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Predictors of Stage Fright

Stage Fright in the Framework of the Control-Value Theory

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Abstract

Stage fright is a widespread problem in musicians. Therefore, this thesis aims to investigate if levels of stage fright can be explained with the assumptions as outlined in the control–value theory. It was tested whether subjective control and value are significant predictors of stage fright, with the expectation that lower subjective control and higher subjective value lead to higher stage fright. Subjective control was operationalized with self-efficacy and self-concept. Considering subjective value, scales for intrinsic value, importance of achievement, and personal importance were used. Additionally, probable influences on the antecedent of control and value and stage fright itself were explored. The following constructs have been analyzed: gender, age, motivation, music style, number of performers on stage, size of audience, and level of proficiency. Via a questionnaire, musicians stated their personal experience with stage fright, subjective control, and subjective value. Furthermore, they answered open questions concerning the constructs listed before. Sampling was carried out on music students, professional musicians, and amateur musicians. 86 musicians filled out the questionnaire, with 64.5% of them identifying as female and 35.5% as male, with an average age of 38.8 years. The results show a significant negative connection between *self-concept* and stage fright. Looking at perceived value, results vary depending on the subscale analyzed. *Intrinsic value* is negatively connected to stage fright, while *importance of achievement* shows a positive connection. Concerning the constructs of the exploratory analysis, significant correlations with the three main variables and proficiency, motivation, music style, age, and audience size could be observed.

The results indicate that stage fright can indeed be related to both value and control, making the control-value theory an interesting and solid framework for further research on stage fright. The newly gained knowledge forms a basis for new approaches on preventing stage fright and could help minimize the high prevalence of it.

Keywords: *Control-Value theory, stage fright, musicians*

Abstract

Lampenfieber ist ein weit verbreitetes Problem bei Musiker*innen. Daher soll in dieser Arbeit untersucht werden, ob das Ausmaß des Lampenfiebers mit den Annahmen der Kontroll-Wert-Theorie erklärt werden kann. Es wurde getestet, ob subjektive Kontrolle und Wert signifikante Prädiktoren für Lampenfieber sind, mit der Erwartung, dass geringere subjektive Kontrolle und höherer subjektiver Wert zu höherem Lampenfieber führen. Die subjektive Kontrolle wurde mit Selbstwirksamkeit und Selbstkonzept operationalisiert. Für den subjektiven Wert wurden Skalen für den intrinsischen Wert, die Bedeutung der Leistung und die persönliche Bedeutung verwendet. Zusätzlich wurden mögliche Einflussfaktoren auf Kontrolle und Wert sowie Lampenfieber untersucht. Folgenden Konstrukte wurden analysiert: Geschlecht, Alter, Motivation, Musikstil, Anzahl der Musiker*innen auf der Bühne, Publikumsgröße und Leistungsniveau. Mittels eines Fragebogens gaben die Musiker*innen ihre persönlichen Erfahrungen bezüglich Lampenfieber, Kontroll- und Wertempfinden an und beantworteten offene Fragen, zur Erhebung der Einflussfaktoren. Die Stichprobe umfasste 86 Musikstudierende, Berufsmusiker*innen und Amateurmusiker*innen, von denen sich 64,5 % als weiblich und 35,5 % als männlich identifizierten und ein Durchschnittsalter von 38,8 Jahren aufweisen. Die Ergebnisse zeigen einen signifikant negativen Zusammenhang zwischen Selbstkonzept und Lampenfieber. Bezüglich des Wertempfindens variieren die Ergebnisse je nach Subskala. Intrinsischer Wert steht in einem negativen Zusammenhang mit Lampenfieber, während die Bedeutung der Leistung einen positiven Zusammenhang aufweist. Hinsichtlich der Konstrukte der explorativen Analyse konnten signifikante Korrelationen mit den drei Hauptvariablen und Leistungsniveau, Motivation, Musikstil, Alter und Publikumsgröße festgestellt werden.

Die Ergebnisse deuten darauf hin, dass Lampenfieber tatsächlich sowohl mit Wert als auch mit Kontrolle in Verbindung gebracht werden, dies macht die Kontroll-Wert-Theorie zu einer interessanten Basis für die weitere Erforschung von Lampenfieber. Die neu gewonnenen Erkenntnisse bilden eine Grundlage für neue Präventionsansätze und könnten dazu beitragen, die hohe Prävalenz von Lampenfieber zu minimieren.

Stichworte: Kontroll-Wert Theorie, Lampenfieber, Musiker*innen

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Introduction

Stage fright is a phenomenon affecting a large number of performers. Many have experienced fear, anxiety, and fright when performing in front of an audience. Especially in the music sector, the fear of performing is persistent. Even well-known musicians, such as Frederic Chopin or Barbara Streisand, have struggled with stage fright throughout their careers (Abromeit, 2014). Nearly thirty years ago, the study by Van Kemenade and colleagues already showed a high prevalence of stage fright in musicians. In their sample of 155 orchestral musicians, 91 reported that performance anxiety was severe enough to interfere with their professional and personal lives. In the same study, participants stated that the anxiety would start days (36%) or even weeks (10%) and months (5%) before the performance (Van Kemenade et al., 1995). A more recent study showed similar results among music students, indicating that one-third of the students suffer from stage fright (Studer et al., 2011). These are just two examples of many studies that document the presence of performance anxiety in the music industry. Both papers urged science to investigate stage fright further and understand the causes, symptoms, and consequences. Since then, numerous papers and books have been published in an attempt to further explain this phenomenon (Abromeit, 2014; Goetz, 2022; Mumm et al., 2020). Yet, several questions remain unanswered. While it seems evident that both cognitions and emotions play a fundamental role (Kenny, 2009b), it is not yet understood if stage fright can be explained in the context of various emotion theories, such as the control-value theory by Pekrun (Pekrun, 2006). Furthermore, open questions remain whether various aspects of the person and situation influence performance anxiety.

The object of this thesis is to investigate whether stage fright can be explained within the framework of the control-value theory (the theory will be explained in the associated chapter, starting at page 11). By examining the significance of the constructs control and value as predictors, it is hoped that further insights into the phenomenon can be gained. Additionally, an exploratory analysis will be carried out with the aim to identify probable influences on the antecedents of control and value, as well as stage fright. In order to achieve this, constructs of person and situation, which have either produced ambiguous results or are relatively new when it comes to researching stage fright, were selected in the hope to provide further insights into the topic of performance anxiety.

Stage fright and the Control – Value Theory

Stage Fright

Definition and Components

Stage fright is a specific type of test anxiety that only occurs in situations of performance. Performing usually comes with a feeling of being evaluated and, therefore, comes close to, or in some cases is, a situation where one is evaluated and tested on their performance and abilities (Goetz, 2022). As the name already indicates, fright, hence anxiety, is the core emotion of the phenomenon. Yet other emotions do play an important role, too. Emotions such as shame or helplessness are very common in people experiencing stage fright (Abromeit, 2014). Furthermore, a vicious circle of fear of the fear can manifest. As performance anxiety comes with a variety of unpleasant feelings and symptoms, one who has already experienced stage fright might become anxious about revisiting those feelings, and a fear of the fear evolves, hence intensifying symptoms of stage fright (Metzig & Schuster, 2018).

The reasons why somebody suffers from stage fright are diverse. One may feel their abilities are not up to the expectations, or one may have already had bad experiences while performing and therefore fears for those. Past traumatic experiences might also manifest as triggers, which activate simultaneously and cause stage fright (Abromeit, 2014). Moreover, personality facets or social influences can both mitigate and exacerbate stage fright. Perfectionists, for example, tend to be more prone to stage fright. Family and friends may have high expectations or lack belief in one's ability, thus increasing stage fright (Abromeit, 2014). Experiences made in adolescence seem to have a great impact on the development of stage fright. Therefore, in terms of prevention techniques, adolescence is seen as a sensible phase (Spahn, 2019).

Emotions, and thus stage fright, present in different forms and components. In the research on emotions, five components have been identified (Pekrun et al., 2017). How these components present in stage fright was depicted in detail by Goetz (2022); therefore, following description refers to his work. First, an emotion never comes without an affect. Other components cannot be present and yet one still feels an emotion. The *affective component*, though, is part of every emotion and therefore present every time one feels stage fright. This component is simply how an emotion

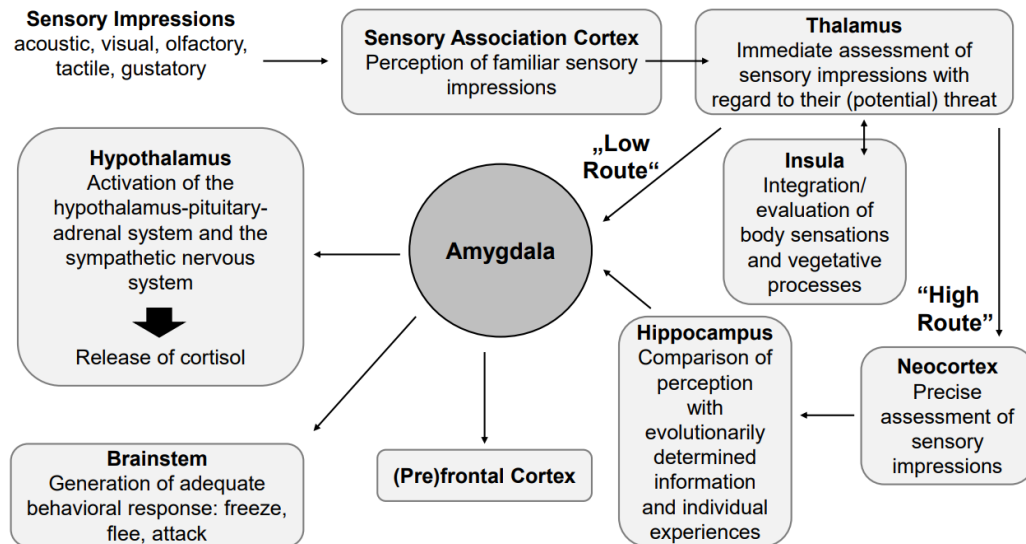
feels; with stage fright, it is usually an uncomfortable, nervous, and sometimes panicky feeling (Goetz, 2022). In addition, an emotion is normally accompanied by cognition. These appraisals form in a complex process in which one assesses the demands of the situation, one's personal resources on hand, and plausible consequences. Hence, the *cognitive component* determines how one perceives and interprets a situation (Kenny, 2009b). In the case of performance anxiety, the cognitive component may manifest in recurring thoughts of failure and constant worries about one's abilities. Emotions are hardly something happening only on the inside of someone. Most emotions that are felt are also shown through differences in posture and expression. This *expressive component* can be both visible and/or audible. With stage fright, one may show a worried face, be tense in their muscles, or be visibly uneasy, like a trembling leg or a shaky voice when speaking or singing. Behind most emotions lies motivation—a need to do or change something. The *motivational component* of stage fright might be feeling the need to leave the situation, not wanting to perform at all, and being as far away from this fearful situation as possible. Stage fright is a strong emotion and thus mostly comes with a strong *physiological component*. Physical changes caused by performance anxiety can include an increased pulse, sweating, and shortness of breath (Goetz, 2022). These symptoms are just a few examples, as stage fright can cause many changes in the body. These can be explained by how anxiety forms biologically (Abromeit, 2014).

The Biology of Stage Fright

Performance anxiety develops in the brain when the situation of the performance indicates danger. This plausible danger activates the limbic system, which in turn activates the amygdala via the thalamus and transmits the information towards the neocortex. The stimulation of the amygdala happens almost instantly and initiates the evolutionary flight-fight response. The pathway involving the neocortex takes more time, as it is a conscious verification of whether a danger is indeed present. Both pathways come with their own set of symptoms, such as increased heartbeat (amygdala) or recurring thoughts (neocortex) (Abromeit, 2014; Mumm et al., 2020).

