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## Improving assessment center criterion validity for salesperson selection: a socioanalytic approach

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### ABSTRACT

Assessment centers (ACs) are one of the most common selection and recruitment methods in today's business world, with very high acceptance in practice. The AC research literature, however, has focused on managerial performance and neglected sales performance. Therefore, we assessed the features of ACs for sales positions. The results indicated that AC ratings designed for sales positions exhibited good interrater agreement and were distinct. The criterion-related validity of AC observer ratings was in the normal range of ACs designed for managerial jobs in terms of overall assessment rating scores. Additionally, we tested a new approach to ACs for salesperson selection based on the socioanalytic theory of personality. We hypothesized and found that motivation for sales success combined with social competence predicts field sales performance one year later. This interaction effect explained incremental variance in objective performance above and beyond exercises and overall assessment rating scores. Operational validity compared to the traditional approach increased by 25%. The true score criterion validity of the new approach was .49. We discuss implications and limitations.

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### KEYWORDS

Assessment Center method; socioanalytic theory; criterion validity; sales performance

Reinhold Wuerth, a German businessman who turned a small company into a corporation with sales of over \$15 billion (<https://www.forbes.com/profile/reinhold-wuerth/#8a222520e9c>), said in a newspaper interview (Stuttgarter Nachrichten 2020): 'A sales team accounts for 90% of a company's entire success; next ranks the IT team, which accounts for 5%, and the entire rest also accounts for 5%'. Systematic studies and reviews of the sales and marketing literature have found that organizational sales effectiveness depends on business strategy, sales management, sales force control systems, and salesperson factors (Baldauf, Cravens, and Piercy 2001, Echchakoui 2013; Fatima 2021). Previous research on the characteristics of salespersons' performance have found that situational, organizational, buyer, coworker, and personal factors (e.g., drive and social competence) are responsible for high sales performance (Chawla et al. 2020; Herjanto and Franklin 2019; Pauser, Wagner, and Ebster 2018). Thus, there is a need for organizations to identify the people with the best personal factors for positions as sales representatives.

Many organizations use some form of assessment center (AC) in their selection and recruitment processes to identify the best people for positions as sales representatives (Hausknecht and Heavey 2017). An AC is a standardized testing environment involving multiple exercises. Candidates are observed in completing these exercises by experienced or knowledgeable judges, who provide ratings assessing multiple behavioral dimensions of interest (Meriac, Hoffman, and Woehr 2014). In the final stage of the assessment process, each candidate is thoroughly discussed and the judges

recommend either hiring or not hiring them. However, a recent meta-analysis of personnel selection procedures in general found the predictive validity of ACs to be markedly below the criterion validity of other selection procedures (Schmidt, Oh, and Shaffer 2016). Consequently, more research above and beyond the classic studies (Bray and Campbell 1968; Burroughs and White 1996; Cron et al. 2005; Randall et al. 1985) is missing on how to improve the selection and recruitment of salespersons based on ACs (Kleinmann and Ingold 2019). The purpose of our research is to examine how companies can improve the use of ACs for selecting sales representatives.

The criterion space of the published AC research literature is usually defined as managerial performance (Hoffman et al. 2015; Meriac, Hoffman, and Woehr 2014). Surprisingly, there are few research studies specifically assessing sales performance. The classic study on selecting salespeople by means of an AC by Bray and Campbell (1968) did not even include a role-play exercise focusing on acquiring new customers or role-play on sales, but rather assessed managerial performance. Role-play exercises are simulation exercises developed on the basis of job analyses to measure critical personal factors (e.g., drive, competencies) for job success and include ratings by experienced or knowledgeable judges. Role-play exercises are capable of eliciting relevant behaviors by simulating the demands of real-world situations (Cummins and Peltier 2021; Peltier, Chennamaneni, and Barber 2021; Schollaert and Lievens 2012). Candidates must make sales presentations and respond to customer questions (Fleener 1987). Assessing sales candidates via role-play exercises

simulating diverse aspects of sales interactions applies the behavioral approach to psychological assessment that the best predictor of future behavior is relevant past behavioral performance (Wernimont and Campbell 1968).

Previous research on managerial performance has found that exercise effects account for substantial variance in AC ratings (Hoffman et al. 2015). To close this gap in the literature with respect to sales performance, we analyzed testing environments that place candidates in realistic sales settings. In the present study, we examine candidates' performance in exercises specifically simulating sales environments and analyze dimensions underlying AC observer ratings pertinent to sales performance. We expect a multidimensional criterion space.

Traditionally, 'scholars tend to agree that the overall assessment score derived from the entire AC process is a valid reflection of overall potential and thus, a valid predictor of future performance' (Arthur and Day 2011, 211). So far, ACs have not applied any specific theory of job performance, but rather apply the principle that the best predictor of future behavior is past behavior (Fleenor 1987; Wernimont and Campbell 1968). In line with previous AC research (Hoffman et al. 2015; Meriac, Hoffman, and Woehr 2014), we suggest that AC research will profit from incorporating the socioanalytic theory of personality (Hogan and Blickle 2013). The AC method and socioanalytic theory share two basic assumptions. First, socioanalytic theory likewise proposes that the best predictor of future behavior is past behavior. The more similar past and future behavior, the better past behavior predicts future behavior. Second, socioanalytic theory stipulates that traits, motives, and competences are better perceived via behavioral job performance observations by experienced and knowledgeable judges than assessed by the candidates themselves (Hogan and Shelton 1998). Above and beyond the AC method, the socioanalytic theory of personality predicts that the interplay of motivation and social competence incrementally predicts job performance behaviors (Hogan and Shelton 1998). In an attempt to improve ACs' criterion validity, we test this theory-based approach to improving the criterion validity of the AC method for selecting field salespeople. Previous literature has already used the socioanalytic theory of personality (Blickle and Hogan 2020) to explain the dimensional structure of ACs (Hoffman et al. 2015; Meriac, Hoffman, and Woehr 2014). We, however, use socioanalytic theory to improve the criterion-related validity of ACs for sales staff. The socioanalytic theory of personality thus can help improve the selection and recruitment of salespersons by identifying effective personal factors related to sales performance.

Socioanalytic theory argues that in competitive jobs, which encourage incumbents to act with and through others to attain organizational or personal goals (e.g., sales or leadership), the most successful persons will be high on the motive to get ahead leveraged with a high level of social competence. Furthermore, socioanalytic theory holds that observers (as opposed to targets' self-reports) can best evaluate a target's motive to get ahead and level of social

competence. Consequently, we hypothesize that the AC dimension capturing the motive to get ahead will be a strong predictor of future sales performance when moderated by the AC dimensions capturing level of social competence. This interplay of motivation and social competence will not only explain incremental performance variance above and beyond the criterion-related validity of the AC exercises (Hoffman et al. 2015), but also above and beyond overall assessment rating (OAR) scores.

