

Exploring the Relationship: Gender Perceptions and Motivation in Pursuing Professional Piano Careers

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ABSTRACT

The Self-Determination Theory creates a framework for the study of human motivation and personality in which the social environment affects one's motivation and psychological needs. Intrinsic and identified are the most autonomous forms of motivation for the pursuit of a professional career, which requires great perseverance and practice. These traits typically are intertwined with personal identity, sense of self, and intrinsic motivation. However, this may be hindered by gender perceptions. Currently, the amount of professional female musicians is decreasing in numerous countries. Gender perceptions relating to piano specifically and their relation to motivation is unclear at this point. In this study, the effect of gender perceptions (in the form of gender role self-concept and intrinsic value in music) of female pianists regarding competence on six different forms of motivations, especially identified motivation, as per SDT, will be explored. Participants ($N=26$) completed a survey with two validated scales; bivariate correlation and linear regression analysis tests were administered. Between “equal gender perceptions” (being uninfluenced by either gender stereotype) and identified regulation, female participants were found to have strong positive correlations while male were found to have small to medium. Regarding “feminine gender perceptions,” female and male participants were found to have strong large positive correlations. Regarding “masculine gender perceptions,” there were no responses from female participants and male participants were found to have small positive to medium negative correlations. The findings reveal that competence is a large predictor of intrinsic motivation and indicates that gender perceptions could be an obstacle.

1. LITERATURE REVIEW

The explicit choice of pursuing a professional career requires great self-determination as musicians tend to initiate their education early in life as the intensive art and “performance levels” requires great perseverance and practice. As such, these traits are deeply “intertwined” with personal identity, sense of self, and intrinsic motivation. Female musicians are present at the educational level but not much so at the professional level (Valenzuela, et al., 2020). This gender inequity¹ is involved with musicians' inherent motivation to pursue a professional career, often affected by the social environment, is defined as the immediate surroundings influenced by society and humans with their unique characteristics and skills in which social relationships and communities grow (Aube, 2011; Gurieva, et al., 2022; Valenzuela, et al., 2020). Society often makes up the social environment, promoting gender perceptions, defined as manners in which society labels characteristics as either feminine or masculine (Nonte, et al., 2021).

¹ This gender equality, a movement to be analyzed in this study, is presently being pushed for in numerous countries such as Scandinavia (Valenzuela, et al., 2020).

1.1. Self-Determination Theory

To understand more regarding musicians’ explicit choice-making in pursuing a music career, the **Self-Determination Theory (SDT)** may be used as a framework to understand this personal and professional commitment . Created by psychologists Deci & Ryan (2002), SDT is one of the most widely studied theoretical constructs for the study of human motivation and personality (SDT). It frames how the social environment can affect universal psychological needs (PNS), which have been argued to be the most high quality forms of motivation for engagement in activities. PNS are defined by three terms: **autonomy**: experience of volition and willingness, **competence**: experience of effectiveness and mastery, and **relatedness** (Deci & Ryan, 2002). The theory consists of a self-determination continuum with behavior ranging from autonomy (intrinsic motivation) to medium levels (extrinsic regulation): integrated, identified, introverted, external to low levels (amotivation).

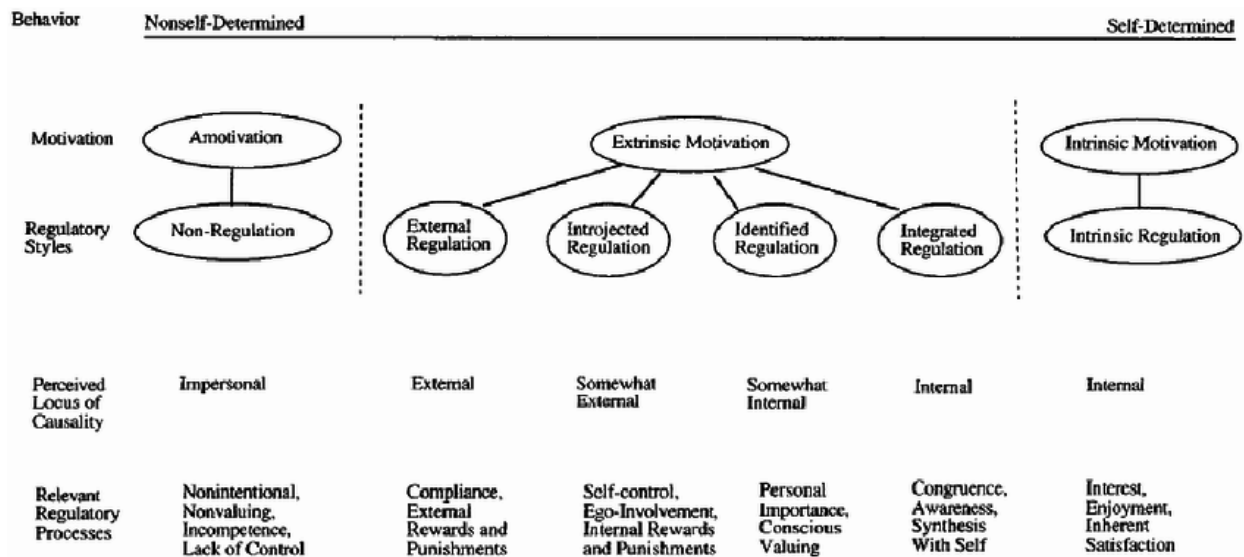


Figure 1, Self-Determination Continuum (Ryan & Deci, 2000; Vallerand, et al., 1992).

This continuum states that intrinsic and extrinsic motivations are interconnected; as necessary context for her evaluation of the Global Motivation Scale that falls along the SDT continuum, Zycinska (2021) explains that when individuals feel self-determined in their lives, they may initiate behaviors through choice and act in accordance with their own values (Deci & Ryan, 2002; Nonte, et al., 2021; Zycinska & Januszek, 2021). Self-determination corresponds with the motivation in one’s life. In the same manner, in evaluations and literature reviews of gender perceptions ranging from popular music to music in general, numerous sources state that gender perceptions could be internalized by an individual, thus affecting their latter behavior and outlook on life (Faupel & Schmutz, 2012; Green, 1994; Koskoff, 1991; Legg, 2010).

