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## Salesperson Genetics and Managerial Remedies

Winter, Christian G. H.; Zacharias, Nicolas A.; de Jong, Ad; Habel, Johannes

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Research paper

# The stress of prospecting: Salesperson genetics and managerial remedies

Christian G.H. Winter [a,*], Nicolas A. Zacharias [a], Ad de Jong [b], Johannes Habel [c]

[a] Friedrich Schiller University, Faculty of Economics and Business Administration, Chair of Marketing, Carl-Zeiß-Straße 3, 07743 Jena, Germany
[b] Copenhagen Business School, Department of Marketing, 2000 Frederiksberg, Denmark
[c] C.T. Bauer College of Business, Department of Marketing & Entrepreneurship, University of Houston, Houston, TX 77204, USA

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ABSTRACT

Prospecting involves significant stress for industrial salespeople. Some react by procrastinating or develop mental health issues whereas others dive headfirst into it. Employing genetic, survey, and experimental data, this study explores whether these different reactions relate to genetic predispositions of salespeople and how managers and salespeople can intervene. Drawing on differential susceptibility theory (DST) and stress research, we propose that carrying the Serotonin Transporter Gene S allele (SERT S) has the potential to affect a salesperson's propensity to prospect because it makes salespeople more sensitive towards negative information. We find empirical evidence that carrying SERT S has a positive relationship with prospecting for salespeople who tend to appraise stressors as eustress (salespeople high in sensation seeking), and a negative relationship for salespeople who tend to appraise stressors as distress (salespeople high in neuroticism). An experiment further supports these findings and explores how managers and salespeople can trigger coping to mitigate the negative effects of distress appraisals in prospecting. Thereby, the study contributes to research on salesperson well-being by taking a DST perspective on salesperson stress. Furthermore, the study provides actionable implications for business practice on employee well-being.

## 1. Introduction

*"It is not stress that kills us, it is our reaction to it!"* – Hans Selye

Selling in business-to-business (B2B) markets can be a stressful endeavor (e.g., McFarland & Dixon, 2021). Stress, like other negative psychological states, can lead to negative work-related salesperson outcomes such as absenteeism, intention to leave, intentional slow-work (Hochstein, Lilly, & Stanley, 2017), and avoidance (Bagozzi & Verbeke, 2020). In addition, recently the role of work stress for salesperson mental health and well-being has received increasing scholarly attention (e.g., Dugan, Ubal, & Scott, 2023; Hartmann, Chaker, Lussier, Larocque, & Habel, 2024; Lyngdoh, Chefor, Hochstein, Britton, & Amyx, 2021).

However, not all stress is negative; challenging situations—so called stressors—can also be appraised positively (Mende, Scott, Bitner, & Ostrom, 2017; Selye, 1973). While negative stress, or distress, is associated with adverse health outcomes, absenteeism, and turnover (Nelson & Cooper, 2007; Quick, Quick, Nelson, & Hurrell, 1997), positive stress, or eustress, is associated with positive outcomes in terms of work performance and physical health (Nelson & Cooper, 2007)—for example, work satisfaction, organizational commitment, and goal orientation (Cavanaugh, Boswell, Roehling, & Boudreau, 2000; Rodríguez, Kozusznik, & Peiró, 2013; Scheck, Kinicki, & Davy, 1997). How individuals appraise stressors leading to eustress or distress is a function of their individual characteristics (Branson, Dry, Palmer, & Turnbull, 2019; Nelson & Cooper, 2007; Nelson & Simmons, 2011), which are partly due to one's genetic makeup (e.g., Salinas et al., 2020).

In this regard, rapid advances in biotechnology have brought us to the "dawn of a new age" (Daviet, Nave, & Wind, 2021, p. 7). Especially polymerase chain reaction (PCR) amplification technology that allows to selectively identify specific DNA sequences has become part of everyday life during the COVID-19 pandemic (National Human Genome Research Institute, 2022). Given these technological advancements and the pressing need to better understand the causes and consequences of mental health and well-being, the question arises whether genetic analyses can help explain why different individuals are very differently affected by similar work stressors.

This question is especially relevant for salespeople in B2B markets. A key stressor for B2B salespeople is potential rejection by customers (e.g.,

* Corresponding author.
*E-mail addresses:* christian.winter@uni-jena.de (C.G.H. Winter), nicolas.zacharias@uni-jena.de (N.A. Zacharias), adj.marktg@cbs.dk (A. de Jong), jhabel@bauer.uh.edu (J. Habel).

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DeCarlo & Lam, 2016; Ingram, LaForge, Avila, Schwepker, & Williams, 2017; Verbeke, Bagozzi, van den Berg, Worm, & Belschak, 2016; Whiting, Donthu, & Baker, 2011). Such rejection is particularly likely during prospecting, that is, approaching and engaging with unknown potential customers (DeCarlo & Lam, 2016; Ingram et al., 2017; Verbeke & Bagozzi, 2000). Salespeople significantly differ in their reactions to potential rejection. For example, some salespeople actively seek new prospects while others avoid prospecting and instead focus on existing customers (DeCarlo & Lam, 2016). Further, while some salespeople thrive under pressure, others develop mental health issues like burnout (e.g., Habel, Alavi, & Linsenmayer, 2021; McFarland & Dixon, 2021).

In this study, we identify and examine one gene that has been associated with various mental health issues like major depression (e.g., Gutiérrez et al., 2015), autism spectrum disorder (Nuñez-Rios, Chaskel, Lopez, Galeano, & Lattig, 2024), panic disorder (Miozzo, Eaton, Joseph Bienvenu, Samuels, & Nestadt, 2020), or substance abuse (Taylor, 2016): the short allele of Serotonin Transporter Gene (SERT S). SERT S makes salespeople more sensitive to negative social cues, which might cause them to more intensively experience psychologically demanding situations, such as potential rejection while prospecting (Fox & Beevers, 2016). Accordingly, we theorize that salespeople who carry SERT S might be more likely to expect perceiving negative social cues from customers during their prospecting attempts, which may cause either eustress or distress for them. This perspective aligns with Differential Susceptibility Theory (DST), which posits that the same genetic variation may either have beneficial or detrimental effects on a given individual depending on moderating factors (Belsky, Bakermans-Kranenburg, & van Ijzendoorn, 2007; Belsky & Pluess, 2009; Belsky & van Ijzendoorn, 2017). More specifically, we argue that SERT S has a negative effect on the propensity to prospect for salespeople high in neuroticism, as neuroticism fosters distress appraisals of negative social cues during prospecting. Conversely, we expect a positive effect of carrying SERT S for salespeople high in sensation seeking, as sensation seeking fosters eustress appraisals of negative social cues. In addition, we explore how sales managers can support salesperson coping to mitigate the harmful effects of distress appraisals.

To test our hypotheses, we collected saliva samples from 594 salespeople and performed genetic analyses to identify carriers of SERT S. Additionally, we gathered survey data to assess these salespeople's traits and their propensities to prospect. Building on this rich data set, we tested our model using multivariate regression analyses. We find support for the notion that the effect of a salesperson carrying SERT S on prospecting depends on neuroticism and sensation seeking. More precisely, we find that neuroticism moderates the relationship negatively, indicating distress appraisal, while sensation seeking moderates it positively, indicating eustress appraisal. Further, we use an experiment with 300 salespeople to demonstrate that supervisor supported problem-focused and emotion-focused coping can alleviate the negative effects of distress appraisals on a salesperson's decision to prospect.

This study makes four key contributions. First, we contribute to the sparse literature explaining the genetic roots of variation in salesperson performance-related behavior (e.g., Verbeke, Belschack, Bagozzi, Pozharliev, & Ein-Dor, 2017) and add knowledge on the role of genes in prospecting (Bagozzi & Verbeke, 2020). We show how genetic variations interact with traits to influence sales behavior, thereby providing sales managers with a new perspective to consider when identifying suitable individuals for specific selling tasks.

Second, we are the first to apply a DST perspective to marketing and sales research, showing that psychological factors decisively moderate the effect of genetic predispositions in a "for-better-*and*-for-worse" manner (Belsky et al., 2007, p. 300). In other words, we show that certain genetic variations can have either positive or negative effects on carriers' behavioral propensities, depending on contingency factors. Given the increasingly easy access to genetic information for sales scholars and practitioners (Daviet et al., 2021), our study underscores that more nuanced analyses of such data, including both positive and negative contingency effects (Fox, Ridgewell, & Ashwin, 2009), are required to predict business related outcomes. We thereby highlight the opportunities but also point to tensions arising from using new biotechnological approaches in selling and sales management research.

