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Effect of social media marketing activities on brand image of the airline companies

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BUSINESS
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Resumo

À luz do desenvolvimento da Web 2.0, este estudo tem como objetivo investigar as características das Atividades de Marketing em Mídias Sociais (SMMA) de 2 companhias aéreas: Emirates e Ryanair, além de seus efeitos na imagem de marca dessas companhias aéreas. Neste estudo, as características do SMMA são identificadas como entretenimento, interação, informatividade, capacidade de resposta e risco potencial. Espera-se que os seus efeitos no e-WOM e no compromisso, os identificadores da imagem da marca, sejam positivos, com base em estudos anteriores. Ao contrário de artigos anteriores, esta relação será testada não apenas por um questionário, mas também por uma análise de mídia social, principalmente usando dados externos secundários, que são comentários no Instagram, e analisados por R. Espera-se que o resultado deste estudo seja útil para os gestores do setor aéreo, que buscam dados fundamentais para desenvolver seus métodos de marketing.

***Keywords**: Atividades de marketing em mídias sociais, imagem da marca, resposta do cliente*

Abstract

This study investigates Social Media Marketing Activities (SMMA) undertaken by Emirates and Ryanair airlines, analyzing their impact on brand image. SMMA characteristics—entertainment, interaction, informativeness, responsiveness, and risk—are identified. The study examines their relationship with brand image, e-Word of Mouth (E-WOM), and commitment using a structural equation model. Unlike previous research solely relying on questionnaires, this study incorporates social media analysis, particularly Instagram comments analyzed in R. Surveys were conducted with 137 passengers, complemented by analysis of 1,024 and 1,370 comments from Emirates' and Ryanair's social media, respectively. Results indicate SMMA significantly enhances brand image, which in turn positively influences E-WOM and commitment. The findings offer valuable insights for airline industry managers seeking foundational data to refine marketing strategies.

***Keywords**: Social media marketing activities, brand image, customer response, airlines*

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1. Introduction

Social media marketing has become a pivotal tool for the airline industry to engage with customers, enhance brand visibility, and foster loyalty. Social media allows airlines to interact with customers in real-time, creating a more personal connection that traditional marketing methods lack (Hudson & Thal, 2013). This interaction can lead to higher customer satisfaction and loyalty. As a result, various companies, including airline companies, tend to use social media for promotion, customer management, and sentiment analysis. Moreover, the deregulation of the air transport market has increased the level of competition among airports to attract passengers and airlines (Gitto & Mancuso, 2019). In another comprehensive study, Kaplan and Haenlein (2010) discussed the strategies airlines use on social media platforms, such as Facebook, Twitter, and Instagram. They underlined that two important components of effective social media marketing efforts are high-quality content and engaged customers. According to their research, airlines that regularly interact with their followers on social media typically have higher levels of consumer retention and brand identification.

However, the existing papers, including those of Seo & Park (2017) and Prasetio et al. (2022), mostly focus on the general effects of social media marketing in the airline industry, using the survey method only. Meanwhile, this study aims at selecting and comparing two specific airline companies. Also, it focuses on the impact of that kind of marketing method on the brand image, more than the profit, based on social media analysis. This study aims to build upon the existing literature by not only examining the general effects of social media marketing in the airline industry but also by comparing specific airline companies. It focuses on the impact of social media marketing on brand image rather than profit, employing social media analysis to gather insights.

This study focuses on Emirates and Ryanair because of their distinct market positions, marketing strategies, and significant market value compared to other airlines with similar brand images. Emirates is a Middle Eastern luxury airline that targets passengers who demand premium services and intercontinental flights. Their Instagram and YouTube features high-quality images and promotional videos. In contrast, Ryanair is a European LCC (Low-cost carrier), which is known for affordability and efficiency, appealing to travelers with low budgets. They apply a humorous and casual social media approach to interact with travelers on a tight budget, especially on TikTok. Their different approaches to customers and social media marketing provide a comprehensive view of Social Media Marketing Activities (SMMA) across diverse market segments.

In order to evaluate and compare the social media marketing method between two companies from different regions, this study suggests two research questions; How does social media marketing impact the airline brand image? What is the difference in social media marketing between low-cost airlines and full-service airlines?

The findings provide valuable data for airlines to develop unique and effective social media marketing strategies, contributing to their overall marketing management practices. By integrating these references and expanding on the specific methodologies and findings of previous studies, the section now offers a more comprehensive overview of the existing research on social media marketing in the airline industry. Based on the revealed relationship between social media marketing strategy and brand image, the marketing manager of airlines can have a clearer perspective on how to tailor their social media activities to enhance their brand's perception among consumers.

This dissertation begins by introducing the research topic, including the research questions and objectives. It is followed by a comprehensive literature review, covering social media marketing activities, brand equity, brand image, and customer response. Afterwards, it outlines the methodology used in this research, detailing the research context, design, data collection, and data analysis methods. The next section discusses the results of the study, including the findings from both the survey and social media analysis. In the end, it concludes the thesis by summarizing the main findings, discussing their implications for theory and practice, and suggesting directions for future research.

2. Literature review

The literature review is divided into several sections to comprehensively cover the relevant research areas. The first section discusses the theoretical foundations and key concepts related to social media marketing and consumer engagement. Then, it reviews the importance of brand equity and brand image and their impact on marketing strategies.

The final section examines the role of social media and customer responses in the airline industry, focusing on their impact on brand awareness. It also identifies the hypotheses that this paper is aiming to prove.

