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**CROSS-CULTURAL DIFFERENCES IN SELF-PROMOTION:
A STUDY OF SELF-CITATIONS IN MANAGEMENT JOURNALS**

NICK DESCHACHT & BIRGITT MAES¹

Abstract

We study cross-cultural differences in self-promotion by comparing the self-citation behavior of scholarly authors originating from individualist and collectivist cultures, using original data on 1,346 journal articles published between 2009 and 2014 in the fields of Management and Business. Our main finding is that articles by authors from individualist cultures are about twice as likely to contain many self-citations. Our results confirm the presence of a gender gap in self-citations, but we show that this effect is smaller than the cultural effect and that the effect appears to be stable across cultures. These findings show that the structure of rewards and costs associated with particular self-promotion tactics differ from culture to culture. Implications of cultural variations in self-promotion are discussed.

Practitioner points

- We develop theory and provide empirical evidence about cultural and gender differences in self-promoting behavior.
- As the workforce diversifies, a broader awareness of these differences might affect the actions of both employees and HR departments.

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INTRODUCTION

Self-promotion is the practice in which individuals tend to emphasize their strengths and talents. It is a form of impression management aimed at improving one's image and status and especially used in competitive contexts (e.g. during job interviews). Examples of self-promotion include pointing with pride to one's accomplishments or making internal rather than external attributions for achievements during a job interview (Rudman, 1998). If self-promotion in the labor market increases the chances of being hired or promoted, then self-promotion is a career determinant and group differences in such self-promoting behavior (say between genders or cultural origins) may contribute to the observed career and leadership gaps between these groups. Since the composition of the labor force has been diversifying due to globalization and the increased participation of women, it is important to understand to what extent career gaps between various groups exist and what causes them.

The early evidence on group differences in self-promoting behavior came from lab experiments (Rudman, 1998). More recently, scholars have tried to measure self-promotion by observing real-world behavior. Within the academic world self-promotion frequently occurs in the form of self-citing and scholarly articles therefore represent useful output to analyze self-promoting behavior. Maliniak, Powers and Walter (2013) calculate the number of self-citations of scholarly authors and interpret this as a measure for self-promotion. They find that male authors are more likely to self-cite than female authors in the field of political sciences. Self-citing behavior in academia provides an interesting and valid "case study" into group differences in self-promotion more generally in the labor market. But studying academic careers is also interesting in its own right because academia is an important job market and because many academic career gaps appear to persist (Barres, 2006; Kretschmer & Kretschmer, 2013; OECD, 2006). Self-citation increases the chance of being hired or promoted in the academic world because the number of citations is used as a measure of the importance of the author's work in evaluations. Some departments try to correct for self-promoting behavior by excluding self-citations from the number of citations in evaluation procedures – a practice which demonstrates that the academic community regards self-citing

primarily as an act of self-promotion. However, excluding the number of self-citations does not produce an unbiased measure because self-citing tends to substantially increase the number of citations received from others (Fowler & Aksnes, 2007). So even if self-citations would be excluded in every evaluation, self-citing would remain a fruitful strategy for self-promotion. Moreover, we argue that some self-promotion tactics, including self-citation behavior, may be beneficial even when the behavior is recognized by the target as mere impression management because it signals ambition and thus creates what we call a “second-order impression”.

We contribute to various literatures. First, our study is related to the literature on models of workplace impression management behavior (Leary & Kowalsky, 1990; Johnson, Griffith & Buckley, 2016). We apply and expand the cost-reward model by considering the decisions to engage in impression management and to adopt a particular tactic as an investment decision, where costs are incurred today in return for expected rewards in the future. We identify the various components that affect the structure of costs and rewards and develop a framework that can be used to study cross-cultural differences in impression management behavior. Second, we contribute to the empirical literature on cultural differences in impression management using evidence from directly observed real-world behavior. While some authors hypothesize that impression management is more common in Eastern cultures where people tend to have a more interdependent view of themselves so that appropriate impressions are required to avoid public embarrassment, our study presents further evidence of the fact that at least some tactics are more common in Western cultures (Lalwani & Shavitt, 2009). Third, our study is also related to the empirical literature on self-citation behavior (Maliniak et al. 2013). Our study is – to the best of our knowledge – the first to provide evidence on cross-cultural differences in self-citing behavior. This question is relevant because globalization increasingly impacts the workforce of academic institutions. We also build upon the analysis on the gender self-citation gap by Maliniak et al. (2013) by studying how these gender gaps vary across cultures. The remainder of this article is as follows: section 2 summarizes the literature and develops the hypotheses that will be tested in this study, section 3 presents the data and methods for the

empirical analysis, section 4 presents the results and section 5 discusses the main findings and conclusions.

LITERATURE

The Cost-Reward Model of Self-Promotion

Self-promotion can be defined as a practice in which individuals emphasize their strengths and talents, internally rather than externally attribute their achievements, take pride in their contributions, and underline positive aspects of themselves rather than negative (Heine, Lehman, Markus, & Kitayama, 1999; Heine, Kitayama, & Lehman, 2001; Mezulis, Abramson, Hyde, & Hankin, 2004; Rudman, 1998). Self-promotion is one form of self-presentation or impression management (IM), which in our understanding encompasses any behavior designed to influence others' perceptions to generate some reward, i.e. some desired outcome (Johnson et al., 2016). IM can take place in a great variety of settings, including political elections, intimate relationships or the workplace. Our study is focused on workplace IM, which includes attempts by job applicants or workers to get employers or supervisors to see them the way they want to be seen in order to get hired or promoted. The literature on IM has developed a range of concepts and models to more formally describe decisions to engage in IM behavior (Schlenker, 1980; Leary & Kowalsky, 1990; Johnson et al., 2016). The person engaging in the IM behavior is referred to as the actor and the person on the receiving end of the influence attempt is the target. The various ways in which an actor can engage in IM are called tactics. Examples of workplace IM tactics include complimenting a co-worker (ingratiation), denying responsibility for the failure of one's project (excuses), or pointing out the strengths one might bring to an organization in an interview (self-promotion).