Each motivation is defined below (in order, from top of the figure, non self-determined, to the bottom, self-determined):

Amotivation	Present when the person does not have any motivation to engage in an activity
Extrinsic Motivation	An umbrella term. Present when an individual performs an activity with the aim of obtaining a separable result
External Regulation	Present when an individual participates in activity due to their being stimulated externally by rewards
Introjected Regulation	Behavior controlled internally but borrowed from the external environment
Identified Regulation	Behavior perceived as being chosen by the individual themselves
Integrated Regulation	Behavior adjusted to other activities and aimed at life resulting from values
Intrinsic Motivation/Regulation²	Present when an individual performs an activity merely for the pleasure of experiencing it (without expecting extrinsic rewards or avoiding punishments) (Deci & Ryan, 2002).

Figure 2

If self-developed enough, all forms of motivation can lead to intrinsic motivation, the most preferred form of self-determination that enables musicians to pursue long-term careers as evidenced by Deci & Ryan (2002) through analyses of future outcomes in performance and psychological health which focus on this association (Fung, 2018; Hendricks, 2013; Valenzuela, et al., 2020; SDT). However, the coexistence of intrinsic with extrinsic motives, such as identified regulation (personal goals), may be experienced as troublesome, potentially leading to amotivation in the transition into professional education (for both genders). Identified regulation, considered high-quality motivation, allows people to regulate their behavior according to intrinsic goals. Together, identified regulation and intrinsic motivation create a higher order composite known as autonomous motivation, of which intrinsic motivation is the most common form (Deci & Ryan, 2002; Ryan & Deci, 2000). It must be noted that it could be beneficial for musicians or individuals in general to have both intrinsic and identified motivation to create a more autonomous nature, spurring their careers.

1.2. Expectancy-Value Theory

In international music educational research, **Expectancy-Value (EV)**, connecting SDT and gender perceptions, is an established theory positing that students must be motivated to participate in an activity, believing they can successfully master it in the future (Nonte, et al., 2021; Wigfield & Eccles, 2000). Students immersing themselves in music corresponds with the choice-making to take a class, which can help define the choice-making of explicitly choosing to pursue a musical career in the future. In EV Theory, from her experiment of two psychological fitted models on students, Bernabe-Valero contends that competence is associated with intrinsic value of an activity (Bernabe-Valero, et al., 2019). However, gender perceptions may affect this choice-making, which will be described in section 1.21.

² Note that the terms “motivation” and “regulation” are interchangeable.

1.21. Gender Role Self-Concept

As a part of the EV theory, **gender role self-concept**³ can be defined as gender stereotypes and roles that an individual may align themselves with (Nonte, et al., 2021). Within gender role self-concept, there are various gender stereotypes in music: emotionality and domestic roles. Through an examination of terminology in gendered musical literature and composition, Dr. Sergeant and Hominides find that female musicians are often categorized as less competent, “irrational,” “hysterical,” and “sentimental.” They often are not recognized for their abilities or accomplishments in music compared to men, who often appear “serious, intelligent, stoic” and more competent in ability (Sergeant & Himonides, 2016, 2022). Through testing of gender attitude measures and surveys of workgroup gender compositions, women, often labeled as “nurturing,” are “disproportionately burdened” with domestic duties that may restrict their employment opportunities, reproductive autonomy, and health-care access. This may occur because their careers are often not taken seriously by society, causing them to be granted fewer expectations and support in education and employment relative to boys. Female musicians will also be burdened with domestic roles as they begin to be underestimated for their abilities (Jain, et al., 2022; Matta & Folkes, 2013; Redell, 2016, Ting, 2020). In the case women pursue their career, in their literature review, Lundberg and Stearns find that women may be held to higher standards than men of equal ability and required to create higher-quality work to achieve equal levels of success, decreasing feelings of competence (Lundberg & Stearns, 2019). By contrast, as discovered in interviews and literature reviews, gender norms in men revolve around employment, allowing them to dominate numerous musical fields such as popular, orchestral, percussion, piano, and even fields such as corporate management leadership roles at junior and senior levels at times (Sergeant & Himonides, 2022; Aube, 2011). In the long run, this may exacerbate societal perceptions of female musicians, demotivating them from pursuing a professional career.

As the act of choice-making explicitly corresponds directly with **identified regulation** and as much of the gender perceptions of female pianists revolve around doubt about their **competence**, both will be the focus of this study (Deci & Ryan, 2002). Competence was found to be most important towards avoiding dysregulation tendencies in pursuing a higher career as it was most associated with intrinsic motivation and positive affect, which reflects the frequency and intensity of pleasant feelings in life (Valenzuela, et al., 2020). Those who have a greater self-concept in femininity tend to feel more competent in music; children that believe they play an extrinsic role in decision-making (ie. career choices) feel more competent (Wigfield & Eccles, 2002). This suggests that there are certain ways and identifications musicians can obtain to gain competence, which is crucial towards a future pursuit of a professional career.

In the current body of literature, it is crucial to determine how gender perceptions and competence affect and are correlated with the six different motivations of pianists. While identified regulation will be the main focus, all motivations will be evaluated to promote further understanding as per the SDT continuum. There are two hypotheses (Figure 3):

1	Pianists (of both genders) that identify with equal self-concept may feel more competent and have increased identified regulation.
2	A female pianist that identifies with the self-concept of femininity may feel more incompetent and have decreased identified regulation.

