

10107

# A further investigation of the relations of aggressive humor to income and sensation seeking and a contemplation of the role of power

Bachelor's thesis in Psychology

Supervisor: Håvard R Karlsen

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## ABSTRACT

The aggressive humor style is a harmful humor style that has been empirically linked to negative psychological outcomes in recipients. Previous literature sparse in quantity have reported positive associations of aggressive humor to income and the risk-related personality trait sensation seeking. The present study firstly investigates if the associations of aggressive humor to income and sensations seeking are similarly found in the present sample. Secondly, it is investigated if income additionally predicts sensation seeking, thereby showing a pattern aligning with the approach/inhibition theory of power (AITP), indicating that income, as related to feelings of power, activates approach tendencies that are argued to be overlapping with both sensation seeking and aggressive humor. The latter investigation may thus, given supportive results of all investigations, indicate that the previously found relations of aggressive humor to income and sensation seeking meaningfully can be interpreted through the AITP. A cross-sectional design was used, applying linear models to investigate the relationships of interest. The results showed no support for positive associations of income to aggressive humor and sensation seeking, but the positive association between sensation seeking and aggressive humor was reproduced. These findings indicate that the relationship between income and aggressive humor is not universal, that the AITP falls short as a suitable framework for the relations of income, sensation seeking and aggressive humor, and that the relationship between sensation seeking and aggressive humor can be regarded substantiated. The insight that sensation seeking predicts aggressive humor can prove valuable in both clinical and hiring contexts.

Humor is a seemingly universal, multifaceted component of human social interaction that has been the subject of scientific interest from various angles. Although often framed positively, recent approaches have highlighted how certain types of humor styles can function maladaptively and be potentially harmful. The aggressive humor style has been tied to a range of problematic outcomes in interpersonal contexts. For instance, one line of research highlighting aggressive humor in the workplace context has suggested that exposure to aggressive humor is tied to dysfunctional resistance, health destructive behaviors and job stress (Goswami et al., 2015; Huo et al., 2012, Guenzi et al., 2019, p. 361). Use of aggressive humor, especially from people in powerful positions, may thus be regarded a potential source of interpersonal harm, thereby emphasizing the value of insights into the aggressive humor style and its' relations to other psychological or demographic constructs.

Examples of research offering such valuable contributions are studies reporting positive relations between the aggressive humor style and (1) income (Navarro-Carrillo et al., 2020; Yaprak et al., 2018), (2) the risk-related personality construct sensation-seeking (Kennison & Messer, 2019) and (3) proneness to risk behavior and reduced risk appraisals (Cann & Cann, 2013). Additional literature on these exact relationships remains either sparse or mixed, thereby leaving a need for further investigation. Furthermore, seemingly no theoretical or empirical literature have investigated if these findings can be related and rightfully seen in a shared context.

However, the approach/inhibition theory of power (AITP) offers a possibly unifying, theoretical framework. The AITP postulates that elevated levels of power activate approach tendencies among more characterized by increasement in disinhibited behavior, probability of inappropriate behavior and sensitivity to rewards in ambiguous situations (Keltner et al., 2003), all elements of arguable relevance for aggressive humor. Furthermore, extending investigations have found power to be positively associated with optimistic risk appraisals and risky behavior



(Anderson & Galinsky, 2006), elements of overlap with the sensation seeking construct. The AITP and the findings of Anderson and Galinsky (2006) might therefore meaningfully contextualize the relations of aggressive humor to both income and sensation seeking, by suggesting that income by increasing feelings of power may cause aggressive humor both directly and through sensation seeking tendencies.

The aim of the present study is firstly to investigate if the previous, separate findings of positive relationships of aggressive humor to income and sensation seeking are similarly found in the present sample. Secondly, a second aim is to investigate if these seemingly separate relationships can fit the context of the AITP and thereby be regarded interrelated.

### **The phenomenon of humor and different approaches**

Humor is in the APA dictionary defined as “the capacity to perceive or express the amusing aspects of a situation” (American Psychological Association, 2023). When addressing humor, as with all phenomena, the angle of incidence used determines which aspects are illuminated. For instance, one approach has emphasized humor appreciation (Ruch, 1992), focusing on individual differences in reactions to humoristic content. Another approach has highlighted humor expressions, where the humor styles questionnaire (HSQ) can be regarded the most prominent. The HSQ has been claimed to be the most prevalent measure within research on humor (Henitz, 2019), and has yielded several valuable insights in how humor expressions relate to the greater social and intrapsychic context.

### **The HSQ**

The HSQ was first launched by Martin and colleagues in 2003. The instrument can be claimed to have an intrinsic functional and taxonomic approach, as it was developed on theoretical grounds assuming four central styles of humor expressions, where the styles are

defined partially by their relevance for psychosocial health and partially by their *function* in everyday life (Martin et al., 2003, p. 51). This means that the different humor styles are differentiated not on why they are humoristic, but to a greater degree on what this humoristic aspect *achieves* in the social or intrapsychic context.

The questionnaire measures the four distinct humor styles labelled affiliative humor, self-enhancing humor, self-defeating humor, and aggressive humor, all accounted for in the preliminary article (Martin et al., 2003). The affiliative style is characterized by humor expressions that functionally eases social interactions and boosts social relationships through non-hostile joking. The self-enhancing style is in larger part intra-psychical, entailing the ability to functional, humoristic perspective taking even in the face of adversity. Further, the self-defeating humor style is characterized by the potentially detrimental inclination to engage in self-disparaging humor expressions and the accept of others' jokes at expense of the self. Lastly, the aggressive humor style is characterized by potentially detrimental humor expressions made up of elements such as inconsiderate jokes, hostile disparagement of others and compulsive humor expressions. The two former styles are considered adaptive, while the two latter potentially maladaptive and detrimental (Martin et al., 2003).

### **The aggressive humor style**

The present study will solely investigate aggressive humor, and this specific style will thus be elaborated in greater detail. Conceptually, the aggressive humor style has been described as a humor style that may harm social relationships through belittling, disparaging, alienating, manipulative, inconsiderate or compulsive expressions of humor (Martin et al., 2003). The compulsive aspect refers to humor expressions where the expressor finds it difficult to inhibit jokes that may be inappropriate, hurtful, or offensive. Furthermore, it has been stated to include properties such as implied threats of social sanctions such as ridicule or mockery,

general hostile teasing, potential relations to sensitive topics such as racism or sexism, and to take formats such as irony or sarcasm (Martin et al., 2003).

### *Effects in the interpersonal context*

Several studies have highlighted how the use of aggressive humor inflicts damaging effects on others. One study suggests that aggressive humor used by supervisors in the work context cause dysfunctional resistance in employees (Goswami et al., 2015). Another study found that employees reported greater levels of strain when they experienced to be the target of aggressive humor from supervisors to a greater extent than their co-workers (Huo et al., 2012). Huo and colleagues (2012) further found that employee levels of strain were positively related to destructive behaviors such as drinking, smoking and addictive internet use, thereby indicating that supervisors' uneven use of aggressive humor can cause destructive behaviors. Similarly, manager levels of aggressive humor reported by salespersons was significantly related to the job stress reported by salespersons (Guenzi et al., 2019, p. 361). Overall, there are clear empirical grounds suggesting that being the target of other's aggressive humor expressions can be detrimental for the recipient, thus emphasizing the need for solid insights into this humor style. It is also clear from these specific findings, that when people in power-positions use the aggressive humor style, this can inflict measurable harm in the recipients.

### *Empirical insights*

**Age, gender, and income.** Preceding literature have reported consistent patterns in the relations between aggressive humor, age and gender. Overall, gender differences with men reporting higher levels of aggressive humor than women are consistently reported. One large cross-cultural study found this to be the main trend across 28 countries except Bulgaria, Estonia and Romania (Schermer et al., 2019), and other studies report the gender differences to be

statistically significant as well (Martin, 2003, p. 62, McCosker & Moran, 2012, p. 146). Further, age has been established as negatively related to levels of aggressive humor across several studies as well (Martin et al., 2003, p.62, McCosker & Moran, 2012, p. 146, Torres-Marín et al., 2022, p. 5).