2.1. Social media marketing activities (SMMA)

Social media is defined as an internet-based application that uses Web 2.0 technology and allows users to generate content and share it (Prasetio et al., 2022). Also, it is generating traditional

methods of finding information and purchasing items obsolete, and per se, new social and economic consequences are being generated (Seo & Park, 2018). As a result, the expansion of social media platforms offers new opportunities for brand-related marketing research (Plumeyer et al., 2017). Specifically, social media-based marketing has received considerable attention in part due to the fact that the recall rates for social media advertisements are more than 55% higher than those for conventional advertisements, while a 2013 report determined that social media influenced 90% of all purchases (Marketingcloud.com, 2013).

Laudon and Traver (2017) indicated that marketers can use social media for various goals, one of which is to strengthen brands and even increase sales. When a marketer uses social media to enhance a brand, it generally means increasing brand equity (Prasetio et al., 2022). The identical study mentioned that brand equity is the value given by consumers to the brand above and beyond the functional characteristics of the product. This is almost similar or identical to brand reputation, but brand equity implies economic value which indicates that if the brand has a "positive" reputation it has the potential for high brand equity value, meanwhile if it has weak brand equity then it has a negative reputation (Prasetio et al., 2022). The results of brand equity can boost market share, reduce consumer price sensitivity, and improve marketing efficiency. (Mothersbaugh et al., 2020).

Various studies with different authors have addressed the component of SMMA characteristics, as clarified in Table 1. In this study, the components of airline SMMA are identified as entertainment, interaction, informativeness, responsiveness, and potential risk.

References	Title	SMMA Characteristics	Research design	Sample size
Kim & KO (2012).	Do social media marketing activities enhance customer equity? An empirical study of luxury fashion brand	Entertainment Interaction Customization WOM	Survey	N = 362 10th to 25th of Mar, 2010
Sano (2015).	An empirical study of the effect of social media marketing activities upon customer satisfaction, positive word-of-mouth and commitment in indemnity insurance service	Interaction Trendiness Customization Perceived risk	Survey	N = 338
Seo & Park (2017).	A study on the effects of social media marketing activities on brand equity and customer response in the airline industry	Entertainment Interaction Trendiness Customization Perceived risk	Survey	N = 302 10th to 24th of Jan, 2017
Kim (2017).	An influence of mobile marketing features upon consumer attitudes	Information Immediacy Responses Access	Social media analysis	

Table 1 – Empirical studies

Entertainment is a result of fun and chill acquired through social media (Agichtein et al., 2008). According to Kang (2005), entertainment in social media is a significant component that motivates positive emotions, escalates participating behavior, and leads to intention to use continuously.

Given that social media is a space for users to discuss and share opinions, interactions in social media grant insights into users who contribute to social media platforms with respect to specific brands (Muntinga et al., 2011). The same author also indicated that users engage with one another online and discuss certain brands and products. These interactions have also influenced the growth of user-generated content (UGC) on social media, which is fundamentally altering the dynamics of brand-customer communications. (Daugherty et al., 2008; Gallauter, 2010; Kaplan, 2010).

According to Tokopedia, the SMMA's informativeness component was able to raise brand awareness among consumers who could clearly identify, recognize, and define the company's identity (Adriana & Widodo, 2019). Consumers tend to trust information acquired through social media more than that from advertisements in marketing activities or promotions (Seo & Park, 2018).

Responsiveness in this study is defined as not only the companies reaching their customers back through comments, but also listening to their opinions and reviews. Arun Sharma (1997) confirmed that responding to new demands increases customer happiness. Research shows that responding to new requirements and resolving customer concerns lead to higher levels of customer satisfaction (Karampela et al., 2018). It also indicated that responsiveness could enhance not only customer satisfaction but also a perception of partner quality. Agnihotri et al. (2015) have discovered that social media reactivity improves client satisfaction. According to Ahearne et al. (2007), being responsive can improve partner quality perception in addition to consumer pleasure, as responsiveness is associated with a firm's reliability, which may indicate the quality of the business partner (i.e., brand).

Perceived Risk is known as the collection of doubts that customers experience following the purchase of products or services (Remesh, 2023). The author also mentioned that before purchasing expensive items, consumers typically conduct extensive research and consultation to ensure there are no problems later. Therefore, providing accurate and useful information to them is crucial to overcome the perceived risk, and Chafidon et al. (2022) confirmed that social media marketing has a significant influence on perceived risk, decreasing the uncertainty regarding consumer behavior. Therefore, we hypothesize as following:

H1: The SMMAs have a positive and significant impact on the brand image
H1a: Entertainment is a remarkable component of SMMA

H1b: Information is a remarkable component of SMMA

H1c: Informativeness is a remarkable component of SMMA

H1d: Responsiveness is a remarkable component of SMMA

H1e: Perceived risk is a remarkable component of SMMA

2.2. Brand equity and brand image

Keller (1993) explained brand equity by dividing this concept into brand awareness and brand image, proposing 'customer-based brand equity'. Brand equity is carved in a consumer's memory as a unique value differentiated from other brands by combining various brand properties. Therefore, brand equity is a sociocultural phenomenon that goes beyond a mere product name; it is a symbolic meaning that the brand seeks (Keller, 2003). Aaker (2022) stated that brand equity is a set of assets or liabilities in the form of brand visibility, brand associations and customer loyalty that add or subtract from the value of a current or potential product or service driven by the brand, therefore a key construct in the management of marketing.

