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Main drivers of consultancy services: A meta-analytic approach☆

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ABSTRACT

This meta-analysis incorporates the results from 34 separate studies examining fee models for consultancy services whereby the consulting firm provides both audit and advisory services to its customers. The findings indicate a number of key determinants of consultancy bills: client size, audit fees, auditors being from a "Big Audit Firm," client's financial difficulties, and prior experience with the legal auditors. Conversely, the meta-results fail to correlate the variable of interest with several constructs commonly used in consultancy models such as the auditee's inherent risk, the client's financial debt, or the audit opinion. The study also explores the influence of three moderators: the Sarbanes–Oxley Act, the legal environment, and the type of statutory auditor. The overall moderator results are robust but fail to group prior data into homogeneous sets. The findings are relevant for policy makers, audit scholars, and stakeholders.

1. Introduction

This study examines the research on consultancy services models, in particular research that captures when the same company provides both the statutory audit of the financial statements and consultancy services, also known as non-audit services (NAS), to the customer.

Archival literature addressing NAS (e.g., tax, legal, information technologies, financial, or human resources) models does not look at them as a separate area of study but rather as an additional aspect of core legal auditing topics (Hay, Knechel, & Li, 2006; Krishnan & Yu, 2011; Stein, 2006; Ye, Carson, & Simnett, 2011; Zerni, 2012).

Hence, to date, the NAS fee model studied in prior research resembles the Simunic (1980) model for audit fees, incorporating factors such as client size, audit complexity, auditor attributes, and engagement characteristics, among others. However, while audit fee models perform well, with an explanatory power around 75% (Hay, Knechel, & Li, 2006), the adjusted R-squared of the NAS fee model is, on average, around 35% (Abbott, Parker, & Peters, 2011; Ghosh & Pawlewicz, 2009; Griffin, Lont, & Sun, 2009) despite the high number of independent variables tested so far, which frequently show a lack of significant association. Thus, the main drivers of consultancy fees represent a research issue that deserves further investigation.

The present study aims to contribute to the extant literature in several ways. First, the study sheds light on the main determinants of NAS fees through meta-analysis (MA) techniques. Although prior research offers several meta-analyses conducted on audit fees (De Fuentes & Sierra, 2015; Hay, 2013; Hay, Knechel, & Wong, 2006a), this may be the first attempt to apply MA to the vast empirical literature on NAS fees. MA presents several advantages over: a) a narrative review or a mere recounting of prior findings, which can be misleading or inconclusive, whereas MA provides the objectivity of a statistical technique (Rosenthal, 1991); and, b) the results of individual studies, because MA increases sample sizes and statistical power (Cooper, 2010).

Second, this study draws on the influence of three moderating variables that might impact consultancy fee drivers: a) the 2002 Sarbanes–Oxley Act (SOX) that drives up audit fees and reduces NAS fees (Ghosh & Pawlewicz, 2009; Griffin et al., 2009) and changes audit fee drivers (Huang, Raghunandan, & Rama, 2009); b) the legal environment, since the geographical scope of SOX is limited to the US environment, while the remaining countries offer a map of miscellaneous audit regulations; and c) the auditor's reputation, because the Big Auditing Firms[1] charge a premium related to the high quality of their services (Hay et al., 2006a; McMeeking, Peasnell, & Pope, 2006; Clatworthy, Makepeace, & Peel, 2009; Campa, 2013) and this premium might also be applied to consultancy services. Analysis of these moderating variables may reveal whether or not the NAS drivers are robust across different grouping criteria and enable archival data to be bundled into homogeneous sets.

The ongoing concerns of regulators and policy makers about the joint provisioning of auditing and NAS, and whether this jeopardizes auditor independence, justify the importance of identifying the main

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determinants of consultancy services. Those concerns eventually triggered recent audit regulatory changes (European Directive 2014, or the European Regulation 2014, on public-interest entities) that heavily constrain the provision of NAS.

