

# Towards the measurement of stereotype threat: scale development and validation

Scale  
development  
and validation

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## Abstract

**Purpose** – The purpose of the study is to develop a valid measure of stereotype threat.

**Design/methodology/approach** – A convenience sample of 2,900 respondents from different occupational sectors, including managers, engineers and health-care professionals, was used for the present study. The data were collected from various government and private organizations in North India. The questionnaire survey was administered in three phases. During the first phase, 800 questionnaires were circulated, followed by 1,200 questionnaires in the second phase, and the third phase involves 900 questionnaires. The data were analysed using exploratory factor analysis, confirmatory factor analysis and structural equation modelling.

**Findings** – The results indicate nine dimensions, namely, occupational identification, occupational stigma consciousness, gender identification, gender stigma consciousness, religion identification, religion stigma consciousness, caste identification, caste stigma consciousness and negative effect of stereotype threat. The study ensures the reliability and validity of the stereotype threat scale. The measure also fulfils the assumptions of nomological validity.

**Originality/value** – To the best of the authors' knowledge, the study is the first of its kind to develop and validate the stereotype threat scale adhering to scale development procedures.

**Keywords** Stereotype threat, Stigma, Identification, Negative affect, Job performance and scale development

**Paper type** Research paper

## Introduction

Stereotype threat has been identified as a significant factor contributing to employee underperformance (Steele and Aronson, 1995; Schmader and Beilock, 2012). Individuals belonging to stigmatized groups tend to exhibit reduced performance when confronted with situations that emphasize negative stereotypes associated with their social identity. In the words of Inzlicht and Schmader (2012), stereotype threat is characterized as a “situational predicament in which individuals are at risk of confirming negative stereotypes about their group”. This phenomenon occurs when an individual is part of a team or group that is negatively stereotyped, and there is a concern about being judged or treated adversely based on this stereotype (Spencer *et al.*, 2016).

While a substantial body of literature attests to the reliability and generalizability of stereotype threat effects on performance, questions persist regarding the specific processes underlying these effects (Schmader *et al.*, 2008). Previous research on stereotype threat has predominantly focused on its consequences, particularly in domains such as math performance (Spencer *et al.*, 1999; Schmader, 2002; Keller and Dauenheimer, 2003; O'Brien and



Crandall, 2003) and intellectual performance (Croizet *et al.*, 2004; Martens *et al.*, 2006). However, the absence of a valid stereotype threat measure poses a challenge, with existing instruments primarily assessing stereotype threat moderators, such as racial identity (Davis *et al.*, 2006), gender stereotypes (Tomasetto *et al.*, 2011) and ethnic identification (Armenta, 2010).

Currently, research on measuring stereotype threat is in its nascent stages, and minimal effort has been directed towards developing and validating a comprehensive stereotype threat scale. This study aims to address this gap by developing and validating a stereotype threat scale. The subsequent sections of this paper are structured as follows: the first section delves into the conceptualization of the stereotype threat construct and explores its various dimensions. The second section outlines the development process of the stereotype threat scale, while the third section discusses the methodology used in the study, concluding with implications drawn from the research.

### The stereotype threat construct

The word stereotype was first highlighted by an American journalist Lippman (1922) who defines stereotype threat as “pictures in our heads” in the context of explaining social and political ideas. Later on, the phenomenon of stereotype threat was explored by Steele and Aronson (1995), who argue that the “stereotype threat is being at risk of confirming, as self-characteristic, a negative stereotype about one’s group”. Schmader and Johns (2003) argue that stereotype threat is a phenomenon in which an individual performs poorly in a task when their social identity is stigmatized. It is the phenomenon in which an individual experiences vulnerability and feels pressured to be judged negatively. The experience of stereotype threat leads to identity conflict (Von Hippel *et al.*, 2011), and conflict affects performance (Cogburn *et al.*, 2014; Bhandarker and Rai, 2019). It inhibits the performance of individuals when negative stereotypes about their social identity are highlighted (Picho and Brown, 2011).

Individuals often preoccupied with thoughts of how they are being perceived and evaluated by others are more prone to experience stereotype threat (Vorauer, 2006). Stereotype threat generally occurs when an individual strongly identifies themselves with their social group (Schmader, 2002), values their domain (Steele, 1997; Appel *et al.*, 2011), is conscious of the stigma attributed to his/her social group (Hess *et al.*, 2009) and believes the attributed stigma to be true (Elizaga and Markman, 2008). The phenomenon of stereotype threat occurs in various contexts, where group identity is made salience, in a situation where an individual is a sole representative of one’s group or in a numerical minority (Murphy *et al.*, 2007) or a situation of evaluative scrutiny (Osborne, 2007). The stereotype threat mostly leads to negative consequences. Some of the major consequences of this phenomenon are poor performance, self-handicapping, task discounting, distancing oneself from their respective social-identity disengagement and dis-identification and altered professional identities and aspirations (Stroessner and Good, 2014). Mariano *et al.* (2022) argue that older are more likely to avoid using technology due to stereotype threat, the fear of confirming negative stereotypes about their social group.