One interesting but preliminary line of findings has found income to be positively related to levels of aggressive humor. Seemingly, only two studies have investigated this relationship with somewhat different approaches. The first study investigated the relations between perceived income and levels of aggressive humor (Yaprak et al., 2018). It was found that people perceiving their income as high reported significantly higher levels of aggressive humor than those perceiving their income as medium, and that those with perceptions of medium levels had significantly higher scores than those perceiving their income as low (Yaprak et al., 2018, p. 10). This study was seemingly conducted in Turkey, with a sample consisting of students. The second study seemingly used a Spanish sample and included analyses of self-reported levels of income and aggressive humor from two samples (Navarro-Carrillo et al., 2020). In both samples, positive associations between income and aggressive humor were found. Investigations on the second sample also showed empathetic concern to function as a mediator between income and aggressive humor, negatively related to both constructs (Navarro-Carrillo et al., 2020).

**Personality constructs.** More theoretically, a great deal of research has reported associations between the aggressive humor style and personality traits. In relation to the big five model, Martin and colleagues reported significant correlations between aggressive humor and NEO-PI-R agreeableness ( $r = -.59$ ), conscientiousness ( $r = -.37$ ) and neuroticism ( $r = .21$ ) (2003, p. 69). Meta-analyses similarly report aggressive humor to have positive relations with neuroticism and negative relations with agreeableness (Mendiburo-Seguel et al., 2015, p. 339; Plessen et al., 2020, p.6). Some inconsistent patterns have also been reported between

aggressive humor and the personality trait sensation seeking, (Kennison & Messer, 2019; Amani & Shabahang, 2018), thus bringing along a need for clarification.

### **Sensation-seeking, risk tendencies and aggressive humor**

Sensation-seeking has been argued to be a fundamental personality trait since the late 1960s. Marvin Zuckerman has been the main driving force, having published a series of books and research articles devoted to the topic. Zuckerman himself has defined sensation-seeking as “...a trait defined by the seeking of varied, novel, complex and intense sensations and experiences, and the willingness to take physical, social, legal and financial risks for the sake of such experience” (Zuckerman, 1994, p. 27) with biological and genetic roots (Zuckerman & Aluja, 2015, p. 377). A large part of the sensation seeking literature has emphasized its’ relation to risk tendencies, making risk tendencies a highly related subject. Both sensation seeking and risk tendencies has been found to have positive relationships with the aggressive humor style.

#### ***The four facets of sensation seeking***

Although related, each facet has its own unique characteristics. In “Behavioral Expressions and Biosocial bases of Sensation Seeking” (1994), Zuckerman accounts for the four facets by reference to the belonging items in the sensation seeking scale form IV. Thrill and adventure seeking (TAS) captures the degree to which an individual possesses the desire to engage in risky physical activities or sports and is not strictly bound to actual experiences. The second facet, experience seeking (ES), covers an individual’s tendency to seek new sensations and experiences through both the mind and the senses. Disinhibition (DIS) relates to sensations through social activities like partying, alcohol consumption and sex. Lastly, boredom susceptibility (BS) taps into the inclination of an individual to dislike repetitiveness in formats such as work routines.

### ***Associations to demography, other personality constructs and behavior***

Sensation-seeking, both generally and with regards to the narrower facets, have shown some consistent relations. General trait score has been found to be negatively, significantly related to age, and for females all facets had negative, significant relations with age, while the negative relations only were significant for TAS and DIS in males (Zuckerman et al., 1978, p. 145). In the same study, men were found to have significantly higher general trait scores (Zuckerman et al., 1978, p. 143), aligning with what seems to be a general trend as men's total scores have been found significantly higher in samples from Australia, Canada, USA, and Spain (Zuckerman, 1994, p. 100). Relating to the NEO-PI R big five model, sensation seeking has been found to correlate with extraversion and openness to experience positively, and with conscientiousness negatively (Garcia et al., 2012, p. 158). Within the ZKA-PQ model, sensation seeking correlated moderately with ZKA-PQ SF aggressiveness (Aluja et al., 2018, p. 180).

Relating to behavioral tendencies, sensation seeking have been linked to behaviors referred to as characteristic for disinhibition, such as risky sexual activity, aggressive tendencies, impulsive tendencies, antisocial and borderline behavior, and abusive intoxication (Zuckerman & Aluja, 2015, p. 377). More generally, the research investigating sensation seeking and behavioral tendencies often emphasize risk behaviors, e.g. reporting positive relations to behaviors such as alcohol consumption (Hittner & Swickert, 2006), risky driving (Jonah, 1997) and high-risk sports (McEwan et al., 2019).

### ***Associations between sensation seeking, risk tendencies and aggressive humor***

Although risk has been defined in different ways (Aven & Renn, 2009), Zuckerman suggests it “.. may be defined as the appraised likelihood of a negative outcome for behavior” (Zuckerman, p. 124, 1994). Inclinations to risk-taking can be claimed to be a central part of the

sensation seeking trait. After all, the willingness to take risks for sensations is explicitly included in Zuckerman's definition of sensation seeking from 1994. However, as argued by Zuckerman himself, the risk element in an activity is not a central motivation for high sensation seekers. It can more precisely be regarded as less of an obstacle, or as a price to a greater extent accepted by high compared to low sensation seekers (Zuckerman, 1994, p. 27). Both sensation seeking and more specific measures of risk appraisals and risk behavior have been reported to have positive associations with aggressive humor.

Several empirical investigations have established consistent relations between sensation seeking, various risk behaviors and risk appraisals. For instance, one study found significant mean differences in sensation seeking between ski instructors reporting to use helmets "Rarely or never" relative to those reporting "Always or most of the time" (Masson & Lamoreux, 2020, p. 125). In an extensive investigation of several risk constructs, sensation seeking was also found to have moderate correlations with social, health/safety, recreational and ethical risk behaviors (Zhang et al., 2016, p. 301). Further analyses revealed domain variations as to whether these relationships were mediated through lowered risk perceptions or heightened expectations of benefits. Regarding social risk behaviors, it was concluded that "expected benefit" had most explaining power as mediator between sensation seeking and social risk behaviors (Zhang et al., 2016).

Seemingly, only two studies have investigated the relations between sensation seeking and aggressive humor, showing mixed results. In a study investigating how sensation seeking relates to all humor styles, sensation seeking was reported to predict aggressive humor (Kennison & Messer, 2019). Correlation analyses showed all facets to be significantly, positively related to aggressive humor for females, but only the BS to have a significant, positive relation for males (see table 2, Kennison & Messer, 2019, p. 9). However, a multiple regression analysis showed facets BS and ES to be significant predictors for aggressive humor

in a model including all sensation seeking facets and self-reports of curse words for males, and TAS and ES in an identical model for females (see table 3, Kennison & Messer, 2019, p. 12). The second study found no significant relationships between sensation seeking and aggressive humor in a sample of Iranian salespersons, which may be caused by their application of a sensation seeking scale deliberately omitting measurement of risk behaviors (Amani & Shabahang, 2018, p. 113-116).

Aggressive humor has also been reported to have associations with more explicit measures of risk appraisals and behaviors. In their study examining humor styles, risk perception and risky behaviors, Cann and Cann (2013) reported the aggressive humor to be the only humor style of all HSQ constructs with significant relationships to perceptions of risk, individual likelihood to perform risk behaviors and actual risky behaviors, the former of a negative character, the two latter of a positive character. This may furtherly explain why high sensation seekers have been found to have greater inclinations to use the aggressive humor style and can also be interpreted as indicative of the notion that aggressive humor itself may be viewed a risk behavior.

### **The approach/inhibition theory of power**

The approach/inhibition theory of power (AITP) was first formulated coherently in Keltner and colleagues' article from 2003. In general, it states that high levels of power activate approach tendencies, while low levels activate inhibition tendencies. Furthermore, power have been found to have strong associations with individual risk assessments and behaviors.