Our research offers the following contributions to academic research in the domain of sales staff selection using ACs: First, we hypothesize that exercise effects (Hoffman et al. 2015) will also account for substantial variance in AC ratings for salesperson selection and that evaluations of candidates' performance in ACs for salesperson selection will have a multidimensional structure (Meriac, Hoffman, and Woehr 2014). Our research addresses this gap in the literature because previous research on the structure of AC ratings has neglected ACs for salespeople. Second, previous research on AC judges' ratings as predictors of job performance has generally ignored multiplicative predictor combinations, instead averaging the dimensions of AC ratings to predict job performance. We close this gap based on the socioanalytic theory of personality. We identified two pivotal dimensions of behavior, namely behaviors indicating a motive to get ahead (drive) and behaviors indicating relational skills (social competence) that should multiplicatively combine to predict sales performance (Blickle, Wendel, and Ferris 2010). Third, our study shows that multiplicatively combining observer assessments on targets' motive to get ahead and targets' social competence will explain incremental variance in sales performance above and beyond performance ratings on the AC exercises (Hoffman et al. 2015). Fourth and finally, our study shows that the multiplicative combination of motive to get ahead and social competence explains incremental variance in sales performance above and beyond overall assessment rating (OAR) scores. Thus, our study also contributes to validating the socioanalytic theory of personality. To the best of our knowledge, our study is the first to comprehensively test the socioanalytic theory of personality because it combines other ratings of the motive to get ahead and other ratings of social competence to predict objective job performance behaviors after an extended period of time (one year) in a field study. Our study has strong implications for future AC-based sales staff selection and recruitment. When trying to optimize their sales force, organizations should not offer jobs to those candidates with a high OAR score, but to those with high scores on the motive to get ahead and social competence.

Our study combines several strengths: First, the AC approach was typically atheoretical, instead based on subject-matter experts' contextual knowledge (Fleenor 1987 but see for recent approaches: Kleinmann and Ingold 2019). We, however, ground our predictions on the socioanalytic theory of personality, which has already found broad empirical support outside the domain of AC research and sales management (Blickle and Hogan 2020). Second, our research design is predictive as opposed to cross-sectional (e.g.,

McFarland and Dixon 2021), excluding the possibility that the outcome variable influenced the predictor variable, thus providing an advantage over cross-sectional studies. Third, we examined an objective criterion variable (sales performance) as opposed to subjective supervisor rating data (e.g., Schwepker and Good 2021). Thus, it had a reliability of 1 and was free of rater bias (Murphy 2020). Fourth and finally, our predictor variables were not self-rating data, but rather aggregated other-ratings by experienced or knowledgeable judges with high levels of interrater agreement. Recent research has found that such predictor variables strongly increase criterion validity (Luan et al. 2019).

## Theoretical background and research hypotheses

The origins of the AC method go back to Germany's first democratic government after World War I, which strived to select and recruit military officers based on talent and personal potential as opposed to noble descent. During World War II, the United States Offices of Strategic Services used the AC method to identify and select intelligence agents (Thornton and Byham 1982). After World War II, the AC method was used to assess potential for business management (Bray and Grant 1966) and select sales representatives (Bray and Campbell 1968). And today, the idea that candidates who excel in sales simulations will also excel in real-world sales jobs has strong plausibility (i.e., face validity based on job-relatedness; the assessment task looks like it measures sales proficiency) to many sales managers and candidates. Face validity is key to the acceptance of personnel selection methods among candidates, HR practitioners, and managers (Arnoneit, Schuler, and Hell 2020). In this research, we suggest and test how to improve the predictive validity of ACs for selecting sales representatives above and beyond previous research (Cron et al. 2005; Randall et al. 1985).

We develop our hypotheses on pivotal predictors of sales performance based on meta-analytic research on personnel selection in general and the structure of exercises and dimensions in ACs in particular. These will also serve as the basis of determining what can be done to improve the use of ACs for recruiting salespeople.

In recent years, researchers evaluating selection methods estimated criterion validity through what is known operational validity (Hunter and Schmidt 2014). If necessary, i.e., in the absence of objective performance data, predictor-performance correlations are corrected for downward bias resulting from measurement error in raters' subjective assessments of job performance. In addition, predictor-performance correlations are corrected for range restriction due to the selection method in incumbent samples relative to applicant populations. 'No correction is made for measurement error in the predictor scores, because observed scores must be used in selection' (Schmidt, Oh, and Shaffer 2016, 12).

A recent meta-analysis of personnel selection procedures reports that ACs have substantial operational validity (.36) for overall job performance; nevertheless, this is markedly

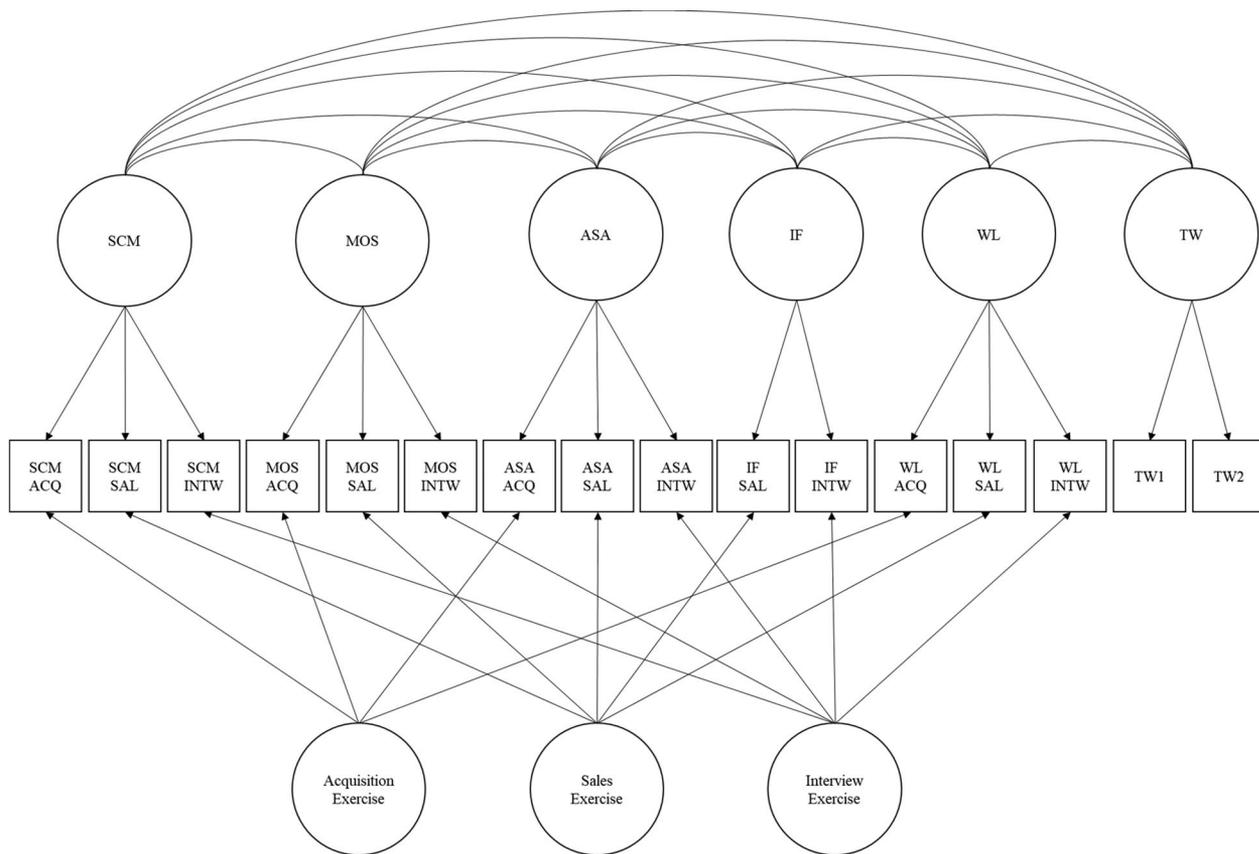
below the criterion validity of other selection procedures, such as employment interviews (.58) or general mental ability (GMA) tests (.65; Schmidt, Oh, and Shaffer 2016). Although GMA is a powerful predictor of job performance in many jobs, a meta-analysis has shown that GMA does not predict objective sales volume among professional salespeople, while verbal intelligence actually negatively predicts sales performance with correlations varying between  $-.05$  and  $-.54$  (Verbeke et al. 2008; Vinchur et al. 1998). Consequently, in practice many organizations recruiting salespeople use the AC method to select personnel and include an interview as one AC exercise to improve criterion validity.

