

PERFECTIONISM IN INDIA COMPARED TO AMERICA: A CROSS-CULTURAL
INTERNET-BASED ASSESSMENT

A Thesis
by
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Abstract

PERFECTIONISM IN INDIA COMPARED TO AMERICA: A CROSS-CULTURAL INTERNET-BASED ASSESSMENT

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Perfectionism is currently conceptualized as a multidimensional personality construct, but has not been extensively studied cross-culturally. Amazon's Mechanical Turk (MTurk) lets users complete online questionnaires and scales, collecting data that can provide an international sample, taking advantage of MTurk as a cross-cultural psychological research tool. Indians represent the second-largest proportion of MTurk users behind Americans and presented a unique opportunity to conveniently examine cross-cultural differences. India also represents a growing and increasingly influential global economy. The current study assessed perfectionism in Indians via MTurk and compared scores on multidimensional perfectionism scales to an American sample. Mean differences on perfectionism subscales indicated that Indians scored higher than Americans on Concern Over Mistakes, Perceived Parental Pressure, and Striving for Excellence, while Americans scored higher than Indians on Planfulness and Need for Approval. A number of analyses were also conducted to compare perfectionism between demographic groups in both samples. Neither sample was nationally representative, as the Indian sample overrepresented males, urban citizens, and individuals with higher education and income, and the American sample overrepresented

Caucasians and females. Scale score differences were influenced by disparities in demographic variable distributions such as gender, education, income, and religious affiliation. Future studies would likely benefit from considering more representative samples as well as the latent structure of perfectionism in Indian samples.

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Dedication

I would like to dedicate this thesis to my parents, Nancy and Steve Semcho. Without their love, support, and encouragement, I would not be where I am today.

Table of Contents

Abstract.....	iv
Acknowledgements.....	vi
Dedication.....	vii
List of Tables.....	ix
Foreword.....	x
Perfectionism in India Compared to America: A Cross-Cultural Internet-Based Assessment.....	3
Method.....	10
Results.....	16
Discussion.....	21
References.....	37
Tables.....	42
Appendix A.....	49
Appendix B.....	50
Vita.....	52

List of Tables

Table 1. Representativeness of Indian and American Samples.....	42
Table 2. Descriptive Statistics and Correlations in Indian and American Samples.....	43
Table 3. Differences between Perfectionism Inventory Scale Score Means for Americans and Indians.....	44
Table 4. Statistically Significant Differences between Genders in the Indian Sample.....	45
Table 5. PI Scale Score Differences Between Religious Groups in the Indian Sample.....	46
Table 6. PI Scale Score Differences Between Income Groups in the Indian Sample.....	47
Table 7. PI Scale Score Differences Between Education Groups in the Indian Sample.....	48

Foreword

This thesis is written in accordance with the style of the *Publication Manual of the American Psychological Association (6th Edition)* as required by the Department of Psychology at Appalachian State University.

Perfectionism in India Compared to America: A Cross-Cultural Internet-Based Assessment

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Abstract

Perfectionism is currently conceptualized as a multidimensional personality construct, but has not been extensively studied cross-culturally. Amazon's Mechanical Turk (MTurk) lets users complete online questionnaires and scales, collecting data that can provide an international sample, taking advantage of MTurk as a cross-cultural psychological research tool. Indians represent the second-largest proportion of MTurk users behind Americans and presented a unique opportunity to conveniently examine cross-cultural differences. India also represents a growing and increasingly influential global economy. The current study assessed perfectionism in Indians via MTurk and compared scores on multidimensional perfectionism scales to an American sample. Mean differences on perfectionism subscales indicated that Indians scored higher than Americans on Concern Over Mistakes, Perceived Parental Pressure, and Striving for Excellence, while Americans scored higher than Indians on Planfulness and Need for Approval. A number of analyses were also conducted to compare perfectionism between demographic groups in both samples. Neither sample was nationally representative, as the Indian sample overrepresented males, urban citizens, and individuals with higher education and income, and the American sample overrepresented Caucasians and females. Scale score differences were influenced by disparities in demographic variable distributions such as gender, education, income, and religious affiliation. Future studies would likely benefit from considering more representative samples as well as the latent structure of perfectionism in Indian samples.

Keywords: perfectionism, cross-cultural, India, Mechanical Turk

Perfectionism in India Compared to America: A Cross-Cultural Internet-Based Assessment

In the psychological literature from the past few decades, the construct of perfectionism has undergone a variety of revisions. Perfectionism was initially viewed as a pathological, consistently dysfunctional behavior linked to a range of psychopathology, as well as specific behaviors like suicide and dropout among law school students (Burns, 1980; Stoeber & Otto, 2006). Contemporary evidence, however, has supported the notion that different facets of perfectionism are related to both positive and negative psychological phenomena (Stoeber & Otto, 2006). For example, a review of perfectionism literature describes correlations between perfectionistic strivings and adaptive outcomes such as active coping skills, greater subjective life satisfaction, long-term achievement of personal goals, and lower levels of suicidal ideation (Stoeber & Otto, 2006).

The establishment of excessive, unrealistically high personal standards, especially regarding performance, is a central element of perfectionism (Burns, 1980). This element provided the basis for the initial conceptualization of unidimensional perfectionism. More contemporary research on the construct, specifically the development of new instruments such as the Multidimensional Perfectionism Scale (MPS-F; Frost, Marten, Lahart, & Rosenblate, 1990), highlighted the inherently multidimensional nature of the perfectionism, including subscales for Concerns over Mistakes, Personal Standards, Parental Expectations, Parental Criticism, Doubts About Actions, and Organization (Frost et al., 1990). Frost, Heimberg, Holt, Mattia, and Neubauer (1993) also proposed that some aspects of perfectionism were adaptive, while others were maladaptive. Other researchers concurrently described support for a different multidimensional instrument, also called the Multidimensional Perfectionism Scale (MPS-HF; Hewitt, Flett, Turnbull-Donovan, & Mikail, 1991), which reflected a three-factor model of perfectionism: self-oriented

perfectionism (SOP), other-oriented perfectionism (OOP), and socially prescribed perfectionism (SPP; Hewitt et al., 1991).

Other investigators described support for an additional instrument, the Perfectionism Inventory (PI; Hill et al., 2004). Although the MPS-F and MPS-HF each contain unique subscales of perfectionism, a certain degree of redundancy and overlap between the two measures was observed; as a result, the PI was created to provide a more comprehensive and inclusive instrument (Hill et al., 2004). Factor analyses of PI responses from an American undergraduate sample supported an eight-factor model of perfectionism with two higher-order factors. The Conscientious Perfectionism factor, composed of subscales for Organization [PI-O], Striving for Excellence [PI-SE], Planfulness [PI-P], and High Standards for Others [PI-HS], was considered the more adaptive factor of perfectionism. Self-Evaluative Perfectionism, composed of Concern Over Mistakes [PI-CM], Need for Approval [PI-NA], Rumination [PI-R], and Perceived Parental Pressure [PI-PPP], was considered the more maladaptive factor. The PI subscales also have strong relationships to both the MPS-F and MPS-HF subscales.

Cross-cultural psychological research

Cross-cultural psychological research studies provide an avenue for researchers to compare and contrast psychological constructs across and within countries and ethnic groups. Broadly speaking, cross-cultural research can proceed in three major ways, by being exploratory in nature or focused on hypothesis testing, by including or excluding contextual factors, and by focusing on level-oriented versus structure-oriented differences (Van de Vijver, 2002).

Exploratory studies are characterized by a lack of any preconceived notions or hypotheses about expected results. They often include collecting vast amounts of data from

multiple sources and analyzing this collection of data in a fashion that is not reliant upon any particular theoretical model or framework (Van de Vijver, 2002). Exploratory studies are commonly the precursors to more specific hypothesis-driven studies, in which researchers hypothesize about the relationship between psychological constructs and cultural factors based on a theoretical framework and apply statistical analyses to test the accuracy thereof (Van de Vijver, 2002).

The inclusion of contextual factors in a cross-cultural study, be they specific to the individual participants (education level, income, age) or specific to the culture in question (economic standing of the country, religion, population makeup), may influence the interpretation of any perceived differences or similarities (Van de Vijver, 2002). A large portion of cross-cultural studies is focused on large-scale international comparisons between countries, and as a result these studies do not consider the influence of contextual variables. They are instead concerned with highlighting the similarities and differences between countries, and they commonly lead to more contextual studies that attempt to tie the observed differences to fundamental underlying dimensions in the studied countries (Van de Vijver, 2002).

Cross-cultural studies can also differ in the scope and objective of their research question. Level-oriented studies are concerned with the magnitude of score differences on a particular measure between groups of participants from various countries, such as the differences in levels of Conscientiousness between American and Indian participants. On the other hand, structure-oriented studies are performed in an attempt to determine if the construct in question is defined the same way or composed of the same underlying factors across countries (Van de Vijver, 2002).