Brand image is a positive or negative feeling that a consumer has about a brand, confidence in the brand, or a psychological structure of the consumer, and is defined as a set of beliefs that the consumer has about the brand (Kotler, 2010). Determining how consumers perceive brands is crucial to the development of an effective marketing strategy (Gitto & Mancuso, 2019). Keller (1993) stated that brand image is the sum of several brand reminders and the overall perception of a brand in a consumer's memory. It might therefore be a crucial marketing element. The cited author also said that it is a combination of how the consumer feels about the product itself and related indirect elements. In a nutshell, brand image is the meaning of a brand that people accept using their sensory organs (Jung, 1994). Low and Lamb (2000) insisted that a brand image, which consists of a symbolic, social, and psychological image, is a belief about the purpose and symbol of a certain brand. It was also described by Dobni and Zinkhan (1990) as a logical or emotional perception that reflects the consumer's brand association.

The positive brand image is made possible by a marketing program that associates strong, favorable, and distinctive connections with the brand in the memory of the consumer and may be created by, in addition to the information under the marketing manager, various channels including the direct experiences of consumers, opinions, and WOM of other consumers (Keller, 2003). In research from Pahwa (2022) indicates that every company strives to build a strong image as it helps in fulfilling their business motives. Pahwa also suggested the advantages of strong brand image as followings: More profits as new customers are attracted to the brand; Easy to introduce new

products under the same brand; Boosts the confidence of existing customers which helps in retaining them; Better Business-Customer relationship.

This study selected the airline companies for analysis based on the *Airlines 50 2024: The Annual Brand Value Ranking,* an annual report on the most valuable and strongest airline brands from Brandirectory (2024). The companies that have no social media accounts are excluded as it is unable to study their SMMAs. Thus, the second hypothesis of this study is, H2: The brand image has a positive and significant impact on the e-WOM.

2.3. Customer response

Consumer Word-of-Mouth (WOM) behaviors are formed as a result of commitment, a positive emotion (Amine, 1998). Consumer response, in this study, is divided into behavioral response and emotional response, and it will investigate the effects of airline SMMAs on Electronic Word-of-Mouth (e-WOM) as a behavioral response and commitment as an emotional response (Seo & Park, 2018).

Recent studies have emphasized the importance of content analysis of online traveler feedback in studies of service quality (Brochado et al., 2019). With the rise of social media platforms, web reviews are perceived as accessible, reliable, credible and readily available information by both consumers and researchers (Lu & Stepchenkova, 2012). In the airline industry as well, passengers share their reviews and ratings online in the post purchase phase for everyone to see, and these contents are viewed as trustworthy by other passengers (Brochado et al., 2019). Social media is considered to be the ideal platform for e-WOM (Canhoto et al., 2013; Erkan, 2016), and has long been acknowledged as a powerful marketing tool (Bickart et al., 2001). The act of meeting online, exchanging ideas, and rating services is known as "e-WOM" (King et al, 2014; Yoon, 2012; Barreto, 2014), which offers usability, accessibility, and permanence for information that was unavailable in traditional offline WOM (Cheung, 2014). The information disseminated through these WOMs tends to be accepted as fair and unexaggerated one (Mourali, 2005). O'Cass (2014) studied that WOM is very important because it shapes consumers' attitudes toward brands. E-WOM considers positive WOM as expressed in customers' willingness to recommend the product to others in this study (Seo et al., 2020). The internet is changing the way consumers behave in searching for information online, interacting online, and adopting information from e-WOM (Prasetio et al., 2022).

Consumers' responses and desires to sustain a relationship with a brand over time, as well as their internal psychological circumstances that are thought to be connected to other people or things, are referred to as commitment. Since these customers share the same beliefs and resources

as the business, the corporation classifies who have a commitment to a product and service brand as being of greater importance (Seo & Park, 2018). The study of Ahluwalia et al (2000) figured out that consumers that are very committed to a brand and who have done so for a long time can be sources of knowledge, influence attitudes, and protect and combat false information. Although it is anticipated that customers with weaker brand loyalty will be able to withstand the spread of unfavorable information, their contribution is viewed as being lower than that of those with high levels of loyalty.

Moreover, the previous research stated that the brand image variable has a significant effect on the e-WOM variable (Prasetio et al., 2022). This research shows that the brand awareness variable has no effect on e-WOM (Laelian & Widodo, 2021). Seo & Park (2018) mentioned similar results as well in the airline industry. It can be seen that consumer-generated online or digital word-of-mouth sources can have an impact on a company's ability to develop a positive brand image (Laelian & Widodo, 2021). Previous researchers studying luxury items also claimed that the brand image variable had a favorable and significant impact on commitment (Godey et al., 2016). Other researchers revealed that in finding the influence of brand image on commitment, the research object used was South Korean airlines, which results in line with previous research that brand image had a positive and significant effect on commitment (Seo & Park, 2018). These researchers also indicated that brand image can be a reference for consumers in dedicating themselves and binding companies with consumers. Therefore, the last hypothesis of this study is, H3: The brand image has a positive and significant impact on the commitment.

The figure 1 presents the research model developed for this study, illustrating the hypothesized relationships between SMMAs, brand image, e-WOM, and customer commitment. This model is based on not only literature on social media marketing and brand equity, but also Stimulus-Organism-Response (S-O-R) theory (Mehrabian & Russell, 1974), which explains how effective social media marketing can enhance brand's image and foster positive e-WOM and customer commitment. The S-O-R paradigm is commonly being applied to marketing research to explain how external environments (i.e. SMMA) affect organism’s internal feelings (i.e. brand image and customer perceptions) and further trigger responses (i.e. e-WOM and customer commitment).