## Structure of exercises and dimensions in sales ACs

The basic units of ACs are exercises and assessment dimensions. HR practitioners within organizations select and develop exercises and assessment dimensions to elicit and measure critical job competences and personal factors based on behavioral observations and judgements provided by subject-matter experts. Hoffman et al. (2015) reviewed the literature on AC exercises, while Meriac, Hoffman, and Woehr (2014) reviewed the literature on assessment dimensions used in ACs pertinent to managerial roles. Managerial ACs use in-basket exercises, leaderless group discussions, role-plays, case analyses, and oral presentations as exercises (Hoffman et al. 2015). Judges in ACs for managerial jobs assess candidates' problem solving, planning & organization, drive, communication, consideration & awareness of others, and ability to influence others (Meriac, Hoffman, and Woehr 2014; Wirz et al. 2020). As no systematic review of AC exercises and dimensions specifically pertinent to sales roles exists, we form our hypotheses based on insights which might generalize across managerial and sales jobs.

Hoffman et al. (2015) report that exercise effects can explain substantial variance in AC ratings. Meriac, Hoffman, and Woehr (2014) found in a meta-analysis that a multidimensional structure of correlated assessment dimensions provided the best fit to the data. A model with a general performance factor had the lowest fit to the data. This means that no variance was simultaneously shared by all dimensions, i.e., there was no general factor common to all assessments. Unfortunately, these studies did not integrate both exercises and assessment dimensions into a single structural equation model.

We assume that both exercises and assessment dimensions explain substantial variance in sales AC ratings. Additionally, we suggest a parsimonious data model assuming that exercises and dimensions are complementary, i.e., the relations are orthogonal. Certain structural equation models (i.e. bifactor models; Markon 2019) offer the opportunity to integrate both elements (i.e., exercises and assessment dimensions) into one comprehensive model. The correlations between different assessments in different exercises are captured by content factors that account for the shared variance across assessment dimensions and by group factors that capture exercise-specific variance. The content factors and



**Figure 1.** Bifactor model with assessment dimensions and exercise factors (see Table 2, Model C).

Notes: ASA=Active social approach competence, MOS=Motivation for success, SCM=Sales conversation management, IF=Implementation focus, WL=Willingness to learn, TW=Teamwork Competence.

exercise factors are assumed to be orthogonal (Markon 2019). In Figure 1, we present this bifactor model. If this model empirically fits the data well, it would support the distinctiveness of AC ratings. A recent meta-analysis of managerial AC dimension ratings found that although the dimensions were distinct, they substantially overlapped, reducing their discriminant validity; i.e., the assessment dimensions were substantially correlated but did not form a general factor (Meriac, Hoffman, and Woehr 2014).

Hypothesis 1. (a) Exercises and dimensions in ACs for sales jobs independently account for substantial variance in AC ratings.  
(b) The assessment dimensions are correlated but do not form a general factor.

### **Socioanalytic theory of personality and sales performance**

Previous research has already linked socioanalytic theory to the sales process (e.g., Blickle, Wendel, and Ferris 2010) and AC research (Hoffman et al. 2015; Meriac, Hoffman, and Woehr 2014). In this section, we merge these different lines of research with respect to the selection of sales staff via ACs.

The origins of the socioanalytic theory of personality go back to the previous century, when Robert Hogan explicitly postulated this theory to link personality and everyday performance (Hogan 1983). Socioanalytic theory provides a

perspective on human nature based on insights from Charles Darwin on human evolution, Sigmund Freud on unconscious motivation, and George Herbert Mead on the dynamics of social interaction (Blickle and Hogan 2020). It is a general theory of personality and behavior. Modern personality psychology consists of three major theoretical approaches, each with a distinctive focus and intent. Clinical theories of personality use introspection to identify the sources of individual neuroses and perhaps overcome their affects. Self-report trait theory uses introspection (self-report data) to identify the structure of this self-report data and trace its neurological underpinnings. Socioanalytic theory uses reputation, i.e., how others see a person, to predict important life outcomes, usually occupational success or failure (Hogan and Blickle 2018).

This theory suggests that personality dimensions ‘reflect social evaluations of every day performance’ (J. Hogan, Hogan, and Busch 1984, p. 167). Being helpful, thoughtful, considerate, and cooperative, e.g., reflects a service orientation. Taking this theory one step further, Hogan and Shelton (1998) suggested that some people can control how their personality is socially evaluated by others. They defined social skill as competent impression management, which involves controlling the impressions others form of oneself. Thus, the socioanalytic theory of personality is a theory about competent impression management in everyday performance and is therefore especially relevant to interpersonal

sales processes. For instance, someone who is high on extraversion is seen as assertive, energetic, and ambitious (Costa and McCrae 1992). Building on socioanalytic theory, Blickle, Wendel, and Ferris (2010) found that the job performance of extraverted car salespeople with strong impression management skills (social competence) was much higher than the sales performance of extraverted car salespeople with weak impression management skills. In addition, Wihler et al. (2017) found that social potency greatly strengthened the effects of achievement motivation on sales performance.

The socioanalytic theory of personality combines insights about human evolution and the dynamics of social interaction (Hogan and Blickle 2018). It suggests that people need status and power at a deep and often unconscious level (Blickle and Hogan 2020). Because human nature is rooted in biology, individual differences are inevitable. Thus, some people need more status than others. Digman (1997) examined self- and other ratings of personality traits from 14 studies. He found two higher-order factors in all 14 studies representing the need to get along with others and the need for status and power, which socioanalytic theory terms the motive to get ahead.

Individuals high on the motive to get ahead seek to gain recognition, seek responsibility, take initiative, and engage in competition (Meriac, Hoffman, and Woehr 2014). Hoffman et al. (2015) found in their meta-analysis that role-play exercises specifically activate the extraversion personality trait, while Meriac, Hoffman, and Woehr (2014) found in their meta-analysis that extraversion was associated with the drive dimension in AC assessments, which represents career ambition, energy, initiative, job motivation, tenacity, and high work standards. The meta-analyses found no activation of the motive to get along with others in any type of AC exercises.

Additionally, socioanalytic theory suggests that some people are more successful than others in attaining status and power because of their superior social competence (Hogan and Shelton 1998). People with a high level of social competence are able to restrain, calibrate, and adjust their behavior in changing contexts. This allows them to gain the trust of those with whom they interact and exert influence on. Drawing upon the socioanalytic perspective on predicting performance, Blickle, Wendel, and Ferris (2010) found that the motive to get ahead produces greater performance in interaction with social competence. Specifically, for individuals with a high level of work-related social competence, a higher motive to get ahead was associated with higher sales levels. Correspondingly, Meriac, Hoffman, and Woehr (2014) found that the drive dimension (motivation) in managerial assessments was closely associated with the relational skills dimension (social competence) in managerial ACs.

Finally, Hogan and Shelton (1998, 136) argue that basic motives are expressed in recurring patterns of behavior, which raters can observe and quantify. Consequently, 'social skill is a judgement about an actor's performance rendered by observers regardless of what an actor may intend'. In a recent study on social competence and

Machiavellianism in the leadership context, Genau et al. (2022) found support for this socioanalytic proposition: Targets' social competence as judged by a knowledgeable other strongly predicted Machiavellians' leadership effectiveness.

