these effects arose, and a survey of data and interviews should contribute to enriching the figures that these methods unveil.

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CHAPTER 4. PAPER 3

SOCIAL DIFFUSION AND LOYALTY PROGRAMS

A PATH TO SUCCEED

SOCIAL DIFFUSION AND LOYALTY PROGRAMS
A PATH TO SUCCEED

Pedro Pimpão, Antónia Correia, João Duque and Carlos Zorrinho[3]

Abstract

Purpose – The purpose of this study is to define a model of social technology diffusion, comprising constructs that explain guests' likelihood of recommending their hotel loyalty program to their peers.

Design/methodology/approach – The diffusion effect is explained by commitment-trust, satisfaction with user-to-user interactivity, satisfaction with user identifiability and word of mouth. A total of 2,812 usable responses were obtained through an online questionnaire sent to guests with two or more transactions with the loyalty program.

Findings – The results suggest that commitment and trust and word of mouth are crucial to enact social diffusion. As such, hotel loyalty programs need to be leveraged through enacting social diffusion.

Practical implications – Tourism and hospitality practitioners dealing with loyalty programs should create and post new trustworthy content that might be beneficial for the hotel loyalty program in their efforts to provide a more valuable experience for guests.

Originality/value – The paper provides empirical evidence that the likelihood of sharing with other guests or the intention to belong to a hotel loyalty program community exists and then goes on to offer a range of possible responses based upon four relational mediators.

Key words: hotel loyalty program; structural equation modeling; satisfaction; commitment-trust; word of mouth.

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4.1 Introduction

Nowadays, social diffusion is an emerging force which is critical to leverage tourism services and subsequently the adoption of e-business in the area of e-marketing (Tsiotsou and Ratten, 2010). The Internet plays a key role as a communication tool (e.g. information sharing) and helps to build a closer relationship between hotels and guests and induces guests to repeat the purchase of that hotel's brand (Lacey and Morgan, 2009). The online world has become more dynamic and is changing how hotels contribute to the creation and distribution of personalized information. In this sense, by obtaining information from the experiences of others, potential guests could be attracted to the loyalty program.

Previous research proves that social diffusion occurs when customers trust and are committed to the online service (Barreda *et al.*, 2015; Gustafsson *et al.*, 2005). The willingness of a guest to rely on the hotel loyalty program is crucial in the mediation between a website's physical characteristics and a guest's behavioural intentions (Herrero *et al.*, 2015; Javernpaa *et al.*, 2000). Online trust is a key factor behind purchasing behaviour (Cugelman *et al.*, 2009), whereas commitment is a desire to maintain that behaviour in the long term (Gustafsson *et al.*, 2005). Trust and commitment are key variables when decisions are related to enhancement in the scope of the relationship. However, to guarantee the continuity of a relationship, the key variable is satisfaction (Cugelman *et al.*, 2009). In this sense, commitment-trust and satisfaction are two complementary attitudinal constructs in a social diffusion process, well established in predicting behavioural intentions (Garbarino and Johnsson, 1999).

In this research, the focus is on technology enacting social diffusion. That is why loyalty programs must behave as a communication technology tool. In this sense, two satisfaction constructs are included: satisfaction with user-to-user interactivity and satisfaction with user identifiability, as two technology-oriented constructs which help guests to create and maintain social contacts, and which may influence other behavioural beliefs, such as word of mouth (Livari, 2014). Word of mouth represents a favourable personal recommendation from one individual to another regarding a hotel and its services. Word of mouth is well understood as a credible source of communications and plays an instrumental role in new guest acquisition, through intentional behaviour of sharing (Herrero *et al.*, 2015; Lacey and Morgan, 2009). The

impact of intentional behaviour of sharing and word of mouth in capturing new guests via loyalty programs is still under research (Lacey, 2015; Rong *et al.*, 2012). Furthermore, hotel loyalty programs have caught the attention of a number of researchers (Hansen *et al.*, 2010; Lacey, 2015), although more research is required to develop models able to account for guests' attitudinal and behavioural responses to social relatedness or belongingness (Hansen *et al.*, 2010; Herrero *et al.*, 2015; Lacey and Morgan, 2009; Rong *et al.*, 2012; among others). Understanding the effects of hotel loyalty programs requires a view into the potential of social diffusion.

The objective of this study is, therefore, to analyse the likelihood of guests sharing hotel loyalty program contents among their friends and relatives. Attitudinal components, such as commitment-trust, satisfaction with user-to-user interactivity and satisfaction with user identifiability, and behavioural variables such as word of mouth were introduced as explanatory variables for the likelihood of sharing.

To enable a better understanding of guests' behaviour and make them more involved in their business decisions, hotel loyalty programs require a transformation such as social media platforms. Two crucial questions drove this research: Could loyalty programs be supported by online word of mouth referrals for capturing new segments? How can this be developed and made to last in a continuum relationship?

To answer these questions, we follow a threefold research process: we first attempt to assess the importance and influence of these factors in leveraging loyalty programs supported in the literature. Further by splitting satisfaction into two dimensions (satisfaction with user-to-user interactivity and satisfaction with user identifiability), this research contributes to the literature by encompassing the expectations of guests' self-behaviour intention, based on the unified theory of acceptance and use of technology (UTAUT) (Venkatesh *et al.*, 2003). This theory will impact motivation (intention) to use the system, which in turns leads to actual usage (Udo *et al.*, 2010; Venkatesh *et al.*, 2003). We then develop and validate a structural equation model to measure and understand the latent constructs. This model was tested with a sample of 2,812 questionnaires collected online by direct e-mail from one of the biggest hotel chains in Portugal.

Based on the findings, we summarize our theoretical contributions and provide managerial implications regarding how to enhance and capture the social motives and

guests' behaviours while sharing their loyalty program experiences. In this sense, a new theoretical perspective is proposed, by adopting social technology diffusion in hotel loyalty programs, the crucial importance of commitment-trust and word of mouth for intentional behavior of sharing, and the need for satisfied and committed guests with the communication tools offered by the hotel loyalty programs. Finally, this study is also important for practitioners since measurable awareness of guests can lead to changes in guest loyalty and the acquisition of new guests.

4.2 Conceptual development and hypotheses

4.2.1 The essence of loyalty programs

The current literature argues that a hotel loyalty program suggests a stronger working relationship, although not all guests respond and behave in the same way (Barreda *et al.*, 2015; Garbarino and Johnson, 1999). In this sense, it is crucial to identify guests' engagement with the loyalty program, depicting the attitude the guests adopt in relation to the program (Cugelman *et al.*, 2009). A loyalty program is a program that allows customers to accumulate free rewards when they make repeat purchases in a hotel (Sharp and Sharp, 1997; Liu, 2007). Firstly, it is a program which gives points at the time of purchase, i.e., they have important psychological meaning for customers; and secondly, as customers can later redeem points for free rewards, point accumulation creates an anticipation of positive future events, which increases consumers' likelihood of staying in the relationship (Liu, 2007). A loyalty program requires a one-to-one "commitment" (Liu, 2007), and permits guests to communicate, interact virtually, form a social community, recommend services, post comments, and share experiences (Barreda *et al.*, 2015). However, the challenge is to evaluate how attitudes shape repeat patronages. The longer a guest has been in a program, the more intrinsic motivation and interests he/she has in the program (Dorotic *et al.*, 2012; Liu, 2007; Xie and Chen, 2013).