Figure 1

The two pathways of stage fright in the brain and the involved brain structures (Mumm et al., 2020)



When stage fright manifests in one's mind, many parts of the body are influenced, and various symptoms develop. The pathway of the amygdala activates the brainstem, which is responsible for basic body functions, such as breathing, temperature, pulse, and blood pressure. In response to the signals of the amygdala, the brainstem releases noradrenalin, which activates the sympathetic nervous system. The heart is influenced by noradrenalin to beat faster, leading to a higher pulse and blood pressure. Muscles and brain receive more blood and, therefore, energy, while other parts of the body, such as the hands and feet, are hence left with less blood. This new distribution of blood explains symptoms of stage fright, like a red head or cold and pale hands and feet. Noradrenalin, additionally, commands the lungs to intensify oxygen saturation and hence increases breathing. Priority is given to breathing in oxygen, which results in fast and short breathing. Hyperventilation changes the pH-level of the blood leading, in the worst case, to a *hyperventilation tetany*. As the sympathetic nervous system is active, the metabolism is disrupted, leading to symptoms such as a dry mouth, stomach pain, and increased urination (Abromeit, 2014).

Most symptoms of performance anxiety can be explained by either looking at its biology or its components. A further symptom of stage fright can be changes in mood. One may begin to feel angry or start crying. Battling anxiety takes a lot of energy and resources, so it is not surprising that concentration, memory, and responsiveness are impaired. Finally, performance anxiety compromises social behavior. Because all of one's energy is devoted to coping with stage fright, there are fewer resources left to communicate and interact effectively with others. This can be especially problematic if one is not playing alone but must pay attention to other players while performing (Metzig & Schuster, 2018).

Negative effects of Stage Fright

In the long run, all these different symptoms have a negative impact on one's health, as they may reduce general well-being and may shatter one's enjoyment of playing music. In the short term, stage fright is always harmful to one's ability to perform (Goetz, 2022). Stage fright interferes with the performance outcome as it influences one's resources, motivation, and performance strategies. As mentioned above, dealing with performance anxiety consumes a lot of energy and resources. This leaves less room for other resources needed to perform. Music-making is physical work because one needs to control parts of one's body precisely in order to play accurately. Stage fright gets in the way of this as it presents with physiological symptoms such as rigid muscles, trembling, shaking, sweating, and so on. The physical resources one normally has at disposal when playing are now strongly impaired. Performing also requires cognitive resources. One needs high concentration to recall the musical piece from memory, to remember certain techniques of playing, and to pay attention to others. As stage fright also comes with some cognitive appraisals and hence needs cognitive resources, the resources needed to perform properly are negatively affected (Goetz, 2022). These *worry cognitions* of anxiety often manifest as intrusive thoughts concerning fear of failure and evaluation. This leads to a negative impact on other cognitive processes, such as focus and memory. Worry cognitions not only affect the performance but also the preparation and the subjective valuation of it. Described inferences can already occur while practicing, impairing one's abilities, and giving further sustenance to already existing intrusive thoughts. Furthermore, worry cognitions have a negative influence on one's self-confidence and self-worth. They are therefore detrimental to one's mental health (Cassady & Johnson, 2002).

Music-making is highly emotional. When one falls into the emotion of the play, one can play beautifully. When stage fright takes over, anxiety is what most people feel. There is little to no room left for other emotions. Especially positive emotions, such as joy, cannot coexist with stage fright. This may hinder one's musical resources, the ability to fall right into music, and harm one's dedication to music. When playing with others, performing requires interactive resources. It is important to be attentive and adaptable to other players. Again, as performance anxiety draws one's attention to oneself, paying attention and adapting to others is hardly possible (Goetz, 2022). Furthermore, the kind of motivation one has when playing shapes the performance. If one is motivated to do their best and wants to show the audience how beautiful music is, one will perform differently, compared to an individual whose motivation is to avoid making mistakes. Stage fright can cause this shift from an approach-motivation to an avoidance-motivation. Lastly, good music-making requires performance strategies. Due to stage fright, one may not be able to access these strategies or use them too rigidly (Goetz, 2022). When resources, motivation, and performance strategies are impaired by stage fright, the performance will be negatively affected in terms of techniques used, musicality, intonation, rhythm, and interaction with others (Goetz, 2022).

It is often said that "a little stage fright doesn't hurt", as it leads to an activation of the body, and one performs better. This idea is derived from the Yerkes-Dodson Law (Yerkes & Dodson, 1908), which states that an intermediate activation of the body and mind leads to the best performance. Too low or too high activation hinders performance. It is commonly believed that "a little stage fright" leads to an intermediate activation and is therefore beneficial to the performance (Abromeit, 2014). While it is true that intermediate activation is beneficial, anxiety, hence stage fright, is normally a very strong emotion and thus leads to high activation (Goetz, 2022). Numerous studies support this hypothesis. A study of 1997 showed that 70% of musicians in 56 orchestras reported performance-impairing anxiety (James, 1997). These results indicate that for most people, stage fright is far from beneficial and therefore unlikely to cause an intermediate activation. Fortunately, intermediate activation can be achieved without anxiety. Other emotions, such as joy and pride, or motivation, can lead to intermediate activation without stage fright being involved (Goetz, 2022).

Prevalences of Stage Fright

Determining the prevalence of stage fright among musicians is a challenging task due to the lack of standardized tests. Research papers typically report a prevalence ranging from 17% to 60% (Mumm et al., 2020). It is important to note that the prevalence rate may vary depending on the severity of the stage fright. In the study of Van Kemenade and colleagues (1995), it was found that 24% of the symphonic musicians perceived stage fright as a “problem” and 16% as a “severe problem” (Van Kemenade et al., 1995). Recent studies estimate that the percentage of musicians experiencing severe stage fright ranges from 15 to 25% (Kenny, 2009b). It is furthermore believed that one-quarter of musicians suffer from stage fright in a clinically relevant manner (Mumm et al., 2020). When simply asked if one had already experienced stage fright at least once in their life, 58% responded with “yes” (Van Kemenade et al., 1995).

Scales to measure Stage Fright

As stage fright has already been subject to many studies, several scales to measure it have been designed. One widely used scale is the *Performance Anxiety Inventory (PAI)*, which consists of 20 items, addressing the cognitive, behavioral, and physiological components of stage fright (Nagel et al., 1981). Another more recent scale is the *Kenny Music Performance Anxiety Inventory (K-MPAI)* by Kenny (2009a), with 40 items measuring 12 different factors of performance anxiety. This scale is especially used in more recent papers (Atay et al., 2020; Wiedemann et al., 2019), while the PAI was mostly used in papers dating back to the early 2000’s (Biasutti & Concina, 2014; Rae & McCambridge, 2004; Smith & Rickard, 2004). While the PAI is a rather short scale, it has been over 40 years since its release. This might impair its validity, which probably explains why researchers do not use it as frequently anymore. The K-MPAI, on the other hand, is a later scale, but with its 40 items, it is relatively long. Goetz (2022) proposes a new scale, extracted from the AEQ (Academic Emotions Questionnaire) (Pekrun et al., 2011). This scale has not yet been used in research, but consists of only 12 items focusing on the subjective experience before and during a performance.

In conclusion, it is important to recognize that while stage fright can be a significant challenge for many performers, there are effective strategies and techniques available to help them cope with it. It is essential to understand that stage

fright, its symptoms and experience can vary significantly between individuals, which means that overcoming it will look different for everybody (Goetz, 2022). For these reasons, it is important to gain a deeper insight into the origins and manifestations of stage fright. As stage fright is an emotion, it may be insightful to examine whether it can be better understood when put into the context of emotion theories, such as the control–value theory.

Antecedents of Stage Fright: The Control – Value – Theory

There are many theories regarding the development of emotions. They differ in the factors that determine an emotion, as well as their respective foci, which include learning, development, or cognition (Kenny, 2009b). The *control-value theory* (CVT) was developed for a specific kind of emotions, which are referred to as *achievement emotions*. In the context of the CVT, each emotion can be placed within a three-dimensional taxonomy. Firstly, an achievement emotion is either linked to an achievement activity or an achievement outcome, while the outcome can either be prospective or retrospective. Additionally, emotions can be categorized by their valence, meaning they are either positive or negative. Lastly, an emotion can be activating or deactivating. Performance anxiety is categorized as being tied to a prospective outcome and is perceived as a negative and activating achievement emotion (Pekrun & Perry, 2014).

The basis of this theory is that each achievement emotion comes with different appraisal antecedents. These appraisals can concern the present activity and past and future outcomes. The CVT posits two kinds of appraisals to be of high importance. The first kind of appraisal are *control appraisals*, which withhold to what degree one feels in control of the situation, its possible outcome, and its consequences. The second kind are *value appraisals*. Here, the personal relevance of the situation, outcome, and consequences are central. The idea is that the degree to which one feels in control (or not) and how much importance is given to the situation determines what emotion one experiences. As these appraisals can be different in every situation and for every individual, this theory outlines the individuality of emotions. Nevertheless, it is believed that there is a relative generality of achievement emotions, meaning that across individuals, gender, and sociohistorical context, the same perceived control and value lead to the same emotion. Still, content, frequency, and intensity can again vary (Pekrun & Perry,

2014). Additionally, the theory assumes that the interaction between control and value further influences the emotional experience (Pekrun, 2006). The importance of the consideration of this interaction term has been demonstrated in positive emotions, showing that the interaction of control and value plays an additional significant role in their formation (Goetz et al., 2010).

Control and value are considered proximal antecedents, meaning they directly influence an emotion. More distal antecedents, such as goals, beliefs, tasks, etc., influence an emotion by changing either perceived control or value of the situation (Pekrun & Perry, 2014).

Stage Fright in the Control – Value Theory

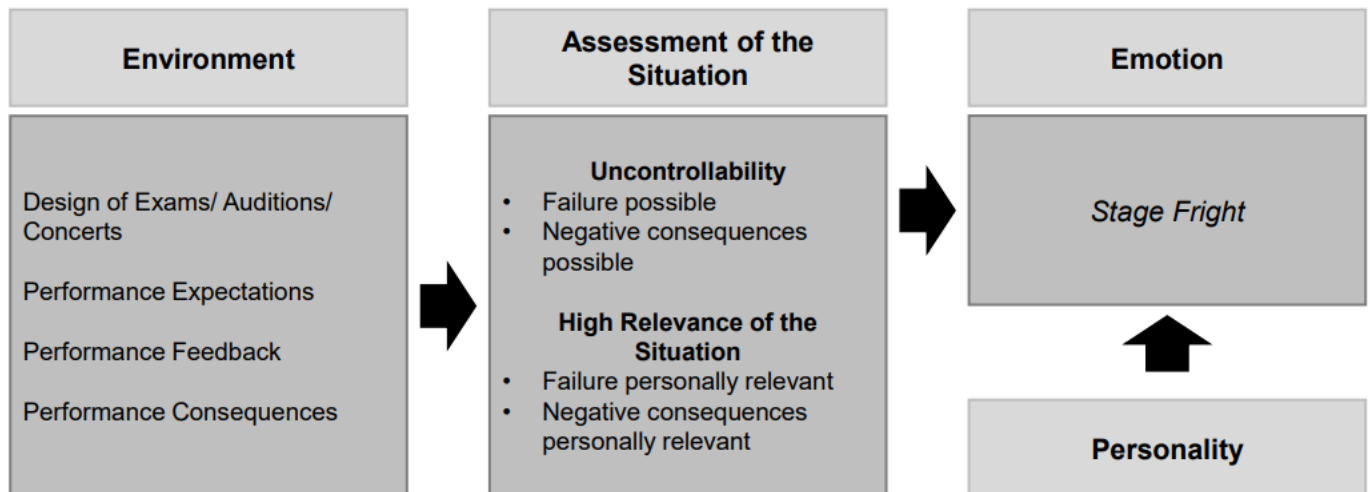
According to the *CVT*, a negative and activating emotion, such as performance anxiety, leads to an increase in task-irrelevant thinking, reduced cognitive resources, and a loss of interest. Furthermore, it impairs motivation, such that the focus lies on avoiding failure and not on approaching success (Pekrun & Perry, 2014). When comparing these effects with the symptoms of stage fright described in the previous chapter, it becomes evident that stage fright can be seen as an achievement emotion, as it portrays a specific anxiety in which the outcome of a performance is the focus.

