The influence of photographs when choosing horses for purchase

Thesis by Melina Schnaudt

Name: Melina Schnaudt

Student number: 870806101

Major: Equine, Leisure & Sports

Address: Grenzstraße 70

47589 Uedem

Germany

Institution: University of Applied Sciences Van Hall Larenstein, part of Wageningen University and Research Centre, Netherlands

Time: February 2011 – June 2011

Internal Coach: Dr. Inga Wolframm, van Hall Larenstein, Wageningen

Statutory Declaration

I declare that I have written and completed the enclosed thesis entirely by myself and only the defined sources and study aids were used. Any thoughts or quotations which were inferred from these sources are clearly marked as such. This thesis was not submitted in the same or in a substantially similar version, not even partially, to any other authority to achieve an academic grading and was not published elsewhere.

Table of content:

Register of illustrations

Register of tables

1. Zusammenfassung

Die vorliegende Forschungsarbeit beschäftigt sich mit der idealen Präsentation von Pferden auf Verkaufsfotos. Zwei Studien wurden durchgeführt um die Aspekte eines guten Verkaufsfotos zu bestimmen, um herauszufinden, worauf bei Pferdefotos genau geachtet wird und um zu definieren, was von potentiellen Kunden als attraktiv angesehen wird. In der ersten Studie wurde ein Fragebogen mit 30 Bildern von 17 unterschiedlichen Pferden entworfen. Die Bilder waren in der Art, wie sie regelmäßig in Printmedien zum Pferdeverkauf genutzt werden. Die Fotos wurden in drei Gruppen unterteilt: Kopfbilder, Ganzkörperbilder und Springbilder. 21 pferdebegeisterte Studenten und Dozenten der Fachhochschule Van Hall Larenstein in Wageningen wurden gebeten, die ihnen gezeigten Pferde auf einer Skala von 1 (äußerst unattraktiv) bis 10 (äußerst attraktiv) zu bewerten. Anschließend wurden sie gebeten anzugeben, ob sie das jeweils gezeigte Pferd kaufen würden wenn sie gerade auf der Suche wären.

Die Blickrichtung der Teilnehmer wurde mit dem Eye Tracker Tobii T60 XL aufgenommen. Um die Blickrichtung der Teilnehmer korrekt analysieren zu können, wurden die Fotos in „Areas of interest“ aufgeteilt. Erste Ergebnisse ergaben unabhängig von der Art des Fotos einen schwerpunktmäßigen Fokus auf den Kopf, insbesondere auf die Augen des jeweiligen Pferdes.

Im Weiteren wurde mit Hilfe von ANOVAs nach einem Zusammenhang zwischen dem Fokus auf verschiedene Regionen und der Bewertung gesucht. Einige signifikante Zusammenhänge konnten entdeckt werden, die allerdings weiterer Forschung bedürfen. T-Tests bei gepaarter Stichprobe wurden ausgeführt um zu testen, ob es signifikante Unterschiede der visuellen Aufmerksamkeit auf Augen, Maul oder Ohren zwischen jenen Teilnehmern gibt, die das Pferd kaufen würden und jenen, die einen Kauf nicht in Erwägung ziehen würden. Keine signifikanten Unterschiede zwischen den Gruppen mit $p > 0.05$ konnten gefunden werden.

In einer zweiten Studie wurden 217 Reitern in einem ausführlicheren Fragebogen die gleichen Fragen gestellt. Einige Fotos wurden ersetzt sowie weitere hinzugefügt, sodass am Ende 38 Fotos von 18 Pferden genutzt wurden. Erstes Ziel der Analyse dieses Fragebogens war es, das attraktivste Foto jeder Gruppe (Kopffoto, Ganzkörperfoto, Springfoto) zu finden. Im Weiteren wurden die Einflüsse von Erfahrung der Reiter (in Jahren), Level und Disziplin getestet. Dafür wurden einfaktorielle ANOVAs durchgeführt. Während Erfahrung mit Pferden keine signifikante Rolle spielt, können Level und Disziplin die Bewertung eines Pferdefotos beeinflussen. Vergleiche der unterschiedlichen Fotos ergaben, dass Springpferde in der Absprungphase attraktiver sind als in einer späteren Phase. Desweiteren spielen ein sympathischer Gesichtsausdruck des Pferdes, sowie ein gepflegtes Erscheinungsbild eine große Rolle.

Die vorliegende Forschungsarbeit zeigt also, dass die Präsentation eines Pferdes auf einem Verkaufsfoto von enormer Bedeutung ist, da ein Pferd auf einem schlechten Foto sofort unattraktiver für den potentiellen Kunden wird. Zusammenfassend kann man festhalten, dass bei der Betrachtung von Pferdefotos der Fokus auf die Augen gelegt wird und der Ausdruck des jeweiligen Pferdes eine große Rolle spielt. Ideale Springfotos zeigen Pferde in der Absprungphase, dabei spielt die Höhe des Sprungs eine untergeordnete Rolle. Unabhängig von der Art des Fotos sollten Pferde aufmerksam schauen, also gespitzte Ohren, einen interessierten Augenausdruck und eine entspannte Maulpartie aufweisen, und ein gepflegtes Äußeres haben.

2. Abstract

The present research investigates the perfect way to present a horse on a photo in order to sell it. Two studies were conducted in order to define the aspects of a good sales photo, to investigate where people look at in a photo and finally to define what potential customers consider attractive. For the first study a questionnaire with 30 horse photos of 17 different horses was designed. The photos were in a kind that is commonly used when selling horses. Photos were divided into three groups: Head shots, full body shots and show jumping photos. 21 equine enthusiasts of the University of Applied Sciences Van Hall Larenstein, Wageningen, were asked to rate the photos on a scale from 1 (very unattractive) to 10 (extremely attractive) and subsequently decide whether they would consider buying the horse, assuming they were looking to buy.

The visual attention of the participants was recorded with the eye-tracker Tobii T60 XL. For each group different body parts were defined as areas of interest in order to facilitate the analysis. First results indicated independently of the kind of photo (head, full body, show jumping) a main focus on the horse's head, primarily the eyes. Subsequently, analyses of variance were conducted in order to investigate a correlation between the different AOIs and the scoring. Some significant correlations could be found, but further research is needed. Paired sample T-tests were conducted in order to determine whether or not there were any significant differences in visual attention on the eyes, ears and nose between participants who considered purchasing a horse and those who didn't. No significant differences were found between any of the groups with $p > 0.05$.

In a second study 217 equine enthusiasts were asked the same questions with a slightly different set of photos. Some were added, some were reduced so that in total 38 photos of 18 horses were used. Primary objective was to determine the most attractive photo of each group. Subsequently, effects of experiences with horses (in years), level of performance and discipline were tested. One-way ANOVAs were therefore conducted. While experiences with

horses do not have a significant effect on scoring, level and discipline might influence the rating of an equine photo. Comparisons of the different photos showed that show jumping horses should be presented in the take off phase because a later phase is less attractive to the beholder. Furthermore, a likable facial expression of the horse and a well-groomed appearance play an important role.

The current thesis demonstrates the importance of a good picture. Horses on photos taken in a wrong phase appear less attractive to potential customers than on good photos. Summarizing it is possible to say that people focus the horse's expression, primarily the horse's eyes when looking at equine photos. Perfect show jumping shots show the horses in the take-off phase while the height of the fence plays a subordinate role. Independently of the group of photo, the horse's expression should be attentive, with pricked ears and a mouth devoid of tension. Furthermore, the horse should be well-groomed.

2. Introduction

2.1 Market situation in Germany

More than one million horses and ponies are currently registered in Germany. Research published in the annual report of the Deutsche Reiterliche Vereinigung e.V. (FN), the governing body of equitation in Germany, divides the horses in Germany in three groups: The smallest group is the group of top sport horses, about 1% of horses currently kept in Germany (FN, 2002). The second group consists of horses for basic competing, about 24% of the total number of horses in Germany. Seventy-five percent of the horses in Germany are kept only for leisure riding (FN, 2002). Furthermore, approximately 1.6 to 1.7 million people, including children younger than 14 years, are participating in equine sports. Of these equine enthusiasts, approximately 750.000 are members of a riding club, of whom one third (250.000 equestrians) compete at novice up to professional level. The rest of the equine enthusiasts in Germany are non-organised leisure riders (FN, 2002).

One of the reasons that make equestrian sports attractive to such a large number of people is the close interaction with the horse. Buying and selling horses therefore plays an integral part in equestrian sports. Approximately 3.000 equestrians perform at a professional level, and generally prefer horses that can be used in the sport immediately while rarely running the risk of buying a young horse not knowing if it will meet all expectations (Schneider, 2008). Essentially this means that the large majority of horses sold is bought by private people, who ride horses for fun and as a hobby (Schneider, 2008). Nevertheless, the rather high number of professional equestrians demands high quality horses while the amount of those horses is steadily shrinking. Consequently, the prices for high quality horses are rising while horses of lower quality and with a small price tag are flooding the market (Schneider, 2008). But high quality horses are not only needed in Germany. There is an international demand for high quality horses bred in Germany, France or the Netherlands. In 2005, 3.619 horses bred in

Germany (horses for meat production excluded) of a value of 88 Mio. € were exported (Schneider, 2008). So the export of high quality horses results again in a decreasing number of good horses in Germany while, compared to that number, the amount of low quality horses explodes.

Taking into account the expenses just for breeding a horse a breeder should get approximately 24,000€ for a three year old youngster including direct costs like feed, indirect costs such as labour and building occupancy expenses (Rothenberger, 2006). In this calculation, the quality of a horse is not considered. But breeding low quality horses costs just as much as breeding high quality horses. In order to sell their horses for an adequate price, more and more sellers make use of print media or the internet. Advertisements almost always use one or several photos of the horse in order to give the potential buyer a realistic impression of the horse. However, many photos used in advertisements depict horses in an unfavourable light, such as a less than optimal phase during a jump or in a dressage test or in the field. Intuitively one would assume that potential buyers are attracted to certain features within an equine photo. One might assume that potential buyers for a show jumper are interested in a photo where the horse presents a good technique. However, little conclusive evidence exists suggesting what the attracting features might be, and what potential buyers really look at when studying photos of horses. The current study aims to investigate what type of photo equine enthusiasts find attractive and would make them consider purchasing the horse. Furthermore, the study also aims to investigate what type of features in a horse people are drawn to look at when studying a photo. Additionally, this research aims to investigate if good horses presented with bad photos have a smaller chance to be sold than horses of a lower quality on good photos. Finally, it will be investigated whether or not there is a “perfect photo” to sell a horse.

3. Literature Review

3.1 Attractiveness

A common axiom about attractiveness and beauty is: "Beauty is in the eye of the beholder." (Schmid, Marx and Samal, 2007). Many different research projects have been carried out in order to identify which factors make a face attractive. The following sections aim to describe the different factors that seem to make faces attractive.

One main factor for attractiveness might be averageness. More conventional faces are thought to appear more attractive too (Galton, 1878). Consequently, the mathematical average of faces of a population is important, because it is represented by attractive faces (Langlois, Roggman and Musselman, 1994). Additionally, Langlois, Roggman and Musselman (1994) state: "because a face can be both young and smiling and still be quite unattractive relative to other young, smiling faces, we believe that averageness is a necessary, fundamental component of attractiveness, whereas characteristics such as a pleasant expression are not." Furthermore, attractiveness is influenced by symmetry. While the attractiveness of male faces is influenced by both - averageness and symmetry, the attractiveness of female faces is primarily governed by averageness (Komori, Kawamura and Ishihara, 2009).

Standards of what is considered attractive and what is considered less attractive are learnt e.g. through the media. Different cultures have different standards of attractiveness (Langlois, Roggman and Musselman, 1994).

3.2 Visual perception

Having started with what is considered attractive the following section addresses the mechanical components of perception. The human field of sharp vision is limited. Furthermore, human eyes are quite slow. It takes approximately 80ms of seeing before an image is registered at all (Anon., 2010). Nevertheless, this implies only registration, but yet

no conscious recognition. When a stimulus is located within one's field of foveal vision, approximately 1,5 degrees on the left or the right side of the point of fixation are sent to both hemispheres in order to be processed (Janiszewski, 1988). Data on the left of the point of focus are processed in the right hemisphere and data on the right of the point of focus are processed in the left hemisphere (Janiszewski, 1988). The right hemisphere uses "a template matching procedure" in order "to give meaning to incoming information and applies alternative templates to elaborate upon incoming or stored information" (Janiszewski, 1988). The right hemisphere is able "to simultaneously integrate multiple pieces of information" (Janiszewski, 1988). "The left hemisphere recognizes well-learnt individual units, then serially integrates or combines them into some meaningful whole" (Janiszewski, 1988). So the formation of different preferences can be linked to the different abilities of the two hemispheres to react on a stimulus (Janiszewski, 1988).

The foveal vision of human vision has the function of a magnifier, while the peripheral vision is responsible for the compression of the seen data. When pieces of information are interpreted to be relevant, the necessary muscle commands are calculated and the foveal vision is positioned. The positioning occurs approximately 3 to 4 times per second. Data that has already been compressed by the peripheral system are recalculated in order to "compensate for the eye movement" (Hunziker, 2006). Consequently, when people see an advertisement it is not possible to see and process all the details. Advertisements in print media, like horse magazines, usually print several advertisements per page. Consequently, an advertisement supposed to attract potential buyers needs to stand out. Attractive faces evoke greater activity in the orbitofrontal cortex (OFC) and the left hippocampus than unattractive faces (Aharon, et. al., 2001; Bray and O'Doherty, 2007; Cloutier, et. al., 2008; Ishai, 2007; Kranz and Ishai, 2006; O'Doherty et. al., 2003; Winston et al., 2007, citied in Tsukiura and Cabeza, 2010). While the orbitofrontal cortex plays an important role in decision making and emotional processing (Bechara, Damasio and Damasio, 2000) the hippocampus is very

important for remembering details (Davachi, 2006; Diana, et. al., 2007; Yonelinas, 2002; Tsukiura and Cabeza, 2010). Tsukiura and Cabeza (2010) additionally found out that "functional connectivity between these orbitofrontal and hippocampal regions was stronger during the encoding of attractive than neutral or unattractive faces." Essentially, it is possible to activate the important regions of the human brain using attractive photos.

3.3 Decision making

For many years, economists thought of the human being as a "homo economicus" who decides only based on reason and who processes information only rationally and economically (Trommsdorff, 1989). The homo economicus is supposed to gather all available pieces of information and processes them all (Todd, 2005). This indeed can be the case for risky decisions with a high involvement of the consumer, like for cars or other high priced goods (Trommsdorff, 1989). Nowadays it is known that usually feelings, moods and emotions play an important role in consumer's buying behaviour (Trommsdorff, 1989).

Research has shown that it is possible that consumers rely on evaluations of the past that were stored in their memories earlier (see e.g. Lynch, Marmorstein, and Weigold, 1988, citied in Pham, 1998). This process is called "affect-referral" (Wright, 1975, citied in Pham, 1998). Instead of evaluating according to the products features and attributes people might trust their feelings they once experienced more when they see the targets e.g. a photo, a commercial etc. (Pham, 1998). The mood of the consumer in the moment he has to make a decision has impact on the decision as well because it influences the consumer's feelings, too (Pham, 1998).

Another important variable in the consumer decision making process might be affect, as Pham (1998) describes recent developments in social psychology. As he refers to former research by Schwarz and Clore (1983, 1988): "Affect may be used as a source of information in evaluative judgment." The so called "affect-as-information"-model describes people's

evaluation of targets as thinking about the target's representation and asking afterwards "How do I feel about it?" (Schwarz and Clore, 1983, 1988, citied in Pham, 1998)

Although the preferring of two issues occurs consciously, the subconscious plays an important role influencing the thoughts etc. that are used to form a preference (Janiszewski, 1988). According to Janiszewski (1988), the process of preferring can even occur subconsciously and without conscious thinking.

It often occurs that the scarce resource is attention instead of information (Karelaia, 2005). So it is really important to arouse the potential buyer's attention and to offer the correct information that is really needed. Several researchers have been researching about the so called "fast and frugal decision making models" of Gigerenzer and Goldstein (1996). Fast in these models means they do not require complicated cognitive thinking and frugal refers to the use of only little parts of the information available (Gigerenzer, Todd, and the ABC Research Group, 1999). That way these simple models only need little cognitive effort and perform quite well compared to models that are cognitively demanding and rational (Karelaia, 2005). Although the "fast and frugal" method has been demonstrated as successful in several environments, there exists additional empirical evidence saying that people sometimes search for more information even when they have to spend time and money although additional data is not important and not needed. They are simply not comfortable with the little amount of information (Karelaia, 2005). Pieces of information that are searched for to feel more comfortable are intended to confirm and support the first intuition and impressions (Karelaia, 2005). The following part will investigate the importance of the first impression further.

3.4 First impressions

First impressions are considered to be very important and very stable and hard to change (DeGirolamo and Hintzman, 1997). "The visual presentation of a product may result in early elimination of some alternatives as well as in a cue for several attributes. So, while the visual

presentation may already reduce the size of the evoked set, it may also lead to more in-depth search about the remaining alternatives (Painton and Gentry, 1985). Furthermore, consumers that already have developed a preference for one alternative usually use new information to make the first choice even more attractive (Russo, Meloy, and Medvec, 1998, citied in Chernev, 2001). Essentially that means that when shared product features are added to the different alternatives the previously chosen alternative becomes even more attractive for the consumer, not considering that the other alternative also improved by the new information (Chernev, 2001).

Furthermore, the cognitive capacity of a human being is restricted (Simons, 1955, citied in Oppenheimer, 2003). So usually the human being does not even need much information to make decisions: "Fast and frugal heuristics" are used, which means that most of the information available is ignored (Todd, 2005). So it is again the important first impression that many decisions are based on (Todd, 2005). Todd (2005) gives as one example the phenomenon of "love at first sight". One quick look without any deeper information about the potential partner is enough. Todd (2005) argues that exactly the unnecessary pieces of information are ignored and the few important pieces of information are put focus on.

3.5 Horses

Love at the first sight is an important aspect when considering the purchase of a horse as love plays an important role in most of the horse – rider – relationships. About 90% of equine enthusiasts in Germany describe their bond with the horse as very close (Schneider, 2008). This first sight often occurs via advertisements in print media or on the internet. Depending on the photo the buyer can define several features of the horse. But what does a potential buyer want and what is a single photo able to tell him or her about the horse?

