Master thesis Business Administration

Museum visitor valuation through Social Media use

How do social media affect the valuation of Dutch museums?

Name: Glenn van de Hulst
Student number: s1010516
Specialisation: Innovation & Entrepreneurship

Supervisor: Dr. Raphaël Smals
Second reader: Armand Smit

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Radboud University

Abstract

In the past few years there have been a lot of cuts in subsidies for Dutch museums. For this reason it has become very important to maintain cashflows and to attract visitors to the museums. In order to attract visitors museums need to understand what creates value for visitors and how their expectations can be influenced by social media before visiting the museum. This thesis has studied the influence of social media use on the valuation of Dutch museums by means of a quantitative study. Theoretically it was expected that fulfilled expectations contribute to a high valuation. For this reason, the decision was made to use the SERVQUAL-model as a scale within this study. This is because the SERVQUAL is capable in measuring the service quality through the fulfillment of expectations in every sector. The research was conducted by a survey with 395 respondents. The main question that is answered with the results of the study is:

How do social media affect the valuation of Dutch museums?

The research showed that social media do not significantly affect the valuation of Dutch museums. However, despite the fact that the results showed that social media use has no significant influence on the valuation, other interesting results have emerged. For example, the most auspicious finding that is found is that the SERVQUAL-model appears to be unsuitable for measuring service quality within the museum sector. According to these findings we may conclude that the SERVQUAL-model lacks construct validity and therefore four new factors have been created that are used to measure the service quality in museums. These factors are service, exhibitions, activities and facilities.

Keywords: Museums; visitor value; expectations; social media; SERVQUAL; quantitative.

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1 Introduction

In the past few years there has been a lot of debate among the Dutch museums. Policy makers and the general public discussed if the Dutch cultural heritage was still able to maintain financial health (Council for Culture, 2017). As a result of cuts in subsidies the museums do not have the financial needs to expand their collection and are not able to maintain and spread the knowledge about their collections. Hence, it is important for museums to maintain cashflows by attracting visitors. Therefore, the museum sector has to understand what creates value for the visitors. By knowing and rightly influencing the critical pivots that create value for the visitors, museums can influence the intentional behavior to revisit and recommend the museum (Chen & Chen, 2010).

The common perspective in managing organizations argue that the delivering of superior visitor value will increase the value of organizations (Woodruff, 1997). Visitor value is defined as what a visitor wants and believes to get from purchasing a good, service or experience (Slywotzky, 1996). High visitor value leads to high visitor satisfaction, which will positively influence the behavioral intentions of the visitor which on their turn will create visitor loyalty (Chen & Chen, 2010). Visitor loyalty is what organizations want to create since loyal visitors are more likely to recommend the organizations to their family, friends and relatives (Shoemaker & Lewis, 1999).

The creation of visitor value differs a lot per sector. For example, in the retail sector product quality and price are major antecedents that influence the created value, while in the service industry it is about the perceived service quality and the price (Sweeney, Soutar, & Johnson, 1997). In addition, value is created by expectations that are met, also called the expectation-confirmation theory (Bhattacherjee, 2001). Therefore, it is valuable to understand and manage the expectations (Rowley, 1999). The expectations of visitors have to match the quality of the service that will be provided. According to Chen & Chen (2010) expectations have a significant influence on the conceptualization of service quality, experience and often affect the post-memory of the visitors. Additionally, the expectations are likely to influence the experience of the perceived service (Nath, Devlin, & Reid, 2018). Expectations can be categorized in five dimensions: responsiveness, reliability, tangibility, assurance and empathy (Babakus & Mangold, 1992; Buttle, 1996; Jain & Gupta, 2004; Lucas Jr, 1972; Parasuraman, Arun, Berry, & Zeithaml, 1991). These dimensions are part of the SERVQUAL-model which will be used as scale to measure visitor value.

In addition, according to Kidd (2011) Social Media posts of organizations are likely to influence the expectations of visitors. When the expectations are met, value is created. However, when expectations are not met, dissatisfaction can arise (Kidd, 2011). This is in line with the expectation-confirmation theory of Bhattacherjee (2001). Hence, it is interesting to study the effect of social media on the expectations of museum visitors and if this creates value or decreases value. Especially when taking into account that the museum sector is still exploring their ways of effective marketing and little is known about the marketing techniques that are used by Dutch museums. Therefore, this study can shed light on the influence of social media on the expectations of visitors of Dutch museums and if the created expectations are accurate and create value or if they are not met and diminish value.

Therefore, the formulated research question is: *How do social media affect the valuation of Dutch museums?*

This thesis contributes to academic literature in several ways. First of all, it will shed light upon the outcomes of the valuation process and the expectations influenced by social media of visitors of Dutch museums. Hereby the thesis tries to create new insights in existing theories of unknown usability. This can be of theoretical value for advisors and consultants.

Secondly, this thesis provides insights into the existing knowledge of expectations of museum visitors and on the relationship of social media and the expectations in the museum sector from the perspective of the visitors. Scholars state that research into the expectations and experience of visitors in the museum sector is required to provide insights into the perspective of the visitors (Ek, Larsen, Hornskov, & Mansfeldt, 2008; Sheng & Chen, 2012). This indicates a gap and therefore this thesis will provide information to fill this gap by studying the effects of social media posts of Dutch museums and their influence on the expectations of their visitors. In addition, this thesis will shed light on the gap provided by Sheng & Chen (2012) about how the perceived experience is influenced by expectations. More knowledge about these concepts will be gathered in this thesis. Furthermore, Kidd (2011) indicated that there are a lot of new possibilities for museums by using social media. However, social media posts that create misalignment with the expectations of visitors can be harmful for the image of museums. Therefore, this thesis provides information about the influence of social media posts of Dutch museums. Additionally, there has been a lot of research on customer value creation, but there is little knowledge of visitor valuation of visitors of Dutch museums. Gathering this knowledge would be of great value for the museum sector and will also have a great theoretical and academical value. This thesis will therefore be an important contribution to the Dutch museum

sector. The thesis is theoretically relevant for the Masters' specialization Innovation & Entrepreneurship since it offers insights in managing expectations of museum visitors by the use of social media channels.

Practically the thesis provides knowledge for the museum sector about the influence of expectations on the perceived experience of visitors and how social media marketing tools influence the expectations for Dutch museum visitors. Thereby museums can see the relevance of focusing on social media and expectations to create higher visitor value which will lead to satisfaction and loyalty (Chen & Chen, 2010).

2 Theoretical framework

The following section will shed light on the theoretical background information that is needed for this research. Later in this chapter the hypotheses are stated and finally, the conceptual model is created.

2.1 Visitor-value

Visitor value has been defined by many different authors. Anderson et al. (1993) describe visitor value as the perceived worth that a person gets in the form of social, economic, technical and service benefits in exchange for the paid amount of that product or service. Another definition of visitor value is the established bond that is created when a visitor buys a product or service and identifies the added value of the purchase (Butz Jr & Goodstein, 1996). In addition, most authors agreed upon a quite similar definition of visitor value as "*the perceived quality that is delivered for a certain price. When the perceived quality meets the expectations visitor value is created"* (Anderson, J. C., Jain, & Chintagunta, 1992; Butz Jr & Goodstein, 1996; Gale, Gale, & Wood, 1994; Monroe, 1990; Zeithaml, 1988). An important addition to this definition is that visitor value is interpreted differently for everyone, the valuation is different for each individual (Smith & Colgate, 2007).

As stated in the definition of visitor value, value is created if expectations are met. Additionally, met expectations can have many beneficial consequences for organizations such as perceived service quality, satisfaction, perceived value and loyalty (Susanto, Chang, & Ha, 2016). Hence, it is important to understand what expectations are and how they are measured.

First of all, expectations will be elaborated. According to Chen & Chen (2010) visitor expectations are the expectations of the visitor before they experience the situation. The expectations have a significant influence on the conceptualization of service quality, experience and often affect the post-memory of the visitors (Chen & Chen, 2010). However, expectations of visitors differ per individual. Antecedents like prior visits and first-time visits or novices and experts in the theme of the museum influence the expectations (Falk & Dierking, 2016). Different scholars acknowledge the significantly large role of expectations of customers and visitors in the overall valuation and satisfaction of the experience (Parasuraman, Anantharanthan, Zeithaml, & Berry, 1985). In addition, scholars discussed the role of expectations and the influence on the perceived experience. When the perceived experience meets the expectations, the expectations are confirmed and value is created. This is called the confirmation theory (Oliver, 1980). However, it can also have the reverse effect. This happens

when expectations are created, but these expectations are not in line with the reality. Subsequently, the visitors will compare the expectations with the actual perceived experience. The inaccurateness of the experience will then be explained by the disconfirmation paradigm and leads to diminished value of the experience (Westbrook & Reilly, 1983). However, Lin et al. (2009) indicate that expectations depend on the price or brand image of the organization. People have lower expectations with companies that are unknown and have low costs. As a result, a lesser experience with low expectations can still receive a high valuation. In addition, brand image can lead to many benefits that can create value for museums. As example, the museum has more capital and can invest in more exhibitions, has a better website through more capital and better website findability. All these benefits can lead to higher revenues (Caldwell, 2000; Evans, Bridson, & Rentschler, 2012; Lin, Tsai, & Chiu, 2009).

Hence, it is useful to study the expectations of the visitor to get insights in how they value their museum visit. Parasaruman et al. (1985) created a model that indicates how expectations can be measured, the SERVQUAL-model. From origin the SERVQUAL-model was developed as a marketing tool by marketing researchers to assess the overall service quality. The model provides an abstract view about the expectations that consumers have of the service they purchase. These expectations will be compared to the perceived service and so the perceived service quality is created.

The model has 22 items that have five underlying dimensions that are used to evaluate the service quality of every kind of service (Parasuraman et al., 1985). The five underlying dimensions of the model are assurance, responsiveness, reliability, tangibility and empathy. *Assurance* refers to the knowledge of the staff and their ability to inspire and trust. *Responsiveness* relates to the ability of the company to react and to help visitors in an accurate and prompt manner. *Reliability* is the ability of the company to provide the promised service accurately. *Tangibility* is the physical part of the service and the personnel. Finally, *empathy* refers to the ability to give caring and individualized service to every individual (Parasuraman et al., 1985).

The SERVQUAL-model captures the service quality for each dimension in the gaps. Every gap measures the difference between expected and perceived service and has their own score which in the end sum up the experienced quality that influences the value creation (Jiang, Klein, & Carr, 2002; Parasuraman et al., 1985). The application of the SERVQUAL as scale will be further elaborated in chapter 3.

Secondly, the consequences of value creation will be elaborated. According to the research of Oh (1999) visitor value is an important variable that leads to visitor satisfaction and word-of-mouth communication. Visitor value can be considered in the quality of services and the satisfaction of visitors. Visitor value and the quality of services combined create a mediating effect that leads to visitor satisfaction (Oh, 1999). According to Chen & Chen (2010) every organization wants to create visitor value and satisfied visitors. Satisfied visitors are more loyal to an organization and this will lead to positive word-of-mouth promotion (Shoemaker & Lewis, 1999). In addition, Oh (1999) concluded that it is important to focus on visitor value since the lack of focus on visitor value may cause lower visitor satisfaction what will lead to reduced revisits and reduced word-of-mouth promotion. Another important outcome of the study of Oh (1999) is that price negatively influences perceived price, which in their turn negatively influences the perceived visitor value. The reason behind this is the price-quality reasoning of the visitors. By having a higher price, the visitors will set higher expectations that are harder to meet. In such a situation visitors will often value the experience less than having low expectations (Oh, 1999). These findings are in line with the results of prior research of Anderson & Chintagunta (1992), Butz Jr & Goodstein, Gale & Wood (1994), Monroe (1990) and Zeithaml (1988) and strengthen the formulated definition of visitor value.

2.1.1 Consequences of visitor value

This section provides additional information about the consequences of visitor value, visitor satisfaction and loyalty. However, to demarcate the scope of this research only visitor value will be examined during this research. Nevertheless, the following subsection is added to the theoretical background to provide insight in the beneficial effects of visitor satisfaction and visitor loyalty (Anderson et al., 1992; Butz Jr & Goodstein, 1996; Gale et al., 1994; Monroe, 1990; Zeithaml, 1988).

Rust & Oliver (1993) state that visitor value determines the satisfaction of visitors and define visitor satisfaction as the positive feelings that a person creates through the delivered experience (Rust & Oliver, 1993).

In marketing literature visitor and customer satisfaction are one of the most studied topics (Anderson, E. W., Fornell, & Lehmann, 1994; Dalla Pozza, 2014; Kumar, Dalla Pozza, & Ganesh, 2013). There are three categories of research in which visitor satisfaction plays an important role. The first one is conceptualization studies on visitor satisfaction, the second

category consists of studies about the antecedents that influence visitor satisfaction and the third one consists of studies about the consequences of visitor satisfaction (Dalla Pozza, 2014).

First of all, the concept of visitor satisfaction is elaborated. Scholars have defined two different kinds of satisfaction. These are transactional satisfaction and cumulative satisfaction (Anderson et al., 1994; Dalla Pozza, 2014; Maxham III & Netemeyer, 2002). Transactional satisfaction is created as overall satisfaction from an experience delivered by a firm. Maxham III & Netemeyer (2002) state that transactional satisfaction leads to word-of-mouth promotion to friends, relatives, and family. Transactional satisfaction can only be created by novel recent experiences. When customers are satisfied with their novel experiences, they are willing to share them. Cumulative satisfaction arises over a certain period of time and is created by repeated experiences. Therefore, it is harder to break down the satisfied mindset to a brand or service that is created through cumulative satisfaction (Gustafsson, Johnson, & Roos, 2005). In other words, cumulative satisfaction creates loyalty and can be really beneficial for companies.

Secondly, scholars found a lot of information about antecedents of visitor satisfaction. As already explained in section 2.1, visitor value is an important contributor to visitor satisfaction (Oh, 1999). According to Anderson et al. (1994), there are more antecedents that drive visitor satisfaction. Price, quality, and expectations are significant influencers of visitor satisfaction. These factors are also antecedents of visitor value and indicate that these variables are strongly correlated.

Thirdly, a lot of research has been done on the consequences of visitor satisfaction. Visitor loyalty, providing feedback to the supplier and word-of-mouth promotion are significant behavioral results of high visitor satisfaction (Anderson, E. W. & Sullivan, 1993; Söderlund, 1998). Another consequence of visitor satisfaction is the effect on willingness to pay more and satisfied visitors are less likely to complain (David Mc A, 2013). The conclusion can be drawn that visitor satisfaction is highly wanted for organizations and will lead to beneficial advantages for organizations.

In addition, evidence was found on the ultimate consequence of visitor value, loyalty. The most specific definition of visitor loyalty is: *"Visitor loyalty is viewed as the strength of the relationship between an individual's relative attitude and repeat patronage. The relationship is seen as mediated by social norms and situational factors. Cognitive, affective, and conative*

antecedents of relative attitude are identified as contributing to loyalty, along with motivational, perceptual, and behavioral consequences" (Dick & Basu, 1994) (P.99).

The concept loyalty has two dimensions: behavioral loyalty and attitudinal loyalty. Behavioral loyalty influences the emotional state of a person to repurchase or revisit the experiences of a certain brand. Attitudinal loyalty describes the view of a person on a certain brand or product. In this situation, the person has a psychological commitment to the product, which makes them exclude other brands or products (Lee, Kyle, & Scott, 2012). As mentioned in the sections before, visitor value leads to satisfaction which on their turn will lead to loyalty. Therefore, in the service industry behavioral loyalty is relevant and can be beneficial for organizations like museums (Oh, 1999). Therefore, it is helpful to understand how loyalty is created for organizations in the service industry. So, in order to benefit from loyalty, it must first be discovered how value is created for visitors.

2.2 Social media use

Social media have become widely used tools for daily online communication (Luo & Zhong, 2015). In addition, social media come in many forms and for different purposes. For example: social networks such as Instagram and Facebook, microblogs such as Twitter and media sharing sites such as YouTube (Zarrella, 2009). In this thesis the focus will be on the marketing purpose of social media. Social media marketing is defined as: *"the utilization of social media technologies, channels, and software, to create, communicate, deliver, and exchange offerings that have value for an organization's stakeholders."* (Tuten & Solomon, 2017) (P.18)

Scholars argue that marketing of today is about the sense of satisfying the customer needs (Kotler, Burton, Deans, Brown, & Armstrong, 2015). This begs the question how can organizations like museums can effectively use marketing with such a small budget. Kidd (2011) contributed interesting findings of the use of social media for museums. She argues that the use of social media is one of the easiest and cheapest ways of promoting and informing about new exhibitions, upcoming events and can also help to make the institutions grow amongst individuals and communities. However, Kidd (2011) also discussed the risk of social media marketing. Since the use of social media can create expectations for the visitors. When these expectations are not met, or wrongly interpreted dissatisfaction can arise. According to scholars Facebook and Twitter are the most efficient and used social media channels for organizations (Ashley & Tuten, 2015). According to the research of Ashley & Tuten (2015) 96% of their studied organizations made use of social media channels as Facebook and Twitter to connect to their

customers and visitors. However, a social media channel that Ashley & Tuten (2015) excluded is Instagram. Instagram has become an influential photo platform that can positively influence the image of people or organizations (Nixon, Popova, & Önder, 2017). Organizations use Instagram as a marketing tool to connect to (potential) customers and visitors. Additionally, companies use Instagram to share live updates about their brand, products or services through photos via the application (Bergström & Bäckman, 2013). The use of Instagram is already adopted by many Dutch museums and reaches a lot of followers (Rijksmuseum 347k followers and Stedelijkmuseum 140k followers) (Rijksmuseum, 2019a; Stedelijk Museum, 2019). Therefore, the social media channel Instagram cannot be excluded as one of the most influential social media channels. Additionally, evidence was found that customers who use social media more intensive are more engaged with the company (Dijkmans, Kerkhof, & Beukeboom, 2015). In addition, evidence was found that the behavior of engaged customers makes them adjust their expectations (Alexander & Jaakkola, 2015).

