



Bachelor Thesis

STRATEGY OF HORSE EVALUATION SYSTEM

Alfiya Samaeva

Aeres University of Applied Sciences



Influence of Oldenburg studbook horse evaluation system on the process of creation demand for showjumping stallion semen in Paul Schockemohle GmbH

Author:

Alfiya Samaeva

Program:

International Equine Business Management

Place:

Aeres University of Applied Sciences

Thesis coach:

Toine van Westing

Date:

07.06.2022

Preface

As part of my education at AERES University Applied of Sciences, the university required me to do research as my Bachelor Thesis. The research topic is in line with the degree specialization and is done about equestrian market. During the whole research, my coach Toine van Westing, whom I would like to thank in this foreword, guided me, helped to understand the complexity of the topic and provided me the required assistance. My gratitude goes to the Dick Smit, who contributed to the research with valuable feedback and additional support. I would like also to thank Christoph Hinkel, the head manager of the breeding station, for providing me with valuable information on task accomplishment and for sharing his experience and practical knowledge with me. The whole team of the breeding station Paul Schockemohle GmbH significantly added to this study with their daily effort of supervising me and sharing their practical knowledge and experience, for what I am enormously grateful. Finally, my deep appreciation is addressed to everyone who contributed to this study in any way including but not limited to the language translation.

Table of content

Preface	3
Summary	5
Kurzfassung	6
1. Introduction	7
1.1. Horse breeding and equestrian industry	7
1.2. Process of horse breeding	8
1.3. Strategy of horse evaluation system in Germany	9
1.3.1. Former evaluation system in Oldenburg studbook	10
1.3.2. Modern evaluation system in Oldenburg studbook	12
1.3.3. Connection between Oldenburg studbook and Paul Schockemohle GmbH	15
1.4. Research Question	17
1.5. Research Objective	18
2. Materials and methods	19
2.1. Study design	19
2.2. Data collection	19
2.4. Data analysis	19
2.5. Planning	20
2. Results	21
2.1. Stallion collection analysis	21
2.2. Pregnancy rates analysis	22
2.3. Market demand: relation between breeding organization and studbook	23
3. Discussion	26
4. Conclusion & Recommendation	28
List of references	29
Acknowledgment	31

Summary

Showjumping stallion semen market is driven by the created demand. For example, it could be influenced by the horse evaluation system used in breeding associations. There are multiple market participants, however the current study is focused on the connection between three bodies: breeding organizations, breeding associations and horse owners. The determination of the main market influencer clarifies how showjumping stallion semen market demand is formed. This knowledge is vital for building a strategy for the horse evaluation system used in a studbook.

According to theoretical knowledge and recent researches, studbooks are the central subject in the breeding process. They also control breeding goals and programs with the help of governmental authorities in order to improve breeding value and diversity. The current study is focused on German studbook - Springpferdezuchtverband Oldenburg-International (OS) and breeding organization - Paul Schockemohle GmbH. These organizations are perfect examples of how breeding associations and breeding organizations interact with each other. In addition to that Springpferdezuchtverband Oldenburg-International (OS) and Paul Schockemohle GmbH have been working together for a long period of time.

An interview with the head manager of the breeding station Paul Schockemohle GmbH was conducted to identify the position of the breeding organization regarding the creation of showjumping stallion semen market demand. With the same goal seven interviews were conducted with current customers of Paul Schockemohle GmbH in the breeding season 2022. Interviews took place in person or digitally with 5-7 open questions. Results of the interviews are present in the acknowledgment.

Current research shows that Springpferdezuchtverband Oldenburg-International (OS) has no specific influence on the demand creation of Paul Schockemohle GmbH showjumping stallion semen. The central role of the demand creation belongs to the customers of Paul Schockemohle GmbH (horse owners/breeders). Breeding organizations are economically oriented companies which main goal is to stay profitable by meeting customer expectation. As the horse evaluation systems used in Springpferdezuchtverband Oldenburg-International (OS) have no influence on the breeding organization, Paul Schockemohle GmbH has the full freedom to act according to horse breeder needs. An outcome of the study is a definition of alternative method of stallion evaluation which is based on pregnancy rates evaluation.

Breeding organizations should withdraw from their central role as market influencers. The reason for that is the fact breeding goal and program cannot rely only on the demands of the horse breeders and owners as might negatively influence breeding process in general. Two suggestions are proposed: the use of governmental authorities' power to influence and control market demand and/or the increase of customers' awareness using education methods. First recommendation might significantly slow down the market itself which is why preferences are given to the second option. Knowledge of the equestrian industry, breeding process and importance of breeding decisions might make horse owners/breeders realize their power on the modern market and make them act more consciously and responsibly. Further research should be carried out to determine the efficiency of pregnancy rates examination as a method of stallion evaluation in the studbook.

Kurzfassung

Der Markt für Springhengstsaamen wird durch die entstehende Nachfrage bestimmt. Er könnte beispielsweise durch das in den Zuchtverbänden verwendete Bewertungssystem für Pferde beeinflusst werden. Trotz der Vielzahl an Marktteilnehmern konzentriert sich die vorliegende Studie auf die Relationen zwischen den folgenden drei Parteien: Zuchtorganisationen, Zuchtverbände und Pferdebesitzer. Die Bestimmung der wichtigsten Marktbeeinflusser verdeutlicht, wie sich die Nachfrage nach Springhengstsaamen bildet. Dieses Wissen ist von entscheidender Bedeutung für die Entwicklung einer Strategie für das in einem Zuchtbuch verwendete Pferdebewertungssystem.

Nach theoretischen Erkenntnissen und neuesten Forschungen ist das Stutbuch das zentrale Subjekt im Zuchtprozess. Es steuert auch mit Hilfe staatlicher Stellen die Zuchtziele und -programme, um den Zuchtwert und die Vielfalt zu verbessern. Die folgende Studie konzentriert sich auf das deutsche Zuchtbuch - Springpferdezuchtverband Oldenburg-International (OS) und die Zuchtorganisation - Paul Schockemohle GmbH. Diese Organisationen sind perfekte Beispiele dafür, wie Zuchtverbände und Zuchtorganisationen miteinander interagieren. Darüber hinaus arbeiten der Springpferdezuchtverband Oldenburg-International (OS) und die Paul Schockemohle GmbH schon seit langem zusammen.

Es wurde ein Interview mit dem Leiter der Zuchtstation Paul Schockemohle GmbH geführt, um die Position der Zuchtorganisation hinsichtlich der Schaffung von Springpferde-Saamenmarktbefarf zu ermitteln. Mit dem gleichen Ziel wurden sieben Interviews mit derzeitigen Kunden der Paul Schockemohle GmbH in der Decksaison 2022 geführt. Die Interviews haben persönlich oder digital mit 5-7 offenen Fragen stattgefunden. Die Ergebnisse der Interviews sind in der Danksagung aufgeführt.

Der aktuelle Forschungsstand zeigt, dass der Springpferdezuchtverband Oldenburg-International (OS) keinen spezifischen Einfluss auf die Nachfragebildung der Paul Schockemohle GmbH nach Springpferdehengstsaamen hat. Die zentrale Rolle der Nachfragebildung ist auf die Kunden der Paul Schockemohle GmbH (Pferdebesitzer/Züchter) zurückzuführen. Zuchtorganisationen sind wirtschaftlich orientierte Unternehmen, deren Hauptziel es ist, durch die Erfüllung von Kundenerwartungen profitabel zu bleiben. Da die im Springpferdezuchtverband Oldenburg-International (OS) verwendeten Pferdebewertungssysteme keinen Einfluss auf die Zuchtorganisation haben, hat die Paul Schockemohle GmbH die volle Freiheit, nach den Bedürfnissen der Pferdezüchter zu handeln. Ein Ergebnis der Studie ist die Definition einer alternativen Methode der Hengstbewertung, die auf der Auswertung der Trächtigkeitsraten basiert.

Die Zuchtverbände sollten sich aus ihrer zentralen Rolle als Marktbeeinflusser zurückziehen. Der Grund dafür ist die Tatsache, dass Zuchtziel und -programm nicht nur von den Anforderungen der Pferdezüchter und -besitzer abhängen dürfen, da dies den Zuchtprozess im Allgemeinen negativ beeinflussen könnte. Es werden zwei Vorschläge gemacht: die Nutzung der Macht der Regierungsbehörden zur Beeinflussung und Kontrolle der Marktnachfrage und/oder die Sensibilisierung der Kunden durch Schulungsmethoden. Die erste Empfehlung könnte den Markt selbst erheblich verlangsamen, weshalb der zweiten Option der Vorzug gegeben wird. Kenntnisse über die Pferdewirtschaft, den Zuchtprozess und die Bedeutung von Zuchtsentscheidungen könnten dazu führen, dass Pferdebesitzer und Züchter ihre Macht auf dem modernen Markt erkennen und bewusster und verantwortungsvoller handeln. Es sollten weitere Untersuchungen durchgeführt werden, um die Effizienz der Trächtigkeitsuntersuchung als Methode der Hengstbewertung im Zuchtbuch zu ermitteln.

1. Introduction

1.1. Horse breeding and equestrian industry

The equestrian industry could be described as a business of using horses as a source of recreation and enjoyment. There is a large number of people with considerable wealth which contribute to and are involved in the industry. This makes the equestrian industry important to the local economy (Eastwood, et al., 2008). The equestrian industry contributes to the world's economy and includes a lot of money and people who are dependent on the industry's well-being and success. The annual economic impact of the industry is 300 billion dollars (Equine Business Association, 2022).