First of all, the potential buyer wants a basic benefit (level, colour, body shape, character) and some additional benefit like e.g. exterior appearance, fit with the rider or affability, and therefore decides according to his personal buying interest and his subjective bond to the

horse as well (Schneider, 2008). Assuming that a potential buyer is looking for a well-performing, healthy horse he or she needs a horse with a good conformation. Indeed, research of Holmström and Philipsson (1993) found several correlations and relationships between conformation and performance and found out that it is possible to distinguish a horse with good gaits from a horse with worse gaits just by having a look at the conformation. They measured the angles between femur and horizontal plane as well as the angle of the hip joint and found a correlation to the gaits. The angle femur – horizontal plane especially influences the locomotion in trot, but both angles influence all gaits. Consequently, smaller angles result in better scores for the gaits. Especially walk, but generally all gaits were positively affected by a small inclination of the scapula related to the horizontal plane. Furthermore, the quality of gaits are influenced by height at withers, length of the humerus and length of the femur, so a long femur influences the quality of walk and trot positively. It is of common knowledge that the hindquarters are very important for horseback riding. They have to bear a lot of weight, drive the horse forward and enable the horse to work balanced. A forwardly sloping femur is therefore important, because it places the hindquarters further under the horse's body. Combined with a rather flat pelvis it enables the work of the quadriceps femoris, which is the most strained muscle when the horse is worked in collection. Conformational aspects also influence show jumping qualities. So a small width of front cannon at the middle, a short hind phalanx and large angles of stifle and hock joints indicate good jumping abilities. Furthermore, good show jumpers can be distinguished from bad show jumpers by significantly smaller angles of the femur to the horizontal plane (Langlois et. al., 1978, citied in Holmström and Philipsson, 1993).

In addition to the effects on performance, the conformation affects the medical and orthopaedic status as well. So a long humerus and a long femur, a short metatarsus, a small angle between scapula and horizontal plane and small angles of the shoulder joint result in high scores for the medical status while a long humerus, a large angle of the elbow joint and

small angles between the scapula and the femur and the horizontal plane positively affects the orthopaedic status. Evaluating the conformation of horses they should be looked at in the view from the front and from behind. It is important to pay attention to symmetry (Rahn and Fellmer, 1996, citied in Schneider, 2008). The hooves have to be equally big, eyes and ears have to be of the same size as well and the muscles should be equally developed on both sides of the body (Rahn and Fellmer, 1996, citied in Schneider, 2008) to ensure a healthy horse that is able to perform adequately.

Besides the conformation the basic benefit includes the colour and the character too. People often prefer black and brown horses, while chestnuts are out-of-favour. Furthermore, geldings are preferred over stallions and mares (Schneider, 2008). People can see a horse's character by evaluating its behaviour. It is easy to see whether the horse is afraid, nervous, aggressive, or desensitized (Rahn and Fellmer, 1996, citied in Schneider, 2008). The horse should be calm but interested and pleasant (Rahn and Fellmer, 1996, citied in Schneider, 2008).

The first impression when seeing a photo of a horse already tells several details about the horse. The most obvious aspects are colour and, under certain conditions, the gender as well. The state of health can be distinguished via attentive and friendly eyes, shiny coat and a good body condition. Finally, certain exterior characteristics like active hindquarters, good neck muscles and hindquarter muscles, a nice head, harmony of the entire body and charisma can be recognised in a photo (Schneider, 2008). There are several characteristics that show the potential customer a hardening of the muscles and therefore problems of the horse's health or in the rideability of the horse. Bad neck muscles, distinctive muscles in the lower part of the neck, bad neck-shoulder-connection and a skew posture of the tail are only a few examples (Heuschmann, 2008).

Schneider (2008) describes several criteria of a perfect horse. His type should be harmonious and precious, and the horse should have clear gender type and charisma. The neck should be medium highly set. It should be no goose-, swan-, ewe lamb-neck or have other deformations.

The back should be of an average length, fitting to the rest of the body. The shoulders should be big, long and sloping to ensure long and harmonious movements. The withers should be long and well-shaped to ensure a good positioning of the saddle. The back should fit in the appropriate rectangular format and should be harmoniously rolling finishing in a long croup. The pelvis should be sloping as well; its angle to the horizontal plane should measure approximately 45°. The legs should stand correctly with clear and big joints. The hooves have to carry the weight of the horse, so they should be big and well shaped; the angle to the horizontal should be approximately 45 – 50° so that the tendons are not overburdened. The gaits should be rhythmical, supple, elastic and ground-covering, trot and canter should be in addition to that cadenced, powerful and swinging. A good show jumper should be brave and eager to jump, he should have good jumping skills, a good bascule and a good estimation for distances. The forelimbs should be bent well in the elbow, knee and fetlock joints (FN, 1997). Additional characteristics of a good horse are comfortable gaits, an active back, attentiveness and sensitivity, an even temper, keen to walk, talent, trustful and fearless (Schneider, 2008).

Applying all these aspects of literature review to the initial problem of selling horses it shows once again the importance of a photo. It seems that a perfect photo has to catch the potential customer's attention (Karelaia, 2006), has to serve all the important pieces of information (Gigerenzer and Goldstein, 1996, Karelaia, 2006) and present the horse in a way that is appealing for the potential customer i.e. has to show the strong points of a horse. Finally, the photo needs to arouse a positive first impression which the potential buyer wants to confirm with additional information, e.g. by calling the owner to try the horse out. Between two horses of the same quality the horse with a bad photo will not be preferred over a horse with a good photo that the consumer initially preferred.

The current study aims to investigate what type of photo equine enthusiasts find attractive and would make them consider purchasing the horse. Furthermore, the study aims to investigate what type of features in a horse people are drawn to look at when studying a photo and

whether good horses presented with bad photos have a smaller chance to be sold than horses of a lower quality on good photos.

Finally, it will be investigated whether or not there is a “perfect photo” to sell a horse.

4. Methods

Two research projects were carried out in order to determine attractive and unattractive photos of horses. Furthermore, a qualitative study was carried out in order to distinguish influences on the ratings.

4.1 Research 1

4.1.1 Participants

The first research project was conducted at the University of Applied Sciences Van Hall Larenstein, part of Wageningen University and Research Centre. Twenty-one equine enthusiasts (students and lecturers of the University of Applied Sciences Van Hall Larenstein of an equine related study) were asked to complete the questionnaire while having their visual attention monitored using the eye tracker Tobii T60 XL.

Participants were divided into different age groups. Furthermore, they were divided according to their level of performance and their discipline (Age group 1: 15 -20, Age group 2: 20 – 25, Age group 3: 25 – 30, Age group 4: 35 – 40, Age group 5: 40 – 45). Participants in this research were divided according to their discipline they mainly compete in into the following groups: 1: Dressage, 2: Show jumping, 3: Eventing, 4: Endurance, 5: Leisure (no competing). Finally, they were divided according to their level of performance into the following groups: 1: Novice (German performance level 0 and 6, Dutch performance level B and L), 2: Intermediate (German performance level 5, 4 and 3, Dutch performance level M/Z/ZZL/ZZZ), 3: Professional (Higher performance levels).

4.1.2 Questionnaire

A questionnaire was designed showing 30 different equine photos commonly used when selling horses. The photos showing 17 horses were divided into three groups: show jumping photos, head shots or full body shots. Participants were asked to rate the attractiveness of each horse on a scale from 1 (not attractive at all) to 10 (extremely attractive) and subsequently

decide whether they would consider buying the horse, assuming they were looking to buy. In the end of the questionnaire the participants were asked to answer some questions about their gender, age, discipline and level. Finally, they were asked how important a good photo in an advertisement for them personally is.

Plate 1: Example full body photo

Plate 2: Example head shot

Plate 3: Example show jumping photo

4.1.3 Equipment and procedure

In order to monitor the visual attention of the participants the eye-tracker Tobii T60 XL was used during the questionnaire. First of all, the eye tracker had to be calibrated so that measurements were valid for each participant. During the calibration procedure, the eye tracker measures details about the participant's eyes. The participant therefore needs to look at specific point on the screen, following a red dot with a black inside with the eyes. With the help of resulting illustration of the gaze points it is possible to determine if the eye tracker is set up correctly for the participant. Afterwards, participants were asked to complete the actual questionnaire. They were advised to complete the questionnaire without considering preferences for colour or their own discipline. They were supposed to imagine that they would think about purchasing a horse like the one on each photo, so that dressage riders did not score a show jumper worse just because of the discipline. Each photo was shown to the participants for 5 seconds to ensure that the first impression influences the rating of the horse. After each photo participants were asked to rate the horse's attractiveness and to decide whether they would consider a purchase.

4.1.4 Determining areas of interest

In order to measure the time the participants looked at the different regions of the photos (fixation duration) and how often they looked at these regions (fixation count) each photo was divided into areas of interest (AOI). To get valid results the size of the AOIs per photo had to be equal. For show jumping photos, the areas of ears, eyes, mouth, neck, forelegs, hind legs, gender and rider were decided on (see plates 4 – 6). Head shots were divided into the areas of ears, eyes, mouth and neck, while full body photos were split into ears, eyes, mouth, neck, shoulder, forelegs and hind legs. Three AOIs were the same in each photo: Nose, eyes and ears. For that reason and for the reason that heat maps were already indicating a focus on the horses' eyes, the focus in the analysis was set on these three AOIs.

Plate 4: Example for the division of AOIs for head shots

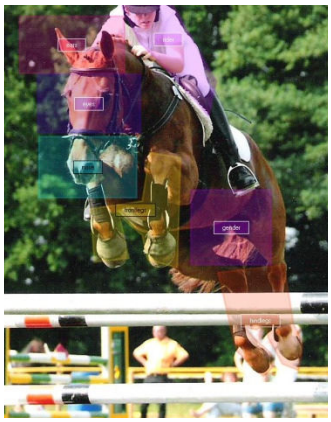


Plate 5: Example for the division of AOIs for a show jumping shot

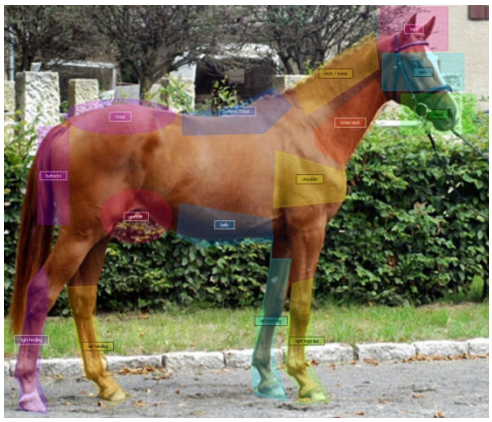


Plate 6: Example for the division of AOIs for full body shots

As a next step, the photos are divided into "good", "medium" and "bad" photos according to their ratings. Photos are rated as "good" with a score of 7 and higher, as "medium" with a score of 4 – 6.9 and with "bad" with a score of < 4.

4.1.5 Statistics

The data for the total fixation duration and the total fixation count was processed with the statistical programme SPSS (Statistical Package for Social Scientists). The visual attention data gained from the eye tracker was analysed using descriptive statistics for each group of photos. Furthermore, the inferential statistic analysis of variance (ANOVA) was conducted in

order to find whether or not there were significant correlations between score and the different fixation durations and fixation counts. Therefore, a Pearson's Product Moment correlation was conducted between score and fixation durations and fixation counts. Finally, paired sample t-tests were conducted in order to determine whether or not there were any significant differences in visual attention on the eyes, ears and nose between participants who considered purchasing a horse and those who didn't.

4.2 Research 2

A second questionnaire was designed in order to publish it online via the social network "facebook".

4.2.1 Participants

The participants in this questionnaire were invited via facebook to answer the questionnaire. The equine enthusiasts were divides into several groups according to their experiences with horses, discipline and level.

4.2.2 Questionnaire

The second questionnaire was of a similar design as the first one for the eye tracking software. Some of the photos of the first questionnaire were replaced by new photos and some more photos were added so that in the end 38 photos of 18 horses were shown to the participants. Most of the horses appeared several times in the questionnaire, up to five times. It was important that enough photos of other horses were shown between them so that the participants do not have the direct comparison between two versions of one horse. Additionally, each photo was adapted in a way that the rider was anonymous so that the participant's attention was not drawn to the rider. In some photos the head of the rider was cut off, in other a coloured area was put over the rider. Prior to the questions with photos the participants were asked about their age, their experiences with horses (in years), their

discipline they mainly compete in and the level they compete in that discipline. Furthermore, they were asked as well about the importance of a photo in an advertisement to sell a horse.

4.2.3 Procedure

The photos were shown to the participants one by one, after each photo the participants were asked to rate the attractiveness of each horse on a scale from 1 (not attractive at all) to 10 (extremely attractive) and decide afterwards whether they would consider buying the horse, assuming they were looking to buy. In this case, there was no control of the time participants looked at each photo but they were again asked to rate according to their first impression without considering their discipline and the horses colour (see annex for the full questionnaire).

4.2.4 Statistics

The results were processed with the help of the statistical programme SPSS. One objective of the analysis was to find the most attractive photos. For that reason descriptive statistics were applied. It was distinguished between ratings of the people who would consider buying the horse and the people who would not consider buying the horse. A mean score was calculated for both groups. According to the total mean score of all participants (N = 217) a ranking of the three best photos for each group (head shots, show jumping photos and full body shots) was designed. Furthermore, three different influences are tested with the help of one-way between-groups analysis of variance (ANOVA): The influence of years of experiences on the ratings, the influence of the level of performance on the ratings and finally the influence of the discipline on the ratings. For the last investigation, influence of discipline, the focus was set on the three biggest groups: Show jumpers, dressage riders and leisure riders.

4.3 Qualitative research

In the end, the most attractive photos of each group are compared in order to find similarities between the photos. The photos were compared for differences in show skills or attitude,

facial expression (ears, eyes, mouth) and the situation or phase the photo was taken. Furthermore, photos of horses with more than one photo in the research will be compared on photos with high ratings to those rated worse. Are their differences in skills/attitude, facial expression (ears, eyes, mouth) or the situation/phase the photo was taken? The result of this qualitative research will give a suggestion how good photos of horses have to look like in order to make the horses shown attractive.

5. Results

5.1 Research 1

5.1.1 Show jumping photos

For show jumping photos (showing horses over a fence), the areas people most frequently looked at were the eyes (mean 2.94, SD = 1.63), mouth (mean 1.88, SD = 1.03), and ears (mean 1.48 SD = 0.79). The total fixation duration for these areas of interest was 0.11 seconds for the ears (SD = 0.24), 0.92 seconds for the eyes (SD = 0.64) and 0.37 seconds for the nose (SD = 0.42).

While the manner of the forelegs is rather important for a show jumper, the values for both, total fixation duration and fixation count, are smaller than for the other eyes. The total fixation duration of the forelegs is 0.3 seconds (SD = 0.31) and the fixation count for the forelegs is 1.39 (SD = 0.96).

	Minimum	Maximum	Mean	Standard deviation
Fixation duration ears	**.00**	**1.40**	**.1095**	**.23814**
Fixation count ears	**1.00**	**4.00**	**1.4839**	**.78868**
Fixation duration eyes	**.00**	**3.41**	**.9228**	**.64331**
Fixation count eyes	**1.00**	**8.00**	**2.9446**	**1.62503**
Fixation duration forelegs	*.00*	*1.77*	*.3019*	*.31130*
Fixation count forelegs	*.00*	*4.00*	*1.3891*	*.96134*
Fixation duration gender	.00	1.50	.2623	.31583
Fixation count gender	1.00	4.00	1.5000	.70957
Fixation duration hind legs	.00	1.00	.1987	.26812
Fixation count hind legs	.00	4.00	1.1429	.87320
Fixation duration mouth	**.00**	**2.43**	**.3743**	**.42330**
Fixation count mouth	**1.00**	**6.00**	**1.8813**	**1.03364**
Fixation duration rider	.00	1.97	.5237	.39294
Fixation count rider	1.00	4.00	1.6364	.80193
Fixation duration neck	.00	1.42	.2342	.28485
Fixation count neck	1.00	5.00	1.4881	.75241

Table 1: Descriptive statistics show jumping photos


Plate 7: Heat maps of two show jumping photos indicating the main focus

5.1.2 Head shots

For head shots, participants also most frequently focused on eyes (mean 7.22, SD = 5.16), mouth (mean 3.9, SD = 2.78) and ears (mean 1.41, SD = 1.65). The total fixation duration for these areas is 0,29 seconds for ears (SD = 0,48), 2,67 seconds for eyes (SD = 1,95) and 1,16 seconds for nose (SD = 1,16).

	Minimum	Maximum	Mean	Standard deviation
Fixation duration ears	**.00**	**2.62**	**.2868**	**.47664**
Fixation count ears	**.00**	**8.00**	**1.414**	**1.6476**
Fixation duration eyes	**.00**	**10.62**	**2.6659**	**1.94600**
Fixation count eyes	**1.00**	**24.00**	**7.221**	**5.1565**
Fixation duration neck	.00	2.64	.4143	.44198
Fixation count neck	.00	7.5	1.424	1.3895
Fixation duration mouth	**.00**	**4.37**	**1.1571**	**.93373**
Fixation count mouth	**.00**	**14.0**	**3.899**	**2.7801**

Table 2: Descriptive statistics head shots

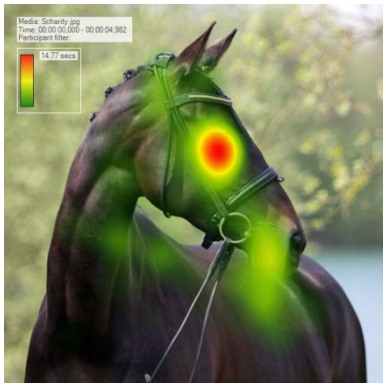




Plate 8: Heat maps of head shots indicating the main focus

5.1.3 Full body shots

Full body shots showed participants once again focusing on eyes (mean 4.29, SD = 3.36), mouth (mean 2.37, SD = 1.56) and ears (mean 2.44, SD = 1.52).

	Minimum	Maximum	Mean	Standard deviation
Fixation duration ears	**.00**	**2.02**	**.1858**	**.39857**
Fixation count ears	**1.00**	**7.00**	**2.441**	**1.5214**
Fixation duration eyes	**.00**	**5.21**	**1.2181**	**1.07461**
Fixation count eyes	**1.00**	**19,0**	**4,284**	**3,3640**
Fixation duration forelegs	.00	1.13	.1980	.23586
Fixation count forelegs	.00	4.0	.857	.8018
Fixation duration hind legs	.00	1.08	.1907	.25663
Fixation count hind legs	.00	5,0	1,012	,9970
Fixation duration mouth	**.00**	**3.45**	**.6133**	**.58159**
Fixation count mouth	**.00**	**9,0**	**2,370**	**1,5612**
Fixation duration neck	.00	1.10	.1791	.26251
Fixation count neck	.00	4,5	,949	1,1145
Fixation duration shoulder	.00	1.17	.1946	.27567
Fixation count shoulder	0.00	4,0	1,105	1,0468

Table 3: Descriptive statistics full body shots

Plate 9: Heat maps of two full body shots showing the main focus

5.1.4 Correlation of fixation duration/fixation count and scores

The relationship between fixation duration or fixation count and scoring was investigated using Pearson product-moment correlation coefficient.