In summary, the AC setting behaviorally activates (Tett, Toich, and Ozkum 2021) the biologically rooted, broad motive to get ahead (Anderson et al. 2001), which energizes individuals' actions in specific behavioral settings such as ACs or sales conversations, whereas social competence gives direction to behavior and performance in both the AC and in later sales contexts. Through social competence, one is able to transform one's drive into actions that are positively perceived and evaluated by others. Based on socioanalytic theory, we therefore suggest that the 'drive' dimension assessed by AC raters will positively predict objective performance in jobs requiring incumbents to act with and through others to attain organizational or personal goals when interactively combined with (rater-assessed) AC dimensions capturing social competence (Munyon et al. 2021).

Hypothesis 2. Motivation for sales success will positively predict objective sales performance when interactively combined with social competence.

### ***AC exercises, motivation x social competence, and sales performance***

Hoffman et al. (2015) found in their meta-analysis on managerial ACs that cognitive intelligence (General Mental Ability, GMA), the Big Five personality traits (Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism, OCEAN), and AC exercises jointly predict managerial job performance. Thus, we expect that the motivational drive dimension in AC assessments, which represents energy, initiative, and tenacity and results from behavioral activation of the personality trait of extraversion in ACs, will have incremental sales-related validity above and beyond AC exercises.

Additionally, both distal and proximal constructs influence job performance. Personality traits are distal antecedents that affect performance indirectly through their influence on proximal antecedents such as motivation. Another important proximal antecedent of performance in interpersonal jobs is social competence. Social competence predicts job performance in interpersonal jobs (Blickle, Ferris, et al. 2011) and specifically in sales jobs (Blickle et al. 2012; Herjanto and Franklin 2019; McFarland and Dixon 2021).

Social competence encompasses being sensitive and responsive to others, being flexible and adaptive, being persuasive, being able to instill trust, being consistent across situations, being accountable, and being able to listen and communicate (Hogan and Shelton 1998). These social skills are independent of cognitive intelligence and shaped by experience, motivation, social learning, and cultural variables (Blickle, Ferris, et al. 2011). Social competence is often represented in several AC dimensions (Meriac, Hoffman, and Woehr 2014), namely 'consideration & awareness of others', 'influencing others', and 'communication'. Thus, we conclude that the social

competence dimensions in AC assessments will have incremental sales-related validity above and beyond AC exercises.

AC ratings of motivation and social competence are made by others, specifically experienced or knowledgeable judges, as opposed to self-ratings, which tend to be biased (Hogan and Shelton 1998). In line with the socioanalytic theory of personality, research has found that other-ratings of personality traits and social competence strongly increase criterion validity (Blickle, Ferris, et al. 2011; Luan et al. 2019). Thus, we conclude that other-ratings of motivation and social competence will have incremental sales-related validity above and beyond AC exercises.

Finally, exercise effects represent additive aggregations of rater assessments across evaluative dimensions within specific exercises (Hoffman et al. 2015). Therefore, these effects only capture the linear effects of assessment dimensions while neglecting nonlinear, multiplicative effects. Thus, we conclude and expect that the multiplicative combination of other-ratings of motivation and social competence will have incremental sales-related validity above and beyond AC exercises.

Hypothesis 3. The multiplicative combination of other-rated motivation for sales success and social competence as assessed by experienced or knowledgeable judges will predict variance in sales performance above and beyond AC exercise effects.

### **Overall assessment rating, motivation x social competence, and sales performance**

The overall assessment rating (OAR) score is the mean score on all assessment dimensions aggregated across all raters for a target candidate. Seen through the lens of the socioanalytic theory of personality, not all assessment dimensions are equally relevant for predicting sales performance; instead, two dimensions are considered pivotal, namely behaviors indicating the motive to get ahead (drive) and behaviors indicating social competence. Additionally, socioanalytic theory postulates a multiplicative combination of these two assessment dimensions: Drive energizes sales behavior, while social competence gives direction to successful sales behavior. Consequently, we conclude and expect that the multiplicative combination of other-ratings of motivation and social competence will have incremental sales-related validity above and beyond the overall assessment rating (OAR) score.

Hypothesis 4. The multiplicative combination of other-rated motivation for sales success and social competence as assessed by experienced or knowledgeable judges will predict variance in sales performance above and beyond the overall assessment rating (OAR) score.

## **Method**

### **Participants and procedure**

The data stem from AC sessions for a large insurance company that regularly recruits field salespeople in Germany in line with the standards of the International Taskforce on Assessment Center Guidelines (2015). The company's human resource (HR) department provided anonymized data on individual participants' performance across exercises, the company's final

decision regarding a job offer, field sales revenues after one year of employment, as well as additional information on applicants' gender, age, and quality of the sales training received by those who accepted the company's job offer. The company collected complete data from 241 applicants over a five-year period. Out of these applicants, the company ultimately hired 93 persons who ended up working for the company for at least one year. This group was 70% male, with an average age of 29.12 years ( $SD = 5.57$ ). For one candidate, overall AC performance ratings and sales performance results after one year are available, but ratings indicating how the candidate performed on each exercise are not. We therefore dropped this candidate from the analyses. Including this candidate, however, did not change the results substantially.

The assessment center consisted of three identical exercises for all participants: a semi-structured interview, a role-play exercise focusing on the acquisition of new clients, and a role-play exercise focusing on sales. The fourth exercise, a teamwork task in a leaderless group discussion, was carried out whenever the applicant group size at a given assessment center session permitted. Consequently, this exercise was not part of the company's hiring decisions. Raters assessed targets on six dimensions: motivation for sales success (measured in three exercises), active social approach competence (measured in three exercises), teamwork competence (measured in one exercise), sales conversation management (measured in three exercises), implementation focus (measured in two exercises), and willingness to learn (measured in three exercises).

Between two and six raters assessed applicants in each exercise. Raters were senior sales managers and one member of the HR department who took on a moderator role in the AC exercises and the rater conference. All raters received a frame of reference training including information on the dimensions being measured, optimal observation techniques, how to rate behavior to minimize observation biases, and appropriate documentation of one's ratings (see the behavioral anchors for AC dimensions in the Appendix). We used  $r_{wg}$  scores (LeBreton and Senter 2008) to assess interrater agreement. The consensus between raters was high across all dimensions. We present the interrater agreement in the diagonal of Table 3.

### **Measures**

Table 1 reports the definitions of the evaluated competencies that were provided to the AC judges in the frame of reference training. These judges were experienced and knowledgeable sales and HR subject-matter experts.

#### **Active social approach competence**

This dimension refers to participants' skill in social interactions. Applicants scoring high in this competence are open to meeting strangers and seek out contact with others, appear highly likable, easily build positive relationships with others, and are able to shape conversations so that others feel pleasant.