Third, we bridge DST and organizational stress research by proposing that psychological trait-based eustress and distress appraisals of stressors explain why carriers of SERT S vary in their reactions to mentally demanding situations. In so doing, we provide information on the biological and psychological underpinnings of DST (Homberg & Jagiellowicz, 2022) and provide a new angle on the occurrence of eustress and distress in sales situations as well as more general workplace situations (Nelson & Simmons, 2011). That is, we underline the relevance of considering genetic variation in understanding and influencing stress-related behaviors, outcomes, or conditions in sales, like burnout (e.g., McFarland & Dixon, 2021; Peasley, Hochstein, Britton, Srivastava, & Stewart, 2020; Singh, Goolsby, & Rhoads, 1994) and anxiety (e.g., Agnihotri, Vieira, Senra, & Gabler, 2016; Verbeke et al., 2016).

Fourth, this research demonstrates how sales managers can support salespeople's coping with prospecting-induced stress by mitigating the harmful effects of distress appraisals while capitalizing on the positive effects of eustress. Thereby, we contribute to positive psychology literature that aims to find ways for "savoring eustress while coping with distress" (Nelson & Simmons, 2011, p. 4). We further emphasize the importance of providing targeted managerial support to salespeople affected by a tendency towards distress appraisals. Thereby we add to the literature highlighting sales supervisors' supportive role for their salespeople's mental health (e.g., Brown, Locander, & Locander, 2022), especially regarding supervisor-supported emotion-focused and problem-focused coping (Amin, Arndt, & Tanner, 2023).

## 2. Conceptual and biological background

### 2.1. Stress appraisals (eustress and distress)

Salespeople in industrial settings are frequently exposed to high levels of stress (McFarland & Dixon, 2021). Stress is defined as "the naturally occurring mind-body response to demanding and/or emergency situations" (Quick, Horn, & Quick, 1987, p. 19). Those demanding situations (e.g., role or interpersonal demands), called "stressors," are inherently neutral in nature (Nelson & Cooper, 2007); that is, they have no inherent valence (Branson et al., 2019). Stress is not caused directly by the stressor or the stressor's characteristics but rather by individuals' *response* to the stressor based on their cognitive appraisal of that stressor (Lazarus, 1993; Nelson & Cooper, 2007; Quick et al., 1987).

This appraisal-based response can be positive or negative (Mende et al., 2017; Selye, 1973). Positive responses, or eustress, occur when individuals appraise the stressor as a challenge that they can overcome, and that provides an opportunity to increase their well-being and a feeling of fulfillment. In general, eustress is associated with positive outcomes in terms of work performance and physical health (Nelson & Cooper, 2007)—for example, work satisfaction, organizational commitment, and goal orientation (Cavanaugh et al., 2000; Rodríguez et al., 2013; Scheck et al., 1997). In contrast, a negative response, or distress, is engendered when the stressor is interpreted as a source of harm or threat, occurring when psychological damage has occurred or is imminent (Lazarus, 1993). Distress is associated with adverse health outcomes, absenteeism, and turnover (Quick et al., 1997; Nelson & Cooper, 2007). How individuals appraise stressors leading to eustress or distress is a function of their characteristics, especially their psychological traits (Branson et al., 2019; Nelson & Cooper, 2007). Furthermore, positive and negative stress responses are not mutually exclusive and can occur simultaneously (Rodríguez et al., 2013).

### 2.2. Differential susceptibility theory

Variations in individuals' work behavior and performance are partly due to differences in their genetic makeup (e.g., Bagozzi & Verbeke, 2020; Camerer & Yoon, 2015; Salinas et al., 2020, for a primer on the human genome, see Daviet et al., 2021). This fact is mirrored by findings on genetic influences in sales contexts (e.g., Bagozzi & Verbeke, 2020; Verbeke & Masih, 2020). To identify specific effects of genes or gene combinations, researchers build on two approaches: genome-wide association studies and candidate-gene approaches. Genome-wide association studies represent data-driven investigations linking phenotypes (e.g., clinical diagnosis) with genetic variations across the entire human genome, while candidate-gene approaches rely on theoretically and microbiologically deduced hypotheses on relationships between phenotypes and specific genetic variations (Daviet et al., 2021; Fox et al., 2009). Because our focus herein is on theoretically and microbiologically deduced hypotheses regarding the relationship between SERT S and prospecting, this study relies on the candidate-gene approach.

Because genetic variation often explains only small proportions of variance in behavior, researchers in genetics (e.g., Caspi et al., 2002) as well as in sales (e.g., Bagozzi & Verbeke, 2020) have focused on interactions of candidate genes with other genes, environmental conditions, and individual characteristics. Especially in the context of individual and social behavior, such as in sales situations, psychological characteristics can moderate the effect of genetic variants (Bagozzi & Verbeke, 2020; Belsky & Pluess, 2009; Seabrook & Avison, 2010).

Scholars have long considered some genetic variations to make carriers vulnerable to specific environmental influences (Sameroff, 1983; Zuckerman, 1999). These carriers are considered "disproportionately or even exclusively likely to be affected adversely by an environmental stressor" (Belsky & Pluess, 2009, p. 885). Other individuals, due to certain factors that protect them against such vulnerabilities, are considered resilient to these stressors (Luthar, 2006). DST challenges this view as being too one-sided from an evolutionary perspective: adverse and supportive conditions have been present throughout human development; therefore, natural selection should not result in widespread genetic variants making carriers susceptible only to negative effects of contextual adversity. According to this view, natural selection would have decreased carriers' chances of passing on such genes to the next generation (Belsky & van Ijzendoorn, 2017; Ellis, Boyce, Belsky, Bakermans-Kranenburg, & van Ijzendoorn, 2011).

Instead, DST proposes that "vulnerable" individuals could also be more susceptible to supportive conditions. In light of uncertain environmental influences, a species could draw on selection advantages from genetic hedging, such that some alleles would make carriers less susceptible to environmental influences (i.e., resilient), while other alleles of the same gene would make carriers more susceptible to those influences in a "for-better-*and*-for-worse" (Belsky et al., 2007, p. 300) manner (Belsky & Pluess, 2009). In this sense, in many cases genetic variations previously considered "vulnerability genes" or "risk alleles" may function more as plasticity[1] genes (Belsky et al., 2009).

Recently, scholars have found empirical support for DST. For example, meta-analytic evidence suggests that putative vulnerable variations in the dopamine-related genes DRD4, DRD2, and DAT can be associated with varying levels of susceptibility to differences in parenting style and childhood environment. In unsupportive environments, preschoolers who carried the putatively vulnerable variants achieved worse outcomes than their non-carrying counterparts; however, in supportive rearing conditions, they outperformed their non-carrying agemates (Bakermans-Kranenburg & van Ijzendoorn, 2011). Similarly, Bagozzi and Verbeke (2020) found that variants of the DRD4 gene influenced salespeople's job satisfaction differently depending on interactions with different attachment styles and with role conflict. Other findings pertain to the SERT gene, which has been connected to DST in several environmental circumstances (e.g., Fox & Beevers, 2016; Homberg & Jagiellowicz, 2022; van Ijzendoorn, Belsky, & Bakermans-Kranenburg, 2012). For example, Beevers, Pacheco, Clasen, McGeary, and Schnyer (2010) show that SERT is associated with heightened neural reactivity to both positive and negative emotional stimuli in comparison to neutral stimuli, an effect that may have been overlooked if the authors had only searched for risk genes for depression. The next section highlights SERT S in more detail.

### 2.3. SERT S

An essential mechanism through which genes can influence behavior is through encoding neurotransmitters, which are proteins influencing neurological and behavioral processes (Chi, Li, Wang, & Song, 2016; Nofal, Nicolaou, Symeonidou, & Shane, 2018). One important neurotransmitter is serotonin, which regulates brain functions like pain, sleep, emotion, cognition (Savitz & Ramesar, 2004; Song, Li, & Arvey, 2011), and social behavior (Carver, Johnson, & Joormann, 2009; Spoont, 1992). It is especially crucial in the context of stress reactions (Lucki, 1998). SERT encodes a protein removing excess serotonin from the synaptic cleft. This gene is polymorphic, meaning that for certain areas of the genetic sequence (loci), several variants (alleles) exist that are distributed throughout a given population. For SERT, two alleles are widely distributed: a short allele (S) and a longer version (L) (Canli & Lesch, 2007).

Carriers of the SERT S allele produce less 5-HTT mRNA and protein, which makes serotonin uptake less efficient. Consequently, higher concentrations of serotonin remain in the synaptic cleft (Canli & Lesch, 2007). Using functional magnetic resonance imaging, researchers have associated those conditions with processes connected to the amygdala region (fear center) of the brain, which is central to emotional behavior and arousal, vigilance, and fear response (Hariri et al., 2002; Hariri & Holmes, 2006; Ressler, 2010) and has been identified as a crucial part of the brain in terms of differential susceptibility (Gard, Shaw, Forbes, & Hyde, 2018). In line with these findings, other studies have associated SERT S with higher amygdala reactivity when confronted with either positive or negative emotional stimuli, in contrast to neutral stimuli (Drabant et al., 2012; Klucken et al., 2013). Furthermore, individuals who carry at least one copy of SERT S do not show an attention bias towards positive information, in contrast to their homozygous counterparts who carry the long variant of SERT, SERT L. In other words, carriers of SERT S are more sensitive to negative information (Fox et al., 2009).