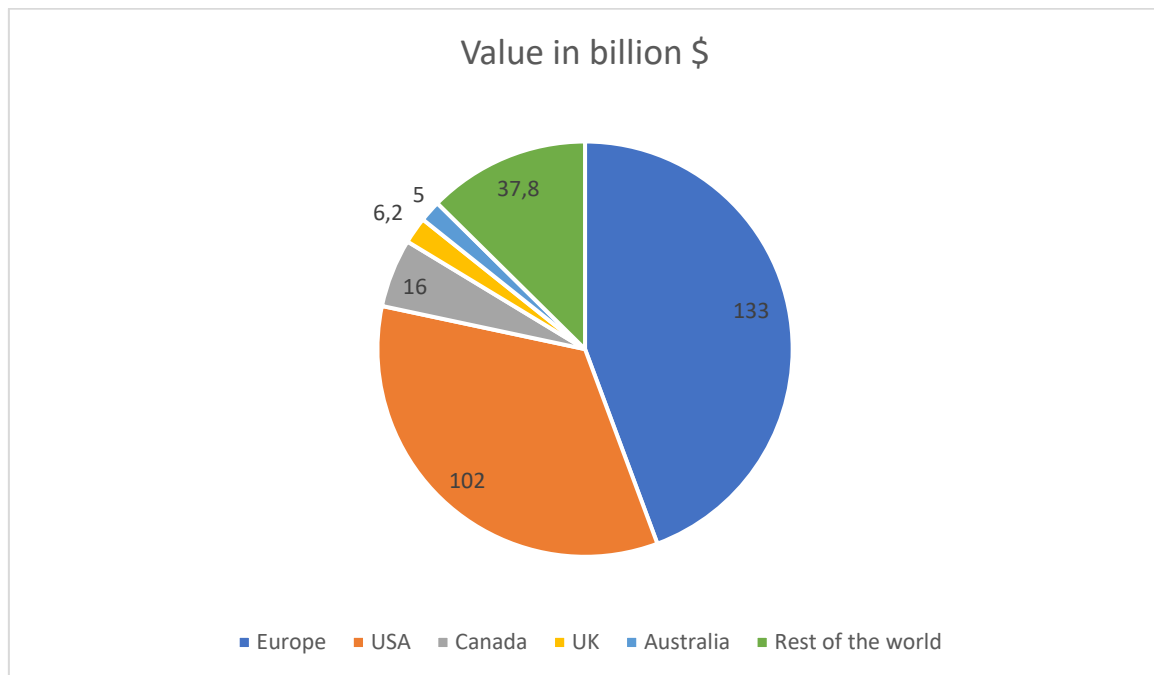


Figure1: Annual economic impact of the equine industry (Equine Business Association, 2022)

The equestrian industry can be seen as a combination of three main components: services, owners and riders, breeding and manufacturing. An interesting fact which unites all breeders is that, however wonderful a foal looks on paper, it is valueless until it has job to be done. That is why a breeder is dependent on the end user to produce and develop the raw material (foal). It also means that end users (owners, riders) have an influence on the developing process, as breeders aim to satisfy customers' needs. Moreover, each member has its own aims and objectives, benefiting and contributing to each other (Eastwood, et al., 2008).

The importance of breeding in the equestrian industry has a vital economic contribution to the industry and world economy. People, who are busy in the industry are interested in fulfilling their own goals and receiving economic benefits from the breeding process. The German equestrian industry as a system is a good example of a valuable contribution to the general economic well-being of a country. A study has shown that every three to four horses create one job. This means that approximately 300,000 German workplaces have been created as a result of equestrian activity. The equestrian sport and horses also have an indirect economic impact. The biggest segment of the market belongs to books, magazines and TV shows provided in German spoken lands (Deutsche Reiterliche Vereinigung, 2014). A breeding process is the process of creating raw material for the equestrian industry, it is also a driver to the industry's existence and development. The need for breeding process development seems to be logical and evident, but the process itself is much more complicated.

1.2. Process of horse breeding

The goal of a horse breeder is to produce a horse, which is better than its parents, to increase breeding value. The breeding values are the degree to which animal can transfer its genes and traits to the next generation (Oldenbroek, et al., 2014). However, it is difficult to evaluate breeding potential as there are a lot of environmental aspects which affect the animal (Worldpress, 2020). The most important aspect of creating successful breeding program is choosing outstanding stock for a higher chance in improving breeding value. The process of choosing the right stock is done by correct evaluation, which is based on individual records, pedigree records and progeny information (Worldpress, 2020).

The individual records with high heritability traits are good indicators of the horse breeding potential. Through the accurate selection of an animal with certain traits, the probability of passing the same characteristics onto the next generation could be 40-60 percent. Moreover, these traits relate to the economic importance of the horse (Worldpress, 2020). Breeders also pay attention to the pedigree records which include information about the sire and dam. Outstanding parents also have a positive influence on the probability with which the horse will pass genes with desired traits to the next generation. The pedigree indicates genes which have been passed on with several generations and shows the concentration of desired genes in the individual (Worldpress, 2020). Another one way to estimate the horse breeding potential is to record success of the offspring. If a sire and a dam have produced a successful offspring, it means that these parents have breeding potential. To get more accurate results, breeders should look at the average results of offspring produced. Progeny averages on a number of offspring are the best indication of horse's genetics and a good predictor of breeding success (Worldpress, 2020).

Some European countries as Holland and Germany have established programs for horse breeding and development which have been successful for many years (Eastwood, et al., 2008). These programs mainly are designed and exists within breeding associations, which are called studbooks. A studbook is an official record of pedigrees of purebred animals, usually published by a national breeding association or similar regulating organization (Britannica, 2022). Each studbook has a breeding goal and a breeding program which aims to fulfill end user needs and desires. The goal should be consistent, economically important and focused on the market (Worldpress, 2020).

Some studbooks are specifically focused on traits which are important for showjumping and dressage. To design the suitable breeding program, knowledge about genetic correlation between both disciplines and between traits measured early in life and performance in competition in each discipline is needed. The study about genetic correlations between dressage, show jumping and studbook-entry inspection traits in a process of specialization in Dutch Warmblood horses showed that correlation between showjumping and dressage traits are negative. It is also proven that correlation between competition traits and traits recorded in studbook-first inspection is not strong. The result of the study states that it is better to use separate breeding programs and goals for each discipline (Rovere, et al., 2017). The evaluation systems should be adjusted not only according to the desires of the market, the end user, but also according to the breeding goal, required traits and purposes of animal use. There is no a universal breeding goal and program for every equestrian discipline, nor is there an option to design a universal breeding program for every purpose of a horse use. Sport and breeding horses cannot be produced with the same breeding program.

Different studbooks use different forms of horse evaluation for a selection of outstanding stock. For example, The Dutch Royal Warmblood Studbook (KWPN/BLUP) includes in their evaluation system the highest score achieved in competition to evaluate horse genetic ability of performance. However, this method is not perfect as data collected during performance is associated with some aspects that might affect the quality of genetic evaluation based on these records. Such aspects

might be an influence of the rider, a censoring and a preselection of the data (Rovere, et al., 2016). The study about competition performance analysis in dressage and show jumping of Dutch Warmblood horses has shown that there is an effect of the rider on the genetic analysis. Moreover, the censoring itself has a small effect on the genetic parameter for highest performance achieved by the horse; the preselection has a genetic basis, but the effect on genetic parameters was relatively small (Rovere, et al., 2016). It means that the method of horse selection and evaluation for breeding purposes used in The Dutch Royal Warmblood Studbook (KWPN) is not objective and reliable enough to be the perfect solution.

Currently Belgian breeders are using Best Linear Unbiased Prediction animal model, which requires additional external information from neighboring countries to achieve more accurate estimated breeding value (Vandenplas, et al., 2013). The study about an integration of external information for foreign stallions into Belgian genetic evaluation for jumping horses showed that Belgian evaluation of foreign stallions was more similar to foreign rankings according to the increase of the rank correlations of at least 12%. The estimated breeding value was improved by at least 2% on average. Current results were confirmed by the integrated into the Belgian evaluation external information (Vandenplas, et al., 2013). Moreover, the study result proves that Best Linear Unbiased Prediction animal model provides quite reliable information.

Currently, it is known that the breeding goal and the program should be strictly specialized and customized. Nowadays several horse evaluation systems and programs are known and applied into practice. Some of them are quite successful, but there is no information about reliable and accurate evaluation system which has proved itself in long term.

1.3. Strategy of horse evaluation system in Germany

Strategy is defined as a long-term direction of decision making (Johnson, et al., 2017). As the goal of breeding process is the increase of breeding value and the goal of business in the equestrian industry is meeting end users demand, it is important to understand how all three bodies work. The equestrian industry of Germany is taken as an example to explain breeding organization, studbook and end users (horse owners) interact with each other.

Germany is widely known for its high-quality standards in the areas of breeding, selling, training, and competing in the equestrian industry. This country belongs to the area with the biggest concentration of value created in equestrian industry in the world (Equine Business Association, 2022). German high standard for breeding is one of the key factors for successful performance in selling and competing. Germany has a significant population of breeding horses. In 2012, 3,500 sport horse sires and 60,000 broodmares with 28,000 sport-horse foals were registered with the FN (Deutsche Reiterliche Vereinigung). At the Olympic Games in London, 65 out of 219 competing horses (30%) were of German breed. At the Olympic Equestrian Games in Hong Kong in 2008, 52 out of 194 participating horses were German-bred. They won 18 of the 45 possible medals: eight gold, four silver and five bronze medals, which is nearly half of all possible medals to win (Deutsche Reiterliche Vereinigung, 2014). All these factors confirm high level of German breeding system development.

FN (Reiterliche Vereinigung) is the main organization in German breeding system and its mission consists of three main elements (Deutsche Reiterliche Vereinigung, 2014):

- The promotion of the equestrian sport and horse breeding
- The provision of guidance and services
- The preservation of the historic relationship between man and horse

It shows how vital horse breeding is and how tight it is to the economic success and well-being of the industry and the country. The structure and organization of breeding activities in Germany has two very distinctive features. First, as one of the main departments of FN, the breeding department works in close collaboration with the competitive equestrian sports. Secondly, Germany's breeding structure is uniquely composed of a two-track structure of sire keeping. The first track involves the federal state studs, which hold approximately 700 sires. The second track encompasses the private studs, which hold approximately 4,000 sires. The Federal Republic of Germany is structured in a decentralized manner. There are 25 different official breeding associations, all coordinated by the umbrella organization of FN. The FN breeding department is responsible for the coordination of breeding associations activities (Deutsche Reiterliche Vereinigung, 2014).

