

**Understanding Deceptive Behavior on LinkedIn:  
The Influence of Psychological Factors and LinkedIn Usage Patterns**

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### Abstract

Deception, driven by psychological factors, is prevalent on social media, where usage patterns frequently moderate these relationships. Despite LinkedIn's prominence in professional networking, its relationship with deceptive behavior and underlying psychological motives remain relatively understudied compared to other platforms. Thus, this study aims to examine the relationship between psychological factors (need for approval, impression management, and self-esteem) and deceptive behavior on LinkedIn, and how LinkedIn usage patterns moderates this. A quantitative online questionnaire was conducted with 150 participants aged 18 to 60 ( $M_{age} = 26.2$ ,  $SD = 7.75$ ), where participants responded to questions regarding demographics, psychological factors, deceptive behavior, and patterns of LinkedIn usage. Regression analyses investigated the impacts of need for approval, impression management, and self-esteem on deceptive behavior on LinkedIn, and LinkedIn usage patterns' moderating effect. Results revealed a significant negative relationship between impression management and LinkedIn deception, contrary to the initial expectation of a positive relationship. No significant effects were observed for other psychological factors or moderation effects. However, limitations include most scales utilized in the study were originally designed for different platforms, lacking specific adaptation for LinkedIn, and most participants indicating rare or no daily LinkedIn use, potentially limiting sample appropriateness for LinkedIn-specific behavior study. Future research should consider recruiting more active LinkedIn users and employing peer-review, Q-sort technique, or expert validation to improve scale relevance.

**Keywords:** deceptive behavior, deception, LinkedIn, psychological traits, LinkedIn usage patterns

## Introduction

Humans are social animals, and conversation is fundamental to forming and maintaining connections (Sprigings et al., 2023). Through interactions, individuals share information, but they might also withhold or distort the truth, leading to deception. Deception, characterized by the distortion, fabrication, or manipulation of the truth, is prevalent in various contexts, including social media (Masip et al., 2004). This deceptive behavior extends to formal conversations, written texts, and social media platforms like Instagram, Facebook, and LinkedIn. Deceptive behavior on social media manifests in diverse forms and is motivated by various psychological factors. Previous studies have examined why individuals engage in deceptive behavior on Instagram and Facebook, highlighting the significant influence of psychological factors and social media usage patterns on the tendency to present oneself authentically or deceptively. Despite LinkedIn being the most widely used professional networking social media platform, the relationship between deceptive behavior and underlying psychological motives has not been thoroughly investigated. Additionally, there are limited studies about LinkedIn usage and its impact on user behavior, although previous research has shown that social media usage can affect psychological factors and deceptive behavior. Understanding deceptive behavior on LinkedIn is crucial due to its widespread use in professional context, serving as the foremost platform for recruitment, professional networking, and career development, steadily and effectively replacing traditional resumes. Furthermore, LinkedIn is often used as a recruitment tool, with recruiters reviewing profiles for decision-making, and applicants are aware of its use for background checks. Consequently, there has been an increase in deceptive practices, with approximately 90 percent of users engaging in dishonest behaviors on LinkedIn. This makes it more challenging to find qualified candidates and verify the truth of the information provided. However, the

motivations behind these behaviors remain underexplored, complicating efforts to tackle this issue. Hence, addressing this research gap and identifying the psychological factors driving deception can migrate the deceptive practices and contribute to form more authentic interactions on LinkedIn, thereby improving the quality of information on the platform. Therefore, this study aims to examine the following research questions:

1. How do individual psychological factors, such as the need for approval, desire for impression management, and self-esteem, affect on deceptive behavior on LinkedIn?

2. How does LinkedIn usage pattern moderate the relationship between psychological factors and deceptive behavior on LinkedIn?

By addressing these research questions, this study explores the relationship between psychological factors (need for approval, impression management, and self-esteem) and deceptive behavior on LinkedIn, and investigates how LinkedIn usage patterns moderate this dynamic. This study focuses specifically on LinkedIn, an area relatively underexplored compared to other social media platforms. By examining these psychological factors and usage patterns, the research aims to enrich existing literature and offer insights for recruiters and professionals. These insights can help develop strategies that promote authenticity, mitigate deceptive practices on LinkedIn, and comprehend the motivations and potentially prevent them. A theoretical framework exploring previous studies on this topic will be presented, followed by the method and results of the study. The study concludes with answers to the research questions, limitations and future research directions, theoretical and practical implications, and a conclusion section.

## **Theoretical framework**

### **Understanding Deceptive behavior on LinkedIn**

Deceptive behavior is prevalent in everyday life, occurring at various levels and contexts, and has become widespread on social media platforms. While people could deceive others in numerous contexts and various form, deception can be categorized into three levels: outright, exaggerations, and subtle deceptions. Outright deception is a complete falsehood, while exaggeration involves inflating facts or present a perception that overstates the truth (Feldman et al., 2002). Subtle deception encompasses misleading others by sidestepping questions or omitting relevant details (Memon et al., 2003). Individuals may engage in deceptive behavior across these three levels and even employ all these behavior within a singular interaction or conversation. In a modern society, social media has emerged as a widely embraced and diverse mode of communication enabling users to share information, expressing opinions, and network with others. Social media platforms are accessible at any time, offer anonymity, operate on open platform, provides immediate updates, and have potential to reach vast audiences. Furthermore, Tsikerdekis and Zeadally (2014) suggested that because interaction on most social media primarily relies on text and unfolds asynchronously, these platforms offer a low-cost means for deceit. These characteristics make users feel comfortable sharing information, regardless of its accuracy. Consequently, these unique features of social media environment often facilitate or promote deceptive behavior (Liu et al., 2014).

Deceptive behavior can occur across various social media platforms with different objectives. Ellison et al. (2007) indicate that the primary motivation for using Facebook or Instagram is to maintain connections with family and friends. Therefore, users these platforms often engage in deceptive behavior to impress individuals within their social circles and portray a fabricated self-image. Such behavior aims to show idealized version of themselves, mask vulnerabilities, or display an image of being friendly, diligent, and intelligent (Möller et al.,

2022; Peluchette & Karl, 2009). In contrast, Twitter, with its limited space for profile or personal information, primarily serves as a platform for expressing opinion or sharing real-time information in a concise textual format (Utz, 2016). Thus, deception on Twitter predominantly manifests through the dissemination of fake news or inaccurate information.

Meanwhile, LinkedIn functions as a social media platform where users are driven to leverage it for professional networking and career development, aiming to achieve career-related objectives. Additionally, many corporations consider LinkedIn profile as a replacement for the traditional resume (Zide et al., 2014). LinkedIn stands out as an efficient and powerful social media platform for job seekers and recruiters, allowing employers to attract job candidates by posting job openings and reaching out to passive candidates, thereby increasing the number of applicants and the visibility of vacancies. Furthermore, LinkedIn enables individuals to acquire career benefits by connecting with other professionals, exploring job opportunities, and contacting potential employers. Users can achieve these goals by showcasing their expertise, skills, educational backgrounds, and experiences containing various individuals' information relevant to hiring decisions. Therefore, LinkedIn has become interchangeable with and has replaced the traditional resume.

However, information on LinkedIn may not always be accurate, and it can be challenging to distinguish between deception and truth. LinkedIn users often engage in deceptive behavior to impress recruiter, aware that companies frequently conduct LinkedIn screenings. According to Rangel (2014) and Zide et al. (2014), 94 percent of HR professionals use LinkedIn to gather information about applicants, and job seekers are aware of its widespread use for recruitment and selection. Consequently, this LinkedIn profile screening influences candidates' job prospects, leading to a deceptive behavior in resumes and LinkedIn profiles. Furthermore, Guillory and

Hancock (2012) found that approximately 90 percent of people admit to misleading information about their experiences, educational backgrounds, and interests on LinkedIn. Current studies highlight LinkedIn as a replacement of traditional resumes and illustrate that individuals embellish, fabricate, and omit information in a professional context, which can similarly occur on LinkedIn (Bremner & Phung, 2015; Henle et al., 2019). Specifically, on LinkedIn, embellishment involves overstating accurate information, fabrication involves falsifying information, and omission, which is less common, entails excluding information that might disadvantage individuals (Henle et al., 2019).

In short, current studies indicates a considerable prevalence of deceptive practices among individuals utilizing LinkedIn due to its capabilities and potential influence within a job-related context.