Considering the three dimensions of cross-cultural research, the present study was classified as an exploratory, contextual, level-oriented investigation. Without previous data on which to base specific testable hypotheses, the current study sought to explore perfectionism differences across samples from the US and India, and propose avenues for further, more specific research. Additionally, several contextual factors in the Indian sample, including gender, religious affiliation, education level, income, and the nature of the environment in which one lived (either rural or urban) were collected and integrated into the analysis by considering their influence on scale score differences both within and between samples. Specifically, ANOVAs and *t*-tests compared mean scale score differences between demographic groups, and effect sizes were calculated to examine the magnitude of observed differences between pairs of groups. Odds ratios were also calculated to quantify the representativeness of sample groups in comparison to national percentages, and this data was used to help explain observed overall differences between the Indian and American samples. Finally, the study was designed to assess the differences in levels of perfectionistic personality facets between Americans and Indians, and not the specific structure of perfectionism in each sample.

Perfectionism in India

India's relevance in the context of the global community is undeniably growing. As a member of the Brazil, Russia, India, China (BRIC) group of countries, India is projected to have the third largest economy in the world, in terms of GDP in US dollars, by the year 2050 (Vikas, 2011). Additionally, India's population of roughly 1.1 billion people represents approximately 1/7th of the overall world population. Together, the BRIC nations encompass over 40% of the total world population, over 25% of the total world land coverage, and are projected to represent four of the top six economies in the world by 2050 (Vikas, 2011).

Continued globalization of economies has increased communication between nations but also contributed to increased economic competition, unemployment, and the sharing of knowledge regarding workplace management strategies that could alter existing organizational structures. The anticipated influence of India and other similar nations on the global community provides a justifiable rationale for further exploration of the Indian population with respect to personality features.

The Indian culture represents a very distinct culture from both the Western perspective and from the perspective of other Asian countries, due in large part to the prevalence of the Hindu religion (Slaney, Chadha, Mobley, & Kennedy, 2000). According to the Indian Census, approximately 80.45% of Indian citizens identify as Hindu (Census of India, 2011a). Even for those who do not practice Hinduism, the culture and traditions of India are saturated with the influence of the religion (Slaney et al., 2000). Due to the strong influence of the Hindu religion, perfectionism in India is often seen as being related to achieving nirvana (liberation from the cycle of reincarnation) and transcending many of the concepts that define the Western view of perfectionism (Slaney et al., 2000). Because of this influence, and because of the relatively early state of perfectionism research in India, Slaney et al. (2000) proposed a unique conceptualization that takes into account reincarnation, karma, and nirvana.

Slaney et al. (2000) performed the only previous study to examine the nature of perfectionism in India, measuring perfectionism with the Almost Perfect Scale (APS), which proposed a four-factor model of perfectionism: Standards and Order, Anxiety, Relationship Issues, and Procrastination. Indian undergraduates ($N = 321$) demonstrated higher scores on perfectionistic standards, order, and relationships scales than did American undergraduates ($N = 1,425$); however, American undergraduates on average reported higher anxiety and

procrastination scale scores related to their perfectionism (Slaney et al., 2000). Further, some gender differences emerged; Indian males scored higher than American males on Standards and Order, Relationships, and Anxiety, but lower on Procrastination (Slaney et al., 2000).

Indian females scored higher than American females on Standards and Order and Relationships, but lower on Anxiety and Procrastination scales (Slaney et al., 2000).

From the entire sample, five Indian undergraduates who self-identified as perfectionists were interviewed; during the interviews, it was discovered that they all placed very high emphasis on Standards and Order, but reported Relationships as a more secondary concern (Slaney et al., 2000). All five interviewees endorsed Standards and Order and Relationships scales significantly more than they did Anxiety and Procrastination scales (Slaney et al., 2000).

Mturk

Amazon's MTurk service was introduced in 2005 and can be described as a "crowdsourcing, microworking system" (Fort, Gilles, & Cohen, 2011, p. 143).

Crowdsourcing indicates that a task is placed on the internet and then voluntarily completed by a variety of individuals, while microworking refers to the nature of the "jobs," namely that they are most often split into smaller tasks for which completion is compensated (Fort et al., 2011). MTurk "Requesters" are users who create "Human Intelligence Tasks" (HITs) that are then completed by willing participants, referred to as "Turkers."

Previous research has shown that a sample of MTurk users from the United States was more representative of the general U.S. population and also more diverse than a sample of American undergraduates, which is often the most common sample used in psychological research (Buhrmester, Kwang, & Gosling, 2011). The amount of compensation has not been shown to significantly affect the quality of the data obtained or the rate of participation, only

the amount of time needed to collect adequate amounts of data, such that lower compensation amounts generally indicate a longer time to collect (Buhrmester et al., 2011). Additionally, data derived through MTurk exhibits psychometric properties that compare quite favorably with those of conventional research methods; test-retest reliabilities range from $r = .80$ to $r = .94$ (Buhrmester et al., 2011).

MTurk provides a unique opportunity for cross-cultural research. A recent study showed that out of 1,000 participants, 468 (46.8%) were from the United States and 372 (37.2%) were from India, the two countries with the highest participation rates by a considerable margin (Ipeirotis, 2010). Of the Indian sample, 70% of participants were male while 30% were female, compared to 35% male and 65% female participation in the United States sample (Ipeirotis, 2010). Educational backgrounds also showed a notable difference: 54% of Indians had a bachelor's degree, while 24% had at least a master's degree; conversely, 35% of the US sample had a bachelor's degree, while 15% had a master's degree or higher (Ipeirotis, 2010).

Of all Indian MTurk users sampled, 37.06% reported that MTurk was a secondary source of income for them, while 62.94% of Indians stated that they considered MTurk a primary source of income (Ipeirotis, 2010). In comparison, 61.54% of Americans said MTurk was a secondary source of income, while 38.46% of Americans regarded MTurk as a primary source (Ipeirotis, 2010). Due to the aforementioned high education level of Indian MTurk samples and the fact that English is the most ubiquitous language for educated Indians (Jayakar, 1994), the decision was made to assess perfectionism in English without providing a Hindi translation (Slaney et al., 2000). MTurk provided an exciting opportunity to gain access to a foreign sample with above average education. In short, MTurk is a

unique, novel avenue by which one can “obtain high-quality data inexpensively and rapidly” (Buhrmester et al., 2011, p. 2).

The current study provided a unique, convenient opportunity to use MTurk to examine cross-cultural differences in perfectionism, a construct that has not received adequate cross-cultural study, in an Indian sample that represented a burgeoning economy in an increasingly globalized market place. In addition, coupled with the aforementioned knowledge regarding MTurk, the study also sought to contribute to the growing empirical base surrounding the viability of using MTurk as a psychological research tool, particularly in a cross-cultural context, where obtaining culturally diverse samples may traditionally be viewed as time-consuming or financially costly.

Method

This study, #12-0229, was approved by the Appalachian State University Institutional Review Board on March 20, 2012. The notice of IRB Exemption is shown in Appendix A. Appendix B lists the informed consent document that was presented to all participants.

Participants

Indian sample. Participants were recruited via Amazon’s MTurk service, and were required to have registered India as their primary location. A total of 1,678 participants responded to the questionnaire. Over the course of data collection, data from 474 participants (28.2%) were eliminated due to the endorsement of infrequently endorsed items on the Infrequency Scale (IFS) at a rate above the acceptable threshold (>2 items), suggesting potentially careless or inattentive response styles. Mean age of the final sample ($N = 1,204$) was 27.78 years ($SD = 8.43$); 783 of participants were male (65.0%) and 420 were female (34.9%). Data from the Census of India (2011a) indicated that of the total population, 51.5% were male and 48.4% were female, suggesting that the male participants in this sample were

overrepresented while females were underrepresented (Census of India, 2011a). A series of chi-square goodness-of-fit tests were performed to determine if the distributions of demographic groups in the Indian and American samples were statistically equivalent to expected distributions according to information retrieved from respective Census and CIA World Factbook data (Index Mundi, 2013; U.S. Census Bureau, 2014). Table 1 summarizes the sample and national percentages of certain demographic groups, as well as odds ratios. In the Indian sample, the males were overrepresented based on gender distribution reported by 2011 Census data, $\chi^2(1, N = 1,203) = 88.92, p < .001, OR = 1.75$.