Figure 3

Through these hypotheses, this study will determine what the gender variances are with regard to the correlation between gender perception and the six forms of motivation in piano. In a path analysis on fifth graders to understand gender role self-concept and intrinsic value in music classes, Nonte et al (2021) found that gender-specific

³ Gender role identity and biological sex are not necessarily identical.

differences have become an adequate construct to describe differences in attitudes and actions in stereotyped domains such as music (Heyder & Kessels, 2013; Nonte, et al., 2021; Wolter & Hannover, 2016). While numerous studies, such as Daley & Duda (2006), Johnson, et al. (2011), and Su, et al. (2015) have reported gender differences in levels of motivational regulations, other studies, such as Lutz, et al. (2003) and Shen, et al. (2008) have reported no gender differences (Daley & Duda, 2006; Johnson, et al., 2011; Lutz, et al., 2003; Shen, et al., 2008; Su, et al., 2015). It will become crucial to take note of the gender variance in this study (Zamarripa, et al., 2018). Dr. Rafael Valenzuela Garcia's study on gender-differences in the career choices and motivation of conservatoire students will be mirrored due to shared similarities in which Dr. Garcia finds the correlation between PNS and motivation in various conservatoire musicians to pursue a professional career and discovers notable gender variances in reported scores. Women have lower autonomy levels due to a higher tendency towards strict self-regulated learning and to conform to societal norms; women have a greater need for autonomy than men, leading to amotivation in the transition from educational to professional music fields (Valenzuela, et al., 2020).

Currently, Dr. Garcia establishes that amotivation, via the Self-Determination Theory, leads to discontinuation from the professional field. Aube (2011) warrants this decrease from 17% of female musicians per studio in education to 6% in the professional field (Aube, 2011). Although it has been established that gender perceptions and motivations are related to competence respectively, gender perceptions in piano and their relation to motivation is unclear (Cramer, et al., 2002; Doolittle, 2018; Duchon, 2012; Wigler, 1999). To explore this phenomenon in this study, the effect of gendered perceptions of female pianists will be examined and how that relates to competence and motivation.

2. METHODS

2.1. Participants

An experimental group consisting of twenty-six pianists ($N=26$) aged eighteen and above who were asked to participate in the survey (10-15 minutes). This group was chosen as skilled pianists are often defined as being committed to piano, allowing them to accurately answer survey questions. Eight pianists were female, seventeen pianists were male, and one (Response 22) was unlabeled (see Figure 4). Responses from all other genders besides male and female were not evaluated as they were beyond the scope of this study. Snowball sampling was conducted as the participants were recruited by personal contacts of the researcher which included pianists and other mutual contacts. Participants were contacted through SMS texting, email, and social medias such as Instagram and Discord. The messages contained a survey created via Google Forms composed of 26 questions in total. A consent form (see Figure 5) and two questionnaires⁴ were consulted to create the survey. This method was the most convenient and reliable method as they asked for specific opinions from skilled pianists in a short amount of time.

⁴ the Gender Perceptions Seven-Point Likert Scale and Sports Motivation Scale (SMS-II) from the Self-Determination Theory (will be mentioned later)

what gender do you identify as?

26 responses

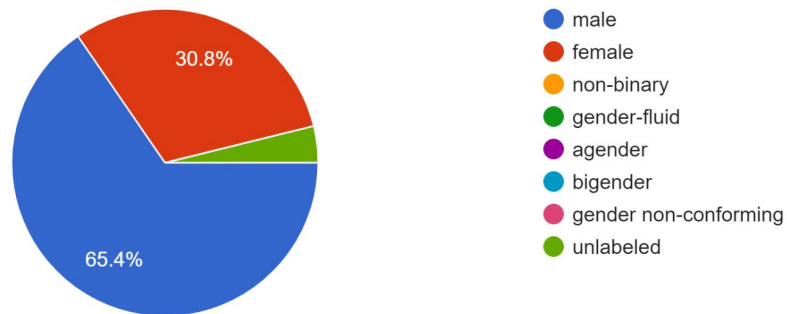


Figure 4, Pie Chart of Participants' Various Genders

2.2. Procedure

Ethical requirements were applied to the current study, meaning that no other additional approval was required. All questions of the survey were optional besides two questions asking for the participants' consent to partake in the study⁵ (see Figure 5). No personal information that could potentially identify an individual would be provided or asked for in the study.⁶

Please enter your initials to confirm that you have read the terms above and consent to being a part of the study. *

Short answer text

Please select "yes" to confirm that you are 1) over the age of 18 2) a piano student at a professional music college. If you do not fulfill this criteria, please select "no." *

Yes

No

Figure 5, Consent Form

⁵ Which ensured that the participants were at least 18 years of age and pianists

⁶ Initials would be only collected to confirm that the individual assented to being a part of the study.

2.3. Measures

Gender Perceptions Seven-Point Likert Scale

To determine the gender perceptions of women in relation to their piano competency, a 7-point Likert Scale was created surrounding gender perceptions relating to the social environment as there exists no present scale. As discovered in a series of usability tests, the 7-point scale, crucial for revealing personal insight, was preferred over other scales such as the 5-point scale, which was more likely to elicit interpolations and irregularities (Finstad, 2010).

Each point of the seven-point likert scale was coded the same as the Sports Motivation Scale (SMS-II) to reduce confusion and maintain consistency for the participants (See Figure 6).

Does not correspond at all 1	Corresponds very little 2	Corresponds a little 3	Corresponds moderately 4	Corresponds quite a bit 5	Corresponds quite a lot 6	Corresponds completely 7
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Figure 6, Seven-Point Likert Scale for Gender Perceptions & SMS.

The questionnaire included three questions total, corresponding to gender role self-concept (gender stereotypes) in regards to competence. The first two questions, consisting of the words “feminine” and “masculine,” were uniquely created while the third was derived from Rost & Sparfeldt 2002’s eight-item scale on self-concept (Rost & Sparfeldt, 2002). These questions best represented my study as it could be connected with my literature review. The values of one to seven on the Likert corresponded to the PNS of incompetence to competence (respectively). Questions for each item can be viewed (Figure 7).

Gender Perceptions 7-Point Likert Scale (3 questions)

Does not correspond at all 1	Corresponds very little 2	Corresponds a little 3	Corresponds moderately 4	Corresponds quite a bit 5	Corresponds quite a lot 6	Corresponds completely 7	
	1	2	3	4	5	6	7
In piano, the characteristic “feminine” applies to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In piano, the characteristic “masculine” applies to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In piano, I am not among the good students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure 7, Gender Perceptions 7-Point Likert Scale.