### **Factors Influencing behavior on social media**

#### ***Need for Approval***

Social approval is an inherent aspect of human nature and a psychological desire for recognition and acceptance from one's social circle. The need for approval refers a desire to be affirmed and accepted (Kalaman & Becerikli, 2020). The desire significantly influences shaping individuals' traits and attitudes, shaping behavior both offline and online (Mun & Kim, 2021; Nie et al., 2024). For instance, individuals could behave in a deceptive manner, portraying themselves in a distorted way and tailoring their image rather than showing their authentic selves to obtain social validation (Ballara, 2023). Specifically, individuals with a high need for approval tend to be more inclined towards deception to gain reassurance and fulfill their social approval needs on social media (Utz et al., 2012). Additionally, Dumans et al. (2017) argued that individuals with a strong desire for social acceptance are more likely to present themselves

deceptively to achieve their goals. Moreover, individuals who rely on social media to attain desired approval might engage in excessive and problematic social media behavior, such as concealing undesirable characteristics and heavily highlighting achievement (Tong et al, 2018). In short, individuals with a high desire for social approval might engage in deceptive behavior to gain validation rather than express their genuine selves.

Especially with the advent of social media, this behavior is observed prevalently, as these platforms play a crucial role in satisfying the need for social approval. Most social media platforms provide features such as likes, comments and shares, serving as indicators of acceptance (Hjetland et al., 2022). Consequently, individuals may choose to selectively reveal or emphasize certain aspects of themselves to attain approval by others, utilizing editing and customization options offered by social media platforms.

LinkedIn, in particular, offers a unique environment where users can showcase their skills and accomplishments, gaining validation through skills endorsements or recommendation from colleagues. These endorsements and recommendations could serve as indicators of professional competence and contribute to a user's profile strength, affirm their abilities, and leave a positive impression on potential employers. However, users have the autonomy to manage their endorsements and recommendations, including showing, hiding, or even arranging them in a specific order. This LinkedIn feature allows individuals with a high need for approval to potentially indulge in more deceptive behavior, as they might be driven by a desire to be recognized and reassured in the professional world. Thus, depending on individuals' level of need for approval, LinkedIn can serve as a tool for engaging in deceptive behavior. Especially, those who have a strong desire for social approval might perceive recognition on LinkedIn as



validation of their abilities, prompting them to be involved in deceptive practices to enhance their online visibility and reputation.

*Hypothesis 1: A need for approval positively affects deceptive behavior on LinkedIn.*

### ***Impression Management***

Impression management is a pervasive social phenomenon, processes of individuals self-present themselves to exert influence on how audiences perceive them. Impression management theory posits that individuals seek to build and maintain an image that aligns with how they want to be portrayed by others (Bozeman & Kacmar, 1997). Impression management involves employing various tactics to achieve and formulate a desired impression. Bolino et al. (2008) illustrated that individuals could control their image by selectively presenting information to gain a favorable image. However, some tactics might be perceived as manipulative or inauthentic, as the goal of impression management is to cultivate a self-image that resonates with how individuals want to be perceived by others. For example, individuals could assertively manage their impression by disclosing specific information or highlighting positive outcomes they are accountable for more than commonly believed (Bolino et al., 2008). Deceptive impression management entails presenting oneself with misleading information or in a manner inconsistent with one's authentic self, core values and identity to control others' perception of their image. While this form of impression management could occur unconsciously and habitually, it happens daily in both face-to-face and online social interactions (Al-Shatti et al., 2022; Bolino et al., 2016).

Within the era of digital communication and social media interaction, impression management tactics can manifest on social media platforms, where users possess control over their online profile image, activities, and information. Although both forms of impression

management can occur within an online context, several studies indicate that individuals tend to engage in more deceptive behavior on social media platforms. This tendency arises from the ability to reach larger audiences and selectively present certain aspects of themselves (Sigona, 2015). Furthermore, in online setting, individuals might perceive anonymity and reduced immediate consequence from deceptive behavior compared to face-to-face interactions, leading to increased engagement in deceptive impression management on social media (Joinson, 2007).

Deceptive impression management strategies are also prevalent in job-related context, such as interview, job performance, or resume. Bolino et al. (2008) asserted that deceptive impression management behaviors in employment and organizational contexts can take various forms. For instance, job seekers may employ deceptive impression management tactics towards recruiters to secure job offers (Leary & Kowalski, 1990). Similarly, individuals could manipulate previous employment experience and information to manage their impression of their performance and promote themselves by enhancing, ingratiating, or exemplifying their achievements (Bolino et al., 2008). Carlson (2012) further illustrates that using deceptive acts as excuses to mitigate poor work performance or inflate their contribution or achievement. Additionally, Guillory and Hancock (2012) conclude that over 90 percent of their study participants exhibited deceptive impression management behavior regarding their online resume writing, particularly in a LinkedIn setting.

LinkedIn provides users to cultivate a favorable professional image to attract recruiter by incorporating with numerous tools to showcase users' professional achievements, certifications, or project successes, thereby demonstrating their expertise. It is also a platform which is featured to advance individuals' career by strategically tailoring and controlling their impression in favor of themselves to get more job opportunities since recruiters utilize social media platforms

especially LinkedIn to search for candidates. Moreover, as organizations increasingly rely on LinkedIn for recruiting, the practice of impression management become pivotal. Consequently, individuals may downplay less favorable aspects and tailor information to present them as ideal candidates. This tendency can lead to increased engagement in impression management practice on LinkedIn, which could be perceived as deceptive behavior.

*Hypothesis 2: Impression management positively affects deceptive behavior on LinkedIn.*

### ***Self-Esteem***

Self-esteem, a subjective and fundamental cornerstone of social psychology, refers an overall evaluation of oneself as a person based on a self-perception which could potentially build individual's personal value and self-worth (Michikyan, 2022). It can pertain to one's holistic self-perception or relate to particular aspects of the self, ranging from social status to specific physiological attributes (Holloway, 2016). This evaluation shapes individual's attitude and influence on their decision-making process and actions profoundly across various domains in daily life. Self-esteem can manifest in both high and low forms, depending on how individuals perceive themselves in their social environment. High self-esteem indicates a high level of self-confidence while low self-esteem implies a low self-consciousness, which causes people think themselves as an inferior person (Bailey, 2003). Furthermore, the level of self-esteem can impact on how individuals present themselves to others and engage in social interaction in both face-to-face and online contexts. For instance, individuals with low self-esteem might engage in behaviors such as self-doubting or seeking approval from others, reflecting their insecurity and low trust in themselves (Bergana & Tartaglia, 2018). On the other hand, individuals with high self-esteem could show confidence, self-assertiveness, and an enthusiasm to share about their life, experience, or accomplishment.

These differences in behaviors can be observed not only in real-life conversation but also on social media platforms. In the online context, self-confident individuals tend to present their authentic self-identity, while people with low self-esteem might engage in displaying deceptive self to hide their characteristics or genuine self (Michikyan, 2022). Moreover, individuals with high self-esteem tend to possess enhanced interpersonal skills in online contexts and acquire benefits from social media use (Baumeister, 1998). Nonetheless, users with low self-esteem have higher chance of involving oneself in adverse social communication on social media. For instance, Wang (2024) claims that college students exhibiting low self-concept are highly prone to encountering maladaptive social media use, as they seek to compensate for their poor interpersonal development and social interactions by relying on social networking platforms. In particular, previous research indicates that individuals with low self-esteem are potentially more susceptible to engage in deceptive practices in online environments, aiming to gain attention and secure social inclusion by seeking others' attentions (Dumas et al., 2020). Wright et al. (2018) further assert that those with a fragmented self-concept and low self-esteem are more likely to engage in deceptive Facebook use, false self-presentation, and inauthentic self-portrayal. Moreover, they elaborate on the potential for those to mislead others about their accomplishments, identity, status and even their interests.

This problematic utilization of social media attributed to low self-esteem also extends to professional networking platforms like LinkedIn. While LinkedIn primarily serves as a tool for job search and professional networking, Johnson and Leo (2020) explain that the ability to utilize LinkedIn might vary depending on individuals' levels of self-esteem. For instance, users with low self-esteem are inclined to adopt a passive approach to their interactions on LinkedIn compared to individuals with high self-esteem. Additionally, individuals with high self-esteem

tend to show greater confidence in their actions on the platform, actively cultivating their professional connections. Conversely, those with low self-esteem often seek to conceal their insecurities and may disregard the potential consequences of their actions. Moreover, they also could strive for increased visibility on LinkedIn like those with high self-esteem by masking their true personality, traits, and authentic selves, while others portray their authentic self by showing off their ability, skills, and achievements. Previous studies indicate that individuals with low self-esteem, experiencing decreased confidence and performance in face-to-face interactions, may perceive themselves as underestimated or less competent. In response, they may turn to LinkedIn, drawn by its platform features, to mitigate these feelings of low confidence and boost their sense of self-worth. Specifically, individuals with low-self-esteem might be more likely to resort in a deceptive manner on LinkedIn, as they tend to underestimate their own worth and their current valuable experience and may seek to compensate for perceived limitations through deceitful behavior.