Of the participants who responded, 1,010 reported living in an urban agglomeration (83.9%), while 193 reported living in a rural environment (16.0%). Urban agglomerations were characterized as “towns” and adjacent outgrowths with a combined population of 20,000 or more; “towns” were defined as places with a municipality or places with at least 5,000 people, a population density of at least 400 people/square kilometer, and at least 75% of the male population working in non-agricultural capacities (Census of India, 2011b). All areas other than those that met the aforementioned specific criteria for urban environments are considered to be rural (Census of India, 2011b). Data from the Census of India (2011a) indicated that of the total population, 68.84% live in rural environments while 31.16% live in urban environments, suggesting that participants in this sample greatly over-represented urban inhabitants (Census of India, 2011a), $\chi^2(1, N = 1,203) = 1,559.84, p < .001, OR = 11.54$.

Regarding use of the English language, 69 participants reported that English was their first language (5.7%), 981 reported English as their second language (81.5%), 141 reported English as their third language (11.7%), and 13 responded with ‘Other’ (1.1%). Data from the CIA World Factbook (Index Mundi, 2013) indicated that 41% of Indians reported Hindi

as their first language, while 8.1% reported Bengali, 7.2% reported Telegu, 7% reported Marathi, 5.9% reported Tamil, 5% reported Urdu, 4.5% reported Gujarati, 3.7% reported Kannada, 3.2% reported Malayalam, 3.2% reported Oriya, 2.8% reported Punjabi, 1.3% reported Assamese, 1.2% reported Maithili, and 5.9% reported Other. Little data was available on the prevalence of English, although it is generally considered “the most important language for national, political, and commercial communication” (Index Mundi, 2013).

Family college history was also evaluated: 352 participants (29.2%) reported that they were the first in their family to attend university, while 851 (70.7%) reported that they were not the first in their family to attend university. In terms of individual education levels, 11 participants (0.9%) completed primary education, 81 participants (6.7%) completed secondary education, 653 participants (54.2%) endorsed having a first university degree, and 458 participants (38.0%) endorsed having a post-graduate degree.

Concerning religious affiliation, 786 participants (65.3%) reported Hindu as their primary religion, 144 participants (12.0%) reported that they were Muslim, 219 participants (18.2%) reported that they were Christian, 11 participants (0.9%) endorsed no religious affiliation, and 44 participants (3.7%) endorsed Other religious affiliation. Data from the CIA World Factbook (Index Mundi, 2013) indicate that as of 2001, 80.5% of Indians identified as Hindu, 13.4% as Muslim, 2.3% as Christian, 1.9% as Sikh, 1.8% as Other, and 0.1% as unspecified. One chi-square test was run to test all observed categories versus expected categories. Subsequently, individual odds ratios were calculated for each group relative to national percentages. These data suggest that the distribution of identification with religious groups in the current Indian sample was significantly different than the population distribution, $X^2(2, N = 1,149) = 1,369, p < .001$. Hindus (OR = 0.46) and

Muslims (OR = 0.88) were underrepresented, while Christians were greatly overrepresented (OR = 9.46).

In terms of income, 319 participants (26.5%) reported earning < Rs 1 lakh (lower class), 469 participants (39.0%) reported earning Rs 1 lakh – Rs 3.4 lakh (low middle class), 365 participants (30.3%) reported earning Rs 3.4 lakh – Rs 17 lakh (middle class), 32 participants (2.7%) reported earning Rs 17 lakh – Rs 30 lakh (upper middle class), and 18 participants (1.5%) reported earning > Rs 30 lakh (wealthy upper class; Press Trust of India, 2011).

American sample. Participants in the independent American sample were similarly recruited via Amazon's MTurk (Mautz, 2012). A total of 508 respondents were included in the American sample. Mean age was 32.41 years ($SD = 12.56$); 173 participants were male (34.1%) and 335 were female (65.9%). Data from the U.S. Census Bureau (2014) indicated that 49.2% of the population was male, and 50.8% of the population was female. The percentages of males and females were not equivalent to the national percentages, $\chi^2(1, N = 508) = 46.68, p < .001$.

In terms of ethnic background, 400 participants identified as Caucasian/European (78.7%), 32 responded as African-American (6.3%), 19 participants endorsed being Hispanic/Latino (3.7%), 1 participant identified as American Indian (0.2%), 41 participants reported being Asian (8.1%), and 15 endorsed Other (3.0%). Data from the U.S. Census Bureau (2014) indicates that 76.3% of the population is Caucasian, 13.7% is African-American, 16.9% is Hispanic/Latino, 1.7% is American Indian, and 5.8% is Asian. The percentages of Caucasian, African-American, Hispanic, American Indian, and Asian ethnic groups in the American sample were not equivalent to the national percentages, $\chi^2(4, N = 493) = 98.52, p < .001$.

Annual household income was considered; 155 participants reported earning less than \$25,000 (30.5%), 161 participants reported earning \$25,000-\$50,000 (31.7%), 92 participants reported earning \$50,000-\$75,000 (18.1%), 55 participants reported earning \$75,000-\$100,000 (10.8%), and 45 participants reported earning over \$100,000 (8.9%). According to the U.S. Census Bureau (2014), 24.4% of the population earned less than \$25,000 a year, 24.2% earned \$25,000-\$50,000, 18% earned \$50,000-\$75,000, 11.9% earned \$75,000-\$100,000, and 21.6% earned over \$100,000. The percentages of household income categories in the American sample were not equivalent to national percentages, $X^2(4, N = 508) = 58.30, p < .001$.

Concerning formal education, 13 participants reported completing Some High School (2.6%), 58 reported being a High School Graduate (11.4%), 168 reported completing Some College (33.1%), 50 reported earning an Associates/Professional Degree/Certificate (9.8%), 161 reported earning a Bachelor's Degree (31.7%), and 58 reported earning a Graduate Degree (11.4%). Data from the U.S. Census Bureau (2014) indicates that 7.9% of the population has completed Some High School, 28% has completed High School, 21.3% completed Some College, 8.0% earned an Associate's Degree, 18.2% earned a Bachelor's Degree, and 10.9% earned a Graduate Degree. The distribution of education levels in the American sample were not equivalent to national percentages, $X^2(5, N = 508) = 143.93, p < .001$.

Measures

Perfectionism Inventory (PI). The PI is a 59-item self-report questionnaire that measures perfectionism on eight subscales (PI-SE, PI-O, PI-P, PI-HS, PI-CM, PI-NA, PI-R, and PI-PPP). Item responses on the questionnaire are measured on a 5-point Likert scale from 1 (Strongly disagree) to 5 (Strongly agree). The PI shows strong convergent validity

with other measures such as the MPS-F ($r = .72$) and MPS-HF ($r = .73$; Hill et al., 2004).

Cronbach's alphas ranges were acceptable in the Indian sample ($r = .66$ to $r = .81$) as well as in the American sample ($r = .76$ to $r = .83$; Mautz, 2012).

Infrequency Scale for Personality Measures (IFS). The IFS is a 13-item scale that was designed to screen for random response styles (Chapman & Chapman, 1986). Each item is a dichotomous item (i.e., True/False), and the items are randomly distributed among the other questionnaire items. Responding negatively to more than 2 items (e.g., "False" for "I believe that most light bulbs are powered by electricity") would indicate a random and thoughtless response style.

Procedure

The survey task was administered on the MTurk website and was available to all eligible participants from June 3, 2012 to July 5, 2012. The MTurk HIT included a link to the self-report measures administered via a Select Survey website. Participants were presented with a confirmation code after valid completion of the measures on Select Survey, and then provided this confirmation code on MTurk to indicate valid completion and to receive compensation. The American sample of comparison was collected between May 19, 2011 and June 3, 2011 in a similar fashion via MTurk and a Qualtrics website survey (Mautz, 2012). Participants gave informed consent after being presented with all relevant study information.

Results

Descriptive Statistics

Means, standard deviations, internal consistency reliabilities, and correlations among all study variables are displayed in Table 2. An online web utility (Preacher, 2002) was used to calculate the significance of the difference between correlations from the two independent samples using Fisher's r -to- z transformation. Several differences between inter-scale correlations in the Indian and American samples were observed.

The correlation between PI-CM and PI-NA was higher in the American sample ($r = .77$) than in the Indian sample ($r = .68, z = 3.61, p < .001$). The correlation between PI-CM and PI-SE in the American sample ($r = .56$) was higher than in the Indian sample ($r = .23, z = 7.52, p < .001$). The correlation between PI-CM and PI-R in the American sample ($r = .82$) was higher than in the Indian sample ($r = .67, z = 6.53, p < .001$).

PI-HS and PI-SE were more highly correlated in the American sample ($r = .52$) than in the Indian sample ($r = .29, z = 5.24, p < .001$). PI-O and PI-SE were less highly correlated in the American sample ($r = .38$) than in the Indian sample ($r = .53, z = -3.58, p < .001$). Similarly, PI-O and PI-P were less correlated in the American sample ($r = .36$) than in the Indian sample ($r = .54, z = -4.29, p < .001$).