#### **Sales conversation management**

This competence refers to one's conversational style in a sales encounter. Applicants scoring high in this competence

**Table 1.** Definitions of evaluated AC dimensions.

Active social approach competence	means actively seeking out contact with other people. It is the ability to approach others with openness and without timidity, to quickly build and maintain a network – including with people from other social or professional contexts. People with strong interpersonal skills appear pleasant and congenial and make a good impression on others.
Sales conversation management	refers to the ability to express oneself well and convince others with arguments and with one's personal demeanor. It is the ability to structure conversations, articulate oneself clearly and understandably, and to appropriately emphasize what one has said through body language and facial expressions. People with a good ability to make conversation make cogent arguments and give their conversation partner sufficient opportunity to contribute to the conversation.
Motivation for success	means continuously striving over the long term to achieve the goals that have been set. It is the ability to “keep at it” even when one encounters resistance/frustration or failure and to work to achieve a successful result. Motivated people exhibit perseverance, work diligently, and have a strong desire for success.
Implementation focus	refers to a person's action orientation. It is the ability to concentrate on what is important when putting goals into action and to remain solution-oriented in one's thinking and actions (rather than problem-oriented). People with execution competence are pro-active, effectively deploy their resources, and are more likely to see opportunities than risks.
Willingness to learn	refers to expanding one's own knowledge and skills. It is characterized by the ability to realistically assess one's own capabilities and willingness to accept feedback. People with the willingness and ability to learn are aware of their own strengths and weaknesses and can deal with them in a constructive way.
Teamwork competence	means being able to integrate oneself into a group and work purposefully with a group to complete a task. It is the ability to find a place for oneself within the group that is accepted by the other group members and contributes to completing the task at hand. People with a good ability to work in teams can optimally integrate into and actively participate in different groups.

communicate clearly and precisely, find good arguments, do not interrupt others, are ultimately able to make a deal, and create commitment among their clients.

### **Motivation for sales success**

This dimension encompasses job applicants' goal orientation, their will to succeed, and their behavior after failures and rejection. Applicants scoring high in this dimension show great tenacity and diligence, little uncertainty after failures, and a strong drive for success.

### **Implementation focus**

This competence refers to the ability to successfully manage problematic situations. Applicants achieve high scores in this competence if they seek solutions to problems in an active and dynamic fashion, focus on potential solutions rather than the problem itself, show initiative, and are able to set priorities to their advantage.

### **Willingness to learn**

This competence refers to applicants' mindset regarding their own professional development. Applicants who score high in this competence have a realistic picture of themselves, reflect on their own strengths and opportunities for growth, are able to receive and implement feedback, and show interest and motivation for personal professional development.

### **Teamwork competence**

Teamwork competence refers to skill in successfully navigating social interactions within work groups. Applicants with high scores in this competence are able to find acceptance within a team, easily build good relationships, communicate effectively with all team members, and are able to skillfully convey their own opinions and win team members over to their ideas.

### **Overall assessment center rating score (total score)**

The total score represents the statistical average of the six rating dimensions, i.e., motivation for sales success, active social approach competence, teamwork competence, sales

conversation management, implementation focus, and willingness to learn.

### **Social competence**

In order to capture social competence in accordance with socioanalytic theory, we averaged candidates' scores on the *active social approach competence*, *sales conversation management*, and *teamwork competence* dimensions.

### **Average sales revenue**

The company provided data on individual sales performance after one year of employment. The company uses a point system that ensures the comparability of different sales products and thus represents an overall sales index determining the commission paid to each sales agent. In general, the company ensures that all sales agents are assigned a sales region containing an equal number of potential clients with comparable incomes, making it possible to directly compare agents' sales performance.

### **Control variables**

We controlled for the quadratic effects of motivation and social competence in order to exclude the possibility that the interactive effect is driven by quadratic effects (Li 2021).

### **Statistical analyses**

We tested our hypotheses using confirmatory factor analyses (CFA, Hypothesis 1a and 1b) and multiple hierarchical moderated regression analyses (Hypotheses 2 to 4). Based on previous meta-analytic findings, we did expect to find support for the dimensions' distinctiveness; i.e., the assessment dimensions should be substantially correlated but should not form a general factor (Meriac, Hoffman, and Woehr 2014).

In the multiple hierarchical moderated regression analyses, we first entered the predictor variables and then included the interaction term. When testing Hypotheses 3 and 4, we entered the AC exercise scores (Hypothesis 3) and the AC total score (= OAR score; Hypothesis 4), respectively, before including the interaction term. When testing Hypothesis 2,

**Table 2.** Model-data fit indices for confirmatory factor analysis models.

Model	$\chi^2$	df	$p (\chi^2, df)$	RMSEA	$p$ (RMSEA)	CFI	TLI	SRMR
A: 9 correlated factors: 6 dimensions, 3 exercises	277.68	67	.0000	.114	.000	.947	.905	.508
B: bifactor model: first order general factor, 3 exercises	166.03	82	.0000	.065	.041	.976	.969	.021
C: bifactor model: 6 dimensions, 3 exercises	111.35	75	.0041	.045	.674	.991	.985	.025
D: bifactor model: second order general factor, 6 dimensions, 3 exercises	127.76	84	.0012	.047	.604	.989	.984	.023
Model comparison C vs. D	$\Delta=17.4$	$\Delta=9$	$p < .05$					

Notes:  $N=241$ ; RMSEA=root mean square error of approximation; CFI=comparative fit index; TLI=Tucker-Lewis index; SRMR=standardized root mean square residual.

3, and 4, we additionally entered the squared terms of both predictors in Steps 3a and 3b, as the predictors were correlated (Cortina 1993). To counteract negative effects of multicollinearity, we standardized all predictors (Dawson 2014). Controlling for the squared terms of both predictors excludes the possibility that the interaction effects of different correlated predictors reflect quadratic effects of the product of the two predictor variables (Cortina 1993).

## Results

In order to assess the AC performance measures (measure validity), we calculated the interrater agreement (Harari and Viswesvaran 2018) which indicates both test reliability and measure validity (i.e., hetero-rater convergence; Campbell and Fiske 1959). The interrater agreement of the rating dimensions was good ( $.83 \leq r_{wg} \leq .87$ ; LeBreton and Senter 2008) supporting measure validity.

### Structure of exercises and dimensions in sales ACs

To test Hypothesis 1, we assessed our CFA models' goodness of fit by applying multiple criteria. The criteria for an acceptable fit were:  $p (X^2) \geq .01$ , RMSEA  $< .08$ , CFI  $> .95$ , TLI  $> .90$ , and SRMR  $< .10$ . However, Schermelleh-Engel, Moosbrugger, and Müller (2003, p. 36) note: 'The usual test of the null hypothesis of exact fit is invariably false in practical situations and will almost certainly be rejected if sample size is sufficiently large'. Therefore, they recommend assessing whether the model fits approximately well in the population. The root mean square error of approximation (RMSEA) is a measure of approximation in the population. It is relatively independent of sample size and favors parsimonious models. We therefore used RMSEA and  $p$  (RMSEA) to assess model fit. An RMSEA  $\leq .05$  indicates good fit, with values for  $p$  (RMSEA) ranging between  $.10 < p \leq 1.00$  (Schermelleh-Engel, Moosbrugger, and Müller 2003). Table 2 shows the results of the four CFAs.

To test Hypothesis 1a, we compared the goodness of fit indices for Model A and Model B. In bifactor models, content factors and method factors are uncorrelated (Markon 2019). The bifactor model (Model B) with one first-order general factor and 3 exercise factors had a better fit than the CFA model (Model A) with 9 correlated factors (6 dimensions & 3 exercises):  $\Delta\chi^2=111.65$ ,  $\Delta df = 15$ ,  $p < .0001$ . Model C (see Figure 1), a bifactor model with six first-order content and

three exercise factors achieved the best fit of all models. Its model fit in the population was very good,  $p$  (RMSEA) = .674. The empirical fit of Model C was also superior to that of Model D, a bifactor model with one second-order general factor, six first-order content factors, and three exercise factors:  $\Delta\chi^2=17.4$ ,  $\Delta df = 9$ ,  $p < .05$ . This supports Hypothesis 1b: The assessment dimensions are correlated but do not form a general factor at either the first-order (Model B) or second-order (Model D) level. These results support the distinctiveness of the sales AC rating dimensions.