In line with DST, molecular psychiatry findings point to SERT S being more of a plasticity allele than a risk allele, as carriers of SERT S are more sensitive to both positive and negative environments (e.g., Caspi, Hariri, Holmes, Uher, & Moffitt, 2010). van Ijzendoorn et al. (2012) provide meta-analytic evidence suggesting that, at least for certain subsamples, SERT S carriers are significantly more vulnerable to negative environments when it comes to developmental outcomes but also profit significantly more from supportive environments. Other scholars have found that SERT S carriers show heightened neural reactivity to both positive and negative emotional stimuli in comparison to neutral stimuli (Beevers et al., 2010).

Although studies have associated SERT S with several business outcomes (e.g., job satisfaction (Song et al., 2011), corporate corruption (Kong, 2014), social behavior, as well as health issues like depression and anxiety (Gyurak et al., 2013)), none have thus far taken a DST perspective. Therefore, these studies have neglected that whether SERT S has positive or negative effects on business outcomes might depend on contingency factors. Furthermore, little is known about psychological or biological mechanisms driving differential susceptibility in the context of SERT S (Fox & Beevers, 2016; Homberg & Jagiellowicz, 2022), especially in industrial marketing and sales.

[1] "Neuroplasticity" refers to malleability on a neural level (Nguyen, Murphy, & Andrews, 2019).

## 3. Study framework

Fig. 1 depicts our study framework, which is rooted in DST and organizational stress research. We examine the relationship between salespeople carrying the short allele of SERT, (SERT S) and a crucial activity that is elementary to the industrial sales process: prospecting (cf. Belschak, Verbeke, & Bagozzi, 2006; Verbeke & Bagozzi, 2000). We define it as a salesperson's propensity to approach and engage with unknown potential customers.

Carrying SERT S makes salespeople more sensitive to negative social cues in prospecting, which should cause these salespeople to experience psychologically demanding situations more frequently (Fox & Beevers, 2016). However, in line with DST, we expect the effect of carrying SERT S on prospecting to depend on interacting psychological factors. More specifically, we argue that negative or positive effects for an individual salesperson only occur through their appraisal of psychologically demanding situations in terms of distress or eustress. As explained previously, not all demanding situations (i.e., stressors) are perceived negatively (Mende et al., 2017; Selye, 1973). Instead, the valence of stressors is determined by individuals' cognitive appraisal of these stressors as negative (i.e., distress) or positive (i.e., eustress). Following this perspective, salespeople might experience the potential of being rejected during prospecting as either unpleasant distress, and thus avoid it, or as thrilling eustress, and thus seek it out.

First, we expect neuroticism to negatively moderate the relationship between carrying SERT S and prospecting. Neuroticism describes emotional instability and a propensity to experience negative affect (Costa & McCrae, 1992). Therefore, we expect neuroticism to increase the likelihood of a salesperson to appraise a given stressor in terms of distress rather than eustress. Second, sensation seeking describes 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). We expect sensation seeking to positively moderate the relationship between carrying SERT S and prospecting. This is because sensation seeking may increase the likelihood of a salesperson to appraise a given stressor in terms of eustress rather than distress.

Additionally, we explore how supervisors can help those salespeople who tend to appraise stressors in terms of distress by supporting their coping. To do so, we develop and test a problem-focused as well as an emotion-focused coping mechanism, both of which supervisors can either control directly or by training their salespeople. We elaborate in the following sections.

## 4. Hypotheses

### 4.1. The role of SERT S in prospecting

In prospecting situations, salespeople deal with customers who have unknown needs and characteristics, which makes those situations vague, ambiguous, and easy to provoke rejection. Therefore, during prospecting salespeople frequently face negative social cues (e.g., facial expressions, body language, voice modulation) hinting at rejection or dislike (Alavi, Habel, & Linsenmayer, 2019; Cascio, O'Donnell, Bayer, Tinney, & Falk, 2015). For salespeople in prospecting situations, dealing with and appropriately reacting to such social cues is essential (Verbeke & Bagozzi, 2000). Given high rejection rates and pressure in sales (DeCarlo & Lam, 2016), becoming aware of such social cues constitutes a psychologically demanding situation and thus may lead salespeople to experience stress.

Carriers of SERT S show a bias towards processing negative information and are more likely to notice and process negative social cues (Dannlowski et al., 2012; Fox et al., 2009; Fox & Beevers, 2016). Therefore, salespeople carrying SERT S should be more likely to pick up on customers' negative cues during prospecting and thus experience prospecting as psychologically demanding (Fox et al., 2009; Fox & Beevers, 2016; Homberg & Jagiellowicz, 2022). However, we do not expect a significant positive or negative main effect of SERT S on their decision to prospect. Rather, as outlined previously, evidence points to SERT S being a plasticity gene rather than a vulnerability gene. Building

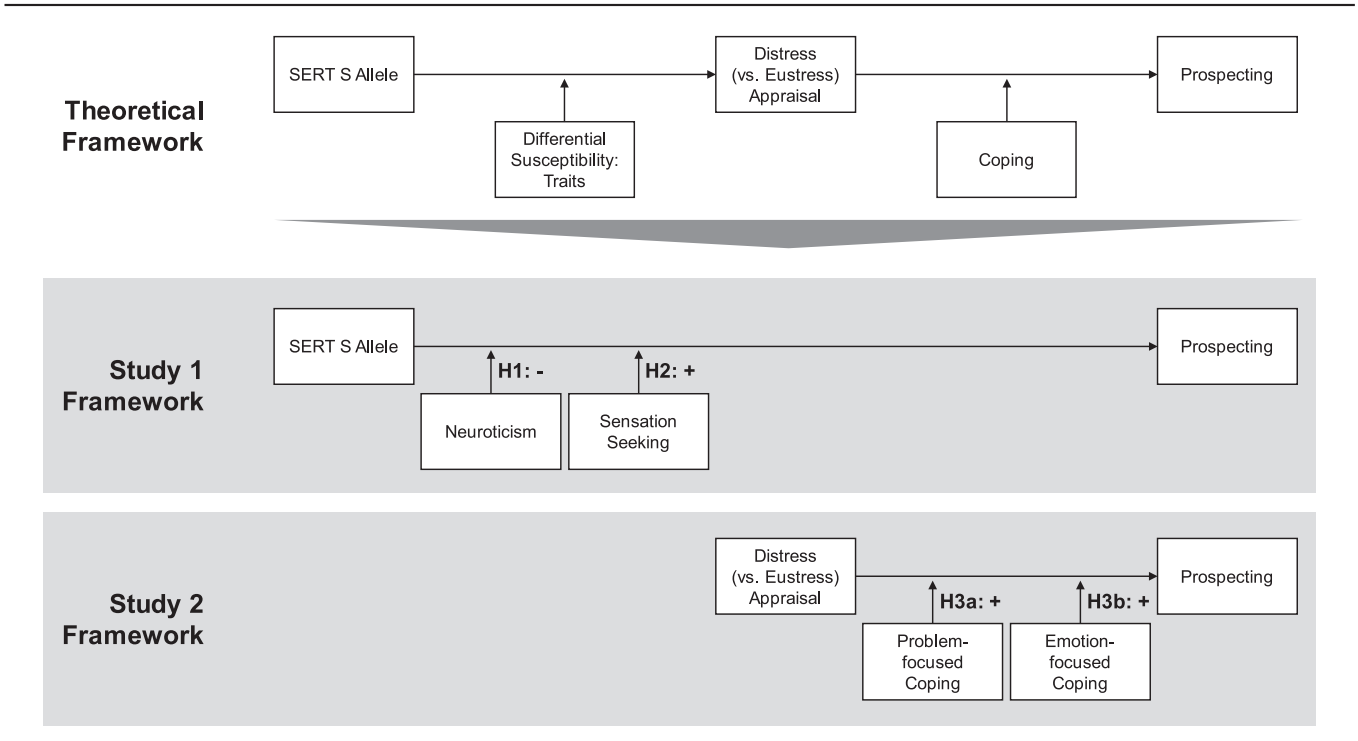


**Fig. 1.** Study Framework.

on this notion, we propose that whether salespeople carrying SERT S engage in or avoid prospecting depends on whether they appraise prospecting-related stressors in terms of eustress or distress (Nelson & Cooper, 2007). This appraisal depends on whether the salesperson perceives that they can overcome the demanding situation and increase their well-being or take psychological damage (Lazarus, 1993). We propose this perception to be shaped by a salesperson's psychological traits (Nelson & Cooper, 2007), which represent individual differences fostering consistent reactions to the environment (Matthews, Deary, & Whiteman, 2009; Schneider, Rench, Lyons, & Riffle, 2012).