Our theoretical framework for analyzing self-promotion is inspired by the cost-reward model of IM (Leary & Kowalsky, 1990). We argue that workplace IM can be regarded as an investment decision, in the sense that the actor incurs a cost today in order to create an impression in the eyes of the target and increase the probability of a future reward, which is the expected return on investment. As in other investment decisions, it is rational to invest in an impression using a particular tactic

when the expected benefits exceed the costs of using that tactic. We also allow for the possibility that a certain impression can be created in different ways, i.e. using different IM tactics. This possibility is especially important in cross-cultural research, because different IM tactics could be required in different cultures in order to create the same impression. In other words, we assume that the “technology” with which impressions can be created, is culturally determined.

The costs of an impression may be pecuniary, for example resulting from expenditures on beauty and clothing. But there may be non-pecuniary costs as well when IM behavior is recognized and considered to be unacceptable by others, including the target, co-workers and society at large. With regards to the target it should be kept in mind that IM tactics are risky by nature, in the sense that there could be adverse effects for the actor when the target recognizes the behavior as “mere impression management”. If the target interprets the behavior as the spreading of false information in order to influence the target’s decision, then the IM attempt could result in a lower chance of obtaining the reward. However, workplace IM may in some cases be interpreted by the supervisor as a signal for the employee’s ambition or commitment, which would then increase the probability of obtaining the reward even though the employee’s behavior was recognized as IM. In fact, the actor may have some knowledge about the risks of being recognized associated with each IM tactic and may use that knowledge in the process of deciding whether to engage in IM and what tactics to choose. This leads to a more complicated set of IM tactics aimed at creating what we call a “second-order impression”, i.e. any positive impression created by a recognized IM attempt (in the workplace or in any other setting). For example, an actor could aim to signal his or her ambition to a supervisor (the second-order impression) by engaging in IM behavior that is seemingly attempting to create a (first-order) impression of competence or gratitude, when the behavior is very likely to be recognized as IM. By taking into account how supervisors interpret IM behavior, this theoretical framework is closely related to the emerging literature on how the motives attributed to employee behavior influence the evaluations of these employees by supervisors (Halbesleben, Bowler, Bolino & Turnley, 2010).

The expected benefits of an impression depend on the size of the reward and on the effect of the impression on the probability of winning the award. Leary and Kowalsky (1990) refer to these same factors as respectively the value of desired goals and the goal-relevance of the impression. For example, a job applicant will be more motivated to manage his or her impressions before an interviewer if the job is highly desirable (big reward). The impression effect is determined by factors such as the extent to which the actor depends on the target for the outcome and the extent to which the impression can determine the decision of the target on how to allocate the reward, which in turn depends on the current image of the actor and the intensity of competition for the reward.

The cybernetic model of IM proposed by Johnson et al. (2016) rightly emphasizes that IM behavior is dynamic in the sense that actors continually adjust their IM behavior based on the feedback they receive from the target. Decision making in the cost-reward framework should also be regarded as dynamic. Actors learn about the costs and expected rewards of their IM tactics by relying on the target's behavior to infer information on the extent to which certain IM tactics are acceptable and efficient.

Cultural Variability in Self-Promotion

The literature suggests that people in all cultures engage in IM behavior, although the tactics and aims of IM may differ considerably from culture to culture (Lalwani & Shavitt, 2009). For example, empirical evidence shows that natives and immigrants with different cultural backgrounds use different IM tactics (Zaidman & Drory, 2001) and that self-promoting behavior among managers is accepted and even required in the US while it is essentially taboo in the UK (Molinsky, 2013), although no differences were found when comparing managers in the UK and Sweden (Singh & Vinnicombe, 2001). Lalwani and Shavitt (2009) present evidence on the relation between cultural factors and the aims of IM: respondents with an independent (vs. interdependent) self-construal showed an increased tendency to present themselves as skillful and capable and a decreased tendency to present themselves as socially sensitive and appropriate. Another issue, on which there appears to

be a debate, is whether IM behavior is stronger in some cultures than in others. Some studies suggest that IM is more pronounced in Western nations than in Eastern cultures (Brown & Kobayahsi, 2002; Heine et al., 2001; Mezulis et al., 2004; Riemer & Shavitt, 2011; Silvera & Seger, 2004). However, other authors expect IM to be stronger in Eastern cultures where people tend to have a more interdependent view of themselves, so that appropriate impressions are required to avoid public embarrassment (Lalwani & Shavitt, 2009).

The cost-reward model of self-promotion, developed in the previous paragraph, provides a useful framework for analyzing cultural differences in the decision to engage in self-promotion behavior and to use particular self-promotion tactics. Cultural differences in the structure of the rewards and costs associated with investments in particular self-promotion tactics, would produce cultural variability in self-promotion. The rewards aimed at by IM behavior (such as being hired or getting promoted) may be affected when the value or the importance attached to these rewards differs across cultures or when similar impressions have a different effect on the probability of obtaining rewards across cultures. Also, if the same impression can be created using various IM tactics, then the tactics chosen might differ across cultures if some tactics are more efficient to create this impression in certain cultures. The cost structure may be affected when recognized IM tactics are less acceptable in some cultures than in others. According to Zaidman and Drory (2001), the literature largely overlooks this issue of how legitimate it is to use a particular tactic to deliberately attempt to impress one's superior.

