THE IMPACT OF CLIENT AND AUDITOR GENDER ON AUDITORS’ JUDGMENTS: A REPLICATION AND EXTENSION

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**Synopsis:** This study is a replication and extension of a previously published experiment. We replicate an experiment that examines whether an auditor’s judgment is influenced by the gender of a client and the gender of the auditor. We modified the instrument to test whether a potential impairment of auditor independence also impacts an auditor’s judgment. We find equivocal support for the initial experiment; specifically, the client’s gender has a significant effect on auditors’ judgment but we find no impact based on the gender of the auditor. In addition, we find that the potential impairment of the auditor did not impact the auditors’ judgments.

**Introduction**

In most areas of academic research there is an understanding that the validity of an experimental research conclusion is partially dependent on similar findings from replications of the study. For example, in the medical field, the results of experimental trials of medications must be replicated prior to the approval of the medication for public consumption. However, replication is not typically performed within the field of accounting. In accounting, replications of research are rarely published because they are seen as contributing little to the body of knowledge generated from empirical research (Hunter 2001). As a result, most researchers in accounting tend to avoid replication unless something significant happens within the field (e.g., a change in the regulatory environment that could affect results) or if the replication also includes an extension, such as adding another independent variable to a model.

In academia, there is an understanding that the data used in published manuscripts should be available to others upon request. Recently, however, Dr. James E. Hunton, a former
accounting professor at Bentley College, refused to release data from two of his published papers. After a preliminary investigation was conducted, it was determined that the data was likely falsified. Thus, the two articles were retracted, and an internal investigation conducted by Bentley questioned the legitimacy of Hunton’s entire body of work; ultimately, over 30 articles were retracted due to potential falsification. Although a replication is not typically seen as useful in business research, with the recent question as to the legitimacy of Dr. Hunton’s data, we think that a replication and extension of one of his studies would provide useful new information as well as confirm or refute his previous research.

**Background**

Research shows that women are generally more risk averse, and have the ability to process information more comprehensively, than men. Given this knowledge, it seems reasonable to assume that auditors’ judgments might differ in relation to their gender.

The primary purpose of this research, which is a replication of Gold et al. (2009), is to identify if there are underlying biases within auditors that affect how auditors interpret and judge explanations given by their clients. Specifically, we test whether the gender of auditors affects their audit decisions (i.e., if male and female auditors with the same underlying evidence make different audit judgments), and whether client-provided information (whether the information came from a male or female client executive) also affects the auditors' decisions.

A secondary purpose of this research is to test whether the auditors’ decisions are also affected by a potential impairment of independence; specifically, we test whether a close personal relationship between the engagement partner and client CFO impedes the auditor’s judgment.
Hypothesis Development

Auditor Gender

In general, prior judgment and decision-making research has shown that the impact that gender has on audit judgments arise from two primary sources, risk aversion and the selectivity hypothesis. Risk aversion states that men and women appear to differ in regards to the amount of risk they are willing to accept, such that men will typically accept a higher level of risk than women (e.g., Byrnes et al. 1999; Dwyer et al. 2002; Hinz et al. 1997; Jianakoplos and Bernasek 1998; Olsen and Cox 2001; Sundén and Surette 1998). The selectivity hypothesis states that women tend to employ more comprehensive and detailed cognitive information processing than men (e.g., Chung and Monroe 1998, 2001; Meyers-Levy 1989, 1998; Meyers-Levy and Maheswaran 1991; Meyers-Levy and Sternthal 1991; O'Donnall and Johnson 2001).

Risk Aversion

Risk-taking is regarded as the acceptance of options that could lead to negative consequences (Byrnes et al. 1999). According to evidence from multiple different domains of research, men are generally less risk averse in their judgments and behaviors than women. For example, in psychology research, researchers have found gender differences in studies of risky behavior (Byrnes et al. 1999). Gender differences are also evident within the realm of financial decision making, since male investors tend to be less risk averse than women. This has been researched by Hinz et al. (1997), Sundén and Surette (1998) and Jianakoplos and Bernasek (1998). In all of these studies, women were found to hold higher portions of their wealth in assets with lower volatility compared to men. Olsen and Cox (2001) found that professionally
trained female investors weigh risk attributes more heavily and focus more on risk reduction than their male counterparts. Dwyer et al. (2002) observed that men show more risk-taking tendencies than women in their most recent, largest, and riskiest mutual fund investment decisions. Given that there is significant research as to the risk aversion of both men and women, male auditors should exhibit more risky judgments than female auditors. Hence, a response to unverified client-provided evidence, a relatively higher risk aversion should result in a relatively smaller audit adjustment; and a relatively lower risk aversion should result in a relatively larger audit adjustment.