PI-R and PI-NA were more highly correlated in the American sample ($r = .81$) than in the Indian sample ($r = .68, z = 5.62, p < .001$). PI-R and PI-SE were more highly correlated in the American sample ($r = .54$) than in the Indian sample ($r = .33, z = 4.93, p < .001$).

PI-SE and PI-NA were more highly correlated in the American sample ($r = .40$) than in the Indian sample ($r = .18, z = 4.56, p < .001$). PI-SE and PI-P were less highly correlated in the American sample ($r = .34$) than in the Indian sample ($r = .49, z = -3.43, p < .001$).

Mean Differences in Perfectionism between American and Indian Samples

Mean scores on the PI scales were compared between the American sample and the Indian sample using a series of independent-samples t -tests. Using a Bonferroni correction to account for family-wise Type 1 error, statistical significance levels were set at $\alpha = 0.00625$ ($.05 / 8$).

Table 3 depicts descriptive statistics and t statistics regarding differences between the American sample and the Indian sample on PI scales. Scores on PI-CM in the Indian sample ($M = 2.99, SD = 0.66$) were significantly higher, $t(701.07) = -4.38, p < .001, d = -0.25$, than scores in the American sample ($M = 2.78, SD = 0.99$). Scores on PI-NA in the American sample ($M = 3.30, SD = 0.99$) were significantly higher, $t(695.16) = 2.81, p = .005, d = 0.16$, than scores in the Indian sample ($M = 3.17, SD = 0.64$). Scores on PI-PPP in the Indian sample ($M = 3.37, SD = 0.68$) were significantly higher, $t(663.61) = -6.99, p < .001, d = -0.40$, than scores in the American sample ($M = 2.99, SD = 1.15$). Scores on PI-P in the American sample ($M = 3.96, SD = 0.69$) were significantly higher, $t(718.48) = 5.96, p < .001, d = 0.34$, than scores in the Indian sample ($M = 3.76, SD = 0.48$). Scores on PI-SE in the Indian sample ($M = 3.73, SD = 0.58$) were significantly higher, $t(680.26) = -9.76, p < .001, d = -0.56$, than scores in the American sample ($M = 3.30, SD = 0.92$).

Group Differences in Perfectionism in the Indian Sample

Gender. Significant differences were found between males and females in the Indian sample with respect to PI scales, and can be found in Table 4. Using a Bonferroni correction to account for family-wise Type 1 error, statistical significance levels were set at $\alpha = 0.00625$

(.05 / 8). Women's scores on PI-O ($M = 3.86$, $SD = 0.53$) were significantly higher, $t(1201) = -6.86$, $p < .001$, $d = -0.42$, than men's ($M = 3.63$, $SD = 0.56$).

Religion. Using a Bonferroni correction, significance levels were set at $\alpha = 0.00625$ (.05 / 8 tests). No significant differences were found between religious groups with respect to any of the PI subscales. Due to a lower n in both the None and Other groups, ANOVAs were conducted with only Hindu, Muslim, and Christian religious groups. Table 5 summarizes the PI scale score comparisons between religious groups. Effect sizes were calculated to determine the magnitude of differences between individual pairs of religious groups, and some small effect sizes were noted. A small effect was found on PI-HS, such that Christians ($M = 3.20$, $SD = 0.60$) scored slightly higher, $d = -0.26$, than Muslims ($M = 3.05$, $SD = 0.55$). Similarly, Christians ($M = 3.79$, $SD = 0.52$) scored slightly higher, $d = -0.28$, than Muslims ($M = 3.64$, $SD = 0.57$) on PI-O. Lastly, Christians ($M = 3.81$, $SD = 0.48$) also scored slightly higher, $d = -0.23$, than Muslims ($M = 3.70$, $SD = 0.46$) on PI-P.

Income. Scores on PI scales also differed substantially between income groups on a number of PI scales. All income groups higher than Rs 3.4 lakh were combined to form a new 'middle class and above' group due to low n 's in the original high income groups. Table 6 summarizes the PI scale score comparisons between income groups. Using a Bonferroni correction, significance levels were set at $\alpha = 0.00625$ (.05 / 8 tests). No significant differences were found with respect to PI-CM; however, Games-Howell post-hoc analyses indicated that individuals who earned < Rs 1 lakh ($M = 3.07$, $SD = 0.59$) scored higher, $d = 0.23$, than individuals who earned > Rs 3.4 lakh ($M = 2.92$, $SD = 0.69$), with this difference near the standard for statistical significance.

Significant differences were found with respect to PI-NA, $F(2, 1202) = 6.91$, $p = .001$, $\eta_p^2 = .011$. Post-hoc Games-Howell analyses indicated that individuals who earned <

Rs 1 lakh ($M = 3.26$, $SD = 0.56$) scored significantly higher, $d = 0.27$, than individuals who earned > Rs 3.4 lakh ($M = 3.09$, $SD = 0.65$).

Significant differences were found with respect to PI-PPP, $F(2, 1202) = 17.15$, $p < .001$, $\eta_p^2 = .028$. Post-hoc Games-Howell analyses indicated that individuals who earned < Rs 1 lakh ($M = 3.48$, $SD = 0.60$) scored significantly higher, $d = 0.39$, than individuals who earned > Rs 3.4 lakh ($M = 3.21$, $SD = 0.76$). In addition, individuals who earned between Rs 1 lakh – Rs 3.4 lakh ($M = 3.43$, $SD = 0.65$) scored significantly higher, $d = 0.31$, than individuals who earned > Rs 3.4 lakh.

Significant differences were found with respect to PI-R, $F(2, 1202) = 6.37$, $p = .002$, $\eta_p^2 = .011$. Post-hoc Games-Howell analyses indicated that individuals who earned < Rs 1 lakh ($M = 3.38$, $SD = 0.57$) scored significantly higher, $d = 0.25$, than individuals who earned > Rs 3.4 lakh ($M = 3.22$, $SD = 0.69$). Additionally, individuals who earned between Rs 1 lakh – Rs 3.4 lakh ($M = 3.34$, $SD = 0.65$) scored significantly higher, $d = 0.18$, than individuals who earned > Rs 3.4 lakh.

Education. Significant group differences on a number of PI scales were found between those with different levels of education. Due to low n , the ‘primary education’ group was combined with the ‘secondary education’ group to form a new ‘secondary education or less’ combined group. Table 7 summarizes the PI scale score comparisons between education groups. Using a Bonferroni correction, significance levels were set at $\alpha = 0.00625$ (.05 / 8 tests). Significant differences were found with respect to PI-O, $F(2, 1202) = 6.06$, $p = .002$, $\eta_p^2 = .010$. Post-hoc Games-Howell analyses indicated that individuals with a first university degree ($M = 3.71$, $SD = 0.53$) scored significantly higher, $d = -0.32$, than individuals with a secondary education or less ($M = 3.53$, $SD = 0.61$). Similarly, those with a

post-graduate degree ($M = 3.75$, $SD = 0.58$) scored significantly higher, $d = -0.37$, than those with a secondary education or less.

No significant differences were found with respect to PI-PPP; however, post-hoc Games-Howell analyses indicated that those with a secondary education or less ($M = 3.51$, $SD = 0.73$) scored slightly higher ($d = 0.27$) than those with a post-graduate degree ($M = 3.31$, $SD = 0.73$), with this difference also trending toward statistical significance.

Discussion

In the current study, scores on the multidimensional Perfectionism Inventory were compared across an American sample and an Indian sample. The investigation revealed a number of differences between the American and Indian samples on PI subscales, and also demonstrated several demographic disparities within each sample concerning contextual variables that are explored in an effort to explain between-sample differences.

Perfectionism Findings

Scores on PI-CM were higher in the Indian sample than in the American sample. This finding suggests that individuals from the Indian sample report a higher tendency to experience distress or anxiety after making a mistake. Such distress involves potential embarrassment, fear of losing the respect of others, or fear of believing that all future instances will result in failure or self-doubt. Individuals who score highly on PI-CM may believe that making a mistake reveals inherent flaws in their character, or that they will feel like less of a person after making a mistake. Frost (1990) has also previously described PI-CM as “the most central component of perfectionism.” PI-CM was highly associated with symptoms of anxiety and depression, as well as fear of negative evaluation in an American sample (Hill, et al., 2004). Other findings have discovered high correlations in American samples between PI-CM and subscales of Klass’s (1987) Situational Guilt Scale and Interpersonal Harm and Norm Violation, suggesting a high degree of concern over making mistakes may have consequences in terms of interpersonal guilt and fear of negative social judgment (Frost, 1990).