For the horse shown on plate 10, there was a medium, positive correlation between fixation duration forelegs and scores, $r = .445$, $n = 21$, $p < .05$, with high scoring associated with a longer fixation duration of the forelegs. For the horse shown on plate 11, there was a large,

negative correlation between fixation duration of the mouth and scores, r = -.507, n = 21, p < .05, with high scoring associated with a short fixation duration of the mouth. For the horse shown on plate 12, there was a large, positive correlation between fixation duration of the ears and scores, r = .613, n = 21, p < .005, with high scoring associated with a long fixation duration of the ears. For the same horse there was a large, negative correlation between fixation duration of the mouth and scores, r = -.772, n = 10, p < .01, with high scoring associated with a short fixation duration of the mouth. For the horse shown on plate 13, there was a large, negative correlation between the fixation count of the mouth and scores, r = -1.000, n = 2, p < .0005, with high scoring associated with a low fixation count of the mouth. For the same horse on another photo (see plate 14), there was a medium, negative correlation between fixation duration of the eyes and scoring, r = - 472, n = 21, p < .05, with high scoring associated with a shorter fixation duration of the eyes. For the horse shown on plate 15, there was a large, positive correlation between fixation duration of the mouth and scoring, r = .525, n = 21, p < .05, with high scoring associated with a long fixation duration of the mouth. For the horse on plate 16, there was a large, negative correlation between fixation count of the ears and scoring, r = -1.000, n = 2, p < .0005, with high scoring associated with a low fixation count of the ears. For the horse shown on plate 17, there was a medium, positive correlation between fixation duration of the ears and scores, r = .453, n = 21, p < .05, with high scoring associated with a higher fixation duration of the ears. For the horse shown on plate 18, there was a medium, positive correlation between fixation count of the ears and scores, r = .483, n = 17, p < .05, with high scoring associated with a higher fixation count of the ears. Furthermore, there was a large, positive correlation between fixation count of the mouth and scores for that horse, r = .543, n = 20, p < .05, with high scoring associated with a high fixation count of the mouth. For the horse shown on plate 19, there was a large, positive correlation between fixation count of the neck and scores, r = .504, n = 21, p < .05, with high scoring associated with a high fixation count of the neck. For the horse shown on plate 20, there was a large,

negative correlation between fixation duration of the neck and scores, r = -.574, n = 21, p < .01, with high scoring associated with a short fixation duration of the neck. For the same horse on another photo (plate 21) there was a medium, negative correlation between fixation count of the eyes and scores, r = -,480, n = 21, p < .05, with high scoring associated with a low fixation count of the eyes.

Plate 10: Horse with sig. pos. correlation FD forelegs - scores

Plate 11: Horse with sig. neg. correlation FD mouth - scores

Plate 12: Horse with sig. pos. correlation FD ears – scores, sig. neg. correlation FD mouth – scores

Plate 13: Horse with sig. neg. correlation FC mouth - scores

Plate 14: Horse with sig. neg. correlation FD eyes – scores

Plate 15: Horse with sig. pos. correlation FD mouth – scores

Plate 16: Horse with a sig. neg. correlation FC ears - scores

Plate 17: Horse with a sig. pos. correlation FD ears – scores

Plate 18: Horse with sig. pos. correlations FC ears - scores and FC mouth – scores

Plate 19: Horse with sig. pos. correlation FC neck - scores

Plate 20: Horse with sig. neg. correlation between FD neck – scores

Plate 21: Horse with sig. neg. correlation FC eyes – scores

Plate 22: Horse with sig. neg. correlation FD ears - scores, sig. pos correlation FD shoulder - scores and FC shoulder - scores

Plate 23: Horse with sig. pos. correlation FD ears – scores

Plate 24: Horse with sig. neg. correlation FD eyes – scores

For the horse on plate 22, there was a strong, negative correlation between fixation duration of the ears and the scoring, $r = -1.000$, $n = 2$, $p < 0.0005$, with high scoring associated with a low fixation duration of the ears. Furthermore, there was a medium, positive correlation between fixation duration of the shoulder and scores ($r = 0.499$, $n = 21$, $p < .05$) and between fixation count of the shoulder and scores ($r = .468$, $n = 21$, $p < .05$), both with high scoring associated with a higher fixation duration and fixation count of the shoulder. For the horse on plate 23, there was a strong, positive correlation between fixation duration of the ears and scores, $r = 1.000$, $n = 2$, $p < 0.0005$, with high scoring associated with a high fixation duration of the ears. For the horse on plate 24, there was a medium, negative correlation between fixation duration of the eyes and scores, $r = -.440$, $n = 21$, $p < .05$, with high scoring associated with a low fixation duration of the eyes.

5.1.5 Differences in visual attention

Paired sample t-tests were conducted to determine whether there were any significant differences in visual attention on the eyes, ears and nose between participants who considered purchasing a horse and those who did not consider a purchase. No significant differences were found between any of the groups with $p > .05$.

5.2 Research 2

Equine enthusiasts (N = 217, males = 18, females = 199) of the age between 13 and 67 (Mean 26.35 years) answered the questionnaire. They had experiences with horses between 1 and 51

years and participated in the disciplines dressage (N = 59), show jumping (N = 69), eventing (N = 5), endurance (N = 3), vaulting (N = 1) or western (N = 1) or were leisure riders without participation in competitions (N = 79). They were divided into the German performance categories 0 (N = 82, including leisure riders), 6 (N = 42), 5 (N = 48), 4 (N = 26), 3 (N = 13), 2 (N = 5) and 1 (N = 1). The participants were asked to rate the importance of a good photo when selling a horse. On average the importance was rated with 7.56 (SD = 2.14) (see plate 25).

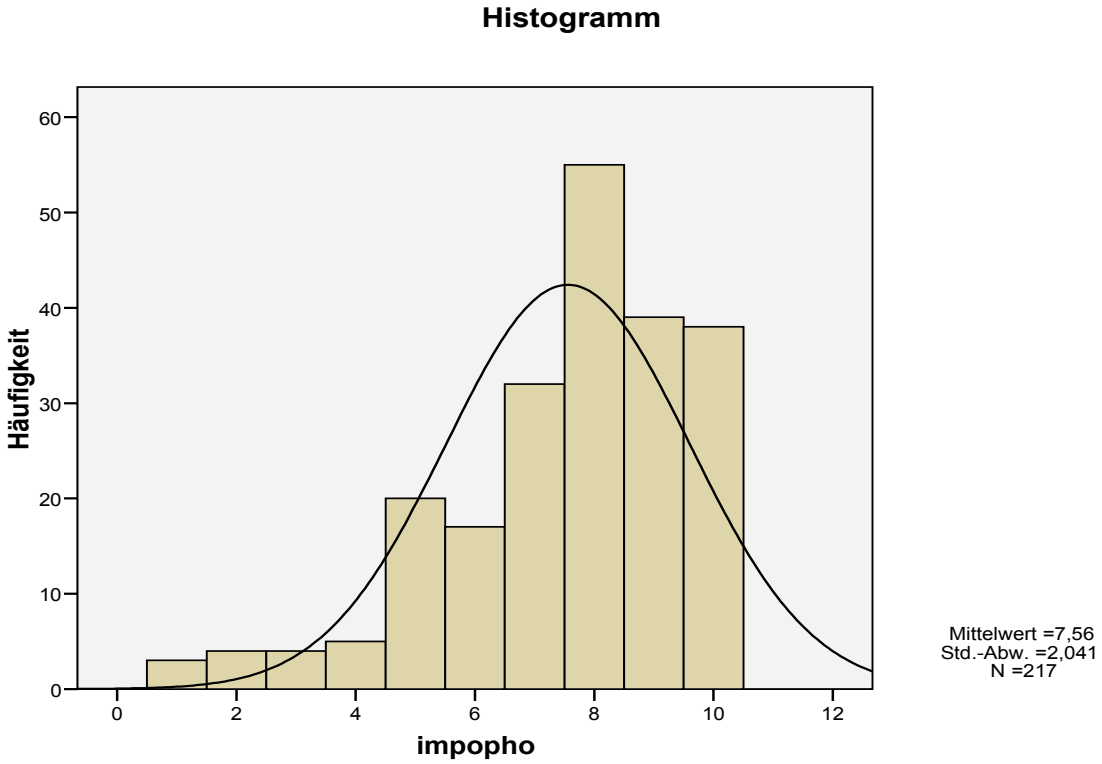


Plate 25: Importance of a photo

Furthermore, the mean of the photos was calculated in order to determine the most attractive photo for all three groups: head shots, show jumping photos and full body shots. Additionally, it was checked if the horses on these attractive photos appeared again with another photo and if that photo is rated as less attractive. The results supported the hypothesis that the attractiveness of a horse depends to a very high extend on the photo.

5.2.1 Show jumping photos

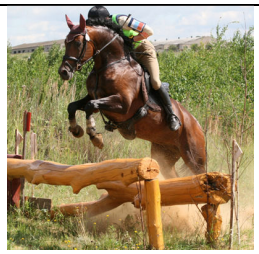
No. I	No. II	No. III
		

Plate 26: Most attractive show jumping photos

The most attractive show jumping photo (plate 26, No. I) got a mean score of 7.65 (SD = 1.79). Of the equine enthusiasts (N = 217) that participated in this research 178 would consider buying this horse on this photo. Those rated the horse on average 8.10 while those who would not consider buying this horse (N = 39) rated it 5.59.

The photo with the second highest rating (plate 26, No. II) got a mean of 7.21 (SD = 2.20). People who would consider buying this horse (N = 153) rated the horse with 8.18 while those who would not consider buying it (N = 64) rated it 4.88.

The photo with the third highest rating (plate 26, No. III) got a mean score of 7.01 (SD = 1.94). 141 participants would consider buying this horse and rated it on average 7.83 while 76 people would not consider buying this horse and rated it on average 5.49.

Each of the three horses on these photos had other photos in this questionnaire as well. The most remarkable difference is the most attractive photo. This horse was rated on another show jumping photo (plate 27) on average with 5.66 (SD = 2.03). Equine enthusiasts who would consider buying the horse based on this photo (N = 112) rated it on average with 6.89 while those who would not consider buying the horse (N = 105) rated it on average with 4.35.

Plate 27: The most attractive horse shown on a less attractive photo

A one-way repeated measures ANOVA was conducted to compare the scoring of the participants for the three best show jumping photos, “horse 9”, “horse 29” and “horse 10” (see plate 13). The means and standard deviations are presented in table 4. There was a significant effect for the scoring, Wilks’ Lambda = .898, F (2, 215) = 12.22, $p < .0005$, multivariate partial eta squared = .10, indicating a moderate to large effect.

	N	Mean	Standard deviation
Horse 9	217	7.65	1.79
Horse 29	217	7.21	2.20
Horse 10	217	7.01	1.94

Table 4: Descriptive Statistics in scoring for the three highest rated show jumping photos

“Horse 9” was significantly higher rated than “horse 29” ($p < 0.05$) and “horse 10” ($p < 0.0001$). There was no significant difference between “horse 29” and “horse 10”.

5.2.2. Head shots

No. I	No. II	No. III
		

Plate 28: The three most attractive head shot photos

In the group of head shots the same horse got the two highest scores. The first photo was rated on average with 7.78 (SD = 1.85). Equine enthusiasts who would consider buying the horse (N = 181) rated it with 8.19 on average while those who did not consider buying the horse (N = 36) rated it with 5.72 on average. The second photo of the horse was rated with 7.70 (SD = 1.71) on average. People who considered buying the horse (N = 174) rated it 8.07 on average while people who would not consider buying it (N = 43) rated it 6.16 on average.

The horse on the third position got a 7.31 (SD = 2.10). 148 equine enthusiasts would consider buying this horse based on this photo and rated it 8.09 on average. 69 people would not consider buying the horse and rates it with an average score of 5.62.

The horse that got the highest scores in this group was also present in the group of full body shots. Based on this photo (see plate 29) equine enthusiasts rated it on average with 5.34 (SD = 2.21). Those who considered buying the horse based on this photo (N = 111) rated it on average with 6.67 while those who would not consider a purchase based on this photo rated it 3.95.

Plate 29: Horse with the two highest scores for head shots in different position

A one-way repeated measures ANOVA was conducted to compare the scoring of the participants for the three best head shots, “horse 23”, “horse 4” and “horse 26” (see plate 28). The means and standard deviations are presented in table 5. There was a significant effect for the scoring, Wilks’ Lambda = .952, F (2, 215) = 5.45, $p < .005$, multivariate partial eta squared = .05, indicating a moderate effect.

	N	Mean	Standard deviation
Horse 23	217	7.78	1.85
Horse 4	217	7.70	1.71
Horse 26	217	7.31	2.10

Table 5: Descriptive Statistics in scoring for the three highest rated head shots

The photos “horse 23” and “horse 4” were both significantly higher rated than “horse 26” ($p < .005$ and $p < .05$). There was no significant difference in rating shown between “horse 23” and “horse 4”.

5.2.3 Full body shots

No. I	No. II	No. III
		

Plate 30: Most attractive full body shots

The most attractive full body shot (see plate 30, No. 1) was rated on average with 7.60 (SD = 1.87). Equine enthusiasts who would consider buying this horse based on that photo (N = 165) rated it on average with 8.15 while those who would not consider buying this horse rated it with 5.87 on average. The photo with the second highest score (see plate 30, No. II) was rated on average with 7.38 (SD = 2.03). Those equine enthusiasts that would consider buying the horse based on that photo (N = 175) rated it with 7.38 while those who would not consider buying the horse based on that photo (N = 42) rated it with 5.57. The third photo (plate 30, No. III) was rated with an average score of 7.28 (SD = 2.03). 163 equine enthusiasts would consider buying this horse based on that photo. These people rated the horse with an average score of 8.10 while people who would not consider a purchase rated it with 4.80.

A one-way repeated measures ANOVA was conducted to compare the scoring of the participants for the three best head shots, “horse 35”, “horse 38” and “horse 19” (see plate 30). The means and standard deviations are presented in table 6. There was no significant effect for the scoring, Wilks’ Lambda = .978, F (2, 215) = 2.46, p = .088, multivariate partial eta squared = .02, indicating a small effect.

	N	Mean	Standard deviation
Horse 35	217	7.60	1.87
Horse 38	217	7.38	1.93
Horse 19	217	7.28	2.03

Table 6: Descriptive Statistics in scoring for the three highest rated full body shots

5.3 Further research

An analysis of the same horses shown on different photos indicated a different attractiveness of the horse (see plate 31 and plate 32).

	
Horse's height increasing, late take-off phase, rated on average 7.21, N = 153 would consider a purchase	Height is decreasing again, landing phase, rated on average 6.35, N = 131 would consider a purchase

Plate 31: First example of a horse on two differently rated photos

	
Mean score of 7.65 (SD = 1.79). N = 178 would consider buying this horse on this photo	Mean score 5.66 (SD = 2.03). N = 112 would consider buying the horse on this photo

Plate 32: Second example of a horse on two differently rated photos

5.3.1 Influence of experiences on ratings

A one-way between-groups analysis of variance (ANOVA) was conducted in order to explore the impact of years of experiences of the participating equine enthusiasts on their rating of the different photos. The equine enthusiasts were divided into seven groups according to their years of experiences with horses (see table 7).

Years of experience	Frequency	Percent
0-5	7	3.2
6-10	18	8.3
11-15	75	34.6
16-20	69	31.8
21-25	24	11.1
26-30	8	3.7
>31	16	7.4
Total:	217	100.0

Table 7: Distribution of years of experiences with horses

For some photos the significance value for Levene's test was < .05 indicating a violation of the homogeneity of variance assumption. For that reason the significance level is reduced to p < .01. Analysing the ANOVA with this background no significant difference between the different groups of experience in rating could be found.

5.3.2 Influence of performance category on ratings

Another one-way between-groups analysis of variance (ANOVA) was conducted in order to explore the impact of performance categories on the ratings. Participants were divided into six groups according to their performance category in Germany (see table 8). The German performance categories 0 and 6 are novice riders, 5, 4 and 3 are intermediate riders and 2 and 1 are the professionals performing on the highest level. There was only one participant with the highest performance category 1 so the performance categories 1 and 2 were put together into one group.

Performance category	Frequency	Percent
0	82	37.8
6	42	19.4
5	48	22.1
4	26	12.0
3	13	6.0
1 and 2	6	2.8
Total	217	100.0

Table 8: Distribution of the performance categories

For some photos the significance value for Levene's test was < .05 indicating a violation of the homogeneity of variance assumption. For that reason the significance level is reduced to p

< .01. There were statistically significant differences at the p < .01 level in scores of the six groups for ten photos.

Plate 33: "horse 4"

For the photo “horse 4” (see plate 33) there was a statistically significant difference between the six groups: F (5, 211) = 3.93, p < .005. Despite reaching statistical significance, the actual difference in mean scores between the groups was only medium. The effect size, calculated using eta squared, was 0.085. Post-hoc comparisons using the Turkey HSD test indicated that the mean score for the performance categories 6 (M = 8.21, SD = 1.661) and 5 (M = 8.10, SD = 1.372) was significantly different from performance category 3 (M = 6.46, SD = 1.613). The other groups did not show a significant difference to one of the other groups.

Plate 16: "horse 7"

For the photo “horse 7” (see plate 16) there was a statistically significant difference between the six groups: F (5, 211) = 5.416, p < .001. The actual difference in mean scores between the groups was medium to large as well. The effect size, calculated using eta squared, was 0.114. Post-hoc comparisons using the Turkey HSD test indicated that the mean score for the performance categories 0 (M = 5.95, SD = 1.714) was significantly different from performance categories 6 (M = 7.45, SD = 1.714, p < .005), 5 (M = 7.46, SD = 1.725, p <

.005) and 4 (M = 7.73, SD = 2.127, p < .005). The other groups did not show a significant difference to one of the other groups.