**The Selectivity Hypothesis**

Prior research has also identified that men and women are different in regards to the level of detail that they cognitively process information (Meyers-Levy 1989, 1998; Meyers-Levy and Maheswaran 1991; Meyers-Levy and Sternthal 1991). According to this hypothesis, women tend to integrate more of the available evidence within their judgments, which shows an intense level of cognitive processing. Men, on the other hand, tend to eliminate perceived irrelevant cues and focus on a limited set of perceived important information that are relatively easy and quick to process (Meyers-Levy 1998).

Prior research within the field of accounting supports the gender difference between auditors in various contexts. Chung and Monroe (1998) found that male accounting students processed information selectively, whereas female accounting students relied upon a more comprehensive information processing strategy. Additionally, O’Donnell and Johnson (2001) found that female auditors utilized greater processing effort than male auditors on low risk
Finally, according to Chung and Monroe (2001) in an inventory valuation study, female auditors exceeded male auditors because of more comprehensive information processing. Based upon both risk aversion and the selectivity hypothesis, we suggest that the impact of unverified client-provided explanations will be greater with female auditors than with male auditors. The first reason is that female auditors should stay with their initial opinion, more so than males; since the acceptance of these unverified client explanations is an inherently risky behavior. Second, female auditors should be more reluctant than male auditors to change their initial judgments, because of their greater need for comprehensive information. Thus our first hypothesis is:

**H1:** Female auditors will be less influenced by client-provided explanations than will male auditors.

**Client Gender**

Because less than 10 percent of CFOs in the Fortune 500 are female (Nyberg-Stuart 2006), one can reasonably assume that few auditors are accustom to interacting with female CFOs when obtaining client-provided evidence. Given this, we expect this lack of experience could lead to different auditor reactions between male and female clients. In addition, the susceptibility of auditors to gender stereotypes could explain different responses.

Research in psychology provides evidence that “gender” reflects a social category which is often considered by individuals subconsciously during their information processing and judgment-forming activities (e.g., Berger et al. 1977; Norton et al. 2004). In order to facilitate and accelerate the process of decision making, individuals tend to utilize stereotyping to categorize people into groups (e.g., male and female). Decision makers utilize these stereotypes to make tacitly biased assumptions about other’s behaviors, skills, and capabilities. Norms of a
particular stereotype are automatically associated with assumed members, even if the situation does not provide corresponding indications (Dunning and Sherman 1997).

Generally people associate the male gender with a greater overall ability than the female gender (Williams and Best 1990)—this is often referred to as “sexism.” Research in management has shown that individuals tend to stereotype male managers as possessing high managerial abilities, while expecting that female managers lack the necessary attributes for managerial success (Heilman et al. 1989; Powell and Butterfield 1989; Schein 2001). The impact of gender stereotypes can also affect individual’s receptiveness to influence or persuasion. Additional research has shown that people tend to agree with opinions of males at a greater extent than those of women (Berger et al. 1977; Wagner and Berger 1997), particularly in fields that are stereotypically masculine (Carli 1990; Lockheed 1985; Propp 1995; Schneider and Cook 1995).

Given that auditors’ have extensive education and training to make objective and unbiased decisions, auditors should not consider the gender of the client when forming audit-related judgments. However prior research has shown that auditors are susceptible to non-diagnostic cues (e.g., Hackenbrack 1992), a category within which client gender belongs.