Although score differences on PI-CM were significantly different between the American and Indian samples, further analysis revealed a modest effect size. This modest effect suggests that despite statistical significance, the differences in scale scores may or may not represent truly meaningful clinical or personality differences in the current samples. Furthermore, analysis of the contextual income variable within the Indian sample revealed that individuals from the lower income class demonstrated higher levels of PI-CM in comparison to individuals from the middle income class and above. This difference also represented a small effect size that was near the standard for statistical significance. The current Indian sample, as previously reported, included a larger number of individuals from higher income groups than might be expected, yet still displayed a higher level of PI-CM than the American sample. As a result, one could speculate on potential findings if a more nationally representative Indian sample had been studied. For example, a representative sample from India would include a high number of individuals from the lower income group. In this scenario, the aggregate scores on PI-CM in the total Indian sample would also be expected to be even higher than in the current sample. Perhaps individuals in lower income groups experience greater levels of distress after making a mistake because making a mistake may have real consequences in terms of financial compensation, upward class mobility, job security, interpersonal relationships, or resources meant to improve the safety and quality of life for the individual and his or her family unit.

Scores on PI-NA were higher in the American sample than in the Indian sample. These results suggest that those in the American sample demonstrate a higher tendency to desire validation from other people and also be sensitive to perceived criticism from others. This difference between the American and Indian samples was represented by a very small effect size, suggesting that although the discrepancy met the standards for statistical

significance, the difference in scores may not represent meaningful personality or behavioral differences. Additionally, with respect to demographic group differences, individuals in the Indian sample from the low income group demonstrated higher levels of PI-NA than individuals in the middle income group and above, and this difference was represented by a modest effect size. One may speculate by considering that individuals in lower income groups are more apt to seek validation from others in an attempt to mitigate negative feelings or tangible stressors associated with lower economic standing, such as a relative lack of resources or financial security. In this particular study, lower income individuals also experienced higher levels of similar negative perfectionistic tendencies, namely PI-CM and PI-PPP. PI-NA was highly correlated with PI-CM in the Indian sample, suggesting a relationship between the two constructs. Perhaps the tendency to seek approval from others and to be more sensitive to their criticism causes one to experience more concern over mistakes, or perhaps the reverse is true. Moreover, due to the fact that lower income groups in the current Indian sample are underrepresented, a more nationally representative Indian sample may reveal higher overall scores on PI-NA, and would therefore remove the significant difference between Indians and Americans.

The results revealed that the Indian sample scored higher than the American sample on PI-PPP. These findings suggest that those in the Indian sample experience the need to perform at a high level in order to receive approval from parents and to meet what they perceive to be their parents' high standards. Further analysis revealed that this difference between the Indian and American samples was represented by an effect size trending toward a medium effect, suggesting potentially meaningful differences above and beyond what is suggested by statistical significance.

One might speculate on differences in the parental or familial influences between American and Indian cultures; for example, interviewees in the Slaney et al. (2000) study provided anecdotal evidence indicating that much of their perfectionistic tendencies were attributable to learning from their parents or grandparents. India has historically been viewed as a collectivist culture, although research has demonstrated that based on situational demands, Indian individuals exhibited both collectivist and individualist behaviors (Sinha, Sinha, Verma, & Sinha, 2001). A principle finding from Sinha et al. (2001) indicated that issues related to family members were generally met with behaviors consistent with collectivist intentions. However, when confronted with situations where individual goals were in direct conflict with family interests, individuals moved more toward a mix of collectivist and individualistic behaviors. Higher levels of PI-PPP may be related to subjective feelings of a duty to conform to familial needs and concerns. On the other hand, individuals in the Indian sample may have also reported higher levels of perceived pressure regarding their own pursuit of more individual goals, such as education, employment, or romantic relationships that may be perceived as contradictory to the interests or desires of the family.

Further, within-sample analysis demonstrated that low and low-medium income class individuals in the Indian sample demonstrated higher PI-PPP than individuals from the middle class and above, with modest effect sizes. Similarly, levels of PI-PPP in the Indian sample were also related to level of education, in that a low to moderate level of education was associated with more PI-PPP than higher levels of education. It may be that individuals from lower income and education groups experience pressure from their parents to pursue further education or job opportunities in an effort to increase their socioeconomic standing. Perhaps these individuals experience higher parental pressure because their current income or

education level is in contrast with familial expectations or standards, therefore creating the aforementioned pressure to behave in a manner that benefits the collective family unit.

Based on the nature of the findings regarding PI-PPP, future studies may benefit from examining level of parental perfectionism, as well as further investigating the propensity of individuals in India to demonstrate individualistic, collectivistic, or mixed behaviors depending on situational contexts.

Again, one may speculate about findings if a more nationally representative sample had been studied, which would be expected to include many more individuals from lower income and education groups than in the current sample. In such a case, scores on PI-PPP would be expected to be even higher than currently observed, suggesting that higher PI-PPP is more widespread throughout the Indian culture than the current results would suggest.

Scores on PI-SE in the Indian sample were significantly higher than scores from the American sample. These scores indicate that the participants in the Indian sample, on average, reported a higher emphasis on the personal pursuit of high standards and perfect results than the participants in the American sample. Further analysis revealed a moderate effect size with respect to this difference. This suggests that those in the Indian sample may be more likely to drive themselves or put forth significant effort in order to achieve excellence and high standards. PI-SE is considered a key factor of “perfectionistic strivings,” a dimensional conceptualization that captures positive, adaptive aspects of perfectionism (Stoeber & Kersting, 2007). Stoeber and Kersting (2007) discovered that high perfectionistic strivings predicted higher performance on aptitude tests of reasoning and work samples. Previous research has suggested that PI-SE correlates highly with Hewitt and Flett’s Self-Oriented Perfectionism as well as with MPS-F Personal Standards perfectionism (Frost et al., 1990; Hewitt et al., 1991), which has been shown to increase longitudinally across life as

does Big Five Conscientiousness (Stoeber et al., 2009). Other cross-cultural research indicated that Indian undergraduates scored lower than Americans on Conscientiousness (Schmitt, Allik, McCrae, & Benet-Martinez, 2007). The Stoeber et al. (2009) study suggested that those with higher levels of PI-SE would also be expected to demonstrate higher levels of Self-Oriented Perfectionism, and therefore Conscientiousness. The findings from this study demonstrated that the current Indian sample was found to exhibit higher levels of PI-SE, despite the fact that they might have been expected to exhibit lower levels according to predictions based on lower assumed levels of Conscientiousness (Schmitt et al., 2007). As a result, the relationship between PI-SE and Conscientiousness may benefit from further investigation in an Indian sample.

Scores on PI-P in the American sample were significantly higher than scores in the Indian sample. These results suggest that those in the American sample, on average, reported a greater tendency to plan for the future and spend time deliberating before making a decision than those in the Indian sample. Analysis of the difference revealed a small to modest effect size. One might expect participants in the American sample to take a longer time and exert more effort weighing options before making up their minds, to be less likely to make decisions “on the spot,” and to often feel the need to make a plan before taking action. PI-P suggests a tendency to think ahead with great care, as opposed to acting impulsively without thought or deliberation. Hill et al. (2004) have previously described strong correlations between PI-P and other perfectionism scales including MPS-F Personal Standards and Organization (Frost et al., 1990) and MPS-HF Self-Oriented Perfectionism (Hewitt et al., 1991). Other literature has documented that individuals who are considered at-risk for depressive disorders tended to plan daily activities with less care than those who were not at-risk; subsequently, their plans were similarly realized less completely,

highlighting a potentially advantageous aspect of PI-P (Nezlek, 2001). The current Indian sample featured an overrepresentation of Christians compared to expected national distributions, and Christians were found to endorse higher levels of PI-P, albeit at a modest effect level. Again, if a study with a more nationally representative sample had been conducted, with an expected lower number of Christians, scores on PI-P in the Indian sample may be even lower than currently observed.

Other PI scale score differences between the American and Indian samples that were not statistically significant may also be explained by sample idiosyncrasies. For example, the current sample featured a higher proportion of males and lower proportion of females compared to census data. Further analysis of the current Indian sample demonstrated that females scored significantly higher on PI-O than males, with a modest effect size. Slaney et al. (2000) had previously reported that Indian females demonstrated higher levels of Standards and Order compared to American females. Due to the underrepresentation of females in the current sample, one may again speculate as to findings in a more nationally representative sample. Specifically, a study with a more representative distribution of gender may show that PI-O levels are significantly higher India, considering that the current Indian sample already exhibited slightly higher levels of PI-O.