A national breeding association is called the studbook as stated before in the study. Each German studbook has its own breeding program, goal and horse evaluation system to reach desired result. These aspects are related to and managed by the state German organization FN, helping studbooks stay on track, meet market demands, and maintaining economic importance and efficiency. One of the studbooks in Germany is Oldenburger Pferdezuchtverband (Oldenburger Pferdezuchverband, 2022). This way breeding organizations can improve breeding value and business processes can stay effective as demand of the end users is met.

Through time, the market changes and so do the effects, demands and desires of end users. So, it is important to adjust and improve evaluation system in the studbook to be able to meet customers' expectations. However, incorrect decisions might lead to negative consequences and the change of the evaluation system might be driven by economic factors. To make an accurate conclusion about the effectiveness of the evaluation system it is wise to look over a broader period of time when a certain studbook evaluation system is processed.

1.3.1. Former evaluation system in Oldenburg studbook

The Oldenburg breed is one of the oldest breeds of Europe, which was developed between the 13th and 14th century. Oldenburg horses were bred with the influence of Frisian, Andalusian, Neapolitan, Berberian and purebred stallions. The population of breeding stallions was narrowed down to the Oldenburg breed by the 19th century because enough breeding value had been created within the breed. Reasons for the successful development of the breed were the way foals and horses were raised and through testing and the selection of outstanding horses with higher breeding potential (Politova, 2003).

Foals were grazed from early spring till December and sometimes they were even not stabled through the whole winter. Within the grazing period horses rarely got any additional feed or supplements. Pastures were in an area where soil was poor in nutrients and minerals. This way of raising foals gave them a good health and an enormous endurance (Politova, 2003). Such qualities were reached in the severe conditions because of animals' ability to modify their physical bodies to better deal with extreme environment (Cho, 2018). Massiveness and correct development were reached because foals were able to move freely for long periods of time (Politova, 2003).

The Oldenburg breed is famous for its durability, fertility, and calm temperament. Trot testing were firstly organized for mares, and later for stallions. Already in the year 1930, starting from the age of 3 years old, all stallions must be tested according to 5 main points: temperament, performance in walk and trot, traction power, and body constitution. The traction power was tested in the distances of 1000 meter, the trot performance was tested in the distance of 2000 meters. The body constitution was evaluated by measurement of heartbeat, breath, body temperature, and perspiration. Mare testing became mandatory from the year 1937. Testing for mares was way more complicated than for stallions. It included a traction power test for 65 kilometers with the weight

2500 kilograms. 50 kilometers out of 65 should be done in trot with a strict time limit per kilometer (Politova, 2003). More précised description of test requirements is present in the table below.

Table 1. Former selection requirements for Oldenburg stallion

Stallion	Distance in meters	Time limit in minutes per kilometers
Traction power	1000	8
Trot performance	2000	3

Table 2. Former selection requirements for Oldenburg mare

Mare	Distance in kilometers	Loaded weight in kilograms	Time limit in minutes per kilometer
Traction power (walk)	15	2500	7
Traction power (trot)	50	2500	9,5

After the year 1920, demand and expectation of end users had changed, having had an influence on the traits and characteristics of the Oldenburg breed. A horse should meet the severe conditions of the war and agricultural work. The most attention was paid to the joints, which should be correctly built and strong. The scapula should be long, the chest is deep, and the ribs are long and round. There were special requirements for movements as well: a long stride and spacious trot (Politova, 2003).



Figure 2. Former Oldenburg horse type in 1940 (The Horse Magazine, 2018)



Figure 3. Former Oldenburg horse type in 1960 (*The Horse Magazine*, 2018).

As Oldenburg horses were mainly used for draft purposes, the breeding goal and program was designed in the way to produce horses with the composition and characteristics of a draft horse. Former requirements were based on the demands of end users, but at the same time they were coordinated and checked by responsible authorities, what made the breeding process reliable and conscious.

1.3.2. Modern evaluation system in Oldenburg studbook

Modern appearance of Oldenburg horse was formed after the World War Two, when the demands of the war time had disappeared. The goal was to make the Oldenburg breed lighter, which is why Purebred, Hanoverian, Holstein, French Sel, Westfalen, Arabic stallions were added to the breeding program. At the same time, preferences were given to the horses with typical Oldenburg appearance which had become a reason for modern success of the breed. Stallions were chosen according to their quality, not to the uniqueness of the pedigree. Later on, mainly Holstein stallions were used in breeding purposes to improve breeding value. Another one reason for the modern success is consolidation of mare base of the breed (Politova, 2003).

Modern Oldenburg horses are also evaluated and tested but in a different way. Stallions are selected at the age of 2,5 years by evaluating exterior, movements, and free jumping. Mares are registered in a studbook after meeting evaluation requirements in movements and exterior. Station tests are desired but not mandatory. In 2003 there were 8583 Oldenburg mares and 225 Oldenburg stallions registered in the studbook, while in 1999 there were 9386 mares and 236 stallions. Reduction of a mare population between 1999 and 2003 years by 10% took place because the market was overloaded with the current breed. As the result in 2002 only 62% of all mares were covered. The modern Oldenburg is a noble horse which can be used for many purposes. Performance of the breed makes it successful in riding and draft sports (Politova, 2003).



Figure 4. Modern Oldenburg horse type (Paul Schockemohle, 2022).

1.3.2.1. Modern Oldenburg stallion selection

Today, the Oldenburg studbook performs several tests to select breeding stallions: Young Stallion Licensing, Main Premium and Saddle licensing. Every year at the beginning of the October selection of the 350 best 2,5 years old stallions takes place. Around of 350 foals are selected every year to go to the main licensing, the Oldenburg Licensing, which always takes place at the end of November in the Oldenburg Horse Center Vechta. Springpferdezuchtverband Oldenburg-International's main licensing is also held at the same time as the Oldenburg Licensing (Oldenburger Pferdezuchverband, 2022).

The stallions are inspected on hard ground, running loose and free jumping, on the lunge and in the walking ring. Only those who convince the committee regarding movement action, jumping technique, conformation, exterior, type, and overall impression, have a chance of being licensed. Stallions of a special quality are ranked in a premium ring and the Champion Stallion proclaimed (Oldenburger Pferdezuchverband, 2022).

Main premium is the next selection of stallions who are currently active in breeding. After they have passed their stallion performance test and their first offspring have been inspected, the stallions are evaluated regarding their performance and hereditary traits. The three best four- and five-year old stallions in the fields of dressage and show jumping are then presented and ranked during the main licensing. The main premium winner with emphasis on dressage as well as emphasis on jumping is selected (Oldenburger Pferdezuchverband, 2022).

The Oldenburg Spring Licensing with saddle test is also held at the Oldenburg Horse Center Vechta. In spring 2012, a licensing with a prior one-day test was offered for the first time. After the pre-selection in January, the stallions must be presented in Vechta where they are inspected while free jumping and their gaits examined under saddle the end of March/beginning of April. Rideability is also tested by a guest rider (Oldenburger Pferdezuchverband, 2022).

Table 3. Modern selection requirement for Oldenburg stallion (Oldenburger Pferdezuchverband, 2022).

Type of the test	Age	Number of stallions chosen	Month	Requirements
Young stallion	2,5	350	October	Movement action, jumping technique, conformation, exterior, type and overall impression
Main Premium	For actively breeding stallions	70	November	After they passed stallion performance test (held by the German Government) and offspring have been inspected, Performance and hereditary traits
Saddle Licensing	-	-	March/April	Free jumping, saddle riding by guest rider.

The selection of stallions is done through multiple auctions at the same time with the aim to sell stallions right after they are licensed (Oldenburger Pferdezuchverband, 2022). It shows the true intention of holding these type of selections – marketing and increase of market value of the horse. The intention of the breeder is to gain value and sell the best stallion for the best price. There is not enough reliable information how breeders increase breeding value if they sell the most highly ranked stallions.

1.3.2.2. Modern Oldenburg mare selection

The Oldenburg studbook plays vital attention to the mares' bloodlines. Oldenburg mare lines have been carefully maintained for generations by their breeders and are the basis for reliable and successful breeding (Oldenburger Pferdezuchverband, 2022). The studbook took special care specifically about mares' quality. As it is stated before in the text, even tests for mares were more strict and tough.

All mares that are actively involved in breeding must be registered in the studbook. At registration the mares are described linearly, given a score and, if quality merits, awarded a premium. During registration process all necessary information is kept, especially the pedigree, stick measures, and assessment results. During the assessment, the mares are presented in a trot on the triangle and in a walk in the walking ring and described linearly. Characteristics such as type, quality of conformation (head, neck, saddle position, frame, front legs, hind legs), correctness, walk, trot and overall impression play a special role in the assessment.

Mares between the age of 3 and 6 years are inspected for the Elite Broodmare Show in Rastede. Tests are held in May and June and mares present themselves in free jumping, demonstrate their basic gaits under saddle and are also ridden by a guest rider to verify rideability. The results serve for Oldenburg studbook the Elite Broodmare Show.

Table 4. Modern selection requirements for Oldenburg mare (Oldenburger Pferdezuchtverband, 2022)

Type of the test	Information kept	Assessment	Characteristics
Studbook registration	Pedigree, stick measures, assessment results	Trot on the triangle and in a walk in the walking ring and described linearly	Type, quality of conformation (head, neck, saddle position, frame, front legs, hind legs), correctness, walk, trot and overall impression
Elite Broodmare Show	3-6 years old	Free jumping, ridden by a guest rider	Rideability, basic gaits

Following the change of end users and market desires, the breeding program and goal have been adjusted accordingly. Nowadays, the Oldenburg horse is mainly used for leisure and sport activities. This created the need for a lighter, well ridden horse with a calm temperament and good jumping capabilities. The Oldenburg studbook gives more importance to change in the evaluation requirements, proving the ability of the Oldenburg studbook to meet market demand and be on track with fast changing world.

1.3.3. Connection between Oldenburg studbook and Paul Schockemohle GmbH

As Oldenburg studbook is a national breeding association, which is coordinated by the FN, it is important for understanding of how the market demand is created in real business framework to examine the connection of the studbook with breeding organization. One of the German leading companies in horse breeding is Paul Schockemohle GmbH. Paul Schockemohle, a former outstanding sportsman, managed to establish his own company with the complete cycle of breeding, training, competing, selecting, and marketing sport horses. His trademark is associated with high quality in the equestrian industry. The business of Paul Schockemohle also includes sport management programs for international riders, teams, and companies (Briones , 2021).