Plate 34: "horse 9"

For the photo “horse 9” (see plate 34) there was a statistically significant difference between the six groups: F (5, 211) = 3.519, p < .005. The actual difference in mean scores between the groups was medium. The effect size, calculated using eta squared, was 0.08. Post-hoc comparisons using the Turkey HSD test indicated that the mean score for the performance category 3 (M = 6.00, SD = 2.273) was significantly different to the performance categories 0 (M = 7.50, SD = 1.709, p < .05), 6 (M = 8.14, SD = 1.458, p < .005), 5 (M = 7.75, SD = 1.720, p < .01) and 4 (M = 8.04, SD = 1.685, p < .01). The other groups did not show a significant difference to one of the other groups.

Plate 35: "horse 10"

For the photo “horse 10” (see plate 35) there was a statistically significant difference between the six groups: F (5, 211) = 3.286, p < .01. The actual difference in mean scores between the groups was medium. The effect size, calculated using eta squared, was 0.07. Post-hoc

comparisons using the Turkey HSD test indicated that the mean score for the performance category 6 (M = 7.79, SD = 1.976) was significantly different to performance categories 2 & 1 (M = 5.17, SD = 1.835, p < .05). The other groups did not show a significant difference to one of the other groups.

Plate 36: "horse 13"

For the photo “horse 13” (see plate 36) there was a statistically significant difference between the six groups: F (5, 211) = 4.172, p = .001. The actual difference in mean scores between the groups was medium to large. The effect size, calculated using eta squared, was 0.09. Post-hoc comparisons using the Turkey HSD test indicated that the mean score for the performance category 0 (M = 5.88, SD = 2.322) was significantly different to the performance categories 6 (M = 7.36, SD = 1.620, p < .005) and performance category 5 (M = 7.08, SD = 2.009, p < .05). The other groups did not show a significant difference to one of the other groups.

Plate 37: "horse 15"

For the photo “horse 15” (see plate 37) there was a statistically significant difference between the six groups: F (5, 211) = 4.912, p < .001. The actual difference in mean scores between the groups was medium to large. The effect size, calculated using eta squared, was 0.10. Post-hoc comparisons using the Turkey HSD test indicated that the mean score for the performance

category 0 (M = 6.26, SD = 2.078) was significantly different to the performance categories 6 (M = 7.48, SD = 1.656, p < .01) and 5 (M = 7.50, SD = 1.530, p < .005). The other groups did not show a significant different to one of the other groups.

Plate 38: "horse 18"

For the photo “horse 18” (see plate 38) there was a statistically significant difference between the six groups: F (5, 211) = 3.607, p < .005. The actual difference in mean scores between the groups was medium. The effect size, calculated using eta squared, was 0.8. Post-hoc comparisons using the Turkey HSD test indicated that the mean score for the performance category 3 (M = 4.31, SD = 1.888) was significantly different to the performance categories 0 (M = 6.56, SD = 2.420, p < .005) and 4 (M = 6.38, SD = 1.675, p < .05). The other groups did not show a significant difference to one of the other groups.

Plate 39: "horse 29"

For the photo “horse 29” (see plate 39) there was a statistically significant difference between the six groups: F (5, 211) = 3.974, p < .005. The actual difference in mean scores between the groups was medium to large. The effect size, calculated using eta squared, was 0.09. Post-hoc

comparisons using the Turkey HSD test indicated that the mean score for the performance category 0 (M = 6.40, SD = 2.372) was significantly different to the performance categories 6 (M = 7.62, SD = 1.886, $p < .05$) and 5 (M = 7.77, SD = 2.086, $p < .01$). The other groups did not show a significant different to one of the other groups.

Plate 40: "horse 31"

For the photo “horse 31” (see plate 40) there was a statistically significant difference between the six groups: F (5, 211) = 3.577, $p < .005$. The actual difference in mean scores between the groups was medium. The effect size, calculated using eta squared, was 0.08. Post-hoc comparisons using the Turkey HSD test indicated that the mean score for the performance category 0 (M = 5.01, SD = 2.088) was significantly different to the performance categories 6 (M = 6.19, SD = 1.877, $p < .05$), 5 (M = 6.04, SD = 1.675, $p = .05$), and 4 (M = 6.38, SD = 2.368, $p < .05$). The other groups did not show a significant different to one of the other groups.

Plate 41: "horse 35"

For the photo “horse 35” (see plate 41) there was a statistically significant difference between the six groups: F (5, 211) =3.983, $p < .01$. The actual difference in mean scores between the groups was medium to large. The effect size, calculated using eta squared, was 0.09. Post-hoc

comparisons using the Turkey HSD test indicated that the mean score for the performance category 6 (M = 8.10, SD = 1.411) was significantly different to the performance categories 3 (M = 6.38, SD = 2.181, $p < .05$) and 2 & 1 (M = 5.50, SD = 2.881, $p < .05$). Furthermore, there was a significant difference between the performance categories 4 (M = 8.12, SD = 1.558) and 2 & 1 (M = 5.50, SD = 2.881, $p < .05$). The other groups did not show a significant difference to one of the other groups.

5.3.3 Influence of discipline on ratings

Another one-way between-groups analysis of variance (ANOVA) was conducted in order to explore the impact of discipline on the ratings. For this analysis, the three biggest groups of discipline were compared: Dressage (N = 59), show jumping (N = 69) and leisure (N = 79). For some photos the significance value for Levene's test was < .05 indicating a violation of the homogeneity of variance assumption. For that reason the significance level is reduced to $p < .01$. There were statistically significant differences at the $p < .01$ level in scores of the six groups for eight photos.

Plate 42: "horse 7"

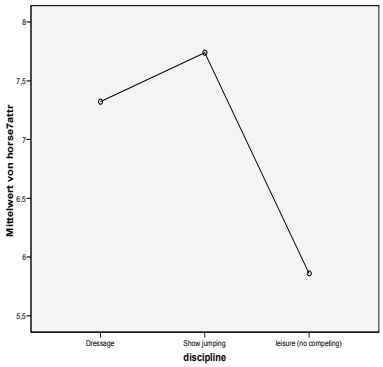


Plate 43: Mean scores of attractiveness of "horse 7" for the three disciplines

For the photo "horse 7" (see plate 42) there was a statistically significant difference at the $p < .01$ level for the three groups of discipline: $F(2, 204) = 16.899$, $p < .001$. Reaching statistical significance, the actual difference in mean scores between the groups was large as well. The effect size, calculated using eta squared, was 0.14. Post-hoc comparisons using the Turkey HSD test indicated that the mean score for the group of dressage (M = 7.32, SD = 1.925) was

significantly different to the group of show jumping (M = 7.74, SD = 1.633) and to the group of leisure riders (M = 5.86, SD = 2.469). Furthermore, there was a significant difference between the groups of show jumping and leisure riders. The means plot is presented in plate 43.

Plate 46: "horse 11"

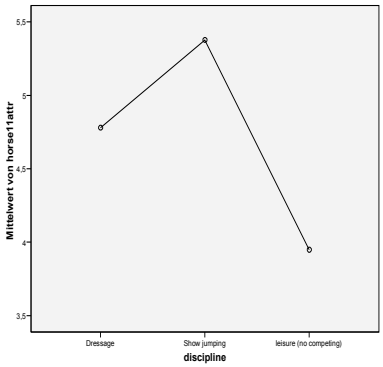


Plate 47: Mean scores of attractiveness of "horse 11" for the three disciplines

For the photo “horse 11” (see plate 44) there was a statistically significant difference at the p < .01 level for the three groups of discipline: F (2, 204) = 11.494, p < .001. Reaching statistical significance, the actual difference in mean scores between the groups was quite large as well. The effect size, calculated using eta squared, was 0.1. Post-hoc comparisons using the Turkey HSD test indicated that the mean score for the group of leisure (M = 6.75, SD = 1.925) was significantly different to the group of dressage (M = 7.34, SD = 2.154) and show jumping (M = 7.20, SD = 1.623). The groups of dressage and show jumping did not show a significant difference from each other. The means plot is presented in plate 45.

Plate 44: "horse 13"

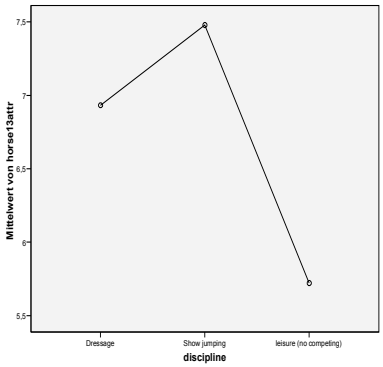


Plate 45: Mean scores of attractiveness of "horse 13" for the three disciplines

For the photo “horse 13” (see plate 46) there was a statistically significant difference at the p < .01 level for the three groups of discipline: F (2, 204) = 15.133, p < .001. Reaching statistical significance, the actual difference in mean scores between the groups was large as well. The effect size, calculated using eta squared, was 0.13. Post-hoc comparisons using the Turkey HSD test indicated that the mean score for the group of leisure (M = 5.72, SD = 2.189) was significantly different to the group of dressage (M = 6.93, SD = 1.920) and show jumping (M = 7.48, SD = 1.812). The groups of dressage and show jumping did not show a significant difference from each other. The means plot is presented in plate 47.

Plate 48: "horse 14"

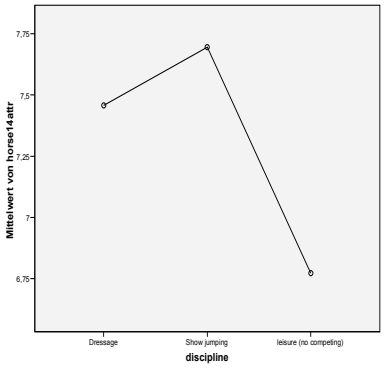


Plate 49: Mean scores of attractiveness of "horse 14" for the different disciplines

For the photo “horse 14” (see plate 48) there was a statistically significant difference at the p < .01 level for the three groups of discipline: F (2, 204) = 5.719, p < .005. Despite of reaching statistical significance, the actual difference in mean scores between the groups was only medium. The effect size, calculated using eta squared, was 0.05. Post-hoc comparisons using the Turkey HSD test indicated that the mean score for the group of leisure (M = 6.77, SD = 1.775) was significantly different to the group of show jumping (M = 7.70, SD = 1.448). The group of dressage (M = 7.46, SD = 1.908) did not differ significantly from either the show jumping group or the leisure group. The means plot is presented in plate 49.

Plate 50: “horse 15”

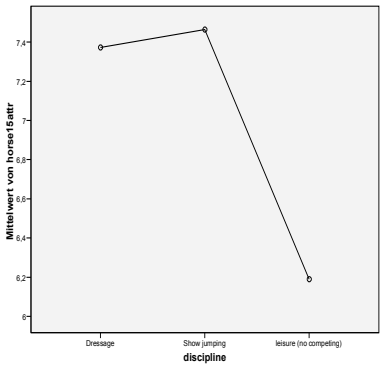


Plate 51: Mean scores of attractiveness of “horse 15” for the different disciplines

For the photo “horse 15” there was a statistically significant difference at the $p < .01$ level for the three groups of discipline: $F (2, 204) = 11.143$, $p < .001$. Reaching statistical significance, the actual difference in mean scores between the groups was medium to large. The effect size, calculated using eta squared, was 0.1. Post-hoc comparisons using the Turkey HSD test indicated that the mean score for the group of leisure ($M = 6.19$, $SD = 2.101$) was significantly different to the groups of dressage ($M = 7.37$, $SD = 1.680$) and show jumping ($M = 7.46$, $SD = 1.596$). The groups of dressage and show jumping did not show a significant difference from each other. The means plot is presented in plate 51.

Plate 52: "horse 29"

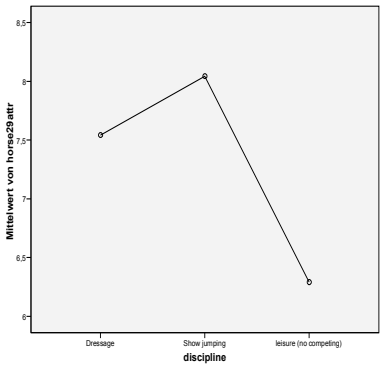


Plate 53: Mean scores of attractiveness of "horse 29" for the three disciplines

For the photo “horse 29” there was a statistically significant difference at the $p < .01$ level for the three groups of discipline: $F (2, 204) = 13.692$, $p < .001$. Reaching statistical significance, the actual difference in mean scores between the groups was large as well. The effect size, calculated using eta squared, was 0.12. Post-hoc comparisons using the Turkey HSD test

indicated that the mean score for the group of leisure (M = 6.29, SD = 2.429) was significantly different to the groups of dressage (M = 7.54, SD = 1.897) and show jumping (M = 8.04, SD = 1.851). The groups of dressage and show jumping did not show a significant difference from each other. The means plot is presented in plate 53.

Plate 54: "horse 31"

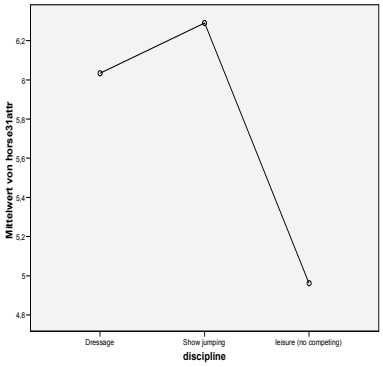


Plate 55: Mean scores of attractiveness of "horse 31" for the three disciplines

For the photo “horse 31” (plate 54) there was a statistically significant difference at the $p < .01$ level for the three groups of discipline: $F (2, 204) = 9.635$, $p < .001$. Reaching statistical significance, the actual difference in mean scores between the groups was medium to large. The effect size, calculated using eta squared, was 0.09. Post-hoc comparisons using the Turkey HSD test indicated that the mean score for the group of leisure (M = 4.96, SD = 2.109) was significantly different to the groups of dressage (M = 6.03, SD = 1.929) and show jumping (M = 6.29, SD = 2.109). The groups of dressage and show jumping did not show a significant difference from each other. The means plot is presented in plate 55.

5.3.4 Comparison of photos per horse

In order to investigate the differences in scoring of one horse shown on different photos, one-way repeated measures were conducted for each horse with more than two photos in the questionnaire.

A one-way repeated measures ANOVA was conducted to compare the scoring of the participants for the different photos of repeating horses. The photos “horse 2”, “horse 18”, “horse 30” and “horse 34” show the same horse (see plates 56 - 59). The means and standard deviations are presented in table 9.


Plate 56: "horse 2"


Plate 57: "horse 18"


Plate 58: "horse 30"


Plate 59: horse 34"

	N	Mean	Standard deviation
Horse 2	217	3.38	1.90
Horse 18	217	6.04	2.12
Horse 30	217	3.73	1.91
Horse 34	217	5.93	2.18

Table 9: Descriptive statistics for scoring one horse on 4 different photos

There was a significant effect for the scoring, Wilks’ Lambda = .391, F (3, 214) = 111.292, p < .0005, multivariate partial eta squared = .61, indicating a very large effect. Pairwise comparisons indicated a significant difference of “horse 2” to “horse 18” (p < .0005) and “horse 34” (p < .0005). Furthermore, there is a significant difference between “horse 18” and “horse 30” (p < .0005) and between “horse 30” and “horse 34” (p < .0005). No significant differences could be found between “horse 2” and “horse 30” as between “horse 18” and “horse 34”.

A one-way repeated measures ANOVA was conducted to compare the scoring of the participants for the different photos of repeating horses. The photos “horse 3”, “horse 16”, and “horse 37” show the same horse (see plate 60 - 62). The means and standard deviations are presented in table 10.


Plate 60: "horse 3"


Plate 61: "horse 16"

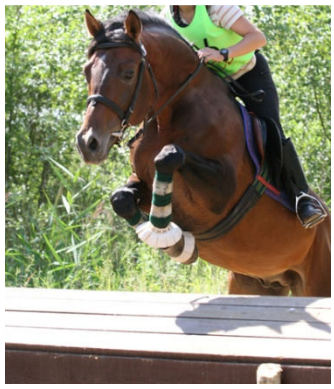


Plate 62: "horse 37"

	N	Mean	Standard deviation
Horse 3	217	6.88	1.67
Horse 16	217	4.53	1.90
Horse 37	217	6.25	1.99

Table 10: Descriptive statistics for scoring one horse on 3 different photos

There was a significant effect on scoring, Wilks' Lambda = .464, F (2, 215) = 124.256, p < .0005, multivariate partial eta squared = .54, indicating a very large effect. Pairwise comparisons indicated a significant difference between each of the photos with p < .0005.

A one-way repeated measures ANOVA was conducted to compare the scoring of the participants for the different photos of repeating horses. The photos "horse 4", "horse 23", and "horse 25" show the same horse (see plate 63 - 65). The means and standard deviations are presented in table 11.


Plate 63: "horse 4"


Plate 64: "horse 23"


Plate 65: "horse 25"

	N	Mean	Standard deviation
Horse 4	217	7.70	1.71
Horse 23	217	7.78	1.84
Horse 25	217	5.34	2.21

Table 11: Descriptive statistics for scoring one horse on 3 different photos

There was a significant effect on scoring, Wilks' Lambda = .525, F (2, 215) = 97.222, p < .0005, multivariate partial eta squared = .48, indicating a very large effect. Pairwise comparisons indicated a significant difference between "horse 4" and "horse 25" (p < .0005) and between "horse 23" and "horse 25" (< .0005). There was no significant difference between "horse 4" and "horse 23".

A one-way repeated measures ANOVA was conducted to compare the scoring of the participants for the different photos of repeating horses. The photos "horse 9", "horse 11", "horse 26", "horse 31" and "horse 38" show the same horse (see plate 66 - 70). The means and standard deviations are presented in table 12.

Plate 66: "horse 9"

Plate 67: "horse 11"

Plate 68: "horse 26"

Plate 69: "horse 31"

Plate 70: "horse 38"

	N	Mean	Standard deviation
Horse 9	217	7.65	1.79
Horse 11	217	4.62	1.91
Horse 26	217	7.31	2.10
Horse 31	217	5.66	2.03
Horse 38	217	7.38	1.93

Table 12: Descriptive statistics for scoring one horse on 5 different photos

There was a significant effect on scoring, Wilks' Lambda = .314, F (4, 213) = 116.406, p < .0005, multivariate partial eta squared = .69, indicating a very large effect. Pairwise comparisons indicated a significant difference between "horse 9" and "horse 11" (p < .0005), between "horse 9" and "horse 31" (p < .0005), between "horse 11" and "horse 26" (p < .0005), between "horse 11" and "horse 31" (p < .0005), between "horse 11" and "horse 38" (p < .0005), between "horse 26" and "horse 31" (p < .0005) and between "horse 31" and "horse 38" (p < .0005).