Based on the S-O-R theory and literature review, this study has identified key variables and their interactions, which are visually represented in the research model. The model integrates insights from previous empirical studies, highlighting the critical role of social media marketing in shaping consumer perceptions and behaviors. Each path in the model is supported by theoretical

frameworks and empirical evidence discussed in the preceding sections of the literature review, providing a comprehensive basis for the hypotheses tested in this study.

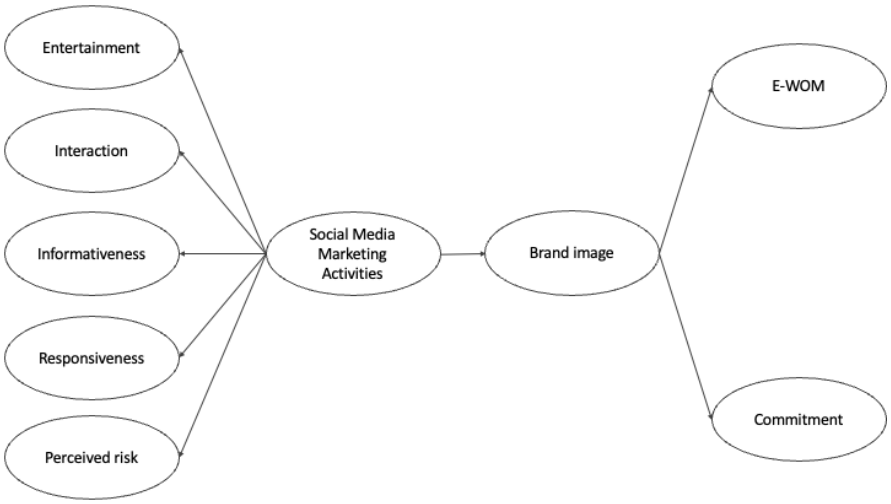


Figure 1 – Research model

Based on the findings from the literature review, the following hypotheses are drawn for this study.

H1: The SMMAs have a positive and significant impact on the brand image

H1a: Entertainment is a remarkable component of SMMA

H1b: Interaction is an important factor in fostering customer engagement

H1c: Informativeness is a key driver in providing valuable content

H1d: Responsiveness is a notable factor in engaging audiences

H1e: Perceived risk is a crucial element in enhancing consumer confidence

H2: The brand image has a positive and significant impact on the e-WOM

H3: The brand image has a positive and significant impact on the commitment

3. Methodology

3.1. Research context

This study focuses on Emirates and Ryanair, chosen for their distinct market positions and robust social media presence. Emirates, the largest airline in the Middle East, is renowned for its high brand value and premium services. According to Brandirectory (2022), Emirates ranks as the 4th highest brand value worldwide, accounting for €4298 million, with an 8.13% increase from the previous year. Additionally, Emirates is ranked as the 8th strongest airline brand globally in 2022.

On the other hand, Ryanair is one of the largest low-cost airlines in Europe, known for its cost-effective services and extensive route network. Ryanair's significant market presence and aggressive social media marketing strategies make it an ideal candidate for comparison with a full-service airline like Emirates.

The contrasting business models of these airlines—Emirates as a full-service carrier and Ryanair as a low-cost carrier—provide a comprehensive understanding of how different SMMAs impact brand image across diverse market segments. By examining these two airlines, this study aims to offer valuable insights into the effectiveness of SMMAs in both premium and budget airline sectors.

3.2. Research design

In this study, both primary and secondary data were used to ensure a comprehensive analysis. Primary data was collected through questionnaires distributed to airline passengers, focusing on Social Media Marketing Activities (SMMA) characteristics. This data was supplemented with secondary data through sentiment analysis of social media comments. The questionnaires, designed to capture respondents' perceptions of SMMA, were administered online to maximize the reach and diversity of participants. To validate and cross-check the findings from the questionnaires, sentiment analysis was performed on approximately 1,000 comments per airline, extracted from their most recent social media posts. The sentiment analysis was conducted using R Studio, a statistical software well-suited for processing large datasets and performing detailed text analysis, as well as Apify Instagram comment scrapper, TikTok comment scrapper, and Microsoft Excel.

The use of Confirmatory Factor Analysis (CFA) was integral to this study's methodology. CFA is a statistical technique used to test the validity of hypothesized relationships between observed variables and their underlying latent constructs. This method was chosen because it allows for a rigorous assessment of the measurement model, ensuring that the constructs used in this study (such as entertainment, interaction, and informativeness) accurately reflect the SMMA characteristics. The decision to use CFA was driven by its ability to provide robust validation of the factor structure identified through the survey, which is crucial for drawing reliable conclusions about the relationship between SMMA and brand image.

Overall, this combined approach of using CFA alongside sentiment analysis provides a modern knowledge of how SMMA influences brand perception, offering valuable insights for both academia and industry.

3.3. Data collection

The literature review served as the basis for developing the questionnaire items used in this investigation. The survey consists of 5 different SMMAs, brand image, commitment, and e-WOM. The replies were split into 5 categories, from 1 (strongly disagree) to 5 (strongly agree), using a 5-point Likert scale. Detailed operational definitions for the questionnaire can be found in the Table 2.