In the book, “Stage Fright and Test Anxiety for Musicians”, Goetz illustrates how stage fright might present itself in the scheme of the *control–value theory* (Goetz, 2022). According to this model, stage fright could be induced by a sense of uncontrollability, meaning that one feels they have no influence on the outcome, and failure and its negative consequences seem rather possible. This uncontrollability is paired with high relevance. The situation, its outcome, and its consequences are of high importance, intensifying the emotion one feels. Combined with little to no sense of control, stage fright has easy play. The model further incorporates distal aspects that influence the sense of control and value. One crucial factor is the design of the audition or concert. This could include the possibility of rehearsal, a clear understanding of what is being evaluated, and so forth. Performance expectations set by oneself or others may also play an important role. Furthermore, the kind of feedback one receives beforehand while rehearsing can increase or decrease perceived control or personal relevance. Lastly, the kind of consequences expected for both success and failure shape one’s sense of control and value. If the

consequences are the preservation or loss of a job, the value of this performance might increase drastically (Goetz, 2022).

Figure 2

The described model proposed by Goetz (2022)



Even though stage fright can be considered an achievement emotion, no study could be found directly investigating stage fright in the context of the *CVT*. However, there are studies that examine performance anxiety and key components of the *CVT*. In 2014, for example, a study was conducted on actors to understand if and how their locus of control and self-efficacy were tied to their performance anxiety. The study concluded that locus of control, emotional stability, and gender are significant predictors of stage fright in actors (Goodman & Kaufman, 2014). Another recent study looked at performance anxiety in public speaking and found self-efficacy, but not locus of control, to be a predictor of stage fright (Shanahan, 2021).

Given the limited number of studies on stage fright in this context and the indicative results they have yielded, a closer examination of related constructs within the context of the *CVT* should help to better estimate plausible connections. A construct to which stage fright can be closely related to is test anxiety. This is because a performance can be quickly perceived as an examination of one's ability to perform (Goetz, 2022). Test anxiety, especially in the context of academic examinations, has already been studied intensively in the context of the *CVT*. Studies from the previous century already demonstrated that test anxiety is negatively correlated with perceived control, self-concept, self-efficacy, and locus of control

(Hembree, 1988; Zeidner, 1998). Looking at perceived importance, hence value, a positive relation to test anxiety has also been found over two decades ago (Pekrun, 1992). Research in this field continues and various novel studies are published on a regular basis. With regard to the different components of the *CVT*, relevant to the subsequent empirical study, a short summary of recent studies follows.

Control

The control antecedent withholds appraisals of perceived control over actions and their outcomes. This sense of control can either be powered by internal factors of the person or by external factors. The intensity of perceived control strongly influences how probable one believes an outcome to be (Pekrun & Perry, 2014).

When looking at perceived action and outcome control, Liu and colleagues found that it relates negatively to mathematics anxiety (Liu et al., 2024). Another research team studied the control factor and its correlation with the five components of anxiety. Their findings confirm a negative relation to all components, with the strongest correlation to the cognitive component (Roos et al., 2021).

Self-efficacy and self-concept are two concepts closely related to the control factor of the *CVT*. Consequently, they are often used to operationalize the construct of control (Pekrun & Perry, 2014). Regarding the emotion anxiety, the prospective control, and as part of it, the action-control expectations are often key elements of the control antecedent. As self-efficacy is defined as one's belief in being able to do or not to do something, it is a crucial aspect of one's action-control expectations (Pekrun & Perry, 2014). Self-efficacy has already been used as an approximation of perceived control when examining English learning anxiety. The result indicated a negative relation between anxiety and self-efficacy, supporting the hypothesis that negative control appraisals are correlated with higher anxiety (Yue et al., 2024). The same results were found when testing for other kinds of anxiety, such as math anxiety. One research team operationalized perceived control with both self-efficacy and self-concept and demonstrated a negative correlation for each of them with math anxiety (Li et al., 2021). Self-concept is considered to be a competence appraisal and is believed to directly influence perceived control (Pekrun & Perry, 2014). Self-concept in the framework of the *CVT* showed a negative correlation to academic anxiety when examining subjects such as English, Mathematics, and Chinese (Zhang, 2022).

This excerpt of the existing literature on the control component provides a relatively clear picture that control and test anxiety are negatively related to one another.

Value

The relevance of something to someone can be driven by personal values such as interest (*intrinsic value*) and external factors (*extrinsic value*) (Pekrun & Perry, 2014).

How value relates to test anxiety remains unclear and still needs to be better understood. While some research results indicate negative correlations (Liu et al., 2024; Zhang, 2022), others find no impact (Lohbeck et al., 2016). Some research also provides results with a probable positive relation between value and test anxiety (Pekrun, 1992; Roick & Ringeisen, 2017). Different definitions of value (e.g., task value, intrinsic value, relevance of success) or different cultural contexts might explain these contrary findings. Further research suggests that high value differs in its effect on test anxiety depending on the control appraisals, such as that high value paired with low control leads to high test anxiety (Selkirk et al., 2011).

The *control–value theory* considers a multitude of factors and yet compromises them to the factors of control and value. This theory may shed more light on the phenomenon of stage fright and provide a new approach for coping strategies. However, it seems that a high number of factors might influence perceived control and value. It may therefore be insightful to additionally take a closer look at plausible distal antecedents that are either already heavily discussed and/ or not yet fully understood and examined.

Influences on Stage Fright

Many constructs have been tied to stage fright. For instance, personality traits such as perfectionism (Mor et al., 1995; Yang et al., 2022), introversion (Rae & McCambridge, 2004; Smith & Rickard, 2004), neuroticism (Rae & McCambridge, 2004; Smith & Rickard, 2004), and trait anxiety (Smith & Rickard, 2004) are considered to influence the occurrence and severity of stage fright. For other constructs like gender and age, a possible influence is still being discussed (Biasutti & Concina, 2014; Papageorgi et al., 2013; Smith & Rickard, 2004; Van Kemenade et

al., 1995). With regard to other factors, such as music style or proficiency, only indications as to whether these might influence performance anxiety exist (Larrouy-Maestri et al., 2012; Papageorgi et al., 2013). This chapter aims to describe several constructs with ambiguous findings or indications of their influence on stage fright. The discussed constructs were subsequently tested for their influence on stage fright as part of the empirical study of this thesis.

Gender

Several studies were able to demonstrate a significant correlation between gender and stage fright, indicating that females tend to exhibit higher scores of stage fright (Rae & McCambridge, 2004; Smith & Rickard, 2004). However, other studies have shown different relations depending on the type of test anxiety being examined. For instance, when examining math anxiety, females tend to score higher, whereas when examining language anxiety, males would show higher anxiety scores. These findings are also in line with their self-concept, with males having a higher self-concept in math and consequently less anxiety (Zhang, 2022). When anxiety is not merely studied as a total score but its components are also evaluated separately, it appears that there are gender differences in the physiological and emotional-behavioral components of anxiety, but not in its cognitive component (Biasutti & Concina, 2014). While named studies have demonstrated gender differences, other studies were not able to observe such differences (Ringeisen et al., 2016; Van Kemenade et al., 1995). Pekrun (2014) suggests that gender and associated stereotypes may influence control and value appraisals.

Age

Although fewer studies have examined age compared to gender, differences in findings are present. While some studies have found no relationship between age and stage fright (Van Kemenade et al., 1995), others have suggested a positive connection between these two constructs (Sokoli et al., 2022). Another study with a sample of a wider age range, therefore including musicians in late adulthood, found a negative correlation between stage fright and age (Kenny et al., 2014). When looking at general anxiety, prevalences increase until middle age and only decrease in late adulthood (Bandelow & Michaelis, 2015; Sokoli et al., 2022). One could expect the course of prevalence of performance anxiety to be similar to the course of general anxiety.

Motivation

Motivation is a construct that has not yet been extensively studied when researching performance anxiety. In the *control–value theory*, motivation is considered an outcome variable that is influenced by the present achievement emotion. The CVT furthermore states that outcome variables have a recursive influence on distal and proximal antecedents. Hence, it is believed that motivation influences subjective control and value (Pekrun & Perry, 2014). Additionally, when examining math anxiety, motivation proved to be a significant negative predictor of it (Li et al., 2021). Another study was able to link motivation with the cognitive component of anxiety (Varasteh et al., 2016).

Music Style

Most studies on stage fright focus on musicians playing Western classical music, and little is known about whether the music style played has an impact on performance anxiety. Papageorgi and colleagues (2013) showed that, compared to Jazz, Pop, and traditional Scottish music, musicians playing Western classical music had higher stage fright scores. Another study came to a similar conclusion when comparing Western classical music with traditional Turkish music. The authors posit that music styles with a freer approach to performance and greater scope for creativity and improvisation lead to lower levels of stage fright (Teztel, 2017).

Number of Players

When analyzing stage fright in musicians, little research has been done on whether performing alone or in a group affects stage fright. Two studies give indication that being part of a group, such as a choir or orchestra, may result in lower stage fright scores than when performing a solo (Papageorgi et al., 2013; Teztel, 2017).

Audience

A study carried out in the 1970s provided the initial evidence that a larger audience leads to higher subjective tension. The results also included that tension was perceived to be higher when the audience was of older age and male - dominated (Latané & Harkins, 1976). A more recent study confirmed these results with yet again self-reported anxiety (Lemasson et al., 2018). To date, no study has

been conducted to investigate the relationship between audience size and quantitative performance anxiety scores.

Level of Proficiency

When studying stage fright, most researchers examine the phenomenon either on professional musicians (Mor et al., 1995; Van Kemenade et al., 1995) or on music students (Larrouy-Maestri et al., 2012; Yang et al., 2022). There has been a paucity of studies that have compared different groups of musicians. Given the diversity of musicians in terms of their backgrounds, experiences, and standards, it is plausible that they may experience stage fright in different ways (Barry & Teweleit, 2003). One study took on the task and compared professional musicians and amateurs and found that professional musicians seem to exhibit greater anxiety (Castiglione et al., 2018).

Some papers on stage fright investigated whether the years spent playing a musical instrument are associated with stage fright. However, most studies could not find a significant relation (Kenny, 2009b; Rae & McCambridge, 2004; Van Kemenade et al., 1995). One research team, while analyzing voice accuracy and anxiety in singing students, observed differences in anxiety levels between students of different classes. As at one timepoint the older students suffered more anxiety and at another timepoint the younger students scored higher on the scale measuring anxiety, it remains unclear whether these findings are coincidental or an indication of an underlying pattern (Larrouy-Maestri et al., 2012). Another factor that might be more indicative than “years of playing” is the number of performances, as it might represent better if it is possible to suffer less stage fright by gaining more experience on stage. Unfortunately, to the best of my knowledge, there are no published papers that examine this potential connection.

These are just a few constructs which may influence control and value appraisals, as well as stage fright. As these constructs are either relatively new or subject to discussion in the context of stage fright, analyzing them in a novel framework might help to better understand their influence.

To conclude, performance anxiety is a construct that has already been studied from various perspectives. A review of the literature on the emotion anxiety in general

and more specific research on stage fright reveals that we already have a clear picture of the components, biology, and symptoms of stage fright. Yet, looking at the observed prevalences over the years reveals the gravity of this emotional experience and indicates a need for further research to fully understand stage fright and provide research-based support for musicians. By focusing on the antecedents of control and value and evaluating whether stage fright can be explained using the framework of the control-value theory, the empirical part that follows aspires to contribute to a better understanding of stage fright.

Research Questions & Hypotheses

The aim of the empirical part of this thesis is to gain a deeper understanding of stage fright as a trait emotion among musicians by identifying potential predictors, utilizing the context of the control-value theory. By exploring whether the antecedents of control and value are significantly related to stage fright, I hope to contribute to the existing knowledge base on this topic. The book “Stage Fright and Test Anxiety for Musicians” by Goetz (2022) forms the basis of the analysis and the intention of this thesis is to evaluate whether the model proposed in the book can indeed be used to explain stage fright in musicians. The following research question is therefore proposed:

- *Are subjective value and control significant predictors of stage fright?*

To answer this research question, two hypotheses are formed:

H1: Higher perceived value leads to higher stage fright.

H2: Lower perceived control leads to higher stage fright.

To test these hypotheses as to whether control and value are indeed significant predictors of stage fright, multiple regressions with control and value as predictors and stage fright as outcome are performed.