Conversely, individuals in the Indian sample with a first university degree and with a post-graduate degree both demonstrated higher scores on PI-O than individuals with a secondary education or less, with modest effect sizes. This finding is not surprising, given that organization and time management would be expected to be adaptive for academic achievement. Given that individuals with university degrees and above are generally overrepresented in the current sample, a more representative Indian sample with fewer university-educated individuals may exhibit even lower levels of PI-O than currently

observed. Such a finding would potentially indicate that PI-O in India in general would be lower than in America. Additionally, Christians in the Indian sample, who were overrepresented, demonstrated relatively higher levels of PI-O and PI-HS, and a more representative sample might also reveal these scale scores to be higher in American than in India.

Differences within the Indian sample with respect to PI-R were observed, such that individuals from the low income group reported higher levels than individuals from the middle and above group, with a modest effect trending toward significance. Similar to PI-CM, it is possible that low income individuals experience more PI-R due to worries about financial or economic stability or their quality of life. Causality cannot be inferred, although one can speculate about whether being in a low SES causes rumination and worry, if a downward drift is occurring, or if some interaction explains the relationship. Additionally, a more representative Indian sample may reveal higher aggregate levels of PI-R than observed.

One interesting note was that there were no significant differences with respect to ANOVAs conducted on PI scale differences between religious groups in the Indian sample. The religious group differences on PI-HS and PI-O would have met criteria for significance were it not for the Bonferroni corrections, and the relevant paired group comparisons regarding both of those subscales have been discussed previously.

More precisely, there were certain aforementioned differences between individual pairs of religious groups that produced modest effect sizes, but analyses did not indicate overall significant differences between all groups. In the context of an exploratory cross-cultural study, findings such as this are important for indicating that only certain religious groups differed on certain PI subscales, and only with modest effect sizes. These findings suggest that perhaps differences between religious groups are less meaningful or significant

than would be expected, and may provide evidence that support the ubiquitous influence of the Hindu religion among all religious groups and identities. Additionally, these findings may help lay the groundwork for further, more detailed analyses into specific religious group differences on specific variables. As previously stated, the Indian sample was not nationally representative, and one may again speculate about analyses performed on a more representative sample. Perhaps a more representative sample would indeed reveal differences between religious groups; or, if not, would provide additional support for a lack of meaningful differences between groups.

The results suggest that the Indian sample experiences higher levels of “maladaptive” perfectionism due to their higher levels of PI-CM and PI-PPP. These scores have been associated with higher levels of associated psychopathology in American samples, based on high correlations with other measures as described above, and other indicators of anxiety and depression (Hill et al., 2004).

As a result of the link between perfectionism and psychopathology, a search for prevalence of psychopathology in India was conducted. Data concerning the prevalence of psychopathology in India is difficult to find, and as a result it was necessary to investigate prevalence of specific psychological disorders in a variety of contexts. One particular research article presented broad prevalence rates of common psychological disorders at an urban outpatient clinic in North India; rates included depression (15.7%), generalized anxiety disorder (11.1%), and phobias (10.1%), with 10.6% of individuals reporting previous suicidal ideation (Salve, Goswami, Nongkynrih, Sagar, & Sreenivas, 2012). A recent study indicated that among urban residents of south India, prevalence of depression was 15.1% (Poongothai, Pradeepa, Ganesan, & Mohan, 2009). Among adults age 65 or older, prevalence of anxiety

in urban India was 3.0%, while prevalence of anxiety in older adults in rural India was 0.8% (Prina, Ferri, Guerra, Brayne, & Prince, 2011).

Some of these data are comparable to prevalence rates of depression and anxiety disorder in the US, and in some cases, indicate higher levels of psychopathology, which could have effects in terms of international economic or political collaboration, as well as consequences for individuals from India who choose to relocate to the United States (Kessler, Berglund, Demler, Jin, & Walters, 2005). Based on the documented influence of contextual variables on perfectionism in the current Indian sample, one can speculate on the relationship between psychopathology and contextual variables in India, and potential mediation or moderation of the relationship through variables like education, income, age, or presence of familial psychopathology. Future investigations might seek to document the association between levels of perfectionism and psychopathology in India while also considering contextual demographic variables.

Previous Indian Perfectionism Research

Over 1,200 diverse MTurk participants responded to the questionnaires in the current study, providing a sizeable total number of respondents relative to data reported from a previous Indian undergraduate sample size of 321 (Slaney et al., 2000). The Indian sample in the current study was, on average, approximately seven years older than the Indian undergraduate sample reported by Slaney et al. (2000). Older individuals might be expected to have attained a higher level of formal education and/or may also be more likely to be involved in full-time post-university employment. There is also a question as to whether their findings would hold in a more representative Indian sample.

Indian undergraduates were shown to exhibit high levels of Standards and Order perfectionism (Slaney et al., 2000), which conceptually appear similar to PI subscales of PI-

SE and PI-O (Hill et al., 2004). In the current study, Indians were indeed higher than Americans on PI-SE, consistent with previous findings per Slaney et al. (2004). However, there were no significant differences between samples on PI-O, although the data from the Indian MTurk sample were trending in a direction that would suggest higher levels of PI-O than the American sample, and were also influenced by gender and religious disparities. Furthermore, Slaney et al. (2000) found that Indian undergraduates scored higher than Americans on the Relationships subscale, which focuses on distress related to interpersonal relationships that are perceived to be imperfect, as well as suppression of negative emotions. Conceptually, no PI scales appear to capture these experiences, and as a result no salient comparison is available. No other comparisons appear relevant between the current study and the study performed by Slaney et al. (2004).

MTurk Sample Characteristics

In general, the Indian sample data indicated that a large majority of participants endorsed living in an urban environment, which marks an overrepresentation of urban dwellers compared to census-level data (Census of India, 2011a). The Census of India operationally defined rural and urban environments such that any area that met several clear criteria for urban status was deemed as such, and all other areas that did not meet the entirety of the urban criteria were labeled as rural. I concluded that such a distinction, while necessary for census data collection, was inadequate and likely did not contribute to a meaningful discussion of any potential differences between rural and urban inhabitants.

Similar idiosyncrasies can be found in the American MTurk sample (Mautz, 2012). Compared to census-level data, the American sample featured participants who were predominantly Caucasian, and under-represented other minority populations, save for Asian Americans. Additionally, the American sample significantly over-represented females

compared to expected distributions per census data. As a result, conclusions drawn from the data have limited generalizability to Indians or Americans as broad groups.

MTurk appears to provide an opportunity to collect data from a large number of participants in a relatively quick, inexpensive fashion, which is beneficial for conducting cross-cultural research. However, attention must be paid to MTurk sample characteristics and cross-cultural researchers should consider contextual demographic variables and their influence on any observed differences. In particular, MTurk samples may be more educated than nationally representative samples, as was the case in the current study. This may lead researchers to expect and control for expected differences in their variables of interest as a result of educational differences. The current Indian sample also grossly overrepresented urban citizens; as a result, cross-cultural researchers who wish to study rural citizens may choose not to use MTurk as a research tool. On the other hand, perhaps recruitment of rural participants could be advertised in a widespread manner in rural areas and participants could report to testing centers with Internet access and MTurk availability, although this may limit external generalizability of findings.

MTurk is only available to individuals who have access to the Internet and knowledge of the service itself, so perhaps information regarding the existence of MTurk could be made more readily available in an effort to increase the amount of individuals who are aware of it and who could potentially serve as research participants. In general, MTurk appears to offer unique, yet largely unrepresentative samples. Therefore, cross-cultural research conducted on MTurk should view the data as a piece of a larger puzzle, and integrate findings from MTurk with findings from other methods of participant recruitment to elucidate commonalities between samples. Analysis plans for data collected from MTurk should focus

on measuring contextual demographic variables and analyzing them to better understand how and why observed differences may have arisen as a result of sample characteristics.

Limitations

The findings from this investigation were limited in a number of ways. To begin with, the primary limitation of this study was that the two samples used for comparison, the Indian MTurk sample and the American MTurk sample collected by Mautz (2012) were not representative of either country's population as a whole, in terms of contextual demographic variables described throughout.

Additionally, questionnaires that were administered via MTurk were written in English, primarily due to the (correct) assumption that the majority of respondents would be educated, urban-dwelling Indian citizens, and that these individuals are often proficient with the English language. Conversely, perhaps the current Indian sample represented higher levels of education and urban living precisely due to the fact that the surveys were provided only in English. Considering this, a similar study with measures written in Hindi may attract individuals of a more varied demographic makeup, and therefore provide even more contextualized data. No census-level data are available regarding the prevalence of and proficiency with the English language among Indian citizens. In addition, census-level data concerning education levels among Indian citizens was not available, and therefore rendered comparisons of the representativeness of the sample to the Indian population in terms of education difficult.