2. Literature review and research questions

2.1. Main drivers of consultancy services and the audit literature

Research on NAS remains closely tied to legal auditing topics. To date, researchers have devoted great effort to investigating economies of scope, that is, when the joint provision of both auditing and advisory services to a customer generates shared knowledge among consultants and auditors, resulting in a reduction in the average cost (Stein, 2006). However, researchers face great difficulty in predicting the impact of such knowledge spillover on the total audit-consultancy bill. For example, companies seeking better financial information may engage more consultancy services such as IT advisory services and internal audits. In such cases, the association between audit and NAS fees is positive (Houghton & Jubb, 1999; Koh, Rajgopal, & Srinivasan, 2013). Conversely, the association between the two services is negative if, for instance, delivering NAS enhances the knowledge of the client's IT system and lowers audit costs (Antle, Gordon, Narayanamoorthy, & Zhou, 2006). Notably, O'Keefe, Simunic, and Stein (1994) report a non-significant association.

Empirical testing of the economies of scope through the application of simultaneous equation methods also fails to produce consistent results, that is, a mix of positive (Antle et al., 2006; McMeeking et al., 2006), negative (Krishnan & Yu, 2011; Svanström & Sundgren, 2012) and non-significant associations (Whisenant, Sankaraguruswamy, & Raghunandan, 2003; Hay, Knechel, & Li, 2006b; De Fuentes & Pucheta-Martinez, 2009).

Regarding the market for consultancy services, Svanström and Sundgren (2012) document that small- and medium-sized companies are more likely to hire other consultancy services from their incumbent auditor than are listed companies as the relationship evolves.

In sum, researchers commonly test NAS fee models when exploring auditing issues and these typically incorporate the same constructs and/or are operationalized through the same variables as the audit models. However, general conclusions remain elusive. Hence, the present research investigates the following research question:

RQ1: *Does the overall published evidence about the most commonly applied NAS explanatory variables support a statistically significant association with NAS fees*?

2.2. Auditing services regulatory changes

A recurring audit issue is whether or not the joint provision of auditing and NAS increases the economic bond between client and auditor and, eventually, jeopardizes auditor independence.

The *Enron* scandal and the subsequent implementation of SOX (2002), requiring the disclosure of NAS fees and banning the provision of most NAS by the same auditing firm, were followed by an international wave of auditor independence regulation, despite the lack of conclusive empirical support (Schneider, Church, & Kirsten, 2006; De Fuentes & Pucheta-Martinez, 2009). Thus, post SOX audit literature reveals a decrease in the consultancy services performed by either the auditor or the groups the audit firm belongs to (Griffin et al., 2009; Ghosh & Pawlewicz, 2009) as a consequence of the international political pressure (GAO reports, 2003, 2008). Audit fee drivers also seem to have changed after the implementation of SOX (Huang et al., 2009). Accordingly, the present study explores the following research question:

RQ2: *Does the regulatory change* (i.e., *SOX 2002*) *moderate the association of NAS fees with their explanatory variables*?

2.3. Legal environment

The US audit regulation (SOX 2002) triggered legislative reforms in many countries, launching a wide variety both in terms of when these reforms were implemented as well as the measures adopted. For example, in Europe, the Statutory Audit Directive was approved in 2006, but its transposition by each Member State took place in different years. Hence, geographic scope might also explain the heterogeneity in prior findings. In fact, prior meta-analysis results on the auditor's specialization premium reveal some differences between US-based studies and those carried out in other countries (De Fuentes & Sierra, 2015). Thus, the following research question is explored in this paper:

RQ3: *Does the legal environment* (*US vs. non-US countries*) *moderate the association of NAS fees with their explanatory variables*?

2.4. Auditor's reputation

Audit researchers differentiate between Big Auditing Firms and Non-Big Auditing firms, due to differences in reputation and/or perceived audit quality (Aguiar-Diaz & Diaz-Diaz, 2015; Hay et al., 2006a; McMeeking et al., 2006). The Big Auditing Firms charge higher fees to offset the higher costs of performing high-quality audits (Campa, 2013; Clatworthy et al., 2009). This fee premium might also apply to consultancy services. Therefore, this analysis aims to explore the following research issue:

RQ4: *Does the auditor's reputation moderate the association of NAS fees with their explanatory variables*?