*Hypothesis 3: Self-esteem negatively affects deceptive behavior on LinkedIn.*

### **The Role of LinkedIn Usage Pattern**

Social media has become an essential and inseparable medium for modern individuals to communicate and share their experiences and feelings, encompassing every detail of their lives, both significant and trivial. While nearly six out of ten people worldwide engage with social media (Statista Research Department, 2024), their social media usage patterns vary, broadly categorized into active and passive engagement. Active social media usage refers to behaviors and activities on social media platforms that involve direct engagement and communication with others. This includes sending private messages or contents via direct communication, posting or reposting pictures or videos, and liking, commenting, or tagging others on posts (Fioravanti &

Casale, 2020; Krause et al., 2022). These activities demonstrate active engagement on social media, fostering interactions with others and sharing information within the online community. Conversely, passive social media usage is defined as engaging with social media by observing others' content and absorbing information without interacting. This encompasses activities such as scrolling through and browsing news feed or other users' profiles, and watching contents without engaging through likes, shares, comments, or messages (Lewin et al., 2022; Valkenburg et al., 2022; Verduyn et al., 2020). Essentially, it involves being a passive observer rather than an active participant on social media.

Given these dynamics, different patterns of LinkedIn usage pattern can moderate the relationship between independent variable (need for approval) and deceptive behavior on LinkedIn.

*Hypothesis 4:* LinkedIn usage pattern moderates the relationship between a need for approval and deceptive behavior on LinkedIn.

Especially, passive users who spend more time observing others accomplishments and seeking recognition and approval, might aspire to gain achievements, potentially leading to increased engagement in deceptive practice on LinkedIn.

*Hypothesis 4a:* Passive LinkedIn usage positively moderates the relationship between a need for approval and deceptive behavior on LinkedIn.

On the other hand, active users who are actively interact on LinkedIn may not necessarily engage in such practice. Thus, active usage could negatively moderate the relationship between the need for approval and deceptive behavior.

*Hypothesis 4b:* Active LinkedIn usage negatively moderates the relationship between a need for approval and deceptive behavior on LinkedIn.

Furthermore, the more time they spend browsing LinkedIn feeds and seeing what others are up to, the more they might engage in deceptive behavior. Passive social media users often enhance their self-presentation to meet the perceived standards of the online community. Similarly, passive users could be influenced by their desire for impression management and might strategically employ impression management tactics and portray themselves more favorably.

*Hypothesis 5:* LinkedIn usage pattern moderates the relationship between impression management and deceptive behavior on LinkedIn.

This tendency could be exacerbated by passive usage patterns, where individuals passively observe others' achievements and career updates, feeling compelled to improve and cultivate their own profile.

*Hypothesis 5a:* Passive LinkedIn usage positively moderates the relationship between impression management and deceptive behavior on LinkedIn.

In contrast, active users may rely less on impression management strategies.

*Hypothesis 5b:* Active LinkedIn usage negatively moderates the relationship between impression management and deceptive behavior on LinkedIn.

Recent empirical studies highlight how different patterns of social media usages can shape individuals' behaviors on these platforms. Passive social media usage, characterized by observing others' activities and content without direct interaction, correlates with an increased likelihood of deceptive behavior.

*Hypothesis 6:* LinkedIn usage patterns moderates the relationship between self-esteem and deceptive behavior on LinkedIn.

Passive users, often driven by self-esteem concerns, spend significant time browsing and comparing themselves to others with high activity levels on social media platforms (Verduyn et al., 2017). This comparison can lead to the feelings of envy and a desire to enhance their self-image or self-worth, potentially motivating deceptive practices (Argo et al., 2006).

Consequently, passive social media users may embellish their profiles, qualifications, and achievements to meet or exceed perceived social and professional standards.

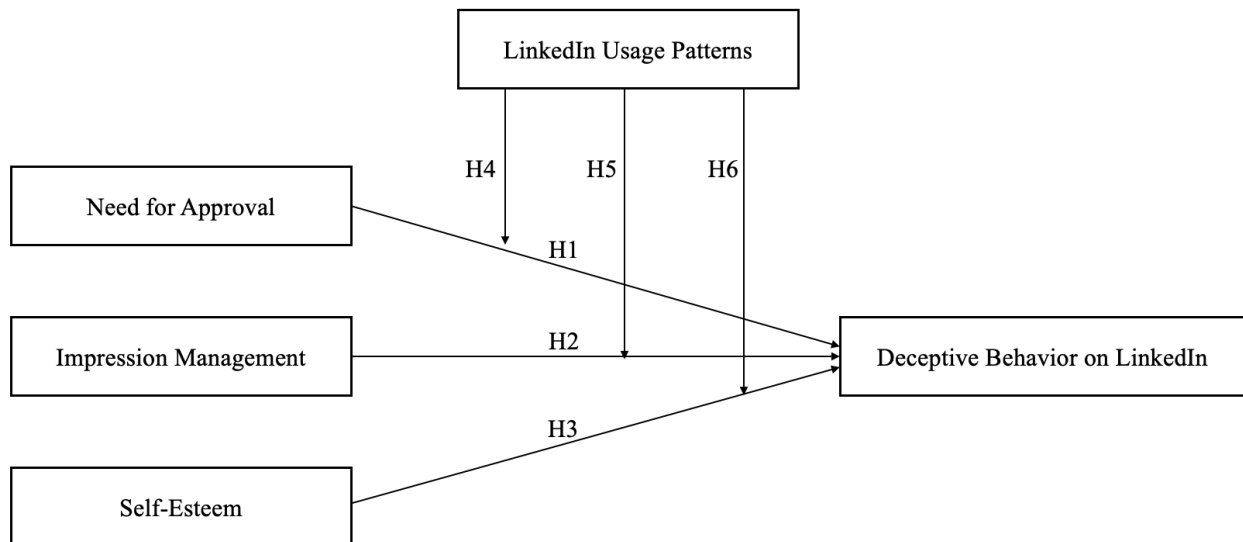
*Hypothesis 6a:* Passive LinkedIn usage pattern positively moderates the relationship between self-esteem and deceptive behavior on LinkedIn.

On the other hand, active social media users who engage directly with others may be less engage in such behaviors.

*Hypothesis 6b:* Active LinkedIn usage pattern negatively moderates the relationship between self-esteem and deceptive behavior on LinkedIn.

## Figure 1

### *Conceptual Framework*





## Method

### Design

This study employed a quantitative online questionnaire research design to explore the relationship between LinkedIn users' psychological traits and deceptive behavior on LinkedIn. The underlying rationale for chosen method stems from its suitability for exploring the sensitive nature of topics like deceptive behavior, where interview methods may lead to biased responses due to social desirability biases (Brenner & DeLamater, 2016). Additionally, online questionnaires offer a private and anonymous means for participants to disclose their behavior and psychological status, minimizing the reluctance to admit to unethical actions like lying and deception. To ensure a comprehensive and accurate assessment of deceptive behavior, this study utilizes both self-report scales and scenario-based scales. While the self-report scales provide insights into participants' subjective perceptions of their own behavior, scenario-based scales present realistic situations, encouraging more authentic responses. This dual-method approach aims to capture honest responses and both intentional and unintentional manifestations of deceptive behavior. The independent variables were need for approval, impression management, and self-esteem, while deceptive behavior on LinkedIn was the dependent variable. Additionally, LinkedIn usage patterns were considered as an expected moderating variable between psychological traits and deceptive behavior on LinkedIn.

### Participants

A total of 150 respondents participated in the study (97 females, 49 males, 2 non-binary/third gender, 2 preferred not to say;  $M_{age} = 26.2$ ,  $SD = 7.75$ ), ranging in age from 18 to 60 years (See Table 1 for additional sociodemographic characteristics). Eligibility criteria included proficiency in English to understand and complete the survey, as well as having a LinkedIn

profile considering the aims and scope of the research. An additional 59 individuals did not complete the questionnaire or did not meet the screening criteria (i.e., absence of a LinkedIn profile).