Stereotype threat is detrimental when it negatively affects the desire and career aspirations of individuals (Picho and Brown, 2011). Chronic exposure to stereotype-threat contexts leads to negative health consequences (Shapiro, 2011; Haft *et al.*, 2023). The effects of stereotype threat are not only limited to social groups who routinely face stigmatizing attitudes; rather they befall anyone who is a member of a stigmatized social group (Pennington *et al.*, 2016). Stereotype threat produces various consequences, and each of the consequences potentially contributes to decreased performance (Stroessner and Good, 2014). Some of the factors which work together to deteriorate performance under stereotype-threatening situation are increased

anxiety (Beilock *et al.*, 2007), negative cognitions and dejection (Keller and Dauenheimer, 2003), lowered performance expectations, reduced effort, reduced self-control, reduced working memory capacity, reduced creativity, flexibility and speed, and physiological arousal which includes low heart rate, high blood pressure and lowered skin temperature (Stroessner and Good, 2014).

Stereotype threat is a psychological burden that a target needs to manage when encountering negative stereotypes about one's social identity (Nelson, 2009). It is also known as a performance deficit phenomenon. Its effects can be reduced or eliminated with the use of different specific techniques or strategies like reframing the task, deemphasizing threatened social identities, encouraging self-affirmation and providing role models (Stroessner and Good, 2014). Previous studies conceptualize stereotype threat as a unidimensional construct (Shapiro *et al.*, 2013), ignoring the possibility of its occurrence in multiple forms. These multiple forms of stereotype threat are claimed because of an individual's association with more than one social identity, namely, gender, religion and caste (Pennington *et al.*, 2016). The majority of the studies on stereotype threat are experimental and measure stereotype threat using single aspects which trigger the phenomenon, such as gender (Pronin *et al.*, 2004), caste (Fehr and Hoff, 2011) and ethnicity (Niemann, 1999).

### Dimensions of stereotype threat

There is a dearth of studies that identify the dimensions of stereotype threat. Previous studies have identified the dimensions of stereotype threat in the context of academics (Picho and Brown, 2011). Picho and Brown (2011) suggest domain identification, stigma consciousness and group identity as the dimensions of stereotype threat. However, the present study proposes stereotype threat as a multidimensional construct with occupational identification, occupational stigma consciousness, gender identification, gender stigma consciousness, religion identification, religion stigma consciousness, caste identification, caste stigma consciousness and negative affect as its dimensions.

Occupational Identification refers to an individual's professional self-concept or one's psychological link with one's occupation (L'Roy, 1983; Hassan, 2012). Employees who exhibit a high level of identification with their job and consider it to be an important part of their self-definition are more prone to the experience of stereotype threat (Picho and Brown, 2011). The definition reflects an individual's perception of belongingness to one's occupation. An occupationally identified individual feels threatened when negative stereotypes about the individual will be made salient because of one's job title. Occupational stigma consciousness is defined as the extent of the awareness about the stigmatized nature of one's job and the trust that others adversely treat him/her because of his/her association with a particular job (Pinel and Paulin, 2005). It has been observed that individuals high in stigma consciousness about the negative stereotypes of one's job/job title might feel discriminated against and disrespected (Downey and Feldman, 1996) and intent to leave the organization (Pinel and Paulin, 2005; Wildes, 2007) and deemphasize the importance of occupation, presumably because of the negative stereotypes they encounter (Schmader *et al.*, 2001).

Gender Identification is one of the most widely used categories which serves as a basis for the formation of one's societal identity. It also means attaching great importance to one's gender identity and perceiving it to be a central part of one's character or personality (Hoffman, 2006). Individuals who do not identify strongly with their gender are less threatened by the stigmatized status of their gender. All individuals generally recognize their membership with their gender as "Male" or "Female". Still, there exists variation in the extent to which an individual considers their gender membership as an essential or critical element of their self-identity (Burn *et al.*, 2000; Schmader, 2002). These variations in finding

their gender as a necessary part of their self-definition also influence the extent of experience of stereotype threat (Keller and Molix, 2008). Gender stigma consciousness refers to the extent to which an individual (male/female) is chronically self-conscious of social stereotypes about their respective gender (Pinel, 1999). The concept of stigma conscious is not limited to one's consciousness about stigma ascribed to one's gender. Instead, it deals with how much an individual focuses on stigmatized status (Hess *et al.*, 2009). Further, the researchers claimed that the level of gender stigma consciousness is linked with the experience of stereotype threat (Picho and Brown, 2011; Pennington *et al.*, 2016).

Religion identification is defined as the sense of group membership to a religion and the importance of this group membership as it pertains to one's self-concept. Following Tajfel's (1981) definition, religious identity can also be conceptualized as an aspect of an individual's social identity. While religious identity may be necessary to individuals regardless of their status as a minority or majority, the religious affiliation of minority individuals can play a particular psychological function in their lives. This may be more obvious within societies in which the religion of minority individuals is typically shown in a weak or unfavourable light in media portrayals and may correlate with disadvantages in social or economic spheres (Abu-Rayya and Abu-Rayya, 2009). Religion stigma consciousness refers to the extent to which individuals are chronically self-conscious about their stigmatized religious label. Stigma consciousness is negatively related to interpersonal trust (Brown and Pinel, 2003), which indicates that one who feels the stigmatized status of their religious group to the right is more towards the experience of stereotype threat. These individuals also interpret the feedback from the out-group members as unfavourable due to increased stigma consciousness.

Caste identification refers to the strong identity towards one's caste, which contributes to one's self-concept. An individual's caste identity shapes perceptions of self-worth (Goel and Deshpande, 2016). In a situation where an individual is reminded about the stigmatized status of their caste, it hampers their self-esteem, which triggers the feeling of stereotype threat, which ultimately contributes to performance decrement (Goel and Deshpande, 2016). Caste stigma consciousness refers to judgements made by members of higher caste towards the individuals belonging to the lower caste category. It is attaching a stigmatized label to the submissive caste by the authoritative caste. Therefore, caste stigma consciousness can be explained as the extent of the awareness about the stigmatized label given due to one's association with a particular caste. Goffman (2009) refers to stigma consciousness as a spoiled identity; it is a "situation of an individual who is disqualified from full social acceptance by authoritative caste members".