Based upon the stereotypic association between the male gender and perceived managerial abilities, the lack of female CFOs in the workplace, and evidence pertaining to the susceptibility of auditors to gender stereotyping, we expect that auditors will be less influenced by female, relative to male, client explanations. This is reflected in our second hypothesis:

**H2:** Auditors will be less (more) influenced by client-provided explanations offered by a female (male) CFO.

**Interaction between Auditor Gender and Client Gender**
Next we will examine how male and female auditors could have the propensity to respond differently to client gender.

Evidence in management and leadership literature suggests that a male-favorability bias is stronger for male than female judges. For example, research into the evaluations of male versus female leaders shows that female leaders are more likely to be rejected when evaluated by men (Eagly et al. 1992). Multiple studies within the field of management have demonstrated that the perception of successful managers being associated with stereotypically male characteristics is more common among men than women (e.g., Schein 2001; Schein and Mueller 1992; Schein et al. 1996). Another set of studies on attitudes towards women as managers also shows that men, compared to women, hold stronger negative attitudes towards female managers (Brenner and Beutell 2001; Owen and Todor 1993; Peters et al. 1974; Terborg et al. 1977).

According to the research of some gender stereotype researchers (e.g., Greenwald and Banaji 1995; Rudman and Kilianski 2000), women garner weaker male-favorable attitudes than men when they are asked explicitly about their gender attitudes; both men and women demonstrate equivalent biases when the respondents were unaware that their attitudes were being measured. With few exceptions, psychology experiments studying gender effects on social influence showed no significant interaction between the gender of the participant and the gender of the influence agent (Carli 2001). Another series of studies has investigated the effect of applicant gender on hiring decisions and found no applicant-rater gender interaction (Rudman 1998; Rudman and Glick 1999). The same conclusion can be drawn for another series of studies on the effect of gender on employee evaluations (e.g., Heilman and Chen 2005; Heilman et al. 2004).
Finally a third stream of research suggested that females may be harsher judges towards other women than male judges. Mathison (1986) found that female’s perception of female managers were more negative than males’ perceptions, especially when the female manager is portrayed as assertive, which is a stereotypically masculine attribute. Another example of this is in regards to the reviews of economic grant proposals to the U.S. National Science Foundation, female reviewers were found to rate female-authored papers consistently lower than male reviewers (Broder 1993). Given all of this information, we have developed our third hypothesis;

**H3:** The male-favorable influence of client-provided explanations will be greater for female than male auditors.

**Impairment of Independence**

The final hypothesis relates to our extension of Gold et al.’s (2009) research. In this extension we investigate whether the possibility of impairment of auditor independence could impact an auditor’s decision.

Research on accountant’s objectivity has largely focused on the independence of auditors; however the results can largely be generalized to other accounting services. A key element in literature pertaining to auditor’s objectivity deals with the potential economic bond between the auditor and the client. For example, Bazerman et al. (2002) suggested that motivations and cognitive biases can adversely affect auditors’ judgments and impair independence. In a summarization of experiments on auditor independence, Church et al. (2015, 220) states that “much evidence suggests that auditors tend to evaluate client-provided information in a manner that suggests they are biased to ‘approve’ or ‘confirm’ the information. In addition, auditors tend to evaluate evidence in a manner that supports client preferences when accounting standards are ambiguous.”
**H4:** There will be an inverse relationship between the perceived impairment of independence and the write-down of inventory.

**Methodology**

For the replication portion of this study, we followed Gold et al.’s (2009) 2x2 between-subjects experiment. Participants were told to assume the role of an audit manager of a large accounting firm. The manager, whose client manufactures computers, is evaluating a potential inventory overvaluation of the client’s finished goods inventory. Participants are informed that the client’s inventory appears to show an overvaluation of around $400,000 as a result of one product line’s potential obsolescence. Participants were provided with information from the client’s CFO that addresses the possible obsolescence problem; specifically, a series of information from the CFO provides the client’s justification for not reducing the value of the inventory. Subsequent to reviewing the CFO’s information, the participants made a judgment as to the amount of inventory, if any, that should be written-down due to obsolescence.

We use the auditor’s estimated write-down of inventory as the dependent variable. The CFO’s gender is an independent variable. The CFO is described as possessing a CPA and master’s degree, and having 15 years of accounting experience. To manipulate the gender variable, we changed the names of the CFO to Tom (male) and Mary (female), and made grammatical changes in the instrument as appropriate (his/her and he/she) to reflect gender. We also use the auditor’s gender as an independent variable. This is simply captured by the participant’s response to their gender (male or female).