Another online tool that significantly influences the success of organizations is the website (Li, Wang, & Yu, 2015). Websites can be used to spread commercial information about the organization to the customers, business partners, and other stakeholders. Communication via the website can offer opportunities that lead to long-term customer relationship (Li et al., 2015). Websites are part of the online dissemination of information therefore this thesis will consider websites as a social media tool. Additionally, Poria et al. (2006) found evidence that the expectations of museum visitors are influenced by the information on the website of the museum (in this case the Anne Frank House). Visitors who study the website before their visit are emotionally more involved with the museum and want to get educated due to their prior knowledge (Poria, Reichel, & Biran, 2006). This can be an interesting insight into the expectations of visitors of the museum sector if this effect would be the same for studying the social media channels of a museum before visiting. If museums can find out if the information on the website or social media channel is studied by the visitors, they can create better interaction with the involved visitors.

Additionally, in the above-mentioned sections the main topic is content that is created by organizations for their visitors and customers. However, social media can also be used to gather information created by users. Information that is provided by users is called user generated content (UGC) (Narangajavana, Fiol, Tena, Artola, & García, 2017). Visitors and tourists can create content by photographs, videos and comments about their own experiences. By creating this content, users provide new information which can influence the expectations of (future)

visitors. This indicates that visitors can utilize social media as search engine to create expectations before their visit to the museum (Luo & Zhong, 2015).

To summarize, some interesting marketing antecedents are found that can influence the expectations and value of visitors of Dutch museums. Social media channels and websites seem to influence the expectations of visitors. Hence, the research will focus on what the effect is of viewing the social media and the website of museums on the expectations and test if these expectations can be met to create value.

Therefore, the following hypotheses are created:

H1: Visitors value the museum higher when they have viewed social media before the visit

H2: Visitors value the museum lower when they have viewed social media before the visit

The stated hypotheses are based on value creation through the mechanism expectations, where expectations explain the connection between the independent variable social media use and the dependent variable visitor value. Therefore, expectations are considered as part of value creation. Nevertheless, the hypotheses will test if social media creates accurate expectations of the museum visit and therefore creates high value, or, if social media creates inaccurate expectations of the museum visit and therefore creates low value (Anderson et al., 1992; Butz Jr & Goodstein, 1996; Gale et al., 1994; Kidd, 2011; Monroe, 1990; Parasuraman et al., 1985; Westbrook & Reilly, 1983; Zeithaml, 1988).

Therefore, the underlying conceptual model is drawn (figure 2.1).

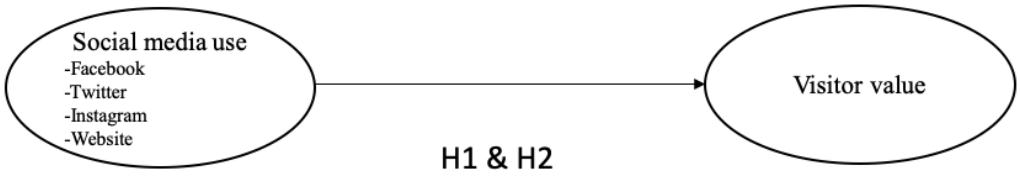

Figure 2.1 Conceptual model

3 Methodology

In this chapter, the methodology will be justified. This chapter will present the research design that will empirically test the formulated hypotheses for the research. Finally, the sample description that has been used during this research will be elaborated.

3.1 Research strategy

According to the literature there are different ways of conducting research, such as an organizational study, experiments, surveys and case studies (Yin, 2014). In this research a quantitative study with surveys will be executed. According to Yin (2014) research with several cases need to be conducted to create an unqualified result. More completed surveys will increase the confidence and certainty the research provides about reality. This research investigates the effect of viewing the social media of a museum before the visit on the final valuation. For this, expectations are used as a mechanism to see whether they can be realized or not. For the museum sector it is important to get insights into these factors, so they can benefit from the provided information this study will provide. Hence, it is important to gather as much data as possible to ensure that the research is reliable and can be interpreted from the perspectives of different museums. When conducting qualitative research, the study will provide deep insights on only a limited group of people (Yin, 2014). Therefore, it is more obvious to conduct a quantitative study that sheds light on the expectations of Dutch Museum visitors than conducting a case study that only takes several cases into account. In addition, it is not ideal to interview museum visitors after their visit, since they are most likely not interested in conducting a lengthy interview at that time. For this reason, a short survey is deemed the best method for this research.

For this research a deductive research is chosen since a lot has been written about social media, expectations and visitor value. However, little is known about the influence of these concepts in the (Dutch) museum sector. Therefore, this research can contribute theoretically and practically by testing the effects of social media use on the expectations and the visitor value and confirming or invalidating the existing literature (Bleijenbergh, 2015). Therefore, hypotheses are created that will be tested during this research.

According to Yin (2014) surveys and other quantitative methods tend to generalize the overall population. This can be done by conducting a web-based questionnaire. A web-based questionnaire provides the possibility to gather a large amount of data in relative short time (Babbie, 2010). In the questionnaire the respondents will be asked to report on their experiences

of their most recent museum visit. All obtained information is considered as private information and will remain only available for the researcher. Therefore, the choice is made to conduct an anonymous web-based questionnaire so there is no social obstacle to participate in the research.

3.2 Operationalization

In this section, the operationalization of the variables will be elaborated.

3.2.1 Visitor value

For the operationalization, the studied literature of chapter two is used. As first the concept of the dependent variable visitor value will be measured by questions based on the SERVQUAL-model and adapted from several studies that used the SERVQUAL-model as scale (see table 3.1). The model has five dimensions responsiveness, assurance, reliability, empathy and tangibility. However, the dimension reliability will not be included in the survey. The reason for this is that questions of reliability do not exclude other dimensions in the case of museums. The dimensions of visitor value will be measured by a 5-point Likert scale with answering possibilities of (1) totally disagree to (5) totally agree.

Table 3.1 Operationalization visitor value

Tangibles
The museum is easy to reach by car
The museum is easy to reach by public transport
The museum provides a clear map with the locations of exhibitions
The exhibitions are interesting
The exhibitions are beautiful
The exhibitions are inspiring
The museum makes use of interaction
The museum makes use of audio/visuals
The museum makes use of augmented reality
The museum has a museum-shop
The museum has a restaurant
Responsiveness
The museum staff tells you when the tour is going to start
Staff in the museum is prompt in providing answers on questions and solving problems
Staff in the museum is willing to help me
The staff is never too busy to respond to requests
Assurance
The staff is consistently courteous
I feel secure inside the museum
The behavior of the staff gives me confidence to ask questions
Empathy
The staff gives visitors individual attention
The opening hours are convenient for visitors
The staff understands visitor needs

Source : (Nowacki, 2005; Pantouvakis, Chlomoudis, & Dimas, 2008; Parasuraman et al., 1985)

3.2.2 Social media use

The effect of prior use of social media on visitor value will be assessed by a nominal scale. Therefore, closed questions will be asked. These questions will be regarding viewing the social media pages of museums prior the visit. By testing, if the visitor has viewed the social media pages before the visit the study attempts to find prove on the effect of social media use on visitor value. The questions that are formulated for the independent variable social media use are adapted from scholars who studied the influence of social media use on different dependent variables (see table 3.2). Because the variable is considered nominal, it was decided to split the scale into four separate questions. Of these four separate questions, one will function as an independent variable and three as a control variable.

Table 3.2 Operationalization Social media use

Social media use
Before my last visit to a museum I visited the (Facebook, Instagram, Twitter, website or none of the social media) of the museum
Control variables
Age
Gender
Daily use of social media
Weekly use of social media
Did you find what you were looking for on the social media / website of the museum?

Source: (Anderson, K. C., Knight, Pookulangara, & Josiam, 2014; Correa, Hinsley, & De Zuniga, 2010; Ellison, Steinfield, & Lampe, 2007; Kidd, 2011)

3.3 Research ethics

When doing research there are ethical obligations, researchers have to follow guidelines before conducting research. According to Babbie (2010), this concerns the way of reporting and how the data is analyzed. First of all, the ethical safety of the respondents will be elaborated. During this study, all the participating respondents of the research will participate voluntarily. Meaning that none of the respondents was obliged to fill in the survey and they were all able to stop filling in the survey if they want to. Furthermore, all the respondents will stay anonymous. There were no questions regarding private information, such as name or place of residence. If the respondents wanted to receive the results of the research, they had an option to fill in their email address. This option was voluntary for the respondents. All collected e-mail addresses are only visible to the researcher and are treated with care. Secondly, the data that is gathered during this research will only be used for this master's thesis and not for any other purposes. Therefore, all the respondents are informed about the confidentially of this research before participating by Radboud University and the researcher.

3.4 Sample description

All frequency tables that are discussed in this section can be found in Appendix 2.

The sample that is used for the data analysis consists of 395 respondents of which are 183 men and 212 women. Based on gender there is a minimum difference on how men and women value the museum visit (see table 3.3).

Table 3.3 Difference mean Gender

Report			
Valuation			
Gender	Mean	N	Std. Deviation
Man	3.9607	183	.46774
Woman	3.9720	212	.42611
Total	3.9667	395	.44534

The age of the respondents varies between 16 and 80 years old and has an average of 29.3 and mode of 25. This is an interesting finding since the council of culture (2017) indicates that all age groups are represented by around 17% (6-11, 12-19, 20-34, 35-49, 50-64 and 65+ years old) this is a big difference with the outcome of this study since the age category 20-34 years old is represented by 76.7% (see table 3.4). From this it could be interpreted that the age of the visitors is not spread, but that the younger generation (20-34 years old) is increasingly visiting museums. Another explanation for this finding is that the researcher has distributed the survey in its own social environment. This makes it logical that there are more younger respondents since the researcher himself also falls into this age category.

Table 3.4 Frequency table – Age Groups 2 (comparable to age groups of Council for Culture (2017))

AGEGRP2					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12-19	20	5.1	5.1	5.1
	20-34	303	76.7	76.7	81.8
	35-49	16	4.1	4.1	85.8
	50-64	51	12.9	12.9	98.7
	65+	5	1.3	1.3	100.0
	Total	395	100.0	100.0	

Out of the respondents 40 checked the Facebook-page of the museum before the visit, 29 viewed the Instagram-page, 2 checked the Twitter account, 214 visited the website and 159 visited none of the social media pages (these numbers do not add up to 395 because multiple answers were possible). It is interesting that visitors hardly ever look at the Twitter page of museums, even though museums still use Twitter frequently to give updates about their exhibitions and other news. For example, the Rijksmuseum still posts daily updates via Twitter (Rijksmuseum, 2019b). This implies that museums still use Twitter but visitors do not feel the need to check a museum's Twitter before their visit.

Furthermore, 21 of the respondents found what they were looking for on the Facebook-page, 15 on the Instagram, 1 on the Twitter account, 230 on the website and 149 did not find what they were looking for at all. However, this data appears to be inconsistent since only 214 used the website to search for information, and 230 indicate that they have found the information on the website. In the limitations this inconsistency will be reflected. Furthermore, 11 of the respondents did not use social media, 21 use social media less than one time a day, 115 use social media 1-5 times a day, 103 use social media 5-10 times a day and 145 use social media more than 10 times a day. Additionally, 41 of the respondents visited a museum by their self, 19 came with a tour group and 335 visited a museum with friends and/or family. Of this group 28 respondents visited a museum for their work, 320 for pleasure and 47 to learn from the experience. In total the respondents visited 107 different Dutch museums and the most often visited museum is Rijksmuseum Amsterdam with 106 visitors in this data set (see appendix 2.3).

In addition, the researcher has manually divided the museums into categories. According to the CBS (2017) and Council for Culture (2017) there are 5 different museum types in the Netherlands: History, Business, science and technology, Art, Natural history and Ethnology museums. Table 3.5 shows the difference between the data from the CBS and the type of museums the respondents from this research visited. The data mainly indicates a difference in the categories business, science and technology and art museums. An interpretation that can follow from this is that even though there are more business, science and technology museums, visitors are more likely to visit art museums. Further analysis of the different types of museums will be conducted in chapter 4.

Table 3.5 Type of museum

Type	Visits	% visits	Visitors	% visitors	CBS statistics	Difference
History museum	46	43.0%	226	57.2%	59%	1,8%
Business, science and technology museum	13	12.1%	25	6.3%	20%	13,7%
Art museum	34	31.8%	120	30.4%	12%	-18,4%
Natural history museum	9	8.4%	9	2.3%	6%	3,7%
Ethnology Museum	5	4.7%	15	3.8%	3%	-0.8%
	107	100.0%	395	100.0%	100%	

4 Results

In chapter 4 there will be a statistical analysis of the data generated during the research. Chapter 4 starts with the reliability of the data and factor analysis. Secondly the assumptions of the regression analysis are checked and the data will be analyzed. After this, the regression analysis of the entire data set was performed. Then the control variables are added and after these analyses, additional analyses of the factors, the type of museum and Rijksmuseum were added. Finally, the hypotheses will be tested.

4.1 Reliability and factor analysis

As first the normality of the distribution is assessed (see appendix 3.1). For most items the kurtosis and skewness values lay between the threshold value of -3 and +3 which means that the data is normally distributed (Hair, Black, Babin, & Anderson, 2014). The exceptions are Public transport (OV), Opening time (Openingstijd) and Safety (Veilig). These items will remain included for the factory analysis. However, in the case that these items do not meet the assumption of the factor analysis they will be excluded from the analysis.

To determine if factor analysis can be used to analyze the data, the following assumptions have to be met. Firstly, the KMO and Bartlett's Test of Sphericity have to be checked. The KMO test is used to determine if the proportion of variance in the variables is explained by the factors (Field, 2014) . Therefore, the threshold is > 0.5. Bartlett's Test of Sphericity checks if there are correlations between the variables. The threshold of Bartlett's Test of Sphericity is < 0.05. Appendix 3.2 shows the output of the KMO and Bartlett's Test. The value of KMO is 0.782 and Bartlett's Test of Sphericity has a value of $p > 0.001$ therefore it can be concluded that factor analyses can be used.

For the exploratory factor analysis, the decision is made to conduct a principal component factor analysis with the Oblimin rotation method. Oblimin rotation method is used because of the theoretical expectations of the items to be correlated (Hair et al., 2014). The factors were created based on the eigenvalue. The eigenvalue indicates that 6 factors are necessary to explain 63.509% of the variance.

As second assumption the communalities are checked. All the communalities have to be above the threshold value of 0.2, if the communalities are below 0.2 the items will be excluded from the factor analysis (Hair et al., 2014). During this stage the items (1) Augmented Reality, (2) Safety, (3) Opening Time and (4) Floor plan were deleted from the analysis since they did not meet the assumption. (The full iteration process can be found in appendix 3).

For the third assumption that has to be met during the factor analysis, the double loaders have to be checked. All the items that load high on two different categories (less than 0.2 difference) have to be deleted from the analysis (Hair et al., 2014). In this process the items (5) Public transport and (6) Car were deleted from the analysis.

After the deletion of the items the full factor analysis was run again. Without the 6 items that did not meet the assumptions, 4 factors came forward. The 4 items explain 67.769% of the variance (see appendix 3.11). However, the factors that were created by Parasuraman et al. (1985) are not found in this analysis (Tangibles, Responsiveness, Empathy and Assurance). Table 4.1 provides a visual representation of what the items should have loaded on and what they were actually loading. The researcher has tried to make the SERVQUAL factors come back as logically as possible and has therefore tried to link them to factors, but as table 4.1 shows, the factors cannot be found. Therefore, it has been chosen that the red X indicates where the item should have loaded on and the green X where it actually loads on. Since the items do not load on the factors where it should load on and the factors cannot be found back it means that the SERVQUAL lacks construct validity in the case of measuring service quality in museums (Hair et al., 2014). The lack of construct validity will be further discussed in the discussion.

Because the factors of the SERVQUAL cannot be found in the data, the researcher chose to rename the factors. Therefore, new factor names were created. Factor 1: Service, Factor 2: Exhibition, Factor 3: Activities and Factor 4: Facilities. These four factors will be used to create the variable valuation, which will be used as dependent variable in this research (see table 4.1 and appendix 3.9).

Table 4.1 Difference between SERVQUAL scale and factors in study

	1 Service - Responsiveness	**2 Exhibition - Tangibles**	**3 Activities - Assurance**	**4 Facilities - Empathy**
The exhibitions are interesting		X X		
The exhibitions are beautiful		X X		
The exhibitions are inspiring		X X		
Staff in the museum is willing to help me	X X			
The staff is never too busy to respond to requests	X X			
The staff is consistently courteous	X		X	
The behavior of the staff gives me confidence to ask questions	X		X	
The staff gives visitors individual attention	X			X
The staff understands visitor needs	X			X
The museum makes use of interaction		X	X	
The museum makes use of audio/visuals		X	X	
The museum shop met my expectations		X		X
The restaurant met my expectations		X		X
The museum staff tells you when the tour is going to start	X		X	
Staff in the museum is prompt in providing answers on questions and solving problems	X X			

X – Where it should load on, X – Where it actually loads on

Finally, the reliability of the construct is assessed, for which purpose the Cronbach's Alpha test is used. According to Hair et al. (2014) the desired value of the Cronbach's Alpha is > 0.7, however > 0.6 is acceptable, if the value lays underneath 0.6 it means that the construct has a bad reliability (see table 4.2).

Table 4.2 Cronbach's Alpha score

Factors	Cronbach's Alpha
Factor 1 - Service	0.889
Factor 2 - Exhibition	0.824
Factor 3 - Activities	0.725
Factor 4 - Facilities	0.603

Based on the Cronbach's Alpha scores in table 4.2 it can be concluded that the reliability of factor 1, 2 and 3 is desirable and the reliability of factor 4 is acceptable. Together the 4 factors form the dependent variable valuation.

4.2 Univariate analysis

Before further analysis will be conducted there will be an univariate analysis of the construct *valuation* and the four factors that create the construct of *valuation*. The mean of the four factors was used to create the score of the construct *valuation.* After creating the factor scores the missing values for the answer possibilities of N/A (which are interpreted as missing values) were changed to the mean of that variable. By changing the missing values to the mean all the respondents can be assessed in further analysis (Field, 2014). The reason the researcher chose for this transformation is because if a single item was answered with N/A, the respondent could no longer be included in the study due to the inability to derive an average from the respondent's factor. If it had been decided to accept this, there were only 44 valid observations left, making it a waste of the dataset (see appendix 4.1.8).