3. Sample and methodology

3.1. Meta-analysis procedures

The present study applies the following MA statistical procedures to the empirical results obtained from individual studies:

a) To compute the effect size estimate by means of the Pearson correlation coefficient normalized by Fisher's Transformation (Zr). This is to avoid the problems generated by, in this case, high standard deviation in the *p* values reported in prior results.
b) To carry out a homogeneity analysis and find evidence of moderating variables that could help in clustering the results. This is to first estimate whether 75% or more of the observed variance is explained by the sampling error, in which case, the results could be assumed homogeneous. Then, to increase the robustness of the analyses, a Q test is performed, which follows an X^2 distribution.
c) To explore publication bias, that is, the possibility of finding a type I publication bias error in the published results due to the fact that

Table 1
Sample of study.

		Number
Articles from the initial search		559
Web of Science	134	
Scopus	425	
(Duplicates)		(69)
(Articles from different areas)		(288)
Initial sample		202
Criteria leading to exclusion of articles		
- Different model/operationalization of NAF		(55)
- Studies on specific events and firms		(10)
- Different topic and purpose		(62)
- Theoretical Studies		(10)
- Other studies		(30)
- Untabulated results		(5)
Final sample of articles		30
Separated studies		4
Final sample of studies		34

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Table 2
Sample distribution by author.

Authors (publication year) (1)	Journal (2)	Subsample (3)	Period (4)	Country (5)	Sample Size (6)
Abbott et al. (2011)	AAJPT	Year	2000	US	338
Abbott et al. (2011)	AAJPT	Year	2001	US	338
Antle et al. (2006)	RQFA		1994–2000	UK	2294
Antle et al. (2006)	RQFA		2000	US	1570
Ashbaugh et al. (2003)	TAR		2000	US	3170
Brown, Falaschetti, and Orlando (2010)	AL&ER		2001–2002	US	927
Chahine and Filatotchev (2011)	BAR		1999–2003	UK	375
Chan, Chen, Janakiraman, and Radhakrishnan (2012)	JAAF	Year	2000	US	2768
Chan et al. (2012)	JAAF	Year	2001	US	3812
Chan et al. (2012)	JAAF	Year	2002–2006	US	20,173
Chen, Du, Krishnan, and Su (2009)	A-PJA&E		2000	US	1027
De Fuentes and Pucheta-Martinez (2009)	ARLA		2002	Spain	135
DeFond, Raghunandan, and Subramanyam (2002)	JAR		2001	US	1158
Ghosh and Pawlewicz (2009)	AAJPT		2000–2005	US	23,273
Griffin et al. (2009)	A&F		2002–2007	New Zealand	513
Gul, Tsui, and Dhaliwal (2006)	A&F		1993–1994	Australia	840
Habib and Islam (2007)	MAJ		1996–1999	Bangladesh	530
Hay, Knechel and Li (2006b)	JBF&A		1999–2001	New Zealand	644
Hoitash and Hoitash (2009)	MAJ		2004	US	2393
Houghton and Jubb (1999)	JIAA&T		1987–1988	Australia	270
Krishnan and Yu (2011)	MAJ		2000–2006	US	11,899
Mitra and Crumbley (2004)	PAFMJ		2000	US	63
Mitra and Hossain (2007)	JBR		2000	US	335
Nam and Ronen (2012)	JAA&F		2000–2002	US	4219
Niu (2008)	CGIR		2003–2004	Canada	911
Quick, Sattler, and Wiemann (2013)	MAJ		2005–2007	Germany	330
Raghunandan, Read, and Whisenant (2003)	AH		2000–2001	US	110
Ruddock, Taylor, and Taylor (2006)	CAR		1993–2000	Australia	3746
Stein (2006)	CAR		2001	US	3053
Svanström and Sundgren (2012)	IJA		2006	Europe	322
Whisenant et al. (2003)	JAR		2000	US	2666
Ye et al. (2011)	AAJPT		2002	Australia	911
Zaman, Hudaib, and Haniffa (2011)	JBF&A		2001–2004	UK	135
Zerni (2012)	MAJ		2000–2004	Sweden	772