To determine the validity of the questionnaire, Cronbach’s Alpha (α) was measured to ensure internal consistency was present within the individual questions to create the que (Raharjanti, et al., 2022; Tavakol & Dennick, 2011). $\alpha = 0.617$, meaning that the Gender Perceptions scale was valid for usage in this study (see Figure 8).

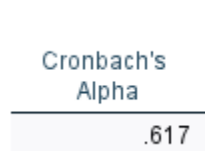


Figure 8, Gender Perceptions Scale Cronbach’s Alpha

2.4. Intrinsic Motivation

Sports Motivation Scale

The Sports Motivation Scale Revised (SMS-II), derived from SDT concepts, will be utilized to measure intrinsic motivation in consistency with Valenzuela et al’s study, which also used SMS (Deci & Ryan, 2002; Pelletier, et al., 2013; Valenzuela, et al., 2020). It includes six subscales with four items and three questions each, respectively, measuring all six forms of motivation. As the questionnaire was originally created to evaluate motivation in sports, the word “sports” was adjusted to “piano” to align with the purposes of my study. To improve legibility in an attempt to reduce confusion for the participants, the questions were modified⁷ (SDT).

Sample questions for each item include the following:

Amotivation	“I used to have good reasons for doing piano, but now I am asking myself if I should continue”
External Regulation	“I practice piano because people I care about would be upset with me if I didn’t”
Introjected Regulation	“I practice piano because I would feel bad about myself if I did not take the time to do it”
Identified Regulation	“I practice piano because I found it is a good way to develop aspects of myself that I value”

⁷ The following modifications were made: for all eighteen questions except the first, second, fourth, tenth, thirteenth, and fourteenth, the phrase “I practice piano” was added to the beginning of the question. The first question was originally written as “Because I would feel bad about myself if I did not take the time to do it.” The word “do” was changed to “practice.” The second question was originally written as “I used to have good reasons for doing sports, but now I am asking myself if I should continue.” The word “doing” was changed to “playing.” The fourth question was originally written as “Because practicing sports reflects the essence of whom I am.” The word “whom” was changed to “who.” The tenth question was originally written as “I don’t know anymore; I have the impression that I am incapable of succeeding in this sport.” The word “this sport” was changed to “the professional piano field” to better fit the context of my study. The phrase “regarding practicing the piano” was also added to the beginning of question 10 to enhance legibility. The thirteenth question was originally written as “It is not clear to me anymore; I don’t think my place is in sport.”

Integrated Regulation	“I practice piano because practicing piano reflects the essence of whom I am”
Intrinsic Motivation/Regulation	“I practice piano because it is very interesting to learn how I can improve”

Figure 9 (SDT).

α was found to be 0.868, meaning that SMS is good in terms of internal consistency (see Figure 10). It is valid for usage in this study.

Cronbach's Alpha
.868

Figure 10, SMS Cronbach's Alpha

2.5. Analyses

Participants were separated into three groups: equal, feminine, and masculine gender role self-concept based on answers to the first two questions. This was done as a participant's gender role self-concept encompasses various gender stereotypes as a whole, allowing it to be utilized as a general overview regarding correlation in this study. The equal group consists of participants that answered with the same numerical value for both questions who were considered to not identify with either gender. These three groups each were then split by gender into two groups: male and female.

2.5.1. Linear Regression Equation & Scatter Plots

For all subgroups consisting of correlations between gender perceptions and identified regulation specifically (as it is the focus of this study), linear regressions were performed to determine the statistical significance between variables via a mathematical linear equation. This would determine the construct validity of the study as it finds predictions in the data and acts as scientific justification for why this study has been conducted.

2.5.2. Bivariate Correlation

Three groups of gender role self-concept were bivariate correlated with the 6 forms of motivation via SPSS. This method, promoting accuracy, was preferred over correlating gender role self-concept with intrinsic motivation as a whole, which would create inaccurate results. Bivariate correlation was used to determine Pearson's Correlation Coefficient (r) to evaluate the direction and strength of a complex phenomenon's multiple variables at an interval scale.

IBM SPSS Statistics for Windows 10 (Version 29.0) facilitated this methodology. This program was preferred to other options to maintain consistency with Valenzuela et al's study. SPSS, found to be efficient and accurate, specialized in providing data analysis for bivariate statistics and survey data. Maintaining accuracy, values from the Relative Autonomy Index from SDT were added to the "values" section in SPSS to add weight to the regulations and ensure variables assumed their respective positions on the SDT continuum (Howard, et al., 2020).

External Motivation	-2
Introjected Motivation	-1
Identified Motivation	+1
Intrinsic Motivation	+2

Figure 11, Relative Autonomy Index Values

2.6. Limitations

There are numerous limitations to the data collection in this study that could be altered in the future. Snowball sampling and small sample size of 26 participants causes the sample size to have limited experiences and opinions. The representativeness to society is not guaranteed due to the fact that there is not a plethora of individuals to help provide a richness and variety of opinions. Pianists of other genders besides male and female such as unlabeled and gender-fluid were not evaluated in this study. The study group of equal gender role self-concept in this study may be an example of data from gender non-conforming individuals. Studying this further could yield valuable results to the larger field and expand inclusivity in the piano industry because it provides further insight into the effect of gender perceptions on motivation outside of the typical genders mentioned (male and female) (Nonte, et al., 2021).

The selection of questions derived from Rost and Sparfeldt (2002), an external questionnaire, may not represent the full intent of the original questionnaire, meaning that it may not be completely representative or reliable in extending previous studies. Currently, conclusions may only be made based on how these subscales fit into the context of this study on an interval scale (Rost & Sparfeldt, 2002).

There exists a subjective element in the interpretation of questions as various participants could interpret the meaning of the terms in the questions (ie. masculine and feminine) differently, creating variation in participants' responses. This study generalizes their responses to favor the definition of the terms as per my study, meaning that the results may not be completely accurate. Future research should aim to focus on participants' responses in a qualitative manner or a case-by-case basis.