The items for the construct valuation have been measured by a 1-5 Likert scale with the answering possibilities of 'totally disagree' (1) to 'totally agree' (5). For the items 'interaction possibilities', 'audio/visuals', 'museum shop', 'museum restaurant', 'tour' and 'answering questions' the option to answer N/A was included.

Table 4.3: Univariate analysis

	N Valid	N Missing	Mean	Std. dev.	Skewness	Kurtosis
Valuation	*395*	*0*	*3.9667*	*0.44534*	*-.492*	*.799*
Factor 1 – service	395	0	3.8089	0.65299	-.199	.247
Factor 2 - Exhibitions	395	0	4.1578	0.72395	-1.256	2.274
Factor 3 - Activities	395	0	4.1467	0.44104	-1.163	2.982
Factor 4 - Facilities	395	0	3.9627	0.61824	-1.199	3.021

To assess if the data is normally distributed the skewness and kurtosis have to be between the critical values of +3 and -3 (Hair et al., 2014). When looking at the univariate analysis it can be concluded that the skewness and kurtosis of *valuation* meets this assumption (see table 4.3). However, this is not the case for Factor 4: Facilities. Therefore, the researcher chose to increase the normal distribution by adding a logtransform to this factor. However, after adding the logtransform the distribution became pointier (kurtosis = 14.117, see appendix 4.1.9). Therefore, it is decided to keep the old Factor 4: Facilities that exceeds the assumption with 0.021. For the dataset, this means that there are many high scores within the facilities factor. This explains the pointy distribution (Field, 2014).

Finally, the averages of the factors and items were looked at. As explained in the previous section, valuation consists of four factors. If we look at the average scores, we see that the respondents give an average of 3.967 out of 5 for a museum visit. All factors that make valuation together do not differ much from this. The biggest difference is with factor 2: exhibitions and that difference is only 0.1911 (see table 4.4).

Table 4.4 Descriptive statistics factors and DV valuation

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Valuation	*395*	*2.04*	*4.93*	*3.9667*	*.44534*
Factor 1 - Service	395	1.29	5.00	3.8089	.65299
Factor 2 - Exhibitions	395	1.00	5.00	4.1578	.72395
Factor 3 - Activities	395	2.33	5.00	4.1467	.44104
Factor 4 - Facilities	395	1.00	5.00	3.9627	.61824
Valid N (listwise)	395				

However, if we look at the frequency table in appendix 2.1 it can be seen that some items differ quite a lot of the mean of valuation. For example, the item *'the staff gives visitors individual attention'* has an average score of 3.3. This almost 0.7 lower than the average score of valuation and indicates that visitors of museums are less satisfied with the personal attention that is delivered in Dutch museums compared to the overall experience. Furthermore, it seems that visitors generally feel very safe in museums (mean = 4.57), they are satisfied with the opening

times (mean = 4.47) and satisfied with the reachability of the museum by public transport (mean = 4.55).

4.3 Linearity

Before the regression analysis can be assessed some assumptions have to be met. The first assumption that has to be met is the linearity. To test the linearity the residual plot has to be checked (appendix 4.1.3). The scatterplot shows two outliers. Since polynomial terms are not possible with dummy variables, the outliers have to be deleted to create a linear scatterplot that meets the assumptions of linearity. The results of deleting the respondent 353 is (Adjusted R^2 = 0.012, F (4, 389) = 2.368, p = 0,066) (appendix 4.1.4 and 4.1.5) and after deleting respondent 52 (Adjusted R^2 = 0.018, F (3, 389) = 2.368, p = 0,07) (appendix 4.1.6 and 4.1.7). The explained variance of the model is slightly increasing with 0.006. However, after deleting the two outliers the ANOVA test becomes insignificant. When the ANOVA test is not significant it is not allowed to use the regression model as predictor of the independent variables and therefore the variables cannot be compared. Hence, the decision is made to keep respondent 353 and respondent 52 in the analysis. However, this means that the results have to be interpreted with caution. Especially because it has to be taken into account that respondent 353 and respondent 52 were the only two respondents who viewed the Twitter of the museum before their visit. If the outliers are removed, it means that a component is omitted from the database that has been observed. This will decrease the representativeness of the database. Because the researcher finds it more important that there are interpretable results and the research is representative, it has been decided to keep the outliers in the research.

4.4 Multicollinearity

The second assumption that has to be met is multicollinearity. To test the multicollinearity the correlation between variables will be assessed (Hair et al., 2014). The critical values to assess multicollinearity are VIF < 10 and tolerance value > 0.2 if the tolerance value is below 0.2 a potential problem is indicated and if the value is below 0.1 it indicates a serious problem (Field, 2014). All the tolerance values are above 0.9 and the VIF values are about 1 (see appendix 4.1). Therefore, it can be concluded that the assumption of multicollinearity is met.

4.5 Constant variance of error terms

To decide if the data is homoscedastic the scatterplot is checked in appendix 4.1.3. To assess if the data is heteroscedastic a clear consistent pattern has to be found among the residuals in the scatterplot (Hair et al., 2014). However, the plot shows a small pattern. This makes it fall into a

gray area whether it is heteroscedastic or homoscedastic. If it is heteroscedastic, it means that the variance around the estimated values of Y is uneven for all values of X. Because of this, the conclusions will have to be interpreted with caution (Field, 2014; Hair et al., 2014). For this reason, the researcher has decided to designate the data as homoscedastic. Therefore, it is concluded that the data is homoscedastic and the assumption is met.

4.6 Normality of the error of terms

For the last assumption that has to be met, the distribution of the residuals will be assessed. The normality of the distribution can be assessed by two figures, the histogram of the residuals (appendix 4.1.1) and the normal P-Plot of regression standardized residuals (appendix 4.1.2) (Hair et al., 2014). The histogram of residuals shows that the data is not skewed to the left or right side and does not peak above the line of the mean or is flat. Based on the histogram it can be concluded that the residuals are normally distributed. The normal P-Plot of regression standardized residuals is assessed on the data plots that follow the straight diagonal line (Hair et al., 2014). In the case of this data plot it can be concluded that the full dataset almost perfectly follows the diagonal line. Therefore, the assumption of normality is met.

4.7 Regression analysis

The regression analysis is used to determine if the respondents who viewed the social media-page or website of the museum before the visit value the museum higher or lower than visitors who did not. Therefore, dummy variables were created with as reference category reference category ‘no social media use’ where no expectations were created on the basis of recent social media use. According to Hair et. al (2014) the most frequent used category is the best category to use as reference category, unless it is not in line with the research or the theory says otherwise. In this case there is no reason to not follow this rule of thumb. By using this dummy variable as reference category, the effect of social media compared to no use can be measured and therefore the hypotheses can be tested and research question can be answered. The ANOVA test indicates that the regression analysis can be used to predict the dependent variable (Adjusted $R^2 = 0.016$, $F(4, 390) = 2.619$, $p = < 0.05$) (appendix 4.1).

Table 4.5: Regression analysis, reference category 'no social media use'

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.924	.034		116.650	.000		
	Facebook	.115	.076	.078	1.513	.131	.944	1.060
	Instagram	.161	.089	.095	1.810	.071	.916	1.092
	Twitter	-.666	.325	-.106	-2.046	.041	.926	1.080
	Website	.043	.045	.048	.942	.347	.966	1.035

a. Dependent Variable: Valuation

The outcomes of the regression analysis show that compared to the reference category 'no social media use' the only category that significantly differs from the reference category is Twitter ($p < 0.05$) (see table 4.5). The regression analysis indicates that visitors who viewed the Twitter page of the museum before the visit, value the museum significantly lower than people who did not visit the social media of the museum ($B = -0.666$ lower than the constant $B = 3.924$). As a result, it can be assumed that twitter outlines incorrect expectations and that visitors therefore value their visit less than when they had no expectations. However, this conclusion has to be interpreted with caution since 'Twitter' only has two respondents among the dataset.

Since 'Instagram' is almost significant the decision is made to run the regression with 'Instagram' as reference category. Therefore, the regression analysis was also done with other reference categories than 'no social media use' (i.e. Facebook, Twitter, Website), in order to see if more interpretable results could be obtained. However, the ANOVA test was not significant (Adjusted $R^2 = 0.009$, $F (4, 390) = 1.886$, $p = 0.112$) (see appendix 4.2) Therefore, a regression analysis with this reference category was not performed. However, the decision was made to check if perhaps the other categories did show significant outcomes.

The next category that is used as reference category is Facebook (Adjusted $R^2 = 0.015$, $F (4, 390) = 2.469$, $p = 0.44$) (see appendix 4.3). The ANOVA is significant and therefore the regression can be interpreted. The regression indicates that visitors who viewed the Instagram of a museum before their visit value the museum significantly higher than the visitors who

visited Facebook before their visit (B = 0.248 higher than the constant B = 3.782) (see table 4.6).

Table 4.6: Regression analysis, Reference category Facebook

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.782	.116		32.523	.000		
	Instagram	.248	.102	.145	2.429	0.016	.698	1.433
	Twitter	-.554	.330	-0.88	-1.676	.094	.900	1.111
	Website	.195	.117	.218	1.669	.096	.146	6.830
	None	.159	.121	.175	1.305	.193	.139	7.171

a. Dependent Variable: Valuation

The fourth category that is used as reference category is Twitter. The ANOVA score is significant and therefore the regression can be interpreted (Adjusted $R^2 = 0.016$, F (4, 390) = 2.634, p = 0.34) (see appendix 4.4).

Table 4.7: Regression analysis, reference category Twitter

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.686	.118		31.123	.000		
	Facebook	.146	.078	.099	1.859	0.064	.885	1.130
	Instagram	.226	.101	0.133	2.233	.026	.709	1.411
	Website	.271	.116	0.304	2.335	.020	.148	6.777
	None	.254	.124	.281	2.060	.40	0.135	7.427

a. Dependent Variable: Valuation

When assessing the data in table 4.7 it can be seen that the categories ‘Instagram’ (B = .226 higher than the constant B = 3.686), ‘Website’ (B = .271 higher than the constant B = 3.686) and ‘No social media use’ (B = .254 higher than the constant B = 3.686) significantly differ from the reference category ‘Twitter’. From this it could be concluded that these three categories outline better expectations and therefore lead to a higher valuation. However, these findings should also be interpreted with caution as the reference category ‘Twitter’ only has 2 respondents.

4.8 Control variables

The survey contained five questions to estimate the personal characteristics of the respondent. The answers of these questions will be tested as control variables in this part of the analysis. By doing so, the researcher tries to find underlying relations that can influence the valuation of the museum. The first variable that will be tested as control variable is age.

The regression analysis indicates that the variable age does not significantly influence the valuation of the museum (Adjusted $R^2 = 0.002$, $F(1, 393) = 1.972$, $p = 0.161$) (see appendix 4.6). However, the more complex model 2 is significant. This is probably due to the significant contribution of the independent variable to the dependent variable. Nevertheless, the control variable age does not significantly influence the valuation of museums (Adjusted $R^2 = 0.021$, $F(4, 389) = 2.680$, $p = 0.021$) (see appendix 4.6). Therefore, the following regression analysis is created.

Table 4.8: Regression analysis, reference category no social media use, control variable 'age'

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.892	.058		67.461	.000		
2	Age	.003	.002	.071	1.404	.161	1.000	1.000
	Age	.003	.002	.085	1.695	.091	.986	1.014
	Facebook	.118	.076	.080	1.559	.120	.943	1.061
	Instagram	.175	.089	.103	1.965	.050	.908	1.101
	Twitter	-.708	.326	-.113	-2.173	.030	.921	1.086
	Website	.039	.045	.044	.867	.386	.964	1.037

a. dependent variable: valuation

Based on the results of table 4.8 it can be concluded that age does not significantly influence the valuation of museums. Furthermore, the table confirms that visitors who viewed the Twitter-page of the museum before the visit value the museum lower.

The second control variable that is checked in the regression analysis is gender. However, the regression analysis indicates that gender does not significantly help in predicting the valuation of the museum (Model 1: Adjusted R^2 = -.002, F (1, 393) = 0.063, p = 0.802) (Model 2: Adjusted R^2 = 0.014, F (5, 389) = 2.095, p = 0.065) (see appendix 4.7) Therefore, the control variable gender will not be further analyzed during this research.

The third control variable that is added to the regression analysis is the dummified variable 'company' to assess if the dummified variable influences the dependent variable the category 'with friends and family' is used as reference category. The regression analysis indicates that the control variable 'company' does not significantly help to predict the dependent variable (Model 1: Adjusted R^2 = .007, F (2, 392) = 2.311, p = 0.1). However, model 2 shows a significant contribution to the model (Model 2: Adjusted R^2 = 0.02, F (4, 388) = 2.353, p = 0.03) (see appendix 4.8).

Table 4.9: Regression analysis control variable 'company'

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.974	.024		163.862	.000		
	By myself	.032	.073	.022	.434	.664	.994	1.006
	Tourgroup	-.216	.105	-.104	-2.066	.039	.994	1.006
2	(Constant)	3.933	.036		109.608	.000		
	By myself	.030	.073	.020	.406	.685	.980	1.020
	Tourgroup	-.190	.105	-.091	-1.815	.070	.980	1.020
	Facebook	.105	.076	.071	1.385	.167	.937	1.067
	Instagram	.153	.089	.090	1.717	.087	.913	1.095
	Twitter	-.662	.325	-.106	-2.038	.042	.925	1.082
	Website	.039	.046	.043	.850	.396	.951	1.051

a. Dependent Variable: Valuation

Table 4.9, Model 2 indicates that even in a more complex model Twitter remains a category that scores significantly lower than the reference category 'no social media use' where no expectations were created on the basis of recent social media use. Furthermore, the model does not indicate significant effects and therefore yields no new findings.

The fourth control variable in the regression analysis is 'the reason of the museum visit'. For this analysis the variable is dummified and 'for pleasure' is used as reference category. The reason that this category is used as reference category is because 'for pleasure' is the most frequent answer on the question: *"What was the reason of your visit?"* (320/395 respondents, 81%). Therefore, the rule of thumb of Hair et al. (2014) is followed and the most frequently answered category is used as the reference category. The test shows that the reason of visit does not significantly contribute to predicting the dependent variable valuation (Model 1: Adjusted R^2 = -.003, F (2, 392) = .318, p = 0.727) (Model 2: Adjusted R^2 = .014, F (6, 388) = 1.964, p = 0.07) (see appendix 4.9). Therefore, it is assumed that the reason of visit does not significantly influences the valuation of the museum.

The last control variable that is added in the regression analysis is the ‘extent/degree of social media use’. Just like the previous control variables this variable is dummified. The most chosen category is used as reference category. In this case that is ‘> 10 times a day’. The regression shows that there is no significant effect between the amount of social media use and the valuation (Model 1: Adjusted R^2 = -.007, F (4, 390) = .299, p = 0.878) (Model 2: Adjusted R^2 = .008, F (8, 386) = 1.382, p = 0.203) (see appendix 4.10).

4.9 Regression analysis of separate factors

Because the regression analysis with the dependent variable 'valuation' led to few significant outcomes, the dependent variable is split into four factors (Service, Exhibitions, Activities and Facilities). As a result, it can be tested whether the use of social media influences the valuation of these separate factors within museums.

The first factor that will be analyzed is Factor 1: Service. The regression shows that there is no significant effect between the independent variable ‘social media use’ and experienced ‘service’ (Adjusted R^2 = .005, F (4, 390) = 1.535, p = 0.191) (see appendix 4.11). This analysis was also conducted for Factor 2: Exhibition (Adjusted R^2 = .009, F (4, 390) = 1.888, p = 0.112) (see appendix 4.12), Factor 3: Activities (Adjusted R^2 = .007, F (4, 390) = 1.650, p = 0.161) (see appendix 4.13) and Factor 4: Facilities (Adjusted R^2 = .006, F (4, 390) = 1.579, p = 0.179) (see appendix 4.14). However, these analyses did not yield substantially different patterns than the overall analysis and will therefore not be discussed in further depth.

In addition, the researcher also examined whether the control variables have a significant effect on the factors. Therefore, one significant effect was found. The analysis shows that social media use controlled by gender has a significant effect on the dependent variable exhibitions. (Model 1: Adjusted R^2 = .013, F (1, 394) = 6.057, p = 0.014) (Model 2: Adjusted R^2 = .021, F (5, 389) = 2.657, p = 0.022) (see appendix 4.16).

Table 4.10 Regression analysis independent variable exhibitions control variable 'gender'

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.241	.049		85.833	.000
	Male	-.179	.073	-.123	-2.461	.014
2	(Constant)	4.170	.065		64.528	.000
	Male	-.172	.072	-.119	-2.376	.018
	Facebook	.020	.123	.008	.160	.873
	Instagram	.276	.144	.100	1.912	.057
	Twitter	-.870	.528	-.085	-1.649	.100
	Website	.091	.074	.063	1.237	.217

a. Dependent Variable: Exhibition

Based on table 4.10, it can be concluded that gender has no significant influence on the independent variable social media use. However, it appears to be a significant difference between the valuation of exhibitions between men and women. Based on the dataset, it can be concluded that men value the exhibition significantly lower than women (B = -.172 lower than constant B = 4.170). A reason for this may be that men have different expectations than women and that museum are better in meeting women's expectations than men's expectations in exhibitions.

Further details of the conducted regression analyses with control variables can be found in appendix 4.15, 4.16, 4.17 and 4.18. Since the analyses did not yield significant outcomes they will not be further discussed.

4.10 Comparing means of different type of museums

Because the regression analyses have yielded few significant results, it has been decided to do an additional analysis where the averages of different types of museums are compared with each other and the total. Table 4.11 presents the mean scores on valuation of the different types of museums.

Table 4.11 Means of different type museums

Report			
Valuation			
Type Museum	Mean	N	Std. Deviation
History museums	3.9512	226	.44969
Business, science and technology museums	4.1914	25	.38668
Art museums	3.9438	120	.44081
Natural history museums	3.8241	9	.54373
Ethnology museums	4.0962	15	.35352
Total	3.9667	395	.44534

If the means are compared to each other it can be seen that the mean of Business, science and technology museums is higher than the other means. Compared to the total mean Business, science and technology museums score 0.2247 higher. While looking at Natural history museums it can be seen that they score 0.1426 lower than the average and 0.3673 lower than Science, business and technology museums. Table 4.11 shows that that History and Art museums are close to the total average score and that Ethnology museums also score above mean. The reason that History and Art museums are score close to the mean has to do with the fact that they contain the majority of the dataset (120 + 226 = 346, 346/395 = 87.6%). This actually indicates that these two categories constitute the mean. Nevertheless, it can be concluded that visitors of Business, science and technology museums and Ethnology museums are generally very satisfied with their visit. In addition, visitors to Natural history museums are the least satisfied compared to the other types of museums.