A&F: Accounting and Finance; AH: Accounting Horizons; AAJPT: Auditing: A Journal of Practice and Theory; ALER: American Law and Economic Review; A-PJA&E: Asia-Pacific Journal of Accounting and Economics; ARLA: Academia, Revista Lationamericana de Administración; BAR: The British Accounting Review; CGIR: Corporate Governance: An International Review; CAR: Contemporary Accounting Research; IJA: International Journal of Auditing; JAAF: Journal of Accounting, Auditing & Finance; JAR: Journal of Accounting Research; JBFA: Journal of Business Finance and Accounting; JBR: Journal of Business Research; JIAAT: Journal of International Accounting, Auditing and Taxation; MAJ: Managerial Auditing Journal; PAFMJ: Petroleum Accounting and Financial Management Journal; RQFA: Review of Quantitative Finance and Accounting;; TAR: The Accounting Review.

research studies without a significant effect are more likely to be discarded in file drawers. To address this issue, the *Safe N* is estimated.

3.2. Sample of study

Following Stanley et al. (2013), the initial search focused on publications written in English between 1986 and December 2013 and included in several databases and editorial sources such as ISI Web of Science, ScienceDirect, EJS Ebsco, Blackwell, Emerald, ABI Inform, and SSRN. References in the most recent articles of major accounting and finance journals were also examined to identify other sources. Unpublished (working) papers were dropped (Hay, 2013; Hay et al., 2006b). The strings used to identify NAS models included "non-audit*"; "nonaudit*"; "NAS"; "additional servic*"; "consult* servic*"; "fee"; and also those of related topics such as "audit* independ*"; "bargaining power" and "fee." The search was carried out and completed in February 2015.

Table 1 lists the studies discarded. Three articles contain separate analyses carried out on different samples, so the total number of studies that constitutes the basis for the MA is 34.

Table 2 reveals that all usable articles in this study have been published this century (except for Houghton and Jubb (1999)) and in highly reputable journals. Anglo-Saxon studies predominate. The number of observations varies from 63 (Mitra and Crumbley, 2004) to 23,273 in Ghosh and Pawlewicz (2009).

The experimental and control variables were grouped following the criteria in Hay (2013).[1]

4. Results

4.1. Explanatory variables

Table 3 reports the meta-results related to the first research question, that is, the overall statistical significance of prior results on the explanatory variables of the NAS fees.

As with audit fees (Hay et al., 2006a), the variability in NAS fees is positively and highly correlated (0.355) to client *Size* and the meta-result is robust since 17,628 studies (*Safe N*) with null results are needed to reject the conclusions. Although in five out of seven studies the client's *Sales Growth* was not significant, the meta-results indicate a positive and significant association (0.015).

Of all the reported evidence on client complexity, the number of *Business Segments* offers the most robust results. The remaining variables display significant correlation but either a very low *Safe N* or a high number of studies with null significance. *Volatility* in the stock market negatively correlates (−0.019) with NAS fees.

Regarding client profitability, *ROA* (−0.050) and *Stock return* (−0.012) display negative coefficient, whereas *Loss* (0.020) *and*

[1] The current Big Auditing Firms are Deloitte, KPMG, Ernst and Young, and PriceWaterhouseCoopers, because Arthur Andersen collapsed in 2002.

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Market-Value-to-Book Value (0.029) are positively associated with the variable of interest.

Concerning the financial structure of the client company, only the *Issuance of debt or equity* positively relates (0.018) to hiring consultancy services. The presence of *Institutional investors* positively and significantly associates with hiring consultancy services (0.021) with a *Safe N* of 73.

Prior studies (20) report a positive association between NAS fees and the auditor's reputation (*Big Auditing Firm*) that is corroborated in the present study, with 0.072 being the correlation coefficient and 3082 the *Safe N*.

New auditor negatively correlates (−0.060) with the variable of interest, whereas the *Number of years of the audit engagement* with the incumbent auditor shows a positive sign (0.043), in line with Svanström and Sundgren (2012). However, the number of studies is still limited (4) and the *Safe N* is very low (18).

Prior tests failed to find any association of NAS fees with the (modified) *Audit opinion* (in 12 out of 14 cases) and the overall coefficient is not significant. Conversely, the meta-results offer robust evidence of the relationship between *Nat Log of audit fees* and *NAS fees* (the correlation coefficient is 0.301 and the *Safe N* is 7889).

In every measure displaying significant association with NAS fees, the percentage of variance explained by the sampling error is below the benchmark of 75% and the p-value of the X^2 is below conventional levels, so the hypothesis of homogeneity is consistently rejected.