As stage fright is a complex phenomenon with numerous probable factors influencing it, understanding what factors of performance (situational) and performer (personal) are affecting performance anxiety is of high value. By taking an exploratory look at novel factors or ones with ambiguous results, their possible influence on stage fright, and on the antecedents of control and value, it may be possible to gain further insight and give basis for future research. By performing an exploratory analysis, it will be attempted to answer the following questions:

- *Do the personal factors gender, age, motivation, and level of proficiency significantly influence stage fright or the antecedents of control and value?*
- *Do the situational factors music style, number of players, and size of audience significantly influence stage fright or the antecedents of control and value?*

Methodology

To answer the proposed research questions, a questionnaire in German was put together. It includes scales for stage fright, control, value, and motivation. Additionally, open questions were included to gather data for the exploratory analysis. The survey was published via the platform *soci-survey* at the beginning of February 2024 and the data collection ended on 30th of March 2024.

Sampling

Sampling occurred mostly online via social media but also at the University of Vienna, Bruckner University in Linz, and personal connections. As no randomization took place and participants were purely recruited based on their availability, the sample was gathered using convenience sampling. The aim was to recruit musicians of any kind, hoping to include professionals as well as musicians playing merely in their free time as a hobby. There were no requirements to be met concerning the frequency of playing or performing, as long as an instrument is being played, one must be over fourteen years old and speak German to take part in the survey. This kind of sampling aimed to include three types of musicians, namely university students studying music or an instrument, professional musicians who earn more than half of their living by playing music, and amateur musicians who play in their free time. These three types should help to analyze the plausible influences of proficiency differences. Before the start of the questionnaire, participants were informed about the purpose of the study.

As previous studies on anxiety in the context of the control–value theory, namely control and value as predictors on math and test anxiety, found medium to large effect sizes, the sample size was calculated with a medium effect size ($f^2 = 0.15$) (Li et al., 2021; Liu et al., 2024; Ringeisen et al., 2016). Hoping for a power of 95% and an alpha error of .05, it is estimated that the sample needs to consist of at least 74 participants.

The minimum sample size was met, with 88 participants starting the questionnaire and 76 finishing it. Two participants were excluded as they did not answer over 90% of the questions.

As 10 participants discontinued the survey and the questionnaire withheld no questions that had to be filled out in order to continue, an analysis of dropouts and

missing data has been carried out. During the first part of the questionnaire, five participants discontinued. Only the scale for stage fright was filled out by all 86 participants. Afterwards, with each scale, one to two participants dropped out. At the beginning of the section consisting of only open questions evaluating the proposed influential variables, out of the 81 participants who had filled out the last scale, only 76 chose to continue with filling out the open questions. The questions concerning the number of other performers on stage was filled out by only 67 of the participants, making it the least answered question. Due to the constant occurrence of missing values, a *Little MCAR test* was carried out. It included all variables except the variable *music style*, as it is nominal. The test came out not significant ($p=.265$), indicating that the missing values are missing at random without any underlying pattern, which might impact the analysis performed to answer the research questions given. Therefore, the following analysis withholds all the data collected from the 86 participants, and no data was excluded.

The age of the participants ranges from 16 to 80 years, with an average age of 39 years and a standard deviation of 18.8 years. Looking at the distribution, most participants are between 20 and 30 years old. When asked about their gender, the majority (64.5%) identified as female and just 35.5% as male. As there were no requirements for participation concerning their musical habits, the sample differs in frequency of playing, performing, and proficiency. On average, participants stated to having played an instrument for 25 years, with a span going from one year of music-making to 67 years maximum. When asked about their performance frequency, the answers ranged from zero to 175 performances a year, with an average of 15 performances. On average, participants have been performing for around 21 years. Almost 39% of the sample are currently studying or have studied music or an instrument. Concerning their earnings with music, 52% stated not having any income with their music, and 7% stated that their entire income stems from music-making.

Scales and Operationalization

In order to operationalize and measure the constructs needed to test the hypotheses imposed, already existing scales were adapted to fit the context of music-making and performance. A codebook in the appendix gives deeper insight and displays each item included in the questionnaire in the same order as presented to the participants.

The scale used to collect information about the participants' *stage fright* was provided by Goetz in his book "Stage Fright and Test Anxiety for Musicians", which is also the basis for this analysis. The scale is an adaptation of the Performance Anxiety Questionnaire, a subscale of the AEQ (Academic Emotions Questionnaire) (Pekrun et al., 2011). The scale consists of 12 items; six of them concern feelings before a performance, and the other six items focus on one's feelings during a performance (Goetz, 2022). Participants had to state how much they felt each statement was true for them. To do so, a 5-scaled Likert scale was provided (strongly disagree - disagree – undecided – agree - strongly agree). As this scale has not been used for research before, the reliability was calculated, giving a result of Cronbach's alpha of .928.

Exemplary items for stage fright translated into English:

- *"I feel anxious and uncomfortable before the performance."* (before)
- *"I'm worried whether I'll get through the performance all right."* (during)

To evaluate one's *value* concerning music-making and performance, parts of a scale constructed by Gaspard and colleagues were adapted (Gaspard et al., 2017). First, three questions on one's *intrinsic value* were presented to the participants. These were followed by four questions on *importance of achievement*. Lastly, three additional questions were given on *personal importance*. The response format remained a 5-scaled Likert scale. Due to the adaptations, the reliability was calculated, resulting in Cronbach's alpha being .812. Concerning the subscales, *intrinsic value* shows a Cronbach's alpha of .909 and the subscale *importance of achievement* of .696. The third subscale *personal importance* only shows a Cronbach's alpha of .510, indicating that the items do not measure the same latent construct. The results concerning *personal importance* should therefore be considered with caution.

Exemplary items for value translated into English:

- *"I enjoy being on stage and making music/singing."* (intrinsic value)
- *"A good performance is important to me."* (importance of achievement)
- *"The performance has no meaning to me."* (personal importance)

The construct *control* was operationalized via *self-efficacy* and *self-concept*, as these proved to be good indicators for the control antecedents in past research (Li et al., 2021; Pekrun & Perry, 2014; Yue et al., 2024; Zhang, 2022). Both constructs were

measured using a scale provided by Marsh and colleagues, which was yet again adapted to the context of music-making (Marsh et al., 2019). Three items were presented to evaluate self-efficacy, and five items were given to analyze one's self-concept concerning one's music. The response format continued to be the Likert scale used for the previous scales. Again, due to adaptations, the reliability was analyzed, showing a Cronbach's alpha of .733 for the scale on self-efficacy and a Cronbach's alpha of .881 for the scale on self-concept.

Exemplary items for control translated into English:

- *"I am convinced I can perform well."* (self-efficacy)
- *"I play my instrument/sing very well on stage."* (self-concept)

To examine plausible influences on value, control, and stage fright by *intrinsic motivation*, a scale to gather data on the participants motivation was added to the questionnaire. For this, a scale used to evaluate intrinsic motivation in mathematics by Pekrun and colleagues was adapted (Pekrun et al., 2002). Six items were included. The reliability for this adaptation is a Cronbach's alpha of .958.

Exemplary items for intrinsic motivation translated into English:

- *"I enjoy performing on stage."*

For all scales provided, scores for each subscale and total scales were calculated. Additionally, a total score for control and value was computed. Each score is the average of the items' values on the associated scale.

The remaining data on the influences of gender, age, level of proficiency, music style, number of players, and audience size were collected using open questions concerning, for example, frequency of playing or performance, income through music, instruments played, etc. All fifteen questions asked can be found in the codebook.

Exemplary open questions translated into English:

- *"How many years have you been playing your instrument/singing?"*
(proficiency)
- *"What is your primary music style?"* (music style)

- “ *How many other people are you usually on stage with?*” (number of players)
- “ *How big is the average audience you perform in front of?*” (audience size)

In total, the questionnaire contained 51 questions and was, on average, filled out within 7.5 minutes with a standard deviation of 3.37 minutes. After the recruiting period had passed, the data was downloaded and set up for the analysis in SPSS. The evaluation of dropouts and missing values was also done in SPSS. For the statistical analysis of the hypotheses and the exploratory analysis the program JASP was used.

Hypotheses Testing

Descriptive Analysis

To analyze and test for the hypotheses imposed, the three variables *stage fright*, *control*, and *value* were evaluated on a variable basis before being computed into the analysis.

A 12-item scale was used to quantify *stage fright*, the outcome variable. Each of the eighty-six participants completed this questionnaire, and the aggregate results range from 1.17 to 4.83 on the 5-point Likert scale, where higher scores correspond to more performance anxiety. The mean total score is 2.52, with a standard deviation of 0.87. A more thorough analysis of the distribution reveals that participants typically display rather higher than lower scores. Only 5% of individuals achieved total scores of 4 or above, while 26% displayed total scores of 2 or below.

Self-efficacy and self-concept are the constructs used to operationalize the predictor variable *control*. Eighty-two participants completed the self-efficacy scale. On a 5-point Likert scale, participants scored an average of 3.70, with a standard deviation of 0.74. Eighty-one musicians completed the scale measuring self-concept, and the results are comparable to those of the self-efficacy scale: an average total score of 3.52 with a standard deviation of 0.76. The two subscales were summed to obtain a total control score. Participants' average score on the control scale was 3.59, with a standard deviation of 0.71. For each scale, higher scores correspond to higher levels of the construct measured.

The predictor *subjective value* is quantified by three subscales: intrinsic value, importance of achievement, and personal importance. Eighty-five musicians completed the subscale intrinsic value, with the lowest total score being 2, and the average total score being 4.16 with a standard deviation of 0.83. This suggests that the participants place a high intrinsic value on their music-making. Eighty-four individuals completed the subscale on the importance of achievement, which resulted in an average score of 4.47 with a standard deviation of 0.53. Similar results are shown by the third subscale, which had eighty-five respondents and an average total score of 4.59 with a standard deviation of 0.59. Eighty-four cases could be considered and analyzed after adding up the subscales and creating a total score for the variable value. Participants' average total score was 4.42 out of 5, which

suggests that the sample has high subjective value. Given that the lowest total score was 3, it must be considered that a ceiling effect may have occurred.

Table 1

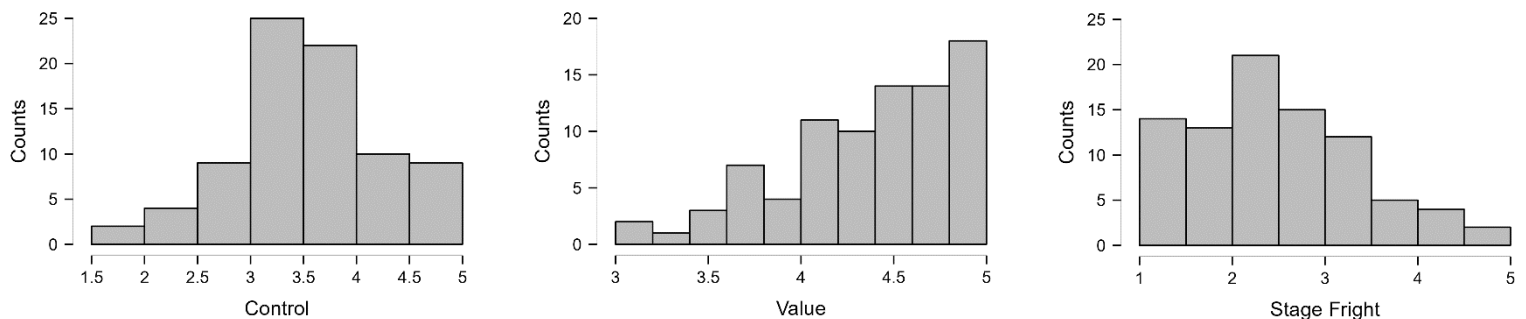
Scales and their respective scores

Variable	Average Total Score	Standard Deviation	Range
Stage fright	2.52	0.87	1.17 - 4.83
Control	3.59	0.71	1.50 – 4.75
Self-efficacy	3.70	0.74	1.67 – 5.00
Self-concept	3.52	0.76	1.40 – 5.00
Value	4.42	0.48	3.00 – 5.00
Intrinsic value	4.16	0.83	2.00 – 5.00
Importance of achievement	4.47	0.53	3.00 – 5.00
Personal importance	4.59	0.59	2.67 – 5.00

Higher scores in “average total score” and “range” indicate high expression of the constructs.