**Table 1**

*Demographic Characteristics of Participants*

Characteristics	n	%
Age		
18-24	72	48
25-34	59	39.3
35-44	9	6
45-54	8	5.3
55-64	2	1.3
65 or above	0	0
Gender		
Male	49	33
Female	97	65
Non-binary/third gender	2	1
Prefer not to say	2	1
Employment		
Full-time employed	30	20
Part-time employed	46	30.7
Self-employed	3	2
Unemployed	43	28.7
Retired	1	0.6
Other	27	18
Education		
Less than high school	21	14
High school degree	83	55.3
Bachelor's degree	43	28.7
Master's degree	2	1.3
Doctorate/Ph.D.	1	0.7
Other	0	0
Frequency of LinkedIn use		
Daily	27	18
Several times a week	36	24
Once a week	23	15.3
Several times a month	23	15.3
Rarely	41	27.3
Daily time spent on LinkedIn		

Characteristics	n	%
Rarely or never	49	32.7
Less than 10 minutes	65	43.3
10 – 30 minutes	28	18.7
31 – 60 minutes	6	4
1 – 2 hours	2	1.3
More than 2 hours	0	0
Number of LinkedIn connection		
0 – 100	75	50
101 – 200	33	22
201 – 300	14	9.3
301 – 400	7	4.7
401 – 500	3	2
501 or more	18	12
Primary LinkedIn purpose		
Networking and professional connections	53	35.3
Job searching and career advancement	80	53.3
Sharing industry news and updates	2	1.3
Learning and professional development	12	8
Other	3	2

*Note.* N = 150

### **Procedure and data collection**

Participants were recruited through various channels, including social media platforms such as Instagram, LinkedIn, Reddit, WhatsApp, and Facebook. Additional recruitment methods included survey flyers, personal connection of the researcher, and the SONA test subject tool at the University of Twente, which is a website for students to participate in research projects and earn credits. Data collection was conducted via an online questionnaire on Qualtrics over three-week period, from 20<sup>th</sup> May until 10<sup>th</sup> June, 2024. Participants were able to complete the survey at their convenience, regardless of time or device used.

Prior to participation, informed consent was obtained from all participations. The consent form provided a brief description of the study's objectives, information on data preservation, potential risks and benefits, participation rights, and contact information for inquiries (See

Appendix A). Only those who indicated understanding and agreement to participate proceeded further with the survey.

The survey consisted of a total of 68 items. A screening question was included and presented at the beginning to verify whether participants had a LinkedIn profile, determining their eligibility for the study. Participant who did not consent to participate or did not meet the eligibility criteria were directed to the end of the survey. Eligible participants were then asked demographic questions, including age, gender, employment status, educational level, field of study or area of specialization (See table 1). Additionally, participants provided details regarding their LinkedIn usage, including frequency of use, average time spent daily, and the total number of connections on LinkedIn. Following the demographic section, participants were presented with items designed to measure their deceptive behavior on LinkedIn and their psychological traits. Lastly, the survey proceeded with self-report measures assessing participants' LinkedIn usage patterns. On average, participation in this study took approximately 5 to 10 minutes. This research received ethical approval from the Behavioural, Management, and Social Science (BMS) Ethics Committee at the University of Twente prior to data collection.

### **Instruments**

To measure participants' psychological factors, deceptive behavior on LinkedIn, and LinkedIn usage patterns, six scales were employed. Three scales measured the independent variables, need for approval, impression management, self-esteem. Two scales assessed the dependent variable, deceptive behavior on LinkedIn and one scale explored LinkedIn usage patterns. All scales, except one of the scales measuring deceptive behavior on LinkedIn, were derived from existing literature that has been tested for reliability and validity. These scales were adapted to LinkedIn context and utilized a 5-point Likert scale. However, the scenario-based

scale measuring deceptive behavior on LinkedIn, featured answer options ranging from truth to three different deceptive levels, scoring from 1 to 4 based on the degree of deception in the sentence. Thus, this scale employed a 4-point scale (See Appendix A for an overview of the instruments and questionnaire). The following section presents a detailed explanation of each scale and its items.

### ***Need for approval***

The need for approval was assessed using the 8-item Need for Social Approval Scale (Franzén & Mäder, 2020). This scale consists of two subscales: three items measuring public approval (e.g., I do not care about how others think of me) and four items measuring private approval (e.g., It is important for me to succeed in life). Participants indicated how much each statement applied to them on a 5-point Likert scale (*1 = strongly disagree, 5 = strongly agree*). The original study demonstrated adequate internal consistency for the scale, with Cronbach's alpha of 0.67.

### ***Impression Management***

The impression management subscale of the Desirable Responding Short Form (BIDR-16) (Hart et al., 2015) assessed participants' tendencies toward impression management. Participants rated their agreement with 8 statements, such as "I never cover up my mistakes", using a 5-point Likert scale (*1 = strongly disagree, 5 = strongly agree*). Previous studies reported good internal consistency for impression management subscale (Cronbach's  $\alpha > .7$ ).

### ***Self-Esteem***

Participant responded to a 10-items scale measuring their self-esteem, adapted from Rosenberg's Self-Esteem Scale (1965). They were asked to indicate their agreement with statements such as "Overall, I am satisfied with myself" using a 5-point Likert scale ranging

from 1 (*strongly disagree*) to 5 (*strongly agree*). Unlike the original 4-point Guttman scale (1 = *strongly disagree*, 4 = *strongly agree*), this study employed a 5-point Likert scale that included a neutral option (*neither disagree nor agree*) between *disagree* and *agree*. This adjustment aimed to ensure consistency across all scales used in this study, thereby reducing potential participant confusion. The rationale to use a 5-point scale was based on its proven ability to enhance data quality, internal consistency and validity (Østerås et al., 2008). Adding a middle category of agreement to Rosenberg's Self-Esteem Scale has been widely adopted by researchers (Donnellan et al., 2015). Furthermore, the Rosenberg Self-Esteem Scale has demonstrated high reliability (Cronbach's  $\alpha > .8$ ) and validity through numerous studies, establishing it as the most widely used scale in its domain (García et al., 2019).

### ***Deceptive behavior on LinkedIn***

Two scales were utilized to measure deceptive behavior on LinkedIn. The first measure was developed specifically for this study. Participants were presented with a scenario featuring a fictional persona, a recent bachelor's graduate with a specified educational background and experience details. Participants were then tasked with choosing how to portray this fictional persona's LinkedIn profile from four options. These options ranged from no exaggeration or fabrication to varying levels of subtle and obvious exaggeration and fabrication to see how participants engage in deceptive practice in LinkedIn context. The first option was a paraphrased version of the presented information of the persona, maintaining accuracy without exaggeration or fabrication. The second option represented a subtle exaggeration of the details by adding adverbs or adjectives. The third option involved obvious exaggeration, claiming contribution or achievements beyond those presented. The fourth option included both obvious exaggeration and fabrication of information. For example, if the presented information stated that the persona

“assisted in the preparation and organization of internal conferences”, the first option paraphrased this accurately as “contributed to organizing internal conferences and meetings.”, while the fourth option claimed “led the successful preparation and organization of internal external conferences and meetings with excellent organizational and leadership skills,” thereby asserting false claims not supported by the given information.

In addition, two subscales from the Resume Fraud Items (Henle et al., 2019) were employed to evaluate participants’ deceptive behavior on LinkedIn, complementing the newly developed scale to enhance reliability and validity. The scale was originally designed to assess deceptive behaviors in resume contexts, this study adapted the scale by replacing the instruction phrase ‘Regarding your resume, rate the extent to which you have’ with ‘On LinkedIn I have,’ thereby tailoring it specifically to the LinkedIn context. Furthermore, the original scale consisted of 5 items measuring fabrication, 8 items measuring embellishment, and 5 items measuring omission. However, since omission does not fall within the scope of deception as defined in this study, it was excluded, along with one extreme item from the fabrication category. To ensure consistency and coherence with other scales used in this study and to minimize participant confusion, the 7-point Likert scale originally used was adopted to a 5-point Likert scale. Consequently, participants rated the frequency of engaging in 4 items assessing fabrication and 8 items measuring embellishment on a scale ranging from ‘never’ to ‘always’. For example, participants rated their frequency of fabrication behaviors such as “claimed work experience that I do not actually have”, or embellishment behaviors such as “padded my experiences or skills”.