### Socioanalytic theory of personality and sales performance

Table 3 shows the means, standard deviations, correlations, and interrater agreement ( $r_{wg}$ ) estimates for the study variables. The interrater agreement estimates for the assessment and exercise scales were good and support the reliability of observer judgements in this AC (LeBreton and Senter 2008).

Hypothesis 2 predicted that motivation for sales success will positively predict objective sales performance when interactively combined with social competence. Table 4 displays the results of the moderated regression analyses for Hypothesis 2. In the analyses without the squared terms, we found that motivation for sales success and social competence interactively predicted sales performance after one year (Table 4, Model 2,  $\beta = .41$ ,  $p < .001$ ). This interaction effect incrementally explained 15.3% of the variance in sales performance. Figure 2 displays the interaction plot for Model 2 in Table 3. As predicted by the socioanalytic theory of personality, at high levels of social competence, motivation for sales success positively predicts sales performance ( $B=906.84$ ,  $t=2.64$ ,  $p = .01$ ). At low levels of social competence, there was no significant relation between motivation for sales success and sales performance after one year.

When we additionally entered the quadratic term for social competence in Model 3a, the interaction term attained a one-tailed level of significance,  $\beta = .32$  ( $p = .045$ , one-tailed). When entering the quadratic term for motivation for success in Model 3b, the interaction term attained a two-tailed level of significance ( $\beta = .56$ ,  $p = .01$ ). None of the quadratic terms were significant, indicating that the interaction between motivation for success and social competence drives the increase in explained variance in the sales criterion, as predicted by the socioanalytic theory of personality. In sum, the results support Hypothesis 2.

**Table 3.** Means, SDs, Reliabilities, and Correlations of Study Variables.

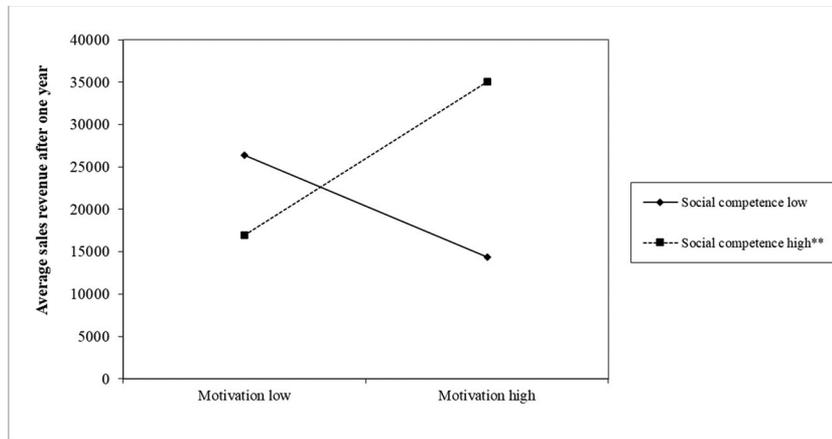
	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1	3.66	0.42	(.83)										
2	3.78	0.42	.75***	(.86)									
3	3.55	0.46	.49***	.62***	(.89)								
4	3.58	0.43	.81***	.83***	.61***	(.84)							
5	3.56	0.46	.80***	.78***	.58***	.84***	(.85)						
6	3.67	0.38	.75***	.74***	.56***	.83***	.76***	(.84)					
7	3.63	0.38	.88***	.90***	.75***	.94***	.91***	.88***	(.84)				
8	3.64	0.39	.77***	.91***	.85***	.91***	.82***	.80***	.97***	(.85)			
9	3.67	0.39	.71***	.75***	.43***	.71***	.52***	.65***	.71***	.70***	(.86)		
10	3.62	0.51	.82***	.75***	.52***	.83***	.86***	.81***	.87***	.78***	.48***	(.84)	
11	3.68	0.44	.76***	.81***	.63***	.85***	.85***	.79***	.89***	.85***	.56***	.67***	(.88)
12	Average sales revenue	28885.86	.26*	.30**	.25*	.24*	.13	.17	.26**	.29**	.16	.20	.26*

Notes: N=93; 0=female, 1=male; average sales performance after 1 year, interrater agreement ( $r_{vg}$ ) on the diagonal.

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

**Table 4.** Hierarchical Regression Analyses Predicting Average Sales Revenue.

	DV: Average sales revenue							
	Without quadratic terms				With quadratic terms			
	Model 1		Model 2		Model 3a		Model 3b	
	B (SE)	$\beta$	B (SE)	$\beta$	B (SE)	$\beta$	B (SE)	$\beta$
Motivation for success	2080.71 (3485.60)	.09	1520.81 (3200.17)	.07	1523.95 (3212.36)	.07	1123.33 (3248.47)	.05
Social competence	4964.21 (3485.60)	.22	2810.40 (3237.60)	.13	2600.96 (3270.55)	.12	3031.32 (3257.54)	.14
Social competence (squared)					1894.95 (3318.23)	.11		
Motivation for success (squared)							-2928.97 (3792.14)	-.16
Motivation for success x Social competence			7542.02 (1780.02)	.41***	5862.98 (3440.53)	.32 <sup>†</sup>	10290.22 (3980.31)	.56*
$R^2_{corr}$	.07*		.217***		.211***		.214***	
$F_{R^2}$	4.45		9.51		7.16		7.25	
(df1, df2)	(2, 90)		(3, 89)		(4, 88)		(4, 88)	
			.153***		.156***		.158***	
			17.95		9.07		9.23	
(df1, df2)			(1, 89)		(2, 88)		(2, 88)	

Notes:  $N=93$ .<sup>†</sup> $p < .05$  (one-tailed); \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .**Figure 2.** Interaction Effect of Motivation and Social Competence on Average Sales Revenue (Model 2). Notes:  $N = 93$ ; \*\* $p < .001$ .

### AC exercises, motivation, social competence, and sales performance

Hypothesis 3 predicted that the interaction effect of motivation for sales success and social competence explains performance above and beyond the individual AC exercise ratings. Table 5 displays the results of the hierarchical regression analyses for Hypothesis 3. The analyses without quadratic terms showed a significant interaction effect in Model 2 (Table 5:  $\beta = .42$ ,  $p < .001$ ). The interaction explained 16.4% incremental variance beyond the AC exercise dimensions. When we additionally entered the quadratic terms, the effects did not change substantially. Again, none of the quadratic terms were significant, indicating that the interaction between motivation for success and social competence drives the increase in explained variance in the sales criterion, as predicted by the socioanalytic theory of personality. In sum, the results support Hypothesis 3.

### Overall assessment rating, motivation x social competence, and sales performance

Hypothesis 4 predicted that the interaction effect of motivation for sales success and social competence will explain

performance variance beyond overall assessment rating scores. Table 6 displays the results of the hierarchical regression analyses for Hypothesis 4. In the analyses without control variables, the overall assessment rating score was significant (Table 6, Model 1,  $\beta = .26$ ,  $p = .01$ ). The incremental interaction effect of motivation for sales success and social competence was also significant (Table 6, Model 2,  $\beta = .42$ ,  $p < .001$ ). This interaction effect explained 16.7% of the variance in the sales criterion beyond overall assessment rating scores. Again, none of the quadratic terms were significant. These results support Hypothesis 4.