#### ***Power***

In the AITP, power is defined as the capacity of an individual to alter other people's states by regulation of resources and punishments (Keltner et al., 2003, p. 265). The authors



note that examples of such is either the distribution or withholding of material phenomenon such as "...food, money, economic property, physical harm or job termination" or social phenomenon such as "... knowledge, affection, friendship, decision-making, opportunities, verbal abuse or ostracism" (p. 266). Power is thus correlated with resources, meaning that powerful individuals live in environments rich on resources and rewards in both material and social levels (Keltner et al., 2003, p. 268 – 269).

### ***Approach tendencies***

The AITP offers a range of postulates of the characteristics that constitute the approach tendencies activated by high levels of power. In short, the approach tendencies are often summarized as increasement in positive affect, perceptual sensitivity of rewards, automatic cognition and disinhibited or state/trait consistent behavior (e.g. expressing one's true attitudes or opinions) (Cho & Keltner, 2020; Keltner et al., 2003). Moreover, in the 2003 article, Keltner and colleagues also assert that approach tendencies are characterized by the (instrumental) view of others as means to own purposes, increased perceptions of opportunities in ambiguous settings, and increased probability of socially inappropriate behavior.

### ***Inhibition tendencies***

In large part, the inhibition tendencies constitute a direct contrast to the approach tendencies. In general, the inhibition tendencies have been summarized as characterized by increasement in negative affect, attention to threats, controlled cognition and inhibited social behavior (Keltner et al., 2003). More in depth, low levels of power have also been postulated to have relations with increased views of the self as means to the purposes of others and more controlled, complex, and thus often more precise social cognition (Keltner et al. 2003). Related

to controlled cognition and inhibited behavior, low levels of power have also been claimed to be associated with more situationally constrained behavior (Cho & Keltner, 2020).

### ***The relation between power, approach, and risk***

In 2006, co-author of the 2003 AITP article Cameron Anderson collaborated with Adam Galinsky on a study investigating the relations between power, optimism and risk inclinations. The increased propensity to percept rewards and opportunities, reduced social inhibition and elevated use of automatic cognition embedded in the postulated approach tendencies all seem to be modalities facilitating greater inclinations to risk. Across five experiments, this was investigated directly. The researchers measured power through either self-report scales, priming or experimental manipulation of the setting the participants acted in. These scores were analyzed together with measures of risk perceptions of either personally relevant outcomes, risk perceptions of general dangers in the world, perceptions of risks relating to specific cases, or various specific measures of optimism. Across all five experiments, positive, significant relations between power, risk appraisals and behavior, and optimism were found, leading the authors to conclude that power seem to increase inclinations to optimistic risk appraisals and risky behavior (Anderson & Galinsky, 2006).

### **Applying the AITP**

The AITP postulates that high levels of power activate approach tendencies, characterized by higher levels of disinhibited behavior, greater probability of socially inappropriate behavior, and instrumental views of others. The experiments of Anderson and Galinsky (2006) further shows that optimistic risk appraisals and actual risk behavior is positively associated with power as well.

Aggressive humor expressions can reasonably be considered disinhibited, inappropriate

social acts likely to be driven by attention to associated rewards, and due to lack of consideration of others, driven by some degree of instrumental view of the targets of the expressions. It can therefore be argued that one reasonably can expect approach tendencies to entail a greater likelihood for and inclination to aggressive humor expressions, and thereby expect aggressive humor to be positively associated to levels of power.

As power in the AITP is described as entailing the ability to delegate resources and it is claimed that «powerful individuals live in environments with abundant rewards, including financial resources, physical comforts, beauty and health...» (Keltner et al., 2003, p. 269), one can argue that the AITP might provide a fitting contextualization of the finding that income and aggressive humor is positively associated. Given the descriptions of power, it seems reasonable that income, as highly overlapping with resources, can cause feelings of power, a notion consistent with Zaleskiewicz and colleagues' (2013, p. 65) suggestion that money can provide a sense of power. As approach tendencies can be viewed overlapping with aggressive humor, this interpretation will imply that income and aggressive humor is positively related because income causes feelings of power, which in turn activate approach tendencies overlapping with the aggressive humor style.

It can be argued that the relationship between sensation seeking and aggressive humor also is compatible with the AITP framework. Aggressive humor expressions can reasonably be viewed risky social acts, as they are likely to risk the evocation of negative emotions or objections in others, and over time damage the social reputations of the expressor. Furthermore, Cann and Cann (2013) found the style to be positively associated with both low-risk appraisals and actual risk behavior, opening for an interpretation that aggressive humor expressions themselves are risk behaviors. Contemplating the findings of Anderson and Galinsky (2006) – that power may cause optimistic risk appraisals and risk behavior - this view both offers further grounds for assuming correlations of power and aggressive humor, and simultaneously a

rationale for regarding power a possible confounding variable causing the previously found association between sensation seeking and aggressive humor.

This is supported by the fact that sensation seeking is highly related to risk behaviors, and furthermore that approach tendencies is claimed to include increased attention to rewards, while the highly overlapping “expected benefit” construct was found to be the most explanatory mediator between sensation seeking and social risk behaviors (Zhang et al., 2016). Moreover, although mentioned briefly, sensation seeking has been suggested to rise from strong approach and weak inhibition mechanisms (Zuckerman, 2014), and to be related to weak inhibition of approach behavior in risky situations (Zuckerman & Aluja, 2015, p. 358), thereby emphasizing the relatedness between approach tendencies and sensation seeking.

One interpretation may thus be that approach tendencies are linked to aggressive humor both directly, but also indirectly through risk tendencies that cause high sensation seeking scores, tendencies that may work as partial intermediums between approach tendencies and aggressive humor. They are assumed partial because other modalities of the approach tendencies have more direct overlaps with the aggressive humor style as well.

For integrating the previously found positive relations of income and sensation seeking to aggressive humor into the AITP framework, viewing income as a source of feelings of power, this would imply that high income causes higher aggressive humor *and* sensation seeking scores. If income predicts sensation seeking as well, this may thus be regarded a pattern consistent with the notion that power works as an underlying factor explaining why both income and sensation is related to aggressive humor.

### **The present study**

The present study has two aims. Firstly, it will be investigated if the associations between aggressive humor and income, and aggressive humor and sensation seeking are

similarly found in the present sample. Secondly, derived from the AITP, it will be investigated if the data shows a positive association between income and sensation seeking. If this latter association is supported as well, this can be seen as indicative of that feelings of power may be an underlying factor explaining why both income and sensation seeking relates to aggressive humor.

These aims will be realized through the testing of three hypotheses:

*Hypothesis 1:* Levels of income positively predicts levels of aggressive humor

*Hypothesis 2:* Levels of sensation-seeking positively predicts levels of aggressive humor

*Hypothesis 3:* Levels of income positively predicts levels of sensation-seeking

## METHODS

### Sample

The sample initially consisted of a total of 420 participants ( $N = 420$ ). It was decided to exclude all students ( $n = 189$ ), because students may receive economic support not classified as income, and further because earlier findings of sensation seeking and aggressive humor stems from a sample of students, thereby giving the present study a new contribution by investigating a different group. Further, three participants were excluded due to reports of age  $< 18$ , and in total 7 due to missing values or answering “other/don’t want to state” on the gender item, thus necessitating exclusion due to the controlling of gender in a multiple regression analysis.

After these adjustments, the final sample in total consisted of 221 participants ( $N = 221$ ), where a total of 214 (96%) reported being Norwegian citizens. Moreover, 139 reported being women (63%) and 82 (37%) men. The age variable ranged from 18 – 83, with a mean of 44.50 ( $SD = 15.10$ ) and a median value of 46.00.

## **Procedure and design**

This study applied a cross-sectional design involving self-report data collected through an online survey. Participants were recruited by a selection of convenience in the timespan from late February to mid-March of 2023, by personal requests of participation in a study investigating “personality, humor styles and interests”. Participants were assured of total anonymity, and informed that submission of the questionnaire would be treated as an expression of consent to participation in the study. An application for data collection with case number 830341 was sent to NSD, and the study received an ethical approval.