In this sense, loyalty programs help to increase customer purchase behaviours over time, which means developing relationships based on trust and commitment rather than

satisfaction, as mediators between attitudes and future intentions and behaviours (Dorotic *et al.*, 2012; Garbarino and Johnson, 1999).

All factors that involve information sharing, accurate information, marketing support, word of mouth referrals and repatronage intentions suggest that behaviour can be predicted from intentions that correspond directly to that behaviour (Lacey and Morgan, 2009). This assumption leads this study to the concept of "self-efficacy", or the judgment of the guests' ability to use/access their own loyalty program profile on the internet (Udo *et al.*, 2010).

4.2.2 The e-business impact on loyalty programs

Internet technology has an intrinsic global reach characteristic, especially for gratifying existing business or creating virtual business, namely e-business (Rodrigues, 2002). E-business is an integrated approach which highlights the aspects of customer service and other tasks inherent in the electronic business, integrating a whole range of technological resources such as database systems (customer relationship management) and transaction processing (Rodrigues, 2002). Without internet technologies, e-business would not be possible on a large scale. E-business offers the hotel a degree of relationship intensity that provides a massive expansion of business and innovation, which is crucial for loyalty programs. To work properly, loyalty programs need information systems as an empowerment tool for guests to post and share the hotel loyalty program and their own tourism experiences (Binkhorst and Dekker, 2009; Confente, 2014).

In e-business, usage levels are highest in the first year (Rodrigues, 2002). In this sense, operating loyalty programs requires knowledge of long-run customer loyalty patterns in order to justify and evaluate investments (Dowling and Uncles, 1997). One of the failures of loyalty programs is the complicated way of communicating about the program and another one is the lack of involvement of all participants (Xie and Chen, 2013). Managers should therefore use information technologies and manage their offerings according to their behaviour circle (Law *et al.*, 2009).

The ease of use of technology and its social influence are embedded in the UTAUT, i.e., the unified theory of acceptance and use of technology (Venkatesh *et al.*, 2003). This

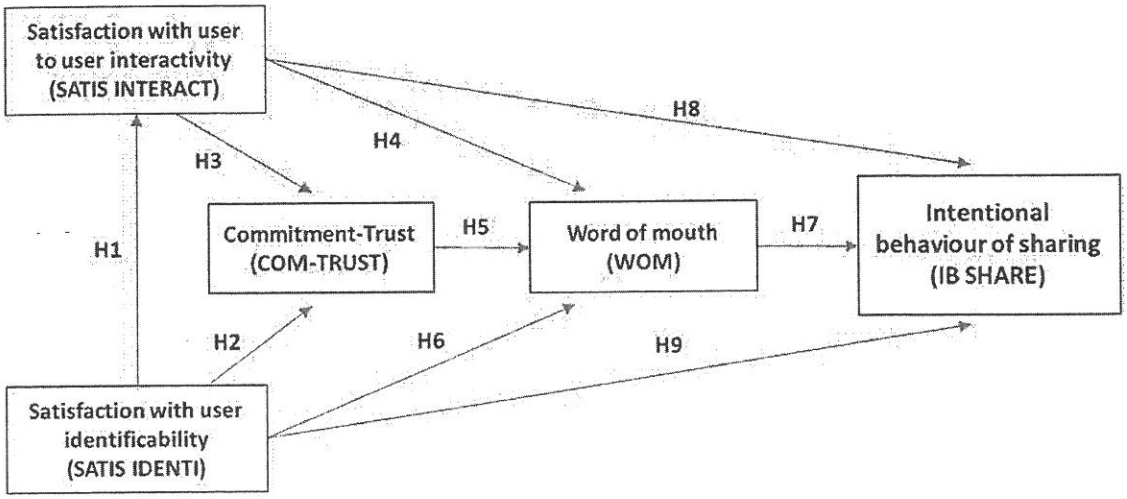
theory assumes that attitudes towards a system will impact the motivation (intention) to use that system, which in turns leads to actual usage. The UTAUT gives us the link between technology and social diffusion, i.e., the social technology model – the degree to which an individual perceives that important others believe he/she should use the new system and the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system (Udo *et al.*, 2010).
Furthermore, this approach will provide the reasoning to predict and explain their attitudes and make them involved (Tsiotsou and Ratten, 2010) in sharing the loyalty program in a technology environment.

4.2.3 Dimensions of loyalty programs and hypotheses

Understanding different consumers' online behaviour could increase the possibility of online transaction completion (Law *et al.*, 2009). Online social environments create new forms of group interactions with large numbers of participants taking on different roles (Libai *et al.*, 2010). Customers are more willing to follow the advice given to them by their predecessors than to copy their actions in markets with imperfect information (Libai *et al.*, 2010). As such, the social online influence embedded in loyalty programs helps to develop and create long-term relationships based on attitudinal factors, through trust, commitment, satisfaction and word of mouth (Barreda, 2015; Dorotic *et al.*, 2012).

The dimensions of the model of social technology diffusion of the chain hotel loyalty program are given in Figure 1.4.

Figure 1.4: Study model and hypotheses



Source: Own elaboration

One of the most important attitudinal factors in building and maintaining stronger relationships between loyalty programs and guests is satisfaction (Barreda *et al.*, 2015). Satisfaction can be defined as "a result of personal evaluation of whether or not the chosen alternative meets expectations or exceeds them" (Engel *et al.*, 1993, p. 20). In such a way, satisfaction is considered a "psychological concept that involves the feeling of well-being and pleasure" (Pizam *et al.*, 2016, p. 4).

Satisfaction is considered the key mediating construct between component attitudes, such as commitment-trust evaluations and future intentions, and it is well established in predicting behavioural intentions (Garbarino and Johnsson, 1999; Gustafsson *et al.*, 2005) for both online and offline businesses (Zhang and Prybutok, 2005). However, it is important to realize that satisfaction in an online service environment, i.e. e-satisfaction, has a bigger impact on intention by reinforcing the likelihood to purchase (Zhang and Prybutok, 2005). Furthermore, the importance of satisfaction is greater, wherein a guest reassures another about an experience or about his or her identifiability in a loyalty program, the best source for facilitating personalized communications (Lacey and Morgan, 2009). Additionally, a guest believes that using information system technology will help him/her create and maintain social contacts, namely satisfaction-with-user-identifiability (Livari, 2014).