### Incremental operational and true score validity of the socioanalytic approach to AC

In order to assess the operational validity (Hunter and Schmidt 2014; Schmidt, Oh, and Shaffer 2016) of the socioanalytic approach to AC selection processes, we corrected for range restriction in the 'motivation for sales success x social competence' predictor from Hypothesis 4 in Table 6 (Model 2:  $\beta = .42$ , Model 3a:  $\beta = .32$ , Model 3b:  $\beta = .58$ ). Comparing the unrestricted standard deviation from the full sample ( $SD = 1.29$ ) to the restricted standard deviation ( $SD = 1.18$ ) from the sample of hired salespeople, we computed

**Table 5.** Hierarchical regression analyses predicting average sales revenue controlling for the AC exercises.

	DV: Average sales revenue							
	Without quadratic terms				With quadratic terms			
	Model 1		Model 2		Model 3a		Model 3b	
	B (SE)	$\beta$	B (SE)	$\beta$	B (SE)	$\beta$	B (SE)	$\beta$
AC Exercise: Acquisition	95.162 (2794.75)	.00	-1427.51 (2571.31)	-.06	-1567.29 (2591.54)	-.07	-1316.75 (2583.25)	-.06
AC Exercise: Sales Interview	271.747 (3163.69)	.01	351.03 (2883.72)	.02	513.59 (2907.31)	.02	408.44 (2893.00)	.02
AC Exercise: Teamwork	3782.501 (3591.38)	.17	3208.61 (3276.15)	.14	3020.66 (3303.47)	.14	2781.31 (3339.53)	.13
Social competence (squared)					2014.61 (3382.18)	.12		
Motivation for success (squared)							-2746.95 (3848.62)	-.15
Motivation for success x Social competence			7814.14 (1796.41)	.42***	6037.28 (3485.65)	.33 <sup>†</sup>	10378.64 (4019.334)	.56*
	.039		.202***		.196***		.197***	
	1.93		5.65		4.73		4.76	
(df1, df2)	(4, 88)		(5, 87)		(6, 86)		(6, 86)	
			.164***		.167***		.169***	
			18.92		9.57		9.66	
(df1, df2)			(1, 87)		(2, 86)		(2, 86)	

Notes: N=93.

<sup>†</sup>p < .05 (one-tailed); \*p < .05; \*\*p < .01; \*\*\*p < .001.

**Table 6.** Hierarchical regression analyses predicting average sales revenue controlling for AC total score.

	DV: Average sales revenue							
	Without quadratic terms				With quadratic terms			
	Model 1		Model 2		Model 3a		Model 3b	
	B (SE)	$\beta$	B (SE)	$\beta$	B (SE)	$\beta$	B (SE)	$\beta$
AC total score	5718.76 (2260.35)	.26*	3331.29 (2129.28)	.15	3116.99 (2163.39)	.14	3213.91 (2137.92)	.14
Social competence (squared)					2087.88 (3315.36)	.12		
Motivation for success (squared)							-3080.78 (3750.46)	-.17
Motivation for success x Social competence			7809.32 (1764.71)	.42***	5950.75 (3441.66)	.32 <sup>†</sup>	10695.16 (3932.90)	.58**
	.055*		.216***		.210***		.213***	
	6.40		13.65		9.17		9.29	
(df1, df2)	(1, 91)		(2, 90)		(3, 89)		(3, 89)	
			.167***		.170***		.173***	
			19.58		9.92		10.09	
(df1, df2)			(1, 90)		(2, 89)		(2, 89)	

Notes: N=93.

<sup>†</sup>p < .05 (one-tailed); \*p < .05; \*\*p < .01; \*\*\*p < .001.

operational validities (OVs) of OV = .45 (Model 2), OV = .35 (Model 3b), and OV = .61. Compared to the traditional approach (OV = .36; Schmidt, Oh, and Shaffer 2016), Models 2 and 3b exhibit a 25% and a 69% increase, respectively.

Becker et al. (2011) found an OV = .396 in meta-analyses for German-speaking regions. When we additionally corrected for the reliability ( $r_{wg} = .82$ ) of the predictor (the criterion, average sales revenue, has a reliability of 1; the relation between ‘motivation for sales success x social competence’ and average sales revenue had a true score validity of  $\beta_c = .49$  in Model 2,  $\beta_c = .38$  in Model 3a and  $\beta_c = .67$

in Model 3b (Peterson and Brown 2005), which is good compared to other predictors (Schmidt and Hunter 1998).

### Discussion

Assessment centers (AC) are a prominent selection and recruitment method in today’s business world with very high acceptance in practice by managers, HR specialists, and candidates (Armoneit, Schuler, and Hell 2020). However, there is a notable dearth of published research studies specifically assessing ACs for sales staff and the relations with sales performance among candidates recruited via a sales AC. We were unable to identify

any published studies over the past two decades in which objective sales performance was predicted based on AC dimension ratings by experienced or knowledgeable judges (Cron et al. 2005). The AC research literature has focused on managerial performance while neglecting sales performance. Nevertheless, ACs are frequently used in practice to select and recruit salespeople (e.g., Salespotentials 2021; Wallis 2021).

To the best of our knowledge (see Cron et al. 2005), this is the first academic study published in English over at least the past two decades to assess features of ACs for sales staff. The interrater agreement scores supported the good reliability of the observers' judgements. Our results also supported the distinctiveness and uniqueness of AC ratings designed for sales selection (Meriac, Hoffman, and Woehr 2014). The criterion-related validity of the AC observer ratings was in the normal range for ACs for managerial jobs in terms of overall assessment rating (OAR) scores.

To improve criterion-related validity, we tested a new approach to the AC method of selecting field salespeople based on the socioanalytic theory of personality. We hypothesized and found that motivation for sales success (drive) demonstrated in an AC and assessed by experienced or knowledgeable judges positively predicts objective sales performance after one year when interactively combined with social competence rated by assessors based on targets' behaviors demonstrated in the AC. We also expected and found that this interaction effect explains incremental performance variance above and beyond assessment center exercises and overall assessment rating scores. The socioanalytic approach to the AC selection method increased operational validity by 25% compared to the traditional approach. The true-score criterion validity of the socioanalytic approach was roughly the same (.49) as other methods like structured interviews and intelligence tests for non-sales jobs (Schmidt and Hunter 1998).

### **Implications for research**

Our results have several theoretical and practical implications. First, AC researchers have traditionally assumed that the AC method predicts future performance because the AC process is a valid reflection of overall potential (Arthur and Day 2011). Socioanalytic theory offers an alternative model in which future performance is predicted based on the motive to get ahead and social competence (Hogan and Shelton 1998). The socioanalytic model of job performance has found ample empirical support (for an overview, see Blickle and Hogan 2020; Hogan and Blickle 2018). However, in all previous studies, either the motive to get ahead or social skill or both were assessed using self-report ratings by targets. The present study is the first to use other-ratings of both motive to get ahead and social competence. Thus, our study contributes to the further validation of the basic assumptions and hypotheses advanced by socioanalytic theory and its application to the AC process for salespeople.

Second, the jobs most closely akin to sales jobs are leadership jobs. Both represent enterprising jobs (Holland 1997) that encourage incumbents to influence and control others to attain organizational or personal goals and to view the

world in terms of money, power, status, and responsibility. Enterprising jobs demand social skill to be successful (Blickle et al. 2012; Ewen et al. 2013), while cognitive intelligence is of minor importance for job performance (Judge, Colbert, and Ilies 2004; Vinchur et al. 1998). In both sales jobs and leadership jobs, the motive to get ahead is a strong predictor of performance when moderated by social competence (Blickle, Wendel, and Ferris 2010; Ewen et al. 2014). We therefore call for constructive replications of the socioanalytic approach to the AC method in recruitment and selection for leadership jobs. Other important job categories with high enterprising job demands are in the fields of marketing and politics (Holland 1997). Consequently, we suggest employing the socioanalytic approach to the AC method when selecting candidates for jobs in marketing and politics as well (Silvester and Dykes 2007; Silvester et al. 2021).