Negative affect refers to negative feelings of dejection experienced after the negative evaluation of an individual. Stereotype threat evokes negative feelings (Keller and Dauenheimer, 2003) like self-question (Steele and Aronson, 1995), negative anticipations, dejection (Marx and Stapel, 2006) and errand-related stresses (Beilock *et al.*, 2007).

### **Towards the development of stereotype threat scale**

To develop a psychometrically sound and valid measure for stereotype threat, we followed the scale development procedure suggested by Hinkin (1998) and Churchill (1979). Inductive or deductive are the two suggested methods for generating items to develop a scale (Hunt *et al.*, 1991). The combination of both approaches is highly recommended for the development of any measure (Boateng *et al.*, 2018). Therefore, the present study uses a mixed-method approach to develop a stereotype threat scale. The study follows the following procedure, namely, stereotype threat conceptual domain specification, item generation, scale purification, scale validation and assessment of nomological validity.

### *Conceptual domain specification*

Developing a definition of a construct under study forms an important part of the scale (Churchill, 1979; Farooq, 2016). A focus group is a type of self-disclosure technique in which participants disclose his/her experiences (Yin, 2016). Therefore, to develop the definition of stereotype threat and generate its items, we conducted the focus group and critically analyses the literature for the operational definitions.

*Focus group.* To conduct a focus group discussion, the investigator selected participants purposively. The participants were sent an invitation through phone calls. The investigator approached around 11–12 participants, out of which eight agreed to participate in the focus group discussion. The recommended group size for focus group discussion is between four and eight participants; thus, the selected participants form a moderate group size for discussion (Kitzinger, 1995). The participants were selected from diverse backgrounds in terms of caste, religion, gender and occupation. A total of eight working employees aged 21–45 years were selected. Two focus groups were conducted, and each session lasted for more than two hours. The session started with a smooth and snappy introduction, which included an overview of the topic, rules and questions. The procedure suggested by Potter (2012) was followed for the analysis of the data obtained from the focus group. The focus group data were analysed using discursive psychology techniques (Edwards and Potter, 1992; Edwards and Stokoe, 2004). Since stereotype threat is a psychological experience, discursive psychology examines how an individual perceives the psychological issues experienced in daily life (Potter, 2012).

The transcription of the recording was done using “The Jeffersons Method of Transcription” (Jefferson, 2004; Potter, 2012), a relevant part from the transcripts according to thematic categories as per the research questions was considered (Potter and Wetherell, 1987), codes were assigned to transcripts for ease in the analysis (Silverman, 2016) and analysis of selected coded excerpts regarding focal research questions was completed (Willig, 2013). Further, the main themes were identified through an inferential interpretation of data. The authors presented a single excerpt, as shown in Table 1 to demonstrate the description of Jefferson’s method and interpretative analysis used in the study.

The results identify five dimensions of stereotype threat. Table 2 presents the description of the identified dimensions along with verbatim illustrations where participants refer to their experience/s related to negative stereotyping. Focus group results indicate that stereotype threat exists in various social groups and domains (Bedyńska and Żolnierczyk-Zreda, 2015). The dimensions identified can serve as an important source for generating items for the stereotype threat scale.

*Item generation.* This stage involves an extensive review of the literature (Farooq, 2016). The development of the conceptual definitions of the dimensions can be used as a guiding manual to ease the development of items (Hinkin, 1998; Farooq, 2016). The review indicates 50 items for the dimensions of stereotype threat. The items generated to capture the domains specified in the present study with enough theoretical support, as suggested by (Hutz *et al.*, 2015). The items generated were measured on a five-point Likert scale ranging from 1 – strongly disagree to 5 – strongly agree. The description and the sources of the dimensions measuring stereotype threat are shown in Table 3.

### **Content validity**

The operationalization of the scale is followed by content validity. Five professors were consulted from the field of psychology and human resource management. The scale presented to subject matter experts was measured using a four-point Likert scale ranging from 1 = not relevant to 4 = highly relevant. The experts were asked to rate the appropriateness of each item according to the construct definition provided to them, as

Moderator	What is your psychological state when you negatively stereotyped based on your social identity (gender, religion, caste or occupation)?
Participant 1	It is an everyday reality in the workplace. I really feel dejected at my work
Participant 2	I frequently face discrimination on the basis of religion, which really triggers the feeling of helplessness
Participant 3	I have been discriminated many times at work on the basis of gender, which really makes doubt about my abilities, and sometimes I really want to leave my job
Participant 4	Because I belong to a very low caste and opted for a profession that is male-dominated. I am criticized every now and then by my colleagues and others. I really feel like hell at times
Participant 5	Hmm. I agree with Participant 4. . .Caste always matters at the workplace. . . , especially when you belong to low caste, it really affects your mental health. . .
Participant 6	Gender is still a matter of great concern in India . . . I really feel like crying at my work when I witness such incidence. . .
Participant 7	I agree with all of them . . . not only gender . . . but religion and caste do matter . . . especially these days . . . it's on hype . . .
Participant 8	I totally agree . . . it does exist. . .