Figure 3

The distribution of total scores in the scales control, value and stage fright



1 indicating low sense of control, value and stage fright, respectively
 2 indicating low to medium sense of control, value and stage fright, respectively
 3 indicating medium sense of control, value and stage fright, respectively
 4 indicating low to medium to high sense of control, value and stage fright, respectively
 5 indicating high sense of control, value and stage fright, respectively

Results

In order to address the hypotheses presented, correlations and linear regressions were conducted. To be sure that the statistical requirements were met, the data was checked for linearity, outliers, homoscedasticity, multicollinearity, and normality. When looking for outliers, the data showed to be slightly right-skewed, but no cases with a cook's distance $> |1|$ could be identified, indicating no significant

outliers. As all other requirements were met, the data is suitable for the statistical analysis proposed.

To get a first overview of the relations between the variables, a correlation matrix was computed. The matrix shows significant correlations between all three total scores. The two predictor variables, control and value, show a positive correlation ($r = .540$, $p < .001$). The relation remains in all subscales, except when looking at personal value, as this scale shows no significant correlation with both self-concept ($r = .159$, $p = .158$) and control ($r = .203$, $p = .069$). When analyzing the relation with the outcome variable stage fright, most subscales of value and control show a significant negative correlation. Only importance of achievement ($r = -.027$, $p = .810$) and personal importance ($r = -.194$, $p = .076$) form an exception, showing no significant relationship.

Table 2

Correlation matrix of the variable stage fright, control, and value, including their subscales.

Variable		1	2	3	4	5	6	7	8
1. Self-efficacy	Pearson's r	-							
	p-value	-							
2. Self-concept	Pearson's r	.738	-						
	p-value	< .001*	-						
3. Control	Pearson's r	.891	.964	-					
	p-value	< .001*	< .001*	-					
4. Intrinsic value	Pearson's r	.606	.550	.611	-				
	p-value	< .001*	< .001*	< .001*	-				
5. Importance of achievement	Pearson's r	.417	.273	.345	.353	-			
	p-value	< .001*	.014*	.002*	< .001*	-			
6. Personal importance	Pearson's r	.256	.159	.203	.391	.474	-		
	p-value	.020*	.158	.069	< .001*	< .001*	-		
7. Value	Pearson's r	.585	.463	.540	.803	.779	.737	-	
	p-value	< .001*	< .001*	< .001*	< .001*	< .001*	< .001*	-	
8. Stage fright	Pearson's r	-.439	-.545	-.539	-.498	-.027	-.194	-.337	-
	p-value	< .001*	< .001*	< .001*	< .001*	.810	.076	.002*	-

**significant*

To test the model as hypothesized, several linear regressions were performed. First, a regression with control and value as predictors and stage fright as the outcome was

computed. This model turned out to be significant ($p < .001$, $F = 15.971$, $df = 2$) with an explained variance of $R^2 = .293$. Analyzing the two predictors, only control proved to be significant ($p < .001$) with a *standard error SE* of 0.135. The *standardized coefficient* β of $-.505$ and a t -value of -4.432 indicate a negative relation between the predictor control and the outcome variable stage fright.

To better understand which subscales contribute to the explained variance, a linear regression using the subscales of both control and value as predictors has been carried out. The model turns out to be significant ($p < .001$, $F = 9.747$, $df = 5$) with an explained variance of $R^2 = .397$. Three subscales have a significant predictive value in this model. Looking at the subscales of control, the scale measuring self-concept is significant ($p = .006$, $t = -2.853$, $\beta = -.393$, and $SE = 0.153$), again showing a negative connection between control and stage fright. Furthermore, two of the three subscales of value show a significant result. Firstly, the subscale intrinsic value shows a negative relation to stage fright ($p = .016$, $t = -2.473$, $\beta = -.305$, and $SE = 0.124$). Secondly, the scale importance of achievement shows a positive relation to stage fright ($p = .020$, $t = 2.372$, $\beta = .254$, and $SE = 0.172$).

For a deeper understanding of the influences on stage fright, linear regressions with the significant predictors self-concept, intrinsic value, importance of achievement and their interaction have been computed. The first regression withheld as predictors self-concept, intrinsic value, and their interaction. The second regression remained the same; only intrinsic value was exchanged with importance of achievement. Both regressions showed a significant model fit ($p < .001$), but neither the predictors nor their interaction turned out to be significant, indicating that their interaction does not add to the explained variance already provided by the predictors individually.

Considering these results, the hypothesis concerning control ("*Lower perceived control leads to higher stage fright.*") can be accepted, as the correlation and both regressions show clear results in the same direction. The analysis concerning the hypothesis for value ("*Higher perceived value leads to higher stage fright.*") shows mixed results, indicating negative or no connection when looking at the correlation and the linear regression with the sum score of value. Only when analyzing the subscales a positive connection between the subscale importance of achievement and stage fright becomes evident. These results are too heterogeneous, and therefore this hypothesis cannot be accepted with the data given.

Exploratory Analysis

Descriptive Analysis

The purpose of the exploratory analysis is to gain a deeper understanding of possible influences on perceived control and value and stage fright. The constructs included were operationalized through the use of open-ended questions concerning the participants' average performance and general data on their music-making activities. The data collected is presented for each construct.

Gender

64.5% of the participants identify as female, while 35.5% identify as male.

Age

The sample shows a wide range of age, with the youngest participant being 16 years old and the oldest being 80 years old. The average age is 39 years, while almost 40% of the sample states an age between 20 and 30 years. To control for outliers in this wide range, additionally the median was calculated, which showed to be 30 years.

Motivation

Intrinsic motivation was measured using a 6-item scale. Final scores could range from 1 to 5, yet the lowest score of the sample is 1.667 and the highest is 5. On average, participants have a total score of 3.988, indicating high intrinsic motivation towards their music-making.

Music Style

To understand the participants preferred music style, questions were asked concerning their primary music style, the number of instruments played, and their primary instrument. Thirteen different music styles were named, with the most popular being Western classical music (53%). Other music styles were Pop (13%), Rock (2%) and brass music (2%). A list of all music styles and their frequencies can be found in the appendix.

Concerning the number of instruments played, participants stated to play up to 8 instruments, with an average of 2 instruments. When asked what instruments were played, a wide range of instruments were stated. The most named instruments were

singing (35 times), piano (23 times) and guitar (21 times). The primary instrument for performances was for 23 participants their own voice. A list of the instruments and their frequencies can be found in the appendix.

Number of Players

When asked about the average number of other players on stage, the participants gave a wide range from zero to 80 additional performers, with a median of two further musicians on stage. Additionally, it was asked how many of the performances on a yearly basis are solos. The median was 10%, while 4.5% stated to always perform as a soloist and 27% stated to never perform alone.

Audience

This construct was assessed with only one item, concerning the average audience size. The answers range from 10 to 1500 people in the audience, with an average audience size of 175 people.

Level of Proficiency

First, participants gave insight on their years of playing and performing and their practicing habits. Participants stated to have been playing an instrument or singing for one to 67 years, with an average of 25 years. Concerning their experience on stage, participants have been performing for up to 60 years, with an average of 21 years. On a yearly basis, participants perform up to 175 times, with an average of 15 performances a year. Unsurprisingly, the years of playing correlate with the years on stage ($p < .001$, $r = .881$). Regarding their practice, participants state that they are practicing zero to 35 hours a week, with an average of 6.7 hours. Furthermore, participants have been taking lessons from zero to 30 years, with an average of 11 years. Interestingly, the number of hours one practices correlates positively with the number of years one has been taking lessons ($p = .001$, $r = .375$).

To confirm that different types of musicians took part in the survey, participants were asked if they are currently studying or have studied music or an instrument. 38.7% affirmed that question. Out of these, 34.5% stated being in the process of studying, while 65.5% stated having studied music or an instrument in the past. Additionally, participants were asked how much of their income stems from music. While 52% answered that they have no income from music, 7% state that they earn all their income from music. Around 14% say they earn more than 50% of their

income with music. These results show that music students, professional musicians, and amateur musicians are part of the sample.

Many of the gathered variables show significant correlations with each other. Showing interesting results such as the correlation between *classic* and *motivation* ($p < .001$, $r = -.453$), indicating less motivation with the primary music style *classic*. Furthermore, there seems to be a significant relationship between the number of players on stage and the size of the audience ($p < .001$, $r = .464$). For the remaining correlations, I refer to the appendix, in which the whole correlation matrix of all variables is depicted.

Results

In order to detect possible connections between the chosen variables and the three main constructs, correlation matrixes have been computed. Focusing on the variable control, several variables show a significant positive relationship. Firstly, both constructs of control (self-efficacy and self-concept), as well as the sum score of control, have a significant connection with the average weekly hours of practice (self-efficacy: $r = .376$, $p = .001$; self-concept: $r = .305$, $p = .009$; control: $r = .356$, $p = .002$). Also, the yearly number of performances has a positive correlation with all three constructs of control (self-efficacy: $r = .260$, $p = .026$; self-concept: $r = .314$, $p = .007$; control: $r = .314$, $p = .007$). Another interesting connection shows between control and income with music (self-efficacy: $r = .308$, $p = .008$; self-concept: $r = .262$, $p = .028$; control: $r = .298$, $p = .012$). Furthermore, intrinsic motivation seems to be tied to perceived control as well (self-efficacy: $r = .650$, $p < .001$; self-concept: $r = .555$, $p < .001$; control: $r = .629$, $p < .001$). When looking at the average size of the audience, no significant correlation with self-efficacy is given, yet self-concept and control show significant results (self-efficacy: $r = .210$, $p = .078$; self-concept: $r = .242$, $p = .044$; control: $r = .250$, $p = .037$). Self-efficacy, but not self-concept, changed significantly when comparing musicians who are currently studying versus those who have already finished their studies. The correlation indicates lower self-efficacy and control for musicians who are no longer studying (self-efficacy: $r = -.498$, $p = .007$; control: $r = -.480$, $p = .011$).

Analyzing the variable value, fewer significant results can be found. There seems to be a positive correlation between the subscale personal importance and gender ($r = .250$, $p = .030$), indicating that participants who identify as male show higher scores in their personal importance towards music. A significant connection with all three subscales and the sum score can only be found with intrinsic motivation, implying that higher value comes with higher intrinsic motivation (intrinsic value: $r = .913$, $p < .001$; importance of achievement: $r = .438$, $p < .001$; personal importance: $r = .415$, $p < .001$; value: $r = .807$, $p < .001$). While the subscales importance of achievement and personal importance show a medium effect size, intrinsic value and the sum score display a strong effect size.

Finally, evaluating the given constructs and their influence on stage fright, certain negative correlations appear. Firstly, there are negative correlations concerning the variables years of playing ($r = -.301$, $p = .009$), years of performing ($r = -.373$, $p = .001$), and stage fright. Additionally, a negative relationship appears with the number of yearly performances ($r = -.247$, $p = .035$). Another construct with a significant negative correlation is age ($r = -.335$, $p = .003$), indicating that younger musicians suffer from more stage fright. Lastly, intrinsic motivation shows a strong negative connection with stage fright ($r = -.544$, $p < .001$).

The variable music style could not that easily be quantified, yet it was possible to form two discrete variables with the data provided. Concerning the primary music style, it was possible to group the answers in *Classic* versus *non-Classic*. As past literature suggests that Classic leads to higher stage fright, this distinction seems fitting (Papageorgi et al., 2013; Teztel, 2017). No significant correlation was found concerning stage fright. Yet, significant results appear with the variable value ($r = -.400$, $p < .001$) and its two subscales, intrinsic value ($r = -.405$, $p < .001$) and importance of achievement ($r = -.305$, $p = .011$). These results suggest that participants with the primary music style *Western classic* have lower intrinsic value and give less importance to their musical achievements. The second discrete variable formed is the primary instrument, which was separated into singing versus instrument. Analyzing this variable, no significant results could be found.