### 4.2. The moderating role of neuroticism

Processing social cues that hint at rejection during prospecting only creates negative stress reactions (i.e., distress) if the salesperson appraises the situation as a potential source of psychological harm (Lazarus, 1993; Quick et al., 1997). One important trait connected to such appraisal is neuroticism. Highly neurotic individuals are prone to experiencing state negative affect, showing anxiety, impulsiveness, and vulnerability to stress, and they feel worse about their coping abilities (Costa & McCrae, 1992; Penley & Tomaka, 2002; Suls, 2001). As neurotic individuals deem their coping abilities to be lower, they are more likely to appraise stressors as threats and thus experience distress (McNiel & Fleeson, 2006; Schneider, 2004).

As outlined previously, salespeople carrying SERT S should pick up on more negative social cues and show a higher neural reactivity towards these cues while prospecting, thus encountering more psychologically demanding situations (Fox et al., 2009; Fox & Beevers, 2016; Homberg & Jagiellowicz, 2022; Nelson & Cooper, 2007). Highly neurotic salespeople carrying SERT S should be more likely to expect psychological damage from these cues and thus experience distress, which should lead them to avoid prospecting (David & Holladay, 2015; Nelson & Cooper, 2007).

In summary, salespeople carrying SERT S who have high levels of neuroticism should experience more stressors (due to SERT S) and should be more likely to appraise those stressors in terms of distress (due to neuroticism), making the effect of carrying SERT S on prospecting negative. Thus, we hypothesize:

**$H_1$**. As a salesperson's neuroticism increases, the relationship of carrying SERT S with prospecting becomes more negative.

### 4.3. The moderating role of sensation seeking

In contrast, processing social cues hinting at rejection while prospecting can create positive stress reactions (i.e., eustress) if the salesperson tends to appraise psychologically demanding situations as an opportunity to increase well-being and gain a feeling of fulfillment (Lazarus, 1993). We argue that salespeople are more likely to appraise prospecting this way if they have high levels of sensation seeking. Indeed, sensation seeking is accompanied by a decreased tendency to see the world as threatening, as well as lower levels of fear and anxiety when anticipating aversive stimuli (Franken, Gibson, & Rowland, 1992; Lissek et al., 2005; Roberti, 2004; Roth, Liebe, & Altmann, 2019). Furthermore, individuals with high levels of sensation seeking are willing to engage in risky situations to experience novel, complex, and intense sensations (Roberti, 2004; Zuckerman, 1994).

More specifically, picking up on customers' negative social cues during prospecting highlights potential obstacles and suggests an increased risk of being rejected, causing psychologically demanding situations. Salespeople with high levels of sensation seeking should be more likely to embrace the challenge connected to potential obstacles as opportunities to experience intense and complex sensations. Thus, they should appraise these situations as an opportunity to increase their well-being and gain a feeling of fulfillment (Lazarus, 1993); that is, they will experience eustress and thus be more likely to engage in prospecting. Such eustress appraisals of stressors are associated with positive emotions like joy and excitement, attitudes like meaningfulness and engagement, and behaviors like organizational citizenship behavior and positive deviance (Mende et al., 2017; Nelson & Cooper, 2007; Nelson & Simmons, 2011).

In summary, salespeople carrying SERT S who have high levels of sensation seeking should experience more stressors (due to SERT S) and simultaneously be more likely to appraise those stressors in terms of eustress (due to sensation seeking), making the effect of carrying SERT S on prospecting positive. Thus, we hypothesize:

**$H_2$**. As a salesperson's sensation seeking increases, the relationship of carrying SERT S with prospecting becomes more positive.

### 4.4. The moderating role of coping

Continuously high levels of stress in sales require effective strategies to prevent negative effects on mental health (e.g., McFarland & Dixon, 2021). Intentional efforts to minimize such harmful effects of distress appraisals, for example to reduce anxiety under stressful situations, are called coping (Carroll, 2020; Klenowski et al., 2023). Effective coping can either be directed at altering the stressor itself (problem-focused coping) or at the emotions connected to the stressor (emotion-focused coping) (Carroll, 2020). While problem-focused coping includes taking responsibility or conducting analytical efforts to solve the problem causing the stress, emotion-focused coping centers around managing the emotions resulting from stress, for example by seeking emotional support from others (Strutton & Lumpkin, 1994). Importantly, in a work setting, supervisors can play an essential role in facilitating coping by providing problem-oriented or emotional support (Amin et al., 2023).

As distress is known to decrease psychological well-being and mental health (Meng & D'Arcy, 2016), employing problem-focused coping or emotion-focused coping should be especially vital for salespeople tending to appraise stressors in terms of distress rather than eustress. Given one's mental health is a prerequisite for sales performance (e.g., Habel et al., 2021; Peasley et al., 2020), employing measures to alleviate the negative effects of distress appraisals is not only paramount for salespeople's well-being, but also should directly influences salespeople's prospecting. Thus, we hypothesize:

**$H^{3a/b}$**. Employing (a) problem-focused coping and (b) emotion-focused coping alleviates the negative effect of distress appraisal on prospecting.

## 5. Study 1

### 5.1. Method

We collected data from two sources (a genetic analysis and a questionnaire) in cooperation with a consulting company. Both the genetic analysis and the questionnaire were part of self-development assessments in which respondents voluntarily participated without any observer present. Participants were informed about their data being used for scientific purposes in an anonymized way and gave their consent to it prior to the data collection. They had the option to withdraw their consent at any time, but no one in the sample chose to do so. We performed all data collection, testing and analyses in accordance with national privacy regulations, and the country's national privacy authority. The institutional ethics council at the institution of the author who was responsible for the data collection approved the study.

For genetic analyses, all participants provided saliva samples. Our final sample comprises 594 salespeople who were involved in the elementary sales process of prospecting. It constitutes a relatively large sample size in comparison to previous research investigating genes or neurophysiological markers in the context of sales (e.g., Bagozzi & Verbeke, 2020). 79.6% of participants were male. On average participants were 39.7 years old and had 12.3 years of job experience. They

worked for companies in 19 different industries; specifically accommodation and food service activities (14), administrative and support service activities (49), agriculture, forestry and fishing (3), arts, entertainment and recreation (6), construction (7), education (4), electricity, gas, steam and air conditioning supply (5), financial and insurance activities (85), human health and social work activities (8), information and communication (176), manufacturing (34), mining and quarrying (5), nonprofit (1), professional, scientific and technical activities (104), public administration and defense; compulsory (10), real estate activities (2), transportation and storage (8), and wholesale and retail trade; repair of motor vehicles and motorcycles (70). For three participants no information on the industry they work in were obtained.

### 5.2. Measures

SERT S is a binary variable that takes the value 0 for participants who are homozygous for SERT L and 1 for those carrying at least one (i.e., one or two) allele of SERT S. More specifically, the 5-HTTLPR polymorphism in the promoter region of the SLC6A4 gene was genotyped byPCR amplification followed by agarose gel electrophoresis. The forward primer was 5'-ATGCCAGCACCTAACCCCTAATGT-3' and the reverse primer was 5'-GGACCGCAAGGTGGGCGGGA-3'. These primers produce a short fragment of 375 bp representing the 14 repeat allele (SERT S) and a long fragment of 419 bp representing the 16 repeat (SERT L). We obtained PCR fragments containing the 5-HTTLPR polymorphism in a total reaction volume of 25 ml, containing 50 ng of genomic DNA, 0.3 U of BioThermAB polymerase according to manufacturer protocol (Genecraft; Münster, Germany). PCR conditions were as follows: an initial denaturation step of 10 min at 94 °C, and 36 cycles of 30s at 94 °C and 1 min at 72 °C. The amplification products were separated on a 2% agarose gel with 0.001% ethidium bromide and visualized by ultraviolet transillumination.

To measure the latent constructs, we relied on multi-item scales from existing research whenever possible. We measured the items of all constructs on a sliding scale with anchors ranging from 0 to 100. We used three items for prospecting, inspired by Verbeke and Bagozzi's (2000) cold canvassing scale. We measured neuroticism on a three-item scale based on Goldberg and Rosolack (1994) and sensation seeking on a scale based on Zuckerman (1994) and Berns (2005).

Many phenotypes are polygenetic, meaning that many genes determine them (e.g., Song et al., 2011). We therefore include four more candidate genes that have been associated with relevant sales-related outcomes as control variables. First, we include Catechol-*O*-methyltransferase (COMT) and Dopamine D2 receptor (DRD2) which have been associated with exploratory decision making and learning (Frank, Doll, Oas-Terpstra, & Moreno, 2009). Further, we control for Dopamine D4 receptor (DRD4), which is connected to risk-aversion (Armbruster et al., 2009). Finally, we incorporate Oxytocin Receptor Gene (OXTR), which influences antisocial behavior (Poore & Waldman, 2020). COMT and DRD2 have further been associated with motivation, while OXTR is connected to job satisfaction (Bagozzi & Verbeke, 2020).