### ***LinkedIn Usage Pattern***

To assess LinkedIn usage pattern, a scale was developed based on the Passive and Active Use Measure developed by Gerson et al. (2017). This scale measures both active (e.g., “Posting

photos or videos”) and passive usage (e.g., “Viewing photos or videos”) on LinkedIn. Participants rated the frequency of their activities on a 5-point Likert scale (*1 = never, 5 = very frequently*). The scale demonstrated acceptable reliability, with a Cronbach’s alpha exceeding 0.6, indicating good internal consistency. While the original scale designed for assessing Facebook usage, the scale was adapted for LinkedIn usage in this study. For example, items such as “chatting on FB chat” were adapted to “chatting on LinkedIn message” to fit the LinkedIn context. Additionally, Brandtzæg (2009) found that users activities on social media, such as content creation and content consumption can be grouped into broader categories rather than specified in detail. Consequently, items with similar natures, such as “Posting photos” and “Posting videos”, which represent active usage, were combined into single items to streamline the scale. Similarly, items assessing passive usage, “Viewing photos” and “Viewing videos”, were merged into one item. This consolidation not only simplified the questionnaire from its original 13 items to 10 items but also reduced the survey length, potentially increasing response rates (DeVellis, 2016). Thus, the final LinkedIn usage pattern scale used in this research included two subscales: three items measuring passive LinkedIn usage and seven items measuring active LinkedIn usage.

### **Data preparation and analysis**

All data analyses were conducted using RStudio, the statistical software. Participants who did not complete the survey or did not meet the eligibility requirements were removed from the final dataset and excluded from the analysis. Out of the 209 responses recorded, 150 responses were included in the final analysis. Prior to analysis, reverse-worded items were recoded. The LinkedIn usage pattern scale was then split into its passive and active subscales. Separate regression analyses for moderation effects were conducted for each subscale to explore its



interaction with the independent variables. Before proceeding with regression analyses to test the hypotheses, descriptive statistics were calculated (see Table 1). For the numeric variable such as age, mean, standard deviation, frequency, and percentage distributions were computed.

Categorical variables – gender, employment, education, major, daily time spend on LinkedIn, number of LinkedIn connections, primary LinkedIn purpose – frequencies and percentages were calculated. Furthermore, reliability assessments via Cronbach's alpha and exploratory factor analysis (EFA) were conducted to evaluate internal consistency and factor structure of the measurement scales used in the study.

### ***Factor analysis***

To confirm the relevance and correlation among questionnaire items and to group them into integrated factors prior to further analysis, exploratory factor analysis was conducted (Shrestha, 2021; Sürücü et al., 2022). Before conducting the factor analysis, the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity were performed to assess sampling adequacy and data suitability (Taherdoost et al., 2014). A KMO value greater than 0.50 is considered adequate for factor analysis, and Bartlett's test of sphericity should indicate significance ( $p < .05$ ) for the data to be suitable (Yong & Pearce, 2013). In this study, an overall KMO value of 0.77 and individual item values exceeding 0.50, along with a significant Bartlett's test of sphericity ( $p < .001$ ), confirmed that exploratory factor analysis could proceed. Principal axis factoring (PAF) was subsequently employed to extract items that loaded onto non-relevant factors or did not load significantly. A threshold point of 0.3 was applied, consistent with common practice (Velicer & Fava, 1998; Williams et al., 2010). Items with factor loadings below 0.3 were excluded from further analysis. Consequently, item S1, S2, N4, N6, and N7 were

removed due to insufficient loadings or because they did not load onto any single factor, resulting in a total of 44 final items retained for subsequent analysis.

### ***Reliability analysis***

After testing construct validity, a reliability analysis was conducted with the remained 44 items to measure internal consistency. A Cronbach's alpha above 0.6 is considered sufficient and acceptable for reliability (Taber, 2017). Internal consistency confirms that a scale is reliable and consistently measures the intended concept (Luca et al., 2017). All constructs scored higher than 0.6. Therefore, the results of the factor analysis and Cronbach's alpha demonstrate that the constructs have adequate validity and high internal reliability (see Table 2 for Factor analysis and Cronbach's alpha).

**Table 2**

### *Factor analysis and Cronbach's Alphas*

Statements	Factor loading					
	1	2	3	4	5	6
Factor 6: Deceptive Behavior on LinkedIn – Scenario-based scale						
S1 Deceptive statements regarding experience on LinkedIn						-.22
S2 Deceptive statements regarding educational background on LinkedIn		.15				
Factor 1: Deceptive Behavior on LinkedIn – Resume Fraud Items (Fabrication, Embellishment)						
F1 Claimed work experience that I do not actually have	.62					
F2 Invented accomplishments that did not really occur	.67					
F3 Claimed to have skills that I do not have	.55					
F4 Made claims that were false	.72					
E1 Inflated the importance of activities or awards	.74					
E2 Provided an enhanced picture of my past or current record	.68					
E3 Made exaggerated claims	.80					
E4 Overstated information	.77					
E5 Padded my experiences or skills	.79					
E6 Exaggerated my responsibilities	.79					
E7 Embellished information on LinkedIn	.70					

	Statements	Factor loading					
		1	2	3	4	5	6
E8	Made the information or experience sound better than it really is	.66					
Factor 4: Need for Approval							
N1	It is important for me that I get positive feedback, when I have done something well				.51		
N2	It is important for me to succeed in life				.58		
N3	I expect proper reward for my dedication				.31		
N4	I do not care about how others think of me				.11		
N5	It matters a lot for me that my friends speak in high terms of me				.32		
N6	For me it is all the same, when others do not accept me the way I am				.01		
N7	I do not mind critique at all				.02		
Factor 5: Impression Management							
IM1	I sometimes tell lies if I have to					.32	
IM2	I never cover up my mistakes					.39	
IM3	There have been occasions when I have taken advantage of someone					.37	
IM4	I sometimes try to get even rather than forgive and forget					.49	
IM5	I have said something bad about a friend behind his or her back					.34	
IM6	When I hear people talking privately, I avoid listening					.30	
IM7	I never take things that don't belong to me					.42	
IM8	I don't gossip about other people's business					.36	
Factor 2: Self-Esteem							
SE1	Overall, I am satisfied with myself		.70				
SE2	At times, I think I am not good at all		.51				
SE3	I feel that I have a number of good qualities		.58				
SE4	I am able to do things as well as most other people		.54				
SE5	I feel I do not have much to be proud of		.66				
SE6	I certainly feel useless at times		.56				
SE7	I feel that I'm a person of worth		.58				
SE8	I wish I could have more respect for myself		.45				
SE9	All in all, I am inclined to think that I am a failure		.68				
SE10	I take a positive attitude toward myself		.72				
Factor 3: LinkedIn Usage Patterns							
LUP1	Sharing profile updates with your networks (about your job, education, or work anniversary)				.50		
LUP2	Engaging with posts (liking, commenting, reposting, sending)				.67		

Statements		Factor loading					
		1	2	3	4	5	6
LUP3	Chatting on LinkedIn message			.61			
LUP4	Checking to see what someone is up to			.60			
LUP5	Creating or participating to events			.48			
LUP6	Posting photos or videos			.55			
LUP7	Tagging connections in posts or videos			.62			
LUP8	Viewing photos or videos			.74			
LUP9	Browsing feed actively (liking, commenting, reposting, sending)			.71			
LUP10	Browsing feed passively (without liking, commenting, reposting, sending)			.57			
Cronbach's alpha:		.93	.84	.88	.62	.68	-

*Note.* N = 150. Factor 6 had no significant loadings. The abbreviations indicate the scales: S = scenario-based scale, F = Fabrication, E = Embellishment, N = Need for Approval, IM = Impression Management, SE = Self-Esteem, LUP = LinkedIn Usage Patterns.

## **Results**

Regression analyses were conducted to test the proposed hypotheses (H1, H2 and H3) and to examine the main effect, the relationship between the independent variables — need for approval, impression management, and self-esteem — and the dependent variable, deceptive behavior on LinkedIn. Multiple linear regression analyses were conducted to investigate the interaction effect between the independent variables and the moderator (LinkedIn usage pattern) on dependent variable, thereby examining H4, H5, and H6. Table 3 provides an overview of the results from main and moderation effect analysis. Table 4 presents the outcomes for each hypothesis, indicating whether the proposed hypothesis was rejected or supported.

### **Main Effect Analysis**

#### ***Effects of need for approval***

A simple linear regression was performed to assess the relationship between need for approval and deceptive behavior on LinkedIn to test Hypothesis 1: A need for approval

positively affects deceptive behavior on LinkedIn. The results of indicated that the model was not statistically significant ( $F(1, 148) = 0.09, p = .76$ ), indicating that need for approval did not significantly predict deceptive behavior on LinkedIn ( $\beta = -0.03, t = -0.31, p = .76$ ). Thus, Hypothesis 1 was not supported.