The stud book of Oldenburg showjumping horses is the fourth largest in Germany and has already produced Grand Prix level horses (Briones , 2021). The Oldenburg studbook was created as a breeding organization - Oldenburger Pferdezuchtverband e.V. - as an umbrella organization which unites the Verband der Züchter des Oldenburger Pferdes e.V. (OL) and Springpferdezuchtverband Oldenburg-International e.V. (OS). Paul Schockemohle is a part of Executive Committee of Oldenburger Pferdezuchtverband e.V. (Oldenburger Pferdezuchtverband e.V., 2022).

AUFBAU DES OLDENBURGER PFERDEZUCHTVERBANDES

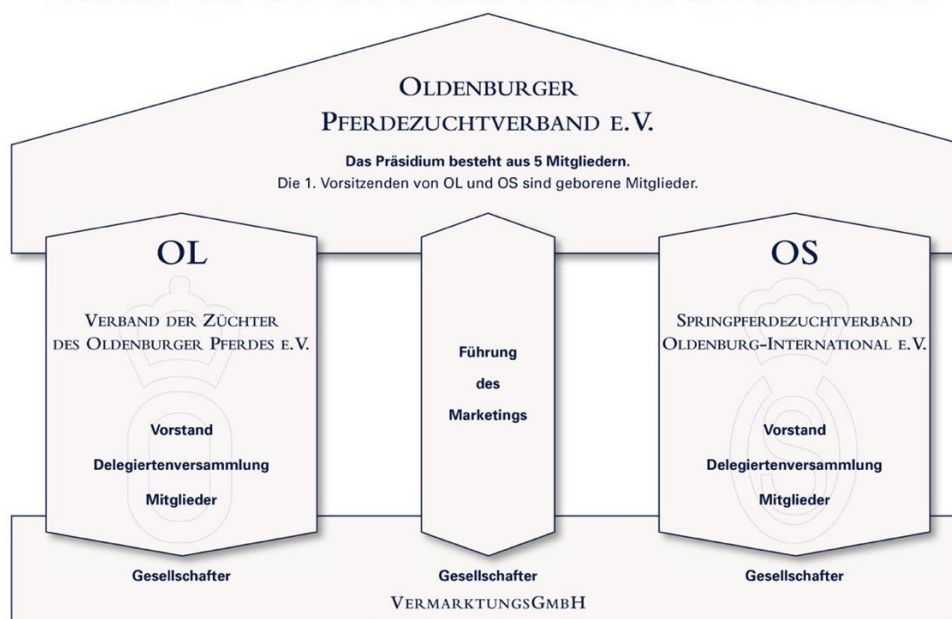


Figure 5. An umbrella organization of Oldenburger Pferdezuchtverband e.V. (Oldenburger Pferdezuchtverband e.V., 2022)

The umbrella organization is a strong community that unites all Oldenburg breeders. The key to economic success lies deeply in the size of the organization. Large organizations bring advantages such as competences, influential network, various contacts, and relations. The unique advantage of the studbook is the fact that OL and OS can share their knowledge, skills, and competences, but stay independent in designing the breeding goal and the program. The objective of the umbrella organization is to take economically oriented actions, keeping in mind the traditional way of doing things.

The Springpferdezuchtverband Oldenburg-International (OS) was supposed to be established in 1997 as a merge of Oldenburg and Zangersheide studbooks. However, the negotiation process was not quite successful (The Horse Magazine, 2018). Springpferdezuchtverband Oldenburg-International (OS) was founded on May 23, 2001 and it has grown enormously.

The objective of establishing OS was to breed show jumpers for higher level competitions. Right from the beginning, Paul Schockemöhle from Mühlen has been the Chairman. Prioritized characteristics of horses at OS are the ability to jump, willingness to perform, rideability, reaction speed as well as robustness health-wise. Oldenburg International focuses on combining the best performance genes together; promoting improvements in breeding as quickly as possible. At OS, great value is placed on stallions and mares that have already proved themselves in competitions (Oldenburger Pferdezuchtverband e.V., 2022). It is wise to separate breeding goal and program for different sport disciplines, as the studies prove (Rovere, et al., 2017), but it is not currently known if it possible to breed horses which are good in sport and breeding at the same time.

Today, business of Paul is still impressively big. One his breeding stables, Lewizt Stud, uses the help of 200 employees and 14 veterinarians to take care of 700 foals. In 2021 Paul Schockemöhle offered the sale of semen of six stallions approved by Oldenburger Pferdezuchtverband e.V.: Conthargos, Diaron, Diarado, Chacoon Blue, Casallco, Balou du Rouet and 20 stallions approved by Springpferdezuchtverband Oldenburg-International e.V.: Stakkato's Golden, Varihoka du Temple, Diaron, Diarado, Diablue PS, Cosmos Z, Cornet's Darco, Continental Blue, Contino-Quick PS, Conthargos, Conthalou, Clear Heart, Chacothage Blue PS, Chacoon Blue, Chacfly PS, Casallco, Big Star, Baloutaire PS, Balou du Rouet, and All Star (Paul Schockemöhle, 2022). All

showjumping stallions of Paul Schockemohle are approved by the umbrella organization of Oldenburger Pferdezuchtverband e.V.

All information expressed above in the text explains that for doing research about the role of horse evaluation system used in studbooks, it is important to analyze all two prospective: breeding organization (business) prospective and end users (horse owners prospective). Germany is chosen as a part of Europe, what has the biggest economic value in the world created in equestrian industry. Oldenburg studbook is one of German national breeding associations coordinated by FN. Paul Schockemohle GmbH is a breeding organization performing successfully on the market. Moreover, Oldenburg-International (OS) and Paul Schockemohle GmbH are closely connected and work together for a long period of time, what makes them the ideal candidates for the research. Evaluation system is narrowed down to the evaluation of showjumping stallions to make the study more accurate and concrete.

1.4. Research Question

Main question:

What is the impact of the horse evaluation system used in Oldenburg Studbook for showjumping stallions on the market demand for showjumping stallion semen of Paul Schockemohle GmbH?

The answer on this question is the summary of analyzed answers on sub-questions. Fathered knowledge is the basic for the recommendation for studbook horse evaluation system. Key words for the question are: “evaluation system”, “market demand”, “studbook”, “customer”, “breeding organization”, “semen”, “showjumping stallions”, “sales”, “influence”, “interaction”, “real business environment”, “impact”.

Sub-questions:

1. What are the determining factors of the demand for showjumping stallion semen of Paul Schockemohle GmbH?

The question is addressed to all three parties (breeding organization, customers, studbook) in order to find the way demand is created, track the creator, find similarities, differences and how bodies interact with each other. Key words to answer this question are: “evaluation system”, “client”, “studbook status”, “choice”, “role of evaluation system”, “pregnancy rates”, “stallion catalogue”, “stallion collection”, “offer shortage”, “semen sales”, “influence”, “breeding choice”.

2. What is the influence of the showjumping stallion evaluation system of the Oldenburg Studbook on the update of the showjumping stallion catalogue of Paul Schockemohle GmbH?

The question is addressed to all three bodies as well. It shows the actual importance of horse evaluation system in real life business environment. Key words to answer this question are: “evaluation system”, “stallion catalogue”, “stallion collection”, “economic performance”, “influence”, “connection”, “studbook”, “selection”, “market demand”, “main factor”, “end users”, “breeding value”, “breeding goal”, “improvement”, “auction”.

3. What is the role of pregnancy rates evaluation as a measure of Paul Schockemohle GmbH showjumping stallion economic performance in the breeding process?

Pregnancy rates might be used as alternative way of stallion evaluation, which might be more topical than current existing system. The question is addressed to breeding organization, studbook and customers to find the attitude of all prospective. Key words to answer this question are: “determining factor”, “stallion catalogue”, “stallion collection”, “market demand”, “stallion

value”, “pregnancy rates”, “evaluation”, “annual”, “influence”, “reputation”, “economic performance”

1.5. Research Objective

It is very difficult to get accurate information regarding the equestrian industry because there is very little communication of data and almost no cooperation between industry members (Eastwood, et al., 2008). Currently, there is no information about reliable horse evaluation systems which improve breeding value and meet end user demand. Moreover, there is no information regarding influence of horse evaluation systems on economic performance of a breeding organization. This way the objective of the study is to evaluate the connection of the horse evaluation system and economic performance of a breeding organization. With the outcome of this study, breeding organizations may set their breeding goal and design breeding programs more effectively.

Results of the study are important for three bodies involved in breeding process: for studbooks, breeding organizations and horse owners. It is possible to understand which body and which way influences the market. Exact understanding of the way the market demand for showjumping stallion semen is created will give studbook understanding of evaluation system importance; how much power it has in real business process. Breeding organizations get information about needs and wishes of end users, their customer. Knowledge about the market demand creation helps to stay customer-oriented and profitable. Horse owners (end users) might realize how important are breeding choices and which consequences it might have of the industry.

2. Materials and methods

2.1. Study design

The data were collected between May 17, 2022, and May 25, 2022, with the contribution of a manager and of customers of Paul Schockemohle GmbH. The study focuses on the collection of data using an interview, information about pregnancy rates and annual stallion updates of Paul Schockemohle GmbH. The data were collected at a specific time for each interviewee. So, this study is an explorative study with qualitative (e.g. interviewees' answer) data.

By collecting and analyzing interview answers of Christoph Hinkel (Paul Schockemohle GmbH), a conclusion was drawn about the relation between the economic performance of a breeding organization and the showjumping stallion evaluation system. Interviewing customers of Paul Schockemohle GmbH gave valuable insight about market trends and the way demand is created. With the analysis of pregnancy rates of mares covered by stallions of Paul Schockemohle GmbH and with the analysis of an update of the stallion catalogue, the success of showjumping stallions' economic performance in the breeding process was determined. By combining and analyzing all conclusions, it is possible to determine the economic impact of the horse evaluation system used in studbooks on breeding organizations.

2.2. Data collection

Research data were collected during interviews with Christoph Hinkel and with seven customers of Paul Schockemohle GmbH. Christoph Hinkel was addressed on purpose as he can give qualitative insight about real life processes. Customers are selected randomly among showjumping stallion clients of Paul Schockemohle GmbH during breeding season 2022.