H1: Satisfaction with user-to-user interactivity is influenced by satisfaction with user identifiability.

Besides satisfaction, trust is another critical factor in developing long-term relationships with customers in online contexts and is a key antecedent of online customer satisfaction (Barreda *et al.*, 2015). Morgan and Hunt (1994, p. 23) define trust as the perception of "confidence in the exchange partners' reliability and integrity". Trust is critical for customer satisfaction in developing long-term online business-to-consumer relationships (Barreda *et al.*, 2015).

Another vital attitudinal factor which gives rise to this evaluation is long-term affective commitment (Liu, 2007). Commitment has been defined as "an enduring desire to maintain a valued relationship (Moorman *et al.*, 1993, p.316). A commitment is considered long-term affective when a psychological attachment exists, based on personal interaction, reciprocity and trust (Bowden, 2009; Gustafsson *et al.*, 2005; Verhoef, 2003). Moreover, a long-term commitment means a relationship between two or more parties who put intense and emotional effort into maintaining it (Garbarino and Johnson, 1999; Morgan and Hunt, 1994; Ou *et al.*, 2011).

The commitment-trust relational dimension resists short-term alternatives in favour of long-standing relationships with existing partners (Lacey and Morgan, 2009). Gwinner, Gremler and Bitner (1998) find the psychological benefit of confidence and trust to be more important than special treatment or social benefits in consumer relationships with service firms.

Due to the enhancement in the scope of the relationship given by the commitment-trust dimension, the continuity and repetitive 'stabilized mechanism' is provided by satisfaction (Ou *et al.*, 2011; Selnes, 1998) with commitment-trust being considered the reflective constructs of the level of customer satisfaction (Garbarino and Johnsson, 1999).

H2: Commitment-trust is influenced by satisfaction with user identifiability.

H3: Commitment-trust is influenced by satisfaction with user-to-user interactivity.

As previously mentioned, satisfaction, trust and commitment are considered attitudinal factors in a relationship. For the behavioural context, word-of-mouth recommendation is proposed as an important factor affecting the vocational choice of individuals (Demir *et al.*, 2014). Positive word-of-mouth communication is considered a key relational outcome; it is a powerful input in decision-making and stands out as a highly trusted, reliable and credible information source (Herrero *et al.*, 2015; Ng *et al.*, 2011). In this

sense, word of mouth is defined as informal communication between guests and friends/acquaintances, sharing information regarding products and services (Arndt, 1967; Rong *et al.*, 2012), with a strong and oriented link between satisfaction with user-to-user interactivity and word-of-mouth intention and also an effect of user identifiability on social processes (Livari, 2014). The inability to access the credibility of a source, such as user identifiability, and hold the source accountable may lead members to discount his or her contributions (Rains, 2007). Knowing the identity of a source helps firstly him or herself and secondly group members to hold him or her accountable (Rains, 2007). By acquiring the willingness to recommend, through satisfaction but also commitment-trust, loyalty programs could increase repurchase intentions as an important indicator of subsequent repurchase behaviour at hotels and restaurants (Anderson and Sullivan, 1996; Ng *et al.*, 2011).

H4: Word of mouth is influenced by satisfaction with user-to-user interactivity.

H5: Word of mouth is influenced by commitment-trust.

H6: Word of mouth is influenced by satisfaction with user identifiability.

Nowadays, in loyalty programs, it is important to measure future behavioural intentions of customers to assess their potential intentional sharing behaviours. Firstly, behavioural intentions "can be viewed as indicators that signal whether customers will remain with or defect from the company" (Zeithmal *et al.*, 1996, p.33). Furthermore, the intention to transact is defined as the consumers' intent to engage in an online exchange relationship (Pavlou, 2003). Secondly, the intentional sharing behaviour is the transfer of satisfaction to the intention to purchase or to communicate and can be captured by such measures as repurchase intentions, word of mouth, and that customer experiences are also related (Udo *et al.*, 2010; Zhang and Prybutok, 2005). In this sense, satisfaction, positive vacation experience and word of mouth affect behavioural intentions (Anderson and Sullivan, 1996; Demir *et al.*, 2014) and therefore intentional sharing behaviours.

H7: Intentional sharing behaviour is influenced by satisfaction with user-to-user interactivity.

H8: Intentional sharing behaviour is influenced by satisfaction with user identifiability.

H9: Intentional sharing behaviour is influenced by word of mouth.

Finally, one of the most powerful tools for measuring the constructs and their relations in tourism marketing behaviour studies is the structural equation model (Fornell and Larcker, 1981; Chin *et al.*, 2008; Hellier *et al.*, 2003; Lacey and Morgan, 2009; Reinartz *et al.*, 2009).

In this sense, the structural equation model (SEM) is used in this study as an approach to testing the nine hypotheses established (Chin *et al.*, 2008, Udo *et al.*, 2010; Herrero *et al.*, 2015).

4.3 Research method

4.3.1 Web-based questionnaire survey

This research is based on data drawn from an online questionnaire via direct e-mail (web-survey instrument) sent to the guests of a hotel chain loyalty program and covers guests with two or more purchases made in the possession of the loyalty program members (since 2011). This questionnaire was previously tested through a preliminary study conducted at the hotel chain with no modifications observed from respondents' comments. The survey questionnaire is given in Appendix 1.

The questionnaire was organized into 13 variables attempting to explain four constructs derived from the literature (Bowden, 2009; Cugelman *et al.*, 2009; Hansen *et al.*, 2010; Lacey and Morgan, 2009; Livari, 2014; Mills *et al.*, 2014; Morgan and Hunt, 1994; Oliver, 1999). The four constructs used in the survey are commitment-trust, satisfaction with user-to-user interactivity, satisfaction with user identifiability and word of mouth, serving as the independent variables. Intentional sharing behaviour i.e., the number of times they shared or were willing to share is defined as the dependent factor (Chin *et al.*, 2008; Hansen *et al.*, 2010). These constructs and their individual items are discussed below.

The construct of commitment-trust measures the level of relationship with the loyalty program members, including four items: honesty and trust; examples of good practice;

something the guest likes to be associated with; and also the only way the guest books with the hotel chain. The construct of satisfaction with user-to-user interactivity is captured by using three items: intention to be an active member of a new loyalty program members' online community; intention to share online experiences with other customers; and intention to post information that might be of interest to other customers. The construct of satisfaction with user identifiability is ensured by the accuracy of the identity printed on the loyalty program membership and in the information which is provided on the website of the loyalty program. Finally, the construct of word of mouth is measured by using three items: intention to recommend the loyalty program membership to friends and relatives; intention to recommend the loyalty program membership to anyone; and the intention of booking upon recommendation of friends (Hansen *et al.*, 2010).