### ***Effects of impression management***

To test the Hypothesis 2: Impression management positively affects deceptive behavior on LinkedIn, a simple linear regression was conducted. The results revealed that impression management negatively affects deceptive behavior on LinkedIn significantly ( $F(1, 148) = 11.65, p < .001$ ). While Hypothesis 2 was supported by the significant relationship between impression management and deceptive behavior, the negative direction suggests that higher level of impression management is associated with lower levels of deceptive behaviors ( $\beta = -0.28, t = -3.41, p = .001$ ).

### ***Effects of self-esteem***

A simple linear regression model predicting the relationship between self-esteem and deceptive behavior, yielded non-significant results ( $F(1, 148) = 3.01, p = .08$ ). Therefore, Hypothesis 3 was not supported, indicating that self-esteem is not a significant predictor of deceptive behavior on LinkedIn ( $\beta = -0.15, t = -1.74, p = .08$ ).

## **Moderation Effect Analysis**

### ***Interaction of Need for Approval and LinkedIn Usage Pattern***

A multiple linear regression was carried out to examine whether the LinkedIn usage pattern moderates the relationship between the need for approval and deceptive behavior on LinkedIn. The results for Hypothesis 4a, which explored the interaction between the need for approval and passive LinkedIn usage, were not significant,  $\beta = .04, t(146) = 0.35, p = .73$ .

Similarly, the results for Hypothesis 4b, which evaluated the interaction between the need for approval and active LinkedIn usage, were also not significant,  $\beta = .01$ ,  $t(146) = 0.05$ ,  $p = .96$ . Consequently, both Hypothesis 4a and 4b were rejected, showing that LinkedIn usage pattern did not have a significant moderating effect.

#### ***Interaction of Impression Management and LinkedIn Usage Pattern***

A multiple regression model examined the moderation effect of LinkedIn usage pattern on the relationship between impression management and deceptive behavior. For Hypothesis 5a, which investigated the interaction between impression management and passive LinkedIn usage, the results were not significant,  $\beta = -0.14$ ,  $t(146) = -1.69$ ,  $p = .09$ . For Hypothesis 5b, which examined the interaction between impression management and active LinkedIn usage, the interaction effect was not significant,  $\beta = -0.05$ ,  $t(146) = -0.45$ ,  $p = .65$ . In summary, both Hypothesis 5a and 5b were not supported.

#### ***Interaction of Self-Esteem and LinkedIn Usage Pattern***

A multiple linear regression analysis was performed to test the interaction effect of LinkedIn usage pattern on the relationship between the independent variable, self-esteem and the dependent variable, deceptive behavior on LinkedIn. The analysis for Hypothesis 6a, investigating the interaction between self-esteem and passive LinkedIn usage, the results showed a non-significant moderation effect,  $\beta = -0.01$ ,  $t(146) = -0.14$ ,  $p = .89$ . Similarly, the analysis for Hypothesis 6b, examining the interaction between self-esteem and active LinkedIn usage, the interaction effect was also not significant,  $\beta = -0.13$ ,  $t(146) = -1.05$ ,  $p = .30$ . Thus, both Hypothesis 6a and 6b were rejected. These results indicate that neither passive nor active LinkedIn usage patterns moderate the relationship between self-esteem and deceptive behavior on LinkedIn.

**Table 3***Regression Analysis: Psychological Factors and LinkedIn Usage Patterns in Deceptive Behavior*

Variable	$\beta$	SE	t	p
Need for approval	-.03	.09	-0.31	.760
Impression management	-.28	.08	-3.41	.001
Self-esteem	-.15	.09	-1.74	.085
Need for approval*passive LinkedIn usage	.04	.10	0.35	.725
Need for approval*active LinkedIn usage	.01	.12	0.11	.910
Impression management*passive LinkedIn usage	-.14	.08	-1.69	.094
Impression management*active LinkedIn usage	-.09	.12	-0.75	.454
Self-esteem*passive LinkedIn usage	-.01	.09	-0.14	.893
Self-esteem*active LinkedIn usage	-.15	.12	-1.23	.221

**Table 4***Outcome of the proposed hypotheses*

Hypothesis	Outcome
Hypothesis 1 Need for approval positively affects deceptive behavior on LinkedIn.	Rejected
Hypothesis 2 Impression management positively affects deceptive behavior on LinkedIn.	Supported
Hypothesis 3 Self-esteem negatively affects deceptive behavior on LinkedIn.	Rejected
Hypothesis 4 LinkedIn usage patterns (both passive and active) moderate the relationship between a need for approval and deceptive behavior on LinkedIn.	Rejected
Hypothesis 4a Passive LinkedIn usage positively moderates the relationship between a need for approval and deceptive behavior on LinkedIn.	Rejected
Hypothesis 4b Active LinkedIn usage negatively moderates the relationship between a need for approval and deceptive behavior on LinkedIn.	Rejected
Hypothesis 5 LinkedIn usage patterns (both passive and active) moderates the relationship between impression management and deceptive behavior on LinkedIn.	Rejected
Hypothesis 5a Passive LinkedIn usage positively moderates the relationship between impression management and deceptive behavior on LinkedIn.	Rejected
Hypothesis 5b Active LinkedIn usage negatively moderates the relationship between impression management and deceptive behavior on LinkedIn.	Rejected
Hypothesis 6 LinkedIn usage patterns (both passive and active) moderates the relationship between self-esteem and deceptive behavior on LinkedIn.	Rejected
Hypothesis 6a Passive LinkedIn usage pattern positively moderates the relationship between self-esteem and deceptive behavior on LinkedIn.	Rejected
Hypothesis 6b Active LinkedIn usage pattern negatively moderates the relationship between self-esteem and deceptive behavior on LinkedIn.	Rejected

## Discussion

This study explored the effects of psychological factors (need for approval, impression management, self-esteem) and deceptive behavior on LinkedIn, and the potential moderating effects of LinkedIn usage patterns on these relationships. The research questions addressed were: “How do individual psychological factors, such as the need for approval, desire for impression management, and self-esteem, affect on deceptive behavior on LinkedIn?” and “How do LinkedIn usages pattern moderate the relationship between psychological factors and deceptive behavior on LinkedIn?”. In the following section, the main findings, theoretical and practical implications, limitations and future research directions, and conclusion will be discussed.

### Main findings

The study did not find significant results for most of the proposed hypotheses except for one significant finding regarding impression management and deceptive behavior on LinkedIn. Contrary to the initial hypothesis that impression management affects positively on deceptive behavior on LinkedIn, the results indicated the opposite. Specifically, the findings revealed that impression management negatively affects deceptive behavior on LinkedIn, suggesting that higher levels of impression management are associated with lower levels of deceptive behavior, and lower levels of impression management are associated with higher levels of deceptive behavior.

The result is inconsistent from previous studies suggesting impression management serves as a significant driver of deception (Howard & Ferris, 1996). To understand these unexpected findings, it is essential to consider the unique characteristics of LinkedIn as a professional networking platform. Unlike other social media platforms that emphasize social interactions, building self-identity and popularity (Mun & Kim, 2021), LinkedIn highlights



professional networking and cultivation of professional identity. It aims to facilitate interactions focused on job contexts and the establishment of perceived fit between applicants and organizations (Weiss & Feldman, 2006). Moreover, Feldman (2018) proposes an alternative perspective on deceptive behavior and impression management, suggesting that individuals skilled in impression management tend to engage in less deceptive behavior. This is because individuals who are highly conscious of managing their impression are more likely to behave honestly to avoid potential reputational damage if their deception is uncovered (Batenburg & Bartels, 2017). Additionally, due to the nature of the LinkedIn connections, predominantly consisting of associates, colleagues, employers, and other professionals, users might perceive a higher risk of their impression management tactics and deceptive attempts being verified. Therefore, impression management on LinkedIn may manifest as presenting oneself positively and authentically, or selectively disclosing information, rather than engaging in deception. This aligns with the concept of strategic and honest impression management, where individuals highlight their achievements and responsibility positively, tailoring their presentation in a specific direction with purposes, and omitting certain details to portray themselves favorably on LinkedIn without necessarily resorting to deceptive behavior (Kasagi & Daibo, 2015; Roulin et al., 2014).

In summary, while prior research has discovered that higher levels of impression management leads to more deceptive practices in various social media contexts, the distinctive professional networking environment of LinkedIn appears to foster a different dynamic. The negative relationship between impression management and deceptive behavior observed in this study suggests that LinkedIn users prioritize authenticity and credibility in their impression management strategies.