**Notes:** The above-presented excerpt is taken when the group was discussing the factors which are the basis of negative stereotyping and the psychological state of the targets. During this entire discussion, the moderator probed the participants. The reliability of an excerpt is justified only when the talkers sharing the same membership agree on a statement (Mrad and Cui, 2017). In the above discussion, Participant 3, 4, 6 and 7 belong to the same category (Female), and they know the negative behavior of colleagues towards the employee of the same category and psychological disturbance they face. Therefore the reliability of the claim of the presence of negative stereotyping based on gender at the workplace and due to that emergence of negative emotion can be confirmed

**Table 1.**  
Example of focus-group (discursive analysis)

shown in Table 3. Content validity rates (CVR) should be calculated for every single item (Formula 1) after collecting the responses from the subject matter experts (Veneziano and Hooper, 1997). Therefore, content validity for the present scale was measured using five expert opinions. The minimum CVR value for five experts should be 0.99 (i.e. a CVR value of 1.00 is adjusted to 0.99 for ease of manipulation) (Veneziano and Hooper, 1997). The items with CVR values less than 0.99 were eliminated from the scale. Two items were excluded from the scale during the process, and 48 items were finally used for the analysis:

Formula 1

$$CVR = \frac{NA}{N/2} - 1$$

where:  
NA = number of experts who answered “highly relevant”;  
N = total number of experts; and  
CVR = content validity rates.

Methodology

A convenience sampling technique has been used to collect data from the respondents. The sample constitutes employees from different occupational sectors, namely, managers, engineers and health-care professionals. These include employees of different government and private organizations in North India. Table 4 shows the description of the sample based on age, gender, religion and caste category. The data collection was started with prior approval from the concerned authorities. Questionnaires were administered via hard copy to



		Scale development and validation
Essential features	Description	
Occupational identification	An individual who identifies strongly with one's domain, they feel threatened when society has negative views about their job. A high level of domain identification is responsible for the occurrence of stereotype threat (Steele, 1997; Steele and Aronson, 1995) "I feel very insulted when someone speaks ill about my job or my work. . . .you cannot criticize my job. . . . I earn my bread and butter from that"	
Occupational stigma consciousness	"It is an extent to which an employee is aware of the stigma attached to one's job and belief that other employees and society treat him/her negatively because of it (Pinel, 1999; Pinel and Paulin, 2005; Shantz and Booth, 2014). Stigma consciousness level is linked to the stereotype threat (Mosley and Rosenberg, 2007) "People have a lot of negative thoughts about my profession. . . .they judge my job inferior, which makes me feel visible at my workplace; thus, I cannot concentrate at work"	
Group identification	Individuals who identify strongly with one's social-group (gender, religion or caste) feel threatened when unfavourable comparisons based on negative stereotypes are made with the other groups (Tajfel, 1981; Picho and Brown, 2011). Therefore, it cannot be denied that the stereotype threat operates in many social groups (Schmader <i>et al.</i> , 2008; Bedyńska and Zolnierczyk-Zreda, 2015) "When I hear something against my gender, religion, or caste in media or public, it makes me feel embarrassed. . . . It's a personal insult"	
Group-stigma consciousness	An individual who is self-conscious about the stigmatized status of one's social group (gender, religion, caste) in a particular domain (Pinel, 1999). A high level of stigma consciousness triggers the feeling of stereotype threat (Schmader <i>et al.</i> , 2008; Mosley and Rosenberg, 2007) "At my work, most of them perceive females as a bad decision-maker. . . . I really hesitate to speak when some seniors ask me about anything. . . . I don't want people to mock at me"	
Negative affect	An individual's continuous exposure to negative stereotyping elicits negative emotions like dejection, task-related worries, etc. (Steele and Aronson, 1995; Keller and Dauenheimer, 2003) "I really feel like leaving my job because of the prevailing negative stereotypes. . . .but I cannot. . . .because I am not that qualified to get another job"	
Source: Authors' finding		

**Table 2.**  
Dimension of  
stereotype threat  
found from focus  
group discussion

the respondents. The questionnaires were administered in three different phases, as suggested by Churchill (1979). The data collected in phase-I was used for purification of the measure, phase-II was used for confirming the factor structures and phase-III was used for assessing the validity of the construct.

The study administered 800 questionnaires during phase-I, and 381 questionnaires were returned. The responses were examined for their completeness and seriousness. The study removed eight non-serious responses, and 373 responses were finally selected for analysis with a response rate of 46.6%. The 1,200 questionnaires were administered to the second sample during the second phase. The questionnaires were administered to the employees working in different government and private organizations in North India. Out of the 1,200 respondents, only 623 agreed to participate in the survey. Out of 623 questionnaires, 32 were dropped due to non-serious responses, and 591 responses were finally selected with a response rate of 49.5%.

To assess the validity of the measure and to ensure the robustness of the nomological network, the analysis should be conducted on a fresh data set (Cronbach and Meehl, 1955;

Sr. no.	Factors	Conceptualization	Source/s
1	Occupational identification	It is the degree to which one personally values achievement in a given domain	Mael and Ashforth's (1995); Steele (1997)
2	Occupational stigma consciousness	The extent of the awareness about the stigmatized nature of one's job and the trust that others adversely treat him/her because of his/her association with a particular job	Pinel (1999), Pinel and Paulin (2005); Wildes (2007)
3	Gender identification	"The extent to which ones gender forms a central part of one's self-concept"	Schmader (2002), Picho and Brown (2011), Picho and Stephens (2012)
4	Gender stigma consciousness	"The extent to which one is chronically self-conscious of the stigma attached to one's gender"	Brown and Pinel (2003); (Picho and Brown, 2011); London <i>et al.</i> (2012)
5	Religion identification	"The extent to which one's religion forms a central part of one's self-concept"	Shapiro (2011), Pasek and Cook (2019).
6	Religion stigma consciousness	"The extent to which one is chronically self-conscious of the stigma attached to one's religion"	Pinel (1999), Pasek and Cook (2019)
7	Caste-category identification	"The extent to which one's caste category forms a central part of one's self-concept"	(Steele, 1997); Cunningham and Menron (1998), Sankaran <i>et al.</i> (2017)
8	Caste-category stigma consciousness	"The extent to which one is chronically self-conscious of the stigma attached to one's caste category"	Pinel (1999), Sankaran <i>et al.</i> (2017)
9	Negative affect	"Negative feelings of dejection experienced during performing a job or task"	Picho and Brown (2011); Schmader (2012); Schmader and Beilock (2012)