4.3.2 Sample and data collection

The online survey questionnaires were sent to 47,593 guests with the content of the e-mail message explaining the purpose of the study with a reward for their answers – one thousand points to be credited on their loyalty program membership, after filling in all the questionnaire. This e-mail was sent by hotel chain direct e-mail from the customer relationship management database to customers with two or more purchases randomly by gender, age and nationality.

A total of 12,113 opened the link to the questionnaire. Of these only 4,654 started to fill it in and at the end 2,812 were considered valid, which represents a response rate of 5.9%. A demographic profile of the respondents is presented in Table 1.4.

Table 1.4: Demographic characteristics of the sample

Demographics	Percentage
Gender	
Female	26.6
Male	73.4
Age	
20 or less	0.0
21-30	2.4
31-40	16.3
41-50	24.6
51-60	24.3
61-70	25.2
71 or more	7.1
Education level	
Basic school	0.8
Secondary school	13.9
Higher education	85.3
Nationality	
Portuguese	53.8
British	15.3
Spanish	6.9
Brazilian	6.5
German	5.0
Other	12.5
Financial resources	
Very little	0.4
Little	1.5
Sufficient	70.1
Very good	27.2
Unlimited	0.9
Occupation	
Student	0.2
Retired	26.3
Unskilled employee	0.3
Skilled employee	12.0
Homemaker	0.7
Self-employed	14.2
Middle management	16.7
Higher management	29.6
Note : n =2,812	

Source: Own elaboration

This sheds light on the challenging task of using the internet to collect data. Furthermore, this shows that this loyalty program is far from being established, as only 25.45% of the guests with a loyalty program membership opened the link sent by direct

e-mail. Those answers were subsequently sorted in SPSS 22.0 in an effort to exclude data entry errors. This process of data gathering had several advantages, such as shorter time, lower costs (Barreda *et al.*, 2015) and more privacy for guests.

4.3.3 Data analysis

The research model was assessed through Structural Equation Modelling (SEM), using AMOS 22.0 software. SEM is conducted to measure the four constructs that are not feasible to measure directly and relations within these constructs called path analysis. The maximum likelihood estimation method of SEM was applied to the analysis as it is robust to minor variations of normality (Hellier *et al.*, 2003; Marôco, 2010; Ng *et al.*, 2011) and to estimate a set of model parameters that maximize the likelihood of observing the true value of the population, with normal distribution (Hair *et al.*, 2011; Marôco, 2010; Reinartz *et al.*, 2009). Indicators to assess normal distribution of the parameters are in Appendix 2. Specifically, a two-step approach was employed (Anderson and Gerbing, 1988). The first is the measurement model, i.e., it starts with common assumptions about items and their relationships to the dependent factor and sources of error (Marôco, 2010), through confirmatory factor analysis (CFA). To test measurement model reliability, Convergent and Discriminant Validity was first conducted and then other statistical tools were used for data analysis such as correlation analysis. The second stage was to perform structural equation modelling to test and validate the hypothesis established, i.e., validate the structural relationships between the latent constructs in the research model (Javernpaa *et al.*, 1999; Ou *et al.*, 2011; Ng *et al.*, 2011).

4.4 Results

4.4.1 Measurement model

The CFA of the measurement model specifies the relationship of each observed variable with the latent construct. The sample was randomly divided in two (1,406 each). The results showed a good overall fit for both, suggesting that the CFA structure is feasible

for any sample of data, which ensures the generalizability of the results. This is confirmed by CFA estimate values, indicated in Table 2.4.

Table 2.4: CFA values

Items		Constructs	Standard Estimate	S.E.	C.R.	P
COM-TRUST 1	←	Commitment-trust	0.213	0 38	10.75 7	** *
COM-TRUST 2	←	Commitment-trust	0.860	0 24	48.37 4	** *
COM-TRUST 3	←	Commitment-trust	0.906	0 24	50.19 8	** *
COM-TRUST 4	←	Commitment-trust	0.777			
SATIS IDENTI 1	←	Satisfaction with user identifiability	0.910	0 57	20.02	** *
SATIS IDENTI 2	←	Satisfaction with user identifiability	0.791			
SATIS INTERACT 1	←	Satisfaction with user-to-user interactivity	0.948			
SATIS INTERACT 2	←	Satisfaction with user-to-user interactivity	0.980	0 9	113.60 56	** *
SATIS INTERACT 3	←	Satisfaction with user-to-user interactivity	0.834	0 12	70.12 6	** *
WOM 1	←	Word of mouth	0.441	0 29	21.65 1	** *
WOM 2	←	Word of mouth	0.809			
WOM 3	←	Word of mouth	0.871	0 27	40.13 4	** *

Source: Own elaboration

Results show that satisfaction with user-to-user interactivity is mostly explained by the guest's willingness to: share online experiences with other guests (SATIS INTERACT 2) (0.980); and be an active member of the loyalty program members' online community (SATIS INTERACT 1) (0.948), as argued by Livari (2014) and by Mills *et al.* (2014), suggesting that even in an online environment one-to-one relations are favoured. As for commitment-trust, results indicate that the program and the loyalty program membership is an example of good practice (0.906) (COM-TRUST 3) (Venkatesh *et al.*, 2003; Hansen *et al.*, 2010), suggesting that engagement with the program depends on the evidence of good performance. Moreover, results show that accuracy and updated information provided on the website (such as name, address and contact information on the loyalty card) mostly explained satisfaction with user

identifiability (0.910) (SATIS IDENTI 1) (Livari, 2014), which posits that updated information is a must-have for the success of loyalty programs. Finally, word of mouth is mostly explained by the guest's recommendation to friends and relatives (0.871) (WOM 3), but also to anyone who asks for her/his advice or opinion (0.809) (WOM 2) (Lacey and Morgan, 2009; Hansen *et al.*, 2010).

Furthermore, an average variance extracted (AVE), i.e., the degree to which the measurement items are explained by the construct and are dissimilar, above 0.5 is adequate for convergent discriminant validity (Gustafsson *et al.*, 2005). In this sense, Table 3.4 shows the results of Convergent and Discriminant Validity.

Table 3.4: Convergent and Discriminant Validity

Constructs	CR	AVE	MSV	ASV	Commitment-Trust	Satisfaction with user-to-user interactivity	Word of mouth	Satisfaction with user identifiability
Commitment-Trust	0.809	0.553	0.386	0.175	0.743			
Satisfaction with user-to-user interactivity	0.945	0.852	0.085	0.049	0.225	0.923		
Word of mouth	0.761	0.534	0.386	0.195	0.621	0.292	0.731	
Satisfaction with user identifiability	0.841	0.727	0.114	0.071	0.297	0.109	0.338	0.852

Source: Own elaboration

For the analysis of construct reliability, a component reliability (CR) above 0.7 for all constructs is considered indicative of a reliable instrument (Udo *et al.*, 2010), which means good internal consistency and reliability, as indicated by Maroco (2010, p. 175). In this sense, it can be concluded that the results in Table 3.4 show signs of high reliability for all constructs.