Table 3*Variables with significant correlations with the construct control*

Variable	According construct		Self-efficacy	Self-concept	Control
Weekly hours of practice	Level of proficiency	Pearson's r p-value	.376 .001*	.305 .009*	.356 .002*
Yearly number of performances	Level of proficiency	Pearson's r p-value	.260 .026*	.314 .007*	.314 .007*
Income with music	Level of proficiency	Pearson's r p-value	.308 .008*	.262 .028*	.298 .012*
Intrinsic motivation	Motivation	Pearson's r p-value	.650 <.001*	.555 <.001*	.629 <.001*
Average size of the audience	Size of audience	Pearson's r p-value	.210 .078	.242 .044*	.250 .037*
Studied in the past	Level of proficiency	Pearson's r p-value	-.498 .007*	-.364 .062	-.480 .011*

significant*Table 4***Variables with significant correlations with the construct value*

Variable	According construct		Intrinsic value	Importance of achievement	Personal importance	Value
Gender	Gender	Pearson's r p-value	.166 .151	-.052 .660	.250 .030*	.141 .227
Intrinsic motivation	Motivation	Pearson's r p-value	.913 <.001*	.438 <.001*	.415 <.001*	.807 <.001*
Western classic	Music style	Pearson's r p-value	-.405 <.001	-.305 .011*	-.202 .093	-.400 <.001*

**significant*

Table 5*Variables with significant correlations with the construct stage fright*

Variable	According construct		Stage fright
Years of playing	Level of proficiency	Pearson's r p-value	-.301 .009*
Years of performing	Level of proficiency	Pearson's r p-value	-.373 .001*
Yearly performances	Level of proficiency	Pearson's r p-value	-.247 .035*
Age	Age	Pearson's r p-value	-.335 .003*
Intrinsic motivation	Motivation	Pearson's r p-value	-.544 <.001*

**significant*

Discussion

The control-value theory was constructed with the aim to try to understand achievement emotions better. While other achievement emotions, such as test anxiety, have been extensively researched in the context of the CVT, stage fright has not been analyzed yet. This thesis provides first-hand results concerning whether and how stage fright can be explained using the CVT. The results show a clear connection between both control and value in relation to stage fright. When looking at the subscales of control and value, they provide almost 40% of explained variance of stage fright, indicating a strong effect size. These results, furthermore, highlight the importance of considering and analyzing facets of control and value, as the explained variance increased by 10% when considering the subscales instead of the total scores.

The variable control shows coherent results, making a negative connection with stage fright evident. Regarding these results, it becomes apparent that a good sense of control, especially a high self-concept, decreases performance anxiety. Support should, therefore, aim to increase self-concept in the long run and additionally encourage a high sense of control before and during a performance.

The analysis of the construct value proved to be more complex. Already, when looking at the reliability of the subscales, the subscale *personal importance* does not meet the criterion of a Cronbach's alpha of .7 or above. Hence, results concerning this subscale should be perceived with caution. As this subscale is part of the total scale value, this precaution needs also be considered when looking at results concerning the total score. Furthermore, the average scores of the participants on the scales of value are rather high, with an average total score of 4.42. This indicates that a ceiling effect has occurred, as the majority of the sample shows the same, high-end results. This aggravates the analysis of that construct and might interfere with the results. Considering the limitations mentioned, the construct value still yields significant results as a predictor variable for stage fright, but only at a subscale level. On the one hand, the subscale *intrinsic value* is negatively related to stage fright, while on the other hand, *importance of achievement* is positively related to stage fright. These contradictory results reflect the state of past research on value and test anxiety. Intrinsic value has shown the same negative relation when examining math anxiety (Li et al., 2021; Liu et al., 2024), while a positive correlation was found between

relevance of success (equated with importance of achievement) and test anxiety (Roick & Ringeisen, 2017). The current results are testimony to the findings of past research and once again highlight the importance of a standardized definition of value and shine light on the differences between distinct constructs of value and their, sometimes, contradictory influences.

In line with the assumptions of the control-value theory, the interactions between the significant facets of control and value have been analyzed. These calculations led to no significant results, indicating that with stage fright (i.e., a negative emotion), such interactions give no further insight into the phenomenon.

For the exploratory analysis, different constructs have been analyzed for their possible influence on the antecedents of control and value, and stage fright. The constructs were chosen because they either showed contradictory results in past research or are relatively new in the research on stage fright.

Concerning *gender*, past research has found that females tend to have more stage fright than males (Rae & McCambridge, 2004; Smith & Rickard, 2004). Additionally, Pekrun, a core figure in the research on the CVT, suggested that gender differences in control and value appraisals occur (Pekrun & Perry, 2014). With the given data, none of these results could be replicated. Gender showed no significant relationship with stage fright. Regarding the constructs control and value, only *personal importance* showed a significant result. As this scale has low reliability, this result cannot be interpreted and should be disregarded.

Based on the existing literature, the construct *age* showed conflicting relationships with stage fright, as such vary from study to study, resulting in both positive and negative correlations (Kenny et al., 2014; Sokoli et al., 2022). The current analysis brought to light a significant negative correlation. As the age range is similar to the sample by Kenny and colleagues (2014), hence depicting also late adulthood, the current results once more give the impression that performance anxiety does indeed develop like general anxiety over a lifetime. The present findings only show that stage fright decreases with age. Further research is needed to analyze whether stage fright also develops in an inverted u-shape over time, like general anxiety does.

Intrinsic motivation is the only construct of the explorative analysis showing significant results with all three main variables. In line with past research, motivation is negatively connected with stage fright. Additionally, it is positively correlated to subscales of both control and value. These findings support the assumption of the control-value theory that motivation can be an outcome of stage fright, which circles back to the beginning of the model, influencing both control and value appraisals in future situations (Pekrun & Perry, 2014). As the statistical models used allow for no information on the direction of the effect, these results are in no way prove this assumption but merely support it and demonstrate the importance of motivation when dealing with stage fright.

With the current data collected, *music style* could only be analyzed by comparing Western classical music with all other music styles. In this comparison, no significant differences were found concerning stage fright. Past research did find that Western classical music was tied to more stage fright (Papageorgi et al., 2013; Teztel, 2017). As the comparative group in the current analysis is a mix of different kinds of music styles, the differences found in past research might be drowned out by the large variance of the comparing group. Yet, a significant correlation between Western classical music and value was found, indicating that participants with the primary music style Western classic, have lower value appraisals towards their music-making. A possible explanation could be that Western classical music has a higher chance of being forced onto somebody, while other music styles may have higher chances of being pursued merely due to high intrinsic interest and motivation.

Past research on the construct *number of players* indicates that stage fright is lower with more musicians on stage (Papageorgi et al., 2013; Teztel, 2017). These results cannot be confirmed by the current analysis, in which the construct number of players showed no significant relation with any of the three main variables.

Concerning the *size of the audience*, past research gave indication that larger audiences would lead to higher stage fright (Latané & Harkins, 1976; Lemasson et al., 2018); these results could not be replicated in the current analysis. The present study did not show any significant results concerning audience size and stage fright, yet a significant positive correlation was found when looking at self-concept and control. These results could indicate that performing in front of a larger audience increases self-concept. To confirm this hypothesis, further research is needed.

The last construct of the explorative analysis is *level of proficiency*. As prior studies focused on either professional musicians or music students, this study had the potential to highlight possible differences across different groups of musicians. Proficiency was operationalized with several items, such as years of playing and performing, income from music, yearly performances, and studying music or an instrument. First, years of playing and performing, as well as yearly performances, are significantly negatively correlated with stage fright, implying that more experience and higher proficiency lead to lower stage fright. The items *yearly performances* and *income* furthermore correlate positively with both subscales of control, indicating a higher sense of control in professionals and more frequent performers. One could conclude that more experience (more yearly performances) leads to a stronger sense of control, thereby reducing stage fright. The current results do not give enough insight to confirm this interpretation; hence, more research is needed to better understand how experience and frequency influence both control and stage fright. Lastly, musicians currently studying score higher on the self-efficacy scale compared to musicians who have studied music or an instrument in the past. This could, for example, signal that students tend to have higher self-efficacy in general, which is in line with educational research (Chemers et al., 2001).

Implications

The main purpose of this study was to analyze the model proposed by Goetz (2022) and test whether its assumptions show to be true. According to the model, high uncontrollability paired with a high value should lead to higher scores of stage fright. Value is primarily described as the personal relevance of the outcome, hence the achievement. The analysis carried out confirms the assumption concerning *control*, as all results are in agreement with the model. The assumption that a higher value leads to higher stage fright can only partly be confirmed by the analysis, as two subscales show contradictory results. One (importance of achievement) points in the same direction as the model proposes, while the other (intrinsic value) points in the opposite direction. As the model highlights the focus on the outcome by addressing possible consequences as part of a situation assessment and assumes stage fright to be an achievement emotion, more attention should be given to the results of the subscale *importance of achievement*, as it is more in line with the description of the model. Considering the irregularities in the construct value, it is of great interest to better understand the influence of value on stage fright and provide further support

for a narrower description of value, highlighting the differences between discrete kinds of value and their influence.

The explorative analysis provides preliminary results, which all call for further research before one can confirm any of the suggested relationships. They give indications and shed light on constructs that should be taken into account when working with or researching stage fright. The results concerning control and value give further insight and suggest possible indirect influences of constructs on stage fright via either control or value appraisals. The results additionally underline the strong connection between control and value appraisals and stage fright, as most times when a construct significantly influences stage fright, at least one of the two show significant relationships, too. This indicates a good model fit of stage fright in the control-value theory.

Limitations

Even though this analysis brought many results and new insights, it is important to mention that several limitations need to be considered and kept in mind. Firstly, the sample is not randomized, and therefore a sample bubble, as well as the exclusion of entire groups cannot be excluded. Furthermore, the data shows a lot of missing values and, therefore, a loss of information. This should not interfere with the results, as no significant patterns of the missing values could be identified, yet the missing information could have helped to deepen our understanding of stage fright and might have shed light on further possible paths of interpretation. It is important to mention that the sample size may have been too small to identify plausible connections in the explorative analysis, as the sample size was calculated merely focusing on the testing of the hypotheses. As most effect sizes of the explorative analysis are of medium size, a post hoc power analysis was carried out, revealing a sample size of 262 needed to show the right results with 95% certainty.

Lastly, some participants provided oral feedback, stating that it was difficult to depict their average performance as the number of players, audience size, and so forth, have high variance. For further research on the topic, it might therefore be interesting to focus on stage fright as a state rather than trait emotion. This might provide further knowledge on how control and value predict stage fright and give an understanding of how stable these constructs remain over time.

The new knowledge provided helps to deepen our understanding of stage fright, it gives reference points for future research on stage fright in the control-value theory, and it provides new input for interventions focusing on the musicians' sense of control and value.

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Codebuch

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2023

Der Datensatz und das vorliegende Codebuch sind Supplements zur Masterarbeit:

The dataset and this codebook are supplements for the master thesis:

„Predictors of Stage Fright“

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Informationen zur Stichprobe

Art der Stichprobe: Gelegenheitsstichprobe

Sampling: convenience sampling

Zielgruppe: Musiker*innen (Hobbymusiker*inne, Studierende, professionelle Musiker*innen)

Target group: Musicians (amateur, students & professionals)

	Häufigkeit	Anteilig
<i>N</i>	86	100%
Alter (age)		
<i>M</i>	38,79 Jahre	
<i>SD</i>	18,81 Jahre	
Geschlecht (sex)		
weiblich	46	63,6%
männlich	27	35,1%
divers	1	1,3%
Musiker*innen		
Hobbymusiker*in	52	60,5%
Studierende	10	11,6%
Professionelle	10	11,6%
Musiker*innen missing	14	16,3%

1. Lampenfieber/ Stage fright

Quelle: Lampenfieber und Prüfungsangst bei Musiker*innen – Tipps aus der Emotionsforschung, Thomas Götz (2022)

Auswertung: Aufaddieren der Antwort-Werte und durch die Anzahl der Items (12) dividieren. Jeder Score liegt zwischen 1 (kein Lampenfieber) und 5 (starkes Lampenfieber).