## Implications

The study did not yield significant findings and prove every hypothesis, but Hypothesis 3. However, the significant effect of impression management on deceptive behavior, in the opposite direction to initial expectations, indicates a complex relationship between how LinkedIn users imply impression management tactics on LinkedIn and there might be other factors that moderate or mediate this relationship. Thus, this finding calls for further theoretical research on understanding of impression management theories and deception on LinkedIn. Moreover, this result is different from most existing literature that investigated the effect of impression management on deceptive behavior on other social media platforms. Besides, the lack of significant effects of need for approval and self-esteem also contradicts from previous studies. Therefore, it suggests that the mechanisms behind it may differ compared than other platforms, highlighting the need to differentiate between LinkedIn and other social media platforms. Furthermore, the absence of moderation effects by LinkedIn usage patterns shows that the frequency or usage patterns does not significantly impact the relationship between psychological factors and deceptive behavior on LinkedIn. This insight challenges assumptions about the influence of usage patterns (active or passive) on behavior and call for more detailed definition of how can measure or decide active or passive engagement types. In summary, this study emphasizes the importance of platform-specific research in social media studies. It shows that findings from other social media studies might not be directly applicable to LinkedIn, which has distinctive features and purpose from other interaction based social media such as Instagram or Facebook. Thus, a tailored approach and study design are required to examining user behavior regarding deception across different social media environments. In short, this study answered to calls from more research on how psychological factors impact on deceptive behavior on

LinkedIn, with moderating effects of LinkedIn usage patterns. However, this present study did not prove all expected hypotheses, it provides valuable insights and potential improvements for future research. The study emphasizes the importance of approaching in a different perspective considering the unique characteristics of professional networking platforms.

### **Limitations and future research directions**

This study has several limitations that should be addressed. First, the construction and validity of the scales used might require additional review and verification. Most of the scales utilized in this study were not originally designed to measure in the LinkedIn contexts. Although the study modified and adjusted these scales specifically for LinkedIn, they were not reviewed by experts, pre-tested, or subjected to a two-stage factor analysis. For instance, the LinkedIn Usage Patterns was adapted from a scale originally intended to measure Facebook usage, necessitating significant modifications. Additionally, while the scale included only three items measuring passive usage, seven items assessed active usage, and this imbalance might hinder finding a significant moderation effect. The scales measuring deceptive behavior, fabrication and embellishment, initially assessed resume fraud. Previous studies suggest that LinkedIn is increasingly replacing LinkedIn traditional resumes functions similarly to one, which was the rationale behind adapting these scales (Bremner & Phung, 2015). However, this adaptation may introduce a few problems. Moreover, scales assessing psychological factors were general rather than specifically tailored to social media or LinkedIn contexts. Furthermore, the scales measuring deceptive behavior on LinkedIn focused solely on deception within the profile section. There are numerous other ways to deceive on LinkedIn, such as through posts, pictures, messages, or job applicants, which were not considered when establishing scales.

Second, due to the inherent limitation of self-report scales and the fact that all measures in this study are self-reported, participants might not respond honestly in the survey. Berry et al. (2012) revealed that self-report measures might not be as effective in detecting deceptive behavior compares to other research methods. This study chose to use online survey because individuals are more likely to admit to deceptive practices in a private and anonymous setting rather than in observation or interview conditions. However, several studies highlight the importance of incorporate multiple methods to capture sensitive topics such as deception and lying behavior (Henle et al., 2019). Furthermore, although the survey was anonymous and ensure confidentiality, research indicated that participants might still tend to provide socially desirable answers unconsciously since deception is perceived as unethical usually. Thus, this study attempted to incorporate scenario-based scales along with self-report scales to measure deception on LinkedIn and to capture participants' behavior in an observational self-report setting. This approach was intended to elicit more honest responses from participants, as the scenario was hypothetical rather than real situations and did not involve reporting their actual deceptive behavior. However, because the scenario was not based on literature or peer-reviewed, their immersion might be weak, and participants might not relate it to their behavior or not feel compelled to make a realistic choice. Consequently, due to low validity, this scale was not included in the analysis.

Thirdly, the sample representation and characteristics might not appropriate enough. This study primarily aimed to explore LinkedIn behavior, yet it revealed that one third of participants rarely or never use LinkedIn (See Table 1). Therefore, it is crucial that participants are familiar with the functionalities and actively engaged on the targeted social media platforms to accurately measure their behaviors. Moreover, previous studies have emphasized the significance of an

appropriate sample when conducting research or identifying relationships, especially in studies related to social media. Furthermore, sample was relatively homogeneous, with 65 percent of participants being women and approximately 90 percent aged between 18-34, which may limit the generalizability of the conclusions.

While this study provides notable findings on the relationship between impression management and deceptive behavior on LinkedIn, the aforementioned limitations might hinder drawing meaningful results for others and moderation effects. Therefore, recommendations for future research could focus on addressing these limitations. Firstly, future research could explore scales designed specifically to measure deceptive behavior on LinkedIn. If existing scales are found to be inadequate for LinkedIn context, researchers could consider using the Q-sort technique, seeking advice from experts, conducting peer-review, or running pre-tests before gathering data to assess the validity of items and their alignment with the literature. Additionally, researchers could incorporate measurements of psychological factors tailored to social media contexts rather than general ones. Moreover, future studies should aim to recruit participants who have been or are actively engaged with LinkedIn to better investigate behavioral patterns and engagement. Efforts should be made to diversify the sample by including participants with various socio-demographic characteristics and a balanced representation of sexual orientations, which could enhance the generalizability of study findings. Furthermore, researchers should consider employing multiple research methods instead of solely relying on self-report scales. These methods could include experiments, observational research, or using interventions to comprehensively capture participants' deceptive behavior and minimize the likelihood of socially desirable responses.

## **Conclusion**

LinkedIn stands out as the predominant and widely utilized professional networking social media platform, yet research on deceptive behavior and psychological factors related to LinkedIn usage patterns is notably scarce. Thus, this study aimed to investigate the relationship between need for approval, impression management, and self-esteem and deceptive behavior on LinkedIn, with the moderating effect of LinkedIn usage patterns. However, contrary to existing literature, the study did not find significant effects of need for approval and self-esteem on deceptive behavior, nor did it discover moderation effects of LinkedIn usage patterns (both active and passive) on these relationships. Nevertheless, the study revealed significant results regarding the influence of impression management on deceptive behavior on LinkedIn, while the direction was opposite to initial expectation. Therefore, the study calls for more study on to research on LinkedIn and suggests for future researcher to employ different approaches for social media which has different nature.

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## Appendix A

### Online Questionnaire

.....Page 1.....

#### Informed consent

Dear participants,

You are being invited to participate in a research study exploring LinkedIn behavior. Your participation will contribute to my bachelor's thesis at the University of Twente. The purpose of this study is to understand the relationship between LinkedIn behavior and psychological traits.

The study will take approximately 10 minutes to complete. There are no personal benefits or anticipated risks to participating in this study. All data collected will be anonymous and confidential. No personally identifiable information will be collected during this study. The data collected will be securely stored on university servers and used solely for academic purposes.

Your participation in this study is voluntary, and you may choose to not participate or withdraw from the survey at any time without penalty.

If you have any questions or concerns about this study, you may contact the researcher, Seonmin Lee, at [s.lee-7@student.utwente.nl](mailto:s.lee-7@student.utwente.nl).

For inquiries about participant rights, please contact the Secretary of BMS Ethics Committee at the University of Twente at [ethicscommittee-hss@utwente.nl](mailto:ethicscommittee-hss@utwente.nl).

After reading the information above, do you understand and agree to participate in this study?

- Yes, I understand and agree to participate in this study.
- No, I do not understand or agree to participate in this study.

.....Page 2.....

1. Do you have a LinkedIn profile?

- Yes
- No

.....Page 3.....

1. What is your age? (In years)

[text entry]

2. What is your gender?

- Male
- Female
- Non-binary / Third gender
- Prefer not to say

3. What is your current employment status?

- Full-time employed
- Part-time employed
- Self-employed
- Unemployed
- Retired
- Other (please specify)

4. What is the highest level of education you have completed or are currently enrolled in?

- Less than high school
- High school diploma
- Bachelor's degree
- Master's degree
- Doctorate / Ph.D.

- Other (please specify)

5. What is your field of study (major) or area of specialization?

- Agriculture & Forestry
- Applied Sciences & Professions
- Business & Management
- Computer Science & IT
- Education & Training
- Engineering & Technology
- Environmental Studies & Earth Sciences
- Hospitality, Leisure & Sports
- Humanities
- Journalism & Media
- Law
- Medicine & Health
- Natural Sciences & Mathematics
- Social Sciences
- Others

.....Page 4.....