## **Instruments**

The questionnaire was composed of a set of control questions, a minor instrument and three main instruments. The control questions typically mapped demographic information about the participants (e.g. “*Marital status?*” and “*Are you a student?*”). A minor instrument for social contact and a scale measuring passion were included in the questionnaire, but not applied in the present study. The two remaining main instruments were the HSQ and the Zuckerman-Kuhlman-Aluja-Personality-Questionnaire Short Form (ZKA-PQ SF), both used in the present study. The HSQ and the ZKA-PQ SF were translated to Norwegian by the students on the bachelor project.

### ***The Humor Styles Questionnaire***

The HSQ consists of 32 items that measure four different humor styles, with eight items for each style (Martin et al., 2003). The answering options ranged from “Totally disagree” (coded as 1) to “Totally agree” (coded as 7). Specific items in the instrument were reversed and were thus reverse coded before the average of the eight relevant items for each style were

calculated and computed into new variables. Missing values were replaced with mean values. Aggressive humor was the only HSQ construct investigated in the present study, with examples of items being “*People are never offended or hurt by my sense of humor*” and “*Sometimes I think of something that is so funny that I can’t stop myself from saying it, even if it is not appropriate for the situation*”. An internal reliability analysis showed that the aggressive humor scale, consisting of 8 items, had a Cronbach’s alpha value of .64,  $\alpha = .64$ .

### ***The ZKA-PQ SF***

The ZKA-PQ SF is a personality measure developed in 2018 by Aluja and colleagues (Aluja et al., 2018). The instrument measures five personality factors each constituted by four facets, ranging on a 4-point scale from “Strongly disagree” (1) to “Strongly agree” (4). The instrument consists of a total of 80 items, with each of the five traits made up of four facets, and each facet made up of four items. Reversed items were reverse-coded, and new variables for both facets and traits were computed by the calculation of the mean of relevant items for each facet, and further the calculation of means for relevant facets for each trait. Before summarizing total trait scores, missing values for facets were replaced by mean values. Sensation seeking is the only trait relevant for the present study, and example items are “*I like some physical activities that are somewhat risky*” and “*I like to let myself go and do impulsive things just for fun*”. A calculation of Cronbach’s alpha for the sensation seeking scale on the values of all four sub-facets, revealed a value of .6,  $\alpha = .60$ .

### ***Income***

Income was measured using the single-item question “What is your yearly income,

roughly?”, operationalized to a 7-point scale. The question had the following answering options: “0 – 175 000 kr” (1), “175 000 – 350 000 kr” (2), “350 000 – 525 000 kr” (3), “525 000 – 700 000 kr” (4), “700 000 – 875 000 kr” (5), “875 000 – 1 050 000 kr” (6) and “> 1 050 000” (7). The Norwegian mean (609 480 kr) and median (549 960 kr) salaries per full-time equivalent for the year of 2021, calculated by multiplying average and median monthly full-time equivalent salaries (Fløtre & Tuv, 2022), were purposely placed in the mid category (4).

### **Statistical analyses**

All statistical analyses were conducted with the IBM SPSS Statistics version 27 software.

#### ***Descriptive statistics***

Frequency, both absolute and percentage wise, were calculated for the gender and “Norwegian citizen” variables. Mean and standard deviations were calculated for the variables age, income, sensation-seeking and aggressive humor for both genders separately and combined. For the age variable, median was calculated as well.

#### ***Main analyses***

One multiple hierarchical regression analysis and two simple linear regression analyses were conducted, examining how income predicts aggressive humor controlling for age and gender, how sensation-seeking predicts aggressive humor and how income predicts sensation seeking.



**Prerequisite assumptions.** The statistical assumptions underlying regression analysis were investigated. First, predictor variable variance was assured by controlling the standard deviations of predictor variables income ( $SD = 1.62$ ) and sensation-seeking ( $SD = 0.42$ ).

Several visual investigations were conducted to control the assumptions of homoscedasticity and normally distributed errors. Homoscedasticity was controlled by inspection of scatter plots of studentized residuals against standardized predicted values for all models. The simple regression models showed no clear systematic variations in residuals and thus homoscedasticity. Although there were slight unsystematic differences in the residuals across the different scale values, these were assessed to be unworthy of concern. However, the multiple regression model showed slight tendencies of homoscedasticity, which should be considered when interpreting the results. Inspection of histograms representing the standardized residuals of all three variable relationships was also conducted, with all residuals showing satisfactory normal distribution, and thus meeting the assumption of normally distributed errors.

The assumption of independent errors was also investigated. Independent errors were controlled by inspecting the results of Durbin-Watson tests for all three models. For all models, Durbin-Watson values ranged from 1.2 – 2, which may be deemed indicative of satisfactory low levels of correlation between the residuals of the predictor and outcome variables (Field, 2009, p. 221). The assumption of no multicollinearity was also investigated for the multiple regression model. The correlation coefficients between predictors gender, age and income ranged from -.234 to .354, thereby indicating the absence of strong relationships between the predictors. Further, all VIF values, as they ranged from 1.0 to 1.2 with an average of 1.1, can be deemed acceptable (Field, 2009, p. 242).

In sum, the statistical assumptions underlying regression analysis can be regarded as correct for the present data, apart from the multiple regression model showing tendencies of

homoscedasticity. The two simple regression models may thus be interpreted normally, while the multiple regression analysis must be interpreted with caution.

## RESULTS

Table 1 shows means and standard deviations for men and women separately and combined. The aggressive humor variable had an overall mean value of 3.20 ( $SD = 0.80$ ), and results showed that men ( $M = 3.39$ ,  $SD = 0.86$ ) on average had higher scores than women ( $M = 3.04$ ,  $SD = 0.72$ ). Income had an overall mean of 3.93 ( $SD = 1.62$ ), with higher means for men ( $M = 4.32$ ,  $SD = 1.74$ ) than women ( $M = 3.71$ ,  $SD = 1.50$ ). The sensation seeking variable had an overall mean of 2.51 ( $SD = 0.42$ ), with men scoring slightly higher on average ( $M = 2.56$ ,  $SD = 0.46$ ) than women ( $M = 2.49$ ,  $SD = 0.39$ ).

**Table 1**

*Descriptive statistics for relevant variables (N = 221)*

	Women M ( <i>SD</i> )	Men M ( <i>SD</i> )	Aggregated M ( <i>SD</i> )
1. Age	43.56 (14.37)	46.22 (16.21)	44.55 (15.10)
2. Income <sup>a</sup>	3.71 (1.50)	4.32 (1.74)	3.93 (1.62)
3. Sensation seeking <sup>b</sup>	2.49 (0.39)	2.56 (0.46)	2.51 (0.42)
4. Aggressive humor <sup>a</sup>	3.04 (0.72)	3.39 (0.86)	3.20 (0.80)

*Note.* Aggregated shows M and SD for men and women combined

<sup>a</sup>Values referenced to a 7-point scale

<sup>b</sup>Values referenced to a 4-point scale

The results from a multiple hierarchical regression analysis predicting aggressive humor using two blocks are displayed in table 2. The first block contained the main independent variable, income, and the second block income and control variables gender and age. Overall, block 1 did not explain variance in aggressive humor,  $R^2 = .00$ ,  $F(1, 219) = 0.76$ ,  $p = .385$ , and income was not a significant predictor of aggressive humor in the model,  $\beta = -0.06$ ,  $p = .385$ . In block 2, variables age and gender were added additionally, raising the explanatory percentage to  $.12$ ,  $\Delta R^2 = .12$ ,  $F(3, 217) = 9.94$ ,  $p < .001$ . In model 2, income was still an insignificant predictor,  $\beta = -0.01$ ,  $p = .832$ , while gender,  $\beta = -0.24$ ,  $p < .001$ , and age,  $\beta = -0.27$ ,  $p < .001$ , were significant predictors of aggressive humor.