The bivariate correlation methodology may be limited in its quality. The notion that its dimensionality assumption of the items only belongs to one factor may lead to a potential inflation and the creation of averaged scores in the magnitude of the correlation between variables. The bivariate correlation relies on the assumption that all variables are measured without measurement errors, which is unlikely in studies given unforeseen variables. As noted in an experimental comparison of various statistical correlational methods, such issues have an "unavoidable impact" on the quality of the results of correlation (Shao, et al., 2022).

The linear regression equation with scatter plots may be limited in its quality as it restrains itself to linear relationships, takes the mean of both independent and dependent variables, and is sensitive to outliers. This means that the data may be inaccurate and not representative of the true population. Outliers must be prioritized and checked over in this study (Flom, 2018). Findings should be interpreted with caution.

3. RESULTS

3.1. Associations Between Study Variables

I. Women - Equal Self-Concept - Two Responses ($N=2$)

Based on Cohen's Guidelines for Evaluating Strength of Association, Bivariate Pearson r Correlations revealed (Table 1) a strong positive correlation^{**8} between equal self-concept and identified regulation, meaning that an [equal self-concept](#) may foster identified regulation. However, self-concept demonstrated a strong negative correlation with all other motivations: introjected, amotivation, intrinsic, integrated, external, meaning that it hinders such. The main outlier was Question 10 in SMS coding for amotivation that reported a strong positive correlation (Cohen, 1988). The hypothesis has failed to be rejected.

	Introjected	Amotivation	Intrinsic	Question 10 (amotivation)
Equal Self-Concept	-1.0** (x3)	-1.0** (x2)	-1.0** (x3)	1.0**
	External	Identified	Integrated	
Equal Self-concept	-1.0** (x3)	1.0** (x3)	-1.0** (x3)	

Table 1

Note: the frequencies of the same r value is denoted in parentheses above.

II. Men - Equal Self-Concept - Nine Responses ($N=9$)

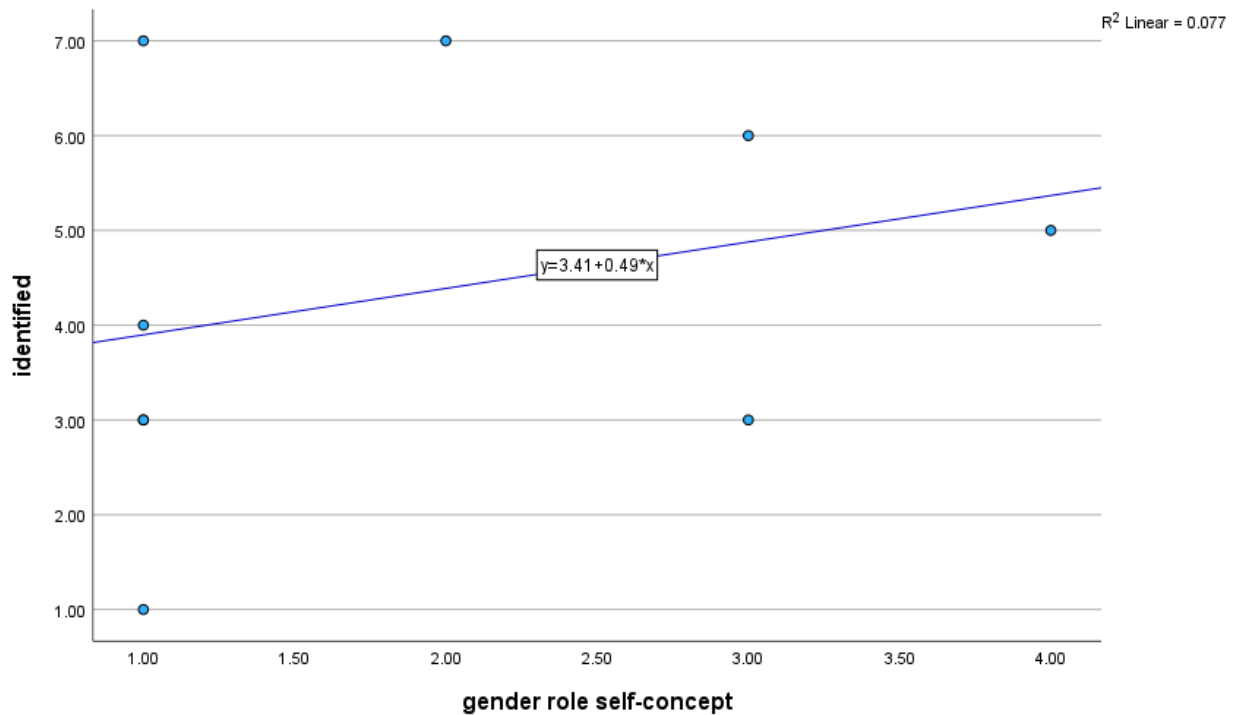
Bivariate Pearson Correlations (Table 2) revealed small to medium positive correlation between having an [equal gender role self-concept](#) and identified regulation, all extrinsic motivation: external, introjected, intrinsic, integrated, and a positive strong correlation with amotivation. As anticipated, this means that an equal self-concept may foster all forms of motivation, even amotivation, for men. The hypothesis has failed to be rejected.

⁸ ** means that the correlation is significant at the 0.01 level (2-tailed) (SPSS).

	Introjected	Amotivation	Intrinsic	Integrated
Equal Self-concept	0.049	0.657	0.115	0.069
	0.423	0.904**	0.140	0.236
	0.321	0.819**	0.115	0.215
	External	Identified		
Equal Self-concept	0.235	0.071		
	0.196	0.458		
	0.455	0.277		

Table 2

Linear regression plots revealed a small positive line of best fit of $y = 0.49x + 3.41$, r squared coefficient of 0.07, and slope of 0.49*, revealing a small relationship between men with an equal self-concept and identified regulation (Graph 1).