Future Research

Future research on perfectionism in individuals from foreign countries such as India could likely build on the current investigation and improve aspects of the research design. First of all, samples collected via MTurk generally do not appear to be representative of

countries of origin as a whole. As a result, future research should focus on the nature of those individuals who utilize MTurk and are likely to respond to psychological research, and how MTurk samples differ from or are similar to national-level samples. Any future cross-cultural studies administered via MTurk would benefit from collecting and considering the impact of contextual demographic variables to provide insight regarding observed level or structure-oriented differences in psychological constructs.

Future research on individuals from India, in particular, would likely benefit by further investigating differences between “rural” and “urban” Indian citizens. In the current study, the sample significantly over-represented Indian citizens who reported living in a primarily urban environment, despite the fact that national census-level data indicated that the majority of Indian citizens live in rural areas. Future investigations might look into the presence of personality differences or similarities between individuals from both types of areas. For example, the current study highlighted differences in PI scale scores as a function of education and income level. A reasonable assumption would follow that individuals who live in urban areas, on average, represent higher levels of achieved education as well as income. One might also consider examining perfectionism in a primarily rural sample of Indian citizens.

An important area of future research would focus on exploring the structure of perfectionism in India in accordance with structure-oriented cross-cultural research. For example, the two-factor structure of perfectionism proposed by Hill et al. (2004) that has been demonstrated in American samples may or may not represent an appropriate fit for individuals from India or other countries. Additionally, Slaney et al.’s (2000) four-factor model proved an adequate fit in the Indian sample in a previous study. Neither an exploratory nor confirmatory factor analysis was performed to examine the fit of the two-factor model of

perfectionism to the Indian sample. A future investigation could analyze perfectionism models for fit to an Indian sample.

Other potential targets for future research include examining the relationship between perfectionism and psychopathology in India, such as anxiety, depressive, and eating disorders. Based on previous literature regarding perfectionism and psychological symptoms in America, the risks for psychopathology in India would be expected to be similarly higher with respect to those with higher levels of perfectionism. On the other hand, aspects of perfectionism have been shown to correlate highly with positive outcomes, including educational achievement and task performance. Future research would benefit from investigating these and other positive, adaptive variables related to perfectionism.

Summary

This investigation analyzed self-reported data from 1,204 Indian citizens regarding perfectionism and other personality traits via MTurk, an online “microworking” site offered through Amazon. The Indian sample was composed primarily of urban-dwelling, bachelor’s-level or higher educated male citizens, with an average age of 27 years. The American sample to which the Indian sample was compared featured a majority of females, with an average age of 32 years. The main findings regarding perfectionism indicated higher levels of PI-SE in the Indian sample and higher levels of PI-P and PI-NA in the American sample. Other interesting results revealed higher levels of PI-CM and PI-PPP in the Indian sample compared to the American sample. Several perfectionism constructs appeared to be statistically equivalent among samples, including PI-HS, PI-NA, PI-O, and PI-R. The study was limited in that the two MTurk samples were not fully representative of their respective populations, limiting the ability to draw broad conclusions about perfectionism differences and similarities between Indians and Americans as a whole. In addition, instruments written

only in English were used. Cross-cultural research with MTurk appears to provide unique samples, and would benefit from the inclusion and analysis of contextual variables.

Contextual demographic variables such as gender, education, income, and religious affiliation influenced scale score differences within and between samples. Future cross-cultural research should consider investigating perfectionism in more rural Indian citizens as well as the factor structure of perfectionism in Indian samples.

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Table 1
Representativeness of Indian and American Samples

Indian Sample	Sample Percentage	National Percentage	X^2	p	OR
Male	65.0	51.5	88.92	< .001	1.75
Female	34.9	48.5			0.57
Rural	16.0	68.8	1559.84	< .001	0.09
Urban	83.9	31.2			11.54
Hindu	65.3	80.5	1367.0	< .001	0.46
Muslim	12.0	13.4			0.88
Christian	18.2	2.3			9.46

American Sample	Sample Percentage	National Percentage	X^2	p
Male	34.1	49.2	46.68	< .001
Female	65.9	50.8		
Caucasian	78.7	63.3	98.52	< .001
African-American	6.3	12.2		
Hispanic/Latino	3.7	16.7		
American Indian	0.2	0.7		
Asian	8.1	4.8		

Note: All statistics are significant at the $p < .05$ level. OR = Odds Ratio.

Table 2
Descriptive Statistics and Correlations in Indian and American Samples

	1	2	3	4	5	6	7	8	<i>M</i>	<i>SD</i>
1. CM	.78	.46*	.77*	.05	.31*	.20*	.82*	.56*	2.78	0.99
2. HS	.49*	.68	.32*	.24*	.26*	.24*	.43*	.52*	3.19	0.90
3. NA	.68*	.46*	.79	.01	.26*	.26*	.81*	.40*	3.30	0.99
4. O	.08	.19*	-.02	.77	.13	.36*	.07	.38*	3.63	0.96
5. PPP	.39*	.29*	.35*	.20*	.81	.12	.31*	.40*	2.99	1.15
6. P	.16*	.22*	.11*	.54*	.28*	.70	.31*	.34*	3.96	0.69
7. R	.67*	.44*	.68*	.09*	.42*	.21*	.77	.54*	3.29	1.00
8. SE	.23*	.29*	.18*	.53*	.30*	.49*	.33*	.66	3.30	0.92
<i>M</i>	2.99	3.14	3.17	3.71	3.37	3.76	3.31	3.73		
<i>SD</i>	0.66	0.57	0.64	0.56	0.68	0.48	0.65	0.58		

Note. Italicized values indicate significance at the $p < .01$ level (two-tailed). Italicized values with an asterisk (*) indicate significance at the $p < .001$ level (two-tailed). Regular font values are not significant. Bold values on the main diagonal represent internal consistency values for the Indian sample. Values above the main diagonal represent values from the American sample. Values below the main diagonal represent values from the Indian sample. Means and Standard Deviations below the table represent values from the Indian sample. Means and Standard Deviations to the right of the table represent values from the American sample.

Table 3

Differences between Perfectionism Inventory Scale Score Means for Americans and Indians

	Americans	Indians	<i>t</i>	<i>p</i>	<i>d</i>
CM	2.78 (0.99)	2.99 (0.66)	-4.38*	< .001	-0.25
HS	3.19 (0.90)	3.14 (0.57)	1.14	.257	0.07
NA	3.30 (0.99)	3.17 (0.64)	2.81*	.005	0.16
O	3.63 (0.96)	3.71 (0.56)	-1.80	.073	-0.10
PPP	2.99 (1.15)	3.37 (0.68)	-6.99*	< .001	-0.40
P	3.96 (0.69)	3.76 (0.48)	5.96*	< .001	0.34
R	3.29 (1.00)	3.31 (0.65)	-0.37	.711	-0.02
SE	3.30 (0.92)	3.73 (0.58)	-9.76*	< .001	-0.56

Note. Standard Deviations appear in parentheses below means. Significant group differences at the $p < .00625$ level are indicated by asterisks. CM = Concern Over Mistakes. HS = High Standards for Others. NA = Need for Approval. O = Organization. PPP = Perceived Parental Pressure. P = Planfulness. R = Rumination. SE = Striving for Excellence.

Table 4

Statistically Significant Differences between Genders in the Indian Sample

	Males	Females	<i>t</i>	<i>p</i>	<i>d</i>
CM	2.98 (0.65)	3.02 (0.66)	-1.06	.287	-0.06
HS	3.15 (0.56)	3.13 (0.58)	0.65	.517	0.04
NA	3.17 (0.66)	3.17 (0.62)	-0.15	.885	0.00
O	3.63 (0.56)	3.86 (0.53)	-6.86*	< .001	-0.42
PPP	3.38 (0.67)	3.35 (0.72)	0.57	.569	0.04
P	3.73 (0.49)	3.81 (0.46)	-2.61	.009	-0.17
R	3.27 (0.64)	3.38 (0.65)	-2.68	.008	-0.17
SE	3.70 (0.59)	3.78 (0.54)	-2.23	.026	-0.14

Note: Standard Deviations appear in parentheses below means. Significant differences at the $p < .00625$ level are indicated by asterisks. CM = Concern Over Mistakes. HS = High Standards for Others. NA = Need for Approval. O = Organization. PPP = Perceived Parental Pressure. P = Planfulness. R = Rumination. SE = Striving for Excellence.