Expressions of self-promotion are intrinsically related to the self-construal: the image and perception individuals have of themselves and how they define and express their 'self' (Markus & Kitayama, 1991). Independent self-construals emphasize independence of individuals, self-actualization, internal attribution of achievement, personal success, self-sufficiency, and development of own potential (Sedikides, Gaertner, & Toguchi, 2003). Furthermore, independent self-orientations result in stronger tendencies to self-enhance (Heine, 2001; Heine et al., 2001). In contrast, interdependent self-construals fundamentally rely on connectedness with others, intergroup harmony, reliance, inclusion, and responsibility towards the group. Although individuals with interdependent

self-orientations are characterized by their own thoughts, opinions, and attributes, they are expressed in context-specific ways and do not seek to fulfill individual objectives (Heine, 2001; Heine et al., 2001; Markus & Kitayama, 1991). It is argued that individuals with independent self-construals are more inclined to engage in self-promoting behavior and are more likely to evaluate themselves positively, whereas individuals with an interdependent self-construal do not experience the same type of motivation and instead demonstrate more tendencies to self-improve and maintain interpersonal relationships (Cai, Brown, Deng, & Oakes, 2007; Nishikawa, Norlander, Fransson, & Sundbom, 2007; Ross, Heine, Wilson, & Sugimori, 2005).

Cross-cultural research shows that certain cultural dimensions correspond to the predominance of either independent or interdependent self-construals. An important dimension is individualism, which represents the relationship between individuals. In individualistic cultures, social bonds between individuals are rather loose and strong emphasis is put on the personal development of people as separate individuals (Hofstede, 2001). Such cultures emphasize agentic traits and emphasize autonomy and self-containment. Its counterpart, collectivism, represents tight social bonds and fosters the development of interdependent selves, strongly emphasizing communion, intergroup harmony, and group loyalty. Individualism and collectivism consist of fundamentally different views on the relationships between individuals and groups and will therefore have a differential impact on the development of the self and the tendency to self-enhance.

Levels of self-enhancing bias are also related to gender and this relation may well interact with culture. Gender stereotypes and assumed sex-roles assign different behavior patterns to people depending on whether they are male or female: men are expected to exhibit agentic traits, self-confidence, and assertiveness whereas women are expected to possess communion traits and express modesty and affiliation (Rudman & Glick, 1999). Socialization and gender stereotyping has made it more acceptable for men to self-promote and self-advocate whereas women are penalized for it (Buss, 1990; Rudman, 1998). External demands for female modesty in achievement situations, such as the academic community, and the penalization of counter-stereotypical gender behavior negatively

affect women's opportunities to progress (Heatherington, Daubman, Bates, Ahn, Brown, & Preston, 1993).

Self-citation Behavior

Self-citation is a practice in which authors cite their previous work. Authors use self-citations for multiple reasons: to increase visibility of their own work, to add further elements to earlier work, to render previous work more valid or to establish a form of authority within a specific area (Fowler & Aksnes, 2007; Pichappan & Sarasvady, 2002). As argued by Glänzel, Debackere, Thijs and Schubert (2006), authors frequently self-cite to indicate that they are referring to their previous findings from prior work, to build upon their own results or to limit the length of the article by simply referring to previous work instead of recapitulating. In the same vein, Hyland (2003) states that author self-citation can be seen as a neutral form of self-reporting by means of which the author simply tries to incorporate previous work within recent research activities. This view regards self-citing as a natural act resulting from the research process and research activities the author is engaged in. Current research activities often build upon or tie in with past research and it is therefore reasonable for authors to establish a cognitive link between current and past work by means of self-citations (Pichappan & Sarasvady, 2002). A second motive to self-cite is to construct greater credibility and to promote the authors' previous research. In this view, self-citations are used as a tool to seek personal gratification, appraisal, and promotion or as a rhetorical tool in the process of rendering previous work more visible and validated (Brybaert & Smyth, 2011; Fowler & Aksnes, 2007). Hyland (2003) calls this type of citing behavior a kind of "academic egotism". In this view self-citations are purposely applied in order to create a scholarly and intellectual image of the researcher (Cronin & Shaw, 2002).

It has become an increasingly accepted practice within the scientific community to assess the performance and achievements of academic researchers by means of quantitative analyses and to base hiring, promotion, and even research funding decisions on the resulting evaluations.

Researchers' impact on the scientific community is measured by the number of citations of a publication. Several researchers argue that the practice of self-citing can be misused by authors in order to strategically inflate their citation rate and thereby misrepresenting the impact of the article, overestimating its contribution to the field, and bias perceptions of the researcher's scientific authority (Foo, 2011; Gami, Montori, Wilczynski, & Haynes, 2004; Glänzel et al., 2006; Pichappan & Sarasvady, 2002). Furthermore, Fowler and Aksnes (2007) conclude that self-citing has a self-reinforcing effect because the practice of self-citing tends to increase the number of citations received from others (they estimate that each self-citation generates an additional 3.65 citations from others after ten years). This potentially creates a vicious citation cycle where these articles are cited simply because they are highly cited and where a Matthew effect results in the overrecognition of the authors involved (Davis, 2009).