**Table 2**

*Results from a multiple hierarchical regression model predicting aggressive humor (N = 221)*

Variable	Aggressive humor				
	<i>b</i>	<i>SEb</i>	$\beta$	$R^2$	$\Delta R^2$
Model 1				.00	-
Income	-0.03	0.03	-0.06		
Model 2				.12	.12
Income	-0.00	0.03	-0.01		
Gender <sup>a</sup>	-0.39	0.11	-0.24***		
Age	-0.01	0.00	-0.27***		

<sup>a</sup>0 = male, 1 = female

\*\*\* $p < .001$

Two simple linear regression analyses were conducted as well. Table 3 displays results from a simple linear model regressing sensation seeking on aggressive humor. Sensation seeking significantly predicted aggressive humor,  $\beta = 0.24$ ,  $p < .001$ , and accounted for 6 % of

the variance in aggressive humor,  $R^2 = .06$ ,  $F(1, 219) = 13.35$ ,  $p < .001$ . Table 4 shows the results from a simple regression model predicting sensation seeking from income. Income was not a significant predictor of sensation seeking,  $\beta = -0.05$ ,  $p = .504$ , and did not explain any variance in sensation seeking,  $R^2 = .00$ ,  $F(1, 219) = 0.45$ ,  $p = .504$ .

**Table 3**

*Results from a simple regression model predicting aggressive humor (N =221)*

Aggressive humor				
Variable	<i>b</i>	<i>SEb</i>	$\beta$	$R^2$
Sensation Seeking	0.46	0.13	0.24***	.06

\*\*\* $p < .001$

**Table 4**

*Results from a simple regression model predicting sensation seeking (N =221)*

Sensation seeking				
Variable	<i>b</i>	<i>SEb</i>	$\beta$	$R^2$
Income	-0.01	0.02	-0.05	.00

## DISCUSSION

The present study mainly investigated the relationships between the variables aggressive humor, income and sensation seeking, but also covered age and gender. As displayed in table 1, men on average had higher scores in both aggressive humor and sensation seeking, consistent with preceding literature (Zuckerman, 1978; Zuckerman, 1994; Schermer et al., 2019, Martin, 2003, p. 62, McCosker & Moran, 2012, p. 146). As both gender (male gender coded as 0) and age showed to be significant, negative predictors for aggressive humor, this suggests that the gender differences can be viewed statistically significant. It further indicates that younger people use the aggressive humor style to a greater extent, also consistent with previous literature

(Martin et al., 2003, p.62, McCosker & Moran, 2012, p. 146, Navarro-Carrillo et al., 2022, p. 5). As this is consistent with well-established trends and outside the main scope of the study, these findings will not be elaborated further.

The first aim of the study was to investigate if the previous findings of positive relations between aggressive humor and income, and aggressive humor and sensation seeking were present in the current sample as well. The second aim was to investigate if these patterns could be related, by investigating if income predicted levels of sensation seeking as well, and thus indicated a pattern consistent with the AITP. The results showed that sensation seeking and aggressive humor was positively, significantly associated, and thus supported hypothesis 2. No positive associations were found of income to aggressive humor or sensation seeking, thereby leaving hypothesis 1 and 3 unsupported. Thus, the previously found relations between income and aggressive humor was not reproduced, and the AITP may be interpreted to fall short as a suitable theoretical framework for the variables of investigation.

### **Sensation seeking and aggressive humor**

The data supports the predictions of hypothesis 2, that there would be positive relations between levels of sensation seeking and aggressive humor, as a simple regression analysis showed that sensation seeking significantly predicted aggressive humor. This complements and further substantiates the findings of Kennison and Messer (2019), who found facets BS and ES to be predictive of aggressive humor for men, and ES and TAS for women in a sample of undergraduates. In addition, these findings show the relationship between sensation seeking and aggressive humor to apply for non-students as well, and thereby extends the generalizability of the link. Because hypothesis 1 and 3 was not supported, this result will be discussed independently from the AITP.

### ***Relations to earlier findings***

Although generally aligning with the findings of Kennison and Messer (2019), the present findings also deviate both slightly to their study, and greatly from the study conducted by Amani and Shabahang (2018). Firstly, the effect size found here is slightly stronger than those reported by Kennison and Messer (2019). Possible causes might be actual sample differences or scale differences as sensation seeking in the present study was measured by a 16-item short form scale, while Kennison and Messer (2019) applied the 40-item “sensation seeking scale V” (SSS-V). Scale differences can also be a possible explanation of the discrepancy between the present results and Amani and Shabahang’s (2018) study reporting no association between sensation seeking and aggressive humor. As noted in their discussion, this discrepancy can perhaps be attributed to the sensation seeking scale applied, the Arnett Inventory of Sensation Seeking (AISS), that do not measure actual risky behavior (Amani & Shabahang, 2018, p. 116).

### ***Possible explanations of the link between sensation seeking and aggressive humor***

The exact reasons or mechanisms that lead high sensation seekers to report higher levels of aggressive humor are not unambiguous as several different but also compatible explanations seem reasonable. Three possible causes to be highlighted here is that that aggressive humor can be viewed as a risk behavior, that the use of aggressive humor might work as a source of sensations, and the postulated connections of sensation seeking to impulsiveness, disinhibition and aggressiveness.

One possible interpretation of the results is that high sensation seekers, more prone to risk behaviors, report higher levels of aggressive humor because this is a type of risk behavior

as well. It can be argued that the discrepancies in findings of positive relations between sensation seeking and aggressive humor in fact provide indirect support for this notion. Although the discrepancy apparently indicate inconsistency in the relation between sensation seeking and aggressive humor, the pattern of difference in scales applied and findings can be argued to provide indirect support for the relation between the tendency of actual risk behaviors and aggressive humor reported by Kennison and Messer (2019). Amani and Shabang's (2018) study reporting no association applied the AISS, while both studies reporting associations – the present study and Kennison and Messer's – used the SSS-V and the ZKA-PQ SF. The aspect of actual risky behavior is deliberately absent in the AISS but present in the SSS-V (Zuckerman & Aluja, 2014, p. 374), while the sensation seeking scale in the long form of the ZKA-PQ SF (ZKA PQ), also accounts for specific behaviors like alcohol or drug use (Zuckerman & Aluja, 2014, p. 377), that indeed are risk behaviors, while the applied ZKA-PQ SF also involves questions about risky activities.

Thus, the studies finding positive associations between sensation seeking and aggressive humor used sensation seeking scales that accounts for risk behaviors, while the study not finding this association used a scale designed not to measure such behavioral risk tendencies. This indicates that greater tendencies of actual risk behaviors can be a central underlying component characteristic of people that use the aggressive humor style to a greater extent, aligning with the findings of Cann and Cann (2013), and possibly that aggressive humor expressions therefore can be regarded as one form such risk behaviors can take.

Another possible cause leading high sensation seekers to use higher levels of aggressive humor, can be that the expression of aggressive humor in different ways provide the expressors with sensations that are valued to a greater extent by high sensation seekers. This notion has been formulated earlier; "For example, teasing, sarcasm and ridicule in social groups seems to be a highly arousing activity and some people pursue it with delight despite the fact that it may

involve social, if not physical risks” (Carratero-Dias & Ruch, 2010, p. 429). Given that high sensation seekers on average scores higher on sub facets “boredom susceptibility”, “thrill and adventure seeking”, “disinhibition” and “experience seeking”, a reasonable interpretation may be that aggressive humor is used as a way of both increasing the thrill and countering boredom in daily social interactions. Somewhat differently, aggressive humor can perhaps also provide a feeling of superiority or entitlement due to the active disparagement of others, and the possible harvest of laughter from bystanders. This feeling, as a form of sensation, may to a greater extent be valued and thus sought out through aggressive humor by high sensation seekers. Use of aggressive humor may thus in different ways offer thrills and sensations valued to a greater degree by high sensation seekers, thus leading them to use this style to a greater extent.