Constructs	Items	Source
Entertainment	The social media of this airline is enjoyable.	Seo & Park (2017)
	The content shared by the social media of this airline is enjoyable.	Seo & Park (2017)
Interactive	Information sharing is possible in the social media of this airline.	Seo & Park (2017)
	The discussion and exchange of opinions is possible in the social media of this airline.	Seo & Park (2017)
	The expression of opinions is easy in the social media of this airline.	Seo & Park (2017)
Informative	The information on this airline social media is credible.	Erkan & Evans (2016)
	The information on this airline social media is useful.	Seo & Park (2018)
	Social media of this airline has high amount of information about itself.	Seo & Park (2018)
Responsiveness	This company listens to what its followers say on social media.	
	I expect to get a reply from the company when I leave a comment on their social media.	
Perceived risk	The social media of this airline alleviated my concern(s) regarding the airline's service.	Seo & Park (2017)
	The social media of this airline alleviated my concern(s) about using the airline.	Seo & Park (2017)
Brand image	This airline is a leader in the industry.	Godey et al. (2016)
	I have an impressive memory regarding this airline.	Godey et al. (2016)
	This airline is customer-centered.	Godey et al. (2016)
E-WOM	I will post positive opinions about this airline on social media.	Goyette et al. (2010)
	I will recommend this airline using social media.	Seo & Park (2017)
	I will recommend this airline to my social media friends.	Goyette et al. (2010)
Commitment	I am proud of being a customer of this airline.	Seo & Park (2017)
	I hope this airline will do well for a long time.	Seo & Park (2017)
	I like this airline very much.	Seo & Park (2017)

Table 2 – Measurement items

The survey was conducted online from 26th of November to 1st of December 2023, using the convenience sampling method. There were 137 respondents, but 28 of them reported that they have never tried either Ryanair or Emirates, leaving 109 responds for analysis.

4. Result

To analyze the characteristics of the respondents, a frequency analysis of respondents is conducted and can be found in Table 3. The most frequent region in the result was Europe with n = 69 (50.36%) and followed by Asia with n = 45 (32.85%). This differentiates this study from the previous ones which focused on only Asian passengers' point of view.

Variable		Frequency	Ratio (%)
Gender	Male	89	64.96
	Female	48	35.04
Age	18 or younger	0	0
	19 – 29	79	57.66
	30 – 39	37	27.01
	40 – 49	17	12.41
	50 – 59	4	2.92
	60 or older	0	0
Region	Africa	1	0.73
	America	10	7.30
	Asia	45	32.85
	Australia	12	8.76
	Europe	69	50.36
Airline usage per year	Never	3	2.19
	1	34	24.82

	2	40	29.20
	3	21	15.33
	4	20	14.60
	5	2	1.46
	6 or more	17	12.41
Purpose of using airline	Travel	83	60.58
	Business	7	5.11
	Visit family or relatives	44	32.12
	Education	0	0
	Other	3	2.19
Total responses		137	100

Table 3 - Frequency table

When it comes to the content analysis of comments on companies' social networks, 24 most recent posts from Emirates Instagram were selected and 1,024 comments were extracted on 5th of January 2024. At the same time, from Ryanair's TikTok account, 12 most recent posts were selected and 1,370 comments were extracted. As shown in Table 4, collected data were pre-processed by classifying the comments type (e.g. Company, destination, content, etc.), translating non-English comments to English, and replacing emojis with text. Proportion of missing data is 6.72% and 8.98% for Emirates and Ryanair, respectively. Classification of post type of each company can be observed in Annex A. After modeling the data, it has been subject to CFA and sentiment analysis.

Content of comment	Emirates	Ryanair
Company	457	397
Destination	268	-
Content	217	625
Response	30	225
N/A	70	123
Total	1042	1370

Table 4 - Comments collected from companies' social media

4.1. Confirmatory factor analysis

The results of confirmatory factor analysis to verify the conceptual model are shown in Table 5. SPSS 28.0.1 and AMOS 28.0 were used for CFA and statistical review of importance of the model. CFA was conducted to assess the following types of validity: Convergent Validity, which ensures that items intended to measure the same construct are highly correlated, Content Validity, which assesses whether the questionnaire items fully represent the constructs being measured, and Divergent Validity, which is also known as discriminant validity, that checks if constructs that should have no relationship do not actually correlate. These validity assessments are crucial for ensuring the reliability and accuracy of the measurement model.

Ideally, factor loading value should exceed 0.7 (Stevens, 2002), AVE should be above 0.5 (Fornell & Larcker, 1981), CR should be above 0.7 (Hair et al., 2009), and Cronbach's α should be above 0.6 (Ahdika, 2017). In the given table, it is shown that all the AVEs and CRs are above the criteria, except

for the variable 'Entertainment'. Also, values of Cronbach's α are above 0.7 for all the variables except 'Brand image' and 'Commitment'. Still, the values for 'Brand Image' are above 0.6 and are considered to have moderate reliability. The value for 'Commitment' is below 0.6, but still quite reliable according to the research of Ahdika (2017). However, in general, the model has convergence validity and ensures content validity.

Latent variables	Observed variables	Factor loading	AVE	CR	Cronbach's α
Entertainment	Ent1	0.859	0.801	0.642	0.772
	Ent2	0.937			
Interactive	Int1	0.924	0.868	0.952	0.766
	Int2	0.930			
	Int3	0.941			
Informative	Inf1	0.913	0.790	0.918	0.714
	Inf2	0.879			
	Inf3	0.873			
Responsiveness	Res1	0.911	0.807	0.821	0.754
	Res2	0.921			
Perceived risk	Ris1	0.964	0.810	0.821	0.757
	Ris2	0.885			
Brand image	Bi1	0.763	0.553	0.787	0.625
	Bi2	0.732			
	Bi3	0.735			
E-WOM	Wom1	0.902	0.713	0.882	0.753
	Wom2	0.806			
	Wom3	0.822			
Commitment	Com1	0.769	0.624	0.833	0.588
	Com2	0.791			
	Com3	0.810			

AVE: Average variance extracted
CR: Composite reliability

Table 5 – Result of Confirmatory factor analysis

The discriminant validity of the constructs in this study is shown in the Table 6. This study used the method of evaluating the divergent validity through whether the value of AVE exceeds the squared value of the correlation coefficient among latent variables. When comparing to the lowest AVE value (0.553) to each square value of correlation coefficients, AVE is greater than all of them. That is, validity condition is met in all constructs.