Analysis: Total score is the average of the items' values on the scale. (same for all scales used)

Antwortkategorien:

- 1 → stimmt gar nicht (*not true at all*)
- 2 → stimmt kaum (*hardly true*)
- 3 → stimmt teilweise (*partly true*)
- 4 → stimmt überwiegend (*mostly true*)
- 5 → stimmt genau (*exactly true*)

Dimension 1 – VOR der Aufführung - BEFORE

Wortlaut im Fragebogen: „Wie fühlen Sie sich in der Regel VOR Aufführungen?“

Variablenname	Inhalt	Mittelwert Standardabweichung	Item-Skala Korrelation
ST1vor	Vor der Aufführung bin ich beunruhigt und fühle mich unwohl.	2.83 1.16	.77
ST2vor	Ich mache mir Sorgen, ob ich genug geübt habe.	3.19 1.16	.70
ST3vor	Ich mache mir Sorgen, ob die Aufführung zu schwierig sein wird.	2.54 1.17	.53
ST4vor	Vor lauter Nervosität würde ich am liebsten nicht zur Aufführung kommen.	1.87 1.05	.68
ST5vor	Ich habe ein flaes Gefühl im Magen.	2.94 1.38	.63

Dimension 2 – WÄHREND der Aufführung - DURING

Wortlaut im Fragebogen: „Wie fühlen Sie sich in der Regel WÄHREND
Aufführungen?“

Variablenname	Inhalt	Mittelwert Standardabweichung	Item-Skala Korrelation
ST6währ	Ich bin sehr nervös.	2.62 1.08	.75
ST7währ	Ich gerate schnell in Panik bei einer Aufführung.	1.84 0.96	.71
ST8währ	Ich mache mir Sorgen, ob ich gut durch die Aufführung kommen werde.	2.84 1.17	.72
ST9währ	Ich bin so aufgeregt, dass ich denke: Wenn es bloß vorbei wäre.	1.93 1.19	.70
ST10währ	Ich habe so viel Angst, dass ich mir wünschen würde, weit weg zu sein.	1.93 1.96	.73
ST11währ	Wenn die Aufführung beginnt, habe ich Herzklopfen.	3.40 1.37	.53
ST12währ	Ich habe ganz zitterige Hände.	2.62 1.29	.64

Gesamtskala – Stage Fright

Reliabilität/ reliability: Cronbach's alpha = .93

Gesamtmittelwert/ mean: 2.52

Standardabweichung/ standard deviation: 0.87

Variablenname	Inhalt	Item-Skala Korrelation
ST1vor	Vor der Aufführung bin ich beunruhigt und fühle mich unwohl.	.78
ST2vor	Ich mache mir Sorgen, ob ich genug geübt habe.	.68
ST3vor	Ich mache mir Sorgen, ob die Aufführung zu schwierig sein wird.	.61
ST4vor	Vor lauter Nervosität würde ich am liebsten nicht zur Aufführung kommen.	.76
ST5vor	Ich habe ein flaues Gefühl im Magen.	.67
ST6währ	Ich bin sehr nervös.	.77

ST7währ	Ich gerate schnell in Panik bei einer Aufführung.	.70
ST8währ	Ich mache mir Sorgen, ob ich gut durch die Aufführung kommen werde.	0.75
ST9währ	Ich bin so aufgeregt, dass ich denke: Wenn es bloß vorbei wäre.	.70
ST10währ	Ich habe so viel Angst, dass ich mir wünschen würde, weit weg zu sein.	.74
ST11währ	Wenn die Aufführung beginnt, habe ich Herzklopfen.	.59
ST12währ	Ich habe ganz zitterige Hände.	.67

2. Valenz/ Value

Quelle: Assessing task values in five subjects during secondary school:

Measurement structure and mean level differences across grade level, gender, and academic subject. Gaspard et al. (2017)

Änderungen: Der Fragebogen wurde an die Thematik Musik/Lampenfieber angepasst und auf Deutsch übersetzt.

Auswertung: Aufaddieren der Antwort-Werte der jeweiligen Unterskala und durch die Anzahl der Items dividieren.

Antwortkategorien:

- 1 → stimmt gar nicht
- 2 → stimmt kaum
- 3 → stimmt teilweise
- 4 → stimmt überwiegend
- 5 → stimmt genau

Dimension 1 – Intrinsische Valenz- intrinsic value

Reliabilität/ reliability: Cronbach's alpha = .90

Gesamtmittelwert/ mean: 4.16

Standardabweichung/ standard deviation: 0.83

Variablenname	Inhalt	Mittelwert Standardabweichung	Item-Skala Korrelation
V1iV	Auf der Bühne zu stehen und zu musizieren/ singen, macht mir Spaß.	4.32 0.79	.80
V2iV	Ich mag es auf der Bühne zu stehen.	4.04 0.99	.84
V3iV	Ich genieße es einfach auf der Bühne zu musizieren/ singen.	4.13 0.90	.84

Dimension 2 - Die Bedeutung der Leistung - Importance of achievement

Reliabilität/ reliability: Cronbach's alpha = .70

Gesamtmittelwert/ mean: 4.47

Standardabweichung/ standard deviation: 0.53

Variablenname	Inhalt	Mittelwert Standardabweichung	Item-Skala Korrelation
V4achiev	Es ist mir wichtig gut mit meinem Instrument/ meiner Stimmer aufzutreten.	4.59 0.68	.54
V5achiev	Gut auf der Bühne spielen/ singen zu können, bedeutet mir sehr viel.	4.43 0.83	.49
V6achiev	Ein guter Auftritt ist mir wichtig.	4.64 0.55	.60
V7achiev	Gute Bewertungen meines Auftritts sind mir wichtig.	4.26 0.83	.37

Dimension 3 – Persönliche Bedeutung – personal importance

Reliabilität/ reliability: Cronbach's alpha = .51

Gesamtmittelwert/ mean: 4.59

Standardabweichung/ standard deviation: 0.51

Variablenname	Inhalt	Mittelwert Standardabweichung	Item-Skala Korrelation
V8pers	Der Auftritt hat keine Bedeutung für mich.	4.60 0.73	.31
V9pers	Ein guter Auftritt ist mir persönlich sehr wichtig.	4.54 0.68	.28
V10pers	Um ehrlich zu sein, interessiere ich mich nicht dafür mit meinem Instrument/ meiner Stimme aufzutreten.	4.64 0.75	.39

Zu invertierende Items: V8pers & V10pers

Gesamtskala – Value

Reliabilität/ reliability: Cronbach's alpha = .81

Gesamtmittelwert/ mean: 4.41

Standardabweichung/ standard deviation: 0.45

Variablenname	Inhalt	Item-Skala Korrelation
V1iV	Auf der Bühne zu stehen und zu musizieren/ singen, macht mir Spaß.	.60
V2iV	Ich mag es auf der Bühne zu stehen.	.64
V3iV	Ich genieße es einfach auf der Bühne zu musizieren/ singen.	.66
V4achiev	Es ist mir wichtig gut mit meinem Instrument/ meiner Stimme aufzutreten.	.59
V5achiev	Gut auf der Bühne spielen/ singen zu können, bedeutet mir sehr viel.	.61
V6achiev	Ein guter Auftritt ist mir wichtig.	.47
V7achiev	Gute Bewertungen meines Auftritts sind mir wichtig.	.18
V8pers	Der Auftritt hat keine Bedeutung für mich.	.18
V9pers	Ein guter Auftritt ist mir persönlich sehr wichtig.	.58
V10pers	Um ehrlich zu sein, interessiere ich mich nicht dafür mit meinem Instrument/ meiner Stimme aufzutreten.	.46

3. Kontrolle /Control

Kontrolle wird durch die Selbstwirksamkeit und das Selbstkonzept operationalisiert.

Control is operationalized with self-efficacy and self-concept.

Selbstwirksamkeit – Self-efficacy

Quelle: The murky distinction between self-concept and self-efficacy: Beware of lurking jingle-jangle fallacies. Marsh et al. (2019)

Änderungen: Der Fragebogen wurde an die Thematik Musik/ Lampenfieber angepasst und auf Deutsch übersetzt.

Auswertung: Aufaddieren der Items und durch die Anzahl der Items dividieren.

Antwortkategorien:

- 1 → stimmt gar nicht
- 2 → stimmt kaum
- 3 → stimmt teilweise
- 4 → stimmt überwiegend
- 5 → stimmt genau

Reliabilität/ reliability: Cronbach's alpha = .73

Gesamtmittelwert/ mean: 3.70

Standardabweichung/ standard deviation: 0.74

Variablenname	Inhalt	Mittelwert Standardabweichung	Item-Skala Korrelation
Eff1	Ich bin mir sicher, dass ich auch die schwierigsten Stücke auf der Bühne spielen/ singen kann.	3.01 1.15	.53
Eff2	Ich bin überzeugt, gut auftreten zu können.	3.82 0.80	.67
Eff3	Ich bin mir sicher, dass ich die nötigen Fähigkeiten erwerben kann, um gut zu spielen/ singen und auftreten zu können.	4.26 0.75	.54

Selbstkonzept / Self-concept

Quelle: The murky distinction between self-concept and self-efficacy: Beware of lurking jingle-jangle fallacies. Marsh et al. (2019)

Änderungen: Der Fragebogen wurde an die Thematik Musik/ Lampenfieber angepasst und auf Deutsch übersetzt.

Auswertung: Aufaddieren der Items und durch die Anzahl der Items dividieren.

Antwortkategorien:

- 1 → stimmt gar nicht
- 2 → stimmt kaum
- 3 → stimmt teilweise
- 4 → stimmt überwiegend
- 5 → stimmt genau

Reliabilität/ reliability: Cronbach's alpha = .88

Gesamtmittelwert/ mean: 3.52

Standardabweichung/ standard deviation: 0.76

Variablenname	Inhalt	Mittelwert Standardabweichung	Item-Skala Korrelation
SC1	Ich bin ein talentierter Musiker/ Sänger oder eine talentierte Musikerin/ Sängerin.	3.75 0.92	.66
SC2	Es ist einfach für mich auf der Bühne mein Instrument zu spielen/ zu singen.	3.44 0.94	.75
SC3	Ich spiele mein Instrument/ singe auch auf der Bühne sehr gut.	3.70 0.84	.68
SC4	Es fällt mich leicht zu spielen/ zu singen und gut aufzutreten.	3.50 0.95	.78
SC5	Es ist einfach für mich ein neues Stück auf der Bühne zu spielen/ singen.	3.21 0.95	.69

Kontrolle – Gesamtskala/ Control

Reliabilität/ reliability: Cronbach's alpha = .90

Gesamtmittelwert/ mean: 3.59

Standardabweichung/ standard deviation: 0.71

Variablenname	Inhalt	Item-Skala Korrelation
Eff1	Ich bin mir sicher, dass ich auch die schwierigsten Stücke auf der Bühne spielen/ singen kann.	.56
Eff2	Ich bin überzeugt, gut auftreten zu können.	.75
Eff3	Ich bin mir sicher, dass ich die nötigen Fähigkeiten erwerben kann, um gut zu spielen/ singen und auftreten zu können.	.63
SC1	Ich bin ein talentierter Musiker/ Sänger oder eine talentierte Musikerin/ Sängerin.	.68
SC2	Es ist einfach für mich auf der Bühne mein Instrument zu spielen/ zu singen.	.75
SC3	Ich spiele mein Instrument/ singe auch auf der Bühne sehr gut.	.75
SC4	Es fällt mich leicht zu spielen/ zu singen und gut aufzutreten.	.76
SC5	Es ist einfach für mich ein neues Stück auf der Bühne zu spielen/ singen.	.65

4. Intrinsische Motivation / Intrinisc Motivation

Quelle: Pekrun, R., Götz, T., Zirngibl, A. & Jullien, S. (2002). Projekt zur Analyse der Leistungsentwicklung in Mathematik.

Änderungen: Der Fragebogen wurde an die Thematik Musik/ Lampenfieber angepasst.

Auswertung: Aufaddieren der Items und durch die Anzahl der Items dividieren.

Antwortkategorien:

1 → stimmt gar nicht

2 → stimmt kaum

3 →stimmt teilweise

4 → stimmt überwiegend

5 →stimmt genau

Reliabilität/ reliability: Cronbach's alpha = .96

Gesamtmittelwert/ mean: 3.99

Standardabweichung/ standard deviation: 0.92

Variablenname	Inhalt	Mittelwert Standardabweichung	Item-Skala Korrelation
Mot1	Es bereitet mir Freude, auf der Bühne zu stehen.	4.18 0.90	.93
Mot2	Ich stehe gerne auf der Bühne.	4.12 1.00	.93
Mot3	Es macht mir Spaß, auf der Bühne zu musizieren/singen.	4.24 0.85	.90
Mot4	Ich trete gerne auf der Bühne auf.	4.11 0.94	.87
Mot5	Es ist einer meiner Lieblingsbeschäftigungen auf der Bühne zu musizieren/ singen.	3.41 1.27	.84
Mot6	Ich freue mich bereits auf meinen nächsten Auftritt.	3.93 1.08	.84

5. Kontrollvariablen

Items der Kontrollvariablen wurden für diese Erhebung neu erstellt.