Interviews took place in real life and/or digitally. The interviewer took notes using the World Document program on a PC during the interview. The list of questions addressed to the interviewees is present in the acknowledgments. Notes taken during the interviews were transferred into logical text in a World Document. Paul Schockemohle GmbH provided information about pregnancy rates of mares covered by stallions. The company also provided information about the showjumping stallion catalogue update for years 2022-2010. The following information is present in World Document, Excel Document and physically on papers.

The study could be considered as reliable and qualitative because it is based on more than 5 interviews. As the data was collected from the people directly involved in the organizations' performance at current time and the information sources are not dependent on the study results, the data can be determined as reliable and valid. Christoph Hinkel is the head manager of the breeding station Paul Schockemohle GmbH with more than 25 years of experience. Interviews of customer of Paul Schockemohle GmbH will be conducted from a random sample of current clients of the company during breeding season 2022. Based on all these facts the study should be determined as valid.

2.4. Data analysis

The data was analyzed analytically by finding logical connection between facts to draw conclusions. As well Microsoft Excel will be used for statistical analysis of stallion catalogues. By answering sub-questions, the main question and the following conclusions were drawn.

2.5. Planning

Analysis of the stallion collection of all years was done on May 17. Afterwards interviews will take place from May 18 till May 25 starting with the interview of breeding station manager Christoph Hinkel. Finally, seven customers of Paul Schockemohle GmbH participated in data collection of the research. Within the timeframe from 16 May till 1 June all data will be analyzed, and conclusions will be drawn.

Table 5. Timetable for the research activities.

	Activity	Time period
1.	Stallion collection analysis	May 17
2.	Interview with the head of breeding station	May 19
3.	Interviews with customers	May 21, 23, 25
4.	Documentation and analysis of the results	May 26, 27

The goal of the study is an explanation in clarified, determined, and structured way of how market demand for showjumping stallions' semen is created. Based on this knowledge conclusion about importance of horse evaluation system in real business situations is drawn. The end product of the study is an advice for Oldenburg studbook regarding evaluation system for showjumping stallions, what effects their business role and performance.

2. Results

Research consists of three main parts: analysis of stallion collection, pregnancy rates analysis and analysis of the market demand. Market demand was analyzed with the aim to get information about economic relation between breeding organization and a studbook. For the analysis the prospective of the breeding organization and customers were examined to determine the way the demand is created. Stallion collection analysis gave information about market power of the Paul Schockemohle GmbH and their own methods of selection. Pregnancy rates evaluations analysis showed that pregnancy rates might be the new alternative method for horse evaluation system. Starting with stallion collection analysis all the aspects mentioned above are described in detail further in the text.

2.1. Stallion collection analysis



Figure 6. Balou du Rouet

Within 13 years in total Paul Schockemohle GmbH used 91 different stallions. 53 stallions out of 91 were used only for 1 year. There were 16 stallions which were used for 2 years, and another 16 stallions were used for 3 years. On average stallions stay in the collection for 3 years. This is the evidence that stallion collection is frequently updated. As mainly three blood lines are used, it is not possible to confirm availability of breeding diversity (Paul Schockemohle, 2022).



Figure 8. Diarado

Stallion collection of years 2010-2022 of Paul Schockemohle GmbH were analyzed. The whole range of stallions is present in the acknowledgment 2. On average 20 stallion are present in the catalogue annually (Paul Schockemohle, 2022). Within these 13 years Paul Schockemohle GmbH mainly used three stallions for breeding purposes: Balou du Rouet, Conthargos, Diarado. These stallions have bred for 13 years straight, and they are still popular among clients (Hinkel, 2022).



Figure 7. Conthargos

Other stallions except from Balou du Rouet, Conthargos, Diarado appear in the collection according to certain relevant events. It seems like market demand is predicted and the company acts according to potential demand. For example, in 2012 Kannan performed in Olympic Games, in 2014 he appeared in the collection. Same action was relevant for London. In 2013 Sandokan became the champion of Germany, in 2014 he was in the catalogue. In 2016 Big Star performed in Olympics, in 2017 he was in the catalogue.

When the demand slows down or disappears, stallions leave the collection. Sometimes trial replacement of the most famous stallions with the young stallions of the same blood lines takes place. However, these young horses do not stay longer than couple years in the collection (Paul Schockemohle, 2022).

To conclude, Paul Schockemohle GmbH puts a lot of effort in renewing, maintaining stallion collections. The company performs according to market demand and desires of the end users (horse breeders/owners). Paul Schockemohle GmbH is commercial, goal-oriented company, which prioritizes economic success as a key activity of any business (Hinkel, 2022).

2.2. Pregnancy rates analysis

Pregnancy rates evaluation is an innovative approach to measure the breeding success and performance of the stallions. Currently it is not an official evaluation method, but the potential benefit of it could be examined by collecting and analyzing information about influence of the method on market activities. Within current study prospective of the breeding organization and customers (breeders) were examined.

Prospective of a breeding organization

Pregnancy rates of mares covered by certain stallion in certain seasons are used as method of evaluating breeding success of a stallion. If the rate is under (or close to) 50% (50% of mares did not get in foal recent year from this stallion) stallion stops breeding as it has the influence on the company's reputation. Pregnancy rates are evaluated by the demand. When the company experiences shortage of the demand of certain stallion, the company analyses results of latest available season to draw conclusion about breeding success.

However, there are several drawbacks of pregnancy evaluation. It is not possible to make accurate analysis as data collection process is complicated. Due to huge number of mares covered per year and widely spread of them it is not possible to collect all pregnancy information about all mares. Analysis is not that reliable either as there are too many factors influencing pregnancy success such as: health of the mare, veterinarian skills, transportation, etc.

Paul Schockemohle GmbH wants to make business profitable and compatible. Customers want to mares be pregnant that is why it is important to know pregnancy rates – to deliver according to clients' expectations. Modern customers are economically oriented, they want to save money to get mares straight in foal. Clients often change the stallion, their breeding plan immediately after they hear that certain stallion has better pregnancy rate. In 2022 none of showjumping stallion was moved away from the catalogue, because of low pregnancy rate. However, two dressage stallions Incredible and Vogue stopped breeding (Hinkel, 2022).

To sum up, pregnancy rates evaluation currently is a good source of reliable and valuable information for breeding organizations. It is contributing to the fulfilment of the main goal of economically oriented activities – satisfying customers' demands and gaining profit.

Prospective of a customer

Seven interviews of a customers out of 5 different countries were conducted: Germany, The Netherlands, France, Italy, and Sweden. Four out of seven participants consider pregnancy rates as an important factor for several reasons. Stallion with the low pregnancy rate is not interesting for breeders. Mare owners want to have a high chance of success, they do not want to lose foals. For two out of seven customers pregnancy rate is an evaluation factor of semen quality.

For two interviewees pregnancy rate is an unambiguous factor. Too many factors influence the pregnancy, customers do not find this evaluation method as a guarantee of success. Only the number of pregnant mares could be valuable information in their opinion. Since too many factors are influencing the fact of pregnancy, use of this evaluation method might have too negative influence on the market demand of the stallion. As success of pregnancy is not dependent only on the stallion, quality of the semen. There are too many external factors influencing the process. One interviewee considers pregnancy rate as good additional source of information; however, it is not the main determining factor.

Pregnancy rates evaluation is an alternative method to measure breeding success and performance of the stallion. However, it has several drawbacks as it is influenced by a lot of external factors. Potentially it might be a valuable source of information for horse breeders (customers) to make choices as majority of the clients appreciate the presence of this data.

2.3. Market demand: relation between breeding organization and studbook

Examining three prospective of business communication in horse breeding among breeding organizations, studbook and customer gives information regarding the main creator of the demand, power of influence of the bodies. Such knowledge provides clear picture of how modern breeding business works and who has the biggest control on the market. Considering the fact that the breeding goal and program should be created by the studbooks (national breeding organizations, coordinated by FN), it is enormously interesting and important how they are created in real business environment.

Prospective of a breeding organization

Interview with the head manager of breeding station of Paul Schockemohle GmbH with more than 25 years of experience in breeding business was conducted to find the relation of breeding organization and studbook. Determining the way, the market demand is created is important for understanding the market model of the breeding business functioning.

Firstly, there is no specific demand for the horse breed, in the modern world. The name and created value of the stallion means way more than the studbook in which animal is registered. The values of the stallion and the market demand for him is mainly created by the success of his offsprings. Only horses proven in practice as good producers stay in breeding business. For example, there is a high demand for the Conthatgos in Paul Schockemohle GmbH. He is successfully active in breeding business for 13 years and every year demand on him only grows as he has more and more good offsprings. With the young stallion, for example Corsini, situation is different. His value is not created yet as he has not proven himself neither in sport neither in breeding yet. It is risky for the customers to breed with him, as there is no evidence that the offspring will be worthy (Hinkel, 2022). There is always higher demand on the market for the stallions with proven experience, such as success of offsprings, for example.

As there is no higher or lower demand for specific breed, studbook, studbooks do not have any influence or any power over breeding organizations. Currently, there is small client segment focused on a breed. Modern world is so transparent and international that any breeder from all over the world can use any stallion from any breed. This action has consequences, for example, it has dropped the demand for the local stallions. However, it is beneficial for the breeding business as it forces breeding organizations and studbooks to be open; business develops; market grows (Hinkel, 2022). Economically breeding business is booming as all the environment was created to let it be the case.

“Breeding goal and program are not necessary anymore because the focus is on breeding for three main disciplines. Moreover, I think that evaluation system and expectations of a jumping horse in Hannover and in Oldenburg studbooks are the same.” (Hinkel, 2022)

An interesting fact is the breeding goal and program used in a studbook has no influence on the breeding organization. Paul Schockemohle GmbH have their own goal and program and breed regarding their customers' needs and expectations (Hinkel, 2022). This change has a dramatic influence on the role of the studbook. Back in the day breeders cared about the breed and they were loyal to the studbook. It makes studbooks lose their main position in the breeding process, losing their influence on the market (Hinkel, 2022).