**Table 3.**  
Articles reviewed for generation of items      **Source:** Authors Finding

Hagger *et al.*, 2017). During the third phase, 900 questionnaires were administered to the respondents from various occupational sectors. Out of 900 questionnaires, 411 responses were recorded, and 21 responses were removed due to incomplete information. The final data set comprises 390 respondents with a response rate of 45.6%. The response rate was fair enough to proceed for further analysis (Hikmet and Chen, 2003).

Scale purification

The calculations one performs in purifying a measure depend somewhat on the measurement model one embraces (Churchill, 1979). The scale purification involves exploratory factor analysis and confirmatory factor analysis (CFA).

Exploratory factor analysis

The 48-item scale was factor-analysed using data collected from sample 1. Principal axis factoring with oblique rotation was used to extract the factors of the stereotype threat scale. The Kaiser–Meyer–Olkin stereotype threat was found to be 0.892. The exploratory factor analysis converged at 25 iterations with 63.3% of the total variance. Eigenvalue above 1.0 determined nine factors, as shown in Table 5. The items with factor loading less than 0.50 were



Variables	N	%	Scale development and validation
<i>Age</i>			
≥ 30 yrs	456	33.6	
31–40 yrs	582	42.9	
41–50 yrs	316	23.3	
<i>Gender</i>			
Male	863	63.7	
Female	491	36.2	
<i>Religion</i>			
Hinduism	975	72.0	
Islam	138	10.1	
Sikhism	72	5.3	
Christianity	46	3.3	
Others	123	9.08	
<i>Caste category</i>			
Schedule tribe (ST)	167	12.3	
Schedule caste (SC)	256	18.9	
Other backward caste (OBC)	369	27.2	
General category (GN)	562	41.5	

**Source:** Descriptive information based on data collection

**Table 4.**  
Descriptive  
information of  
the total sample  
(N = 1,354)

deleted (Karatepe *et al.*, 2005). A total of three items were deleted due to the low factor loadings, as suggested by Karatepe *et al.* (2005). Overall, the commonalities were considered moderate to strong, ranging from 0.592 to 0.841 (Fabrigar *et al.*, 1999).

The present study retained the nine-factor solution. The statements classified under different extracted factors were given appropriate names. The extracted factors include occupational identification, occupational stigma consciousness, gender identification, gender stigma consciousness, caste category identification, caste category stigma consciousness, religion identification, religion stigma consciousness and negative affect.

#### *Confirmatory factor analysis*

The psychometric properties of the scale can be improved using the CFA during the scale purification stage (Hinkin, 1998; Farooq, 2016). The CFA was applied on a stereotype threat scale, as shown in Figure 1, using the AMOS 20.0 version. The result indicates stereotype threat as a multi-dimensional construct with occupational identification, gender identification, gender stigma consciousness, caste category identification, caste category stigma consciousness, religion identification, religion stigma consciousness, and negative affect as its dimension. The results of the CFA indicate a poor fit. The RMR, GFI, AGFI, CFI and RMSEA were below the threshold level. Therefore, it was decided to go for item purification, and items O15, O11, G11, G12, C13, C14, R13, R14 and Na4 were deleted, as shown in Table 6. The incremental model indicates a good fit as shown in Table 6. The scale refinement was followed by an evaluation of the scale, as suggested by Hinkin (2005). The stereotype threat scale was evaluated by testing the construct validity of the scale.

#### **Psychometric properties of stereotype threat scale**

The psychometric properties of the scale were assessed using the validity and reliability of the stereotype threat scale, as suggested by Farooq (2016).