Although in some cases there may be valid reasons for self-citation when building on ideas from one's previous work, we assume that self-citation can be regarded as a self-promotion tactic (Maliniak et al. 2013). It differs from other tactics in the sense that it is specific to the academic world. The target of self-citation behavior may be a particular supervisor, for example a faculty dean, but given the highly mobile and global nature of academic careers, it is probably more correct to regard the target in a more impersonal manner as any possible future employer. The aim of self-citation behavior may be to create an impression of scientific authority by inflating citation rates, but it is well possible that actors take into account that, should their behavior be recognized as self-promotion, a second-order impression of ambition is created that could be beneficial.

Cross-cultural differences in self-citation behavior may arise if culture is related to the value attached to being employed or promoted in the academic world, to the effect of citations on hiring and promotion chances or to the extent to which self-citation is regarded a legitimate self-promotion tactic. Studying cross-cultural differences may also shed more light on the debate about gender differences in self-promotion. A recent study by Maliniak et al. (2013) in the field of political science (international relations) found that female authors are systematically less cited than male authors, that female authors tend to cite themselves less than men and that men cite men more than women. The

authors argue that both men and women regard self-citing as a form of self-promotion, but that women are less likely to self-promote because it might not conform to their expected gender-roles. The reasons for such gender differences in self-promotion remain unclear and the deeper debate is between essentialist theories – rooted in biology, evolutionary psychology and innate preferences – and feminist theories – rooted in sociology, social psychology and the adoption of culturally determined sex roles. Cross-cultural studies can provide evidence on the relative importance of biological versus cultural factors because, if gender differences are biologically determined, then the same differences ought to be seen in all cultures (Costa Jr, Terracciano, & McCrae, 2001). When it comes to self-citation in scholarly journals, it should be kept in mind that self-citation is a relatively anonymous way of self-promotion. Even academics that would not ever consider boasting about their own performance face-to-face might not feel so constrained in the publication process. This is an additional advantage of using self-citations as an objective measure for self-promoting behavior.

Our study aims to contribute to the literature by evaluating the following hypotheses:

Hypothesis 1. Authors with an individualist cultural background tend to self-cite more often than other authors.

Hypothesis 2. The effect of the author's gender on self-citation behavior differs by the cultural background of the author.

METHODS

The empirical analysis is based on original data on the number of self-citations and the cultural background of the author in 1,346 journal articles published between 2009 and 2014 in the fields of Business and Management. The data come from the Web of Science and Scopus citation databases, supplemented by additional data regarding the gender of the reprint author which we collected by online observation.

The articles included in the sample were selected by means of probabilistic stratified sampling. The population of articles was divided into strata according to the country of origin of the author (to increase the variation of the main independent variable in this study) and according to the journal in which the article was published. In order to obtain a sample that is representative for journals in the fields of Business and Management, the articles were extracted from six journals with varying impact factors: the Academy of Management Journal (2014 5-year Impact Factor = 9.8), the Journal of Management (IF = 9.2), Strategic Management Journal (IF = 6.1), the Journal of International Business Studies (IF = 6.1), Industrial Marketing Management (IF = 2.4) and Asian Business & Management (IF = 0.5). In order to maximize the variation of the cultural background of the author, the articles included in the sample had reprint author's addresses in one of the following countries (Hofstede's individualism index score in parentheses): United States (.91), Great Britain (.89), Netherlands (.80), Canada (.80), Denmark (.74), Sweden (.71), Ireland (.70), Norway (.69), Finland (.63), Japan (.46), Singapore (.20), China (.20), South Korea (.18) and Taiwan (.17).

The number of self-citations was calculated by counting the number of times the reprint author's name was mentioned in the cited references of the particular article. Any mention of the first author's name in the cited references was labeled as a self-citation, regardless of whether the author was first author or co-author of the cited reference in particular. Counting was done in MS Excel spreadsheets by applying a function that counted the number of times the author's last name plus first name initial appeared in the cited references.

We constructed two measures for the cultural background of the author: one based on the location of residence and another based on the ethnicity of the author predicted by the author's name. The location of residence was determined using the reprint author's address. Among the fourteen countries of residence listed above, most of the authors of the articles in our sample are located in the US (53%), Great Britain (10%) and China (7%). The predicted ethnicity was constructed using the Ethnea ethnicity classifier software (Torvik & Agarwal, 2016), which classifies names into ethnicities (for example Ian Foster is classified as English and Kang Shin as Korean). The authors of our 1,346 articles were classified into 114 distinct predicted ethnicities, with most authors classified

as English (29%), Chinese (16%) or Nordic (8%). Note that English is used here as an ethno-linguistic group and thus not only refers to authors from England, but also from the US, Canada and Anglophone authors from other countries. To each location and to each ethnicity we then attached a score for individualism based on Hofstede's (2001) national index scores for individualism. In the case of ethnicities we calculated the individualism score as an average of the national scores of countries where that ethnicity is dominant. For example, the score for Slavic ethnicity was calculated as the mean of the scores for the five most populated countries with Slavic languages (Russia, Poland, Ukraine, Serbia and the Czech Republic). Hofstede derived these individualism scores by conducting cross-country surveys on employee attitudes and applying factor analysis to these data to derive a limited number of so-called cultural dimensions. The individualism-versus-collectivism dimension reflects the extent to which society emphasizes personal development and autonomy as opposed to group loyalty, which is the theoretically relevant cultural dimension for self-promotion. Hofstede also distinguished four other cultural dimensions but their theoretical effect on self-promotion is less clear. Moreover, a multivariate analysis in our sample in which the number of self-citations was regressed on all five cultural dimensions showed that only the individualism dimension has a significant effect. There is a debate among intercultural researchers on the validity of Hofstede's dimensions, which has resulted in a number of alternative indices. The most widely used alternative in the field are the index scores derived by the Global Leadership and Organizational Behavior Effectiveness (Globe) Project (House, Hanges, Javidan, Dorfman, & Gupta, 2004). In order to check whether the results in this study are sensitive to Hofstede's scores, all analyses are repeated using the Globe index scores for performance orientation and institutional collectivism values.