Graph 1

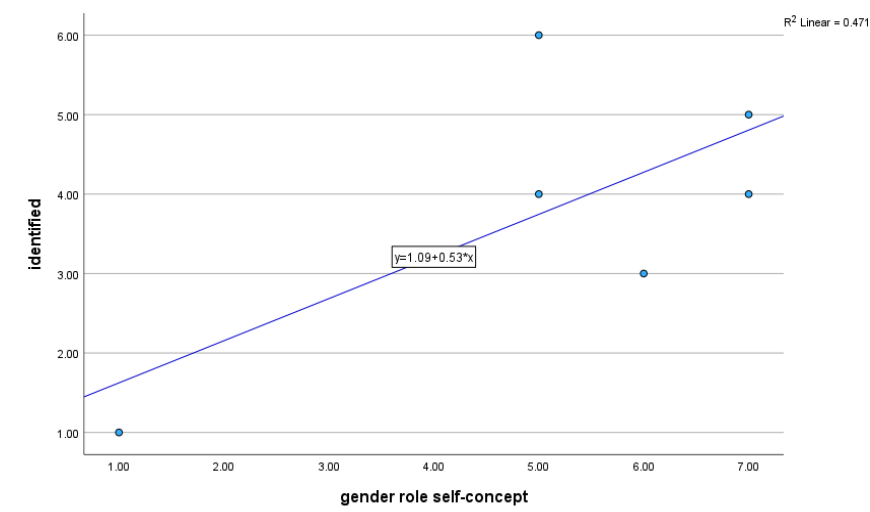
III. Women - Feminine Self-Concept - Six Responses (N=6)

As anticipated, Bivariate Pearson Correlations (Table 3) revealed large positive correlations between self-concept in femininity and identified and introjected regulation, suggesting that a feminine self-concept encourages these two forms of intrinsic motivation. However, outliers included Question 6 (identified), which had a small positive correlation, and Question 16 (introjected), which had a strong negative correlation. The data revealed a medium to large positive correlation with integrated and external, small positive to large negative correlations with intrinsic and amotivation, suggesting that there could be a variation regarding whether these forms of motivations are encouraged or not; however, the majority of them are generally encouraged by a feminine self-concept in women. The hypothesis has failed to be rejected.

	Introjected	Amotivation	Intrinsic	Integrated
Feminine Self-Concept	0.551	0.171	-0.547	0.697
	0.775	-0.172	-0.165	0.718
		-0.738	-0.450	0.472
	External	Identified	Question 6 (identified)	Question 16 (introjected)
Feminine Self-concept	0.356	0.761	0.171	-0.486
	0.436	0.686		
	0.304			

Table 3

Linear regression plots revealed a medium positive line of best fit of $y = 0.53x + 1.09$, r squared coefficient of 0.471, and slope of 0.53, revealing a medium relationship between women with feminine self-concept and identified regulation (Graph 2).



Graph 2

IV. Male - Feminine Self-Concept - Two Responses (N=2)

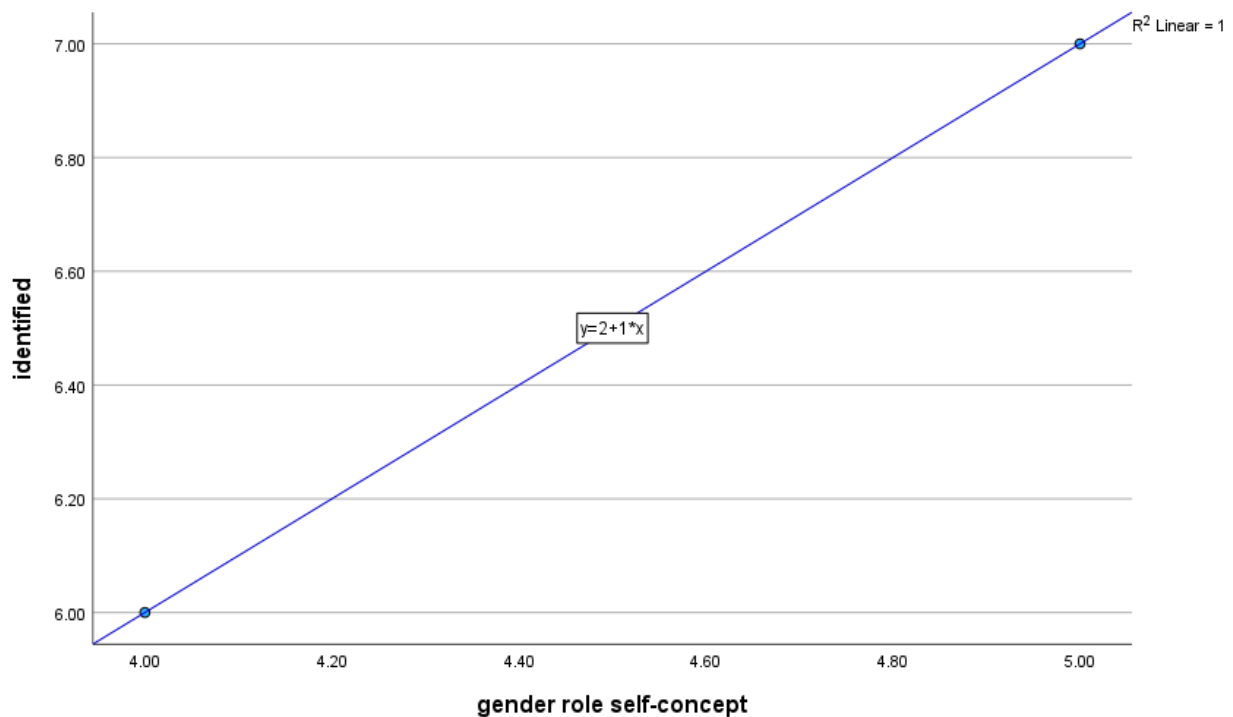
Bivariate correlations revealed a strong large positive correlation between gender role self-concept and identified, introjected, integrated, and intrinsic motivation, suggesting that a feminine self-concept fosters forms of intrinsic motivation. However, the main outlier is question nine (intrinsic) in which a strong large negative correlation was revealed. The data also revealed a strong large negative correlation with amotivation and external regulation, revealing that extrinsic forms of motivation are hindered. This may suggest that a feminine self-concept for men fosters a more autonomous self-determination and mindset in pursuing a professional career. An outlier was question ten (amotivation) and question eight (external) in which a strong large positive correlation was found.