In addition, the regression analysis with the independent variable 'social media use' and reference category 'no social media use' was conducted again, but this time per type of museum. The first type of museum that is examined are History museums. The ANOVA test is significant and therefore the regression analysis can be interpreted (Adjusted R^2 = .08, F (4, 221) = 5.894, p = > 0.001) (see appendix 4.19).

Table 4.12 Regression analysis History museums

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.946	.043		91.008	.000
	Facebook	.096	.105	.061	.912	.363
	Instagram	.362	.126	.195	2.886	.004
	Twitter	-1.908	.450	-.282	-4.244	.000
	Website	-.032	.059	-.035	-.536	.593

a. Dependent Variable: Valuation

Based on the results from table 4.12, it can be concluded that the expectations that are created via Instagram are confirmed by the museum. As a result, these visitors value their visit to a historical museum significantly higher than visitors who did not checked the museum's social media before the visit. Just as in the previous analyses, visitors who have visited the museum's Twitter page before their visit value their visit significantly lower. However, while drawing conclusions on the social media Twitter it must still be taken into account that it is heavily underrepresented and not representative.

The second category that is analyzed is Business, science and technology museums. The ANOVA test is significant and therefore the regression analysis can be interpreted (Adjusted $R^2 = .376$, $F(3, 21) = 5.821$, $p = 0.005$) (see appendix 4.20).

Table 4.13 Regression analysis Business, science and technology museums

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.093	.115		35.455	.000
	Facebook	.627	.163	.662	3.838	.001
	Instagram	.145	.233	.104	.622	.541
	Website	-.054	.144	-.064	-.374	.712

a. Dependent Variable: Valuation

Based on table 4.13 it can be concluded that visitors who viewed the Facebook-page of the Business, science and technology museums before their visit, value their visit significantly higher than visitors who did not view the museum's social media before their visit.

The third category that is analyzed is Art museums. Before the regression analysis can be analyzed the ANOVA test has to be significant. However, the ANOVA test is not significant Therefore, the regression analysis of Art museums cannot be analyzed (Adjusted R^2 = .016, F (4, 115) = 1.476, p = 0.214) (see appendix 4.21).

After the Art museums have been analyzed, the Natural history museums are analyzed. However, the ANOVA test for Natural history museums is not significant (Adjusted R^2 = .102, F (2, 6) = 1.454, p = 0.306) (see appendix 4.22). As a result, this category cannot be further analyzed.

Finally, the category Ethnology museums is analyzed. However, the ANOVA test of this is not significant (Adjusted R^2 = -0.78, F (2, 12) = .496, p = 0.621) (see appendix 4.23). As a result, a further analysis is not possible.

4.11 Additional analysis Rijksmuseum

Since the Rijksmuseum is well represented within the dataset with 106/395 respondents. It has been decided to do an additional analysis to compare Rijksmuseum with the overall findings (see table 4.14).

Table 4.14 Means of Rijksmuseum compared to overall mean

Report						
				Overall		
Rijksmuseum	Mean	N	Std. Deviation	Mean	N	Std. Deviation
Service	3.6823	106	.62730	3.8089	395	.65299
Exhibitions	4.2925	106	.65820	4.1578	395	.72395
Activities	4.1187	106	.38269	4.1467	395	.44104
Facilities	3.9947	106	.64729	3.9627	395	.61824
Total (valuation)	3.9333	106	.43198	3.9667	395	.44534

First, the overall mean is compared. It appears that Rijksmuseum scores slightly lower than the general average of Dutch museums (Rijksmuseum mean = 3.933, overall mean = 3.9667). This difference is explained by the factor service. If this factor is compared with the overall service

of museums, it can be seen that Rijksmuseum scores low on service compared to the overall mean (Rijksmuseum mean = 3.6823, overall mean = 3.8089). Furthermore, the mean of Rijksmuseum for exhibitions is relatively high compared to the overall mean (Rijksmuseum mean = 4.2925, overall mean = 4.1578). From these data it could be concluded that the Rijksmuseum is doing less well in terms of service, but that they are doing very well in terms of the exhibitions. A possible explanation could be that because the Rijksmuseum has so many visitors (+ 2 million visitors a year) (Rijksmuseum, 2017) and therefore the service is lacking a bit. However, they make up for this with highly appreciated exhibitions.

In addition, a regression analysis of the data from Rijksmuseum has been added. The ANOVA test is significant and therefore the regression analysis can be interpreted (Adjusted $R^2 = .0141$, $F(4, 101) = 5.291$, $p = 0.001$) (see appendix 4.24).

Table 4.15 Regression analysis Rijksmuseum

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.961	.059		67.169	.000
	Facebook	.021	.151	.014	.139	.890
	Instagram	.399	.181	.230	2.205	.030
	Twitter	-1.959	.441	-.441	-4.442	.000
	Website	-.068	.079	-.079	-.857	.394

a. Dependent Variable: Valuation

Based on table 4.15 it can be concluded that visitors who have checked Rijksmuseum's Twitter before their visit give a significantly lower valuation to the museum than visitors who have not viewed Rijksmuseum's social media (B = -1.959 lower than constant B = 3.961). However, this result should be interpreted with caution because only one of the visitors has viewed the Twitter of Rijksmuseum before the visit (see appendix 4.24). For this reason, further research will be needed to be able to interpret this result. Furthermore, another significant result can be seen. The category Instagram scores significantly higher than the category where they did not view social media (B = .399 higher than constant B = 3.961). From this it can be concluded that visitors who checked Rijksmuseum's Instagram valuate the museum higher. One reason for this may be that the Rijksmuseum is good at creating expectations through Instagram and can also live up to it.

4.12 Testing the hypotheses

Based on the results that have emerged in this chapter, the hypotheses are answered. The hypotheses that were created in chapter two of this thesis are:

Table 4.16 Testing the hypotheses

Hypothesis	Result
H1: Visitors value the museum higher when they have viewed social media before the visit	Rejected
H2: Visitors value the museum lower when they have viewed social media before the visit	Rejected

To test H1 several regression analyses have been conducted with and without control variables, However, none of the models showed a positive significant effect on valuation created by viewing the social media of a museum before the visit. Therefore, hypothesis 1 is rejected.

However, in addition, the researcher has done some additional analyzes. These analyses have shown that visitors of History museums, Business, science and technology museums and Rijksmuseum (also part of the category History museums) rate their visit significantly higher if they view the museum's Instagram before their visit.

Hypothesis 2 has been tested in the same way as hypothesis 1. However, interpretable results have emerged that support hypothesis 2. The regression analysis shows that Twitter has a significant negative effect compared to the reference category. From this it can be concluded that the Twitter page of museums creates incorrect expectations and therefore visitors value their visit lower than when no expectations have been created by not using social media. However, because Twitter is so underrepresented in the dataset, the researcher has decided to reject the hypothesis. The researcher believes that further research is needed to obtain representative evidence so that the hypothesis can be confirmed. This will be further explained in the discussion and suggestions for further research. Therefore, the conclusion is the use of social media did not show negative influences on museum valuation.

5 Conclusion and Discussion

In this chapter the conclusion is presented first. Then, based on the conclusion, a discussion is provided based on the found results. The theoretical implications are mentioned within the discussion. Then the managerial implications follow and finally the limitations and suggestions for future research are stated.

5.1 Conclusion

This research was conducted with the expectation that social media use would have impact on the expectations of visitors and therefore the valuation of visitors would be influenced by using the social media of museums before the visit. Kidd (2011) stated that social media influence the expectations of visitors. In addition, Bhattacherjee (2001) indicated that when created expectations are confirmed value is created, also called expectation-confirmation theory. In addition, Kidd (2011) and Bhattacherjee (2001) agreed that value was reduced if expectations were not met. Based on theories of value creation the hypotheses are stated as opposites. This way it could be tested whether expectations are being met and value is created or that expectations cannot be met and value would decrease (Bhattacherjee, 2001; Kidd, 2011; Nath et al., 2018; Oliver, 1980; Westbrook & Reilly, 1983). To test these hypotheses, it was decided to conduct a quantitative study in which the SERVQUAL-model was used as a scale. Through the SERVQUAL-model, service quality ratios could be measured in all industries and so it could be measured whether expectations were met and value was created (Parasuraman et al., 1985). Therefore, the main question has been created based on these theories.

How do social media affect the valuation of Dutch museums?

The main question was answered on the basis of the hypotheses that were answered in section 4.12. However, *H1: Visitors value the museum higher when they have viewed social media before the visit* and *H2: Visitors value the museum lower when they have viewed social media before the visit* were both rejected. For this reason, it can be concluded that the answer to the main question is that social media do not affect the valuation of Dutch museums. It should be mentioned that weak signals indicate that Twitter has a negative influence on the valuation of museums. However, because Twitter is so underrepresented, no conclusion can be attached to it and this needs further investigation.

Despite the rejection of both hypotheses, the research lead to other interesting results. First, the respondents of this dataset value Dutch museums on average 3.967 out of 5 (see table 4.11), which is a high valuation. Secondly, this research has indicated that business, science and

technology museums receive the highest valuation on average (mean = 4.1914, overall mean = 3.967) (see table 4.11). Another conclusion was that natural history museums are valued below average (mean = 3.8241, overall mean = 3.967) (see table 4.11). Thirdly, it emerged in this study that men value museum exhibitions significantly lower than women (men's B = -.172 lower than women's B = 4.241) (see table 4.10). This might have to do with other expectations that men have. As fourth, the additional analysis by Rijksmuseum has yielded interesting insights. This analysis has shown that Rijksmuseum is valuated less high on service compared to the average (Rijksmuseum mean = 3.6823, overall mean = 3.8089) (see table 4.14) and it has also emerged that Rijksmuseum is valuated high on exhibitions (Rijksmuseum mean = 4.2925, overall mean = 4.1578) (see table 4.14). In addition, reports from the Rijksmuseum have shown that they have more than 2 million visitors each year (Rijksmuseum, 2017). From this it might be suggested that all those visitors come to the high valued exhibitions of Rijksmuseum, but because there are so many visitors Rijksmuseum cannot meet the service needs of the visitors and Rijksmuseum therefore scores below average. Finally, in the additional analyses, the results have shown that visitors who viewed the Facebook of history museums and of business, science and technology museums give a significantly higher valuation than visitors who did not view the social media of the museums. From this it could be interpreted that these types of museums are able to create accurate expectations via their Facebook.

5.2 Discussion

As formulated in the introduction, this research attempted to answer the question: " *How do social media affect the valuation of Dutch museums?*". This research was carried out by means of a survey filled in by 395 respondents. However, the written theory described in chapter two created different expectations than the actual outcome. In this section an explanation will be sought for the difference between theory and the outcome of this study.

As first, for this research a questionnaire was used to test the influence of different social media on the appreciation of museums, this was done through the SERVQUAL-model of Parasuraman et al. (1985). These questionnaires were then distributed to 395 people within the age category of 16 to 80, in a sample representative of the current population. On the basis of this, it can be stated that if this research were to be repeated, the results would be the same and therefore the results of this research are valid.

Secondly, this research aimed to test whether the SERVQUAL-model is a good measurement tool for museums. However, the scale of the SERVQUAL-model proved invalid for measuring

the perceived service quality of the museum visitors. The factor analysis showed that the dimensions: responsiveness, assurance, tangibility, empathy and reliability could not be found. For this reason, the researcher has made the choice to make more obvious dimensions/factors, namely exhibitions, service, facilities and activities. A possible explanation for this may be that the SERVQUAL-model is not specifically usable for museums. This is in line with the outcomes of Carman (1990) who has investigated the usability of the model and the dimensions. Carman (1990) discovered that the items linked to dimensions by the model do not necessarily load on these factors. From this it can be concluded that the SERVQUAL-model lacks construct validity (Carman, 1990). This research encountered the same problem and therefore questions the theoretical relevance of the SERVQUAL-model. This research has shown that the model cannot be used effectively to measure perceived service quality within museums. However, this research has found an interesting contribution. The research has shown that for museums there are other factors that can be used to measure service quality than the SERVQUAL-model indicates. These factors are service, exhibitions, activities and facilities factors. By means of these factors, a clear distinction can be made between various components that visitors experience within a museum. Therefore, this thesis has made a theoretical contribution to the literature by finding new factors that make it easier to measure the valuation of different parts within museums and by contributing to the literature of the perceived experience of museum visitors. Ek et al. (2008) and Sheng & Chen (2012) indicated that more theory was needed to gain better insights into the experiences and perspective of visitors.

Thirdly, the answers to the questionnaires showed that there is no significant difference in the valuation of a museum between creating expectations by checking the Facebook, Instagram or website before visit or by not having created expectations by not checking the social media of the museum. This result is not in line with the expectations that people's valuation is influenced by expectations created by social media. The literature suggested that expectations could be confirmed or disconfirmed. As a result, a less high value would emerge in the case of disconfirmation than in the case of a confirmed expectation (Bhattacherjee, 2001; Kidd, 2011; Nath et al., 2018; Oliver, 1980; Westbrook & Reilly, 1983). However, these results are not found. A reason for this could be that Dutch museums post accurate information about what they actually offer in the museum. As a result, visitors are not positively and not negatively surprised during their visit and therefore there is no difference among the groups. Another reason for this result comes from Falk and Dierking's (2016) theory, they state that each individual creates his/her own expectations. For this reason, expectations are very difficult to measure and therefore the

difference can be non-significant. In addition, the perceived experience is influenced by other factors such as price and brand image (Lin et al., 2009). As example, if a museum is relatively unknown and has a cheap entrance, then visitors have lower expectations. If the perceived experience meets these low expectations, the museum is highly valued (Lin et al., 2009). This means that other factors such as price and brand image could make a difference in the results of this study. However, these variables were not investigated in this study.

Fourthly, according to Dijkmans et al. (2015), people who make intensive use of social media are more involved with companies. In addition, Alexander & Jaakkola (2015) added that people who are more involved have adjusted expectations compared to people who are less involved. This was the basis for the expectation that people who use social media more intensive differ significantly from people who do not. However, the results of this study do not support this statement: The control variable 'extent of social media use' has no significant influence on predicting the dependent variable valuation. Therefore, it is concluded that the 'extent of social media use' does not significantly influence the valuation of museums. An explanation for this may be that the extent of social media use leads to more engagement, but this engagement does not necessarily have to be linked to the visited museums. Kidd (2011) indicated that the degree of social media use leads to engagement with companies. However, it seems personal to which companies the visitor feels connected. As a result, despite the visitor's extent of social media use, they may be engaged to other companies, but not to the museum visited. For this reason, this control variable may not have had influence within this study. Another reason for this result may be that within this research Facebook, Instagram and website have no significant difference compared to not checking the social media of museums. Therefore, a control variable must have a lot of influence to make the model significant (Hair et al., 2014). Especially in a fairly large sample with 395 respondents.

As fifth consideration the research has shown that Twitter differs significantly negatively from not viewing the social media before the visit. This result suggests that Twitter creates incorrect expectations that cannot be realized by the museums. This was demonstrated by four different regressions where Twitter had a significant negative effect compared to the other categories. However, this result must be interpreted with caution as Twitter was only viewed by two of the 395 respondents. This is equivalent to 0.5% of the data set. Therefore, the share of Twitter is relatively small compared to the other categories. However, of the two respondents who used Twitter before their visit, one of them gave a low valuation to the museum visit. Because an average is made of these two scores, the average of Twitter is very small compared to the other

categories. However, this result does not yet have to confirm that Twitter does not create the right expectations of museums. Therefore, more respondents are needed who have used Twitter before their visit. Only then can a well-founded assumption be made about the influence of Twitter on the appreciation of museums.

Finally, when interpreting the results, it must be taken into account that this research has focused on the effect of social media on the valuation of Dutch museums. As a result, elements that could possibly have provided more explanatory power were not added to the study. Therefore, no conclusion can be drawn about what ensures a high valuation within a museum. Examples of variables that could have influenced the results of this study are brand image, price and whether visitors often go to museums and are experts in the field of the museum. According to Caldwell (2000), many benefits can be gained from brand image. These benefits could create value for museums. Examples of benefits through brand image are better websites through more capital and better website findability and more exhibitions (Caldwell, 2000; Evans et al., 2012).

5.3 Managerial implications

The results of this research do not provide a clear indication of which type of social media makes a significant difference for all types of Dutch museums. However, the additional analyses have shown that History museums and Rijksmuseum's Instagram have a positive influence on the valuation. This is also the case with Business, science and technology museums where Facebook has a positive influence on valuation. An explanation for this may be that museums create accurate expectations for visitors via Instagram and Facebook. This is probably due to the fact that Facebook and especially Instagram use visual representations through photos (Bergström & Bäckman, 2013). From this it could be interpreted that visitors' expectations are influenced by photos via social media posts from museums. That is why museums are advised to post visual representations of what the museum has to offer at that moment. It may be that the visitors are positively influenced by these photos being positively surprised during the visit. In addition, a photo possibly creates an expectation of one aspect within the museum and the rest depends on the visitor to what extent they are positively surprised.

As second recommendation, museums should ensure that more attention is paid to personal attention within museums. The frequency table in Appendix 2.1 shows that 'personal attention' scores only 3.3 out of 5. With this average, personal attention is the lowest scoring item by the respondents. The item 'staff understand needs' also scores 3.67 out of 5. These low-scoring items explain why the average of the factor service is the lowest valuated by visitors (see table

4.3). For this reason, it is important for museums to recognize that they do not neglect service on average points. Therefore, a recommendation is also made to hire service-oriented staff and to train them properly. By converting a weakness into a strength, a higher valuation can be achieved on the service and the general average can also rise.