Gender of the reprint author was determined via the author's personal or university webpage by looking at pictures, indicating pronouns (such as she, he, his or her) and information in the curriculum vitae. Only in 10 instances we could not determine the author's gender this way, which reduced the sample size from 1,356 to 1,346 journal articles.

The main variables used in the analyses (number of self-citations, cultural background and gender) all relate to the reprint author (i.e. the corresponding author) of a journal article. The role of

the corresponding author is to respond to questions from readers and also to be responsible for correspondence with the journal before acceptance and publication. We focus on the reprint author because only the address of reprint authors is systematically recorded in citation databases. However, focusing on the reprint author does not introduce implausible assumptions because bibliometric research indicates that the reprint author is the author contributing more to the article (Mattsson, Sundberg, & Laget, 2010; Wren, Kozak, Johnson, Deakyne, Schilling, & Dellavalle, 2007).

The relation between national culture and the number of self-citations is studied using count data regression models. Count data models are appropriate because our dependent variable, the number of self-citations, takes only non-negative integer values ($y_i = 0, 1, 2, \dots$). We estimate negative binomial models (Hilbe, 2011), rather than standard poisson models, because these make more flexible assumptions regarding the variance of the dependent variable. Count models are semi-log models so that regression coefficients β_i can be interpreted as the percent increase in the predicted number of self-citations when x_i increases by one unit while the other variables are held constant.

Apart from analyzing the number of self-citations in a count way, we also create a binary variable that distinguishes articles with 5 self-citations or more from articles with less than 5 self-citations. This variable indicates the articles with a lot of self-citations and focuses the analysis on the upper tail of the distribution of self-citations (about 10 percent of the articles in the sample have 5 self-citations or more). After all, the count models relate the independent variables to the expected value (i.e. the mean) of the number of self-citations, whereas that mean may not tell the whole story because the distribution of the number of self-citations is skewed to the right. The binary variable is analyzed using standard logistic models for binary dependent variables, but we present marginal effects at the means so that the coefficients β_i can be interpreted as the effect of a one-unit increase in x_i on the predicted probability of containing 5 self-citations or more.

RESULTS

Table 1 presents descriptive statistics for all the dependent and independent variables. The number of self-citations ranges between 0 and 38. The outlier case containing 38 self-citations is a journal article that counts 10 pages and contains 72 cited references, of which more than half are self-citations. The mean number of self-citations is 1.91 (the mean number of self-citations as a percentage of the total number of cited references is 2.4%), but the distribution of the number of self-citations is heavily skewed to the right as can be seen from Figure 1. Such skewness is common in citation data (and more generally in count data) and does not prevent statistical inference because even the mean of a skewed variable is approximately normal when the sample size is large. To account for the count nature of the variable, negative binomial models are used for multivariate inference.

Table 1 shows that 12 percent of the journal articles in the sample contain 5 self-citations or more. Hofstede's index of individualism ranges between .17 (Taiwan) and .91 (United States) when based on the author's country of residence and between 0.18 (Korean) and .83 (English) when based on the ethnicity predicted by the author's name. 69 percent of the authors are male, the number of pages ranges between 1 and 64, the mean number of cited references is 80 and the number of co-authors ranges between 1 and 8 (15% are single-authored, 33% have two authors, 35% have three authors and 17% have 4 authors or more).

Table 1

Descriptive Statistics

	mean	sd	min	max
Number of self-citations	1.91	2.78	0	38
5 self-citations or more (binary)	0.12	0.33	0	1
Individualism (location)	0.77	0.25	0.17	0.91
Individualism (ethnicity)	0.58	0.24	0.18	0.83
Gender: male (binary)	0.69	0.46	0	1
Number of pages	18.88	7.78	1	64
Number of references	80.23	35.26	1	475
Number of co-authors	2.62	1.07	1	8
Year	2011.53	1.65	2009	2014

Note: Sample size is 1332 journal articles for Individualism (ethnicity) and 1346 for all other variables.

Figure 1

Distribution of the Number of Self-citations

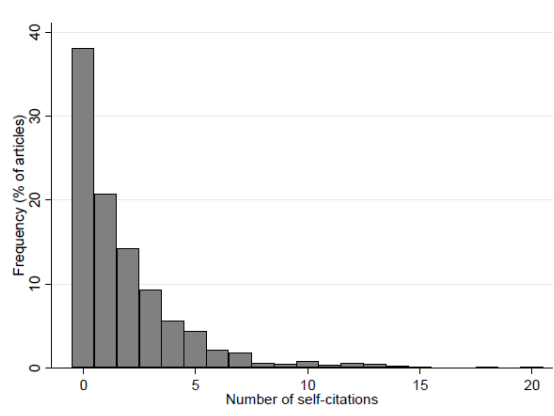
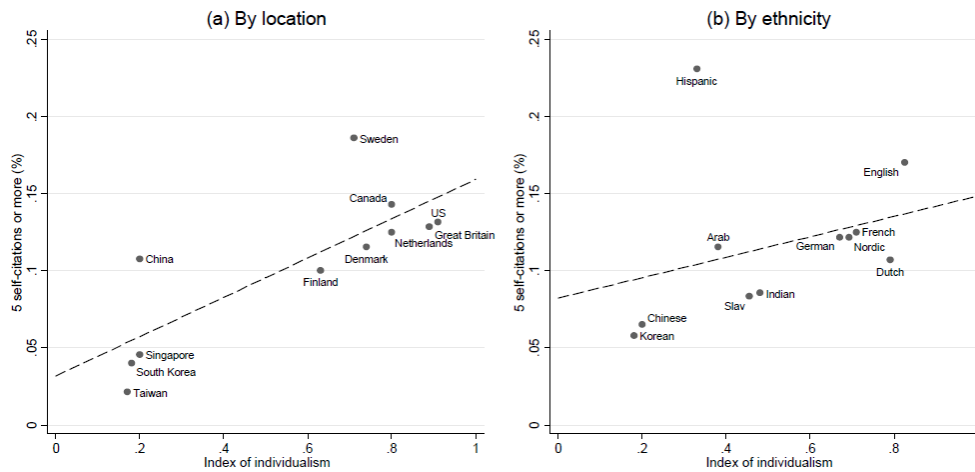