“We don't care if our horses will stop matching requirements/expectations of the Oldenburg-International, we can change the studbook.” (Hinkel, 2022).

Nowadays studbooks are mainly used as a registration body. Breeding organizations take the central role in breeding business. They decide which horses to breed, however they act in the interest of the customers, as breeding business aims to be profitable (Hinkel, 2022). In the modern breeding business breeding organizations naturally set their own breeding goal, program, evaluation system. For example, Paul Schockemohle GmbH has a special system for stallion selection to be included in the catalogue. If the stallion has a good potential in the opinion of Paul Schockemohle GmbH he will be present for the trial year in the stallion collection. In case the stallion has a lot of interest (demand is high) in the first year, he will stay in the catalogue for the second year. If there is insufficient demand, he is moved away from the collection. In the second year the foals of the current stallion are examined. If they are good, the stallion is kept in the catalogue for the third year. During third year of being present in the collection, when stallions are 4-5 years, they start competing. If the stallion fails in the sport, he might have one more year, but his presence in the catalogue is questioned. A stallion must have a strong competition performance to stay in catalogue longer (Hinkel, 2022).

To conclude, in the modern breeding business' central role of the studbook as a controlling and guiding agent is replaced by a breeding organization. Breeding organizations are economically oriented bodies with the main goal to stay in business by meeting demands of their customers. Customers as end users have the power to determine the breeding goal and program of the breeding organization.

Prospective of a customer

Seven breeding season 2022 customer interviews from five different countries contributed to the study. Multiple reasons exist for customers to prioritize Paul Schockemohle GmbH over other breeding organizations. Three out of seven customers choose the company because of the value of the stallion Paul Schockemohle GmbH is offering. The company has gained the trust of other customers within several years (4-10 years) and now clients unconditionally believe that Paul Schockemohle GmbH offers the best service and the best product quality. Some clients find the company as a reliable and trustworthy partner. To conclude, Paul Schockemohle GmbH takes the leading role on the market because of a combination of three main elements: quality of service, of product; and marketing influence of specific stallions (Strooboscher, et al., 16).

For the majority of the customers the determining factors to choose specific stallions from Paul Schockemohle GmbH is the created values of the stallion. They see stallion's result in competition and/or breeding and they select him as a breeding stallion. Other customers do not care that much about the specific stallion, but they know that in Paul Schockemohle GmbH they will get the best quality of the service including advice on matching and selection. One out of seven customers

mentions that Paul Schockemohle GmbH is attractive for her because they work with new line in breeding and that is beneficial for positive results in breeding (Strooboscher, et al., 16).

To sum it up, created marketing value of the stallion is the strongest factor for breeding decision. This marketing value is based on the result in sport and on the success of the offspring. Additional important factors are the quality of service and product of the company Paul Schockemohle GmbH

Regarding studbook status of the stallion (approved/not approved) customers have different opinions. Three out of seven clients do not find this aspect important. First reason for that is that there is no difference between studbooks, according to the customers opinion. Secondly, customers evaluate the quality of the horse based on its results in sport. Other four clients find the studbook status of the stallion important. They want to track sport results of the stallion and the performance of the stallion's foals using the studbook. Some clients use the status of the stallion to make their mares able to produce top sport horses. Customers from France cannot avoid the bureaucratic aspect of the studbook – they cannot breed with the stallion if it is not approved in the French studbook.

Interviewees mentioned that they rely on the studbook status as they truly believe in the quality of evaluation and selections system. To conclude, the majority of the end users still rely on the studbooks even if they have different intentions and ideas for why the studbook as an organization exists. Mainly they use the studbook as a formal body to legalize the horse related activities and a data base to track and record information (Strooboscher, et al., 16).

Six out of seven respondent determine the role of the studbook stallion evaluation system as important, but some of them would still rely on their personal feeling and opinion. Some clients use the result of evaluation as a source of the information to find the best match between dam and sire. Some customers believe that evaluation systems help to keep the quality of the stallion. Others think that for young stallions, the evaluation system plays a bigger role than for older ones. A studbook is a formal body which makes the life of horse owners easier as it helps to register and manage horses.

Studbook still is important for the customers of the breeding organization even if their intentions to use the studbook differ from each other (Strooboscher, et al., 16).

To conclude, clients of Paul Schockemohle GmbH use studbooks and rely on its roles and activities, but it is not the determining factor for breeding decisions. Main roles of the studbook based on customers opinions are dealing with legislation formalities and data collection.

3. Discussion

The study demonstrates that even in the modern world breeding organizations, studbooks and horse breeders work closely together. All three bodies have an influence on each other and their role in the modern equestrian industry is vital. The central role of the main market influencer is determined, but it is not in line with the theory. Moreover, during the research new alternative method of showjumping stallion evaluation was discovered.

Studbook do not have that much power on the market and a lot of influence on the breeding process nowadays. In comparison with 20 years ago, breeding associations have lost the central role as the result of the change in the market and economy. If the stallion was not proved back at the days, he was not used in breeding at all. Moreover, usually stallions were used extremely locally. If the closest studbook was Oldenburg, everyone will breed with Oldenburg stallions. There was not that much offer and opportunity on the market and the name of the breed was way more important (Hinkel, 2022). In the modern world the central role of the market influencer belongs to the horse owners/breeders. As breeding organizations are not dependent on the studbooks horse evaluation systems (Hinkel, 2022), they are absolutely free in the actions aiming to serve customers' needs.

Several interesting findings were detected while research was conducted. For example, that economically vulnerable groups of people such as students (among horse owners/breeders) are more interested in the young stallions as they are more affordable even if the risk of receiving positive breeding outcome is lower (Strooboscher, et al., 16).

Another one finding was discovered during the interview with the head manager of the breeding station. Currently Paul Schockemohle GmbH tries to introduce special liquid which will make stallion semen lasts longer than 4 days (around a week) without an effect on the quality. It will increase shelf life of the semen and decrease the pressure on the stallion (stallion will not be milked that often), what will increase quality. Such action will also lower the pressure on the transportation and make logistics more flexible (Hinkel, 2022).

Results of the study contradicts the theory in the way that the studbook should be the main controller and influencer of the market. Breeding associations should set the breeding goal and program with the control of FN in order to meet the demands of end users (horse owners/breeders) (Deutsche Reiterliche Vereinigung, 2014). In real business environment breeding organizations are the ones who determine what to breed and how to breed. As they are economically oriented organizations which main aim is to stay in business and gain profit, breeding organizations are focused on the customers satisfactions (Hinkel, 2022). So, they adjust breeding goal and program to the demands and expectation of the horse breeders, what is not correct according to current scientific findings. Studies claims that evaluation systems should be adjusted not only according to the market demand but also according to the breeding goal, required traits and purposes of animal use (Rovere, et al., 2017).

Paul Schockemohle GmbH as a breeding organization is a trendsetter on the market. The company has built its own evaluation system to choose candidates for stallion collection. The evaluation system is described before in the text and consists of customer demand, success of the foals and sport success. It means that modern breeding organization treats sport success as evidence for good breeding performance. However, recent studies tend to show that sport and breeding success are not related. Moreover, it is quite complicated to measure sport performance in objective scientific manner (Rovere, et al., 2016).

Examined breeding organization occupies one of the leading positions on the market (Briones , 2021) providing excellent service and quality according to the customers' opinions. Enormous

self-confidence of the company and unconditional trust of the clients might lead the company to face the trap of success. Trap of success is a part of a change management, which describes the situation when the company overemphasizes exploitation investments. It also neglects to explore new opportunities, innovation, market trends, etc. and neglect to enhance its long-term viability (March, 2011). Such attitude might lead Paul Schockemohle GmbH to the loss of market position, reputation and market power. However, the company implements customer loyalty system based on the pregnancy rates evaluations. Customers can get a discount for the next insemination if the current one is not successful (PAUL SCHOCKEMÖHLE, 2022). Considering numerous external factors influencing the fact of pregnancy, such action from the side of Paul Schockemohle GmbH could be considered as a sign of change in the positive direction.

Collected information is important for breeding organizations, breeding associations and horse breeders. These results are built on existing evidence gathered from reliable and valid resources, what makes the data accurately represent the real picture of breeding process in the modern equestrian industry. However, the study is focused just on one breeding organization and just on one breeding association. Moreover, it considers only one discipline and only one horse gender.

Further research might be carried out by using bigger prospective and bigger sample size. Each of three bodies might be examined more in details with the focus on their (market) goals and aims. Such knowledge might give more insights about the true intentions of the breeding associations, organizations, and horse owners/breeders. Gathered information might be sufficient to find win-win solutions for every participant.

4. Conclusion & Recommendation

This study has shown that there is an absence of significant impact of the stallion evaluation system used in Oldenburg studbook on the market demand for showjumping stallion semen of Paul Schockemohle GmbH. Demand is mainly formed because of value of the stallion, trust of the customers, quality of service and product. Value of the stallion is created by success of its offsprings in breeding/sport/sales and/or by its success in sport. The only influence the studbook has is its legislation and data collection roles. Horse owners and breeders rely on the studbooks' formal roles, but it has no influence on breeding decisions.

There is no certain influence of the showjumping stallion evaluation system of the Oldenburg Studbook on the update of the showjumping stallion catalogue of Paul Schockemohle GmbH, because the breeding company has its own evaluation and selection systems. As it is economically oriented company, evaluation system (breeding goal and program) is adjusted to the demands and expectation of the customers. It leads to the fact that breeding process is controlled by the end users (horse owners/breeders). So, customers have the central role in the demand creation in breeding business.

Pregnancy rates evaluation is used as a method to measure breeding performance of the stallion in Paul Schockemohle GmbH. It helps the company to have control over its reputation and deliver to the customers' expectations. Moreover, customers would like to have pregnancy rates evaluation as an additional source of information for making breeding decisions. This method as a great potential, however, it is not absolutely reliable as a lot of external factors might influence the outcome.

Studbooks should get back its controlling function over general breeding processes; evaluation system of the studbook should have more influence. That could be gained using two methods: governmental control or market power. Governmental authorities should be responsible for determining breeding goal/breeding program, controlling breeding diversity. It means that FN should clearly deliver to the breeding associations and organizations how breeding business should be done. However, in the modern environment, most likely it will lead to customer dissatisfaction and complete loss of the demand. It will result in downgrade of the equestrian industry. However, method using contribution of governmental authorities might also be done in a softer way by giving subsidies to breeders to increase breeding diversity, keeping unique lines, for example.