A one-way repeated measures ANOVA was conducted to compare the scoring of the participants for the different photos of repeating horses. The photos "horse 13", "horse 21", and "horse 32" show the same horse (see plate 71 - 73). The means and standard deviations are presented in table 13.

Plate 71: "horse 13"

Plate 72: "horse 21"

Plate 73: "horse 32"

	N	Mean	Standard deviation
Horse 13	217	6.65	2.13
Horse 21	217	2.71	1.68
Horse 32	217	4.06	2.12

Table 13: Descriptive statistics for scoring one horse on 3 different photos

There was a significant effect on scoring, Wilks' Lambda = .288, $F(2, 215) = 265.480$, $p < .0005$, multivariate partial eta squared = .71, indicating a very large effect. Pairwise comparisons indicated a significant difference between each of the photos with $p < .0005$.

6. Discussion

6.1 Attractiveness

The initially quoted axiom “beauty is in the eye of the beholder” seems to be incorrect for equine photos. Beautiful photos could clearly be differentiated from unpleasant photos. It could be said instead that beauty is a matter of the right positioning. The main finding of the research carried out was that a horse can vary in attractiveness depending on the photo it is shown on. Horses photographed from an angle that highlights weaker features are perceived as less attractive than the same horses photographed in a way that accentuates positive features. The best ratings of the above research could be proven as no coincidence but an overall better rating for the “good” photos, because analyses resulted in a significant difference between the three best photos of each group. Qualitative research resulted in the following definition of “good”: Horses that are rated as attractive all showed pricked ears, an alert expression, and a mouth without tension. Additionally, for show jumping photos, the manner of the horse’s forelegs seems to be an important factor as well. Show jumpers should be shown in the take-off phase, when they just left the ground. Although the facial expression of some horses was as described above (pricked ears, alert expression, and mouth without tension) horses shown in the take-off phase were rated as more attractive than in later phases. The height of the fence is not important. One example of the importance of a pleasant expression is shown on plate 74: The ears are not pricked so that the expression is less pleased. The analysis evidenced that showing a significant negative correlation between the fixation count of the ears and the scoring of this photo’s attractiveness.

Plate 74

So the statement that averageness is more important than a pleasant facial expression (Langlois, Roggman and Musselman, 1994) seems to be incorrect for horses as well. Horses with a pleasant expression were rated as more attractive. Consequently, a positive facial expression therefore seems to be of a tremendous importance for high quality photos when a horse is supposed to be sold. However, as there is no definition for "average" horses the statement that averageness is important for attractiveness could not be proven with this research. Symmetry might be a matter of attractiveness for horses as well. Schneider (2008) points out that high quality horses should be symmetrical in muscles, hooves etc. Qualitative research showed horses on good photos compared to those on photos with bad ratings have equally bent legs (show jumping) or clearly diagonal trot movements.

Another important factor that influences the attractiveness of a photo is a well-groomed appearance, as horses with a plaited mane reach higher scores than horses with long and wild manes outside in the field. For the horse shown on plate 75 the analysis showed a significant positive correlation between the fixation count of the neck and the scores.

Plate 75

Independently of the group of photo (show jumping photo, full body shot or head shot), people focus on the head, primarily on the eyes. Even for show jumping horses where the

manner e.g. of the forelegs is important for a horses quality, the main focus was set on the eyes. Furthermore, there is a focus on the gender in cases that it is obvious to the beholder like on show jumping photos. Nevertheless, it is difficult to say whether or not there is a correlation between the fixation duration or the fixation count and the scoring, some findings indicated a connection, but it needs further research for a deeper investigation.

Statistical analysis did not show a correlation between the time people have experiences with horses and the scoring. Instead, correlation between performance category and scoring and discipline and scoring could be found. While for those photos that resulted in a correlation between discipline and scoring it can be said that leisure riders seem to rate horses lower than show jumpers and dressage riders, no real conclusion can be drawn for the correlations of performance category and scoring. Of eight photos with a significant difference between competing riders and leisure riders, seven photos were show jumping photos. Previous research indicated an influence of different cultures on what is perceived as attractive (Komori, Kavamura and Ishihara, 2009). This could be the same with different disciplines and the impact on perceiving horses. As leisure riders do not compete and probably do not watch competitions regularly they might not recognize good jumping skills or high quality horses that easy. Maybe they concentrate on other aspects and prefer cute, pretty or nice horses and do not care about skills. Further research should analyse the perceiving of horses of leisure riders more deeply. As attractiveness is supposed to be learnt through the Media (Langlois, Roggman and Musselman, 1994), competition riders might know how successful competing horses in high classes look like. This might have an impact on their ratings. Considering ones target group therefore seems to be important when selling a horse with the help of a photo. In cases that leisure riders are intended to be addressed, people should not focus on the horse's performance in sports but on a presentation of the keen personality.

6.2 Decision making

The quality of a horse's photo is of a high importance as participants in the former research rated the importance of a good photo as important (M = 7.56) when they look for a horse to buy. As horse advertisements are usually shown with many photos on one page, attractiveness is an important way to arouse the beholders attention. The reason for this can be found in human research: Attractive faces, obviously attractive horses as well, evoke greater activity in the regions of the brain important for emotional processing remembering details and finally decision making (Aharon, et. al., 2001). After all, the act of "preferring" occurs subconsciously (Karelaia, 2006) and arousing attention is much more important than information (Karelaia, 2006) as evidenced in the saying "a photo tells more than a thousand words". This research also confirms the fast and frugal theory (Gigerenzer and Goldstein, 1996). Only a few pieces of information are needed to decide on the level of attractiveness of a horse: Eyes, ears, mouth, overall expression, likable or not and a decision is made. As colour and gender are sometimes relevant criteria when purchasing a horse, the gender is focused in cases that it is obvious to the beholder like in show jumping photos. This might be a general (subconscious) check of what kind of horse is presented in the photo.

Nevertheless, too little information is not satisfying as well (Karelaia, 2006), as horses in the field as an example seem to be rated as less attractive. Furthermore, emotions (Trommsdorff, 1989) and former experiences and memories (Lynch, Mamorstein and Weigold, 1988) play an important role in decision making. So participants of the first research sometimes said something about a horse like "I like this one, it reminds me of my former horse" or the contrary "Uh, this one reminds me of my old horse, I do not like it." Unfortunately, these comments were not recorded, so further research should investigate this effect of memories and experiences. Emotions play for another reason an important role as Schneider (2008) pointed out that 90% of riders describe their bound to their horse as close. So people need a horse they like and that fits them and their personality.

6.3 Limitations of the study

As this study was designed as a twenty-week research project, not all aspects influencing the perceived attractiveness of an equine photo could be investigated. Unfortunately, there was an unequal number of participants of the different disciplines. Analyses found out that there are differences in scoring between the disciplines show jumping, dressage and leisure, but other disciplines could not be compared because of too small numbers. The number of professional riders was very small as well while there was a huge amount of novices.

Taking a look at the photos used in the questionnaires, most of the photos used showed show jumping horses. It was difficult to find a collection of horses with photos of different qualities in the limited amount of time. Future researchers should try to use more full body and head shots, and an equal number of horses in the different disciplines. The lack of dressage photos in the current study made it difficult to describe the perfect dressage phase a photo should be taken in. Nevertheless, the main finding, the importance of the horse's expression, is valid for all horses and all disciplines.

The different angles of the different photos made it sometimes hard to define the AOIs. Although they are correct and all of the same sizes, it can be the case that the participants of research one looked slightly different. One example is the horse on plate 74. The analysis resulted in a significant positive correlation between the fixation duration of the mouth and scores. The AOIs mouth and forelegs are in this case really close, so that there might be the possibility that people actually focused the forelegs. As the horse on plate 76 has a perfect manner that could be the reason for the significant correlation.

Plate 76

There are several aspects that can influence the accuracy of the Tobii eye tracker: Some of them are eye movements, the calibration procedure, drift and ambient light. So the calibration procedure was sometimes difficult for participants wearing contacts or having dry eyes. The procedure was repeated in these cases so that the results are still of a very high accuracy, but small inaccuracies cannot be excluded.

6.4 Future research

Future research should investigate more details about the focus on photos of the different disciplines. An eye tracking study should be conducted with more photos showing horses of all disciplines. Participants should be of different disciplines as well so that it is possible to define if leisure riders look differently at show jumpers or dressage horses etc. There might be a difference as leisure riders rated many show jumping horses significantly lower than competition riders. Furthermore, future research should find out more about possible correlations between the fixation durations and fixation counts of the different areas of interest and the scoring.

7. Conclusion and Recommendation

Coming to a conclusion it is obviously that a good, “likable” photo of a horse is very important. People primarily focus on the facial expression on the horse, primarily on the eyes. So people aiming to sell their horse with a photo should try to photo their horse with open and alert eyes, but not scared, with pricked ears and with a mouth devoid of tension. Skills or manner like in show jumping are not as important as one could think. Although horses with equally bent forelegs get higher rating than others, the main focus is always on the facial expression. Selling a show jumper should be tried with a photo showing the horse in the take off phase, just after leaving the ground with a nice facial expression. Nevertheless, people who intend selling their horse have to consider their target group. Leisure riders do not seem to like performing horses very highly; it is much more likely that they prefer horses in their natural environment. Nevertheless, horses in their natural environment should be well-groomed: Clean, shiny coat, neat mane. But regardless the target group one should always focus on the facial expression of the horse: It should be alert but calm, with pricked ears, attentive eyes and a relaxed mouth.

Photos like these cannot be taken by only one person. A person who is able to present a horse in a good way (e.g. a rider), one person who tries to get the horses attention to ensure pricked ears and an alert expression and the person who actually takes the photo are the easiest way to take a nice photo. It probably takes more time and effort, but the more attractive the horse appears in the advertisement the greater the probability of interested people who can consider buying the horse.

8. References

- Aharon, I., et al., 2001. Beautiful faces have variable reward value: fMRI and behavioral evidence. *Neuron* 32, pp. 537–551.
- Bechara, A., Damasio, H., and Damasio, A.R., 2000. Emotion, Decision Making and the Orbitofrontal Cortex, *Cereb. Cortex* 10 (3), pp. 295-307.
- Bray, S., and O'Doherty, J., 2007. Neural coding of reward-prediction error signals during classical conditioning with attractive faces. *Journal of Neurophysiology*. 97, pp. 3036–3045.
- Chernev, A., 2001. The Impact of Common Features on Consumer Preferences: A Case of Confirmatory Reasoning, *Journal of Consumer Research,* Vol. 27, March 2001, pp. 475 – 488.
- Clore, G. L., Schwarz, N., and Conway, M., 1994. Affective Causes and Consequences of Social Information Processing. *Handbook of Social Cognition,* ed. Robert S. Wyerand Thomas K. Srull, Hillsdale, NJ: Erlbaum, pp. 323 – 417
- Cloutier, J., Heatherton, T.F., Whalen, P.J., and Kelley, W.M., 2008. Are attractive people rewarding? Sex differences in the neural substrates of facial attractiveness. *Journal of Cognitive Neuroscience,* 20, pp. 941–951.
- Davachi, L., 2006. Item, context and relational episodic encoding in humans. *Current Opinion in Neurobiology*, 16, pp. 693–700.
- Deutsche Reiterliche Vereinigung e.V. (FN), 1997, *Richtlinien für Reiten und Fahren, Bd. 2,* Warendorf: FnVerlag, p. 123.
- Diana, R.A., Yonelinas, A.P., and Ranganath, C., 2007. Imaging recollection and familiarity in the medial temporal lobe: a three-component model. *Trends in Cognitive Sciences,* 11, pp. 379–386.

- Galton, F., 1879. Composite Portraits, *Journal of the Anthropological Institute,* Vol. 8., pp. 132-144
- Gigerenzer, G., Todd, P. M., ABC Research Group, 1999. *Take the best: Simple heuristics that make us smart*, Oxford: University Press
- Heuschmann, G., 2008, *Finger in der Wunde – Was Reiter wissen müssen, damit ihr Pferd gesund bleibt,* 2nd ed., Schondorf: Wu Wie Verlag
- Holmström, M., and Philipsson, J., 1993. Relationships between conformation, performance and health in 4-year-old Swedish Warmblood Riding Horses, *Livestock Production Science*, 33, 293-312, Amsterdam: Elsevier Science Publishers B.V.
- Hunziker, H.-W., 2006, *Im Auge des Lesers: Foveale und periphere Wahrnehmung: Vom Buchstabieren zur Lesefreude*, Zürich: transmedia Stäubli Verlag
- Ishai, A., 2007, Sex, beauty and the orbitofrontal cortex. *International Journal of Psychophysiology,* 63, pp. 181–185.
- Janiszewski, C., 1988. Preconscious Processing Effects: The Independence of Attitude Formation and Conscious Thought. *Journal of Consumer Research*, 15 (September), pp. 199-209
- Karelaia, N., 2005, Thirst for confirmation in multi-attribute choice: Does search for consistency impair decision performance? *Organizational Behavior and Human Decision Processes,* 100 (2006) pp. 128 – 143
- Kranz, F., Ishai, A., 2006. Face perception is modulated by sexual preference. Current Biology, 16, pp. 63–68.
- Langlois, J. H., Roggman, L. A., and Musselman, L., 1994. What is average and what is not average about attractive faces? *Political Science,* Vol. 5 (4), pp. 214 – 220
- Langlois, B., et al, (1978), "Analyse des liaisons entre la morphologie et l'apitude au galop au trot et au saut d'obstacles chez le cheval", *Ann. Grnrt. 61. Anim*. 10, pp. 443-474

- Lynch, J. G., Marmorstein, H., and Weigold, M. F., 1988. Choices from Sets including Remembered Brands: Use of Recall Attributes and Prior Overall Evaluations. *Journal of Consumer Research,* 15 (September), pp. 169 – 183.
- O'Doherty, J., et al, 2003. Beauty in a smile: the role of medial orbitofrontal cortex in facial attractiveness. *Neuropsychologia* 41, pp. 147–155.
- Oppenheimer, D. M., 2003. Not so fast! (and not so frugal!): rethinking the recognition heuristic, *Cognition* 90, B1 – B9
- Painton, S., and Gentry, J. W., 1985. Research in Brief: Another Look at the Impact of Information Presentation Format. *Journal of Consumer Research,* Vol. 12, No. 2, pp. 240-244
- Pham, M. T., 1998. Representativeness, Relevance, and the Use of Feelings in Decision Making. *Journal of Consumer Research,* Vol. 25, (September), pp. 144 – 159.
- Rhodes, G., 2006. The evolutionary psychology of facial beauty, *Annual Review of Psychology.* 57, pp. 199 – 226.
- Rothenberger, S., 2006. *Verkaufstechnische und bauliche Planung sowie ökonomische Bewertung eines Aufzuchtbetriebes von Warmblutpferden in Deutschland,* dissertation, Gießen
- Russo, J. E. Medvec, V. H., and Meloy, M. G., 1998. Predecisional Distortion of Product Information, *Journal of Marketing Research.* 35 (November). pp. 438 - 452.
- Schmid, K., Marx, D., and Samal, A., 2007. Computation of a face attractiveness index based on neoclassical canon, symmetry, and golden ratios, *Pattern Recognition*, Vol. 41, pp. 2710 – 2717.
- Schneider, Dr. T., 2008. *Den Wert eines Pferdes sachverständig ermitteln*, 2nd edition, Sankt Augustin: HLBS Verlag

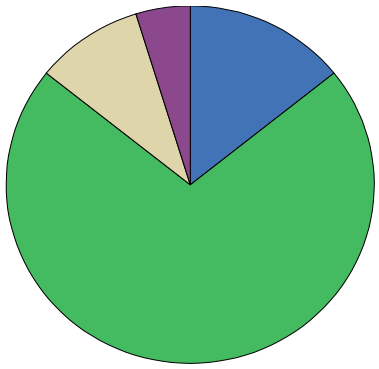
- Schwarz, N., 1990. Feelings as Information: Informational and Motivational Functions of Affective States, *Handbook of Motivation and Cognition*, Vol. 2, ed. E. Torry Higgins and Rochard M. Sorrentino, New York: Guilford, pp. 527 – 561.
- Schwarz, N., Clore, G. L., 1983. Mood, Misattribution, and Judgements of Well-Being: Informative and Directive Functions of Affective States, *Journal of Personality and Social Psychology,* 45 (September), pp. 513 – 523
- Schwarz, N., Clore, G. L., 1988. How Do I Feel about It? The Informative Function of Affective States. in *Affect, Cognition, and Social Behavior,* ed. Fielder, K., and Forgas, J., Toronto, pp. 44 - 62
- Simon, H. A., 1955. A behavioural model of rational choice. *Quarterly Journal of Economics*, 69, pp. 99 – 118
- Todd, P. M., 2005. How much information do we need? *European Journal of Operational Research,* Vol. 177 (2007), pp. 1317 – 1332
- Trommsdorff, V., 1989. *Konsumentenverhalten*, 7th ed. 2009, Stuttgard: W. Kohlhammer GmbH
- Tsukiura, T.; Cabeza, R., 2010. Remembering beauty: Roles of orbitofrontal and hippocampal regions in successful memory encoding of attractive faces. *NeuroImage,* 54 (2011) pp. 653–660.
- Winston, J.S., et al, 2007. Brain systems for assessing facial attractiveness. *Neuropsychologia* 45, pp. 195–206.
- Wright, P., 1975. Consumer Choice Strategies: Simplifying versus Optimizing, *Journal of Marketing Research,* 12 (February), pp. 60 – 67.
- Yonelinas, A.P., 2002. The nature of recolleciton and familiarity: a review of 30 years of research. *Journal of Memory and Language*, 46, pp. 441–517.