Because controlling for the presence of all personality traits is desirable practice in personality research, we added the remaining Big Five personality traits (extraversion, agreeableness, conscientiousness, and openness) (e.g., Longley et al., 2017). Additionally, we added social intelligence as a control as it is an important personality trait in socially demanding situations such as in prospecting (e.g., Craig, Loureiro, Wood, & Vendemia, 2012; Wright, 2002). Furthermore, we controlled for salespeople's age, gender, and job experience, which can determine salespeople's experience of stress (e.g., Habel et al., 2021). To measure the internal consistency and reliability of the reflective constructs, we computed Cronbach's alpha values which were higher than the cutoff value of 0.6 for all constructs, indicating acceptable scale reliabilities (Hair, Black, Babin, & Anderson, 2009). Appendix A provides all items, factor loadings, composite reliabilities, average variance extracted, and the values for Cronbach's alpha. We also assessed discriminant validity (Fornell & Larcker, 1981): The diagonal elements in Table 1 represent the square roots of the average variance extracted, which were greater than the off-diagonal elements for all constructs. Table 1 further presents descriptive statistics and correlations.

### 5.3. Model specification

To test our hypotheses, we performed a stepwise regression analysis comprising the effect of SERT S on prospecting. In the first model we included our control variables, before adding the direct effects of SERT S, neuroticism, and sensation seeking in our second model. Lastly, we added the interactive effects SERT S × neuroticism and SERT S × sensation seeking. We estimated the parameters using SPSS 29 after standardizing all continuous variables to facilitate interpretation. The coefficient of determination ($R^2 = 0.281$) shows a good model fit. Variance inflation factors range from 1.02 to 3.97, indicating that multicollinearity is not a concern in our study (Hair et al., 2009).

### 5.4. Results

Table 2 provides the results and Fig. 2 shows the corresponding interaction plots. Our data suggest no significant main effect of carrying SERT S on prospecting. However, in support of H1 the interaction effect of SERT S × neuroticism is negative and significant, indicating that carrying SERT S negatively affects prospecting if neuroticism is high. At the same time the interaction effect of SERT S × sensation seeking is positive, indicating that carrying SERT S positively affects prospecting if sensation seeking is high, supporting H2.

### 5.5. Robustness checks

*Common method bias.* To reduce the potential for common method bias, we took several steps. First, we relied on different data sources for dependent and independent variables: we obtained data on SERT S using genetic analyses, while for the dependent and moderator variables we relied on survey data (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Second, we assured all participants of full confidentiality, which renders bias caused by social desirability less likely. Furthermore, we conducted a marker variable test using progressive relationship expectations as a marker. According to Lindell and Brandt (2000) and Lindell and Whitney (2001), the smallest correlation among manifest variables collected by the survey ($r = 0.003$) provides a reasonable proxy for common method variance. Using this correlation, we adjusted all correlations between the survey constructs. All the previously significant correlation coefficients remained statistically significant at $p < .05$ after adjusting for the marker variable, suggesting that common method variance is unlikely to be a concern for this study.

*Endogeneity*. Our results might be subject to two sources of endogeneity. The first pertains to selection effects. Specifically, our models compare carriers with noncarriers of the SERT S allele. If carriers systematically differ from noncarriers on our variables of interest, our results might be biased, potentially requiring statistical corrections that ensure comparability across the two subsamples (e.g., propensity score matching). To test for such selection effects, we inspected the standardized mean differences for our variables across carriers and noncarriers of the SERT S allele (see Table 3). All standardized mean differences are substantially below the recommended cutoff of 0.25 (Rubin, 2001). Thus, we conclude that our subsamples of carriers and noncarriers are balanced, rendering a selection bias unlikely.

Second, salespeople's propensities to prospect might be driven by unmeasured variables that correlate with sensation seeking and neuroticism, such as training salespeople received in the past. Such omitted variables might lead to correlations between our models' error terms with both sensation seeking and neuroticism, potentially biasing our estimates. To alleviate such a bias, we conducted a Gaussian copula control function approach (Park & Gupta, 2012). To this end, we first

**Table 1**
Intercorrelation matrix (Study 1).

| | Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SERT S | **N/A** | | | | | | | | | | | | | | | |
| 2 | Sensation Seeking | −0.061 | **0.716** | | | | | | | | | | | | | | |
| 3 | Neuroticism | 0.016 | −0.018 | **0.766** | | | | | | | | | | | | | |
| 4 | Prospecting | −0.023 | 0.311** | −0.004 | **0.802** | | | | | | | | | | | | |
| 5 | Age | 0.039 | −0.062 | −0.036 | 0.084* | **N/A** | | | | | | | | | | | |
| 6 | Gender | 0.035 | 0.012 | 0.081* | −0.074 | −0.128** | **N/A** | | | | | | | | | | |
| 7 | Job Experience | 0.050 | −0.063 | −0.026 | 0.112** | 0.716** | −0.139** | **N/A** | | | | | | | | | |
| 8 | Social Intelligence | −0.046 | 0.274** | −0.031 | 0.432** | 0.070 | −0.104* | 0.050 | **0.721** | | | | | | | | |
| 9 | Openness | −0.039 | 0.355** | −0.133** | 0.286** | 0.062 | −0.076 | 0.054 | 0.360** | **0.814** | | | | | | | |
| 10 | Conscientiousness | 0.019 | −0.188** | 0.198** | 0.081* | 0.071 | 0.080 | 0.068 | 0.168** | −0.017 | **N/A** | | | | | | |
| 11 | Extraversion | −0.077 | 0.314** | −0.060 | 0.385** | −0.068 | −0.016 | −0.044 | 0.579** | 0.386** | 0.050 | **0.804** | | | | | |
| 12 | Agreeableness | 0.010 | −0.075 | −0.357** | −0.056 | −0.001 | −0.002 | −0.011 | −0.098* | 0.130** | 0.030 | −0.010 | **0.758** | | | | |
| 13 | DRD2 | 0.003 | 0.058 | −0.007 | 0.027 | 0.017 | 0.046 | 0.017 | 0.036 | 0.028 | 0.001 | −0.025 | −0.046 | **N/A** | | | |
| 14 | DRD4 | −0.001 | 0.055 | −0.013 | 0.067 | 0.079 | 0.003 | 0.049 | 0.013 | −0.015 | −0.013 | 0.043 | 0.031 | −0.047 | **N/A** | | |
| 15 | OXTR | 0.005 | 0.104* | −0.039 | 0.010 | −0.033 | −0.028 | 0.012 | −0.018 | 0.085* | −0.031 | −0.002 | −0.018 | −0.021 | −0.036 | **N/A** | |
| 16 | COMT | −0.044 | 0.046 | −0.02 | 0.044 | 0.022 | 0.034 | 0.048 | −0.008 | 0.029 | 0.01 | 0.018 | 0.040 | 0.016 | 0.021 | 0.016 | **N/A** |
| | Mean | | 47.705 | 60.247 | 72.252 | 39.742 | | 12.258 | 80.606 | 76.569 | 67.597 | 75.589 | 55.792 | | | | |
| | SD | | 16.438 | 16.532 | 16.958 | 8.399 | | 8.118 | 11.071 | 12.077 | 18.076 | 12.848 | 17.509 | | | | |

Notes: Diagonal elements in bold are the square roots of the average variances extracted for constructs measured reflectively with multiple items. $N = 594$.
* $p < .05$. ** $p < .01$. N = 594.

estimated two control function terms as the inverse normal cumulative density functions of both sensation seeking and neuroticism. We then included these terms in our models and repeated our estimation while bootstrapping the standard error based on 5000 iterations. These results confirm the stability of our earlier findings, indicating that they are not unduly influenced by endogeneity.

## 6. Study 2

Our previous study demonstrates that carrying SERT S affects a salesperson's prospecting negatively if the salesperson is high in neuroticism and positively if the salesperson is high in sensation seeking. We theorized that salespeople carrying SERT S are more likely to pick up on negative social cues in prospecting. These social cues constitute demanding situations (or "stressors") which—depending on their individual characteristics—salespeople appraise as distress or eustress. In the following, we extend Study 1 by investigating whether coping can mitigate negative consequences of such distress appraisals on prospecting.

### 6.1. Design and procedure

We used a scenario experiment that manipulates salespeople's stress appraisal and coping using a 2 (stress appraisal: eustress vs. distress) × 3 (coping: pure problem focus vs. encouragement for risk taking vs. control) between-subjects design. Participants were asked to put themselves in the shoes of a B2B sales representative for a medium-sized mechanical engineering company currently visiting a trade fair, where they recognize a potential new customer. Participants received information on negative social cues sent by the customer, resembling the higher sensitivity towards such cues of salespeople carrying SERT S. For half of the participants, this information was framed in a way indicating imminent psychological harm (distress manipulation), while the other half received the information framed in a way indicating an opportunity to increase their well-being and gain a feeling of fulfillment (eustress manipulation).