	Entertainment	Interactive	Informative	Responsiveness	Perceived risk	Brand image	E-WOM	Commitment
Entertainment	0.801							
Interactive	0.713 (0.508)	0.868						
Informative	0.678 (0.460)	0.711 (0.506)	0.790					
Responsiveness	0.618 (0.382)	0.743 (0.552)	0.741 (0.549)	0.807				
Perceived risk	0.521 (0.271)	0.413 (0.171)	0.530 (0.281)	0.422 (0178)	0.810			
Brand image	0.598 (0.358)	0.482 (0.232)	0.492 (0.242)	0.512 (0.262)	0.628 (0.394)	0.553		

E-WOM	0.673 (0.453)	0.632 (0.399)	0.409 (0.167)	0.571 (0.326)	0.428 (0.183)	0.399 (0.159)	0.713	
Commitment	0.529 (0.280)	0.519 (0.269)	0.637 (0.406)	0.711 (0.506)	0.631 (0.398)	0.498 (0.248)	0.548 (0.300)	0.624
Parentheses (): Square value of correlation coefficient								

Table 6 – Discriminant validity

When it comes to the hypothesis verification, this study examined the connection between social media marketing activities, brand image, E-WOM, and commitment by analyzing the structural equation model (SEM) based on the findings of the confirmatory factor analysis on the measurement model. In order to examine the potential impact of perceived SMMA on brand image, E-WOM, and commitment, SMMA was positioned as a second-order construct in the structural model, with five components at the first order. The analysis of measurement model showed that, every index fell below reasonable bounds ($\chi2 = 495.195$, df = 117, $\chi2/df = 4.232$, $p < 0.000$, GFI = 0.862, AGFI = 0.832, NFI = 0.889, CFI = 0.950, TLI = 0.944, RMSEA = 0.057).

The result of hypothesis verification (Figure 2) indicates that the SMMAs have a positive and significant impact on the brand image ($\beta=0.351$, $p<0.05$), the brand image has a positive and significant impact on the e-WOM ($\beta=0.562$, $p<0.01$), and the brand image has a positive and significant impact on the commitment ($\beta=0.687$, $p<0.01$). That is, H1, H2, and H3 are considered appropriate. The coefficients of the SEM model can be found in Annex B.

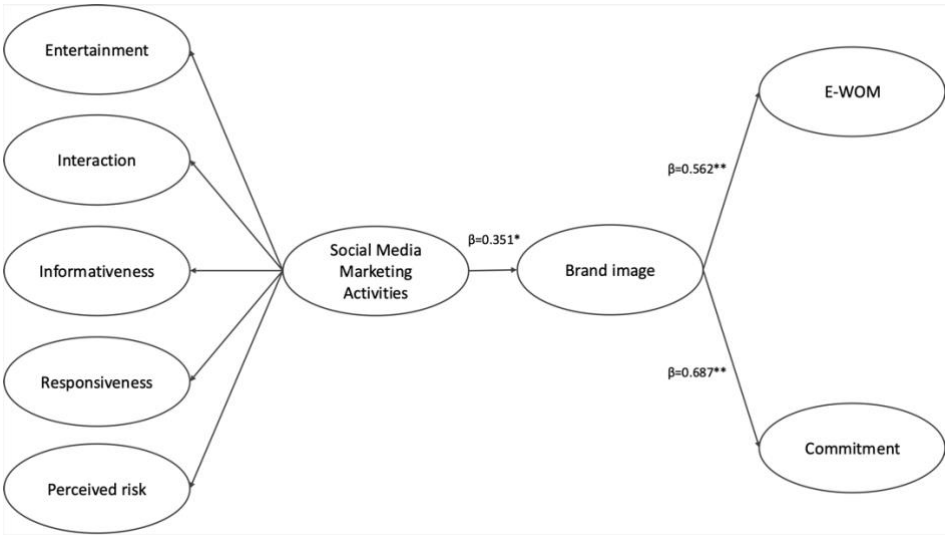


Figure 2 – Result of testing hypotheses * $p < 0.05$, ** $p < 0.01$.

4.2. Sentiment analysis

The sentiment of each comment was analyzed using the syuzhet package, which implements various sentiment analysis algorithms including NRC, Bing, and Afinn lexicons. First, the comments were broken down per word. Afterwards, each word was converted into sentiment scores on a scale from -1 to 1, where -1 indicates extremely negative sentiment, 0 indicates neutral sentiment, and 1

indicates extremely positive sentiment. That is, the sum of sentiment scores of words equals the sentiment score of that comment.