As for the model fit summary, goodness-of-fit measures were considered to assess the overall model fit. Despite the overall fit indices, with x^2/df ratio = 5.34 (p = 0.000) being out of range (between 2.0 and 5.0 for some authors' suggestions) (Maroco, 2010, p. 43; Barreda *et al.*, 2015), the minimum was achieved. However, the sample size is more than 250, reaching 2,812. Moreover, several fit-indices are considered acceptable: goodness-of-fit index (GFI) = 0.985; adjust GFI (AGFI) = 0.976; normed fit index (NFI) = 0.987; comparative fit index (CFI) = 0.989; incremental fit index (IFI) = 0.989;

relative fit index (RFI) = 0.982, as these values are greater than 0.9 (Anderson and Gerbing, 1988). However, for root-mean-square residual index (RMSR) and for root-mean-square error of approximation index (RMSEA), the values should be less than 0.1 to be acceptable (Anderson and Gerbing, 1988), (RMSR = 0.033, RMSEA = 0.039).

As the CFA presents good fits, without validity concerns and with all the items willing to contribute to the latent construct above 0.7, and further as all the factors were proved to be freely correlated among themselves, the structural model could be tested.

4.4.2 Hypotheses testing and validation

The estimation of the complete model with the path coefficients and significant levels is given in Table 4.4.

Almost all the coefficients are significant at a 1% significance level, except H8, between satisfaction with user-to-user interactivity (SATIS INTERACT) and intentional sharing behaviour (IB SHARE), which is significant at a 5% significance level. The goodness-of-fit measures were considered once again to evaluate the overall fit of the conceptual model. Despite the x^2/df ratio = 6.88 (p = 0.000) being out of range, the minimum was achieved. The other relationships seem to indicate a good overall model fit (absolute fit index: GFI = 0.979; RMSEA = 0.046. incremental fit index: NFI = 0.981; IFI = 0.984; RFI = 0.974; CFI = 0.984). An indicator such as parsimonious normed fit index (PCFI) shows the parsimony of the model. The PCFI value (0.719) is between 0.6 and 0.8, indicating good adjustment (Maroco, 2010, p. 51). The other indicators of the model fit summary indicate an adequate and incremental fit for the structural model.

The conceptual model comprises a number of theoretical hypotheses. The strong validity and reliability as well as the resulting fit indices provide robust support for the study hypotheses. Results indicate that the model fits the data well. All the research hypotheses were supported (see Table 4.4).

Table 4.4: Structural Model Results

Structural Path	Standardized Path Coefficient	*t*	Hypothesis Supported?
H1: SATIS IDENTI -> (+)SATIS INTERACT	0.175	.001***	Yes
H2: SATIS IDENTI -> (+)COM-TRUST	0.217	.001***	Yes
H3: SATIS INTERACT -> (+)COM-TRUST	0.095	.001***	Yes
H4: SATIS INTERACT -> (+)WOM	0.110	.001***	Yes
H5: COM-TRUST -> (+)WOM	0.808	.001***	Yes
H6: SATIS IDENTI -> (+)WOM	0.181	.001***	Yes
H7: WOM -> (+)IB SHARE	0.736	.001***	Yes
H8: SATIS INTERACT -> (+)IB SHARE	0.041	.05**	Yes
H9: SATIS IDENTI -> (-)IB SHARE	0.153	.001***	Yes

Notes: H = hypothesis; SATIS IDENTI = Satisfaction with user identifiability; SATIS INTERACT = Satisfaction with user-to-user interactivity; COM-TRUST = Commitment-Trust; WOM = Word
**$p < .05$; ***$p < .001$

Source: Own elaboration

The results in Table 4.4 show a significant statistical relationship between satisfaction with user identifiability (SATIS IDENTI) and satisfaction with user-to-user interactivity (SATIS INTERACT) (H1: path coefficient = 0.175; $p < .001$). This implies that when guests are satisfied with the way the loyalty program addresses them and with correct information about their own name, they are likely to feel satisfied enough to share online experiences with other customers in a loyalty program online community, as argued by Livari (2014). There is also a significant relation between SATIS IDENTI and commitment-trust (COM-TRUST) (path coefficient = 0.217; $p < .001$) showing that a committed and trusted relationship to the loyalty program will only occur if the hotel carefully manages information about personal identification (Selnes, 1998; Hansen *et al.*, 2010; Livari, 2014), and as such H2 is not rejected. The result for H3, which proposes that SATIS INTERACT positively influences guests' COM-TRUST, was also significant (path coefficient = 0.095; $p < .001$). Interacting and sharing information or

experiences with other guests of the loyalty program community strengthens the belonging attitude to the loyalty program members (Lacey and Morgan, 2009). These findings suggest that intentions of interacting with other guests and having their own accurate personal information printed on the loyalty program membership are fundamental in building trust and commitment in establishing a strong and continuous relationship between guests and the loyalty program (Livari, 2014; Mills *et al.*, 2014; Lacey and Morgan, 2009). SATIS IDENTI has a stronger effect on COM-TRUST than SATIS INTERACT. The test results confirmed that SATIS INTERACT had a significant and positive effect on word of mouth (WOM) (H4: path coefficient = 0.110; $p < .001$). This provides support for satisfied guests as active members of the loyalty program online community having a higher effect in recommending this loyalty program membership to anyone or to friends and relatives than on building trust with the loyalty program. Previous research indicates that SATIS IDENTI is positively related to WOM (Hansen *et al.*, 2010; Williams and Naumann, 2011; Livari, 2014) confirming H6 (path coefficient =0.181; $p < .001$). This suggests that it is crucial that guests with up-to-date and accurate personal information match with the intention to recommend the loyalty program to other persons, friends and relatives.

COM-TRUST had a significant positive effect on WOM, lending support to H5 (path coefficient = 0.808; $p < .001$) and between WOM and IB SHARE for H7 (path coefficient =0 .736; $p < .001$). These findings are the strongest of all hypotheses and consistent. It shows a significant positive relationship between COM-TRUST and WOM (defended by Morgan and Hunt, 1994; by Ranaweera and Prabhu, 2003; and by Herrero *et al.*, 2015). A guest who trusts in the honesty of the hotel chain and its program and is also attached to and associated with it will be more likely to recommend the loyalty program membership to friends and relatives. The relationship between WOM and IB SHARE completes the former behaviour on account of the times friends and relatives recommended by guests have joined the loyalty program, as argued by Lacey and Morgan (2009) and by Udo *et al.* (2010). H8, which assumes that SATIS INTERACT is positively associated with IB SHARE, is supported (path coefficient = 0.736; $p < .05$). This finding reveals that belonging to a loyalty program online community and sharing experiences and information with that community is fundamental in a long-term relationship with the program and with the friends and relatives who are recommended to join it (Demir *et al.*, 2014).