Figure 2 describes the relation between self-citation behavior and the author's cultural background by relating the index score for individualism of each location (panel a) and each ethnicity

(panel b) to the percentage of articles that contain at least 5 self-citations. The graph shows a clear positive relation between individualism and self-citation behavior, although there are deviations from the overall pattern. For example, authors residing in China and authors with Hispanic names record higher levels of self-citations than would be expected by the best fit lines. The self-citation rates in the United States and Great Britain are very similar, which is remarkable in light of the differences in self-promotion in these countries reported in the literature. This finding could be related to the fact that self-citation is a relatively anonymous form of self-promotion, although it might also be a subsample effect if contributors to the business literature are more entrepreneurially inclined than others.

Figure 2

Relation Between Individualist Culture and the Rate of Self-citations



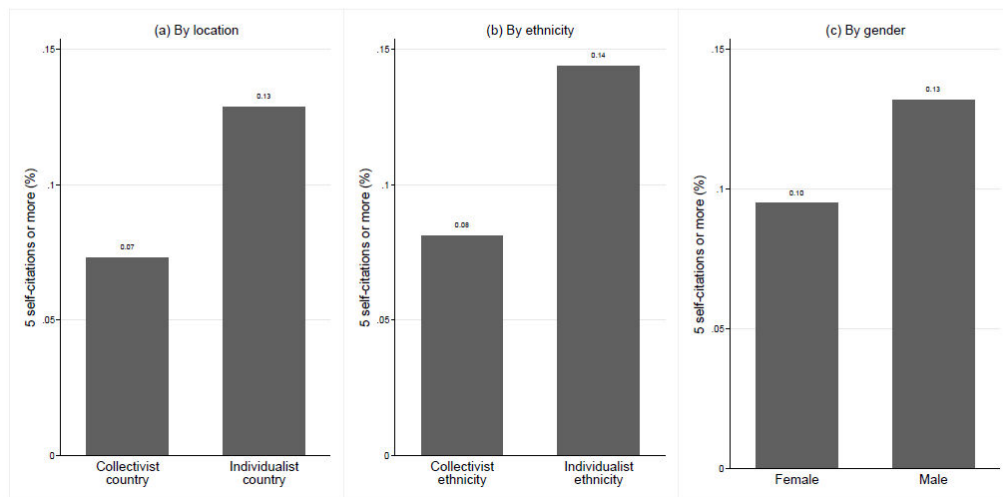
Notes: All countries and ethnicities are included for which the sample size exceeds 20 articles. The lines show linear best-fit relations for the datapoints shown in the graphs.

In order to evaluate the importance of cultural background for self-citing behavior, Figure 3 (panel a) compares the percentage of articles with many self-citations for authors residing in individualist countries with authors residing in collectivist countries. Individualist countries are defined using Hofstede's rule of thumb to use an index score of .50 as the cut-off. 7 percent of the articles coming from collectivist countries contain many self-citations, as opposed to 13 percent (almost double) in the case of individualist countries. The same analysis in terms of ethnicity instead

of location produces very similar results (panel b). The importance of this cultural effect becomes even clearer when we compare it to the well-known gender gap in self-citation rates (panel c): the cultural gap in self-citations is about twice as big as the gender gap.

Figure 3

Effect Sizes of Culture and Gender on the Rate of Self-citations



In order to test for potential interaction effects between gender and culture, the mean number of self-citations was analyzed using a 2 (gender) \times 2 (individualism) independent measures ANOVA. The results show significant main effects of individualism ($F_{(1, 1342)} = 9.58, p < .01$ when based on location and $F_{(1, 1328)} = 15.58, p < .01$ when based on ethnicity) and gender ($F_{(1, 1342)} = 3.87, p < .05$ when based on location and $F_{(1, 1328)} = 5.77, p < .05$ when based on ethnicity), confirming the descriptive analysis in Figure 3. More importantly, we find no significant interaction between gender and individualism ($F_{(1, 1342)} = 0.00, p > .05$ when based on location and $F_{(1, 1328)} = 0.05, p > .05$ when based on ethnicity) as is visualized by the interaction plot shown in Figure 4. The effect of gender on self-citation is no different in individualist countries than in collectivist countries (the plot looks the same when it is based on ethnicity). Or equivalently, the effect of individualism on self-citation behavior is no different for male authors than it is for female authors.