Based on the sentiment analysis result obtained by Afinn and NRC dictionary, it is shown that comments from Emirates' social media account have more positive sentiment overall (Figure 2). The

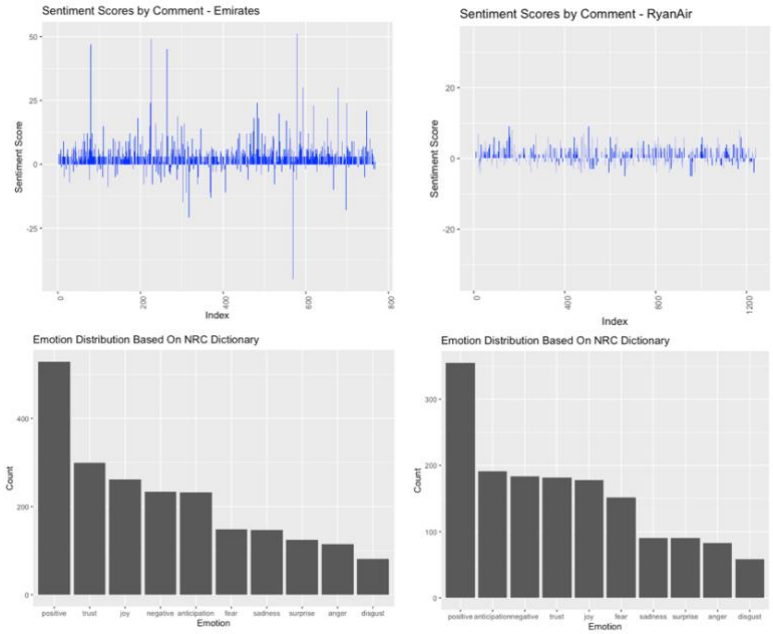


Figure 3 – Sentiment analysis: Emirates & RyanAir

user with the highest sentiment score (51) from Emirates left several comments in different posts as following: "Very nice photo and beautiful design.", "Very great photo and beautiful view 👍👍♡.", and "Nice photo and beautiful cabin 👍👍♡". Meanwhile, the comment with the lowest sentiment score from Emirates had -45 score, commented as following: "Hello. I have raised a complaint more than a month ago. It's been a disaster about how I was dealt with. Firstly, the local UK company offered me to pay less for buying a new bag while they were destroying my old bag. Secondly, when i refused their offer, the case was sent to CASA. I never had such bad experience regarding delay response from any airline. Sorry to say but the fare of your flights are way more than any other airlines. But the customer support you provide is so poor and devastating that it's been more than one and half month since i flew, i am still running behind you people. Now it's time that i won't wait nomore.".

In case of RyanAir, the user with the highest sentiment score (9) left a comment as following: love you Ryanair best airline and best social media interns mwuah xx. The comments with the lowest sentiment score (-5) were "everybody is hating on Ryanair but they never had a crash", "I've never had problems with Ryanair times tbf but I died when the plane landed", and "Finally!! This is how we defeat Ryanair's tyranny!! Refuse to comply, throw off our shackles and fight!". Compared to that of Emirates, RyanAir's comments showed lower absolute value overall.

The results from the sentiment analysis, which are integrated with the questionnaire findings, suggest that the Social Media Marketing Activities (SMMAs) of Emirates had a more positive impact on customer sentiment compared to Ryanair. Emirates had a mean sentiment score of 3.073 with a standard deviation of 5.937, while Ryanair had a lower mean score of 0.441 with a standard deviation of 1.616. These statistics illustrate the differences in public perception between the two airlines.

Furthermore, the analysis indicates that the higher sentiment scores for Emirates, coupled with greater variability in customer sentiment, point to more active and diverse social media marketing strategies. This is consistent with the positive impact of SMMAs on brand image and e-WOM observed in the questionnaire results. The integrated insights confirm the hypotheses of the study, demonstrating the value of combining direct feedback from questionnaires with indirect sentiment analysis data to assess the effectiveness of SMMAs in influencing brand image and customer commitment.

5. Discussion

In response to the research question (How does social media marketing impact the airline brand image?), SMMAs significantly enhance the airline brand image. In this study, five components of SMMAs (entertainment, informativeness, interaction, responsiveness, and perceived risk) were evaluated, showing various levels of impact. Responsiveness and informativeness were significantly impactful, highlighting that timely responses and valuable information on social media lead to a stronger brand image. The structural equation modeling results supported this positive relationship ($\beta = 0.351$, $p < 0.05$), indicating that effective SMMAs are crucial for brand image enhancement. Sentiment analysis supported this finding as well, revealing more positive customer sentiment for airlines with engaging and interactive social media strategies.

This study also answers to the 2nd research question: What is the difference in social media marketing between low-cost airlines and full-service airlines?. There are distinct differences in social media marketing strategies between low-cost airlines and full-service. For example, Emirates emphasizes high-quality, visually appealing content that aligns with its premium brand image, focusing on luxury, customer experience, and global connectivity. Ryanair, on the other hand, highlights its affordability, operational updates, and promotions. As a result, Emirates generated higher positive sentiment among customers, with a mean sentiment score of 3.073 compared to Ryanair's 0.441. This implies that a more individualized strategy works better for building a positive brand image. Emirates demonstrated a higher level of engagement and responsiveness to customer

interactions on social media, reflecting its commitment to maintaining a strong and customer-centric online presence.

The results of this study align with recent literature on social media marketing and its impact on customer behavior. For instance, recent studies have emphasized the importance of SMMAs in enhancing brand image and customer loyalty (Kim & Ko, 2012). This study contributes to this body of literature by providing empirical evidence from the airline industry. Moreover, the positive relationship between brand image and e-WOM found in this study is consistent with findings by Chu and Kim (2011), who highlighted that a positive brand image encourages customers to share their experiences online. Similarly, the strong impact of brand image on customer commitment aligns with studies by Brodie et al. (2013), who demonstrated that a positive brand image fosters emotional attachment and loyalty.