Finally, we found that SATIS IDENTI was negatively related to IB SHARE; however, H9 is supported (path coefficient = -0.153; $p < .001$). A hotel loyalty program which is concerned only with guest information will generate negative intentional sharing behaviour. This result is consistent with Bowden (2009), who argues that for a guest to attain the willingness to recommend, a psychological bond with the loyalty program is necessary, only achieved through the mediation of SATIS INTERACT or WOM. These findings suggest the importance of the presence of committed behaviour in loyalty programs. Guests who recommend the loyalty program membership will be more likely to be influenced in their intentional behaviour to repurchase in the future.

4.5 Discussion and conclusions

4.5.1 Theoretical implications

From a theoretical perspective, the present study contributes to the body of knowledge on sharing economies in loyalty programs, research on consumers' behavioural intentions, and word of mouth in a loyalty program. The aim of this study is to analyse the likelihood of guests sharing hotel loyalty program contents among their friends and relatives. Therefore, attitudinal components (commitment-trust, satisfaction with user-to-user interactivity and satisfaction with user identifiability, and word of mouth as behavioural variable) were introduced as explanatory variables of the likelihood of sharing (Barreda *et al.*, 2015). This study presents one of the few empirical examinations of relationship marketing concepts in the consumer market place (Garbarino and Johnsson, 1999). In this sense, the present study proposes theoretical perspectives regarding how to enhance and capture social motives and guests' behaviours while sharing their loyalty program experiences by adopting social technology diffusion.

The problems associated with measuring either attitudinal/behavioural dimensions or determining how this is influenced by the presence of internet technology makes it a difficult area of research. In this study, the model of social technology diffusion was

tested and the use of the SEM approach provides a firewall because of its capability to facilitate the evaluation of complex structures of relationships such as the customers' behaviours in a hotel chain loyalty program. The first explains the antecedents and outcomes of the key relational constructs (commitment-trust, satisfaction with user-to-user interactivity, satisfaction with user identifiability and word of mouth) and the latter measures the intensity of relationship between guests, through their intentional sharing behaviour in order to increase and maintain a long-term relationship with guests in a loyalty program.

The results also suggest that a hotel chain loyalty program intends to motivate guests to influence others to join the program. A well identified and satisfied guest will recommend the hotel chain loyalty program to several potential new guests. To assess overall willingness to recommend, this research outlines the influence of the main dimensions of guests' attitudes on word-of-mouth intentions and therefore on sharing. Word of mouth and the two types of satisfaction seem to act as mediators between commitment-trust and sharing intentional behaviour. One of the main influencing factors in guests' behaviour is word of mouth, due to the fact that if hotels develop and intensify the relationship between guests and program, i.e., identifying exactly what customers value, it will attract potential long-term guests (Hellier *et al.*, 2003). This will create a continuous net worth for them, using the hotel loyalty program website to share their own experiences online (Rong *et al.*, 2012; Herrero *et al.*, 2015). The results also differentiate between those sharing and not sharing, willing to recommend or not, and having accurate and imprecise information in the program.

In addition to the importance, mainly of word of mouth but also of other factors in the customers' behaviour, the overall model based on the unified theory of acceptance and use of technology, together with its implications for personalized communication, is a source of loyalty. This study concludes that loyalty programs need to try to embed service in customers' existing and future contexts, activities and experiences (Heinonen *et al.*, 2010), through two types of components: attitude and behaviour.

4.5.2 Managerial implications

In a marketplace in which hotels spend millions of dollars on word-of-mouth initiatives, managers need a better understanding of loyalty program strategies. Loyalty programs

are no longer only platforms to manage the information of each guest. These programs have advanced to become a critical part of brand marketing (Barreda *et al.*, 2015).

The service literature argues that specialized marketing should be used to build customer relationships (Berry, 1995). For this reason, and since a loyalty program is a business model for keeping customers, it should be possible for websites to allow the visitor to customize their content according to their preferences (e.g. Facebook) so as to encourage repeat visits and avoid so a dissuasive lack of news. If the information does not change, visitors lose interest (Rodrigues, 2002). After customers have returned home, they often like to share and exchange their travel experiences (Law *et al.*, 2009).

In this sense, for example, a marketing technique such as opening two-way lines of communication and guaranteeing service should be used (Garbarino and Johnson, 1999). Moreover, in a virtual tourism community, the loyalty program could offer guests the possibility of downloading an app with a guide to the city where hotel is located, or a virtual movie about the hotel they choose (local culture). This purpose helps hotels attract new online loyalty program guests, as a superior e-marketing strategy (Binkhorst and Dekker, 2009).

Important strategies for practitioners also include posting trustworthy content on loyalty programs. For example, pictures of the guestroom could be shown in the online guest loyalty program account. These pictures should reflect the actual guestrooms that guests will find once they check into the hotel. This online tool should be user-friendly and properly maintained, otherwise brands could instantly lose credibility within their online visitors (Barreda *et al.*, 2015).

4.5.3 Limitations and future research

The study has a limitation in the procedure of data collection, which is restricted to the period of November/December 2014, a peak season for the majority of hotel chain guests.

For future research, it may be interesting to test the model in business-to-business markets and a study of how word of mouth develops over time would make an important contribution to theory.

Finally, there are strong linkages between commitment-trust and word of mouth, showing that guest advocacy is a reality for extended projected future repatronage behaviours. This could suggest a driver to contribute to the loyalty behaviour of loyalty program members. In this sense, the hotel chain loyalty program should focus on improving these factors, by using periodic surveys to continuously explain certain behaviours.

4.6 References

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CHAPTER 5

CONCLUSIONS AND PERSPECTIVES FOR FURTHER RESEARCH

5.1 Conclusions

This research discusses customer behaviours within multiple communication strategies in the hotel chain loyalty program. The present study focuses on adding new insights to the existing hotel loyalty program research, by building a trade-off between two models that are both theory-laden and empirically grounded. The CRM and loyalty approach holds the theoretical foundations of this study. By focusing on satisfaction, trust, commitment and WOM, this study offers a comprehensive explanation of the development of how customer behaviours in a loyalty program potentiate new communications strategies to achieve new customers through the loyalty of existing ones.

The research problem of this study is "to understand the development of customers' behaviours within the CRM and loyalty approach in the hotel chain loyalty program". Adopting positivism research approach, thirteen hypotheses, divided between three research proposals, were tested to address this thesis research problem and associated questions. The questions are: "How effective might loyalty programs be for positioning the brands/hotels in customers minds?"; "How do diffusion patterns affect the acquisition and use of loyalty cards?"; "How can loyalty programs be supported by online word of mouth referrals for capturing new segments and made to last in a continuum relationship?".