Figure 4

No Interaction Effect Between Gender and Individualist Culture

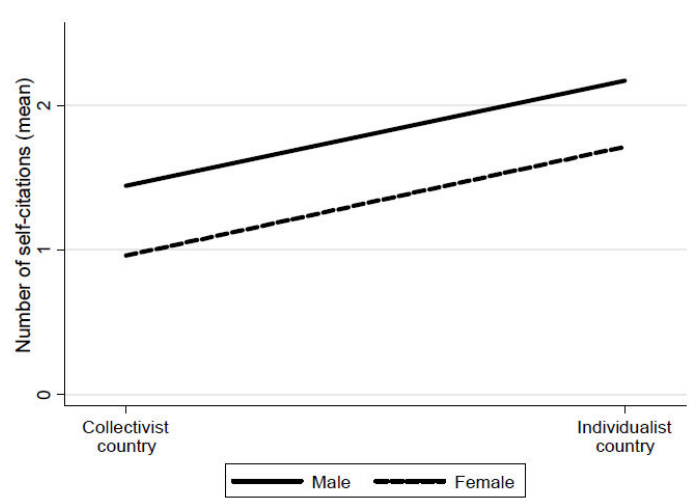


Table 2 presents the main results from this study. It presents seven regression models that estimate the effect of cultural background on self-citing behavior in a multivariate framework where a series of control variables are held constant, including gender, the number of co-authors, the journal in which the article was published and the journal’s impact factor.

Models (1) and (2) have the binary variable indicating articles with 5 self-citations or more as the dependent variable. The results show that the predicted probability of having at least 5 self-citations in the case of an individualist country (with Hofstede's index = 1.00) is about 9 percentage points higher than for a collectivist country (index = 0.00), if all the variables included in the model are held constant. Note that this effect is substantial: only about 12 percent of all the articles contain at least 5 self-citations, so 9 percentage points is a big effect. Using ethnicity as a measure of individualism (model 2) confirms the positive effect and produces a somewhat greater estimate.

We also find a negative effect of the number of pages, implying that (*ceteris paribus*) shorter articles are more likely to contain many self-citations. There is positive effect from the total number of cited references and we find no significant effect from the number of co-authors or the journal’s impact factor. The difference between male and female self-citation rates, *ceteris paribus*, is of the

Table 2**Multivariate Regression Analysis**

	Binary models (logit marginal effects)				Count models (negative binomial)		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	5 or more	5 or more	5% or more	5% or more	self-citations	self-citations	self-citations
Individualism (location)	0.092*	-	0.176***	-	0.742***	-	0.529**
Individualism (ethnicity)	-	0.137***	-	0.138**	-	0.801***	0.620***
Gender: male	0.039*	0.033	0.062**	0.056*	0.223**	0.206**	0.217**
Number of pages	-0.006***	-0.006**	-0.008***	-0.008***	-0.021**	-0.019*	-0.020*
Number of references	0.001***	0.001***	-	-	0.006***	0.006***	0.006***
Number of co-authors	-0.003	-0.002	-0.006	-0.005	-0.047	-0.036	-0.032
Year (6 categories)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Journal (6 categories)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.04	0.05	0.02	0.02	0.05	0.05	0.06
N	1346	1332	1346	1332	1346	1332	1332

The logit coefficients are marginal effects at the means. The count models contain a constant term. Pseudo R-squared is the correlation between the predicted and observed values of the dependent variable.

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

order of 3 to 4 percentage points. Models (3) and (4) show that the same results are found when a relative measure of self-citations – as a percentage of the total number of references (as in Brysbaert & Smyth, 2011) – is used instead of an absolute measure. The dependent variable in these models is a dummy indicating articles in which 5 percent or more of the cited references are self-citations.

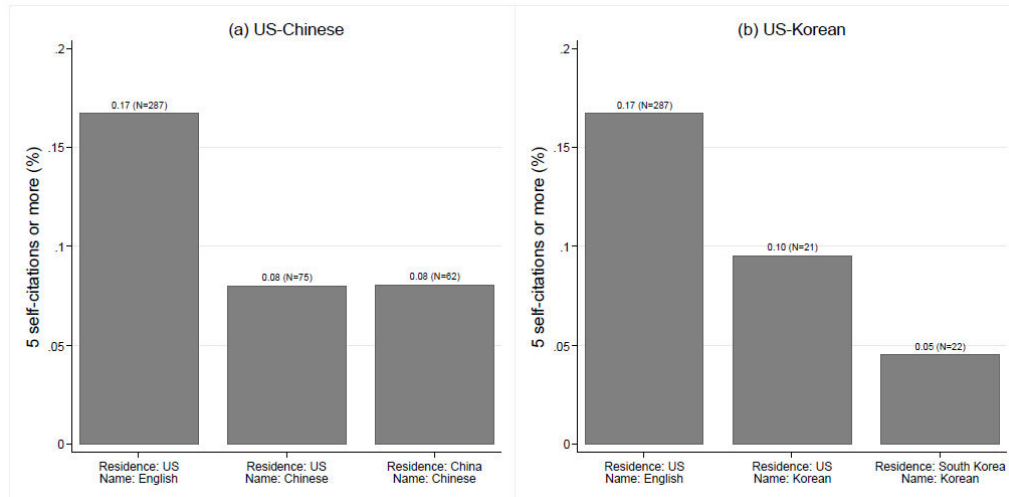
Models (5), (6) and (7) are count models that have the total number of self-citations as the dependent variable. The main result is that, holding other variables constant, the predicted number of self-citations of authors residing in an individualist country (with index = 1.00) is 74 percent higher than in a collectivist country (index = 0.00) and that the number is 80 percent higher for authors with an individualist ethnicity. The estimated effect of being a male author is about 20 percent and, as in the binary models, we find significant effects for the number of pages and cited references. Model (7) exploits the variation in ethnicities across locations by including both the location and ethnicity based measures of individualism at the same time. This model suggests that both location and ethnicity independently contribute to self-citing behavior. Authors from individualist ethnicities are more likely to self-cite than other authors who reside in an equally individualist location and authors who reside in an individualist location are more likely to self-cite than other authors who have an equally individualist ethnicity.