5.4 Limitations & suggestions for future research

First of all, from a methodological perspective, it was decided to use the SERVQUAL-model as measurement tool for measuring service quality. However, the research has shown that the SERVQUAL-model lacks construct validity in measuring service quality within the museum sector. However, other factors that are more logical than those mentioned in the SERVQUAL-model have emerged from this study. A suggestion for future research is therefore to apply the factors that emerged from this research and to test whether these factors are valid for measuring service quality within the museum sector. Another option is to search for different existing scales which can be used to measure service quality within the museum sector.

Secondly, an analysis of the asked question whether the respondents 'found what they were looking for on the social media' revealed an inconsistency. It turned out that 230 respondents indicated that they found what they were looking for on the website, while only 214 respondents indicated that they used the website to search for information about the museum. This inconsistency questions the reliability of the survey as the respondents have been able to provide answers that are not in line with their previous answer. For this reason, this question had to be interpreted with caution during the analysis. For subsequent research it is therefore important that the respondents cannot give an inconsistent answer to this question.

As a third limitation, the research has focused solely on the influence of social media on the valuation of museums. Other factors that also influence the valuation of museums have not been taken into account. This probably explains the low adjusted R^2 during the study, since there are more than just expectations obtained by social media that explain the valuation of museums. For this reason, it is important for future research to investigate what is important for visitors to give a museum a high valuation. Variables that could be added are brand image and price, but neither were the respondents asked what they think is important within museums and what they expect. For further research it is therefore recommended to add an open question to which respondents can answer what they expect at a museum and what they find important. In addition, it is also important that standard expectations are included in the research, since

visitors are likely to have certain expectations prior to a visit, without having created expectations from social media.

As a fourth limitation, the research found the outcome that visitors who used Twitter before their visit value the museum lower. However, as mentioned in the section above, the question remains what the expectations are created by the use of Twitter. Future research should investigate what the expectations of visitors are and to what extent they are adjusted by viewing the social media of museums. However, Twitter is underrepresented within this study and therefore not generalizable to the population. As a result, the statements about the Twitter category cannot be regarded as representative. That is why it is important to have equal group sizes. Therefore, it is suggested that subsequent research uses equal groups in the form of an experiment. Through an experiment, the respondents are only authorized to use one social media category and therefore it is possible to test whether there is a difference between the categories. In this way all social media categories can be representative and the categories can be compared with each other. In addition, the limited use of Twitter can also be an indication that Twitter is not popular as social media to view prior a museum visit. For this reason, future research can be chosen to disregard Twitter.

Furthermore, the research was only conducted in the Netherlands and by means of a Dutch survey. As a result, the results of the study are not representative and therefore not generalizable for other countries. The reason that no larger-scale research has taken place has to do with the time restrictions of the thesis. For this reason, it might be interesting for future research to conduct the same research in different countries and see if there are differences. A variable that can influence this, for example, is culture.

Finally, in table 3.4 can be seen that 76.7% of the respondents were between 20 and 34 years old. This means that there was little diversity in terms of age within the sample. As a result, the generalizability of the results is less high than with a diversified distribution of age. An explanation for this age distribution is that the researcher has distributed the survey within his own network. As the researcher himself also falls within this age category, it is obvious that most respondents fall within this age category. Therefore, for future research, the choice can be made to make the sample more diverse so that the results of the research are more generalizable to the population.

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Appendices

Appendix 1

Museum valuation

Deze enquete gaat over de invloed van het gebruik van social media op de waardering van Nederlandse musea uit het oogpunt van museumbezoekers. De vragen in deze enquête zijn gebaseerd op uw meest recente bezoek aan een Nederlands museum. Dit dient maximaal een half jaar geleden te zijn. Gelieve deze enquete alleen in te vullen als uw meest recente museumbezoek minder dan 6 maanden geleden was. De enquête is volledig anoniem en uw gegevens zullen volgens de huidige privacywetgeving verwerkt worden.

De enquête zal ongeveer 4 minuten duren.
De verzamelde worden eenmalig gebruikt voor afstudeeronderzoek aan de Radboud Universiteit. Bij voorbaat dank voor uw tijd en moeite!

Als u vragen of opmerkingen heeft over deze enquete, dan kunt u contact opnemen middels onderstaand emailadres.

Glenn van de Hulst, Masterstudent Radboud Universiteit Nijmegen

g.vandehulst@student.ru.nl

De eerste vragen hebben betrekking op uw meest recente bezoek aan een Nederlands museum.

Naar welk Nederlands museum bent u het meest recent geweest?

_____

Met wie bent u geweest?

- ○ Alleen (1)
- ○ Een tourgroep (2)
- ○ Familie/vrienden (3)

Wat was de reden van uw bezoek?

- ○ Voor mijn werk (1)
- ○ Voor mijn plezier (2)
- ○ Om ervan te leren (3)

De volgende vragen hebben betrekking op uw gebruik van social media

Hoe vaak bekijkt u social media per dag?

- ○ Niet (1)
- ○ <1 maal per dag (2)
- ○ 1-5 maal per dag (3)
- ○ 5-10 maal per dag (4)
- ○ > 10 maal per dag (5)

Heeft u voor uw meest recente bezoek aan een Nederlands museum van tevoren op de social media-pagina/website van het museum gekeken? (meerdere antwoorden mogelijk)

- ☐ Ja, op de Facebook-pagina (1)
- ☐ Ja, via Instagram (2)
- ☐ Ja, via Twitter (3)
- ☐ Ja, op de website (4)
- ☐ ⊗ Nee (5)

Heeft u op de social media/website van het museum kunnen vinden wat u zocht? (meerdere antwoorden mogelijk)

- ☐ Ja, op de Facebook-pagina (1)
- ☐ Ja, via Instagram (2)
- ☐ Ja, via Twitter (3)
- ☐ Ja, op de website (4)
- ☐ ⊗ Nee (5)

De volgende stellingen zijn gebaseerd op uw meest recente bezoek aan een Nederlands museum.

Indien u met het OV naar het museum bent geweest vul dan n.v.t. in bij de bereikbaarheid met de auto. Als u met de auto bent geweest vul dan n.v.t. in bij de bereikbaarheid met het OV.

	Helemaal niet mee eens (1)	Enigszins mee oneens (2)	Noch eens noch oneens (3)	Enigszins mee eens (4)	Helemaal mee eens (5)	n.v.t (9)
Het museum was goed te bereiken met het OV (4)	○	○	○	○	○	○
Het museum was goed te bereiken met de auto (5)	○	○	○	○	○	○

	Helemaal niet mee eens (1)	Enigszins mee oneens (2)	Noch eens noch oneens (3)	Enigszins mee eens (4)	Helemaal mee eens (5)
De openingstijden waren gunstig (3)	○	○	○	○	○
Er was een duidelijke plattegrond van het museum (4)	○	○	○	○	○
De tentoonstellingen waren interessant (leerzaam) (5)	○	○	○	○	○
De tentoonstellingen waren mooi (6)	○	○	○	○	○
De tentoonstellingen waren inspirerend (7)	○	○	○	○	○
Het personeel hielp graag (15)	○	○	○	○	○
Het personeel had het nooit te druk om vragen te beantwoorden (16)	○	○	○	○	○
Het personeel was vriendelijk (17)	○	○	○	○	○
Ik voelde me veilig in het museum (18)	○	○	○	○	○
Het gedrag van het personeel is toegankelijk om vragen te durven stellen (19)	○	○	○	○	○
Het personeel gaf individuele aandacht aan bezoekers (20)	○	○	○	○	○
Het personeel begreep de wensen van de bezoekers (21)	○	○	○	○	○

Indien u geen gebruik heeft gemaakt van de hieronder genoemde activiteiten, faciliteiten en/of hulp tijdens uw bezoek, dan graag n.v.t. invullen.

	Helemaal niet mee eens (1)	Enigszins mee oneens (2)	Noch eens noch oneens (3)	Enigszins mee eens (4)	Helemaal mee eens (5)	n.v.t. (9)
De interactiemogelijkheden spraken mij aan (bijv. quizzes en spellen) (1)	○	○	○	○	○	○
De audio/visuals mogelijkheden spraken mij aan (filmpjes en geluidsopnames) (2)	○	○	○	○	○	○
De museumwinkel voldeed aan mijn verwachtingen (3)	○	○	○	○	○	○
Het restaurant in het museum voldeed aan mijn verwachtingen (4)	○	○	○	○	○	○
Het personeel gaf goed aan wanneer de tour startte (5)	○	○	○	○	○	○
Het personeel was vaardig in het beantwoorden van vragen en oplossen van problemen (6)	○	○	○	○	○	○

De volgende vraag heeft betrekking op de hierboven geplaatste afbeelding. De afbeelding die u hierboven ziet is een voorbeeld van augmented reality. Door middel van augmented reality wordt er een digitaal beeld over de werkelijkheid weergegeven. Dit kan via een beeldscherm zijn op een smartphone, een AR bril met een speciale prismalens of via een specifieke wijze van projectie. Je kunt nog steeds de omgeving zien, maar er wordt extra informatie aan toegevoegd.

	Helemaal niet mee eens (1)	Enigszins mee oneens (2)	Noch eens noch oneens (3)	Enigszins mee eens (4)	Helemaal mee eens (5)	n.v.t. (9)
De augmented reality mogelijkheden in het museum spraken mij aan (1)	○	○	○	○	○	○

Wat is uw leeftijd?

_____

Wat is uw geslacht?

- ○ Man (1)
- ○ Vrouw (2)

Hartelijk bedankt voor de deelname aan de enquête. Uw gegevens zijn volledig anoniem. Mocht u geïnteresseerd zijn in de resultaten, dan kunt u hieronder uw e-mail adres achterlaten. Dit e-mail adres wordt niet gekoppeld aan de door u gegeven antwoorden.

Klik op het pijltje om de enquête af te ronden.

Na het afronden van het onderzoek zullen er 5 cadeaubonnen t.w.v. €10,- van bol.com worden verloot. Mocht u hier kans op willen maken, dan kunt u hieronder uw e-mail adres achterlaten. Dit e-mail adres wordt niet gekoppeld aan de door u gegeven antwoorden.
Klik op het pijltje om de enquête af te ronden.

Appendix 2

Frequency tables

Appendix 2.1 Frequency table of the Likert-scale items

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Public transport	226	1	5	4,55	,838
Car	198	1	5	4,03	1,221
Opening time	395	1	5	4,47	,784
Floorplan	395	1	5	4,01	,985
Interesting exhibitions	395	1	5	4,27	,837
Beautiful exhibitions	395	1	5	4,29	,775
Inspiring exhibitions	395	1	5	3,92	,907
Staff was willing to help	395	1	5	3,75	,909
Staff was never too busy	395	1	5	3,65	,881
Courteous staff	395	1	5	4,12	,788
Safety	395	1	5	4,57	,627
Staff was accessible to ask questions	395	1	5	3,99	,893
Staff gave personal attention	395	1	5	3,30	1,082
Staff understood needs	395	1	5	3,67	,833
Interaction possibilities	142	1	5	4,04	1,017
Audio/visual possibilities	259	2	5	4,32	,832
Museum shop met expectations	246	1	5	3,98	1,042
Restaurant met expectations	199	1	5	3,95	,994
Tour	129	2	5	4,08	,880
Staff in the museum is prompt in providing answers on questions and solving problems	223	1	5	4,17	,824
Augmented reality possibilities	115	1	5	4,07	1,049
Valid N (listwise)	11				

Appendix 2.2 frequency type of museum

Type	Visits	% visits	Visitors	% visitors
Historymuseum	46	43,0%	226	57,2%
Business and technology museum	13	12,1%	25	6,3%
Art museum	34	31,8%	120	30,4%
Natural history museum	9	8,4%	9	2,3%
Ethnology	5	4,7%	15	3,8%
	107	100,0%	395	100,0%

Appendix 2.3 Visited museums

Museum	Visitors among respondents	Place	Type of museum
Aardhuis	1	Hoog Soeren	Natural history museum
Accordeonmuseum	1	Malden	Business and technology museum
Afrika museum	2	Berg en Dal	Ethnology
Amsterdam Museum	3	Amsterdam	Historymuseum
Anne Frank Huis	4	Amsterdam	Historymuseum
Aviodrome	2	Lelystad	Business and technology museum
Bakkerij museum Hattem	1	Hattem	Business and technology museum
Body world	3	Amsterdam	Business and technology museum
Boijmans van Beuningen	8	Rotterdam	Art museum
Bonefantenmuseum	2	Maastricht	Art museum
Cannenburg	1	Vaassen	Historymuseum
Centraal Museum Utrecht	4	Utrecht	Historymuseum
Chocolade museum	1	Middelburg	Business and technology museum
Cobra museum	1	Amstelveen	Art museum
CODA Apeldoorn	3	Apeldoorn	Art museum
De Domkerk	1	Utrecht	Historymuseum
De gevangenpoort	1	Den Haag	Historymuseum
De museumfabriek	1	Enschede	Natural history museum
Design Museum Den Bosch	1	Den Bosch	Art museum
Dom under	1	Utrecht	Historymuseum
Dru cultuurmuseum	1	Ulft	Business and technology museum
Eye Film Museum	3	Amsterdam	Business and technology museum
FOAM	4	Amsterdam	Art museum
Fort Kijkduin	1	Den Helder	Historymuseum
fries museum	1	Leeuwarden	Historymuseum
Fundatie Zwolle	7	Zwolle	Art museum
Gemeente museum Den Haag	3	Den Haag	Historymuseum
Gemeentemuseum Weesp	1	Weesp	Historymuseum
Glasblazerij nationaal Glasmuseum	1	Leerdam	Business and technology museum
Groninger Museum	12	Groningen	Historymuseum
Hagendoorns Plaatse	1	Epe	Natural history museum
Heineken experience museum	1	Amsterdam	Business and technology museum
Hermitage Amsterdam	2	Amsterdam	Art museum
Het Museum voor Anatomie en Pathologie	1	Nijmegen	Business and technology museum
Huis Marseille	2	Amsterdam	Art museum
Japanmuseum Sieboldhuis	1	Leiden	Ethnology
Jheronimus Bosch	1	Den Bosch	Art museum
Joods Historisch museum	1	Amsterdam	Ethnology
Juttersmuseum	1	De Koog	Historymuseum
Kade	1	Amersfoort	Art museum
Katten kabinet	1	Amsterdam	Art museum

Kinderdijk	1	Nederwaard	Natural history museum
Kranenburgh, Bergen	1	Bergen	Art museum
Kröller-Müller Museum	15	Otterlo	Art museum
Kunsthal	6	Rotterdam	Art museum
Limburgs museum	1	Venlo	Historymuseum
Louwman museum	3	Den Haag	Historymuseum
Madame Tussauds	2	Amsterdam	Art museum
Maritiem Museum Rotterdam	1	Rotterdam	Historymuseum
Mauritshuis	5	Den Haag	Art museum
Militair museum	2	Soest	Historymuseum
Miniworld Rotterdam	1	Rotterdam	Historymuseum
Moco Museum	5	Amsterdam	Art museum
More Gorssel	3	Gorssel	Historymuseum
Museonder	1	Otterlo	Natural history museum
Museum 'Het Schip' te Amsterdam	1	Amsterdam	Art museum
Museum aan het Vrijthof	1	Maastricht	Art museum
Museum catherijne convent	1	Utrecht	Historymuseum
Museum Edam	1	Edam	Historymuseum
Museum het Valkhof	4	Nijmegen	Art museum
Museum Meermanno	1	Den Haag	Historymuseum
Museum Ons' Lieve Heer op Solder	1	Amsterdam	Historymuseum
Museum Rotterdam	1	Rotterdam	Historymuseum
Museum Volkenkunde	4	Leiden	Ethnology
Museum Voorlinden	8	Wassenaar	Art museum
Museumdorp Orvelte	1	Orvelte	Natural history museum
Muzeeum (Vlissingen)	1	Vlissingen	Historymuseum
Nairac	2	Barneveld	Art museum
Nationaal Holocaust Museum	4	Amsterdam	Historymuseum
Nationaal videogame museum	1	Zoetermeer	Business and technology museum
Naturalis	1	Leiden	Natural history museum
Nederlands Wijnmuseum	1	Arnhem	Historymuseum
NEMO	8	Amsterdam	Business and technology museum
Nieuwe kerk, Amsterdam	1	Amsterdam	Art museum
Nijntje Museum	2	Utrecht	Historymuseum
Noord Brabants Museum	1	Den Bosch	Historymuseum
noord veluws museum nunspeet	1	Nunspeet	Art museum
Oorlogsmuseum overloon	6	Overloon	Historymuseum
Openlucht museum	14	Arnhem	Historymuseum
Oscam	1	Amsterdam	Art museum

Paleis het Loo	6	Apeldoorn	Historymuseum
Palingmuseum Harderwijk	1	Harderwijk	Business and technology museum
Park HogeVeluwe	1	Hoenderloo	Natural history museum
Rembrandt huis	3	Amsterdam	Art museum
Rijkmuseum Twenthe	1	Enschede	Art museum
Rijks museum der oudheden	3	Leiden	Historymuseum
Rijksmuseum	106	Amsterdam	Historymuseum
Scheepvaartmuseum	2	Amsterdam	Historymuseum
Singer Laren	1	Laren	Art museum
Sleepvaartmuseum	1	Maassluis	Historymuseum
Spoorweg museum	11	Utrecht	Historymuseum
Stedelijk museum	13	Amsterdam	Art museum
Stripmuseum	2	Groningen	Historymuseum
Tassenmuseum hendrickje	1	Amsterdam	Historymuseum
Textielmuseum	1	Tilburg	Art museum
Teyler museum	6	Haarlem	Historymuseum
Tropenmuseum	7	Amsterdam	Ethnology
Universiteitsmuseum Utrecht	2	Utrecht	Historymuseum
Van Abbe Eindhoven	1	Eindhoven	Art museum
Van Gogh Museum	13	Amsterdam	Art museum
Veluwsche Stoomtrein Maatschappij	1	Beeksebergen	Historymuseum
Verzetsmuseum	1	Amsterdam	Historymuseum
Vlaardings Museum	1	Vlaardingen	Historymuseum
Watermuseum	1	Arnhem	Natural history museum
Witte de With	1	Rotterdam	Art museum
Zaans Museum	1	Zaandam	Historymuseum
Zuiderzeemuseum	3	Enkhuizen	Historymuseum
107	395		

Appendix 2.4 Frequency table - gender

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	183	46.3	46.3	46.3
	Female	212	53.7	53.7	100.0
	Total	395	100.0	100,0	

Appendix 2.5 Frequency table - Company during visit

Company					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	By myself	41	10.4	10.4	10.4
	Tourgroup	19	4.8	4.8	15.2
	Family/friends	335	84.8	84.8	100.0
	Total	395	100.0	100.0	

Appendix 2.6 Frequency table - Reason of visit

Reason of visit?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Work	28	7.1	7.1	7.1
	Pleasure	320	81.0	81.0	88.1
	To learn	47	11.9	11.9	100.0
	Total	395	100.0	100.0	

Appendix 2.7 Frequency table - Social media use per day

Extent/degree of social media use					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not	11	2.8	2.8	2.8
	< 1 time a day	21	5.3	5.3	8.1
	1-5 times a day	115	29.1	29.1	37.2
	5-10 times a day	103	26.1	26.1	63.3
	> 10 times a day	145	36.7	36.7	100.0
	Total	395	100.0	100.0	

Appendix 2.8 Frequency table - Social media search before visit

(the answers do not add up to 100% since it was a multiple answer question)

$SCM_visit Frequencies				
		Responses		Percent of Cases
		N	Percent	
Did you check the museum's social media page / website before your most recent visit to a Dutch museum?	Facebook	40	9.0%	10.2%
	Instagram	29	6.5%	7.4%
	Twitter	2	0.5%	0.5%
	Website	214	48.2%	54.3%
	No	159	35.8%	40.4%
Total		444	100.0%	112.7%
a. Dichotomy group tabulated at value 1.				