The first question relates hotel choice and purchase frequency in the long-term using the Dirichlet model. This model considers the parameters market share, repeat frequency and purchase probabilities to explain the hotel's positioning, the purchase frequency heterogeneity at geographical and temporal level and the future choice patterns (Goodhardt *et al.*, 1984; Ehrenberg *et al.*, 2004). In this sense, the answer is centred on the Dirichlet model of analysis of hotels' heterogeneity along the two years of the hotel chain loyalty program. It is argued that heterogeneity of the hotel chain and the purchase frequency and penetration rates can be assessed considering the present model. In fact, consumer behaviour differs according to localizations and type of hotel. The loyalty program is more effective when the hotel plugs the polygamy inside customers which is attained by a chain effect and therefore by the low permeability between hotels. This is shown by an increased return buying rate for any hotel and a decrease in the 100% loyal rate. Changing the fundamental repeat purchase patterns of markets is

very difficult. However, the Dirichlet model gives the possibility of altering repeat purchase patterns, at least to a small degree, through loyalty programs, in order to achieve customer loyalty.

The second question focuses on the range of diffusion processes from forecasting the launch of the hotel chain loyalty program at a new hotel at a different location. The development of different launch strategies for tracking the WOM networking process, using the Bass model is also undertaken in this research (Schmittlein and Mahajan, 1982; Lilien *et al.*, 2000). The answer takes into consideration the Bass model, which gives us a solid structure of how a new loyalty card diffuses through a target population of adopters, used for long-term forecasting. The three dimensions of diffusion: rate of diffusion; pattern of diffusion; and the potential penetration level comprise the understanding of the spread of innovation from the perspective of communication and adopter (user) perceptions and interactions This is done by reflecting the speed at which sales occur over time and the size of potential market among customers and non-customers of the loyalty program. It is argued that innovation in the program and the customers' country of origin and the hotel's typology can be assessed considering the present model. In fact, this study points out the relation between user behaviour and hotel localization.

The third and last question entails consumers' behavioural intentions from attitudinal/behavioural components such as satisfaction (user-to-user interactivity and user identifiability), commitment-trust and word of mouth. The answer focuses on the study of the attitudinal/behavioural dimensions and determining how this is influenced by the presence of information technology systems by using structural equation modelling based on the unified theory of acceptance and use of technology (UTAUT) (Venkatesh *et al.*, 2003), which in this research constitutes the model of social technology diffusion. Attitudinal/behaviour dimensions are explained by the SEM which provides a firewall in order to increase and maintain a long-term relationship with guests in a loyalty program. It is argued that the main dimensions of guests' attitudes to word of mouth intentions and therefore to sharing can be assessed considering the present model. In fact the intensity of the relationship between guests and the CRM program in a long-term view differs according to their identifiability and accurate information given by the hotel's loyalty program. A well identified and satisfied guest will recommend the hotel chain loyalty program to several potential new

guests. Measuring attitudinal/behaviour dimensions is scarce and a difficult area of research because of available data and evolution of customers' behaviour. However, the SEM confers the possibility of analysing the intensity of relationship between guests, through their intentional sharing behaviour and the intention of the hotel chain loyalty program to motivate guests to influence others to join the program.

Thus, all the above three research answers provide an "understanding of the development of customers' behaviours within the CRM and loyalty approach in the hotel chain loyalty program". Moreover, this research confers the necessary formality to initiate the "trade-off" between the Dirichlet model and Bass model in analysing the consumer behaviour states and to enhance the development of the behaviour/attitudinal components, not only between customers themselves, but also between customers and loyalty programs. Further, the present research confers visibility to hotel loyalty programs and improves communication between hotels and customers.

5.2 Contributions

The findings of the study reveal the need and importance of consolidating the hotel chain loyalty program to continuously improve the communication channels in order to achieve customer loyalty. These research findings support the conclusion that customer loyalty may lead to several direct benefits, say, facilitating entry into new markets, increasing transactions with hotels, enhancing exchange of experiences among customers, accomplishing hotel loyalty program legitimacy, attaining economies of scale and of scope, as well as accessing customers' behaviours in a hotel loyalty program. The present research contributes by showing the predisposition of hotel loyalty program customers to engage with other customers in a social online network.

Throughout this research, particular attention was paid to how marketing could be used to build customer relationships. Loyalty programs are no longer only platforms to manage the information of each guest. These programs have advanced to become a critical part of brand marketing. In this sense, attaining a two-way line of communication between customers themselves and between hotels and customers in a virtual tourism community is of major relevance for the communications strategies

implemented by hotel loyalty programs as a first managerial contribution. For example, the loyalty program could offers guests the possibility of downloading an app with a guide to the city where hotel is located, or a virtual movie about the hotel they choose (local culture). This purpose helps hotels attract new online loyalty program guests, as a superior e-marketing strategy. Important strategies for practitioners also include posting trustworthy content on loyalty programs. For example, pictures of the guestroom could be shown in the online guest loyalty program account. These pictures should reflect the actual guestrooms that guests will find once they check into the hotel (see *paper 3*).

The development of segmented offers is also essential for increasing the number of customers, as a second managerial contribution. Therefore, the data obtained in this work suggested four main groups ('small trend' (Alentejo and Algarve Historical & Cultural Hotels; and Africa Resort Hotel); 'med/big trend' (LVT, Centre and North Historical & Cultural Hotels; and America and LVT Resort Hotel); 'logged hotels' (Brazil & Europe Resort Hotels); and 'stabilized hotels' (Madeira & Algarve Resort Hotels)). These groups represent the hotels' market share tendency in the hotel chain based on the results of the brand performance measures (BPM). The third managerial contribution encompasses the link between the average amount bought at each reservation occasion and the cross-product buying by existing customers. Due to these results and based on the classification of the four groups, we propose reinforcing communications by creating four segment groups (1 – Algarve, Alentejo, LTV, Centre and North Historical & Cultural Hotels; 2 – Africa, Europe and Brazil Resort Hotels; 3 – Algarve, Madeira and America Resort Hotels; 4 – LTV Resort Hotel) in order to segment suitable packages of services. In order to make this possible, the hotel chain should implement intensive extra-product promotions in group 1, intensive price-related promotions in group 2, some price-related promotions in group 3 and some extra-product promotions in group 4 (see *paper 1*).

Nevertheless, diffusion of a hotel loyalty program depends of the level of adoption and use of their cards. In the loyalty program, hotel chains seek to obtain beneficial innovation for customers, to overcome the turndown in 3 years of the loyalty program, meaning a necessity for marketing actions and strategic planning for the loyalty program. The fourth managerial contribution addresses the link between customers' nationality and type of hotel, as a diffusion of a loyalty card is quicker among clients belonging to a country with a higher GNP *per capita*. This purpose helps hotels to

implement and develop long-term relationship measures based on a "waterfall" strategy (see *paper 2*).