Associations between trait sensation seeking and aggressiveness, impulsiveness or disinhibition may also be relevant, intervening factors. As accounted for, sensation seeking scores has been found to correlate with aggressiveness scores (Aluja et al., 2018, p. 180). As aggressive humor contains aggressive elements, this association can also be a partial explanation of the tendency of high sensation seekers on average to use more aggressive humor. As the aggressive humor style also has been claimed to include difficulties with withholding funny comments that may hurt others (Martin et al., 2003, p. 54), the claimed association between sensation seeking and impulsiveness and lack of inhibitory control (Zuckerman & Aluja, 2015, p. 377) may also be a relevant factor leading high sensation seekers to use higher levels of aggressive humor. Where lower sensation seekers might manage to withhold inappropriate jokes or funny comments they think of, high sensation seekers might struggle and thereby use aggressive humor to greater extent.

All possible explanations accounted for here seem compatible with each other. Especially the views of aggressive humor as a risk behavior and a source of sensations seem complementary, as this aligns with Zuckerman’s assertion that high sensation seekers to a



greater extent values the sensations in various behaviors, and therefore also conduct more risky behavior, accepting the following risks (Zuckerman, 1994, p. 124).

### **Income and aggressive humor**

The data did not support the hypothesis that income would be positively associated with reported levels of aggressive humor, as the multiple regression analysis showed income to have a weak, insignificant association to levels of aggressive humor. This constitutes a contrast to earlier studies finding explicit positive associations between income (Navarro-Carrillo et al., 2020) or perceived income (Yaprak et al., 2018) and aggressive humor. Although there are some methodological differences between the previous studies and the present, as will be discussed, these may be deemed unlikely sources of the different results. Because a direct interaction between income and tendencies in humor expressions seem highly unlikely, differences in mediating mechanisms between income and aggressive humor levels between the present sample and the samples of the earlier studies may be a more likely source.

The present study deviates slightly methodologically from the studies of Yaprak and colleagues (2018) and Navarro-Carrillo and colleagues (2020). In the first study, *percieved* income, operationalized to categories of low, medium and high perceived income, was investigated. As the present study operationalized income as self-reports of yearly income approximately, this poses a methodological difference. However, since the scale of the present study had norwegian mean and median wages per full-time equivalent placed in the mid item - “525 000 – 700 000 kr” (4) -, it can be argued that the present scale reasonably can be expected to overlap satisfactory with subjective estimates of low, medium, and high levels of income. A smaller difference similarly exists between the present study’s operationalization of income and that of Navarro-Carrillo and colleagues (2020). In their study, income was operationalized as

self-reports of monthly income. This as well can reasonably be expected to pose an insignificant difference, thereby indicating that the results stem from actual sample differences and not methodological differences.

As earlier findings seemingly arose in Spanish and Turkish samples, cultural or societal differences might affect the mediating mechanisms between income and aggressive humor, and thereby cause different findings in the present sample.

One possibly relevant area of difference is income equality. The gini index is a statistical value indicating the degree to which income is unevenly distributed in a country, where a value of 0 indicates complete equality and 1 complete inequality (Durante et al., 2013, p. 730). A report from 2022 showed Spain to have a gini coefficient of 34.3, Turkey to have a score 41.9, and Norway to have a score of 27.7 (United Nations Development Programme, (UNDP) 2022, see table 3, p. 281). As evident, income is more evenly distributed in the societal context of the present sample than the apparent context of the samples in the study of Navarro-Carrillo and colleagues (2020) and the study of Yaprak and colleagues (2018). Because income inequality has a history of being linked positively to variables of varying relatedness such as aggression and violence (Krems & Varnum, 2017) and whether one as an adolescent has carried out or been the victim of bullying at least twice (Elgar et al., 2013), it seems plausible that contextual income inequality to some degree might moderate how levels of income affects levels of aggressive humor.

Seen through the lens of the AITP, one could also make the argument that income may only have significant associations with levels of experienced power, and thus approach tendencies that are likely to promote aggressive humor expressions, if income inequality reaches some threshold. For instance, it seems likely that wealthy people experiences greater levels of power in a society X where income differences between the wealthy and poorer are great, relative to the wealthy in a society Y where these differences are small. In society X it

may thus be expected that levels of income to a greater extent is associated with levels of power, and followingly that the rich will be more characterized by approach tendencies that can be viewed positively related to the aggressive humor style. The gini coefficients between Spain (34.3) and Norway (27.7) may not indicate extreme differences in income distribution, but this point may anyhow be viewed worthy of consideration.

### **Income, sensation seeking and the AITP**

The data did not support hypothesis 3, that there would be a positive relationship between levels of income and levels of sensation seeking. The hypothesis was deduced from the AITP and related findings, seeking to investigate if the relationships between income, sensation seeking, and aggressive humor followed a pattern aligning with the AITP literature. As neither hypothesis 1 or 3 was supported, this suggests an overall poor fit.

This discrepancy between the hypothesis and the data may have many reasonable explanations. One may be that the relationship between an individual's levels of income and power is weaker than assumed. The previously established relation between income and aggressive humor may for instance be governed by other mechanisms than power, which followingly would imply that the rationales for expecting income and sensation seeking to be positively related are flawed, thus explaining the present results. In their 2003 article, Keltner and colleagues defined power as the capacity of an individual to alter other people's states by the administer of resources and punishments. Resources was further elaborated to be both material, yielding an expected relationship with income, but also social. One source of error may thus be that income is too weakly connected to an individual's ability to administer social resources or punishments, and that the income measure isolated therefore is weakly connected to an individual's levels of power.

Another possibility compatible with point made over, is that the approach tendencies accounted for in the AITP and the sensation seeking construct overlaps too poorly. Although several modalities of both constructs are overlapping, approach tendencies also include characteristics such as increase in positive affect and automatic cognition, elements that are not directly related to trait sensation seeking. More profoundly, sensation seeking has been framed as a personality trait having biological and genetic bases (Zuckerman & Aluja, 2015, p. 377), which can be seen as implying congenital, time-consistent dispositions. This conflicts somewhat with the postulated nature of the AITP approach tendencies, which have been postulated to be a more situationally dependent mechanism.

Overall, the rationale underlying hypothesis 3 – that the earlier, separate findings of positive relations between aggressive humor, income and sensation seeking potentially could be connected in accordance with the AITP – can be viewed unsupported. As income neither predicted sensation seeking nor aggressive humor in the present study, this indicates that either some or all variables are poorly related to the power and approach tendencies of the AITP.

### **Strengths and limitations**

Several strengths and limitations can be identified regarding the present study. Overall, the project offers both extending investigations of subjects investigated sparsely, and a novel angle in contextualizing these findings never explored earlier. The characteristics of the sample constitutes another strength. The final sample is of convenient size ( $N = 221$ ), and with demographic characteristics suitable for investigating the generalizability of earlier findings. The earlier studies investigating income seemingly involved Spanish (Navarro-Carrillo et al., 2020) and Turkish (Yaprak et al., 2018) samples, thereby giving the present sample largely made up of Norwegian citizens a novel contribution with participants from a different cultural

context. Furthermore, the earlier studies investigating various risk tendencies (Cann & Cann, 2013) and sensation seeking (Kennison & Messer, 2019) utilized samples exclusively made up of students. As the present sample exclusively is made up of non-students, this offers a valuable, novel contribution.

Many limitations can be noted as well. Overall, the use of cross-sectional self-report data collection bring along several limitations. As data is only collected at one point of time, inferences of causality have no empirical foundation. Furthermore, self-report data entail many general limitations. Possibilities of measurement inaccuracy due to participants misinterpreting questions or statements cannot be ruled out, and this may be especially relevant as the ZKA-PQ SF and HSQ was translated by the students on the project. Other sources of error may be social desirability and potential impacts of inattention due to a relatively long questionnaire.

More specific to this study, the gender distribution and scale consistencies of the aggressive humor and sensation seeking variables can be highlighted as weaknesses. The gender distribution was somewhat skewed with 62 percent females, an element that must be contemplated when interpreting the simple regression models that did not control for gender. Furthermore, the aggressive humor and sensation seeking variables had Cronbach's alpha values below what seems to be an acknowledged threshold for acceptable internal consistency, namely .7 (Taber, 2018, p. 1288). As Taber (2018) emphasizes, rigid application of such thresholds for deeming reliability may be unjustified, but this discussion will not be elaborated further here. However, as the aggressive humor scale had an  $\alpha$  of .64 and the sensation seeking an  $\alpha$  of .6, this constitutes an element that should be considered when interpreting the present results.