9. Annex

9.1 Participant information of research 1

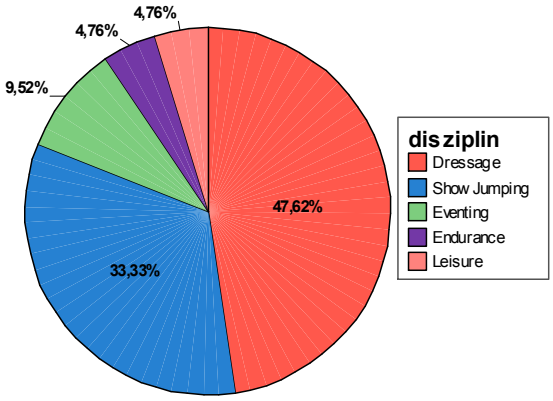
Age:

	Häufigkeit	Prozent
15 - 20	3	14,3
20 - 25	15	71,4
30 - 35	2	9,5
40 - 45	1	4,8
Total	21	100,0



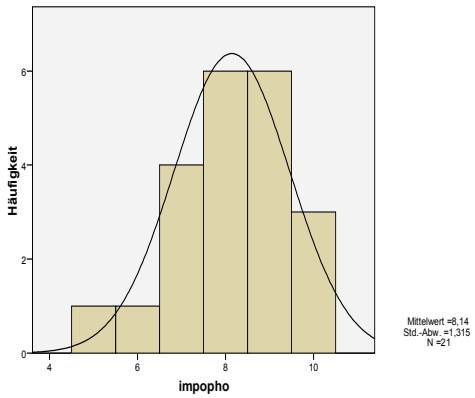
Discipline:

	Häufigkeit	Prozent
Dressage	10	47,6
Show Jumping	7	33,3
Eventing	2	9,5
Endurance	1	4,8
Leisure	1	4,8
Total	21	100,0



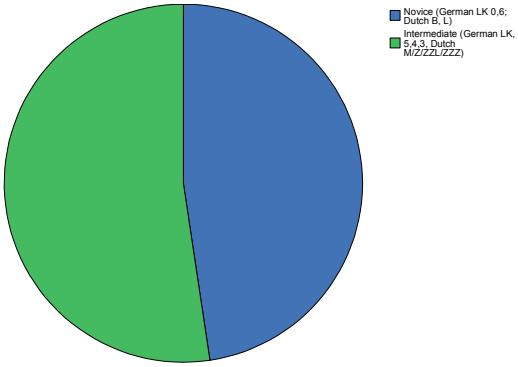
Importance of photos

	Häufigkeit	Prozent
5	1	4,8
6	1	4,8
7	4	19,0
8	6	28,6
9	6	28,6
10	3	14,3
Total	21	100,0



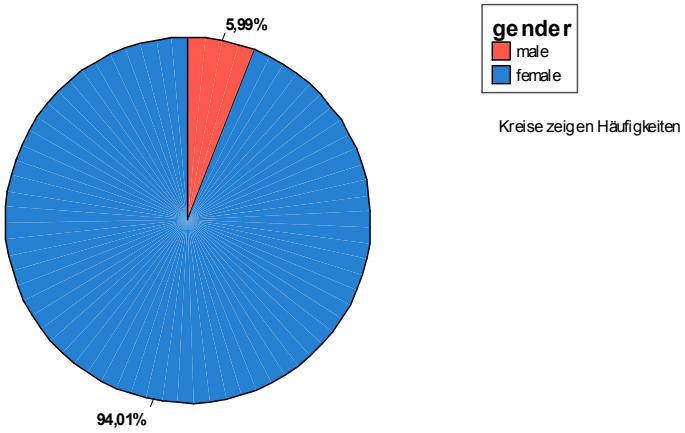
Performance category:

	Häufigkeit	Prozent
Novice (German LK 0,6; Dutch B, L)	10	47,6
Intermediate (German LK, 5,4,3, Dutch M/Z/ZZL/ZZZ)	11	52,4
Total	21	100,0

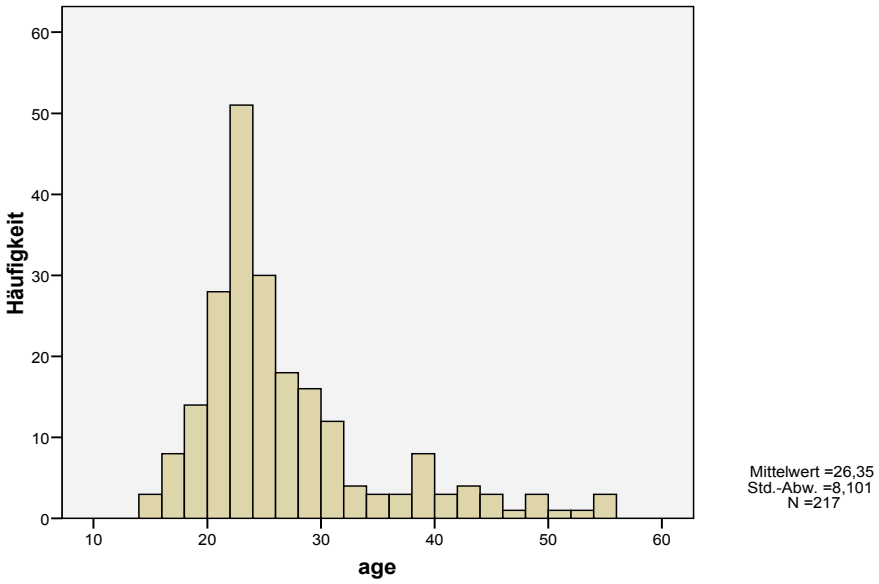


9.2 Results of the questionnaire of research 2

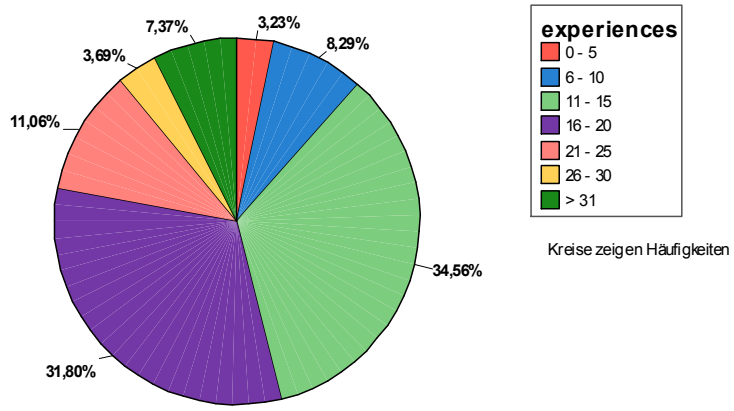
1. Please state your gender.



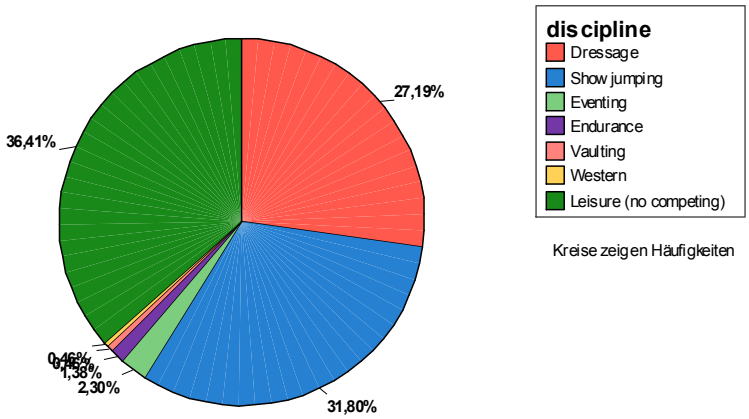
2. What is your age?



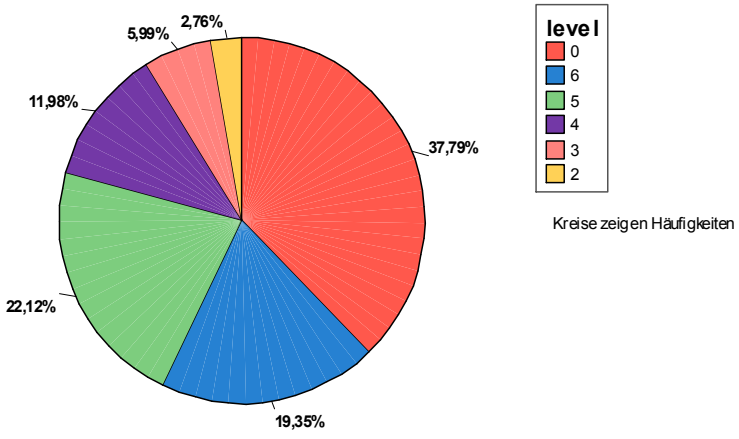
3. How many years of experience do you have with horses?



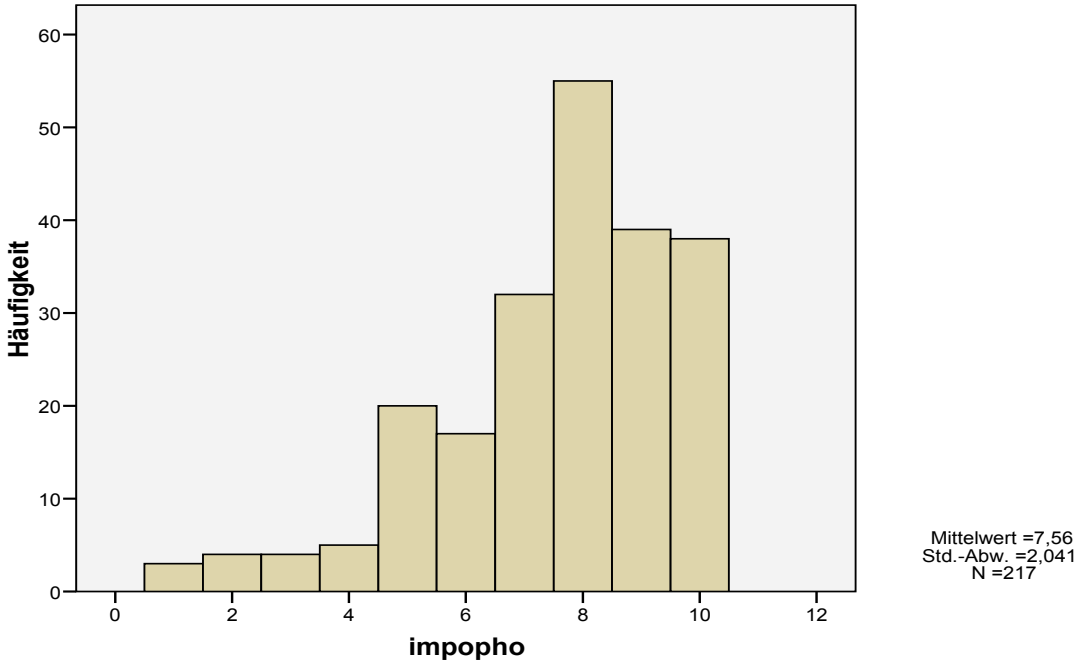
4. Which is the discipline you mainly compete in?

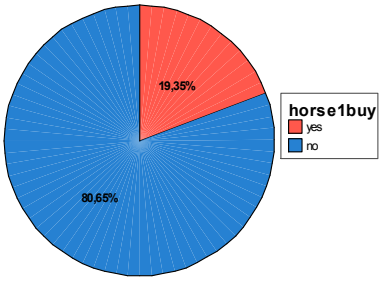
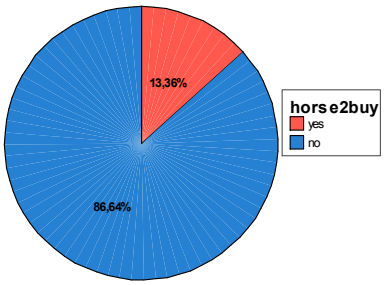


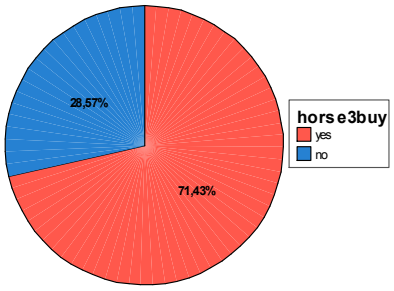
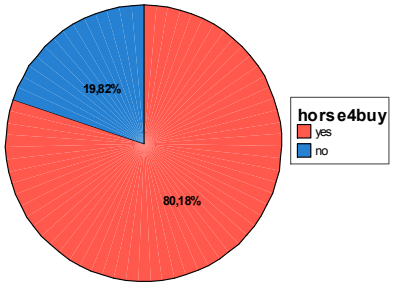
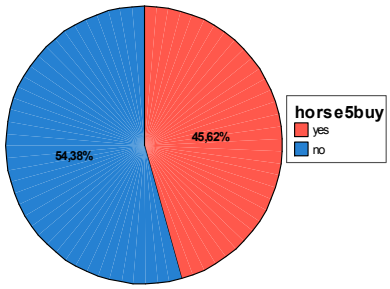
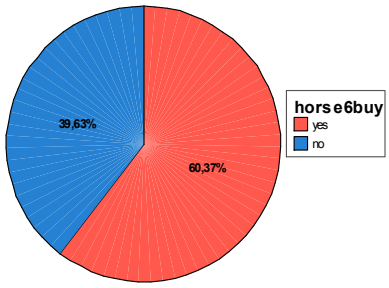
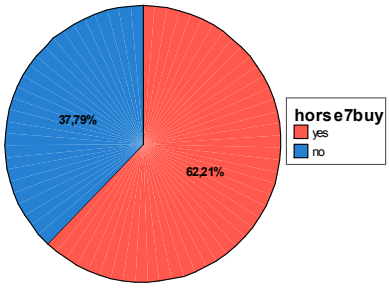
5. What is the performance category you have in that discipline?

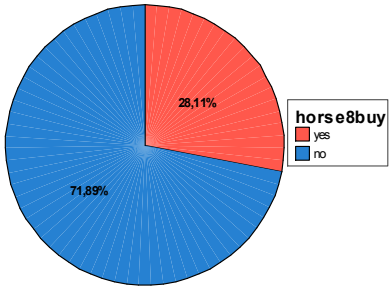
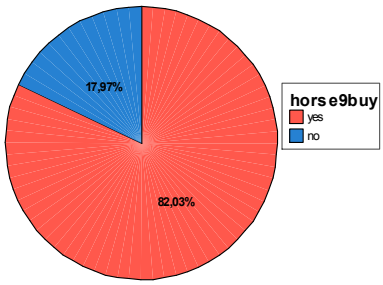
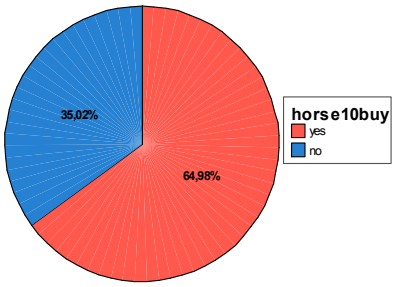
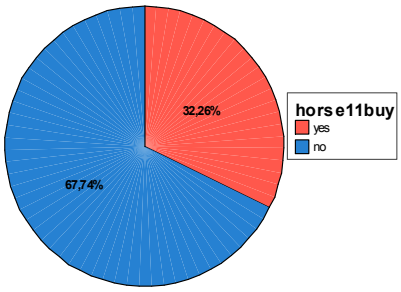
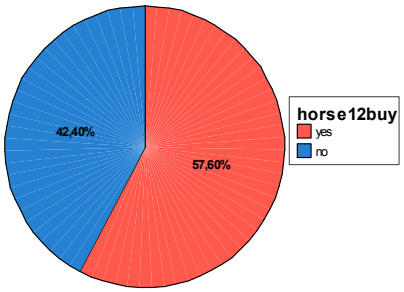


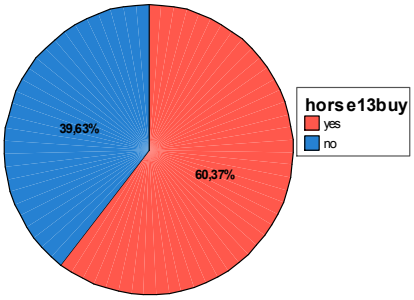
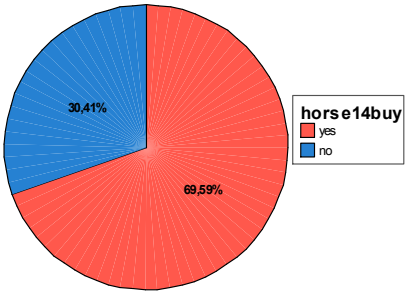
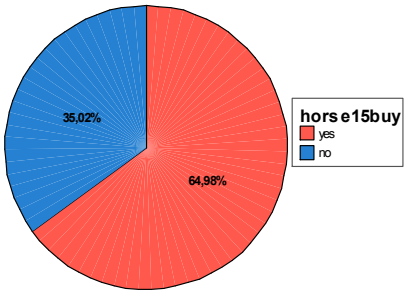
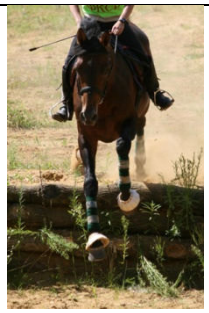
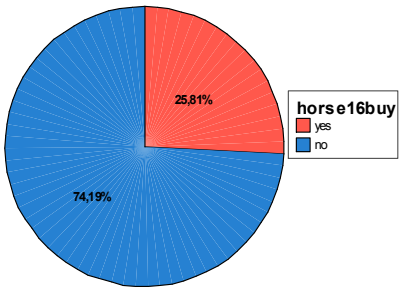
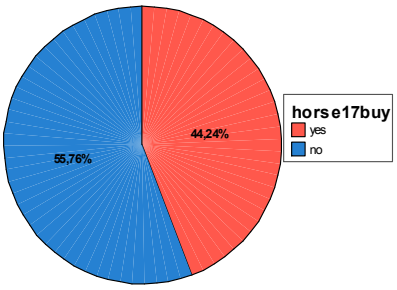
6. How important is the quality of a photo of a horse which is supposed to be sold for you?