5.3 Limitations

The current section focuses on the limitations related with the research setting; the empirical setting of this study addresses only one hotel loyalty program setting and does not assess the impact of these loyalty programs in other competitors; however the hotel chain represents a majority of hotels offering four and five stars Portugal. Further, this study centres its attention on different time frames: primary data collection in a period of November/December 2014, a peak season for the majority of hotel chain guests; and a secondary data collection of the *Initiative:pt* program restricted to 2011.

5.4 Perspectives for future research

This section includes proposals for future research, highlighted by the current study. Empirical research on intercompetitor comparative studies is scarce and much remains to be understood. Further research grounded on the CRM and loyalty programs approach could focus on the development of intercompetitor differences providing more insights about segmentation procedures.

Future research is also suggested to explore how the cost effectiveness loyalty program affects the financial achievements of the hotel chain.

Finally, this research includes a comprehensive analysis of customers' behaviours with themselves and with the hotel chain loyalty program. As an alternative, future research could also test the model in business-to-business markets, which would make an important contribution to theory. This also remains to be accomplished by future research. Overall, there are many ways open for further research.

5.5 References

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APPENDIX 1

THE WEB-SURVEY QUESTIONNAIRE

1. Card Number

_____

2. E-mail

_____

Commitment-Trust (COM-TRUST)

Please mark only one oval per row.
Totally disagree / Disagree / Partially agree / Agree / Totally agree

3. I only book this hotel chain because I have the card. (COM-TRUST 1)
4. My connection to the program and the card...
   - 4.1 Is honest and truth. (COM-TRUST 2)
   - 4.2 Is an example of good practice. (COM-TRUST 3)
   - 4.3 Is something I like to be associated with. (COM-TRUST 4).

Satisfaction with user-to-user interactivity (SATIS INTERACT)

Please mark only one oval per row.
Totally disagree / Disagree / Partially agree / Agree / Totally agree

5. I would like to be an active member of the hotel chain card online community. (SATIS INTERACT 1)
6. I would like to share online experiences with other customers. (SATIS INTERACT 2)
7. I would like to post information that might be of interest to other customers. (SATIS INTERACT 3)

Satisfaction with user identifiability (SATIS IDENTI)

Please mark only one oval per row.
Totally disagree / Disagree / Partially agree / Agree / Totally agree

8. The information provided (such as name, address and contact information) on the website of the hotel chain card is accurate and up to date. (SATIS IDENTI 1)
9. The information printed on the card represents my identity (such as the means of address using my professional title). (SATIS IDENTI 2)

Word of mouth (WOM)

Please answer placing a dot in the field that best fits your opinion.
No / I don't know / Yes / Yes of course / Definitely

10. Have any of your friends or relatives booked upon your recommendation? (WOM 1)
11. I will recommend this card whenever anyone asks for my advice or opinion. (WOM 2)
12. I will recommend this card to my friends and relatives. (WOM 3)

Intentional behaviour of sharing (IB SHARE)

Please mark only one oval.
1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 or more

13. If you have information that your friends or relatives have already joined the loyalty program, to how many of those persons did you recommend the hotel chain loyalty card?

Demographic attributes

Please mark only one oval.

14. *Age* (Up to 20 years old / From 21 to 30 years old / From 31 to 40 years old / From 41 to 50 years old / From 51 to 60 years old / From 61 to 70 years old / 71 years old or more).
15. *Sex* (Female / Male).
16. *Education* (Basic school / Secondary school / Higher education).
17. *Financial resources* (Very little / Little / Sufficient / Very good / Unlimited).
18. *Occupation* (Student / Retired / Unskilled employee / Skilled employee / Homemaker / Self-employed / Middle management / Higher management).

19. *Nationality*

_____

APPENDIX 2

ASSESSMENT OF NORMALITY

Variable	min	max	skew	c.r.	kurtosis	c.r.
q3. I only book with this hotel chain because I have the card.	1	5	-0.404	-8.751	-0.885	-9.575
q4.1. My connection to the program and the card is honesty and truth.	1	5	-0.661	-14.308	1.192	12.901
q4.2 My connection to the program and the card is an example of good practice.	1	5	-0.559	-12.104	1.072	11.603
q4.3 My connection to the program and the card is something I like to be associated with.	1	5	-0.412	-8.913	0.763	8.255
q5. I would like to be an active member of the hotel chain card online community.	1	5	-0.195	-4.213	-0.62	-6.715
q6. I would like to share online experiences with other customers.	1	5	-0.269	-5.813	-1.043	-11.29
q7. I would like to post information that might be of interest to other customers.	1	5	-0.335	-7.251	-1.044	-11.303
q8. The information provided on the website of the hotel chain card is accurate and up-to-date.	1	5	-1.013	-21.937	1.063	11.502
q9. The information printed on the card represents my identity.	1	5	-0.774	-16.743	0.644	6.967
q10. Some of my friends and relatives book or booked upon my recommendation.	1	5	0.202	4.377	-0.604	-6.535
q11. I will recommend this card whenever anyone asks for my advice or opinion.	1	5	0.029	0.619	-0.405	-4.378
q12. I will recommend this card to my friends and relatives.	1	5	0.218	4.725	-0.616	-6.662
					24.088	34.837

APPENDIX 3

AUTHORS RETAINED COPYRIGHTS EDITORS STATEMENTS

1. COPYRIGHTS EMERALD

De: Chris Tutill <CTutill@emeraldinsight.com>
Enviado: segunda-feira, 18 de julho de 2016 07:56
Para: 'Pedro Pimpão'
Assunto: RE: Permission to publication for PhD purposes

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From: Pedro Pimpão [mailto:pedro_pimpao@hotmail.com]
Sent: 15 July 2016 17:00
To: Chris Tutill
Subject: Permission to publication for PhD purposes

Dear Mr Chris Tutill,

Since the article "Exploring Effects of Hotel Chain Loyalty Program" is part of my PhD research, I come to ask Emerald permission to use it for the purpose of structuring my doctoral thesis and integrate it in the body of the thesis. The article will be fully referenced as published in the special edition (Vol. 8, No. 4 2014) of International Journal of Culture, Tourism and Hospitality Research. The thesis will only be available at the University of Lisbon library repository.

Yours sincerely,

Pedro Pimpão

De: m.kozak <m.kozak@superonline.com>

Enviado: sábado, 16 de julho de 2016 13:28

Para: Pedro Pimpão

Assunto: Re: Permission to publication for PhD purposes

No problem, Pedro. Congratulations.. Metin

2016-07-15 19:11, Pedro Pimpão yazmış:

Dear Professor Metin Kozak,

Hope all it goes well.

Since the chapter 8 "Diffusion Patterns in Loyalty Programs" is part of my PhD research, I come to ask your permission to use it for the purpose of structuring my doctoral thesis and integrate it in the body of the thesis. The chapter will be fully referenced as published in the book series "Tourism and Hospitality Management". The thesis will only be available at the University of Lisbon library repository.

Thanks for the opportunity to publish our work.

Best regards,

Pedro Pimpão