Figure 5 further looks into how location and ethnicity interact in the relation between culture and self-citation behavior. Panel (a) compares the self-citation rates of Chinese authors residing the US with that of Chinese authors in China and that of the modal ethnicity in the US (English). Panel (b) does the same for Koreans residing in the US. Panels (a) and (b) show the only interactions that we could investigate in our data without running into small sample sizes. We find that Chinese authors residing in the US essentially have the same self-citation rate as Chinese authors in China, while the self-citation rate of Korean authors in the US is somewhere in between that of Korean authors in South Korea and that of English authors in the US. Thus, the evidence on the interaction effect between location and ethnicity is mixed. Moreover, even if we assume that Korean authors currently residing in the US migrated to the US, the evidence in panel (b) does not necessarily imply

a process of adaptation because it might also be the case that self-citing Korean authors are more likely to emigrate.

Figure 5

Location-ethnicity interactions in self-citation behavior



In order to check the robustness of our results, we experimented with a series of alternative specifications (results are available upon request). Using quasi-poisson specifications instead of negative binomial models produced identical results in terms of statistical significance. A re-estimation of all models from Table 2 using the performance orientations values score from the GLOBE Project's worldwide differences in business values and practices (House et al., 2004) instead of Hofstede's index score for individualism, also produced identical results. If the GLOBE's institutional collectivism orientation values scores are used, then the location based measure produces identical results but there is no significant effect for the ethnicity based measure. We also considered the possibility that our results could be driven by the inclusion of short articles, which are often editorials with a high proportion of self-citations: when the sample is restricted to only articles of more than 5 pages, the coefficient estimates are very similar to the ones presented above.

DISCUSSION

Our study contributes to the literature by for the first time estimating the effect of culture on self-citations. In our sample of 1,346 journal articles published between 2009 and 2014 in the fields of Management and Business we found that authors originating from individualist cultures are much more likely to self-cite than authors originating from collectivist cultures (this confirms our hypothesis H1). We also find that male authors are more likely to self-cite than female authors, but this gender effect appears to be much smaller than the cultural effect. Moreover, we find that the gender effect on self-citation is stable across cultures (we therefore have to reject our hypotheses H2).

Our findings indicate that individualist cultures are more conducive to self-promoting behavior than collectivist cultures. In that regard our results provide new and original evidence for the relation between culture and self-promotion as suggested in the literature on impression management (Brown & Kobayahi, 2002; Heine et al., 2000; Rudman, 1998; Silvera & Seger, 2004). These results add to the literature positing that independent-self orientations, typical of individualist cultures, result in stronger tendencies to self-enhance and thus to self-cite than interdependent self-orientations, typical of collectivist cultures.

Our results confirm the presence of a gender gap in self-citations that was found by Maliniak et al. (2013) in their study of the political sciences. However, our results also show that gender differences in self-promoting behavior are remarkably stable across cultures. Maliniak et al. concluded their study in saying that the gender gap may be "relatively easy to fix", for example by encouraging women to advocate for themselves and their work. It is clear that people – both academics, employees in general and decision makers – need to be made aware of this gender bias and need to be encouraged to act upon this information. But the fact that the gender bias in self-promotion appears to be culturally independent suggests that closing the gap may not be easy. If such gender differences are socially constructed and culturally determined, then we would have expected to see some interaction effect in our analyses. This was not the case. Another reason for scepticism is

that psychological literature on impression management strategies indicates that counterstereotypical impression management may lead to social reprisals (Rudman, 1998). On the other hand, it should be emphasized that our results do not necessarily imply that gender differences in self-promotion are somehow fixed. On the basis of this study we cannot exclude the possibility that other cultural dimensions (other than individualism) do interact with gender or the possibility that the gender gap changes over time but happens to be the same across cultures at the moment of our study.

Further research is needed to study how these cultural differences in self-citation behavior are related to the structure of costs and rewards in different cultures. For example, our data do not allow us to investigate whether the observed cultural differences in self-citation result from cultural differences in the extent to which this is regarded an acceptable self-promotion tactic or from cultural differences in the efficiency or the rewards attached to this tactic. The observational data on self-citation that we use has the advantage over lab experimental data – in which the setting is often artificial – that we study subjects in their real environment. However, the drawback of observational data is that estimated effects can to some extent be contaminated by confounding factors not included in the analysis (omitted variable bias) or problems of randomization (selection bias). Further research could focus on including additional control variables, such as the author's age, the number of prior publications available for self-citation or national differences in the importance of citations for career progress, and on developing designs in which the risk of bias in the estimation of the 'causal effects' of culture and gender on self-promotion is reduced. A related limitation of this study is that the motivations for self-citing are unknown and it is unclear to what extent the observed cultural differences in self-citing reflect differences in neutral self-reporting or differences in academic egotism. On the practical side, there is room for further improvement of HR instruments that can better separate the effects of self-promoting behavior from the intrinsic productivity of employees. Until such unbiased measures are available, both academic departments and employers in general should be aware of the cultural and gendered nature of self-promoting behavior when making hiring and promotion decisions.

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