For the extension of this experiment, we included an additional independent variable, the potential impairment of audit independence. For the potential impairment condition, participants were told that the client’s CFO and the audit partner on the engagement “are close personal...
friends who are both on the board for the local Boys and Girls club.” This information was excluded in the no potential impairment condition.

We acquired Gold et al.’s experimental instrument from Dr. Anna Gold. We imported the instrument into an online format which was distributed to the participants. The survey instrument took into account the participant’s gender, and then randomly assigned them one of four treatment conditions; male client, male client impaired, female client, and female client impaired. To capture the additional variable, potential impairment of independence, the survey program randomly assigned the two conditions (no impairment or potential impairment) to all participants. As a result, the replicated experiment with the extension resulted in 2x2x2 between-subjects design. We also collected data on manipulation checks, demographic measures, and a modified psychological instrument, Women as Managers Scale (WAMS) (Peters et al. 1974). The instrument was also included in the Gold, Hunton, and Gomaa (2009) study to understand the extent to which a male-favorability bias exists.

**Experimental Results**

**Study Participants**

We collected data from two sources, various state auditors’ offices and graduate accounting students. A total of 97 individuals started the instrument, of those, 80 completed it fully. The average age of the participants fell within the range of 31 to 35, and the average amount of full-time accounting experience was 4.8 years. There were 45 male and 35 female participants, of which 56 classified themselves as staff auditors. The remaining participants classified themselves as senior (11), manager (8), or director (5). Of the 80 participants of the
study, 14 were CPAs, two were CIAs, two were CISAs, seven had “other” certifications, and 55 carried no certification.

Table 1
Descriptive Statistics
Mean (Standard Deviation) and [Sample Size]

<table>
<thead>
<tr>
<th>Client Gender</th>
<th>Male</th>
<th>Female</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>175,000</td>
<td>152,941</td>
<td>165,854</td>
</tr>
<tr>
<td></td>
<td>(178,916)</td>
<td>(150,489)</td>
<td>(166,091)</td>
</tr>
<tr>
<td></td>
<td>[24]</td>
<td>[17]</td>
<td>[41]</td>
</tr>
<tr>
<td>Female</td>
<td>236,672</td>
<td>236,667</td>
<td>236,670</td>
</tr>
<tr>
<td></td>
<td>(175,871)</td>
<td>(182,531)</td>
<td>(176,591)</td>
</tr>
<tr>
<td></td>
<td>[21]</td>
<td>[18]</td>
<td>[39]</td>
</tr>
<tr>
<td>Overall</td>
<td>203,780</td>
<td>196,000</td>
<td>200,376</td>
</tr>
<tr>
<td></td>
<td>(178,215)</td>
<td>(170,642)</td>
<td>(173,887)</td>
</tr>
<tr>
<td></td>
<td>[45]</td>
<td>[35]</td>
<td>[80]</td>
</tr>
</tbody>
</table>

Hypotheses Testing

As presented above, in Table 1, the result of the final write-down amounts are delineated according to both the gender of the client and the gender of the auditor. Per Gold et al. (2009), who developed the instrument used in this study, an expert panel’s consensus opinion of the inventory write-down totaled $200,000. This is consistent with the total overall average write-down ($200,376) of our 80 participants. In addition, the average write-offs amount of both male and female auditors ($203,780 and $196,000, respectively) are relatively close to the consensus write-down of $200,000.

The descriptive statistics also show large difference in the average inventory write-downs between the consensus and the averages for male and female clients ($165,854 and $236,670,
respectively). To test this further, we conducted an analysis of variance on the data, the results of which are shown below in Table 2.

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>F-Statistic</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1</td>
<td>104.916</td>
<td>.000</td>
</tr>
<tr>
<td>Auditor</td>
<td>1</td>
<td>0.080</td>
<td>.779</td>
</tr>
<tr>
<td>Client</td>
<td>1</td>
<td>3.455</td>
<td>.067</td>
</tr>
<tr>
<td>Auditor x Client</td>
<td>1</td>
<td>0.079</td>
<td>.779</td>
</tr>
<tr>
<td>Error</td>
<td>76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results of the AVOVA support the descriptive statistics. The independent variable that measures whether the information about the inventory is from a male or female CFO (Client) is significant (p<.10). Neither auditor gender (Auditor) nor the interaction between auditor and client gender (Auditor x Client) is significant.