### **Managerial implications**

The fact that this research provides evidence supporting a 25% incremental validity of the interaction between 'motivation for sales success x social competence' above and beyond overall assessment rating scores for job performance in a sales position, all else being equal, has important implications for sales management. AC are costly to administer because the exercises and candidate ratings take time, and participation in the AC process by experienced or knowledgeable judges creates high opportunity costs (Schmidt, Oh, and Shaffer 2016). Our findings show that two assessment dimensions did not contribute to predictive validity, namely willingness to learn and implementation focus (see Table 3). In order to increase the cost-efficiency of ACs for salespeople, greater focus could be placed on assessing motivation and social competences, while dropping willingness to learn and implementation focus from the assessment.

Often, field salespeople are mistakenly understood as solo performers. Customer troubleshooting and customer follow-up services often require teamwork. Our findings underscore the role of teamwork, i.e., being able to integrate oneself into a team and work purposefully with others to complete tasks. Our research shows that the ability to find a place for oneself within changing teams is critical to individuals' overall sales performance.

This finding also strongly supports the socioanalytic theory of personality, which suggests that social competence is key to social performance. Social competence enhances people's ability to present themselves and control their appearance during social interaction. People with higher social competence are able to better influence others by counseling, persuading, and suggesting rather than ordering, criticizing, and coercing them. Participants in social interactions evaluate each other's performance after every contact experience. These evaluations primarily reflect the degree to which people are rewarding during social interactions, where 'being rewarding involves helping others advance their agendas, being compliant and attentive, and fitting with the culture of the group. Being rewarding has to do with making

another person feel and look good in his or her role' (Hogan and Blickle 2018, p. 120).

### Limitations

Our study is not without limitations. Although the full sample of candidates participating in an AC was large (N=241), the final sample for predictive analyses was smaller (N=93), resulting in reduced statistical power. We therefore suggest replication studies with further AC samples in the field of salesperson selection. Another limitation of our study is that the AC dimensions were correlated, yielding a lower level of discriminant test validity.

If organizations want to use ACs to train and develop their salesperson resources, the empirical distinctiveness of the various AC dimensions is highly relevant. In developmental ACs, judges meet with and provide one-on-one feedback to each participant. Therefore, in developmental ACs, it is strongly recommended dimensions be distinctive and transparent. However, if ACs for purposes of personnel selection or performance prediction as opposed to personnel development (i.e., identifying potential for individual improvement) are in the focus, correlated AC dimensions are of minor concern (Arthur and Day 2011).

Empirically, the fit of our hypothesized model was significantly better than that of a general factor model, thereby supporting the distinctiveness of the different assessment dimensions. Although social competence and motivation for success were correlated, leading to lower discriminant validities, the unbiased nature (hetero-source) of our criterion variable (sales performance), which was objectively measured and time-lagged by one year, creates additional confidence in the findings. The squared terms of social competence and motivation for success did not predict incremental validity (Cortina 1993), but the interaction term between social competence and motivation for success did. Thus, reduced discriminant validity did not hamper the predictive effects of the interaction term.

Our paper's strengths include its theory-based approach, the use of an objective criterion assessing sales performance based on archival data, and a predictive data structure with a time interval of one year. Future research should also integrate other dependent variables above and beyond sales performance, such as customer-directed deviance (Schwepker and Good 2021), job satisfaction (Lassk and Shepherd 2013), or burnout (McFarland and Dixon 2021). These criteria are all highly relevant for sustainable sales performance over a longer period of time.

### Conclusion

Addressing the notable dearth of published research studies on ACs for salespeople, our results supported the good reliability of observer judgements and the distinctiveness of AC ratings designed for sales selection. We successfully tested a new approach to the Assessment Center method for selecting field salespeople based on the socioanalytic theory of personality. We hope this will motivate other

researchers to attempt to replicate our findings with larger samples of salespeople and to apply the same approach to selection for leadership and marketing jobs and political candidates.

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### Declaration of interest

No potential conflict of interest was reported by the authors.

### Ethics approval statement

The corporation agreed to the anonymized publication of the data. As the assessment center method used in this study is a standard approach no additional ethics approval was necessary to publish the study.

### Data availability statement

The authors are not the proprietors of the data. Therefore, the data are not publicly available due to legal restrictions. However, the data/codes of this study are available for other researchers from the first author upon reasonable request.

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**Appendix: Behavioral anchors for AC dimensions**

	Negative behaviors	Positive behaviors
Active social approach competence	Comes across as distant and withdrawn Shys away from personal contact Does not create a positive atmosphere Comes across as unlikable Does not find a friendly way to start the conversation Does not build a relationship with their conversation partner Comes across as bland when first getting to know them	Approaches strangers with openness Seeks out personal contact Creates a positive atmosphere in conversation Is well-liked Finds a friendly way to start the conversation Builds a positive relationship with their conversation partner Comes across as lively and appealing when first getting to know them
Sales conversation management	Maintains a closed posture Conveys content in a long-winded, unclear way Digresses, does not get to the point Does not steer the conversation Does not find any convincing arguments Asks few questions and hardly listens Does not address their conversation partner's needs Interrupts their conversation partner Barely lets their conversation partner speak Cannot win over/enthuse others for themselves and their priorities Acts non-committally Does not end the conversation with a commitment or does not close the sale Comes across as inauthentic, non-credible and untrustworthy Employs facial expressions and gestures inappropriately or insufficiently Uses many words with negative connotations	Maintains an open posture Conveys content in a simple, easy-to-understand way Expresses themselves clearly and comprehensibly Steers the conversation Finds convincing arguments Asks questions and actively listens Addresses their conversation partner's needs Lets their conversation partner finish speaking Gives their conversation partner enough opportunity to speak Can win over/enthuse others for themselves and their priorities Creates commitment Ends the conversation with a commitment or closes the sale Comes across as authentic, credible and trustworthy Employs facial expressions and gestures effectively
Motivation for success	Does not exhibit a focus on success Requires external motivation Exhibits little desire to make sales Allows failures to sap their motivation Does not show persistence and gives up easily Lets themselves get easily rattled and does not show resilience Does not work diligently	Speaks in positive images, uses positively connotated words Exhibits a focus on success Is self-motivated Exhibits a desire to make sales Does not let failures set them back Shows persistence, keeps at it and does not let up Does not let themselves get rattled and shows resilience Works diligently
Implementation focus	Behavior is passive and reactive Comes across as non-dynamic Problem-oriented Sees risks instead of opportunities Does not show business acumen Gets bogged down Has few ideas	Takes initiative and engages in pro-active behavior Comes across as dynamic Solution-oriented Sees opportunities instead of risks Shows business acumen Sets the right priorities Has ideas
Willingness to learn	Inaccurately reflects on their own behavior Does not sufficiently acknowledge their own strengths and weaknesses Not aware of their own impact Demonstrates a lack of openness to novelty Rarely accepts feedback, justifies themselves Does not implement feedback Little interest in their own further development Blames failure on external circumstances	Accurately reflects on their own behavior Recognizes their own strengths and weaknesses Aware of their own impact Demonstrates an openness to novelty Accepts feedback Implements feedback Interested in their own further development Takes responsibility for their own actions
Teamwork competence	Does not find an appropriate role within the team and holds the group back Does not act cooperatively Opinions they express are not accepted by the team Demonstrates a lack of willingness to help others Insists unyieldingly on their own opinions and unwilling to make compromises or reach a consensus	Finds an appropriate role within the team and advances the group's work Acts cooperatively Expresses opinions that are taken up by others Demonstrates willingness to help others Willing to make compromises and reach a consensus