It is quite evident that market demand should be corrected by responsible authorities. Recent studies state that breeding goal and program cannot rely only on the expectation of the horse owner and breeders (Rovere, et al., 2017). Without the control breeding process might go to extremes and might be negatively influenced in general. Another one method could be done by the control over market demand. If end users (horse breeders/owners) have more knowledge about breeding process, business side of equestrian industry; understanding of how important their breeding choices are for the industry in general, it could improve the situation in more natural and gentle manner.

The advice for the Oldenburg studbook is that there is a need in improvement of education level and awareness of horse owners and breeders. Market demand should be controlled by the studbook but in natural way by educating end users. Pregnancy rates evaluation might be used as an alternative method for stallion evaluation, but further research is required to draw final conclusion.

List of references

- Briones Wladimir** The Equestrian Empire of Paul Schockemöhle [Journal]. - Los Andes : Briones dressage, 2021. - The Equestrian Empire of Paul Schockemöhle : Vol. 1.
- Britannica** studbook [Online] // Britannica. - Britannica, 02 08, 2022. - 02 08, 2022. - <https://www.britannica.com/science/studbook>.
- Cho Renee** What Helps Animals Adapt (or Not) to Climate Change? [Article] // State of the Planet. - New York : Columbia climate School, 2018. - 1. - How Does Phenotypic Plasticity Work? : Vol. 1.
- Deutsche Reiterliche Vereinigung** A Guide through the German Equestrian World [Article] // Equestrian sport and breeding in Germany . - Warendorf : Bundesverband für Pferdesport, 2014. - Vol. 1.
- Eastwood Sharon, Anne-Lise Riis Jensen and Anna Jordon** Business management for the Equine Industry [Book]. - Oxford : Blackwell Publishing Ltd, 2008. - Vol. 2.
- Equine Business Association** About the equine industry [Online] // Equine Business Association. - Equine Business Association, 05 18, 2022. - 05 18, 2022. - <https://equinebusinessassociation.com/equine-industry-statistics/>.
- Hinkel Christoph** Paul Schockemöhle GmbH [Interview]. - Mühlen : [s.n.], 04 18, 2022.
- Johnson G. [et al.]** Exploring Strategy [Book]. - New York : Pearson, 2017. - Vol. 17.
- March J. G.** Exploration and Exploitation in Organizational Learning [Book Section] // Organization Science. - Catonsville : Informs, 2011. - Vol. 2.
- McCue Patrick M.** Equine Reproductive Procedures [Journal]. - New York : John Wiley & Sons, 2014. - Breeding Soundness Evaluation of the Stallion : Vol. 1.
- Oldenbroek Kor and van der Waaij Liesbeth** Animal breeding and genetics for BsC students [Book]. - Wageningen : Centre for Genetic Resources and Animal Breeding and Genomics Group, 2014. - Vol. 1.
- Oldenburger Pferdezuchtverband e.V.** Organization [<https://oldenburger-pferde.com/en/breeding/organization/die-organisation.html>]. - Vechta : Oldenburger Pferdezuchtverband e.V, 2022. - Vol. 1.
- Oldenburger Pferdezuchtverband** Breeding [Online] // Oldenburger Pferdezuchtverband. - Oldenburger Pferdezuchtverband, 02 21, 2022. - 02 21, 2022. - <https://oldenburger-pferde.com/en/breeding/news/>.
- PAUL SCHOCKEMÖHLE** DECKBEDINGUNGEN [Online] // PAUL SCHOCKEMÖHLE. - PAUL SCHOCKEMÖHLE, 06 02, 2022. - 06 02, 2022. - <https://schockemoehle.com/ger/deckstation/deckbedingungen/deckbedingungen.html>.
- Paul Schockemöhle** Stallion collection [<https://schockemoehle.com/eng/service-station-stud/breeding-stallions/artikelliste.html>]. - Mühlen : Paul Schockemöhle, 2022. - Vol. 1.
- Pinto Carlos R.F.** Manual of Clinical Procedures in the Horse [Journal]. - New York : John Wiley & Sons, 2017. - Reproduction Evaluation of the Stallion : Vol. 1.
- Politova Marina** European Sports Horse Breeds [Book]. - Moscow : LitRes, 2003. - Vol. 1.
- Rovere G. [et al.]** Journal of Animal Breeding and Genetics [Journal]. - Berlin : Blackwell Verlag GmbH, 2017. - Genetic correlations between dressage, show jumping and studbook-entry inspection traits in a process of specialization in Dutch Warmblood horses : Vol. 2.
- Rovere G. [et al.]** Journal of Animal Breeding and Genetics [Journal]. - Berlin : Blackwell Verlag GmbH, 2016. - Analysis of competition performance in dressage and show jumping of Dutch Warmblood horses : Vol. 6.
- Strooboscher D. [et al.]** Interview of customers of Paul Schockemöhle GmbH [Interview]. - Mühlen : [s.n.], 05 2022, 16.
- The Horse Magazine** The Oldenburger [Journal]. - [s.l.] : The Horse Magazine, 2018. - Vol. 1.
- The Horse Magazine** The Springpferdezuchtverband Oldenburg-International (OS) [Journal]. - [s.l.] : The Horse Magazine, 2018.

Vandenplas J. [et al.] Journal of Animal Breeding and Genetics [Journal]. - Berlin : Blackwell Verlag GmbH, 2013. - An integration of external information for foreign stallions into the Belgian genetic evaluation for jumping horses : Vol. 3.

Worldpress Developing a Horse Breeding Program [<https://horses.extension.org/developing-a-horse-breeding-program/>]. - Amsterdam : Extension Horses, 2020. - Vol. 1.

Acknowledgment

Acknowledgment 1: Interview results of Head Manager of the breeding station with 25 years of experience in breeding business, following selection market of young offsprings. Core activities: select young stallions, sell semen, sell offsprings.

1. What influences the market demand of Oldenburg stallion semen sales in Schockemohle GmbH?

There is no specific demand for the horse breed. Customers are interested in the created value of the specific stallion. They buy Conthargos not because he is approved in Oldenburg studbook, but because he is Conthargos. This value is created by the success of the offsprings. Breeding business works only with good horses. If the stallion does not make good horses, he is automatically kicked out of the business. With the young stallion, for example Corsini, situation is a bit different. There is not that much demand, no-one knows him. It is risky for the customers to breed with him, you have no guarantee that you will get something worthy. There is always higher demand on the market for the stallions with proven experience, such as success of offsprings, for example.

2. How does Paul Schockemohle GmbH experience market demand for the semen of showjumping Oldenburg stallions?

There is no influence, because there is no higher or lower demand for specific breed, studbook. There is small client segment focused on a breed. 20 years ago, it was the case. If the stallion wasn't proved he wasn't used. Moreover, usually stallions were used extremely locally. If in our region the closest studbook was Oldenburg, everyone will breed with Oldenburg stallions. There was not that much to choose from to be honest and the name of the breed was way more important. Now everything is so transparent and international, you can use any stallion from anywhere. It dropped the demand and importance of local stallions. It is good for breeding as breeding organizations and studbooks open, business and market grow. It also does not decrease the breeding diversity.

However, current situation is bad for breeding associations (studbooks). Before customer were loyal and they cared about the breed, now everyone wants just sport horse, no one cares about the breed anymore. It makes studbook lose the main position in the breeding process; they do not have that much influence on the market anymore.

3. What is the connection between Paul Schockemohle GmbH and stallion evaluation system of Oldenburg-International?

There is no connection. They are separate organization, and they have their own system. We cannot influence it. Moreover, breeding goal and program are not necessary anymore because the focus is on breeding for three main disciplines. I think that evaluation system and expectations of a jumping horse in Hannover and in Oldenburg studbooks are the same.

Paul Schockemohle GmbH breeds in the best way we can. Out of 100 stallion we will get may be 25 that might be on the way to be to reach the breeding goal. We breed and look which could possibly match the breeding goal and then we train them to develop potential.

4. How does showjumping stallion evaluation system of Oldenburg-International influence economic performance of Paul Schockemohle GmbH?

There is no influence. We breed for ourselves. We have our own breeding goal. We don't care if our horses will stop matching requirements/expectations of the Oldenburg-International, we can change the studbook. We believe in our breeding goal and program more than in anything else. We breed well, we sell well, we have market and customers. Making the stallion being approved in certain studbook is just a registration issue.

5. How often showjumping stallion catalogue of Schockemohle GmbH is renewed? What are the main factors for change in stallion list?

I cannot say any numbers. If the stallion has a lot of interest (demand is heigh) in the first year, he will stay in the catalogue for the second year. If no, he is moved away from the collection. In the second year we check foals of the stallion produced during the first year. If they are good, we will

keep the stallion for third year. At the third year stallions are 4-5 years, they start compete. If the stallion fails in the sport, he might have one more year, but his present in the catalogue is questioned. Stallion must have a strong competition performance to stay in catalogue longer.

6. What is the role of pregnancy rates evaluation?

For as a company, stallion has to make mares pregnant, they have to do their job. It is 60% or 80%, does not really matter for us. 55% is not that good or bad there are too many factors influencing pregnancy.

We measure pregnancy rates because we want to have successful business. This year we did not move away any showjumping stallion from the catalogue because of the pregnancy evaluation, but Incredible and Vogue are kicked out. Higher the rate is, better for our reputation. Customers save money if the mare is straight away in foal. Clients often change the stallion, their breeding plan immediately if they hear that certain stallion has better pregnancy rate. They are economically oriented as well.

7. How does Paul Schockemohle GmbH prioritize customers when offer shortage appears?

Firstly, if the mare is in heat, she needs semen immediately. Secondly, we preauthorize old good loyal customers. Thirdly, we prefer customers of the bigger number of mares and higher frequency of order. Lastly, we look if the customer has paid already or not.