Appendix 2.9 Frequency table – Found what you were looking for

(the answers do not add up to 100% since it was a multiple answer question)

$SCM_find Frequencies				
		Responses		Percent of Cases
		N	Percent	
Did you find what you were looking for on the social media / website of the museum?	Facebook	21	5.0%	5.3%
	Instagram	15	3.6%	3.8%
	Twitter	1	0.2%	0.3%
	Website	230	55.3%	58.2%
	No	149	35.8%	37.7%
Total		416	100.0%	105.3%
a. Dichotomy group tabulated at value 1.				

Appendix 2.10 Frequency table - age

Age

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	*16,00*	*4*	*1,0*	*1,0*	*1,0*
	17,00	*3*	*,8*	*,8*	*1,8*
	18,00	*3*	*,8*	*,8*	*2,5*
	19,00	*10*	*2,5*	*2,5*	*5,1*
	20,00	*5*	*1,3*	*1,3*	*6,3*
	21,00	*24*	*6,1*	*6,1*	*12,4*
	22,00	*45*	*11,4*	*11,4*	*23,8*
	23,00	*49*	*12,4*	*12,4*	*36,2*
	24,00	*43*	*10,9*	*10,9*	*47,1*
	25,00	*62*	*15,7*	*15,7*	*62,8*
	26,00	*32*	*8,1*	*8,1*	*70,9*
	27,00	*18*	*4,6*	*4,6*	*75,4*
	28,00	*10*	*2,5*	*2,5*	*78,0*
	29,00	*8*	*2,0*	*2,0*	*80,0*
	30,00	*3*	*,8*	*,8*	*80,8*
	31,00	*1*	*,3*	*,3*	*81,0*
	32,00	*1*	*,3*	*,3*	*81,3*
	33,00	*1*	*,3*	*,3*	*81,5*
	34,00	*1*	*,3*	*,3*	*81,8*
	35,00	*1*	*,3*	*,3*	*82,0*
	37,00	*2*	*,5*	*,5*	*82,5*
	38,00	*1*	*,3*	*,3*	*82,8*
	39,00	*1*	*,3*	*,3*	*83,0*
	40,00	*1*	*,3*	*,3*	*83,3*

42,00	*2*	*,5*	*,5*	*83,8*
43,00	*1*	*,3*	*,3*	*84,1*
45,00	*3*	*,8*	*,8*	*84,8*
46,00	*1*	*,3*	*,3*	*85,1*
47,00	*1*	*,3*	*,3*	*85,3*
48,00	*2*	*,5*	*,5*	*85,8*
50,00	*9*	*2,3*	*2,3*	*88,1*
51,00	*4*	*1,0*	*1,0*	*89,1*
52,00	*6*	*1,5*	*1,5*	*90,6*
53,00	*1*	*,3*	*,3*	*90,9*
54,00	*3*	*,8*	*,8*	*91,6*
55,00	*6*	*1,5*	*1,5*	*93,2*
56,00	*5*	*1,3*	*1,3*	*94,4*
57,00	*1*	*,3*	*,3*	*94,7*
58,00	*3*	*,8*	*,8*	*95,4*
59,00	*3*	*,8*	*,8*	*96,2*
60,00	*2*	*,5*	*,5*	*96,7*
61,00	*1*	*,3*	*,3*	*97,0*
62,00	*3*	*,8*	*,8*	*97,7*
63,00	*4*	*1,0*	*1,0*	*98,7*
68,00	*2*	*,5*	*,5*	*99,2*
75,00	*1*	*,3*	*,3*	*99,5*
77,00	*1*	*,3*	*,3*	*99,7*
80,00	*1*	*,3*	*,3*	*100,0*
Total	*395*	*100,0*	*100,0*	

Appendix 2.11 Frequency table - Age groups

Age Groups					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20 and younger	25	6.3	6.3	6.3
	21-40	304	77.0	77.0	83.3
	41-60	53	13.4	13.4	96.7
	61 and older	13	3.3	3.3	100.0
	Total	395	100.0	100.0	

Appendix 2.12 Frequency table – Age Groups 2 (comparable with Council for Culture)

AGEGRP2					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12-19	20	5.1	5.1	5.1
	20-34	303	76.7	76.7	81.8
	35-49	16	4.1	4.1	85.8
	50-64	51	12.9	12.9	98.7
	65+	5	1.3	1.3	100.0
	Total	395	100.0	100.0	

Appendix 3

Factor analysis

Appendix 3.1 Descriptive statistics items dependent variable

Descriptive Statistics									
	N	Minimum	Maximum	Mean	Std. Deviati	Skewness	Skewness	Kurtosis	Kurtosis
Statistic							Std. Error		Std. Error
OV	226	1	5	4,55	0,838	-2,39	0,162	6,056	0,322
AUTO	198	1	5	4,03	1,221	-1,224	0,173	0,447	0,344
Openingstijd	395	1	5	4,47	0,784	-1,83	0,123	3,866	0,245
Plattegrond	395	1	5	4,01	0,985	-0,822	0,123	0,098	0,245
Interessant	395	1	5	4,27	0,837	-1,275	0,123	1,614	0,245
Mooi	395	1	5	4,29	0,775	-1,268	0,123	2,168	0,245
Inspirerend	395	1	5	3,92	0,907	-0,634	0,123	-0,012	0,245
Personeel hielp graag	395	1	5	3,75	0,909	-0,243	0,123	-0,303	0,245
Personeel nooit te druk	395	1	5	3,65	0,881	0,005	0,123	-0,481	0,245
Personeel vriendelijk	395	1	5	4,12	0,788	-0,661	0,123	0,2	0,245
Veilig	395	1	5	4,57	0,627	-1,601	0,123	3,655	0,245
Personeel is toegankelijk	395	1	5	3,99	0,893	-0,592	0,123	-0,204	0,245
Personeel individuele aandacl	395	1	5	3,3	1,082	-0,096	0,123	-0,662	0,245
Personeel begreep wensen	395	1	5	3,67	0,833	-0,089	0,123	-0,197	0,245
interactiemogelijkheden	142	1	5	4,04	1,017	-0,948	0,203	0,176	0,404
Audio/visuals	259	2	5	4,32	0,832	-1,311	0,151	1,377	0,302
Museumwinkel	246	1	5	3,98	1,042	-0,781	0,155	-0,209	0,309
Restaurant	199	1	5	3,95	0,994	-0,803	0,172	0,19	0,343
Tour	129	2	5	4,08	0,88	-0,571	0,213	-0,569	0,423
Vragen beantwoorden	223	1	5	4,17	0,824	-0,707	0,163	0,063	0,324
AR	115	1	5	4,07	1,049	-1,208	0,226	1,21	0,447
Valid N (listwise)	11								

For most items the kurtosis and skewness values lay in between the threshold value of -3 and +3 which means that the data is normally distributed (Hair et al., 2014). The exceptions are OV, Openingstijd and Veilig. These items will remain included for the factory analysis. However, when it turns out that these items do not meet the assumption of the factor analysis they will be excluded from the analysis.

To determine if factor analysis can be used to analyze the data, the following assumptions have to be met. As first the KMO and Bartlett's Test of Sphericity have to be checked. The KMO test is used to determine if the proportion of variance in the variables is explained by the factors. Therefore, the threshold is > 0.5. Bartlett's Test of Sphericity checks if there are correlations between the variables. Therefore, the threshold is < 0.05. Appendix 3.2 shows the output of the KMO and Bartlett's Test and indicates that factor analysis can be used.

Appendix 3.2 KMO And Bartlett's Test 1

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.782
Bartlett's Test of Sphericity	Approx. Chi-Square	378.658
	df	210
	Sig.	.000

For the exploratory factor analysis, the researcher decided to conduct a principal component factor analysis with the Oblimin rotation method. Oblimin rotation method is used because of the theoretical expectations of the items to be correlated (Hair et al., 2014). The factors were created based on the eigenvalue. The eigenvalue indicates that 4 factors are necessary to explain more than 60% of the variance.

Appendix 3.3 Total variance explained 1

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	5.923	28.206	28.206	5.923	28.206	28.206	5.136
2	2.298	10.943	39.149	2.298	10.943	39.149	3.108
3	1.636	7.789	46.938	1.636	7.789	46.938	2.842
4	1.293	6.155	53.093	1.293	6.155	53.093	2.267
5	1.165	5.548	58.641				
6	1.022	4.868	63.509				
7	.975	4.644	68.153				
8	.905	4.309	72.462				
9	.858	4.085	76.547				
10	.694	3.307	79.854				
11	.674	3.210	83.064				
12	.638	3.039	86.103				
13	.503	2.397	88.500				
14	.425	2.023	90.522				
15	.367	1.748	92.271				
16	.360	1.712	93.983				
17	.320	1.523	95.506				
18	.300	1.430	96.936				
19	.281	1.338	98.274				
20	.210	1.000	99.274				
21	.152	.726	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

As second assumption the communalities are checked. All the communalities have to be above the threshold value of 0.2, if the communalities are below 0.2 the items will be excluded from the factor analysis (Hair et al., 2014).

Iteration 1: Augmented-Reality

As first the communality 'Augmented-Reality' is excluded of the factor analysis because its value of 0.122. Therefore, the new values of the KMO and Bartlett's Test are noted.

Appendix 3.3 KMO And Bartlett's Test 2

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.822
Bartlett's Test of Sphericity	Approx. Chi-Square	432.822
	df	190
	Sig.	.000

Iteration 2: Veiligheid/Safety

The second item that is excluded from the research is 'Veiligheid'/'Safety' with a value of 0.149. Therefore, the new values of the KMO and Bartlett's Test are noted.

Appendix 3.4 KMO And Bartlett's Test 3

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.821
Bartlett's Test of Sphericity	Approx. Chi-Square	422.457
	df	171
	Sig.	.000

Iteration 3: Openingstijden/Opening time

The third item that is excluded from the research is 'Openingstijden'/'Opening time' with a value of 0.185. Therefore, the new values of the KMO and Bartlett's Test are noted.

Appendix 3.5 KMO And Bartlett's Test 4

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.827
Bartlett's Test of Sphericity	Approx. Chi-Square	412.873
	df	153
	Sig.	.000

Iteration 4: Plattegrond/Floorplan

The fourth item that is excluded from the research is 'Plattegrond'/'Floorplan' with a value of 0.179. Therefore, the new values of the KMO and Bartlett's Test are noted.

Appendix 3.6 KMO And Bartlett's Test 5

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.826
Bartlett's Test of Sphericity	Approx. Chi-Square	407.818
	df	136
	Sig.	.000

After deleting the fourth item the values of all the communalities are above 0.2. Now the double loaders will be checked. The threshold for double loaders is that one item cannot load high on two different factors. Therefore, the difference between these loadings has to be at least 0.2 (Hair et al., 2014).

Appendix 3.7 Pattern matrix 1

Pattern Matrix[a]				
	1	2	3	4
The museum is easy to reach by public transport		0.483	-0.325	
The museum is easy to reach by car			0.625	
The exhibitions are interesting		0.737		
The exhibitions are beautiful		0.852		
The exhibitions are inspiring		0.802		
Staff in the museum is willing to help me	0.788			
The staff is never too busy to respond to requests	0.828			
The staff is consistently courteous	0.773			
The behavior of the staff gives me confidence to ask questions	0.813			
The staff gives visitors individual attention	0.779			
The staff understands visitor needs	0.717			
The museum makes use of interaction				-0.767
The museum makes use of audio/visuals				-0.876
The museum has a museum-shop			0.667	
The museum has a restaurant			0.653	
The museum staff tells you when the tour is going to start			0.314	-0.576
Staff in the museum is prompt in providing answers on questions and solving problems	0.574			
Extraction Method: Principal Component Analysis.				
Rotation Method: Oblimin with Kaiser Normalization.				
a. Rotation converged in 8 iterations.				

Iteration 5: OV/Public transport

The component matrix indicates that the item 'OV'/'Public transport' is loading on two factors. Therefore, this item is excluded from the factor analysis and the model was run again.

Appendix 3.8 Pattern matrix 2

Pattern Matrix[a]				
	Component			
	1	2	3	4
The museum is easy to reach by car	-0.035	-0.174	0.626	-0.013
The exhibitions are interesting	0.005	0.765	0.047	-0.216
The exhibitions are beautiful	0.041	0.863	0.007	0.027
The exhibitions are inspiring	0.045	0.818	0.028	-0.041
Staff in the museum is willing to help me	0.787	0.077	0.157	0.143
The staff is never too busy to respond to requests	0.818	-0.07	0.04	0.032
The staff is consistently courteous	0.77	0.097	0.113	0.062
The behavior of the staff gives me confidence to ask questions	0.809	-0.04	-0.068	-0.059
The staff gives visitors individual attention	0.791	-0.009	-0.173	-0.067
The staff understands visitor needs	0.734	0.123	-0.137	-0.073
The museum makes use of interaction	0.128	0.065	0.008	-0.759
The museum makes use of audio/visuals	-0.129	0.183	-0.07	-0.872
The museum has a museum-shop	0.134	0.303	0.642	0.057
The museum has a restaurant	-0.058	0.153	0.71	-0.062
The museum staff tells you when the tour is going to start	0.228	-0.196	0.374	-0.57
Staff in the museum is prompt in providing answers on questions and solving problems	0.535	-0.135	0.262	-0.282
Extraction Method: Principal Component Analysis.				
Rotation Method: Oblimin with Kaiser Normalization.				

a. Rotation converged in 7 iterations.		

Iteration 6: Auto/car

All the items are loading on all four factors therefore the researcher chose to find out if this is caused by one item. After deleting the item 'Auto'/'Car' the best factor scores appeared. The improvement of the factor scores is logical since 'Auto'/'Car' explains the reachability of the museums and does not include the perceived experience inside the museums. However, the factors that were created by Parasuraman et al. (1985) were not found in this analysis. Therefore, new factor names were created. Factor 1: Service, Factor 2: Exhibition (tentoonstelling), Factor 3: Activities (activiteiten) and factor 4: Facilities (faciliteiten).

Appendix 3.9 Pattern matrix 3

Pattern Matrix[a]				
	1	2	3	4
The exhibitions are interesting		0.777		
The exhibitions are beautiful		0.857		
The exhibitions are inspiring		0.822		
Staff in the museum is willing to help me	0.775			
The staff is never too busy to respond to requests	0.814			
The staff is consistently courteous	0.761			
The behavior of the staff gives me confidence to ask questions	0.8			
The staff gives visitors individual attention	0.787			
The staff understands visitor needs	0.747			
The museum makes use of interaction			0.749	
The museum makes use of audio/visuals			0.856	
The museum has a shop				0.708
The museum has a restaurant				0.859
The museum staff tells you when the tour is going to start			0.618	0.312
Staff in the museum is prompt in providing answers on questions and solving problems	0.541		0.33	
Extraction Method: Principal Component Analysis.				
Rotation Method: Oblimin with Kaiser Normalization.				
a. Rotation converged in 7 iterations.				

After deleting the item ‘Auto’ all the tests are executed again, the new values of the KMO, Bartlett’s Test, the total explained variance and Cronbach’s Alpha are noted. After the deletion of six items all assumptions are met. Hence, 15 items will be used for further analysis.