However, this study offers a different research model and hypotheses structure compared to past studies with addition of 'Responsiveness' as one of the key indicators of SMMA. Unlike the research of Chu and Kim (2011) and Kim and Ko (2012), this study used both primary survey data and secondary social media analysis, which provided a more comprehensive understanding of how customers perceive and interact with airline brands online. This mixed approach is relatively rare in existing literature, which tends to rely on one method or the other. Also, by analyzing both Emirates, a premium airline, and Ryanair, a budget airline, the study revealed that different market segments respond differently to SMMAs, while the studies of Seo & Park (2017) and Brochado et al. (2022) focused on Korean and Chinese airlines, respectively. This result is crucial for tailoring marketing strategies to different target audiences.

Moreover, several theoretical contributions are revealed in this study. The paper validates the framework linking SMMAs to brand image, e-WOM, and customer commitment. It demonstrates that SMMAs are a critical driver of brand image, which subsequently affects e-WOM and customer commitment. By combining sentiment analysis, the study extends traditional social media marketing theory, showing that sentiment analysis as well can be a valuable tool for measuring the effectiveness of SMMAs and understanding customer perceptions (Birjali et al., 2021). This methodological contribution provides an additional understanding of the impact of SMMAs and can be applied to other industries and contexts (Mehmood et al., 2022). It also provides empirical evidence supporting the effectiveness of SMMAs in the airline industry, highlighting the importance of a strong social media presence and its positive effects on brand image and customer engagement.

Additionally, this study has important managerial implications. First, it's an effective strategy to create a solid rapport with customers by promoting on social media the destinations or services that are provided (Kaplan & Haenlein, 2009). The more familiar consumers are with a brand, the more engaged they are with it (Pahwa, 2023). The outcome also points to a definite connection between commitment and social brand image (Brodie et al., 2011). As a result, airline companies should always be working to enhance their social media marketing strategies in order to grow their brand networks, foster community growth, and better communication with customers (Prasetio et al., 2022).

In conclusion, this study demonstrates the critical role of effective social media marketing in enhancing brand image, fostering positive e-WOM, and building customer commitment in the airline industry. The findings highlight the importance of a strong and engaging social media presence, as evidenced by the higher sentiment scores of Emirates compared to Ryanair's. The integration of questionnaire with sentiment analysis offers a strong method for understanding and utilizing customer sentiment, providing valuable insights for airline marketing strategies (Brochado et al., 2019).

Moreover, future research can address various constraints in the field of airline companies, despite the efforts made to perform considerable study in this area. As this study focused on 2 airlines only, additional study may help to provide a more comprehensive knowledge of the primary narratives in the comments made by passengers about airlines by comparing a larger range of airline businesses. Also, only the effects of social media marketing initiatives were examined in this study. Future research has to look at other aspects of social networking websites and how they affect desires for or behaviors related to usage. Finally, although the questionnaire included the information regarding user profiles, it did not test whether the profiles have an impact on the passengers' overall experiences or not. This could provide further information about market segmentation in the aviation sector.

6. Conclusion

6.1. Theoretical contributions

This study makes several theoretical contributions to the literature on social media marketing and brand image in the airline industry. It validates the framework linking SMMAs to brand image, e-WOM, and customer commitment. By introducing responsiveness as a key component of SMMAs, this study extends traditional models, providing a deeper understanding of how responsiveness impacts customer perceptions.

Moreover, combining survey data with sentiment analysis offers a thorough methodology that advances social media marketing research paradigms by linking the gap between quantitative and qualitative methodologies. Also, by comparing a full-service airline (Emirates) and a low-cost carrier (Ryanair), this study broadens the scope of SMMA research, demonstrating that market segmentation significantly influences the effectiveness of social media strategies. Emirates, which applied more sophisticated and engaging social media strategies, achieved a stronger brand image compared to Ryanair. This finding highlights that airlines can effectively enhance their brand image by leveraging social media platforms to engage with customers, provide information, and foster interaction. The sentiment analysis further showed that Emirates' approach resulted in a higher positive sentiment among customers, while Ryanair's strategy, although effective in its own market segment, resulted in a more neutral or mixed sentiment. These differences underscore the importance of aligning social media strategies with the airline's overall brand positioning and market segment.

6.2. Limitations and Future Research

Despite its contributions, this study has a few limitations. First, it focuses only on two airlines, Emirates and Ryanair, which may limit the applicability of the findings to other airlines or industries. Future research could expand the sample to include a broader range of airlines with different business models and regional markets. Also, the study evaluates only five components of SMMAs. That is, additional factors such as customization, trendiness, or innovation could be explored in subsequent studies. Lastly, this study does not account for cultural or demographic differences in customer perceptions. Future research could investigate how these factors influence the relationship between SMMAs and brand image to develop more targeted marketing strategies.

In conclusion, the findings address both research questions by demonstrating the significant impact of social media marketing on brand image and by highlighting the contrasting strategies used by full-service and low-cost airlines. These insights provide a foundation for understanding how different types of airlines can optimize their social media marketing to enhance brand perception and customer engagement.

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Annexes

	Emirates	Ryanair
Company	9	2
Destination	9	-
Greeting	6	-
Engagement	1	-
Promotion	-	3
Entertainment	-	11
Total	25	16

Annex A – Type of collected posts from companies' social media

Path	Standardized coefficient	t-value	p-value
SMMAs -> Brand image	0.351	2.880	< 0.05
Brand image -> E-WOM	0.562	3.140	< 0.01
Brand image -> Commitment	0.687	2.041	< 0.01

Annex B – Coefficients of the Structural Equation Model