Continuously high levels of stress in sales require effective strategies to prevent negative effects on mental health (e.g., McFarland & Dixon, 2021). Generally, individuals can employ (1) problem-focused or (2) emotion-focused coping to minimize the negative effects of distress appraisals of stressors (Carroll, 2020). Accordingly, we developed two coping manipulations; in the problem-focused coping condition, we asked participants to write a short paragraph describing a plan of action that could lead to successful prospecting (i.e., pure problem focus, PPF, Strutton & Lumpkin, 1994). In the emotion-focused coping group, we asked participants to imagine receiving a text by their superior providing emotional support by encouraging them to take a risk (encouragement for risk taking; Amin et al., 2023). Participants in the control group were not instructed to partake in any of these activities. Appendix B provides the experimental stimuli.

Participants were preselected by a panel provider (Prolific). The sample consisted of 300 individuals working in a sales position in the United States or in the United Kingdom (57.2% female, $M_{Age} = 38.74$ years, $SD_{Age} = 12.16$ years) who were randomly assigned to one of the six experimental conditions (50 participants each).

### 6.2. Measures

*Dependent variable.* Participants indicated the likelihood to prospect on a 7-point Likert scale (anchored 1 = "very unlikely", 7 = "very likely").

*Stress appraisal.* As described above, individuals appraise stressors in terms of distress when the stressor is interpreted as a source of harm or threat (Lazarus, 1993). In contrast, a stressor is appraised in terms of eustress when individuals appraise the stressor as a challenge that they can overcome, and that provides them an opportunity to increase their

**Table 2**
Results (Study 1).

| | Dependent variable: Prospecting | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | (1) | | | (2) | | | (3) | | |
| | Beta | *p* | VIF | Beta | *p* | VIF | Beta | *p* | VIF |
| **Controls** | | | | | | | | | |
| Age | −0.008 | 0.884 | 2.11 | −0.002 | 0.972 | 2.11 | 0.001 | 0.992 | 2.11 |
| Gender | −0.027 | 0.475 | 1.05 | −0.037 | 0.310 | 1.06 | −0.032 | 0.384 | 1.07 |
| Job Experience | 0.095 | 0.068 | 2.08 | 0.102* | 0.047 | 2.08 | 0.102* | 0.045 | 2.08 |
| Agreeableness | −0.045 | 0.223 | 1.05 | −0.025 | 0.520 | 1.23 | −0.025 | 0.533 | 1.24 |
| Conscientiousness | 0.027 | 0.471 | 1.06 | 0.063 | 0.107 | 1.18 | 0.060 | 0.119 | 1.18 |
| Extraversion | 0.185*** | <0.001 | 1.65 | 0.160*** | <0.001 | 1.68 | 0.155*** | <0.001 | 1.68 |
| Openness | 0.117** | 0.004 | 1.29 | 0.070 | 0.095 | 1.38 | 0.077 | 0.063 | 1.39 |
| Social Intelligence | 0.265*** | <0.001 | 1.70 | 0.241*** | <0.001 | 1.73 | 0.244*** | <0.001 | 1.73 |
| DRD2 | 0.019 | 0.601 | 1.01 | 0.010 | 0.772 | 1.02 | 0.013 | 0.715 | 1.02 |
| DRD4 | 0.055 | 0.131 | 1.02 | 0.044 | 0.222 | 1.02 | 0.042 | 0.236 | 1.02 |
| COMT | 0.036 | 0.315 | 1.01 | 0.030 | 0.409 | 1.01 | 0.022 | 0.541 | 1.02 |
| OXTR | 0.005 | 0.900 | 1.02 | −0.010 | 0.784 | 1.03 | −0.004 | 0.904 | 1.04 |
| **Main effects** | | | | | | | | | |
| SERT S | | | | 0.011 | 0.767 | 1.01 | 0.039 | 0.391 | 1.62 |
| Neuroticism | | | | 0.010 | 0.802 | 1.24 | 0.118 | 0.073 | 3.46 |
| Sensation Seeking | | | | 0.184*** | <0.001 | 1.32 | 0.043 | 0.545 | 3.97 |
| **Interaction effects** | | | | | | | | | |
| SERT S × Neuroticism | | | | | | | −0.141* | 0.044 | 3.87 |
| SERT S × Sensation Seeking | | | | | | | 0.166* | 0.014 | 3.64 |
| Observations | 594 | | | 594 | | | 594 | | |
| $R^2$ / $R^2$ adjusted | 0.242 / 0.226 | | | 0.268 / 0.249 | | | 0.281 / 0.260 | | |
| Significance of $\Delta R^2$ | | | | $p < .001$ | | | $p < .01$ | | |

*Notes*: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed tests) for coefficients. VIF: Variance Inflation Factor.

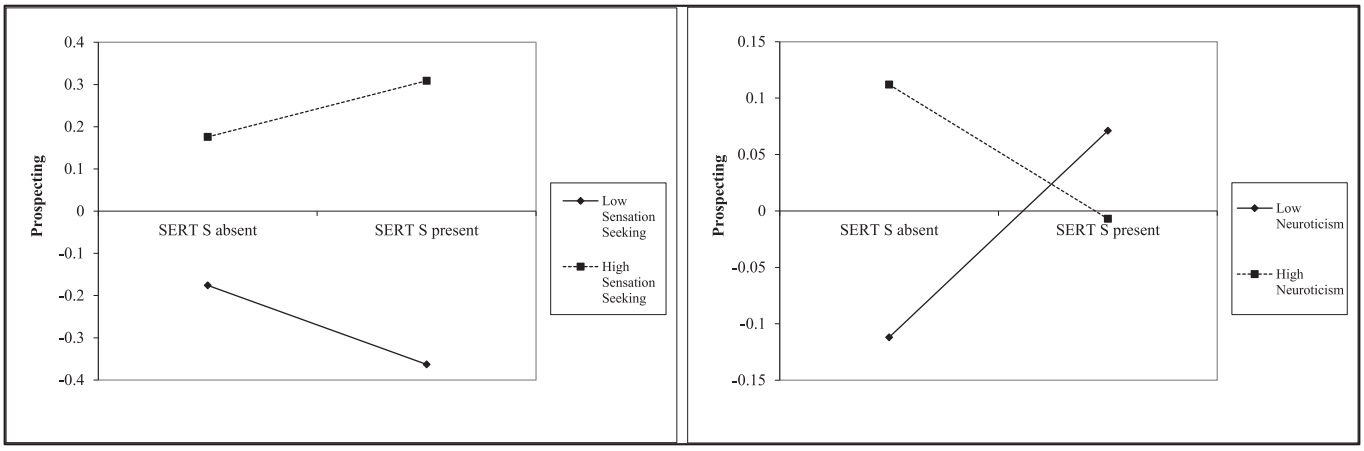


**Fig. 2.** Interaction plots study 1.

**Table 3**
Standardized mean differences.

| Variable | Standardized mean difference | Balanced |
|---|---|---|
| Neuroticism | 0.035 | ✓ |
| Sensation seeking | −0.132 | ✓ |
| Age | 0.086 | ✓ |
| Sex | 0.076 | ✓ |
| Job experience | 0.109 | ✓ |
| Social intelligence | −0.102 | ✓ |
| Openness | −0.100 | ✓ |
| Conscientiousness | 0.041 | ✓ |
| Extraversion | −0.148 | ✓ |
| Agreeableness | 0.021 | ✓ |
| DRD2 | 0.006 | ✓ |
| DRD4 | −0.002 | ✓ |
| OXTR | 0.012 | ✓ |
| COMT | −0.095 | ✓ |

well-being and a feeling of fulfillment (Nelson & Cooper, 2007). Based on these definitions, we either framed information on negative social cues sent to the participants as a thrilling opportunity (indicating eustress appraisal) or as a frightening risk to embarrass themselves (indicating distress appraisal). To evaluate the effectiveness of our manipulations we used scales developed based on our construct definitions assessing participants' situational eustress ("Approaching the CPO [chief procurement officer] in this situation is a (positive) source of challenge/opportunity to me") and situational distress ("Approaching the CPO in this situation is a (negative) source of pressure to me"; 7-point Likert scales, anchored 1 = "strongly disagree" and 7 = "strongly agree").

### 6.3. Results

*Manipulation checks*. To check if the manipulation of eustress and distress succeeded, we conducted two two-way analyses of variance (ANOVA), with situational eustress or situational distress as a dependent

variable and the treatment dummies indicating stress appraisal and coping as independent variables. As expected, we found a significant main effect of distress appraisal (vs. eustress appraisal) on participants' perceived situational distress ($M_{Distress}$ = 3.95, $M_{Eustress}$ = 3.28; $F(1, 294) = 10.534$, $p < .001$). Furthermore, a second ANOVA demonstrated that participants in the eustress appraisal condition scored significantly higher on perceived situational eustress than participants in the distress appraisal condition ($M_{Distress} = 4.92$, $M_{Eustress} = 5.33$; $F(1, 294) = 5.282$, $p < .05$), confirming that the manipulation is effective.