Spieljahre/ years of playing

Variablenname	Inhalt	Antwortkategorie
Years1	Seit wie vielen Jahren spielen Sie Ihr Instrument/ singen Sie?	Offenes Antwortformat
Years2	Wie viele Jahre haben Sie dafür Unterricht erhalten?	Offenes Antwortformat
Years3	Seit wie vielen Jahren treten Sie auf der Bühne auf?	Offenes Antwortformat

Years4	Wie viele Stunden üben Sie im Durchschnitt wöchentlich?	Offenes Antwortformat

Musik als Beruf/ Occupation

Variablenname	Inhalt	Antwortkategorie
Occ1	Studieren Sie grade Musik/ein Instrument oder Gesang?	1.„Ja, ich studiere momentan.“ 2.„Nein, ich habe nichts davon studiert.“ 3.„Nein, aber ich habe ein solches Studium abgeschlossen.“
Occ2	Ungefähr wie viel Prozent Ihres Einkommens verdienen Sie mit Ihrer Musik?	1 – 100 %

Anzahl der Spielenden/ performers on stage

Variablenname	Inhalt	Antwortkategorie
Nper1	Mit wie vielen weiteren Personen stehen Sie meist auf der Bühne?	Offenes Antwortformat
Nper2	Ungefähr wie viel Prozent Ihrer Auftritte sind Solos?	1 – 100 %

Durchschnittliches Publikum / Audience

Variablenname	Inhalt	Antwortkategorie
Aa1	Wie groß ist das durchschnittliche Publikum vordem Sie auftreten?	Offenes Antwortformat
Aa2	Wie viele Auftritte haben Sie im Durchschnitt jährlich?	Offenes Antwortformat

Musikstil/ Music style

Variablenname	Inhalt	Antwortkategorie
Style1	Welcher ist Ihr primärer Musikstil?	Offenes Antwortformat

Style2	Welche Instrumente spielen Sie? (Gesang zählt als Instrument)	Offenes Antwortformat
Style3	Wenn Sie mehrere Instrumente spielen, mit welchen treten Sie am häufigsten auf?	Offenes Antwortformat

Geschlecht & Alter / Gender & Age

Variablenname	Inhalt	Antwortkategorie
Sex1	Welchem Geschlecht fühlen Sie sich zugehörig?	1.„Weiblich“ 2.„Männlich“ 3.„Divers“
Age1	Wie alt sind Sie?	Offenes Antwortformat

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2.Frequency tables „Music Style“

1. Primary Music Style

Music Style	Frequency	Percent	Valid Percent	Cumulative Percent
Brass Music	3	3.488	4.225	4.225
Choir	1	1.163	1.408	5.634
Jazz	1	1.163	1.408	7.042
Western classic	46	53.488	64.789	71.831
Pop	11	12.791	15.493	87.324
Ska-Punk	1	1.163	1.408	88.732
Worship	2	2.326	2.817	91.549
Gregorian	1	1.163	1.408	92.958
Rock	2	2.326	2.817	95.775
Folk Music	1	1.163	1.408	97.183
Oratorios	1	1.163	1.408	98.592
Boogie	1	1.163	1.408	100.000
Missing	15	17.442		
Total	86	100.000		

2. Instruments played

Instrument	Frequency	Instrument	Frequency
Piano	23	Clarinet	8
Singing	35	Trombone	1
Organ	4	Flute	4
Tuba	1	Trumpet	7
Flute	5	Volin	9
Guitar	21	Horn	4
Saxophone	6	Viola	3
Percussion	4	Bass	2
Cello	9	Ukulele	1
Basson	5	Conducting	5
Harmonica	1		

3. Primary Instrument

<i>Instrument</i>	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Cello	3	3.488	5.000	5.000
Chor	1	1.163	1.667	6.667
Fagott	3	3.488	5.000	11.667
Geige	1	1.163	1.667	13.333
Gesang	23	26.744	38.333	51.667
Gitarre	5	5.814	8.333	60.000
Horn	1	1.163	1.667	61.667
Keyboard	1	1.163	1.667	63.333
Klarinette	2	2.326	3.333	66.667
Klavier	5	5.814	8.333	75.000
Orgel	1	1.163	1.667	76.667
Pauken	1	1.163	1.667	78.333
Querflöte	2	2.326	3.333	81.667
Saxofon	1	1.163	1.667	83.333
Schlagzeug	2	2.326	3.333	86.667
Trompete	3	3.488	5.000	91.667
Tuba	1	1.163	1.667	93.333
Waldhorn	1	1.163	1.667	95.000
Dirigieren	1	1.163	1.667	96.667
Violine	1	1.163	1.667	98.333
Bass	1	1.163	1.667	100.000
Missing	26	30.233		
Total	86	100.000		

3. Correlation Matrix with all variables (bold: significant correlation; * $p < .05$, ** $p < .001$)

Variable		1	2	3	4	5	6	7	8	9	10	11	12	13
1. Years of playing	Pearson's r	-												
	p-value	-												
2. Years of lessons	Pearson's r	.161	-											
	p-value	.181	-											
3. Years on stage	Pearson's r	.881	.195	-										
	p-value	<.001**	.103	-										
4. Average weekly practice hours	Pearson's r	.125	.375	.195	-									
	p-value	.297	.001**	.103	-									
5. Studied (1) vs. non studied (2)	Pearson's r	-.090	-.054	-.153	-.063	-								
	p-value	.474	.667	.224	.621	-								
6. Studying (1) vs. studied (2)	Pearson's r	.279	-.126	.238	-.187	-	-							
	p-value	.158	.523	.233	.351	-	-							
7. Income with music (%)	Pearson's r	.023	.473	.090	.486	-.148	-.303	-						
	p-value	.853	<.001**	.458	<.001**	.246	.141	-						
8. Number of players on stage	Pearson's r	.137	-.304	.069	-.177	.019	.138	-.216	-					
	p-value	.278	.015*	.586	.162	.886	.540	.084	-					
9. Amount of solos (%)	Pearson's r	-.177	.189	-.196	.192	-.052	-.102	.010	-.410	-				
	p-value	.140	.117	.099	.112	.682	.620	.936	<.001**	-				
10. Average audience size	Pearson's r	.204	-.168	.237	.026	-.017	-.152	.078	.464	-.260	-			
	p-value	.093	.167	.048*	.832	.894	.449	.525	<.001**	.031*	-			
11. Average yearly number of performances	Pearson's r	.054	.307	.127	.215	-.136	-.357	.287	-.180	-.067	.063	-		
	p-value	.654	.010*	.288	.074	.283	.073	.016*	.147	.574	.605	-		
12. Classic (1) vs. non. classic (0)	Pearson's r	.308	.277	.348	.247	-.049	-.115	.239	-.030	.040	.062	.111	-	
	p-value	.011*	.023*	.004*	.042*	.703	.569	.052	.818	.746	.621	.368	-	

Variable		1	2	3	4	5	6	7	8	9	10	11	12	13
13.Number of instruments played	Pearson's r	.016	.179	.007	-.099	-.010	.159	-.087	-.124	.143	-.154	.138	-.167	-
	p-value	.896	.130	.950	.407	.939	.419	.466	.318	.226	.200	.244	.166	-
14.Singing (1) vs. Instrument (0)	Pearson's r	-.129	-.044	-.183	-.419	.006	-.134	-.275	.130	.043	.055	-.196	-.159	.149
	p-value	.332	.747	.165	.001**	.965	.574	.040*	.350	.747	.689	.136	.245	.257
15.Gender	Pearson's r	.291	-.081	.206	.247	.141	.044	-.156	.011	-.072	-.148	.112	-.029	-.007
	p-value	.012*	.497	.079	.035*	.254	.823	.190	.929	.543	.218	.346	.813	.951
16.Age	Pearson's r	.755	-.115	.750	-.030	-.089	.346	-.126	.201	-.379	.199	-.039	.289	-.105
	p-value	<.001**	.333	<.001**	.800	.472	.071	.291	.104	<.001**	.096	.740	.015*	.366
17.Intrinsic motivation	Pearson's r	.112	-.104	.089	.140	.055	-.240	-.046	.007	-.120	.193	.222	-.453	.142
	p-value	.342	.381	.451	.238	.646	.219	.699	.956	.314	.108	.059	<.001**	.220
18.Self-efficacy	Pearson's r	.032	.193	.031	.376	-.016	-.498	.308	-.040	-.160	.210	.260	-.217	-8.235×10^{-4}
	p-value	.786	.102	.791	.001**	.897	.007*	.008*	.751	.176	.078	.026*	.072	.994
19.Self-concept	Pearson's r	.173	.192	.185	.305	-.094	-.364	.262	-.027	.057	.242	.314	-.150	.095
	p-value	.144	.106	.118	.009*	.438	.062	.028*	.830	.636	.044*	.007*	.219	.417
20.Control	Pearson's r	.128	.202	.143	.356	-.076	-.480	.298	-.030	-.031	.250	.314	-.185	.063
	p-value	.282	.089	.228	.002*	.530	.011*	.012*	.813	.794	.037*	.007*	.128	.591
21.Intrinisc value	Pearson's r	.062	-.123	.096	.148	.056	-.213	-.049	.064	-.137	.176	.202	-.405	.121
	p-value	.601	.299	.417	.212	.631	.268	.681	.608	.247	.143	.086	<.001**	.299
22.Importance of achievement	Pearson's r	.010	.076	-.083	.211	.157	-.286	.149	-.064	-.025	.186	.145	-.305	.078
	p-value	.936	.524	.485	.075	.181	.141	.210	.605	.835	.120	.226	.011*	.504
23.Personal importance	Pearson's r	.075	.051	.006	.095	-.088	-.276	.071	-.208	.009	-.150	.149	-.202	-.031
	p-value	.523	.667	.961	.422	.451	.147	.553	.092	.937	.213	.208	.093	.791
24.Value	Pearson's r	.060	-.013	.014	.201	.066	-.326	.064	-.058	-.079	.127	.214	-.400	.087
	p-value	.613	.914	.907	.090	.576	.090	.595	.641	.511	.292	.070	<.001**	.458
25.Stage fright	Pearson's r	-.301	-.029	-.373	-.136	.200	.091	-.075	-.132	.185	-.229	-.247	1.717×10^{-17}	.066
	p-value	.009*	.807	.001**	.250	.085	.637	.534	.287	.117	.054	.035*	1.000	.574

Variable		14	15	16	17	18	19	20	21	22	23	24	25
14.Singing (1) vs. Instrument (0)	Pearson's r	-											
	p-value	-											
15.Gender	Pearson's r	-.389	-										
	p-value	.002*	-										
16.Age	Pearson's r	-.126	.311	-									
	p-value	.337	.006*	-									
17.Intrinsic motivation	Pearson's r	.054	.214	.081	-								
	p-value	.682	.064	.489	-								
18.Self-efficacy	Pearson's r	-.149	.191	-.070	.650	-							
	p-value	.256	.099	.545	<.001**	-							
19.Self-concept	Pearson's r	-.130	.174	.006	.555	.738	-						
	p-value	.323	.136	.957	<.001**	<.001**	-						
20.Control	Pearson's r	-.147	.190	-.021	.629	.891	.964	-					
	p-value	.262	.103	.856	<.001**	<.001**	<.001**	-					
21.Intrinisc value	Pearson's r	.023	.166	.106	.913	.606	.550	.611	-				
	p-value	.861	.151	.364	<.001**	<.001**	<.001**	<.001**	-				
22.Importance of achievement	Pearson's r	.076	-.052	-.122	.438	.417	.273	.345	.353	-			
	p-value	.567	.660	.298	<.001**	<.001**	.014*	.002*	<.001**	-			
23.Personal importance	Pearson's r	.035	.250	.097	.415	.256	.159	.203	.391	.474	-		
	p-value	.788	.030*	.405	<.001**	.020*	.158	.069	<.001**	<.001**	-		
24.Value	Pearson's r	.061	.141	.030	.807	.585	.463	.540	.803	.779	.737	-	
	p-value	.654	.227	.799	<.001**	<.001**	<.001**	<.001**	<.001**	<.001**	<.001**	-	
25.Stage fright	Pearson's r	.154	-.203	-.335	-.544	-.439	-.545	-.539	-.498	-.027	-.194	-.337	-
	p-value	.239	.078	.003*	<.001**	<.001**	<.001**	<.001**	<.001**	.810	.076	.002*	-