**Table 5.**  
Results of  
exploratory factor  
analysis for  
stereotype threat  
(ST)

Factors extracted	Item code	Items	Factor loading
Occupational identification	Oi1	When someone criticizes my occupation, it feels like a personal insult	0.994
	Oi2	I am very much interested in what others think about my occupation	0.993
	Oi3	My occupation filled me with a sense of pride	0.975
	Oi4	Every day I become more confident that I have chosen the right profession for me	0.833
	Oi5	I have doubts that this profession is the right one for me.	0.712
Occupational stigma consciousness	Os1	Most people who are not from my profession have a lot more negative thoughts about my profession than they actually express	0.574
	Os2	Most people who are not from my profession judge this profession inferior	0.909
	Os3	My association with this profession influences how people from other professions act with me	0.928
	Os4	Negative stereotypes about my profession have affected me personally	0.949
	Os5	Most of the workers of other profession have problem viewing performance of workers of my profession as equal to their performance	0.659
Gender identification	Gi1	In this profession, when a worker of opposite gender criticizes job performance of worker of my gender, it feels like a personal insult	0.609
	Gi2	I am very much interested in what others think about taking this profession as a career by workers of my gender	0.838
	Gi3	When someone praises the job performance of workers of my gender, it feels like a personal compliment	0.732
	Gi4	My gender successes in this profession are my successes	0.651
	Gi5	If a story in the newspaper or on television criticized workers of my gender, I would feel embarrassed	0.961
Gender stigma consciousness	Gs1	In this profession, most workers of the opposite gender have a lot more negative thoughts about the capability of workers of my gender than they actually express	0.580
	Gs2	Most of the workers of my profession judge job performance on the basis of gender	0.552
	Gs3	Most of the workers of my profession have a problem viewing the performance of workers belonging to the opposite gender as equal to their performance	0.949
	Gs4	When interacting with officials of my profession, I feel they interpret all my behaviour's in terms of the fact that I belong to the opposite gender	0.914
	Gs5	Negative stereotypes about the performance of my gender in this profession have affected me personally	0.788
Caste identification	Ci1	In this profession, when a worker of opposite caste criticizes the performance of workers of my caste, it feels like a personal insult	0.806
	Ci2	I am very much interested in what other caste workers think about taking up this profession as a career by workers of my caste	0.781
	Ci3	When someone praises the job performance of workers of my caste, it feels like a personal compliment	0.687
	Ci4	My caste worker/s successes in this profession are my successes	0.812
	Ci5	If a story in the newspaper or on television criticized workers of my caste, I would feel embarrassed	0.859
Caste stigma consciousness	Cs1	In this profession, most workers of other caste have a lot more negative thoughts about the capability of workers of my caste than they actually express	0.794

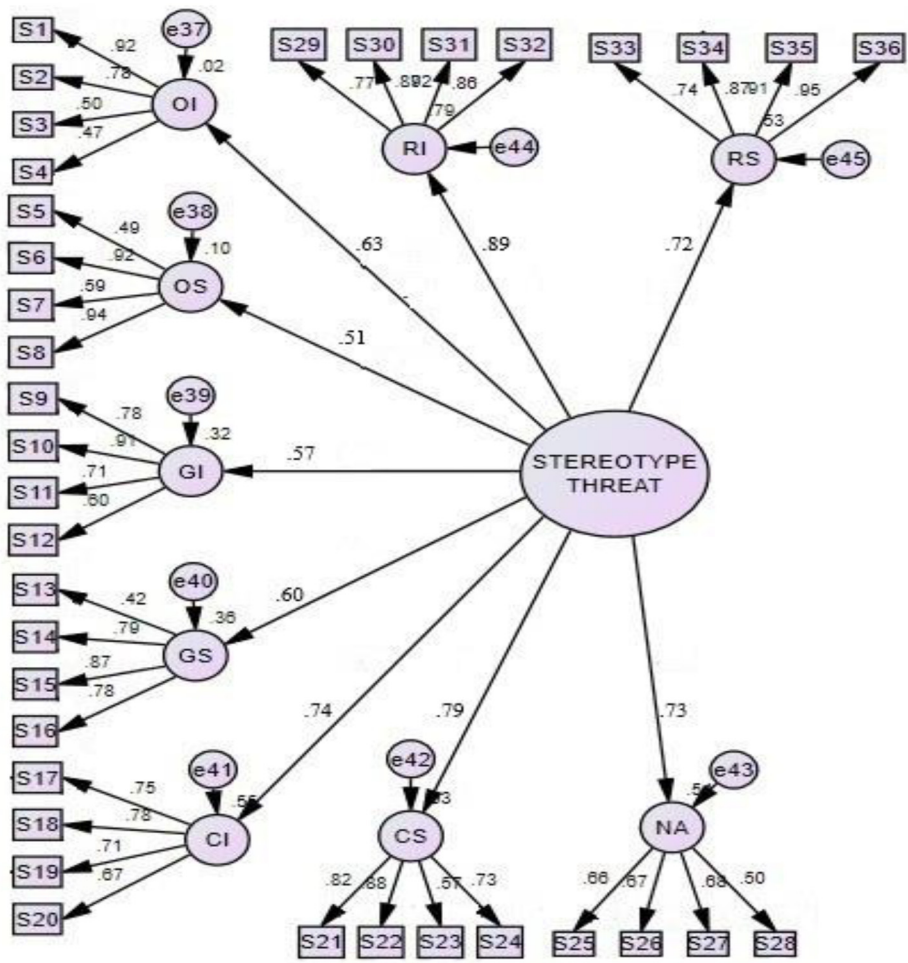
(continued)

Factors extracted	Item code	Items	Factor loading
Religion identification	Cs2	Most of the workers of my profession judge job performance on the basis of caste	0.709
	Cs3	Most of the workers of my profession have problem viewing the performance of workers belonging to another caste as equal to their performance	0.875
	Cs4	When interacting with officials of my profession, I feel they interpret all my behaviour's in terms of the fact that I belong to another caste	0.813
	Cs5	Negative stereotypes about the performance of my caste in this profession have affected me personally	0.883
	Ri1	In this profession, when a worker of other religion criticizes job performance of worker of my religion, it feels like a personal insult	0.788
Religion stigma consciousness	Ri2	I am very much interested in what other religion workers think about taking this profession as a career by workers of my religion	0.816
	Ri3	When someone praises the job performance of workers of my religion, it feels like a personal compliment	0.521
	Ri4	My religions worker/s successes in this profession are my successes	0.859
	Ri5	If a story in the newspaper or on television criticized workers of my religion, I would feel embarrassed	0.785
	Rs1	In this profession, most workers of other religions have a lot more negative thoughts about the capability of workers of my religion than they actually express	0.817
Negative affect	Rs2	Most of the workers of my profession judge job performance on the basis of religion	0.759
	Rs3	Most of the workers of my profession have a problem viewing the performance of workers belonging to other religions as equal to their performance	0.853
	Rs4	When interacting with officials of my profession, I feel they interpret all my behaviour's in terms of the fact that I belong to other religions	0.809
	Rs5	Negative stereotypes about the performance of my religion in this profession have affected me personally	0.818
	Na1	I experience a feeling of dejection	0.805
	Na2	I feel like I am letting myself down in this profession	0.782
	Na3	I start to lose confidence in my abilities as a worker in this profession	0.891
	Na4	I feel hopeless	0.764
	Na5	I feel like giving up this Profession	0.788

Source: SPSS

Scale  
development  
and validation

Table 5.