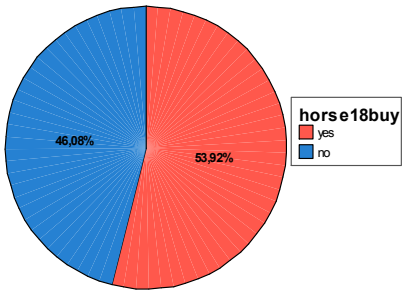
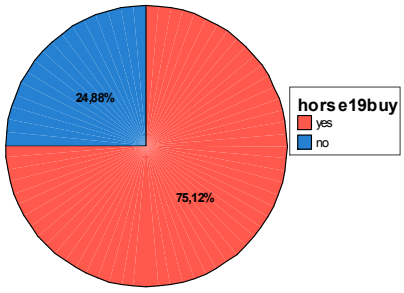
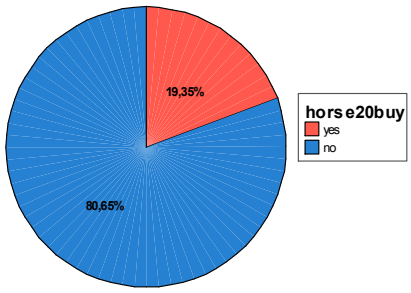
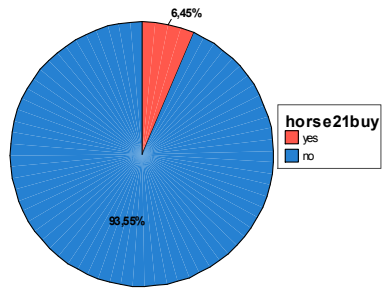
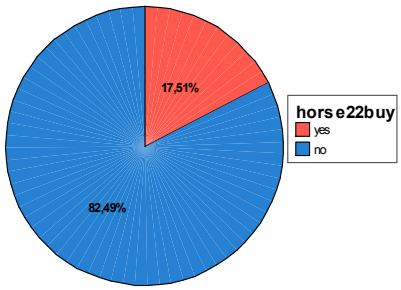


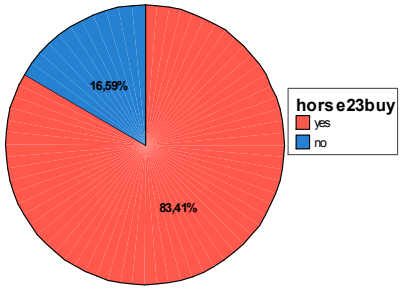
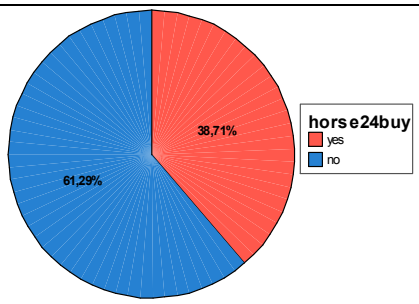
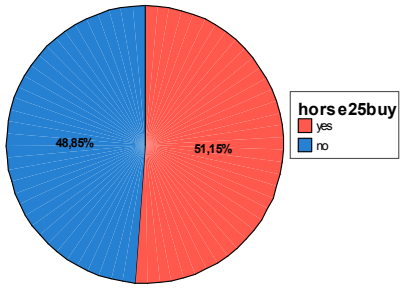
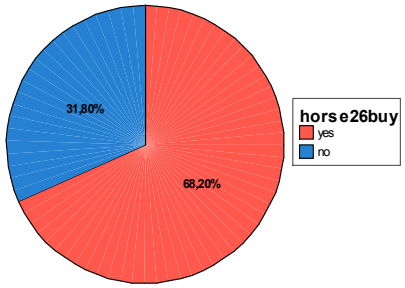
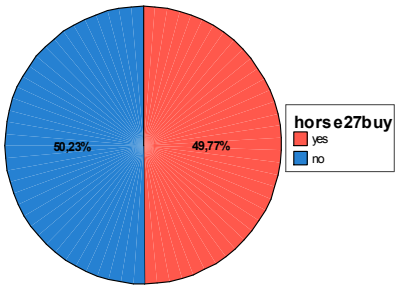
		Please rate the attractiveness of this horse (1 = very unattractive, 10 = extremely attractive):	**Would consider a purchase?**
1.		Mean: 3.37 Standard deviation: 1.906	
2.		Mean: 3.38 Standard deviation: 1.892	

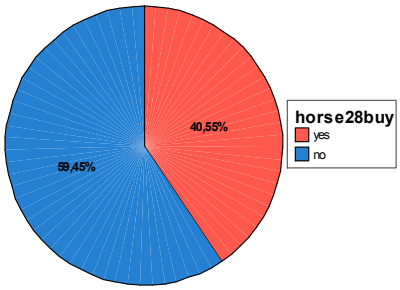
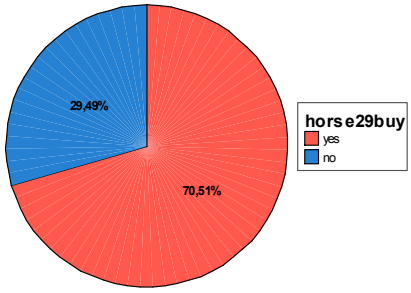
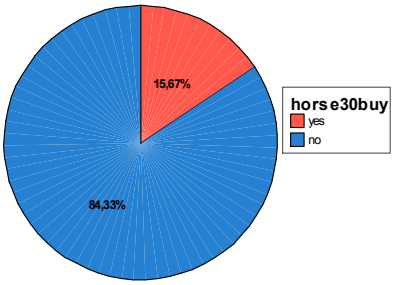
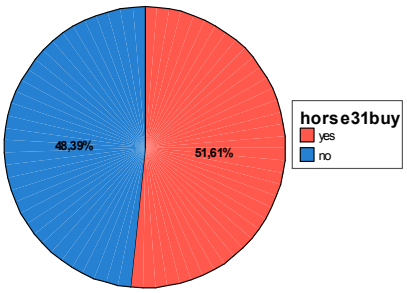
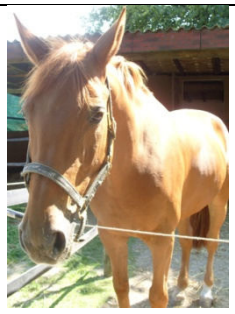
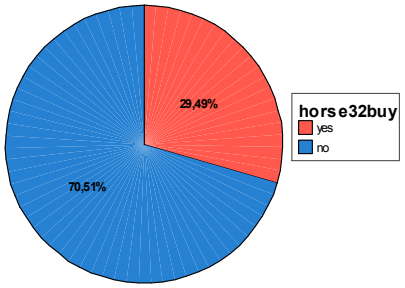
3.		Mean: 6.88 Standard deviation: 1.674	
4.		Mean: 7.70 Standard deviation: 1.705	
5.		Mean: 5.73 Standard deviation: 2.141	
6.		Mean: 6.35 Standard deviation: 2.392	
7.		Mean: 6.89 Standard deviation: 2.237	

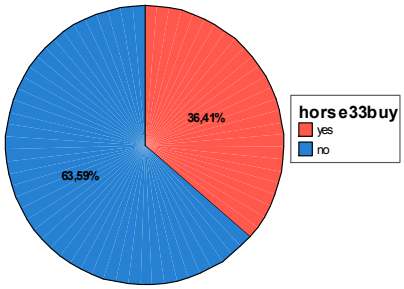
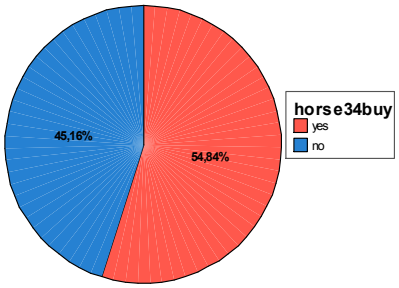
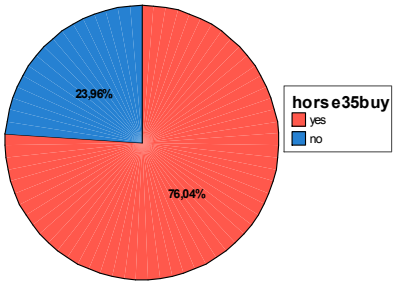
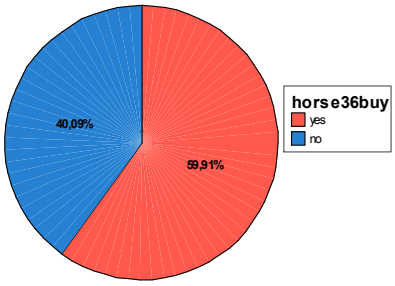
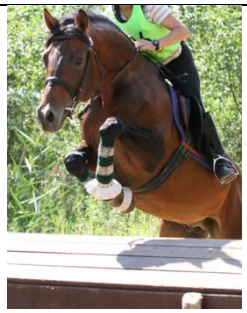
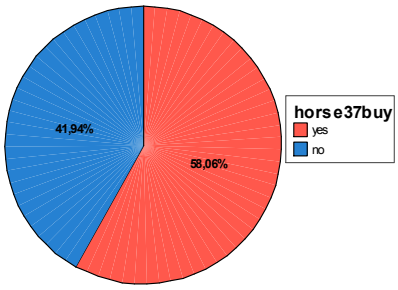
8.		Mean: 4.28 Standard deviation: 2.281	
9.		Mean: 7.65 Standard deviation: 1.789	
10.		Mean: 7.01 Standard deviation: 1.939	
11.		Mean: 4.62 Standard deviation: 1.909	
12.		Mean: 6.80 Standard deviation: 2.063	

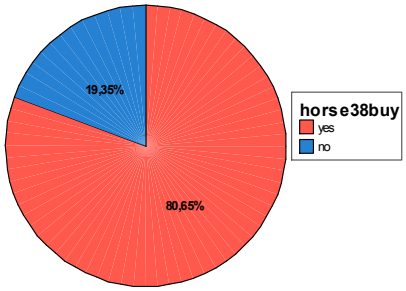
13.		Mean: 6.65 Standard deviation: 2.129	
14.		Mean: 7.26 Standard deviation: 1.787	
15.		Mean: 6.89 Standard deviation: 1.924	
16.		Mean: 4.53 Standard deviation: 1.898	
17.		Mean: 5.57 Standard deviation: 1.916	

18.		Mean: 6.04 Standard deviation: 2.123	
19.		Mean: 7.28 Standard deviation: 2.030	
20.		Mean: 4.17 Standard deviation: 2.174	
21.		Mean: 2.71 Standard deviation: 1.681	
22.		Mean: 3.87 Standard deviation: 1.851	

23.		Mean: 7.78 Standard deviation: 1.847	
24.		Mean: 5.04 Standard deviation: 2.164	
25.		Mean: 5.34 Standard deviation: 2.208	
26.		Mean: 7.31 Standard deviation: 2.095	
27.		Mean: 5.49 Standard deviation: 2.039	

28.		Mean: 5.28 Standard deviation:	
29.		Mean: 7.21 Standard deviation: 2.196	
30.		Mean: 3.72 Standard deviation: 1.912	
31.		Mean: 5.66 Standard deviation: 2.026	
32.		Mean: 4.06 Standard deviation: 2.124	

33.		Mean: 4.76 Standard deviation: 1.967	
34.		Mean: 5.95 Standard deviation: 2.175	
35.		Mean: 7.66 Standard deviation: 1.871	
36.		Mean: 6.08 Standard deviation: 1.955	
37.		Mean: 6.25 Standard deviation: 1.987	

38.		Mean: 7.38 Standard deviation: 1.933	

9.3 Influence of performance category on rating

9.3.1 Descriptives of the one-way between-groups ANOVA

(only horses with a significant difference)

		N	Mean	SD	Minimum	Maximum
horse4attr	0	82	7,40	1,770	2	10
	6	42	8,21	1,661	4	10
	5	48	8,10	1,372	4	10
	4	26	7,88	1,558	3	10
	3	13	6,46	1,613	5	10
	2	6	6,67	2,338	2	8
	Total	217	7,70	1,705	2	10
horse7attr	0	82	5,95	2,523	1	10
	6	42	7,45	1,714	4	10
	5	48	7,46	1,725	3	10
	4	26	7,73	2,127	2	10
	3	13	7,38	1,710	4	10
	2	6	6,67	2,582	2	10
	Total	217	6,89	2,237	1	10
horse9attr	0	82	7,50	1,709	3	10
	6	42	8,14	1,458	4	10
	5	48	7,75	1,720	3	10
	4	26	8,04	1,685	3	10
	3	13	6,00	2,273	3	10
	2	6	7,17	2,927	2	10
	Total	217	7,65	1,789	2	10
horse10attr	0	82	6,82	1,976	2	10
	6	42	7,79	1,507	5	10
	5	48	7,06	1,850	3	10
	4	26	7,12	2,160	1	10
	3	13	6,15	2,035	3	9
	2	6	5,17	1,835	2	7
	Total	217	7,01	1,939	1	10
horse13attr	0	82	5,88	2,322	1	10
	6	42	7,36	1,620	4	10
	5	48	7,08	2,009	3	10
	4	26	7,19	1,812	4	10
	3	13	6,77	1,833	4	9
	2	6	6,17	2,639	2	10
		217	6,65	2,129	1	10

	Total					
horse15attr	0	82	6,26	2,078	1	10
	6	42	7,48	1,656	2	10
	5	48	7,50	1,530	4	10
	4	26	7,38	1,920	1	10
	3	13	6,08	1,498	3	8
	2	6	6,17	2,229	2	8
	Total	217	6,89	1,924	1	10
horse18attr	0	82	6,56	2,420	1	10
	6	42	5,88	1,824	2	10
	5	48	5,67	1,814	2	9
	4	26	6,38	1,675	2	9
	3	13	4,31	1,888	1	7
	2	6	5,17	1,941	2	8
	Total	217	6,04	2,123	1	10
horse29attr	0	82	6,40	2,372	1	10
	6	42	7,62	1,886	3	10
	5	48	7,77	2,086	2	10
	4	26	7,62	2,002	2	10
	3	13	8,08	1,754	4	10
	2	6	7,17	1,329	5	8
	Total	217	7,21	2,196	1	10
horse31attr	0	82	5,01	2,088	1	9
	6	42	6,19	1,877	2	9
	5	48	6,04	1,675	3	10
	4	26	6,38	2,368	2	10
	3	13	5,23	1,481	2	7
	2	6	5,67	2,066	2	8
	Total	217	5,66	2,026	1	10
horse35attr	0	82	7,46	2,109	2	10
	6	42	8,10	1,411	4	10
	5	48	7,73	1,380	4	10
	4	26	8,12	1,558	5	10
	3	13	6,38	2,181	2	9
	2	6	5,50	2,881	2	10
	Total	217	7,60	1,871	2	10

9.3.2 ANOVA

(only horses with a significant difference)

		Sum of squares	df	Mean Square	F	Sig.
horse4attr	Between Groups	53,438	5	10,688	3,925	,002
	Within Groups	574,488	211	2,723		
	Total	627,926	216			
horse7attr	Between Groups	122,910	5	24,582	5,416	,000
	Within Groups	957,652	211	4,539		
	Total	1080,562	216			
horse9attr	Between Groups	53,240	5	10,648	3,519	,004
	Within Groups	638,438	211	3,026		
	Total	691,677	216			
horse10attr	Between Groups	58,662	5	11,732	3,286	,007
	Within Groups	753,320	211	3,570		
	Total	811,982	216			
horse13attr	Between Groups	88,113	5	17,623	4,172	,001
	Within Groups	891,269	211	4,224		
	Total	979,382	216			
horse15attr	Between Groups	83,337	5	16,667	4,912	,000
	Within Groups	716,008	211	3,393		
	Total	799,346	216			
horse18attr	Between Groups	76,682	5	15,336	3,607	,004
	Within Groups	897,023	211	4,251		
	Total	973,705	216			
horse29attr	Between Groups	89,655	5	17,931	3,974	,002
	Within Groups	952,014	211	4,512		
	Total	1041,668	216			
horse31attr	Between Groups	69,267	5	13,853	3,577	,004
	Within Groups	817,176	211	3,873		
	Total	886,442	216			
horse35attr	Between Groups	65,198	5	13,040	3,983	,002
	Within Groups	690,719	211	3,274		
	Total	755,917	216			

9.3.3 Post hoc Tests

Multiple comparisons between the performance categories

Dependent Variable	(I) level	(J) level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
horse4attr	0	6	-,812	,313	,104	-1,71	,09
		5	-,702	,300	,183	-1,56	,16
		4	-,482	,371	,786	-1,55	,59
		3	,941	,493	,399	-,48	2,36
		2	,736	,698	,899	-1,27	2,74
	6	0	,812	,313	,104	-,09	1,71
		5	,110	,349	1,000	-,89	1,11
		4	,330	,412	,967	-,85	1,51
		3	1,753(*)	,524	,012	,25	3,26
		2	1,548	,720	,266	-,52	3,62
	5	0	,702	,300	,183	-,16	1,56
		6	-,110	,349	1,000	-1,11	,89
		4	,220	,402	,994	-,94	1,38
		3	1,643(*)	,516	,020	,16	3,13
		2	1,438	,714	,339	-,62	3,49
	4	0	,482	,371	,786	-,59	1,55
		6	-,330	,412	,967	-1,51	,85
		5	-,220	,402	,994	-1,38	,94
		3	1,423	,560	,118	-,19	3,04
		2	1,218	,747	,580	-,93	3,37
	3	0	-,941	,493	,399	-2,36	,48
		6	-1,753(*)	,524	,012	-3,26	-,25
		5	-1,643(*)	,516	,020	-3,13	-,16
		4	-1,423	,560	,118	-3,04	,19
		2	-,205	,814	1,000	-2,55	2,14
	2	0	-,736	,698	,899	-2,74	1,27
		6	-1,548	,720	,266	-3,62	,52
		5	-1,438	,714	,339	-3,49	,62
		4	-1,218	,747	,580	-3,37	,93
		3	,205	,814	1,000	-2,14	2,55
horse7attr	0	6	-1,501(*)	,404	,004	-2,66	-,34
		5	-1,507(*)	,387	,002	-2,62	-,39
		4	-1,780(*)	,479	,004	-3,16	-,40
		3	-1,433	,636	,218	-3,26	,40
		2	-,715	,901	,968	-3,31	1,88
	6	0	1,501(*)	,404	,004	,34	2,66
		5	-,006	,450	1,000	-1,30	1,29
		4	-,278	,532	,995	-1,81	1,25
		3	,068	,676	1,000	-1,88	2,01
		2	,786	,930	,959	-1,89	3,46
	5	0	1,507(*)	,387	,002	,39	2,62
		6	,006	,450	1,000	-1,29	1,30
		4	-,272	,519	,995	-1,76	1,22
		3	,074	,666	1,000	-1,84	1,99