4.2. Further evidence from moderating variables

Table 4 reports the results of the moderator analysis related to the research questions two to four. Statistical analysis is only performed on those variables that proved relevant in the preceding MA stage, that is, when the number of papers displaying positive or negative significance is greater than those with null significance, the correlation coefficient is significant, and its value is above 1%.

The untabulated correlation coefficients of the analyzed variables within each subgroup are significant except for *Sales growth* (for *Post-SOX* and *Non-Big Auditing Firms* subgroups) and *New Auditor* (for *Non-US countries* and *Non-Big Auditing Firms* subgroups). The data in Table 4 reveal that the moderators fail to bundle prior research in homogeneous groups for the variables displaying significant association with NAS fees, except for *Auditor's reputation* (in *Nat log total assets* and *ROA* whose

Table 3
Meta-analysis on independent variables and non-audit fees. Hunter and Schmidt (1990) model and Stouffer test.

	N	Studies				Zrm	Safe N (p = 0.05)	Homogeneity contrasts
		Total	Positive	Negative	No significant			% Variance explained
Client's size								
Nat log total assets	86,133	26	25	0	1	0.355 #	17,628	0.238 ***
Sales growth	49,364	12	7	0	5	0.015 #	117	19.621 ***
Client's complexity								
Business segments	54,519	13	8	1	4	0.019 #	119	20.822 ***
Foreign operations	53,560	13	5	0	8	0.027 #	168	36.313 ***
Acquisition or merger	40,126	12	4	0	8	0.050 #	141	28.501 ***
Pension plans	47,140	9	3	0	6	0.009 #	4	39.618 ***
Number of employees	41,653	6	2	1	3	0.018 #	15	10.460 ***
Client's inherent risk								
Inventory and receivable	81,309	19	2	5	12	0.002	0	9.855 ***
Volatility	41,648	6	1	2	3	−0.019 #	0	26.278 ***
Client's profitability								
Return on assets	92,758	26	0	15	11	−0.050 #	1236	15.636 ***
Loss	80,461	19	4	2	13	0.020 #	90	30.850 ***
Market value to book value	61,879	19	8	2	9	0.029 #	192	21.354 ***
Stock return	40,255	11	0	6	5	−0.012 #	62	17.957 ***
Liquidity	41,983	7	0	0	7	0.001	0	152.437
Cash flow to total assets	6,653	7	1	3	3	0.002	1	30.323 ***
Client's leverage								
Leverage (Total debt/assets)	88,786	23	1	7	15	−0.006	26	25.868 ***
Equity or debt issuance	50,579	12	6	1	5	0.018 #	107	26.035 ***
Leverage (Long Term debt/assets)	2,765	6	0	0	6	0.022	0	161.320
Client's ownership								
Institutional investors	50,460	11	6	1	4	0.021 #	73	32.089 ***
Auditor reputation								
Big Auditing Firm (4, 5, 6, 8)	93,007	29	20	0	9	0.072 #	3082	17.315 ***
Auditor tenure								
New auditor	50,944	12	0	8	4	−0.060 #	284	16.104 ***
Years of the engagement	15,998	4	2	0	2	0.043 #	18	60.648 *
Other auditing issues								
Audit opinion	73,914	14	2	0	12	0.003	0	69.413 *
Nat log of audit fees	36,123	13	12	0	1	0.309 #	7889	1.456 ***

N is the total number of observations in each analysis; *Zrm* is the average of correlation value, $Zr = \frac{\sum_{i=1}^{k} Zr_i \cdot (n_i - 3)}{\sum_{i=1}^{k} (n_i - 3)}$, (from Fisher: $Zr = \frac{1}{2} \cdot \ln(\frac{1+r}{1-r})$) of the studies for every independent variable in MA; correlation coefficients: $r = \sqrt{\frac{Z^2}{N}} = \frac{Z}{\sqrt{N}}$ and $r = \sqrt{\frac{t^2}{t^2+df}} = \frac{t}{\sqrt{t^2+df}}$; the 95% interval of confidence is established by standardized normal distribution; *Safe N* is the number of published studies that should not be significant to invalidate the results of MA ($Ns = (\frac{\sum_{i=1}^{k} Z_i}{1.64})^2 - k$; homogeneity contrast rule: [(100)S_e^2/S_r^2>75%], where $S_r^2 = \frac{\sum N_i (Zr_i - Zr)^2}{\sum N_i}$ and $S_e^2 = \frac{(1-Zr^2)^2}{N-1}$.
X^2 test: * significant at 10% level; ** significant at 5% level; *** significant at 1% level.
Zrm is significant at 5%, that is, the 95% interval of confidence does not include zero.