Acknowledgment 2: Stallion collection years from 2010 to 2022

	2022	2021	2020	2019	2018	2017	2016
1	All Star	All Star	Action Blue	Action Blue	Action Blue	Action Blue	Balou du Roet
2	Balou du Roet	Balou du Roet	All Star	All Star	Balou du Roet	Big Star	Casallco
3	Baloutaire PS	Baloutaire PS	Balou du Roet	Balou du Roet	Big Star	Balou du Roet	Caligula PKZ
4	Casallco	Big Star	Baloutaire PS	Baloutaire PS	Baloutaire PS	Casallato	Casanova
5	Casalou PS	Casallco	Big Star	Big Star	Chacfly	Chacfly	Conthargos
6	Chacoolou PS	Chacfly PS	Caroly	Caroly	Chacgrano	Casallco	Chacoon Blue
7	Chacfly PS	Chacoon Blue	Chacgrano	Casallco	Catoki	Calodo's Son	Dianant de Quidam
8	Chacoon Blue	Chacconthage Blue PS	Casallco	Chacfly PS	Casallco	Casanova	Diatendro
9	Chacconthage Blue PS	Clear Heart	Chacfly PS	Chacgrano	Conthargos	Conthargos	Diarado
10	Conthalou	Conthalou	Chacoon Blue	Clear Heart	Chacoon Blue	Chacoon Blue	Kannan
11	Conthargos	Conthargos	Charino PS	Chacoon Blue	Caroly	Classino	Messenger
12	Contino-Quick PS	Contino-Quick PS	Clear Heart	Conthargos	Cornet to win	Caroly	Quantos
13	Continental Blue	Continental Blue	Conthalou	Diarado	Diarado	Diatendro	Stakkatol
14	Corsini	Cornet's Darco	Conthargos	Diaron	Diaron	Diarado	
15	Diablue PS	Cosmos Z	Cornet's Darco	For Laubry	For Laubry	Kannan	
16	Diarado	Diablue PS	Diablue PS	Kannan	Kannan	Kannadarco	
17	Diaron	Diarado	Diarado	Kannadarco	Kannadarco	London	
18	Denver's Semilly PS	Diaron	Diaron	Stakkato's Golden	Presley Boy	Messenger	
19	Elbalthago PS	Varihoka du Temple	Kannatol	Stakkatol	Stakkatol	Stakkatol	
20	For Cassius	Stakkato's Golden	Quickly	Talan	Stakkato's Golden	Vivant van de Heffinck	
21	Meganus PS		Stakkato's Golden	Varihoka du Temple	Talan		

22	Varihoka du Temple		Stakkatol				
23			Talan				
25			Varihoka du Temple				

	2015	2014	2013	2012	2011	2010
1	Action Breaker	Action Breaker	Armicor	Action Breaker	Atlantus	Balou du Roet
2	Action Blue	Balou du Roet	Balou du Roet	Baoubet du Rouet	Action Breaker	Califax
3	Baoubet du Rouet	Baoubet du Rouet	Calido I	Balou du Roet	Balou du Roet	Centadel
4	Balou du Roet	Cabachon	Castino	Billy King	Califax	Chacco-Blue
5	Conbassy	Calido I	Conthargos	Califax Castino	Castino	Clinton
6	Caligula PKZ	Contolar	Cantolar	Chacco-Blue	Calido I	Contendros
7	Cabachon	Casallco	Cinsey	Contendros	Chacco-Blue	Conthargos
8	Cantolar	Castino	Chatender	Conthargos	Centadel	Cornet's Stern
9	Cassalco	Chatender	Diarado	Cornet's Balou	Clinton	Diarado
10	Casanova	Cinsey	Qualdandro	Calido I	Contendros	Dobel's Cento
11	Chacoon Blue	Conthargos	Sandro's Adel	Cornetus	Conthargos	Last Man's Hope
12	Chatender	Tailmore Diarado's Boy	Sandro Boy	Cabachon	Cornet's Balou	Quintador
13	Conthargos	Diatendro		Chilensky	Diarado	Quintender
14	Consey	Diarado		Tailmore Diarado's Boy	Last Man's Hope	Sandro Boy
15	Tailormade Diarado's Boy	Kannan		Diarado	Quintender	Sheikh it
16	Diatendro	London		Kannan	Sandro Boy	Sir Shutterfly
17	Diarado	Messenger		Last Man's Hope	Sir Shutterfly	Toulouse
18	For Pleasure	Sandokan		Messenger		
19	Kannan			Quintender		
20	London			Sandro Boy		
21	Messenger			Vivant		
22	Sandokan					

Acknowledgment 3:

Dear Sir/Madam,

My name is Alfiya Samaeva, I am an intern in Paul Schockemohle GmbH breeding station. As a part of my education in Aeres University of Applied Sciences (Dronten, The Netherlands), I do research in strategy of horse evaluation system and economic relation between breeding organizations and studbooks.

I kindly ask you to contribute to the well-being of equestrian industry with giving me an interview from a prospective of a customer of breeding organization. The interview consists of 5 questions, which will not cost more than 15 minutes of your time.

You can easily reach me by answering this email or:

email: 3030560@aeres.nl

phone: +31 6 38561880

Looking forward to hear from you

All the best,

Alfiya Samaeva

Questions for Paul Schockemohle GmbH costumers:

1. Why are you the client of Paul Schockemohle?
2. What is the determining factor for you to choose a stallion from Paul Schockemohle catalogue?
3. How important for you is the studbook/studbook status of the chosen stallion for making a choice?
4. What is the role of studbook stallion evaluation system in your opinion?
5. How important could be pregnancy rates as a stallion evaluation system?

Daphne Strooboscher (The Netherlands)

Student of Aeres University

1. I am a client of Paul Schockemöhle because I really like his stallions; especially Chaccothage Blue PS. He is a perfect fit for my mare and as a student I prefer younger stallions because of the price.
2. The determining factor was that Chaccothage Blue PS seemed really easy to ride and exactly what I need for my mare. The height, looks, jumping quality and longer body seems perfect for her. The price played also a big role.
3. The studbook status of the stallion is not that important at all for me, the foal will be checked in at the Dutch KWPN.
4. It is actually very important that the studbooks are well informed by all stallions and keep up the database and quality of the stallions, something why I did not choose a KWPN stallion this year. I really need a bigger stallion, because my mare is not so big and long. KWPN is adding in my opinion only smaller stallions to the stallion-database.
5. Right now, I am only just using younger stallions as stallion for my mare, because of the price. But the pregnancy rates would really help with choosing out of the quality. But when a stallion does not have good rates, he will be less interesting for mare owners.

Lennart Ek (Sweden)

1. Because I have already a couple of very good mares and another one 4 years old horse. I breed myself and I hope to achieve a great success.
2. Reputation of competing, competition achievement. I am really impressed by Diarado results.
3. Very important. I want to see what the stallion has done before and which foals it has. Olympic Games and word competition results are important. We have a dream to breed a horse of this level by ourselves!

4. Very important as I breed myself. We have very good studbook.
5. It is very important because I lost three foals and I do not want to lose more.

Carla Heitlage (Germany)

1. I am a client of Paul Schockemoehle because I am working there, and I think they have the best breeding stallion.
2. The most important thing for me is, that I really like the stallion.
3. I think a Studbook is not very important because it doesn't matter today if you choose an Oldenburg or Hannover or KWPN. The most important thing is that the horse is good in sport. Nothing more.
4. I think it is important because, the breeder can see which kind of (type) the stallion is and if the stallion might work with the mare.
5. It is nice to know but it could be difficult for the owner of the stallion, because if the breeders can see that the stallion is not making the mares pregnant, then they would not use them anymore and they will just to the stallions were they know that they make the mares pregnant.

Therese Leijon (Sweden)

1. I have chosen Conthargos for innovation and for further quality.
2. To develop the mares' characteristics, reinforce the positive and because its exiting with new lines in breeding.
3. It is important because mares have great potential that had not been acknowledged. She is initially a top horse, did not go further than 135 national jumping. Her mother won 140sm jumping. She has great quality, brought by me as a hobby horse. She Will now be allowed to produce new stars.
4. Of course important but I will always make my own Feeling and Concept. Never fear new mind.
5. Only the Numbers of pregnant mares. There is a LOT that affects the mare becoming pregnant. You must have little luck to.

Brice Elvwzi (France)

1. We are providing semen of several stallion's owners for French customers. We worked with VDL, for example. We made agreement with Paul Schockemohle 5 years ago. We started because we believe that we are stronger together and we can sell stallion better on French market than Paul Schockemohle.
2. First - quality of the semen. Quality of the stallion and his of offsprings is also important.
3. Really important. In France we can only offer the stallion which is approved also in France.
4. For young stallions it is important. For older it is not that important. However, it is a part of the system. If the stallion is not approved too difficult to register the foal, to manage it. Studbook is a station which makes the life of horse owners and breeders easier.
5. Important. That is what I mean saying about quality of semen. If mares do not get pregnant from the stallion, breeders are not interested to buy semen of this stallion.

Terre Rosse (Italy)

1. I became a Schockemohle client at first time because of the offer, then because I found the most professional way of working.
2. The biggest work, selection, investment and knowledge on the offer.
3. Important the approval stud because of the quality of evaluation and selection system.
4. Important with many other elements and requisites.
5. Would be a good requisite to know.

Matteo Delmiglio (Italy)

1. for several reasons:

- they have one of the best catalogues of stallions available in the world.
 - when I use their stallions I am sure I got the best of the best as they are also breeding huge number of horses in Lewitz and this help them to select the stallions faster than everybody else in the world.
 - they offer chilled semen with the very last quality (% of pregnancy is really high)
 - very good logistic process (super reliable), this makes me confident that when I ask for semen I will get it the day after in 99% of the cases.
 - really clear sales conditions, discounts, warranty and process are really clear and the same for all customer and countries (i use to order both in germany, in Ireland, in France and in Italy of course.
- 2.They help me a lot from Muhlen in the selection of the better stallion for the mare I want to breed with. Results I got are really good, a lot of their suggestions are today really good horses. I breed with PS since 10 years.
3. I don't care
4. I also don't care
5. I would say that I used something like 25 different stallions from PS and I never got any problem. We got pregnancy with a 24yo mare, with sport mares, with really young ones. I could assure I am really happy about the semen quality.