	Introjected	Amotivation	Intrinsic	Integrated
Feminine Self-Concept	-1.0** (x3)	-1.0** (x2)	1.0** (x3)	1.0** (x3)
	External	Identified	Question 8 (external)	Question 10 (amotivation)
Feminine Self-concept	-1.0** (x2)	1.0** (x3)	1.0**	1.0**

Table 4

Note: the frequencies of the same r value is denoted in parentheses above.

Linear regression plots revealed a strong positive line of best fit of $y = 1 \cdot x + 2$, r squared coefficient of 1, and slope of 1*, revealing a strong relationship between men with feminine self-concept and identified regulation (Graph 3).



Graph 3

V. Women - Masculine Self-Concept - Zero Responses (N=0)

There were no responses due to the lack of responses in the questionnaire.

VI. Men - Masculine Self-Concept - Six Responses (N=6)

Bivariate Pearson Correlations (Figure 4) revealed a small positive to medium negative correlation between gender role self-concept and identified regulation. The data revealed a medium to large strong negative correlation with introjected and a medium to large positive correlation with amotivation. Against anticipations, the data also revealed no correlation with intrinsic regulation. The outliers were Question two (amotivation) which revealed a small negative correlation and Question nine (intrinsic) which found a medium positive correlation. The data revealed a small negative correlation with integrated and a small to large negative correlation with external.

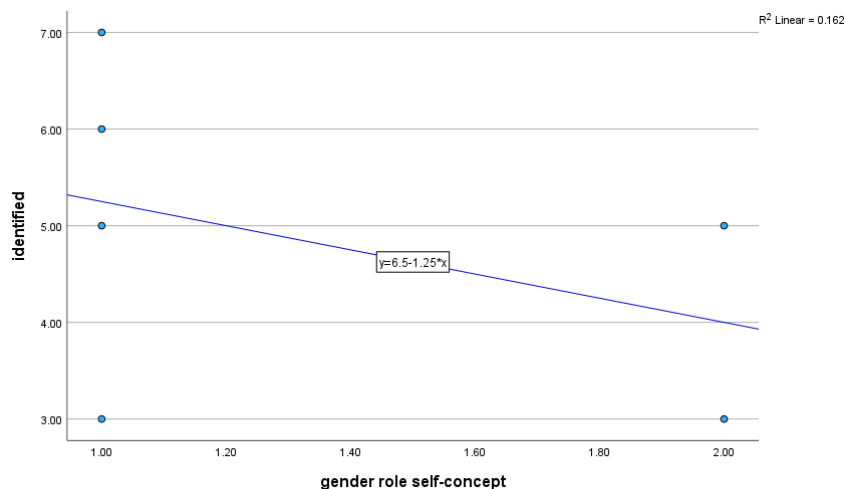
	Introjected	Amotivation	Intrinsic	Question 2 (amotivation)
Masculine Self-Concept	-0.401	0.746	0.0	-0.107
	-0.660	0.431	0.0	
	-0.915*			

	External	Identified	Integrated	Question 9 (intrinsic)
Masculine Self-concept	-0.660	-0.333	-0.074	0.426
	-0.189	0.274	-0.194	
	-0.175	-0.403	0.0	

Table 5

Note: Note: the frequencies of the same r value is denoted in parentheses above.

Linear regression plots revealed a small negative line of best fit of $y = -1.25x + 6.$, small positive r squared coefficient of 0.162, and a high negative slope of -1.25^* , which reveals a small negative relationship between men with masculine self-concept and identified regulation.



Graph 4

3.2. Outliers

An outlier is Participant 19, who answered with the numerical value 1 for “does not correspond at all” for all 18 questions on the Sports Motivation Scale despite having answered differently for all other questions in the survey. This may have skewed the findings for the male subgroup of the equal gender role self-concept group towards a decrease in all forms of motivation drastically due to the extremities of the number one on the Likert scale.

The outlying questions reveal a heteroscedasticity and uneven variance in the results that indicate that the questions are biased or skewed towards results that are opposite of the others. This interferes with the true work of Bivariate Correlations, suggesting that such data may not be applicable to the general population.

3.3. Limitations

Due to the lack of responses in the questionnaire and the snowball sampling used in this study, the male subgroup in the feminine gender role self-concept group and the female subgroup in the equal self-concept group had drastically strong correlations of -1.0^{**} or 1.0^{**} . Each of these groups only had two responses that were correlated together. Two responses was not enough for the SPSS programming to provide a more accurate Pearson’s coefficient. As a result, linear regression models could not be made and analysis had to be made solely on the bivariate correlations. There were also no responses for women with a masculine self-concept, so it could not be evaluated in this study. Due to the fact that gender perceptions were correlated with all 18 questions from SMS, there were three correlations per motivation, creating a range. This may have influenced the analysis of the results. Thus, findings should be interpreted with acknowledgement of the fact that a range will exist with statistical results.

4. DISCUSSIONS

As expected, the results supported Dr. Garcia’s notion that competence is a large predictor of intrinsic regulation and indicates that gender perceptions, which negatively affect women, could be an obstacle towards the pursuit of a professional career (Valenzuela, et al., 2020). However, it may not be a predictor of identified regulation as the following results went against anticipation.

4.1. Gender Role Self-Concepts v.s. 6 Forms of Motivation

I. Equal Gender Role Self-Concept

Regarding women, the strong positive correlation with identified regulation (see Table 1) fills a gap in the literature body, suggesting that being uninfluenced by either gender stereotype allows for explicit choice-making in which women may not have applied themselves to domestic roles. The negative correlation with intrinsic and extrinsic motivation indicates the connection between competence and intrinsic motivation, supporting Dr. Garcia’s notion that women have a greater need for competence and that gender perceptions are more internalized subconsciously (Faupel & Schmutz, 2012; Green, 1994; Valenzuela, et al., 2020; Zycinska & Januszek, 2021). Women may rely on external factors and evidence of competency to boost their interest in music.