To further explain and analyze the data, we created an illustration (Figure 1) of the mean inventory write-downs by both auditor and client gender.

**Figure 1**

**Illustration of Means**

(Auditor and Client Interaction)
The first hypothesis tested pertains to the impact of the client-provided explanations on auditor judgment; specifically, we posit that female auditors will be less influenced by client provided explanations than will male auditors. We assess influence by the amount of inventory write-down; the less (more) the write-down, the more (less) the auditor was influenced by the information provided by the CFO. The write-down amounts for male and female auditors were nearly identical (thus, no significant differences) when the CFO was female. The difference in average write-offs between male and female auditors ($175,000 and $152,941, respectively) when the CFO was male is also not statistically different. Thus, we cannot support H1, and our results do not support the findings of Gold et al. (2009) with respect to this hypothesis.

As noted above, the results from our ANOVA find the Client variable to be significant. When male auditors received client information from a female CFO, the average write-down of inventory was $236,672; when the client information came from a male CFO, male auditors had an average write-down of $175,000. The difference of $61,672 is not statistically significant. We did find a significant difference (p<.10) in average write-downs between male and female auditors ($152,941 and $236,667, respectively) when information about the inventory was provided by a female CFO. This is consistent with our second hypothesis that posits auditors will be less influenced by female client-provided explanations than by male client-provided explanations. The larger average write-downs when information came from female CFOs suggest that female auditors were less convinced that the inventory in question was fairly stated, whereas the same explanation provided to female auditors by male CFOs resulted in smaller write-downs. This decrease in write-downs suggests that the female auditors were more convinced by the male CFOs that the inventory did not need to be written-down as much.
Our third hypothesis posits that the influence of male client-provided explanations will be greater for female auditors than for male auditors. Although we find that, on average, female auditors were more influenced by male CFOs than were male auditors (that is, they had smaller write-downs of inventory), the results are not statistically significant. Thus, we do not find support for H3.

Our fourth hypothesis pertains to our extension of the previous research by Gold et al. (2009). We find no support for the impairment of independence variable. Contrary to what we predicted, the potential impairment of auditor independence did not have a practical or significant impact the auditors’ write-offs of inventory.

**Post-Experiment Clinical Debriefing**

Following the completion the experiment, participants responded to items that were designed to assess the participant’s perceptions of the client’s competence. The items asked how competent was the CFO, how capable was the CFO, and other questions designed to identify the participants’ perceptions of the CFO. We did not find statistical significance regarding the auditor’s perception of the CFO, nor did we find statistical significance regarding the other demographic information run as co-variates (i.e., age, years of full-time accounting experience, firm level, and professional certification). We also collected data on Women as Managers Scale that was included in the original Gold et al. (2009) study. When the aggregated results were included as a co-variate in our ANOVA, no statistical significance was found for the variable.
Discussion and Limitations

This research is intended to investigate the impact of client and auditor gender on an auditor’s judgment during the auditor-client inquiry process. Our replication of the Gold et al. (2009) study found partial support for their results. Specifically, we found that the gender of the client’s CFO has a significant impact on the decision to write-down inventory. We did not find significant differences between decisions made by male and female auditors, nor did we find a posited interaction between client and auditor gender. Additionally, we extended the Gold et al. study by adding an additional variable, the potential impairment of client independence. We find that the potential impairment of auditor independence did not impact the auditors’ inventory write-off decisions.

One major limitation of this study is that although we utilized the same instrument as Gold et al., we did not use the same pool of participants; they used external auditors while we used both state auditors and graduate students who proxied for practicing auditors. Even if we used the same participant pool as Gold et al., we could expect to find some differences in results simply because this is a behavioral study and exact replication is nearly impossible. Nevertheless, our results provide a first step in validating (or not) the retracted works of Jim Hunton.
References