## **Implications and further research**

The present findings yield several practical and theoretical implications, both in terms of knowledge and future extending research. The absent of support for hypothesis 1 suggests that the previously found relationship between income and the negative, hostile humor type aggressive humor is not universal. This implicates that the notion that the wealthy to a greater extent use this negative type of humor is not rigid, which can be used to counter potential social stigma stereotyping the wealthy to be less sympathetic.

The absent of support for hypothesis 3 may be interpreted in different ways, but overall, a reasonable interpretation may be that income, sensation seeking, and aggressive humor are poor or imprecise equivalents to AITP constructs power and approach behavior, either for the present sample or in general.

The support found for hypothesis 2 can be proven valuable in several contexts. Overall, it offers stronger foundations for understanding the mechanisms behind aggressive humor, which followingly can be valuable in efforts to understand and possibly counteract detrimental aspects of interpersonal social behavior. For instance, this finding can be fruitful in a clinical context. Clinical detection of high levels of aggressive humor can be interpreted as a cue for possible inclinations to health threatening risk behaviors. The other way, detection of problematically risky behavior can also be interpreted as a cue for the possible occurrence of aggressive humor damaging the social relations of the patient. Both examples are thus scenarios where the present finding can help increase the efficiency of a therapist-patient interaction.

This insight can also be proven valuable in the hiring context, as it can be relevant for measures taken to secure the welfare of employees. For instance, as personality testing is widely practiced when hiring (Risavy & Hausdorf, 2011, p. 1), sensation seeking measures can easily be included in the applied measures. Thereby, the knowledge gained from the present study can for instance guide recruiters in selecting the right candidates for supervisor or chief positions

based on sensation seeking scores. As supervisors' use of aggressive humor has been shown to inflict harm on employees, this knowledge may thus prove conducive in efforts aimed at securing the welfare of employees in the workplace.

Despite of this, several calls for future research can be made. Firstly, researchers are encouraged to polish the sensation seeking and aggressive humor measures due to the suboptimal internal reliabilities found. As higher numbers of total items in a scale have been shown to raise scale alpha values while average item correlation is held constant (Streiner, 2003, p. 101), this may be especially relevant for the aggressive humor scale as it contains eight items, while the sensation seeking alpha value was calculated on the four values for each facet. In alignment with Schermer and colleagues (2019, p. 14), future research is encouraged to polish the aggressive humor scale, and investigate the relationship between scale consistency and translations.

More theoretically, several calls for future research can be made. Regarding aggressive humor and income, future researchers are encouraged to apply cross-cultural designs accounting for income distribution and other relevant variables of cultural variation, to increase insights of how income can affect tendencies of aggressive humor expressions in diverse cultural settings. As to the relationship of sensation seeking and aggressive humor, future research is encouraged to apply study designs clarifying the exact aspects that lead high sensation seekers to use higher levels of aggressive humor. Propensity to risky behavior, aggressive humor expressions as sources of personal sensations, and overlaps between sensation seeking and aggressiveness, impulsivity and lack of inhibitory control have been presented as possible contributors.

Regarding the AITP, researchers are encouraged to investigate if the AITP can explain aggressive humor scores with more precise operationalizations of the power construct. Future research is encouraged to either experimentally or cross-sectionally investigate this link more

precisely, to clarify to what extent aggressive humor expressions rightfully can be considered related to approach tendencies.

## **Conclusion**

Aggressive humor has been empirically demonstrated to be related to negative psychological outcomes, especially in the work context where supervisors in power positions are expressors and employees recipients. The present study had two aims. Firstly, an aim was to further investigate previous, sparse findings of positive relations of aggressive humor to income and sensation seeking. Secondly, an aim was to investigate if these associations meaningfully could be interpreted as related through the AITP, viewing income and sensation seeking as positively related to aggressive humor due to positive relations of income to power, leading high income to cause approach tendencies and thus higher sensation seeking and aggressive humor scores. The positive association between income and aggressive humor did not reproduce within the present sample. As the data further showed no support for the prediction that income predicted sensation seeking positively, these two insights suggest that the AITP falls short as a suitable theoretical framework for understanding the relations between income, sensation seeking and aggressive humor. However, the present study did reproduce the previously found positive association of sensation seeking to aggressive humor. The present results are valuable in several ways. The failure to reproduce the positive relations between income and aggressive humor indicates that the relationship between wealth and aggressive humor proneness is conditioned. The found relation of sensation seeking and aggressive humor can both be useful in clinical contexts, and in hiring processes for prevention or counteraction of supervisors' damaging use of aggressive humor by personality testing for sensation seeking when hiring.



## REFERENCE LIST

- Aluja, A., Lucas, I., Blanch, A., García, O., & García, L. F. (2018). The Zuckerman-Kuhlman-Aluja Personality Questionnaire shortened form (ZKA-PQ/SF). *Personality and Individual Differences, 134*, 174–181. <https://doi.org/10.1016/j.paid.2018.06.015>
- Amani, M., & Shabahang, M. J. (2018). The Relationship of Sensation Seeking and Social Desirability With Humor Styles Among Iranian Salespersons. *Interpersona: An International Journal on Personal Relationships, 12*(1), 107. <https://doi.org/10.5964/ijpr.v12i1.271>
- Anderson, C., & Galinsky, A. D. (2006). Power, optimism, and risk-taking. *European Journal of Social Psychology, 36*(4), 511–536. <https://doi.org/10.1002/ejsp.324>
- American Psychological Association. (2023, 20.05). *humor*. *APA Dictionary of Psychology*. <https://dictionary.apa.org/humor>
- Aven, T., & Renn, O. (2009). On risk defined as an event where the outcome is uncertain. *Journal of Risk Research, 12*(1), 1–11. <https://doi.org/10.1080/13669870802488883>
- Cann, A., & Cann, A. T. (2013). Humor styles, risk perceptions, and risky behavioral choices in college students. *Humor: International Journal of Humor Research, 26*(4), 595–608. <https://doi.org/10.1515/humor-2013-0033>
- Carretero-Dios, H., & Ruch, W. (2010). Humor appreciation and sensation seeking: Invariance of findings across culture and assessment instrument? *Humor: International Journal of Humor Research, 23*(4), 427–445. <https://doi.org/10.1515/HUMR.2010.020>
- Cho, M., & Keltner, D. (2020). Power, approach, and inhibition: Empirical advances of a theory. *Current Opinion in Psychology, 33*, 196–200. <https://doi.org/10.1016/j.copsyc.2019.08.013>

- Durante, F., Fiske, S. T., Kervyn, N., Cuddy, A. J. C., Akande, A. (Debo), Adetoun, B. E., Adewuyi, M. F., Tserere, M. M., Ramiah, A. A., Mastor, K. A., Barlow, F. K., Bonn, G., Tafarodi, R. W., Bosak, J., Cairns, E., Doherty, C., Capozza, D., Chandran, A., Chrysochoou, X., ... Storari, C. C. (2013). Nations' income inequality predicts ambivalence in stereotype content: How societies mind the gap. *British Journal of Social Psychology, 52*(4), 726–746. <https://doi.org/10.1111/bjso.12005>
- Elgar, F. J., Pickett, K. E., Pickett, W., Craig, W., Molcho, M., Hurrelmann, K., & Lenzi, M. (2013). School bullying, homicide and income inequality: A cross-national pooled time series analysis. *International Journal of Public Health, 58*(2), 237–245. <https://doi.org/10.1007/s00038-012-0380-y>
- Field, A. (2009). *DISCOVERING STATISTICS USING SPSS* (3. ed.). SAGE Publications Ltd
- García, L. F., Escorial, S., García, Ó., Blanch, A., & Aluja, A. (2012). Structural Analysis of the Facets and Domains of the Zuckerman-Kuhlman-Aluja Personality Questionnaire (ZKA-PQ) and the NEO PI-R. *Journal of Personality Assessment, 94*(2), 156–163. <https://doi.org/10.1080/00223891.2011.645935>
- Goswami, A., Nair, P. K., & Grossenbacher, M. A. (2015). Impact of aggressive humor on dysfunctional resistance. *Personality and Individual Differences, 74*, 265–269. <https://doi.org/10.1016/j.paid.2014.10.037>
- Guenzi, P., Rangarajan, D., Chaker, N. N., & Sajtos, L. (2019). It is all in good humor? Examining the impact of salesperson evaluations of leader humor on salesperson job satisfaction and job stress. *Journal of Personal Selling & Sales Management, 39*(4), 352–369. <https://doi.org/10.1080/08853134.2019.1598267>
- Heintz, S. (2019). Do Others Judge My Humor Style as I Do? *European Journal of Psychological Assessment, 35*(5), 625–632. <https://doi.org/10.1027/1015-5759/a000440>