Appendix 3.10 KMO And Bartlett’s Test 6

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.844
Bartlett's Test of Sphericity	Approx. Chi-Square	430.664
	df	105
	Sig.	.000

Appendix 3.11 Total variance explained 2

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	5.514	36.757	36.757	5.514	36.757	36.757	4.811
2	2.160	14.401	51.158	2.160	14.401	51.158	2.640
3	1.393	9.286	60.444	1.393	9.286	60.444	2.913
4	1.099	7.325	67.769	1.099	7.325	67.769	2.248
5	.861	5.737	73.506				
6	.666	4.440	77.946				
7	.569	3.791	81.738				
8	.477	3.179	84.917				
9	.428	2.855	87.772				
10	.393	2.622	90.394				
11	.341	2.275	92.669				
12	.335	2.230	94.899				
13	.304	2.027	96.926				
14	.248	1.652	98.578				
15	.213	1.422	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Appendix 3.12 Cronbach's Alpha factor 1 – Service

Reliability Statistics

Cronbach's Alpha	N of Items
,889	7

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Indien u geen gebruik heeft gemaakt van de hieronder genoemde activiteiten, faciliteiten en/of hulptijdens uw bezoek, dan graag n.v.t. invullen. - Het personeel was vaardig in het beantwoorden van vragen en oplossen van problemen	23,21	18,834	,587	,884
PRCVD1 - Het personeel hielp graag	23,47	17,620	,691	,872
PRCVD1 - Het personeel had het nooit te druk om vragen te beantwoorden	23,61	17,366	,734	,867
PRCVD1 - Het personeel was vriendelijk	23,19	18,244	,726	,869
PRCVD1 - Het gedrag van het personeel is toegankelijk om vragen te durven stellen	23,30	17,687	,724	,868
PRCVD1 - Het personeel gaf individuele aandacht aan bezoekers	23,90	16,459	,672	,878
PRCVD1 - Het personeel begreep de wensen van de	23,59	18,000	,685	,873

Appendix 3.13 Cronbach's Alpha factor 2 - Exhibitions

Reliability Statistics

Cronbach's Alpha	N of Items
,824	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PRCVD1 - De tentoonstellingen waren interessant (leerzaam)	8,20	2,269	,693	,745
PRCVD1 - De tentoonstellingen waren mooi	8,19	2,417	,705	,739
PRCVD1 - De tentoonstellingen waren inspirerend	8,56	2,156	,652	,793

Figure 3 Cronbach's Alpha factor 3 - Activities

Reliability Statistics

Cronbach's Alpha	N of Items
,725	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Indien u geen gebruik heeft gemaakt van de hieronder genoemde activiteiten, faciliteiten en/of hulptijdens uw bezoek, dan graag n.v.t. invullen. - De interactiemogelijkheden spraken mij aan (bijv. quizzes en spellen)	8,14	2,335	,613	,555
Indien u geen gebruik heeft gemaakt van de hieronder genoemde activiteiten, faciliteiten en/of hulptijdens uw bezoek, dan graag n.v.t. invullen. - De audio/visuals mogelijkheden spraken mij aan (filmpjes en geluidsopnames)	7,77	2,794	,580	,598
Indien u geen gebruik heeft gemaakt van de hieronder genoemde activiteiten, faciliteiten en/of hulptijdens uw bezoek, dan graag n.v.t. invullen. - Het personeel gaf goed aan wanneer de tour startte	8,15	3,269	,463	,730

Appendix 3.14 Cronbach's Alpha factor 4 - facilities

Reliability Statistics

Cronbach's Alpha	N of Items
,603	2

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Indien u geen gebruik heeft gemaakt van de hieronder genoemde activiteiten, faciliteiten en/of hulptijdens uw bezoek, dan graag n.v.t. invullen. - De museumwinkel voldeed aan mijn verwachtingen	3,85	1,043	,431	.
Indien u geen gebruik heeft gemaakt van de hieronder genoemde activiteiten, faciliteiten en/of hulptijdens uw bezoek, dan graag n.v.t. invullen. - Het restaurant in het museum voldeed aan mijn verwachtingen	3,85	1,092	,431	.

Appendix 4

Appendix 4.1 Regression valuation. Reference category: Did not visit the social media-page/website of the museum.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,162[a]	,026	,016	,44173	,026	2,619	4	390	,035

a. Predictors: (Constant), Heeft u voor uw meest recente bezoek aan een Nederlands museum van tevoren op de social media-pagina/website van het museum gekeken? (meerdere antwoorden mogelijk) Ja, op de website, Heeft u voor uw meest recente bezoek aan een Nederlands museum van tevoren op de social media-pagina/website van het museum gekeken? (meerdere antwoorden mogelijk) Ja, via Instagram, Heeft u voor uw meest recente bezoek aan een Nederlands museum van tevoren op de social media-pagina/website van het museum gekeken? (meerdere antwoorden mogelijk) Ja, op de Facebook-pagina, Heeft u voor uw meest recente bezoek aan een Nederlands museum van tevoren op de social media-pagina/website van het museum gekeken? (meerdere antwoorden mogelijk) Ja, via Twitter

b. Dependent Variable: Valuation

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2,044	4	,511	2,619	,035[b]
	Residual	76,098	390	,195		
	Total	78,142	394			

a. Dependent Variable: Valuation

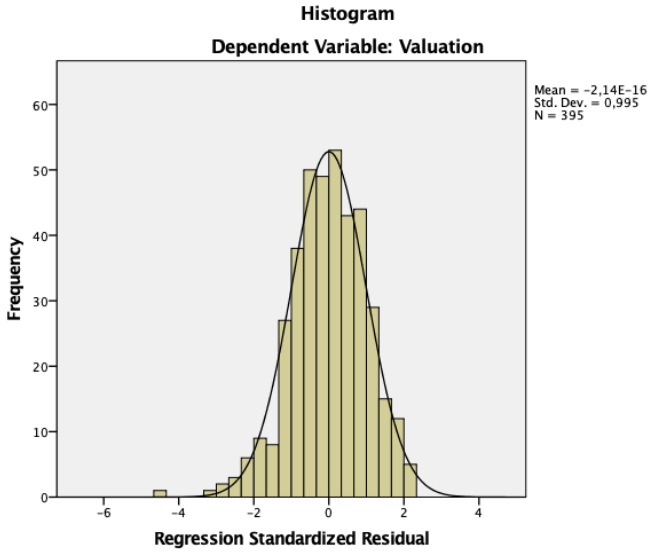
b. Predictors: (Constant), Heeft u voor uw meest recente bezoek aan een Nederlands museum van tevoren op de social media-pagina/website van het museum gekeken? (meerdere antwoorden mogelijk) Ja, op de website, Heeft u voor uw meest recente bezoek aan een Nederlands museum van tevoren op de social media-pagina/website van het museum gekeken? (meerdere antwoorden mogelijk) Ja, via Instagram, Heeft u voor uw meest recente bezoek aan een Nederlands museum van tevoren op de social media-pagina/website van het museum gekeken? (meerdere antwoorden mogelijk) Ja, op de Facebook-pagina, Heeft u voor uw meest recente bezoek aan een Nederlands museum van tevoren op de social media-pagina/website van het museum gekeken? (meerdere antwoorden mogelijk) Ja, via Twitter

Coefficients[a]

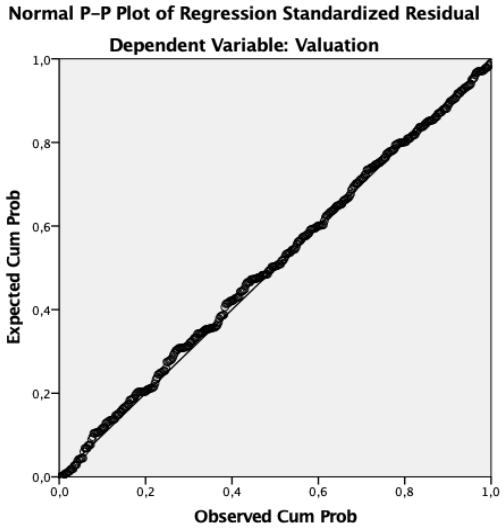
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.924	.034		116.650	.000		
	Facebook	.115	.076	.078	1.513	.131	.944	1.060
	Instagram	.161	.089	.095	1.810	.071	.916	1.092
	Twitter	-.666	.325	-.106	-2.046	.041	.926	1.080
	Website	.043	.045	.048	.942	.347	.966	1.035

a. Dependent Variable: Valuation

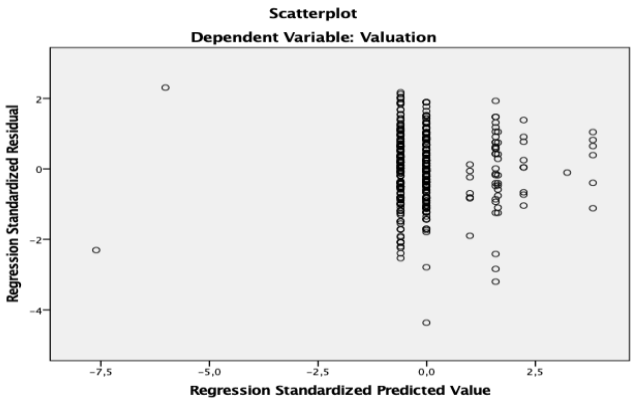
Appendix 4.1.1 Histogram



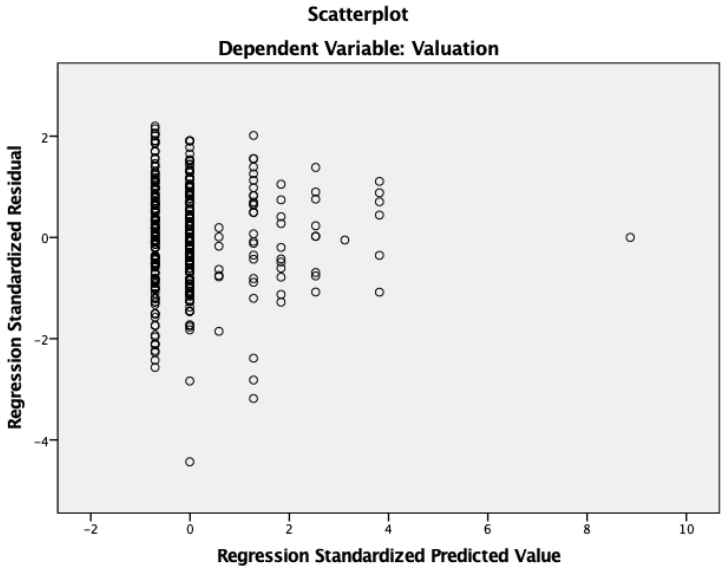
Appendix 4.1.2 Normal P-P Plot of Regression standardized residual



Appendix 4.1.3 Scatterplot



Appendix 4.1.4 Scatterplot After deleting respondent 353



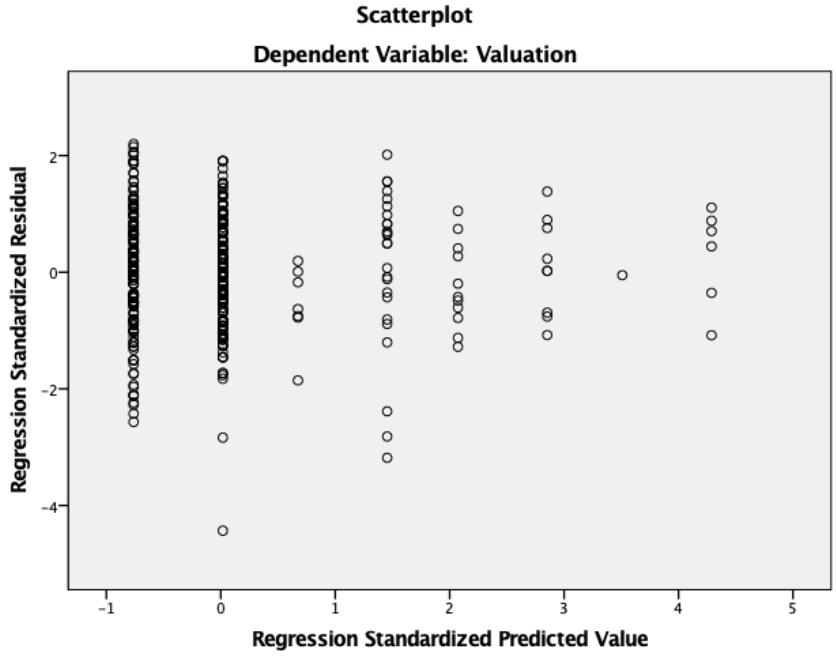
Appendix 4.1.5 ANOVA after deleting respondent 353

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.690	4	.423	2.221	.066[b]
	Residual	73.991	389	.190		
	Total	75.681	393			

a. Dependent Variable: Valuation

b. Predictors: (Constant), Yes, Facebook, Yes, Instagram, Yes, Twitter, Yes, Website

Appendix 4.1.6 Scatterplot After deleting respondent 52



Appendix 4.1.7 ANOVA After deleting respondent 52

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.351	3	.450	2.368	.070[b]
	Residual	73.991	389	.190		
	Total	75.342	392			
a. Dependent Variable: Valuation						
b. Predictors: (Constant), Yes, Facebook, Yes, Instagram, Yes, Twitter, Yes, Website						

Appendix 4.1.8 Valid respondents when not making averages of missing values

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Activitites	66	2.33	5.00	4.0101	.78440
Facilities	150	1.00	5.00	3.8500	.87422
Exhibitions	395	1.00	5.00	4.1578	.72395
Service	395	1.29	5.00	3.8089	.65299
Valid N (listwise)	44				

Appendix 4.1.9 Logtransform of factor 4: facilities

Descriptive Statistics							
	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Valuation	395	3.9667	.44534	-.492	.123	.799	.245
Tentoonstelling	395	4.1578	.72395	-1.256	.123	2.274	.245
Service	395	3.8089	.65299	-.199	.123	.247	.245
Activities	395	4.1467	.44104	-1.163	.123	2.982	.245
Log_Facilities	395	.5913	.08228	-2.783	.123	14.117	.245
Valid N (listwise)	395						

Appendix 4.2 Reference category Instagram

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.138[a]	.019	.009	.44335	.019	1.886	4	390	.112

a. Predictors: (Constant), No, Yes, Facebook, Yes, the website, Yes, Twitter

b. Dependent Variable: Valuation

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.483	4	.371	1.886	.112[b]
	Residual	76.659	390	.197		
	Total	78.142	394			

a. Dependent Variable: Valuation

b. Predictors: (Constant), No, Yes, Facebook, Yes, the website, Yes, Twitter

Appendix 4.3 Reference category Facebook

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.157[a]	.025	.015	.44206	.025	2.469	4	390	.044

a. Predictors: (Constant), No, Yes, Instagram, Yes, the website, Yes, Twitter

b. Dependent Variable: Valuation

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.930	4	.483	2.469	.044[b]
	Residual	76.212	390	.195		
	Total	78.142	394			

a. Dependent Variable: Valuation

b. Predictors: (Constant), No, Yes, Instagram, Yes, the website, Yes, Twitter

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.782	.116		32.523	.000		
	Instagram	.248	.102	.145	2.429	0.016	.698	1.433
	Twitter	-.554	.330	-0.88	-1.676	.094	.900	1.111
	Website	.195	.117	.218	1.669	.096	.146	6.830
	None	.159	.121	.175	1.305	.193	.139	7.171

Appendix 4.4 Regression analysis, reference category Twitter

Model Summary[b]									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.162[a]	.026	.016	.44169	.026	2.634	4	390	.034

a. Predictors: (Constant), Yes, Instagram, Yes, Facebook, Yes, website, none

b. Dependent Variable: Valuation

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.055	4	.514	2.634	.034[b]
	Residual	76.087	390	.195		
	Total	78.142	394			

a. Dependent Variable: Valuation

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, Yes, website, none

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.686	.118		31.123	.000		
	Facebook	.146	.078	.099	1.859	0.064	.885	1.130
	Instagram	.226	.101	0.133	2.233	.026	.709	1.411

	Website	.271	.116	0.304	2.335	.020	.148	6.777
	None	.254	.124	.281	2.060	.40	0.135	7.427

Appendix 4.5 Regression analysis, reference category website

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.155[a]	.024	.014	.44221	.024	2.402	4	390	.049

a. Predictors: (Constant), Yes, Instagram, Yes, Facebook, none

b. Dependent Variable: Valuation

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.879	4	470	2.402	.049[b]
	Residual	76.263	390	.196		
	Total	78.142	394			

a. Dependent Variable: Valuation

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, none

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.950	.033		119.793	.000		
	Facebook	.123	.077	.083	1.589	0.113	.911	1.098

	Instagram	.156	.091	0.092	1.718	.087	.882	1.134
	Twitter	-.692	.325	-0.110	-2.131	.034	.933	1.072
	None	-.010	.048	-0.011	-0.202	.840	0.888	1.126

Appendix 4.6 regression analysis, control variable age

Model Summary[c]									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.071[a]	.005	.002	.44479	.005	1.972	1	393	.161
2	.182[b]	.033	.021	.44067	.028	2.847	4	389	.024

a. Predictors: (Constant), Age

b. Predictors: (Constant), Age, Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Valuation

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.390	1	.390	1.972	.161[b]
	Residual	77.752	393	.198		
	Total	78.142	394			
2	Regression	2.602	5	.520	2.680	.021[c]
	Residual	75.540	389	.194		
	Total	78.142	394			

a. Dependent Variable: Valuation

b. Predictors: (Constant), Age

c. Predictors: (Constant), Age, Yes, Instagram, Yes, Facebook, yes, Twitter, yes, Website

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.892	.058		67.461	.000		
	Age	.003	.002	.071	1.404	.161	1.000	1.000
2								
	Age	.003	.002	.085	1.695	.091	.986	1.014
	Facebook	.118	.076	.080	1.559	.120	.943	1.061
	Instagram	.175	.089	.103	1.965	.050	.908	1.101
	Twitter	-.708	.326	-.113	-2.173	.030	.921	1.086
	Website	.039	.045	.044	.867	.386	.964	1.037

a. dependent variable: valuation

Appendix 4.7 Regression analysis, control variable gender

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.013[a]	.000	-.002	.44587	.000	.063	1	393	.802
2	.162[b]	.026	.014	.44228	.026	2.602	4	389	.036

a. Predictor (constant), Gender

b. Predictors: (Constant), Gender, Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Valuation

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.012	1	.012	.063	.802[b]
	Residual	78.129	393	.199		
	Total	78.142	394			
2	Regression	2.049	5	.410	2.095	.065[c]
	Residual	76.093	389	.196		
	Total	78.142	394			

a. Dependent Variable: Valuation

b. Predictors: (Constant), Gender

c. Predictors: (Constant), Gender, Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Appendix 4.8 Regression analysis, control variable 'company'

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.108[a]	.012	.007	.44387	.012	2.311	2	392	.100
2	.187[b]	.035	.020	.44082	.023	2.358	4	388	.053

a. Predictors: (Constant), Company

b. Predictors: (Constant), Company, Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Valuation

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.911	2	.455	2.311	.100[b]
	Residual	77.231	392	.197		
	Total	78.142	394			
2	Regression	2.744	6	.457	2.353	.030[c]
	Residual	75.398	388	.194		
	Total	78.142	394			

a. Dependent Variable: Valuation

b. Predictors: (Constant), Gender

c. Predictors: (Constant), Gender, Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.974	.024		163.862	.000		
	By myself	.032	.073	.022	.434	.664	.994	1.006
	Tourgroup	-.216	.105	-.104	-2.066	.039	.994	1.006
2	(Constant)	3.933	.036		109.608	.000		
	By myself	.030	.073	.020	.406	.685	.980	1.020
	Tourgroup	-.190	.105	-.091	-1.815	.070	980	1.020
	Facebook	.105	.076	.071	1.385	.167	.937	1.067
	Instagram	.153	.089	.090	1.717	.087	.913	1.095
	Twitter	-.662	.325	-.106	-2.038	.042	.925	1.082
	Website	.039	.046	.043	.850	.396	.951	1.051

a. Dependent Variable: Valuation

Appendix 4.9 Regression analysis, control variable 'Reason of visit'