*Main analyses*. To examine the effectiveness of our coping interventions, we conducted a two-way ANOVA with likelihood of prospecting as the dependent variable and treatment dummies indicating the stress appraisal and the coping manipulations as independent variables. We also included the interactive effect of stress appraisal and coping. We find significant main effects of both coping ($F(2, 294) = 4.299$, $p < .05$) and stress appraisal ($F(1, 294) = 6.392$, $p < .05$). Furthermore, coping and stress appraisal significantly interact ($F(2, 294) = 3.318$, $p < .05$). As shown in Fig. 3, for participants in the eustress condition there is no significant difference in the likelihood of prospecting between participants who received no coping manipulation ($M_{control}$ = 5.660, 95% confidence interval [CI] = [5.285; 6.035]) and participants who received a coping manipulation ($M_{PPF}$ = 5.780, 95% CI = [5.405; 6.155]; $M_{EFRT}$ = 5.600, 95% CI = [5.250; 5.975]). Conversely, participants in the distress condition scored significantly higher on likelihood of prospecting if they received a coping intervention ($M_{PPF}$ = 5.680, 95% CI = [5.305; 6.055]; $M_{EFRT}$ = 5.480, 95% CI = [5.105; 5.855] than if they did not receive a coping intervention ($M_{control}$ = 4.700, 95% CI = [4.325; 5.075]), supporting H3a and H3b.

In summary, the results provide support for distress appraisals and eustress appraisals of stressors as important mechanisms influencing prospecting, as proposed in Study 1. Furthermore, the results provide evidence that coping can be helpful for individuals with a tendency to appraise stressors in prospecting in terms of distress rather than in terms of eustress.

## 7. Discussion

Employing three different types of data—genetic, survey, and experimental data—this paper demonstrated that the effect of genetic variants on business-related outcomes can depend on interacting factors to become either detrimental or beneficial. More specifically, our results indicate that for salespeople with a strong tendency towards distress appraisals of stressors (as in individuals high in neuroticism) carrying SERT S diminishes a salesperson's propensity to prospect. For salespeople with a strong tendency towards eustress appraisals of stressors (as in individuals high in sensation seeking) carrying SERT S enhances prospecting. Furthermore, we demonstrate that sales managers can help mitigate the harmful effects of distress appraisals of stressors by supporting their salespeople in their problem-focused or emotion-focused coping. Our findings yield important implications for researchers, regulatory authorities, managers, and employees.

### 7.1. Theoretical implications

First, we are among the first to bring a DST perspective to marketing and sales research. We show that the same genetic variation can have either negative or positive effects on prospecting, depending on the interacting factors. We thereby offer a theoretical lens on gene × environment interactions in business and marketing. Previous findings suggesting unidirectional success genes for sales may need to be reevaluated in the light of DST to explore possible negative downsides of such genetic variations. At the same time, previously neglected putative risk factors like SERT S (e.g., Caspi et al., 2003) should be reevaluated in various environmental settings to gain a broader understanding of their complex effects on sales practice. To account for the complexity of genetic effects, researchers should therefore include interaction terms with positive and negative external stimuli in their analyses, regardless of whether they are employing single-candidate gene approaches, polygenetic risk scores, or genome-wide association studies (Fox & Beevers, 2016; Homberg & Jagiellowicz, 2022).

Second, prior research has thus far paid only some initial attention to salespeople's genetic predispositions in interaction with their attachment style (Bagozzi & Verbeke, 2020) and has neglected to examine how serotonin-based genes in interaction with personality traits shape specific selling-related behavioral tendencies such as the propensity towards prospecting. Our study demonstrates that a genetic variation in SERT in combination with the psychological traits of neuroticism and sensation seeking can help to explain interindividual differences in salespeople's prospecting. For marketing and sales scholars, we thereby highlight the importance of considering the role of genes and their

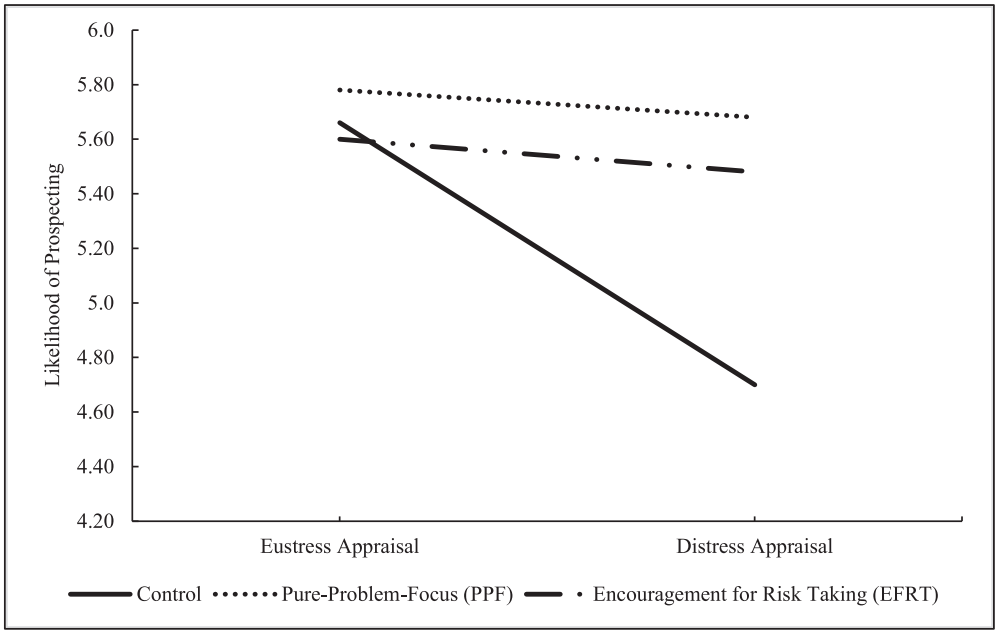


**Fig. 3.** Marginal means of prospecting in Study 2.

interaction with psychological traits, especially when researching boundary conditions for the successful implementation of sales management strategies.

Third, we add to the sparse knowledge available on biological and psychological underpinnings of DST (Homberg & Jagiellowicz, 2022). In our study, we reason that distress and eustress appraisals of stressors are one possible mechanism through which differential susceptibility of carriers of certain genetic variations may occur. Future research can build on our findings by considering eustress and distress appraisals when examining genetic effects on sales behaviors. Furthermore, scholars in other fields may consider factors influencing distress and eustress appraisals of stressors as a possible perspective when identifying relationships between genetic variation in individuals and the occurrence of mental diseases.

Fourth, by highlighting the importance of genetically induced sensitivity to stressors in selling contexts, we expand knowledge in organizational stress research. Researchers attempting to explain distress and eustress appraisals to increase mental well-being in the workplace have not yet focused on individual genetic variation as a factor influencing such appraisals (e.g., González-Morales & Neves, 2015; Nelson & Simmons, 2011). By showing that SERT S heightens individuals' sensitivity to social cues, and by demonstrating the interaction effects of stress appraisal with coping, we provide a new perspective on the literature aiming to explore the supportive role of supervisors in salespeople's stress reduction (e.g., Amin et al., 2023; Brown et al., 2022; Habel et al., 2021). By distinguishing between eustress appraisals and distress appraisals in coping we further add to positive psychology's goal to find ways for "savoring eustress while coping with distress" (Nelson & Simmons, 2011, p. 4).

Fifth, by highlighting the moderating roles of sensation seeking and neuroticism in salespeople's appraisal of stressors, we provide implications to two additional fields of research. First, we challenge the field's predominant view of sensation seeking as being primarily a risk factor for negative outcomes such as gaming disorders, internet addiction, and illegal substance abuse (e.g., Müller, Dreier, Beutel, & Wölfling, 2016; Zhornitsky et al., 2012). Rather, we demonstrate that in the right context, sensation seeking can have positive effects on job outcomes, thereby complementing research showing buffer effects of sensation seeking for high levels of stress (Roth et al., 2019). Second, we underscore the harmful effects of neuroticism on business practice, thereby corroborating substantial previous research reporting negative effects of neuroticism on a variety of life outcomes in general (e.g., Nagel et al., 2018), business outcomes (e.g., McCann, 2018), and sales outcomes in particular (e.g., Bagozzi & Verbeke, 2020; Loveland, Lounsbury, Park, & Jackson, 2015). We additionally highlight the negative role of neuroticism for salespeople in prospecting, adding to recent findings of neurotic salespeople's high initial job performance (Dugan, Rouziou, & Bolander, 2020). Specifically, by linking neuroticism with distress appraisals of stressors in prospecting, we provide a possible explanation for why neurotic salespeople decrease in performance at later stages in their employment.