- Hittner, J. B., & Swickert, R. (2006). Sensation seeking and alcohol use: A meta-analytic review. *Addictive Behaviors, 31*(8), 1383–1401.  
<https://doi.org/10.1016/j.addbeh.2005.11.004>
- United Nations Development Programme. (2022). *Human Development Report 2021/2022: Uncertain Times, Unsettled Lives: Shaping our Future in a Transforming World*. Retrieved 3.05.2023, from [https://hdr.undp.org/system/files/documents/global-report-document/hdr2021-22pdf\\_1.pdf](https://hdr.undp.org/system/files/documents/global-report-document/hdr2021-22pdf_1.pdf)
- Huo, Y., Lam, W., & Chen, Z. (2012). Am I the Only One This Supervisor is Laughing at? Effects of Aggressive Humor on Employee Strain and Addictive Behaviors. *Personnel Psychology, 65*(4), 859–885. <https://doi.org/10.1111/peps.12004>
- Jonah, B. A. (1997). Sensation seeking and risky driving: A review and synthesis of the literature. *Accident Analysis & Prevention, 29*(5), 651–665.  
[https://doi.org/10.1016/S0001-4575\(97\)00017-1](https://doi.org/10.1016/S0001-4575(97)00017-1)
- Keltner, D., Gruenfeld, D. H., & Anderson, C. (2003). Power, approach, and inhibition. *Psychological Review, 110*(2), 265–284. <https://doi.org/10.1037/0033-295X.110.2.265>
- Kennison, S. M., & Messer, R. H. (2019). Humor as Social Risk-Taking: The Relationships Among Humor Styles, Sensation-Seeking, and Use of Curse Words. *Humor: International Journal of Humor Research, 32*(1), 1–21. <https://doi.org/10.1515/humor-2017-0032>
- Krems, J. A., & Varnum, M. E. W. (2017). More than just climate: Income inequality and sex ratio are better predictors of cross-cultural variations in aggression. *Behavioral and Brain Sciences, 40*. <https://doi.org/10.1017/S0140525X16001047>
- Martin, R. A., Puhlik-Doris, P., Larsen, G., Gray, J., & Weir, K. (2003). Individual differences in uses of humor and their relation to psychological well-being:

- Development of the Humor Styles Questionnaire. *Journal of Research in Personality*, 37(1), 48–75. [https://doi.org/10.1016/S0092-6566\(02\)00534-2](https://doi.org/10.1016/S0092-6566(02)00534-2)
- Masson, M., Lamoureux, J., & de Guise, E. (2020). Self-reported risk-taking and sensation-seeking behavior predict helmet wear amongst Canadian ski and snowboard instructors. *Canadian Journal of Behavioural Science / Revue canadienne des sciences du comportement*, 52(2), 121. <https://doi.org/10.1037/cbs0000153>
- McCosker, B., & Moran, C. C. (2012). Differential effects of self-esteem and interpersonal competence on humor styles. *Psychology Research and Behavior Management*, 5, 143–150. <https://doi.org/10.2147/PRBM.S36967>
- McEwan, D., Boudreau, P., Curran, T., & Rhodes, R. E. (2019). Personality traits of high-risk sport participants: A meta-analysis. *Journal of Research in Personality*, 79, 83–93. <https://doi.org/10.1016/j.jrp.2019.02.006>
- Mendiburo-Seguel, A., Páez, D., & Martínez-Sánchez, F. (2015). Humor styles and personality: A meta-analysis of the relation between humor styles and the Big Five personality traits. *Scandinavian Journal of Psychology*, 56(3), 335–340. <https://doi.org/10.1111/sjop.12209>
- Plessen, C. Y., Franken, F. R., Ster, C., Schmid, R. R., Wolfmayr, C., Mayer, A.-M., Sobisch, M., Kathofer, M., Rattner, K., Kotlyar, E., Maierwieser, R. J., & Tran, U. S. (2020). Humor styles and personality: A systematic review and meta-analysis on the relations between humor styles and the Big Five personality traits. *Personality and Individual Differences*, 154, 109676. <https://doi.org/10.1016/j.paid.2019.109676>
- Risavy, S. D., & Hausdorf, P. A. (2011). Personality Testing in Personnel Selection: Adverse impact and differential hiring rates. *International Journal of Selection and Assessment*, 19(1), 18–30. <https://doi.org/10.1111/j.1468-2389.2011.00531.x>

- Ruch, W. (1992). Assessment of appreciation of humor: Studies with the 3 WD humor test. *Advances in Personality Assessment*, 9, 27-75. <https://doi.org/10.5167/uzh-77946>
- Schermer, J. A., Rogoza, R., Kwiatkowska, M. M., Kowalski, C. M., Aquino, S., Ardi, R., Bolló, H., Branković, M., Chegeni, R., Crusius, J., Doroszuk, M., Enea, V., Truong, T. K. H., Iliško, D., Jukić, T., Kozarević, E., Kruger, G., Kurtić, A., Lange, J., ... Krammer, G. (2019). Humor styles across 28 countries. *Current Psychology (New Brunswick, N.J.)*. <https://doi.org/10.1007/s12144-019-00552-y>
- Streiner, D. L. (2003). Starting at the Beginning: An Introduction to Coefficient Alpha and Internal Consistency. *Journal of Personality Assessment*, 80(1), 99–103. [https://doi.org/10.1207/S15327752JPA8001\\_18](https://doi.org/10.1207/S15327752JPA8001_18)
- Taber, K. S. (2018). The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education. *Research in Science Education (Australasian Science Education Research Association)*, 48(6), 1273–1296. <https://doi.org/10.1007/s11165-016-9602-2>
- Torres-Marín, J., Navarro-Carrillo, G., & Carretero-Dios, H. (2022). Differentiating the traits of the Dark Tetrad in their linkages with humor styles, dispositions toward ridicule and laughter, and comic styles. *Personality and Individual Differences*, 185, 111281. <https://doi.org/10.1016/j.paid.2021.111281>
- Zaleskiewicz, T., Gasiorowska, A., Kesebir, P., Luszczynska, A., & Pyszczynski, T. (2013). Money and the fear of death: The symbolic power of money as an existential anxiety buffer. *Journal of Economic Psychology*, 36, 55–67. <https://doi.org/10.1016/j.joep.2013.02.008>
- Zhang, L., Zhang, C., & Shang, L. (2016). Sensation-seeking and domain-specific risk-taking behavior among adolescents: Risk perceptions and expected benefits as mediators.

*Personality and Individual Differences*, 101, 299–305.

<https://doi.org/10.1016/j.paid.2016.06.002>

Zuckerman, M., & Aluja, A. (2015). Chapter 13—Measures of Sensation Seeking. In *Measures of Personality and Social Psychological Constructs* (p. 352–380). Elsevier Inc. <https://doi.org/10.1016/B978-0-12-386915-9.00013-9>

Zuckerman, M., Eysenck, S. B., & Eysenck, H. J. (1978). Sensation seeking in England and America: Cross-cultural, age, and sex comparisons. *Journal of Consulting and Clinical Psychology*, 46(1), 139-149. <https://doi.org/10.1037/0022-006X.46.1.139>

Zuckerman, M. (1994). *Behavioral Expressions and Biosocial Bases of Sensation Seeking*. Cambridge University Press.



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