**Figure 1.**  
Validated stereotype  
threat scale

Source: AMOS 19

**Table 6.**  
Model fit indices for  
stereotype threat  
(ST) scale

CFA default model	RMR	GFI	AGFI	CFI	RMSEA	$\chi^2$	df	p-value	$\chi^2/df$
I	0.063	0.822	0.790	0.883	0.088	716.08	218	0.019	3.285
II	0.045	0.967	0.923	0.984	0.060	181.858	85	0.000	2.140

Source: AMOS 19

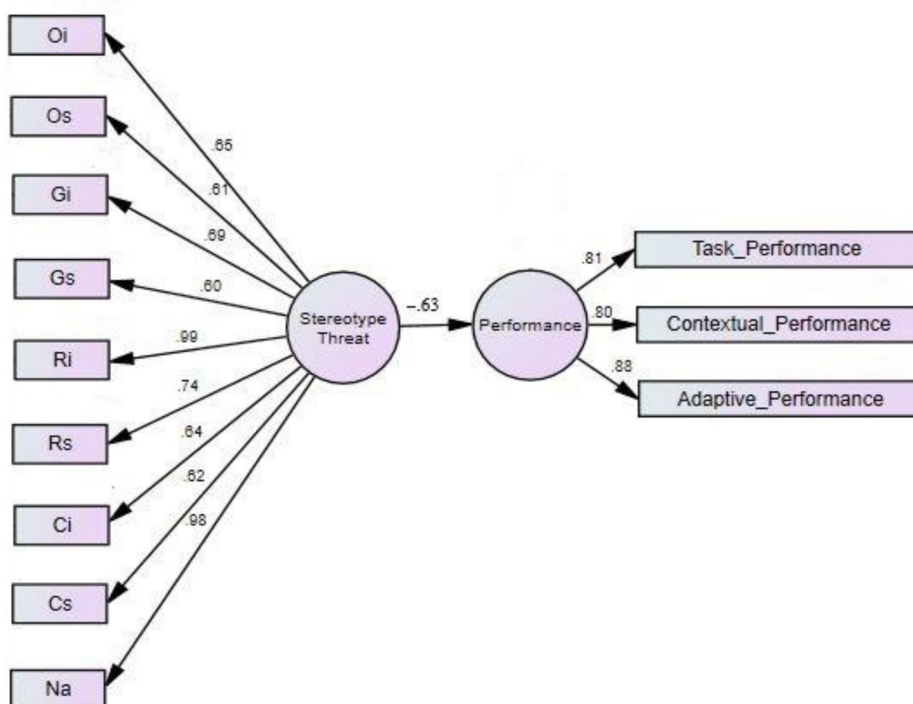
*Validity of stereotype threat scale*

The validity of the stereotype threat scale was assessed with convergent validity. The convergent validity of the stereotype threat scale was assessed using the average variance

extracted (AVE). The AVE of the stereotype threat scale was found to be 0.77, much above the threshold level as suggested by Farooq (2016), which ensures the convergent validity of the scale. The composite reliability of the scale was found to be 0.977, much above the threshold level as suggested by Fornell and Larker (1981) and Farooq (2016).

*Nomological validity.* The nomological validity of the scale can be assessed by examining the correlation between the measure, which can be its antecedents or another related construct (Churchill, 1979). To ensure the robustness of the nomological network, the analysis should be conducted on a new data set (Hagger *et al.*, 2017). Therefore, the present study analyses a new data set of 390 respondents. The study assesses the nomological validity by examining the relationship between the stereotype threat and job performance, as shown in Figure 2. The job performance scale was adopted by Sonnentag *et al.* (2008), Koopman *et al.* (2014) and Charbonnier-Voirin and Roussel (2012). Previous studies explore the relationship between stereotype threat and an employee's impaired performance (Block *et al.*, 2011; Nadler and Komaraju, 2016). The study assessed the psychometric properties of the stereotype threat scale that can be used in predicting job performance. The reliability of the dimensions of stereotype threat was above the threshold level, as shown in Table 7. The Cronbach's alpha of the job performance scale was found to be 0.78, which ensures the reliability of the job performance scale.

The results of structural equation modelling indicated a good fit, as shown in Table 8. There was no adjustment observed in the model-fit indices while moving from the



**Figure 2.**  
Nomological validity  
assessment model

Source: AMOS 19

measurement model to the structural model, which ensures that the basic model did not decrease the model-fit because of its predetermined relationship. The standardized estimates for path stereotype threat (ST) →job performance (JP) were −0.63 significant at a 1% level, indicating a negative relationship between ST and JP, as shown in [Figure 2](#). Hence, it can be concluded that stereotype predicts JP which ensures the nomological validity of the scale.