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Table 4
Summary of the moderator results.

Non-audit fees drivers	Moderators	Homogeneity group
Client's size		
Nat log total assets	Auditor's reputation	Non-big auditing firms
Sales growth	Legal environment	Non-US studies
Client's complexity		
Business segments	None	None
Client's profitability		
Return on assets	Auditor's reputation	Non-big auditing firms
Audit quality		
Big auditing firm (4, 5, 6, 8)	None	None
Auditor tenure		
New auditor	None	None
Other auditing issues		
Nat log audit fees	None	None

homogeneous group is *Non-Big Auditing Firms*) and *Legal environment* (in *Sales growth* with the homogeneous group being *Non-US studies*).

4.3. Further analysis

First, statistical analysis is run on different measurements of NAS fees. In particular: a) the natural logarithm of NAS fees in order to reduce its variability; and, b) the ratios of NAS fees over audit fees or NAS fees over total (audit and non-audit) fees (Ashbaugh, LaFond, & Mayhew, 2003; Zerni, 2012). The results in all cases (not reported here for brevity) confirm prior associations but do not show homogeneity within each group of studies.

Second, to further analyze the publication bias, funnel plots are drawn for each variable. The results of the untabulated analysis corroborate the conclusions drawn from the *Safe N* estimations.

5. Conclusions, implications and limitations of the study

This paper identifies the main drivers of NAS fees by applying MA to prior published results in order to investigate the overall effect size of the tested variables.

The meta-data shows a high correlation (35%) between NAS fees and client *Size*. Companies in expansion (measured through *Sales Growth*) also contract more advisory services. Within the different measures of client complexity, the *Number of business operations* offers the best results.

A plausible explanation for the significant association between the variable of interest and both *Return on Assets* (with a negative sign) and reporting bottom line losses (with a positive sign) is that companies facing financial difficulties seek advisory services in order to improve their performance. Companies hiring a Big Auditing Firm also have higher consultancy bills with their audit firms.

Finally, the current study explores several moderating variables, namely, the influence of SOX 2002, the legal environment, and the auditor belonging to the group of Big Accounting Firms. This analysis confirms the robustness of the main determinants of NAS fees identified in the first step of the MA, however, almost all the moderators fail to group prior results into homogeneous sets.

The present results are relevant for policy makers since with respect to auditor independence they failed to demonstrate a significant association between the level of NAS fees and the audit opinion issued the same year. Hence, the results do not corroborate the "opinion shopping" (Tong, 2006) or "client economic pressure" (Espinosa-Pike & Barrainkua, 2016) hypotheses, although they cannot be rejected because different temporal links cannot be ruled out. Importantly for consulting firms, the meta-results reveal that companies hire consultancy services once they have "experience-based knowledge" (Svanström & Sundgren, 2012) of the auditing services quality since NAS fees are negatively correlated with the appointment of a new auditor and positively with auditor tenure.

The present findings are also of interest to audit scholars because the commonly included variables related to the auditee's inherent risk or the client's leverage seem not to be particularly relevant but are correlated to companies undergoing changes in their financial structure such as debt or equity issuance.

The current literature review also identifies several gaps where further research would be worthwhile such as exploring more dynamic measures, ownership structures, governance issues, or the behavior within and across market segments.

Limitations of this study consist of those endemically linked to MA techniques including: a) the fact that neither causality nor endogeneity concerns are addressed; b) in those papers that do not provide the correlation matrix of variables, the transformation from the statistic *t* to *r* is not exact; and, c) the analysis focuses on isolated variables and other factors might also influence the correlation coefficients.

The results might be also biased due to the inappropriate classification of the published data. Additionally, the presence of other moderating factors that are responsible for the percentage of variance unexplained by the sampling error can also influence the results.

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