1. How often do you use LinkedIn?

- Daily
- Several times a week
- Once a week
- Several times a month

- Rarely
2. On average, how many minutes per day do you spend on LinkedIn?
- Rarely or never
  - Less than 10 minutes
  - 10 – 30 minutes
  - 31 – 60 minutes
  - 1 – 2 hours
  - More than 2 hours
3. How many total connections do you have on LinkedIn?
- 0 – 100
  - 101 – 300
  - 201 – 300
  - 301 – 400
  - 401 – 500
  - 501 – more
4. What is the primary purpose of your LinkedIn usage?
- Networking and professional connections
  - Job searching and career advancement
  - Sharing industry news and updates
  - Learning and professional development
  - Other (please specify)

.....Page 5.....

**LinkedIn Profile Creation Task**

You are tasked with creating a LinkedIn profile for an imaginary persona named John. Your goal is to represent John's educational background and experiences on his LinkedIn profile.

Please read the provided details about John, and select option for each section based on how you would want to represent John's profile on LinkedIn. On the next page, the persona, John's background will be presented.

### [Persona Background]

John is a recent graduate bachelor's student who wants to update his LinkedIn profile based on the information provided below.

#### Education

- Bachelor's in International and European Law
- GPA 7.0/10
- Completed one honors program

1. How would you present John's educational background on LinkedIn profile? Please read the persona's background carefully before answering.



#### Twente Pathway College

Bachelor's degree, International and European Law  
2020 - 2023

Graduated with a bachelor's in International and European Law, achieving a 7.0 GPA, and participating in the honours program.



#### Twente Pathway College

Bachelor's degree, International and European Law  
2020 - 2023

Graduated with a bachelor's in International and European Law, achieving a 7.0 GPA, and successfully participating in the honours program.





**Twente Pathway College**

Bachelor's degree, International and European Law  
2020 - 2023



Graduated with a bachelor's in International and European Law, achieving an outstanding GPA, successfully participating and actively contributing in the honours program.



**Twente Pathway College**

Bachelor's degree, International and European Law  
2020 - 2023



Graduated Cum Laude with a bachelor's in International and European Law, achieving an outstanding GPA, successfully participating and actively contributing in multiple honours programs.

.....Page 6.....

**[Persona Background]**

John is a recent graduate bachelor's student who wants to update his LinkedIn profile based on the information provided below.

**Experience:** worked as a Legal and Compliance Intern at UT Legal Solution for 6 months from September 2022 to February 2023

- Assisting in the preparation and organization of internal conferences and meetings
- Assisting in managing one legal case under the direction of the supervising lawyer(s).

1. How would you present John's educational background on LinkedIn profile? Please read the persona's background carefully before answering.



**Legal and Compliance Intern**

UT legal solution · Internship  
Sep 2022 - Feb 2023 · 6 mos

- Contributed to organizing internal conferences and meetings.
- Contributed to managing a legal case under the guidance of supervising lawyer (s).

**Legal and Compliance Intern**

UT Legal Solution · Internship

Sep 2022 - Feb 2023 · 6 mos

- Played a key role in the preparation and organization of internal conferences and meetings.
- Contributed to successfully managing a complex legal case under the guidance of supervising lawyer(s).

**Legal and Compliance Intern**

UT Legal Solution · Internship

Sep 2022 - Feb 2023 · 6 mos

- Led the successful preparation and organization of internal conferences and meetings with excellent organizational skills.
- Managed a complex legal case successfully and independently with support from supervising lawyer(s), demonstrating exceptional skills and expertise.

**Legal and Compliance Intern**

UT Legal Solution · Internship

Sep 2022 - Feb 2023 · 6 mos

- Led the successful preparation and organization of internal and external conferences and meetings with excellent organizational and leadership skills.
- Independently handled several complex legal cases, demonstrating exceptional skills and expertise.

.....Page 7.....

Keeping in mind that all of your responses are anonymous, please reflect carefully on your actions on LinkedIn. Below are statements regarding behavior that commonly occur on the platform. Please indicate the extent to which you have engaged in the following behaviors on LinkedIn, using a scale ranging from 'never' to 'always'.

On LinkedIn, I have

1. Claimed work experience that I do not actually have
2. Invented accomplishments that did not really occur
3. Claimed to have skills that I do not have
4. Made claims that were false

On LinkedIn, I have

1. Inflated the importance of activities or awards
2. Provided an enhanced picture of my past or current record
3. Made exaggerated claims
4. Overstated information
5. Padded my experiences or skills
6. Exaggerated my responsibilities
7. Embellished information
8. Made the information or experience sound better than it really is

.....Page 8.....

Below, you will find a set of statements to assess your psychological traits. Please read them carefully and indicate how much each statement applies to you, using a scale ranging from 'strongly disagree' to 'strongly agree'.

1. It is important for me that I get positive feedback, when I have done something well
2. It is important for me to succeed in life
3. I expect proper reward for my dedication
4. I do not care about how others think of me
5. It matters a lot for me my friends speak in high terms of me
6. For me it is all the same, when others do not accept me the way I am
7. I do not mind critique at all

.....Page 9.....



Below, you will find a set of statements to assess your psychological traits. Please read them carefully and indicate how much each statement applies to you, using a scale ranging from 'strongly disagree' to 'strongly agree'.

1. I sometimes tell lies if I have to
2. I never cover up my mistakes
3. There have been occasions when I have taken advantage of someone
4. I sometimes try to get even rather than forgive and forget
5. I have said something bad about a friend behind his or her back
6. When I hear people talking privately, I avoid listening
7. I never take things that don't belong to me
8. I don't gossip about other people's business

.....Page 10.....

Below, you will find a set of statements to assess your psychological traits. Please read them carefully and indicate how much each statement applies to you, using a scale ranging from 'strongly disagree' to 'strongly agree'.

1. Overall, I am satisfied with myself
2. At times, I think I am not good at all
3. I feel that I have a number of good qualities
4. I am able to do things as well as most other people
5. I certainly feel useless at times
6. I feel that I'm a person of worth

7. I wish I could have more respect for myself
8. All in all, I am inclined to think that I am a failure
9. I take a positive attitude toward myself

.....Page 11.....

Below is a list of statements reflecting your LinkedIn usage and engagement. Please indicate the extent to which each statements applies to you, using a scale ranging from 'never' to 'frequently'.

How frequently do you perform the following activities when you are on LinkedIn?

1. Sharing profile updates with your networks (about your job, education or work anniversary)
2. Engaging with posts (liking, commenting, reposting, sending)
3. Chatting on LinkedIn message
4. Checking to see what someone is up to
5. Creating or participating to events
6. Posting photos or videos
7. Tagging connections in posts or videos
8. Viewing photos or videos
9. Browsing feed actively (liking, commenting, reposting, sending)
10. Browsing feed passively (without liking, commenting, reposting, sending)

.....END.....

## Appendix B

### Literature search log

Date	Database	Search string	Total hits	Remarks
23.04.2024	Springer	("Social media" AND "Deceptive behavior")	27	~8 relevant articles
23.04.2024	ResearchGate	("Social media" AND "need for approval")	52	~10 relevant articles
26.04.2024	Scopus	("Social media" AND "social approval")	138	~20 relevant articles
26.04.2024	ResearchGate	("Deception" AND "Social media usage")	48	~10 relevant articles
27.04.2024	ResearchGate	("Social media" AND "Impression management" AND "Interview")	311	~15 relevant articles
30.04.2024	Elsevier	("Social media" AND "Self-esteem")	23	~5 relevant articles
03.05.2024	Sage Open	( "LinkedIn" AND "Deception" OR "LinkedIn" AND "Deceptive behavior" )	240	~7 relevant articles
07.05.2024	Sage Open	ALL ( "Social media" AND "Deception")	91	~15 relevant articles
10.05.2024	Sage Open	("Deception" AND "Impression management")	83	~20 relevant articles
10.05.2024	Sage Open	"Impression management" AND "Job" AND "Deception"	4	~ 0 relevant articles
04.06.2024	Sage Open	"Impression management" AND "social media usage"	311	~15 relevant articles
10.06.2024	Sage Open	"self-esteem" AND "social media usage"	104	~10 relevant articles
15.06.2024	Sage Open	"Deception" AND "deception type"	189	~20 relevant articles
20.06.2024	Sage Open	"Impression management" AND "Impression management type"	94	~10 relevant articles