Conclusion

Despite the widespread recognition of stereotype threat in everyday life and the accumulating evidence of its numerous negative effects ([Schmader and Beilock, 2012](#)), the concept has remained relatively marginalized in social psychology. This study aimed to address this gap by developing a reliable and valid measure specifically tailored to assess stereotype threat in the workplace. The 36-item scale, crafted through a rigorous development process, demonstrated robust psychometric properties across three diverse samples.

Our findings, in line with [Picho and Brown \(2011\)](#), confirmed the reliability and validity of the stereotype threat scale, as demonstrated by its consistent factor structure and internal consistency across diverse samples. Convergent validity was established through the AVE, affirming the coherence and consistency among the scale items. Notably, the nomological validity results revealed a compelling association between the stereotype threat measure derived from our psychometric framework and JP. Building upon their foundation, our study advances the field by introducing a more comprehensive framework with nine dimensions for the stereotype threat scale. This expansion extends beyond the original seven dimensions proposed by [Picho and Brown \(2011\)](#), incorporating nuanced elements that capture a broader spectrum of experiences. Notably, our study aligns with Picho and Brown’s insights on negative effects and gender identification while introducing novel dimensions that contribute to a more nuanced understanding of stereotype threat effects.

These nine components can be categorized into three groups, mirroring the multidimensional approach advocated by [Picho and Brown \(2011\)](#). The first category pertains to identification,

**Table 7.**  
Reliability statistics  
of sub-dimension of  
stereotype threat  
(ST) scale

Sr. no.	Construct	No. of items	Cronbach’s alpha
1	Occupational identification	4	0.704
2	Occupational stigma consciousness	4	0.811
3	Gender identification	4	0.759
4	Gender stigma consciousness	4	0.894
5	Caste category identification	4	0.825
6	Caste category stigma consciousness	4	0.857
7	Religion identification	4	0.804
8	Religion stigma consciousness	4	0.837
9	Negative affect	4	0.877

Source: SPSS

**Table 8.**  
Model fit indices for  
stereotype threat and  
job performance

CFA default model	RMR	GFI	AGFI	CFI	RMSEA	$\chi^2$	df	p-value	$\chi^2/df$
I	0.065	0.938	0.917	0.957	0.056	325.06	114	0.000	2.851

Source: AMOS



encompassing occupational, gender, religious and caste identifications. This aligns with Picho and Brown's conceptualization of social identities as multidimensional. The second category comprises items related to stigma consciousness, encompassing gender, religion and caste stigma consciousness. Lastly, the third category encompasses items related to negative effects, in line with Picho and Brown's hypothesis of negative effects as integral to stereotype threat (Picho and Brown, 2011). This study contributes a comprehensive and refined perspective to the understanding of stereotype threat in the workplace, offering a validated scale that captures its nuances across diverse dimensions. The scale will prove instrumental for researchers delving into this crucial yet underexplored field, facilitating a deeper exploration of the intricate dynamics of stereotype threat in organizational settings.

### Implications

The implications drawn from the present study extend our understanding of the intersection between stereotype threat and JP, particularly within the context of the Indian workplace. By employing multiple samples, our research enhances external validity, addressing concerns that often arise in studies of this nature. In a contemporary work environment marked by increasing diversity, the prevalence of negative stereotypes tied to social identity is undeniable. Consequently, this investigation offers valuable insights for institutions seeking to comprehend the impact of negative stereotyping on social identity and its role in triggering the phenomenon of stereotype threat among employees.

Moreover, the study contributes to a clearer delineation of the nomological network connecting stereotype threat and JP. The developed scale proves to be a practical tool for assessing stereotype threat across various industries. Organizations can leverage this scale to evaluate the extent of stereotype threat experienced by their employees, providing a mechanism to discern performance deterioration. Consequently, managers gain the ability to pinpoint the root causes of performance gaps and take proactive measures to mitigate the adverse effects of stereotype threat on their workforce.

Simultaneously, the managerial utility of our scale extends to exploring the relative importance of underlying dimensions in understanding the experience of stereotype threat. This exploration enables managers to identify the most critical factors contributing to this phenomenon in their specific workplace context. Armed with this knowledge, organizations can strategically address and eliminate factors negatively impacting their employees. Thus, the results of our study offer a comprehensive and nuanced understanding of the phenomenon of stereotype threat, providing organizations with the tools and insights needed to foster a more inclusive and performance-enhancing work environment.

### Limitation and scope for future research

While the study makes a valuable contribution to the understanding of stereotype threat in the workplace and presents a comprehensive scale, several limitations should be considered: First, the study found robust psychometric properties across three diverse samples, but the extent to which these findings can be generalized to broader populations or different cultural contexts remains unclear. Second, the samples used in the study may have inherent biases, and the extent to which they represent the broader population needs to be addressed. Third, while the study developed a reliable and valid measure, its real-world applicability and effectiveness in detecting stereotype threat in actual workplace settings need further investigation. It would be valuable to conduct longitudinal studies to assess the scale's predictive validity and its ability to capture dynamic changes in stereotype threat over time. Fourth, the decision to propose nine dimensions for the stereotype threat scale, deviating from Picho and Brown's seven dimensions, should be discussed in more detail. The study

should address the implications of these additional dimensions and the reasons for the divergence. Fifth, respondents may provide answers that align with social norms or expectations, potentially leading to social desirability bias. Future research should acknowledge this limitation and consider incorporating measures to minimize or detect such biases in future research. Sixth, the number of items (36) used in the scale is large. The researchers may face difficulty in the implementation as a part of the overall research design. A reduced version of the scale would be useful to researchers.

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