		2	,792	,922	,956	-1,86	3,44
	4	0	1,780(*)	,479	,004	,40	3,16
		6	,278	,532	,995	-1,25	1,81
		5	,272	,519	,995	-1,22	1,76
		3	,346	,724	,997	-1,74	2,43
		2	1,064	,965	,880	-1,71	3,84
	3	0	1,433	,636	,218	-,40	3,26
		6	-,068	,676	1,000	-2,01	1,88
		5	-,074	,666	1,000	-1,99	1,84
		4	-,346	,724	,997	-2,43	1,74
		2	,718	1,051	,984	-2,31	3,74
	2	0	,715	,901	,968	-1,88	3,31
		6	-,786	,930	,959	-3,46	1,89
		5	-,792	,922	,956	-3,44	1,86
		4	-1,064	,965	,880	-3,84	1,71
		3	-,718	1,051	,984	-3,74	2,31
horse9attr	0	6	-,643	,330	,376	-1,59	,31
		5	-,250	,316	,969	-1,16	,66
		4	-,538	,392	,742	-1,66	,59
		3	1,500(*)	,519	,048	,01	2,99
		2	,333	,736	,998	-1,78	2,45
	6	0	,643	,330	,376	-,31	1,59
		5	,393	,368	,893	-,66	1,45
		4	,104	,434	1,000	-1,14	1,35
		3	2,143(*)	,552	,002	,56	3,73
		2	,976	,759	,793	-1,21	3,16
	5	0	,250	,316	,969	-,66	1,16
		6	-,393	,368	,893	-1,45	,66
		4	-,288	,424	,984	-1,51	,93
		3	1,750(*)	,544	,018	,19	3,31
		2	,583	,753	,972	-1,58	2,75
	4	0	,538	,392	,742	-,59	1,66
		6	-,104	,434	1,000	-1,35	1,14
		5	,288	,424	,984	-,93	1,51
		3	2,038(*)	,591	,009	,34	3,74
		2	,872	,788	,878	-1,39	3,14
	3	0	-1,500(*)	,519	,048	-2,99	-,01
		6	-2,143(*)	,552	,002	-3,73	-,56
		5	-1,750(*)	,544	,018	-3,31	-,19
		4	-2,038(*)	,591	,009	-3,74	-,34
		2	-1,167	,859	,751	-3,64	1,30
	2	0	-,333	,736	,998	-2,45	1,78
		6	-,976	,759	,793	-3,16	1,21
		5	-,583	,753	,972	-2,75	1,58
		4	-,872	,788	,878	-3,14	1,39
		3	1,167	,859	,751	-1,30	3,64
horse10attr	0	6	-,969	,359	,079	-2,00	,06
		5	-,245	,343	,980	-1,23	,74
		4	-,298	,425	,982	-1,52	,92
		3	,663	,564	,848	-,96	2,29

		2	1,650	,799	,310	-,65	3,95
	6	0	,969	,359	,079	-,06	2,00
		5	,723	,399	,461	-,43	1,87
		4	,670	,472	,714	-,69	2,03
		3	1,632	,600	,075	-,09	3,36
		2	2,619(*)	,825	,021	,25	4,99
	5	0	,245	,343	,980	-,74	1,23
		6	-,723	,399	,461	-1,87	,43
		4	-,053	,460	1,000	-1,38	1,27
		3	,909	,591	,640	-,79	2,61
		2	1,896	,818	,192	-,46	4,25
	4	0	,298	,425	,982	-,92	1,52
		6	-,670	,472	,714	-2,03	,69
		5	,053	,460	1,000	-1,27	1,38
		3	,962	,642	,666	-,88	2,81
		2	1,949	,856	,208	-,51	4,41
	3	0	-,663	,564	,848	-2,29	,96
		6	-1,632	,600	,075	-3,36	,09
		5	-,909	,591	,640	-2,61	,79
		4	-,962	,642	,666	-2,81	,88
		2	,987	,933	,897	-1,69	3,67
	2	0	-1,650	,799	,310	-3,95	,65
		6	-2,619(*)	,825	,021	-4,99	-,25
		5	-1,896	,818	,192	-4,25	,46
		4	-1,949	,856	,208	-4,41	,51
		3	-,987	,933	,897	-3,67	1,69
horse13attr	0	6	-1,479(*)	,390	,003	-2,60	-,36
		5	-1,205(*)	,374	,018	-2,28	-,13
		4	-1,314	,463	,055	-2,64	,02
		3	-,891	,614	,695	-2,66	,87
		2	-,289	,869	,999	-2,79	2,21
	6	0	1,479(*)	,390	,003	,36	2,60
		5	,274	,434	,989	-,98	1,52
		4	,165	,513	1,000	-1,31	1,64
		3	,588	,652	,946	-1,29	2,46
		2	1,190	,897	,770	-1,39	3,77
	5	0	1,205(*)	,374	,018	,13	2,28
		6	-,274	,434	,989	-1,52	,98
		4	-,109	,500	1,000	-1,55	1,33
		3	,314	,643	,997	-1,53	2,16
		2	,917	,890	,907	-1,64	3,48
	4	0	1,314	,463	,055	-,02	2,64
		6	-,165	,513	1,000	-1,64	1,31
		5	,109	,500	1,000	-1,33	1,55
		3	,423	,698	,991	-1,58	2,43
		2	1,026	,931	,880	-1,65	3,70
	3	0	,891	,614	,695	-,87	2,66
		6	-,588	,652	,946	-2,46	1,29
		5	-,314	,643	,997	-2,16	1,53
		4	-,423	,698	,991	-2,43	1,58
		2	,603	1,014	,991	-2,31	3,52

	2	0	,289	,869	,999	-2,21	2,79
		6	-1,190	,897	,770	-3,77	1,39
		5	-,917	,890	,907	-3,48	1,64
		4	-1,026	,931	,880	-3,70	1,65
		3	-,603	1,014	,991	-3,52	2,31
horse15attr	0	6	-1,220(*)	,350	,008	-2,23	-,21
		5	-1,244(*)	,335	,003	-2,21	-,28
		4	-1,129	,415	,075	-2,32	,06
		3	,179	,550	1,000	-1,40	1,76
		2	,089	,779	1,000	-2,15	2,33
	6	0	1,220(*)	,350	,008	,21	2,23
		5	-,024	,389	1,000	-1,14	1,10
		4	,092	,460	1,000	-1,23	1,41
		3	1,399	,585	,163	-,28	3,08
		2	1,310	,804	,580	-1,00	3,62
	5	0	1,244(*)	,335	,003	,28	2,21
		6	,024	,389	1,000	-1,10	1,14
		4	,115	,449	1,000	-1,17	1,41
		3	1,423	,576	,138	-,23	3,08
		2	1,333	,798	,552	-,96	3,63
	4	0	1,129	,415	,075	-,06	2,32
		6	-,092	,460	1,000	-1,41	1,23
		5	-,115	,449	1,000	-1,41	1,17
		3	1,308	,626	,297	-,49	3,11
		2	1,218	,834	,690	-1,18	3,62
	3	0	-,179	,550	1,000	-1,76	1,40
		6	-1,399	,585	,163	-3,08	,28
		5	-1,423	,576	,138	-3,08	,23
		4	-1,308	,626	,297	-3,11	,49
		2	-,090	,909	1,000	-2,70	2,53
	2	0	-,089	,779	1,000	-2,33	2,15
		6	-1,310	,804	,580	-3,62	1,00
		5	-1,333	,798	,552	-3,63	,96
		4	-1,218	,834	,690	-3,62	1,18
		3	,090	,909	1,000	-2,53	2,70
horse18attr	0	6	,680	,391	,508	-,45	1,81
		5	,894	,375	,166	-,18	1,97
		4	,176	,464	,999	-1,16	1,51
		3	2,253(*)	,616	,004	,48	4,02
		2	1,394	,872	,600	-1,11	3,90
	6	0	-,680	,391	,508	-1,81	,45
		5	,214	,436	,996	-1,04	1,47
		4	-,504	,515	,924	-1,98	,98
		3	1,573	,654	,160	-,31	3,46
		2	,714	,900	,968	-1,87	3,30
	5	0	-,894	,375	,166	-1,97	,18
		6	-,214	,436	,996	-1,47	1,04
		4	-,718	,502	,709	-2,16	,73
		3	1,359	,645	,287	-,50	3,21
		2	,500	,893	,993	-2,07	3,07

	4	0	-,176	,464	,999	-1,51	1,16
		6	,504	,515	,924	-,98	1,98
		5	,718	,502	,709	-,73	2,16
		3	2,077(*)	,700	,039	,06	4,09
		2	1,218	,934	,782	-1,47	3,90
	3	0	-2,253(*)	,616	,004	-4,02	-,48
		6	-1,573	,654	,160	-3,46	,31
		5	-1,359	,645	,287	-3,21	,50
		4	-2,077(*)	,700	,039	-4,09	-,06
		2	-,859	1,018	,959	-3,79	2,07
	2	0	-1,394	,872	,600	-3,90	1,11
		6	-,714	,900	,968	-3,30	1,87
		5	-,500	,893	,993	-3,07	2,07
		4	-1,218	,934	,782	-3,90	1,47
		3	,859	1,018	,959	-2,07	3,79
horse29attr	0	6	-1,217(*)	,403	,034	-2,38	-,06
		5	-1,368(*)	,386	,006	-2,48	-,26
		4	-1,213	,478	,118	-2,59	,16
		3	-1,674	,634	,092	-3,50	,15
		2	-,764	,898	,957	-3,35	1,82
	6	0	1,217(*)	,403	,034	,06	2,38
		5	-,152	,449	,999	-1,44	1,14
		4	,004	,530	1,000	-1,52	1,53
		3	-,458	,674	,984	-2,40	1,48
		2	,452	,927	,997	-2,21	3,12
	5	0	1,368(*)	,386	,006	,26	2,48
		6	,152	,449	,999	-1,14	1,44
		4	,155	,517	1,000	-1,33	1,64
		3	-,306	,664	,997	-2,22	1,60
		2	,604	,920	,986	-2,04	3,25
	4	0	1,213	,478	,118	-,16	2,59
		6	-,004	,530	1,000	-1,53	1,52
		5	-,155	,517	1,000	-1,64	1,33
		3	-,462	,722	,988	-2,54	1,61
		2	,449	,962	,997	-2,32	3,22
	3	0	1,674	,634	,092	-,15	3,50
		6	,458	,674	,984	-1,48	2,40
		5	,306	,664	,997	-1,60	2,22
		4	,462	,722	,988	-1,61	2,54
		2	,910	1,048	,954	-2,10	3,93
	2	0	,764	,898	,957	-1,82	3,35
		6	-,452	,927	,997	-3,12	2,21
		5	-,604	,920	,986	-3,25	2,04
		4	-,449	,962	,997	-3,22	2,32
		3	-,910	1,048	,954	-3,93	2,10
horse31attr	0	6	-1,178(*)	,373	,022	-2,25	-,10
		5	-1,029(*)	,358	,050	-2,06	,00
		4	-1,372(*)	,443	,027	-2,65	-,10
		3	-,219	,587	,999	-1,91	1,47
		2	-,654	,832	,970	-3,05	1,74
	6	0	1,178(*)	,373	,022	,10	2,25

		5	,149	,416	,999	-1,05	1,34
		4	-,194	,491	,999	-1,61	1,22
		3	,960	,625	,641	-,84	2,76
		2	,524	,859	,990	-1,95	2,99
	5	0	1,029(*)	,358	,050	,00	2,06
		6	-,149	,416	,999	-1,34	1,05
		4	-,343	,479	,980	-1,72	1,04
		3	,811	,615	,775	-,96	2,58
		2	,375	,852	,998	-2,08	2,83
	4	0	1,372(*)	,443	,027	,10	2,65
		6	,194	,491	,999	-1,22	1,61
		5	,343	,479	,980	-1,04	1,72
		3	1,154	,668	,516	-,77	3,08
		2	,718	,891	,966	-1,85	3,28
	3	0	,219	,587	,999	-1,47	1,91
		6	-,960	,625	,641	-2,76	,84
		5	-,811	,615	,775	-2,58	,96
		4	-1,154	,668	,516	-3,08	,77
		2	-,436	,971	,998	-3,23	2,36
	2	0	,654	,832	,970	-1,74	3,05
		6	-,524	,859	,990	-2,99	1,95
		5	-,375	,852	,998	-2,83	2,08
		4	-,718	,891	,966	-3,28	1,85
		3	,436	,971	,998	-2,36	3,23
horse35attr	0	6	-,632	,343	,442	-1,62	,36
		5	-,266	,329	,966	-1,21	,68
		4	-,652	,407	,599	-1,82	,52
		3	1,079	,540	,347	-,47	2,63
		2	1,963	,765	,110	-,24	4,16
	6	0	,632	,343	,442	-,36	1,62
		5	,366	,382	,931	-,73	1,47
		4	-,020	,451	1,000	-1,32	1,28
		3	1,711(*)	,574	,038	,06	3,36
		2	2,595(*)	,790	,015	,32	4,87
	5	0	,266	,329	,966	-,68	1,21
		6	-,366	,382	,931	-1,47	,73
		4	-,386	,441	,952	-1,65	,88
		3	1,345	,566	,169	-,28	2,97
		2	2,229	,783	,054	-,02	4,48
	4	0	,652	,407	,599	-,52	1,82
		6	,020	,451	1,000	-1,28	1,32
		5	,386	,441	,952	-,88	1,65
		3	1,731	,615	,059	-,04	3,50
		2	2,615(*)	,819	,020	,26	4,97
	3	0	-1,079	,540	,347	-2,63	,47
		6	-1,711(*)	,574	,038	-3,36	-,06
		5	-1,345	,566	,169	-2,97	,28
		4	-1,731	,615	,059	-3,50	,04
		2	,885	,893	,921	-1,68	3,45
	2	0	-1,963	,765	,110	-4,16	,24

		6	-2,595(*)	,790	,015	-4,87	-,32
		5	-2,229	,783	,054	-4,48	,02
		4	-2,615(*)	,819	,020	-4,97	-,26
		3	-,885	,893	,921	-3,45	1,68

* The mean difference is significant at the .05 level.

9.4 Influence of discipline on rating

9.4.1 Descriptives of the one-way between-groups ANOVA

(only horses with a significant difference)

		N	Mean	Standard deviation	Minimum	Maximum
horse7attr	Dressage	59	7,32	1,925	2	10
	Show jumping	69	7,74	1,633	4	10
	leisure (no competing)	79	5,86	2,469	1	10
	Total	207	6,90	2,221	1	10
horse11attr	Dressage	59	4,78	1,609	1	8
	Show jumping	69	5,38	1,808	1	9
	leisure (no competing)	79	3,95	1,974	1	8
	Total	207	4,66	1,911	1	9
horse13attr	Dressage	59	6,93	1,920	3	10
	Show jumping	69	7,48	1,812	3	10
	leisure (no competing)	79	5,72	2,189	1	10
	Total	207	6,65	2,126	1	10
horse14attr	Dressage	59	7,46	1,775	2	10
	Show jumping	69	7,70	1,448	5	10
	leisure (no competing)	79	6,77	1,908	1	10
	Total	207	7,28	1,767	1	10
horse15attr	Dressage	59	7,37	1,680	1	10
	Show jumping	69	7,46	1,596	2	10
	leisure (no competing)	79	6,19	2,101	1	10
	Total	207	6,95	1,915	1	10
horse29attr	Dressage	59	7,54	1,897	2	10
	Show jumping	69	8,04	1,851	2	10
	leisure (no competing)	79	6,29	2,429	1	10
	Total	207	7,23	2,228	1	10
horse31attr	Dressage	59	6,03	1,929	2	10
	Show jumping	69	6,29	1,783	2	10
	leisure (no competing)	79	4,96	2,109	1	9
	Total	207	5,71	2,034	1	10

9.4.2 ANOVA

Influence of discipline on rating (only horses with a significant difference)

		Sum of squares	df	Mean Square	F	Sig.
horse7attr	Between Groups	144,414	2	72,207	16,899	,000
	Within Groups	871,654	204	4,273		
	Total	1016,068	206			
horse11attr	Between Groups	76,193	2	38,096	11,494	,000
	Within Groups	676,136	204	3,314		
	Total	752,329	206			
horse13attr	Between Groups	120,137	2	60,068	15,113	,000
	Within Groups	810,820	204	3,975		
	Total	930,957	206			
horse14attr	Between Groups	34,153	2	17,076	5,719	,004
	Within Groups	609,151	204	2,986		
	Total	643,304	206			
horse15attr	Between Groups	74,409	2	37,204	11,143	,000
	Within Groups	681,108	204	3,339		
	Total	755,517	206			
horse29attr	Between Groups	121,052	2	60,526	13,692	,000
	Within Groups	901,817	204	4,421		
	Total	1022,870	206			
horse31attr	Between Groups	73,588	2	36,794	9,635	,000
	Within Groups	779,021	204	3,819		
	Total	852,609	206			

9.4.3 Post hoc Tests

Multiple Comparisons between disciplines

Dependent Variable	(I) discipline	(J) discipline	Mean Differenz (I-J)	Std. Error	Sig.
horse7attr	Dressage	Show jumping	-,417	,367	,492
		leisure (no competing)	1,461(*)	,356	,000
	Show jumping	Dressage	,417	,367	,492
		leisure (no competing)	1,878(*)	,341	,000
	leisure (no competing)	Dressage	-1,461(*)	,356	,000
		Show jumping	-1,878(*)	,341	,000
horse11attr	Dressage	Show jumping	-,597	,323	,156
		leisure (no competing)	,830(*)	,313	,023
	Show jumping	Dressage	,597	,323	,156
		leisure (no competing)	1,427(*)	,300	,000
	leisure (no competing)	Dressage	-,830(*)	,313	,023
		Show jumping	-1,427(*)	,300	,000
horse13attr	Dressage	Show jumping	-,546	,354	,272
		leisure (no competing)	1,211(*)	,343	,001
	Show jumping	Dressage	,546	,354	,272
		leisure (no competing)	1,757(*)	,329	,000
	leisure (no competing)	Dressage	-1,211(*)	,343	,001
		Show jumping	-1,757(*)	,329	,000
horse14attr	Dressage	Show jumping	-,238	,306	,718
		leisure (no competing)	,685	,297	,057
	Show jumping	Dressage	,238	,306	,718
		leisure (no competing)	,924(*)	,285	,004
	leisure (no competing)	Dressage	-,685	,297	,057
		Show jumping	-,924(*)	,285	,004
horse15attr	Dressage	Show jumping	-,091	,324	,958
		leisure (no competing)	1,183(*)	,314	,001
	Show jumping	Dressage	,091	,324	,958
		leisure (no competing)	1,274(*)	,301	,000
	leisure (no competing)	Dressage	-1,183(*)	,314	,001
		Show jumping	-1,274(*)	,301	,000
horse29attr	Dressage	Show jumping	-,501	,373	,373
		leisure (no	1,251(*)	,362	,002

		competing)			
	Show jumping	Dressage	,501	,373	,373
		leisure (no competing)	1,752(*)	,346	,000
	leisure (no competing)	Dressage	-1,251(*)	,362	,002
		Show jumping	-1,752(*)	,346	,000
horse31attr	Dressage	Show jumping	-,256	,347	,741
		leisure (no competing)	1,072(*)	,336	,005
	Show jumping	Dressage	,256	,347	,741
		leisure (no competing)	1,328(*)	,322	,000
	leisure (no competing)	Dressage	-1,072(*)	,336	,005
		Show jumping	-1,328(*)	,322	,000

* The mean difference is significant at the .05 level.