### 7.2. Managerial implications

In addition to our theoretical implications, we provide implications for sales aspirants, industrial sales managers, and regulatory authorities. First, building on genetic analyses and psychological assessment, this study provides an explanation of why salespeople show different levels of prospecting. Specifically, our results show that SERT S carrying salespeople who are high in sensation seeking exhibit higher levels of prospecting, while SERT S carrying salespeople who are high in neuroticism exhibit lower levels of prospecting. As distress is associated with detrimental effects on mental health and well-being, and cost associated with distress-related turnover is high (Edmondson, Matthews, & Ambrose, 2019), a voluntarily self-test including genetic and personality analyses may provide sales aspirants with better guidance on which career paths to pursue or to avoid. For those being genetically sensitive towards stressors and tending towards distress appraisals, training problem-focused and emotion-focused coping mechanisms may be beneficial. Independent institutions or firms may offer genetic and personality analyses and counseling to prospective sales representatives to enable them to make better career choices or making them aware of which support to actively seek out.

Second, when designing sales management strategies managers should bear in mind the interplay of SERT S with their salespeople's personalities. More specifically, a more holistic view on sales strategy implies focusing on leading salespeople in a way that allows them to experience prospecting positively; that is, to draw eustress, not distress from it. Fostering eustress appraisals can help managers increase their employees' mental health, achieve positive outcomes like excitement, engagement, and organizational citizenship behavior, and avoid negative outcomes such as absenteeism and turnover (Mende et al., 2017; Quick et al., 1997; Selye, 1973). For salespeople high in neuroticism (particularly those carrying SERT S) management should make supportive resources available that salespeople need to perceive challenging situations in a non-threating way from which they will not take psychological damage (Lazarus, 1993). Stressing the importance of incorporating help-focused coping into sales management strategies (Amin et al., 2023), such individuals would benefit from both problem-focused support and emotion-focused support from their supervisors. Supervisors should be careful to not only focus on their bottom line (Brown et al., 2022), but provide the emotional support necessary to these employees.

Third, salespeople increasingly have to allocate time and resources between different roles, for example between sales and service tasks (e.g., Hughes & Ogilvie, 2020), or between farming (i.e., maintaining existing customer relationships) and hunting (i.e., prospecting) (DeCarlo & Lam, 2016). When trying to steer such allocation towards a preferred level, sales management should bear in mind that they might cause negative stress and reduced mental well-being for salespeople due to these salespeople's genetics and personality. This might be particularly relevant in situations in which employees who previously focused on farming-related tasks are supposed to take on a more hunting-related role, especially as based on their genetics those employees might have preselected to a role less likely to involve the stressful potential of frequent rejections. It is therefore highly important for sales management to take on a more developmental perspective towards managing their prospecting activities by getting insight into their salespeople's personality structure and how that affects their reaction to stressful situations.

Fourth, in many countries data privacy regulations protect customers' and employees' genetic data (Daviet et al., 2021). However, we demonstrate that genetic testing has the potential to provide value for predicting measures related to mental health, well-being, and work performance. Governments, regulatory authorities, and society as a whole need to conduct an open discussion on whether the many legit practical, ethical, or legal arguments against genetic testing categorically outweigh the benefits of (voluntary) genetic testing at the workplace, and whether certain contexts (e.g., preventing distress-related mental diseases in high-stress work-environments) may justify specific exemptions from an overall strict regulation. With our study we provide additional context to help fuel this highly complex debate.

### 7.3. Limitations and future research directions

We acknowledge several limitations that future research could address. First, in Study 1 we measured prospecting using a self-reported survey measure, which might not fully capture salespeople's actual prospecting behavior. Future research should increase the validity of our findings by matching genetic information with other types of data, for example objective performance data or supervisor ratings. Second, in Study 1 we controlled for a variety of conceptually relevant variables

including personality traits and genetic variants. However, we cannot fully exclude the possibility of omitted variable bias. Future research should control for a wider range of established predictors of salesperson behavior (e.g., regulatory focus, DeCarlo & Lam, 2016) to tease out the causal effect of genetic variation on such behavior. Third, in Study 1, we did not measure the theoretical mechanism of distress appraisals. Future studies may aim to test our proposed theoretical model in its entirety.

## CRediT authorship contribution statement

**Christian G.H. Winter:** Writing – review & editing, Writing – original draft, Visualization, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Nicolas A. Zacharias:** Writing – review & editing, Supervision, Resources, Project administration, Methodology, Investigation, Conceptualization. **Ad de Jong:** Writing – review & editing, Supervision, Resources, Investigation, Formal analysis, Data curation, Conceptualization. **Johannes Habel:** Writing – review & editing, Supervision, Methodology, Formal analysis, Data curation, Conceptualization.

## Data availability

The authors do not have permission to share data.

## Appendix A. Measurements

| Construct | Items (loadings) | Loadings | α/CR/AVE |
|---|---|---|---|
| **SERT S** | 0 – no SERT S allele present<br>1 – at least 1 SERT S allele present | | |
| **Prospecting (Study 1)** (based on Verbeke & Bagozzi, 2000) | I always look forward to visiting new clients. | 0.80 | 0.72/0.84/0.64 |
| | When attending business meetings outside my own company, I like to introduce myself to people I don't know in order to invite them to enter into business with us. | 0.78 | |
| | The thought of calling potential new clients and discussing business proposals with them excites me. | 0.83 | |
| **Prospecting (Study 2)** | Based on the scenario presented to you, how likely is it that you would approach the CPO in this situation? | | |
| **Sensation Seeking** (Berns, 2005; Zuckerman, 1994) | I often do things on the spur of the moment. | 0.70 | 0.81/0.86/0.51 |
| | I enjoy doing things just for the sake of the excitement it evokes in me. | 0.72 | |
| | I enjoy being in new situations where I cannot entirely predict what will happen. | 0.77 | |
| | I am the impulsive type. | 0.73 | |
| | I quickly develop interests in new things. | 0.60 | |
| | I like new and exciting experiences and sensations, even when they somewhat frighten me. | 0.77 | |
| **Neuroticism** (Goldberg & Rosolack, 1994) | Please, indicate to what extent the following adjectives describe yourself as a person | | 0.63/0.80/0.59 |
| | uncertain | 0.84 | |
| | scared | 0.56 | |
| | easily upset | 0.86 | |
| **Social Intelligence** (Sternberg & Smith, 1985) | I am effective in my dealings with others. | 0.65 | 0.81/0.86/0.51 |
| | I find it easy to initiate conversations with other people. | 0.68 | |
| | I have no difficulty starting discussions with others on a great many different subjects. | 0.78 | |
| | I am convinced that I have a lot of common sense. | 0.72 | |
| | I am a very effective communicator who speaks clearly and enunciates words properly. | 0.73 | |
| | My strengths include my verbal flair and my ability to respond to situations. | 0.76 | |
| **Openness** (Goldberg & Rosolack, 1994) | Please, indicate to what extent the following adjectives describe yourself as a person | | 0.74/0.85/0.66 |
| | willing to adapt | 0.76 | |
| | flexible | 0.86 | |
| | open to new experiences | 0.82 | |
| **Conscientiousness** (Goldberg & Rosolack, 1994) | Please, indicate to what extent the following adjectives describe yourself as a person | | 0.79/0.88/0.70 |
| | thorough | 0.87 | |
| | organized | 78 | |
| | meticulous | 0.86 | |
| **Extraversion** (Goldberg & Rosolack, 1994) | Please, indicate to what extent the following adjectives describe yourself as a person | | 0.73/0.85/0.65 |
| | assertive | 0.79 | |
| | energetic | 0.83 | |
| | eager | 0.79 | |
| **Agreeableness** (Goldberg & Rosolack, 1994) | Please, indicate to what extent the following adjectives describe yourself as a person | | 0.62/0.80/0.58 |
| | supportive | 0.87 | |
| | co-operative | 0.79 | |
| | helpful | 0.59 | |

*Notes*: All reflective items for Study 1 were measured with sliding scales anchored at 0 and 100. All reflective items for Study 2 were measured with 7-pointed Likert scales.

## Appendix B. Experimental scenarios

| | | |
|---|---|---|
| You are a B2B sales representative for a medium-sized mechanical engineering company. Currently, you are at the reception of a large industrial trade fair. You recognize the new chief procurement officer (CPO) of a potential customer, whom you do not know personally yet. Winning the potential customer over would be a huge success, but being rejected would be a huge failure.<br>The CPO officer turns around, you make eye contact. There—was that a little flinch in their eye? Is it a sign of reservation? | | |
| **[Distress appraisal:]**<br>You are not sure you can handle the situation and feel afraid. What a risk to embarrass yourself! | | **[Eustress appraisal:]**<br>You enjoy this challenge and feel thrilled. What an opportunity to prove yourself! |
| **[No coping:]**<br>No further text | **[PPF:]**<br>You take a moment to breathe. "Just make a plan of action and follow it through," you tell yourself.<br>*Task: Please write a short paragraph describing what such a plan of action could look like.* | **[EFRT:]**<br>Right before you decide your phone vibrates. Your boss sent a text to you: "YOLO - you only live once!" |

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