Table 5

PI Scale Score Differences Between Religious Groups in the Indian Sample

	H	M	C	<i>F</i>	<i>p</i>	η_p^2	H-M <i>d</i>	M-C <i>d</i>	H-C <i>d</i>
CM	2.99 (0.66)	2.99 (0.61)	3.02 (0.65)	0.15	.864	.000	0.00	-0.05	-0.05
HS	3.14 (0.55)	3.05 (0.55)	3.20 (0.60)	3.08	.046	.005	0.16	-0.26	-0.10
NA	3.16 (0.63)	3.19 (0.61)	3.23 (0.70)	1.10	.332	.002	-0.05	-0.06	-0.11
O	3.71 (0.56)	3.64 (0.57)	3.79 (0.52)	3.45	.032	.006	0.12	-0.28	-0.15
PPP	3.34 (0.71)	3.43 (0.60)	3.46 (0.65)	2.92	.054	.005	-0.14	-0.05	-0.18
P	3.76 (0.47)	3.70 (0.46)	3.81 (0.48)	2.30	.100	.004	0.13	-0.23	-0.11
R	3.32 (0.64)	3.29 (0.64)	3.32 (0.68)	0.18	.832	.000	0.05	-0.05	0.00
SE	3.74 (0.57)	3.66 (0.51)	3.74 (0.61)	1.49	.226	.003	0.15	-0.14	0.00

Note. Significance *F* statistics at the $p < .00625$ are indicated by asterisks. CM = Concern Over Mistakes. HS = High Standards for Others. NA = Need for Approval. O = Organization. PPP = Perceived Parental Pressure. P = Planfulness. R = Rumination. SE = Striving for Excellence. H = Hindu. M = Muslim. C = Christian. H-M: Hindu-Muslim comparison effect size. M-C: Muslim-Christian comparison effect size. H-C: Hindu-Christian comparison effect size.

Table 6

PI Scale Score Differences Between Income Groups in the Indian Sample

	Rs 1 lakh						L- LM	LM- M+	L- M+
	<Rs 1 lakh	- Rs 3.4 lakh	>Rs 3.4 lakh	<i>F</i>	<i>p</i>	η_p^2	<i>d</i>	<i>d</i>	<i>d</i>
CM	3.07 (0.59)	3.01 (0.66)	2.92 (0.69)	5.01	.007	.008	0.10	0.13	0.23
HS	3.12 (0.54)	3.11 (0.57)	3.20 (0.59)	2.67	.069	.004	0.02	-0.16	-0.14
NA	3.26 (0.56)	3.18 (0.64)	3.09 (0.70)	6.91*	.001	.011	0.13	0.13	0.27
O	3.68 (0.49)	3.75 (0.53)	3.69 (0.63)	2.16	.116	.004	-0.14	0.10	-0.02
PPP	3.48 (0.60)	3.43 (0.65)	3.21 (0.76)	17.15*	< .001	.028	0.08	0.31	0.39
P	3.75 (0.48)	3.78 (0.48)	3.75 (0.48)	0.57	.565	.001	-0.06	0.06	0.00
R	3.38 (0.57)	3.34 (0.65)	3.22 (0.69)	6.37*	.002	.011	0.07	0.18	0.25
SE	3.70 (0.53)	3.74 (0.58)	3.73 (0.61)	0.57	.567	.001	-0.07	0.02	-0.05

Note: Significant *F* statistics at the $p < .00625$ level are indicated by asterisks. CM = Concern Over Mistakes. HS = High Standards for Others. NA = Need for Approval. O = Organization. PPP = Perceived Parental Pressure. P = Planfulness. R = Rumination. SE = Striving Excellence. L-LM = Low - Low Middle Class comparison. LM-M+ = Low Middle - Middle and Above comparison. L-M+ = Low - Middle and Above comparison. Low: < Rs 1 lakh. Low Middle: Rs 1 lakh – Rs 3.4 lakh. Middle and Above: > Rs 3.4 lakh

Table 7

PI Scale Score Differences Between Education Groups in the Indian Sample

	Secondary Education or Less	First University Degree	Post- Graduate Degree	<i>F</i>	<i>p</i>	η_p^2	S-F <i>d</i>	F-P <i>d</i>	S-P <i>d</i>
CM	3.07 (0.71)	3.00 (0.64)	2.97 (0.67)	0.98	.375	.002	0.10	0.05	0.15
HS	3.20 (0.55)	3.14 (0.56)	3.14 (0.59)	0.55	.576	.001	0.11	0.00	0.11
NA	3.27 (0.67)	3.17 (0.63)	3.15 (0.65)	1.43	.241	.002	0.15	0.03	0.18
O	3.53 (0.61)	3.71 (0.53)	3.75 (0.58)	6.06*	.002	.010	-0.32	-0.07	-0.37
PPP	3.51 (0.73)	3.39 (0.64)	3.31 (0.73)	4.16	.016	.007	0.18	0.12	0.27
P	3.66 (0.60)	3.76 (0.44)	3.77 (0.50)	2.23	.108	.004	-0.19	-0.02	-0.20
R	3.31 (0.59)	3.32 (0.62)	3.29 (0.69)	0.34	.709	.001	-0.02	0.05	0.03
SE	3.65 (0.60)	3.74 (0.56)	3.73 (0.59)	0.92	.400	.002	-0.16	0.02	-0.13

Note: Significant *F* statistics at the $p < .00625$ level are indicated by asterisks. S-F: Secondary or Less – First University comparison effect size. F-P: First University – Post-Graduate comparison effect size. S-P: Secondary or Less – Post Graduate comparison effect size.

Appendix A

Date: 3/20/2012

RE: Notice of IRB Exemption

Study #: 12-0229

Study Title: Perfectionism in India Compared to America: A Cross-Cultural Internet-Based Assessment

Exemption Category: (2) Anonymous Educational Tests; Surveys, Interviews or Observations

This submission has been reviewed by the IRB Office and was determined to be exempt from further review according to the regulatory category cited above under 45 CFR 46.101(b).

Should you change any aspect of the proposal, you must contact the IRB before implementing the changes to make sure the exempt status continues to apply. Otherwise, you do not need to request an annual renewal of IRB approval. Please notify the IRB Office when you have completed the study.

Best wishes with your research!

CC:

Robert Hill, Psychology

Appendix B

Information to Consider About this Research

Principal Investigator: Stephen Semcho and Dr. Robert W. Hill

Department: Psychology

Contact Information: Stephen Semcho, Psychology Department, Appalachian State University, Boone, NC, 28608.

Dr. Robert W. Hill, Psychology Department, Appalachian State University, Boone, NC, 28608.

This study #12-0229 was approved by the Appalachian State University Institutional Review Board on 3/20/2012.

What is the purpose of this research?

This research is intended to inform the field of research regarding individual personality traits and behaviors.

What will I be asked to do?

You will be asked to answer a series of multiple-choice questions pertaining to your personality and behavior requiring about 30-60 minutes.

What are possible harms or discomforts that I might experience during the research?

To the best of our knowledge, the risk of harm for participating in this research study is no more than you would experience in everyday life.

What are the possible benefits of this research?

You likely will experience no personal benefit from your participation, other than your Mturk compensation, but the information gained through this research will inform various fields of personality research.

Will I be paid for taking part in the research?

Yes. For your participation, you will be paid \$.50. *Note: participation that yields less than truthful responses will result in no compensation. Please pay attention to your responses and be honest.

How will you keep my private information confidential?

No identifying information will be asked of any participant, nor will any data be released beyond the control of the principle investigators and research committee.

Who can I contact if I have questions?

You may contact the Principal Investigators through email at semchosa@email.appstate.edu or hillrw@appstate.edu if you have concerns. If you have questions about your rights as someone taking part in research, contact the Appalachian Institutional Review Board Administrator at 828-262-2130 (days), through email at irb@appstate.edu or at Appalachian State University, Office of Research and Sponsored Programs, IRB Administrator, Boone, NC 28608.

Do I have to participate? What else should I know?

Your participation in this research is completely voluntary. If you choose not to volunteer, there will be no penalty and you will not lose any benefits or rights you would normally have. If you decide to take part in the study you still have the right to decide at any time that you no longer want to continue. There will be no penalty and no loss of benefits or rights if you decide at any time to stop participating in the study. However, if you decide to stop during the survey task, you will not receive compensation.

I have decided I want to take part in this research. What should I do now?

YOU MUST BE 18 YEARS OF AGE OR OLDER TO PARTICIPATE IN THIS RESEARCH.

I have read all of the above information. I understand that I can stop taking part in this study at any time. I understand I am not giving up any of my rights. By continuing with the on-line questionnaires I consent to participate.

Vita

Stephen Andrew Semcho was born in Johnson City, New York to Steve and Nancy Semcho. Mr. Semcho graduated from Cary High School in May 2006. In August 2006, Mr. Semcho began his undergraduate studies at the University of North Carolina at Chapel Hill, and graduated in May 2010 with a Bachelor of Arts degree in Psychology and a Second Major in French and Francophone Studies. In August 2011, Mr. Semcho enrolled in the Master of Arts in Clinical Health Psychology program at Appalachian State University. He received his Master of Arts in Clinical Health Psychology in May 2014. This investigation is Mr. Semcho's Master's thesis and was supervised by Robert W. Hill, Ph.D., Appalachian State University.