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.040[a]	.002	-.003	.44611	.002	.318	2	392	.727
2	.172[b]	.029	.014	.44211	.028	2.784	4	388	.026

a. Predictors: (Constant), Learn, Work

b. Predictors: (Constant), Learn, Work, Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent Variable: Valuation

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.127	2	.063	.318	.727[b]
	Residual	78.015	392	.199		
	Total	78.142	394			
2	Regression	2.304	6	.384	1.964	.070[c]
	Residual	75.838	388	.195		
	Total	78.142	394			

a. Dependent Variable: Valuation

b. Predictors: (Constant), Learn, Work

c. Predictors: (Constant), Learn, Work, Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Appendix 4.10 Regression analysis, control variable 'Frequency of social media use'

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.055[a]	.003	-.007	.44693	.003	.299	4	390	.878
2	.167[b]	.028	.008	.44362	.025	2.460	4	386	.045

a. Predictors: (Constant), 5-10 times a day, not, < 1 time a day, 1-5 times a day

b. Predictors: (Constant), 5-10 times a day, not, < 1 time a day, 1-5 times a day, Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent Variable: Valuation

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.239	4	.060	.299	.878[b]
	Residual	77.903	390	.200		
	Total	78.142	394			
2	Regression	2.176	8	.272	1.382	.203[c]
	Residual	75.966	386	.197		
	Total	78.142	394			

a. Dependent Variable: Valuation

b. Predictors: (Constant), 5-10 times a day, not, < 1 time a day, 1-5 times a day

c. Predictors: (Constant), 5-10 times a day, not, < 1 time a day, 1-5 times a day, Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Appendix 4.11 Regression analysis Factor 1 Service

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.124[a]	.015	.005	.65122

a. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

b. Dependent variable: Service

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.604	4	.651	1.535	.191[b]
	Residual	165.397	390	.424		
	Total	168.000	394			

a. Dependent Variable: Service

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Appendix 4.12 Regression analysis Factor 2 Exhibition

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.138[a]	.019	.009	.72071

a. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

b. Dependent variable: Exhibition

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.924	4	.981	1.888	.112[b]
	Residual	202.573	390	.519		
	Total	206.497	394			

a. Dependent Variable: Exhibition

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Appendix 4.13 Regression analysis Factor 3: Activities

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.129[a]	.017	.007	.43960

a. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

b. Dependent variable: Activities

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.275	4	.319	1.650	.161[b]
	Residual	75.366	390	.193		
	Total	76.641	394			

a. Dependent Variable: Activities

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Appendix 4.14 Regression analysis Factor 4: Facilities

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.126[a]	.016	.006	.61644

a. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

b. Dependent variable: Facilities

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.399	4	.600	1.579	.179[b]
	Residual	148.197	390	.380		
	Total	150.596	394			

a. Dependent Variable: Facilities

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Appendix 4.15 Regression analysis Factor 1 service with control variables

Model Summary[c]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.046[a]	.002	.000	.65312
2	.138[b]	.019	.006	.65091

a. Predictors: (Constant), Age

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Service

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.360	1	.360	.844	.359[b]
	Residual	167.640	393	.427		
	Total	168.000	394			
2	Regression	3.185	5	.637	1.504	.188[c]
	Residual	164.815	389	.424		
	Total	168.000	394			

a. Dependent variable: Service

b. Predictors: (Constant), Age

c. Predictors: (Constant), Yes, Instagram, Yes, Facebook, Yes, Twitter, Yes Website

Model Summary[c]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.067[a]	.004	.002	.65236
2	.143[b]	.020	.008	.65042

a. Predictors: (Constant), Gender

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Service

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.751	1	.751	1.764	.185[b]
	Residual	167.249	393	.426		
	Total	168.000	394			
2	Regression	3.437	5	.687	1.625	.152[c]
	Residual	164.563	389	.423		
	Total	168.000	394			

a. Dependent variable: Service

b. Predictors: (Constant), Gender

c. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Model Summary[c]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.109[a]	.012	.007	.65079
2	.159[b]	.025	.010	.64966

a. Predictors: (Constant), Tourgroup, By myself

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Service

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.979	2	.989	2.336	.098[b]
	Residual	166.021	392	.424		
	Total	168.000	394			
2	Regression	4.243	6	.707	1.676	.126[c]
	Residual	163.757	388	.422		
	Total	168.000	394			

a. Dependent variable: Service

b. Predictors: (Constant), Tourgroup, By myself

c. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Model Summary[c]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.070[a]	.005	.000	.65307
2	.149[b]	.022	.007	.65068

a. Predictors: (Constant), Learn, work

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Service

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.814	2	.407	.955	.386[b]
	Residual	167.186	392	.426		
	Total	168.000	394			
2	Regression	3.726	6	.621	1.467	.188[c]
	Residual	164.274	388	.423		
	Total	168.000	394			

a. Dependent variable: Service

b. Predictors: (Constant), Learn, work

c. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Model Summary[c]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.072[a]	.005	-.005	.65461
2	.140[b]	.020	-.001	.65321

a. Predictors: (Constant), not, 5-10 times a day, < 1 time a day, 1-5 times a day

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Service

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.879	4	.220	.513	.727[b]
	Residual	167.122	390	.429		
	Total	168.000	394			
2	Regression	3.301	8	.413	.967	.461[c]
	Residual	164.699	386	.427		
	Total	168.000	394			

a. Dependent variable: Service

b. Predictors: (Constant), not, 5-10 times a day, < 1 time a day, 1-5 times a day

c. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Appendix 4.16 Regression analysis Factor 2 exhibition with control variables

Model Summary[c]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.065[a]	.004	.002	.72334
2	.157[b]	.025	.012	.71951

a. Predictors: (Constant), Age

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Exhibition

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.868	1	.868	1.659	.198[b]
	Residual	205.628	393	.523		
	Total	206.497	394			
2	Regression	5.113	5	1.023	1.975	.081[c]
	Residual	201.384	389	.518		
	Total	206.497	394			

a. Dependent variable: Exhibition

b. Predictors: (Constant), Age

c. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Model Summary[c]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.123[a]	.015	.013	.71935
2	.182[b]	.033	.021	.71645

a. Predictors: (Constant), Male

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Exhibition

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3,134	1	3,134	6,057	,014[b]
	Residual	203,363	393	,517		
	Total	206,497	394			
2	Regression	6,820	5	1,364	2,657	,022[c]
	Residual	199,676	389	,513		
	Total	206,497	394			

a. Dependent variable: Exhibition

b. Predictors: (Constant), Male

c. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.241	.049		85.833	.000
	Male	-.179	.073	-.123	-2.461	.014
2	(Constant)	4.170	.065		64.528	.000
	Male	-.172	.072	-.119	-2.376	.018
	Facebook	.020	.123	.008	.160	.873
	Instagram	.276	.144	.100	1.912	.057
	Twitter	-.870	.528	-.085	-1.649	.100
	Website	.091	.074	.063	1.237	.217
a. Dependent Variable: Exhibition						

Model Summary[c]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.057[a]	.003	-.002	.72461
2	.145[b]	.021	.006	.72178

a. Predictors: (Constant), By myself, Tourgroup

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Exhibition

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.675	2	.338	.643	.526[b]
	Residual	205.821	392	.525		
	Total	206.497	394			
2	Regression	4.360	6	.727	1.395	.215[c]
	Residual	202.137	388	.521		
	Total	206.497	394			

a. Dependent variable: Exhibition

b. Predictors: (Constant), By myself, Tourgroup

c. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Model Summary[c]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.047[a]	.002	-.003	.72500
2	.140[b]	.020	.005	.72230

a. Predictors: (Constant), Learn, work

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Exhibition

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.450	2	.225	.428	.652[b]
	Residual	206.047	392	.526		
	Total	206.497	394			
2	Regression	4.068	6	.678	1.300	.256[c]
	Residual	202.428	388	.522		
	Total	206.497	394			

a. Dependent variable: Exhibition

b. Predictors: (Constant), Learn, Work

c. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Model Summary[c]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,101[a]	,010	,000	,72396
2	,173[b]	,030	,010	,72042

a. Predictors: (Constant), not, 5-10 times a day, < 1 time a day, 1-5 times a day

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Exhibition

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.090	4	.523	.997	.409[b]
	Residual	204.407	390	.524		
	Total	206.497	394			
2	Regression	6.162	8	.770	1.484	.161[c]
	Residual	200.335	386	.519		
	Total	206.497	394			

a. Dependent variable: Exhibition

b. Predictors: (Constant), not, 5-10 times a day, < 1 time a day, 1-5 times a day

c. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Appendix 4.17 Regression analysis Factor 3 activities with control variables

Model Summary[c]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.000[a]	.000	-.003	.44161
2	.129[b]	.017	.004	.44016

a. Predictors: (Constant), Age

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Activities

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.000	1	.000	.000	.997[b]
	Residual	76.641	393	.195		
	Total	76.641	394			
2	Regression	1.275	5	.255	1.316	.256[c]
	Residual	75.366	389	.194		
	Total	76.641	394			

a. Dependent variable: Activities

b. Predictors: (Constant), Age

c. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Model Summary[c]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.022[a]	.000	-.002	.44150
2	.130[b]	.017	.004	.44008

a. Predictors: (Constant), Male

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Activities

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.036	1	.036	.183	.669[b]
	Residual	76.605	393	.195		
	Total	76.641	394			
2	Regression	1.302	5	.260	1.345	.245[c]
	Residual	75.339	389	.194		
	Total	76.641	394			

a. Dependent variable: Activities

b. Predictors: (Constant), Male

c. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Model Summary[c]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.008[a]	.000	-.005	.44215
2	.130[b]	.017	.002	.44069

a. Predictors: (Constant), Tourgroup, By myself

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Activities

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.005	2	.003	.013	.987[b]
	Residual	76.636	392	.196		
	Total	76.641	394			
2	Regression	1.287	6	.215	1.105	.359[c]
	Residual	75.354	388	.194		
	Total	76.641	394			

a. Dependent variable: Activities

b. Predictors: (Constant), Tourgroup, By myself

c. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Model Summary[c]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.052[a]	.003	-.002	.44157
2	.137[b]	.019	.004	.44025

a. Predictors: (Constant), Learn, work

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Activities

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.207	2	.103	.530	.589[b]
	Residual	76.434	392	.195		
	Total	76.641	394			
2	Regression	1.438	6	.240	1.236	.287[c]
	Residual	75.203	388	.194		
	Total	76.641	394			

a. Dependent variable: Activities

b. Predictors: (Constant), Learn, work

c. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Model Summary[c]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.060[a]	.004	-.007	.44250
2	.140[b]	.020	-.001	.44118

a. Predictors: (Constant), not, 5-10 times a day, < 1 time a day, 1-5 times a day

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Activities

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.276	4	.069	.353	.842[b]
	Residual	76.365	390	.196		
	Total	76.641	394			
2	Regression	1.509	8	.189	.969	.460[c]
	Residual	75.132	386	.195		
	Total	76.641	394			

a. Dependent variable: Activities

b. Predictors: (Constant), not, 5-10 times a day, < 1 time a day, 1-5 times a day

c. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Appendix 4.18 Regression analysis Factor 4 facilities with control variables

Model Summary[c]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.097[a]	.009	.007	.61611
2	.165[b]	.027	.015	.61369

a. Predictors: (Constant), Age

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Facilities

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.415	1	1.415	3.728	.054[b]
	Residual	149.181	393	.380		
	Total	150.596	394			
2	Regression	4.093	5	.819	2.173	.056[c]
	Residual	146.504	389	.377		
	Total	150.596	394			

a. Dependent variable: Facilities

b. Predictors: (Constant), Age

c. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Model Summary[c]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.076[a]	.006	.003	.61724
2	.146[b]	.021	.009	.61551

a. Predictors: (Constant), Male

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Facilities

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.868	1	.868	2.280	.132[b]
	Residual	149.728	393	.381		
	Total	150.596	394			
2	Regression	3.222	5	.644	1.701	.133[c]
	Residual	147.375	389	.379		
	Total	150.596	394			

a. Dependent variable: Facilities

b. Predictors: (Constant), Male

c. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Model Summary[c]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.107[a]	.011	.006	.61625
2	.161[b]	.026	.011	.61493

a. Predictors: (Constant), Tourgroup, By myself

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Facilities

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.728	2	.864	2.275	.104[b]
	Residual	148.868	392	.380		
	Total	150.596	394			
2	Regression	3.880	6	.647	1.710	.117[c]
	Residual	146.717	388	.378		
	Total	150.596	394			

a. Dependent variable: Facilities

b. Predictors: (Constant), Tourgroup, By myself

c. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Model Summary[c]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.080[a]	.006	.001	.61781
2	.155[b]	.024	.009	.61551

a. Predictors: (Constant), Learn, Work

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Facilities

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.973	2	.486	1.274	.281[b]
	Residual	149.624	392	.382		
	Total	150.596	394			
2	Regression	3.600	6	.600	1.584	.150[c]
	Residual	146.996	388	.379		
	Total	150.596	394			

a. Dependent variable: Facilities

b. Predictors: (Constant), Learn, Work

c. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Model Summary[c]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.110[a]	.012	.002	.61763
2	.154[b]	.024	.003	.61721

a. Predictors: (Constant), not, 5-10 times a day, < 1 time a day, 1-5 times a day

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

c. Dependent variable: Facilities

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.824	4	.456	1.195	.312[b]
	Residual	148.772	390	.381		
	Total	150.596	394			
2	Regression	3.549	8	.444	1.164	.320[c]
	Residual	147.048	386	.381		
	Total	150.596	394			

a. Dependent variable: Facilities

b. Predictors: (Constant), not, 5-10 times a day, < 1 time a day, 1-5 times a day

c. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Appendix 4.19 Regression analysis History museums

History museums	N Valid, 226 respondents	Percentage	Cumulative percentage
Facebook	20	9	9
Instagram	14	6	15
Twitter	1	0.5	15.5
Website	124	55	70.5
No social media use	93	41	111.5
Total	252	111.5	111.5

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.310[a]	.096	.080	.43132

a. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

b. Dependent variable: Facilities

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.386	4	1.097	5.894	.000[b]
	Residual	41.114	221	.186		
	Total	45.500	225			

a. Dependent variable: Valuation

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.946	.043		91.008	.000
	Facebook	.096	.105	.061	.912	.363
	Instagram	.362	.126	.195	2.886	.004
	Twitter	-1.908	.450	-.282	-4.244	.000
	Website	-.032	.059	-.035	-.536	.593
a. Dependent Variable: Valuation						

Appendix 4.20 Regression analysis Business, science and technology museums

Business, science and technology museums	N Valid, 25 respondents	Percentage	Cumulative percentage
Facebook	5	20	20
Instagram	2	8	28
Twitter	0	0	28
Website	18	72	100
No social media use	7	28	128
Total	32	128	128

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.674[a]	.454	.376	.30545

a. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

b. Dependent variable: Valuation

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.629	3	.543	5.821	.005[b]
	Residual	1.959	21	.093		
	Total	3.589	24			

a. Dependent variable: Valuation

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.093	.115		35.455	.000
	Facebook	.627	.163	.662	3.838	.001
	Instagram	.145	.233	.104	.622	.541
	Website	-.054	.144	-.064	-.374	.712

a. Dependent Variable: Valuation

Appendix 4.21 Regression analysis Art museums

Art museums	N Valid, 120 respondents	Percentage	Cumulative percentage
Facebook	11	9.2	9.2
Instagram	13	10.8	20
Twitter	1	0.8	20.8
Website	60	50	70.8
No social media use	48	40	110.8
Total	133	110.8	110.8

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.221[a]	.049	.016	.43733

a. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

b. Dependent variable: Valuation

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.129	4	.282	1.476	.214[b]
	Residual	21.994	115	.191		
	Total	23.124	119			

a. Dependent variable: Valuation

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Appendix 4.22 Regression analysis Natural history museums

Natural history museums	N Valid, 9 respondents	Percentage	Cumulative percentage
Facebook	1	11.1	11.1
Instagram	0	0	11.1
Twitter	0	0	11.1
Website	3	33.3	44.4
No social media use	6	66.6	111
Total	10	111	111

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.571[a]	.326	.102	.51527

a. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

b. Dependent variable: Valuation

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.772	2	.386	1.454	.306[b]
	Residual	1.593	6	.266		
	Total	2.365	8			

a. Dependent variable: Valuation

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Appendix 4.23 Regression analysis Ethnology museums

Ethnology museums	N Valid, 15 respondents	Percentage	Cumulative percentage
Facebook	12	80	80
Instagram	0	0	80
Twitter	0	0	80
Website	6	40	120
No social media use	5	33.3	153.33
Total	23	153.33	153.33

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.276[a]	.076	-.078	.36699

a. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

b. Dependent variable: Valuation

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.134	2	.067	.496	.621[b]
	Residual	1.616	12	.135		
	Total	1.750	14			

a. Dependent variable: Valuation

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Appendix 4.24 Regression analysis Rijksmuseum

Rijksmuseum	N Valid, 106 respondents	Percentage	Cumulative percentage
Facebook	9	8.5	8.5
Instagram	7	6.5	15
Twitter	1	1	16
Website	58	55	71
No social media use	42	39.5	110.5
Total	117	110.5	110.5

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.416[a]	.173	.141	.40048

a. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

b. Dependent variable: Valuation

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.395	4	.849	5.291	.001[b]
	Residual	16.199	101	.160		
	Total	19.593	105			

a. Dependent variable: Valuation

b. Predictors: (Constant), Yes, Instagram, Yes, Facebook, yes, Twitter, Yes Website

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.961	.059		67.169	.000
	Facebook	.021	.151	.014	.139	.890
	Instagram	.399	.181	.230	2.205	.030
	Twitter	-1.959	.441	-.441	-4.442	.000
	Website	-.068	.079	-.079	-.857	.394

a. Dependent Variable: Valuation