Men specifically had positive correlations with identified, intrinsic, and an average positive correlation with extrinsic motivation of 0.455 (see Table 2), supporting studies about how men have a lesser need for competence, specifically in their capabilities in not just piano, but any professional field. They are able to channel that perception to allow themselves to fulfill motivational criteria of the self-determination continuum, proving men in this subgroup are motivated - intrinsically and extrinsically. As anticipated, this supports numerous studies regarding the “missing males problem” (Sergeant & Himonides, 2014, 2016; Wigfield & Eccles, 1997).

Against anticipations, this indicates that competence may not be an indicator of identified regulation as being uninfluenced by either gender stereotype increases it for both genders. This suggests that an equal self-concept may influence the conscious mind and its explicit choice-making. This finding is in direct accordance with Valenzuela et al's finding that not identifying with any gender could keep one away from the influence of gender perceptions, allowing them to make decisions of their own accord (Valenzuela, et al., 2020).

II. Feminine Gender Role Self-Concept

Women's negative correlation with intrinsic motivation (see Table 3) indicates that gender perceptions of women are too negative for female pianists to identify with, possibly inhibiting women from gaining self-determination. Their motivation may not be autonomous enough to overcome the negative effects of gender perceptions (Aube, 2011; Sergeant & Himonides, 2014, 2019, 2022). However, this generally disagrees with studies about how gender perceptions about women discourage women as a whole; it discourages intrinsic motivation specifically. The medium positive line of best fit with identified regulation of $y = 0.53x + 1.09$ (see Graph 2) could be a possible explanation for the decrease of female musicians from the field, suggesting that pianists could be looking for external rewards and motivation. The increase of intrinsic and extrinsic forms of motivation and decrease of amotivation and intrinsic motivation fills a gap, addressing the notion that a greater identification with femininity may not relate fully with valuing music more. This idea may only be applied to forms of extrinsic motivation and should not be an indicator of genuine intrinsic self-determination. However, this idea may be true for both female groups aligns with femininity and equal gender self-concept, revealing worse consequences of gender stereotypes (Faupel & Schmutz, 2012).

Men were found to have strong positive correlations with identified, intrinsic, and extrinsic (see Table 4), supporting numerous studies about the high expectations of men in society. This indicates that when men step away from a masculine self-identification and embrace the femininity of music, they may experience less expectations, an increased internal value, higher competence. However, this does not mean that men truly have an increased internal value in music as the social environment and their upbringing still plays a huge factor in this. The large positive line of best fit for men of $y = 1x + 2$ (see Graph 3), being more correlated than that of women's, suggests the underlying effects of gender perceptions that prohibit women from escaping their societal gender role (Deci & Ryan, 2002; Koskoff, 1991; Legg, 2010).

III. Masculine Gender Role Self-Concept

The female group did not receive any responses due to the lack of responses and snowball sampling used in this study. However, there were responses for every group except for this group. In accordance with other studies, this may bring attention to gender perceptions in society that are internalized by women, trapping them to their respective gender roles and making it difficult to identify with roles of other genders (Lundberg & Stearns, 2019; Matta & Folkes, 2013).

The results for the male subgroup (see Table 5 & Graph 4) supports studies about men being given too many expectations within masculinity to have any self-determination to pursue a professional career. This reveals that the current gender perceptions of men are not influential enough to motivate them to pursue a career as even extrinsic motivation, such as identified, may not be available. As predicted, this fosters amotivation and aligns with existing literature as stereotypes of masculinity can be too difficult for men to fulfill, meaning that it must be balanced out with femininity and supposedly "softer" emotions that allow men to establish a greater intrinsic value in music and therefore identified regulation (Nonte, et al., 2021; Wigfield & Eccles, 2017).

5. CONCLUSION

Several conclusions can be drawn from my findings. First, the existence of amotivation for both genders with feminine self-concept may demonstrate large negative stigma surrounding female stereotypes in piano that may decrease competence and foster amotivation, discouraging individuals' pursuit of a professional career. As emphasized by Dr. Garcia, the universal basic need of competence is necessary towards both external and internal satisfactions alike, but may not be key for identified regulation (Valenzuela, et al., 2020).

Masculine stereotypes are negative predictors of all six forms of motivation, proving the "missing males problem." When men embrace femininity such as boys who begin music practice in childhood, they are often more likely to continue playing instruments in adulthood than girls (Nonte, et al., 2021).

Women that identify with femininity may not be internally motivated to pursue a professional career. This has two implications: first, piano may not relate to being a masculine instrument, and second, women may adhere to rules and gender norms more often. This could play a role in the demotivation in female musicians, demonstrating a clear disparity between the societal operations of men and women.

Despite limitations aforementioned, my findings have significant implications for theory and practice. As Dr. Garcia emphasized, many genders perceive the universal basic needs differently, suggesting that an individuals' beliefs and attitudes towards piano must be focused upon. When individuals do not internalize these perceptions (of incompetence), they may be able to pursue their career in an unbiased manner. However, internalizing such perceptions could lead to severe amotivation and a lack of identified regulation in which professional careers may not be pursued, without counting for external factors (Valenzuela, et al., 2020).

Future studies should aim to broaden the sample size to determine if the findings of this study are applicable to the general population (Faber & Fonseca, 2014). Other studies could focus on other forms of motivation besides identified regulation to test the validity of the Gender Perceptions Likert-Scale, originally created for this study, and other scales of measuring gender perception to enrich the literature body. Long-term progress of motivation should be studied to analyze the effects of gender perceptions overtime on pianists' and musicians' career choices and goals. In the future, gender perceptions should be brought to light and made aware to pianists, musicians, and the general public so they may realize what they have subconsciously internalized. Such could potentially be the first steps in understanding how to encourage pianists to pursue their greatest aspirations as pianists.

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