AUDITORS' FORECASTING IN GOING CONCERN DECISIONS: FRAMING, CONFIDENCE AND INFORMATION PROCESSING

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Data used in this study are available from the first author upon request

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Abstract

Forecasts provide a key factor in determining whether a client remain a going-concern. Auditors' judgments and decision choices may be called upon to evaluate a forecast that could shed light on a company's going-concern status. This research attempts to model evaluations and choice and two additional components influencing auditors' opinions in the going concern task: decision framing and confidence in the decision that is made.

A field experiment was conducted in which auditors assessed a company's forecasted financial statements and made a decision about whether to issue an examination report supporting the statements. A revised information processing model was presented and tested that added the roles of framing and confidence in auditors' decision making. It was found that decision framing influenced auditors' perception. Perceived understanding influenced subsequent evaluations of the reasonableness of client-provided financial forecasts, which in turn influenced decisions about whether to issue an assurance letter supporting the forecasted financial statements.

Key Words: *Going concern, Problem framing, confidence, covariance structural equation modeling.*

Data Availability: *Data used in this study are available from the first author upon request.*

I. INTRODUCTION

Forecasts offer one key area in determining whether a client can remain an ongoing company. The accounting profession is particularly concern with the type of information auditors consider in regards to a company's going-concern status (Venuti 2004; Ruiz et al. 2004; Vanstraelen 2002). Statement on Auditing Standards No. 59 states that an auditor must explicitly conclude an audit client will continue as a going concern for up to one year from the date of the audited statements (AICPA 1988b). This auditing standard requires consideration of whether the results of audit procedures performed related to the various audit objectives identify existing conditions and events that indicate substantial doubt about the client's *ability* to *continue* as a *going concern* (e.g., negative trends, indicators of financial difficulties and internal and external matters). When, after evaluating conditions and events in the aggregate, if the auditors believe that substantial doubt may exist, they should specifically consider management's plans for dealing with the effects of those conditions and events. In the context of this delicate situation, viability plans elaborated by client's management rely on forecasted financial statements in order to demonstrate its ability to overcome adverse circumstances and, thereby, reducing the possibility of receiving a qualified audit report (Behn et al. 2001; Ellingsen et al. 1989).

The importance of considering forecasted financial information in the going concern task is supported by previous empirical research. The studies of Behn et al. (2001), Goodman and Braunstein (1995) and Ponemon and Schick (1991) show evidence that going concern evaluations are strongly linked to the analysis of the mitigating information in management plans. While the results of Arnold and Edwards (1993) suggest that auditor's decision tends to be based on prospective information more than on factors related to past performance.

Forecasted financial information also provides creditors and investors with additional information to help shape and aid their judgments regarding a company future operations and potential performance. Further, the accounting profession is evolving from providing assurance on historical financial statements to forward-looking or real time assurance to facilitate reliable interactive communication. Finally, the work of both the AICPA special committee on financial reporting and the special committee on assurance services strongly influences thoughts on providing additional relevance to financial statements (AICPA 1997).

Apparently, a trend toward "a forward looking perspective" is picking up steam for modern financial analysis (AICPA 1997, 2001). The motivation of this study is to examine auditors' processes in evaluating a forecast and forming an opinion as to the going-concern status of a client. The forecast provision under Code of Ethics Rule 201 and Interpretation 204-1 (AICPA 1988a) emphasizes that disclosures accompanying forecasts are expected to include the sources of information used, the major assumptions underlying the forecast, the character of work performed, and the degree of responsibility assumed. A significant question relates to the degree of responsibility an auditor should assume for the reasonableness of the assumptions used in preparing a forecast. Auditors are involved in this process since they exercise judgments regarding whether a forecast is reasonable for a client's projection of earnings, investments, and/or cash flow for the next year.

Asare (1992) advocated that the going-concern decision is separated into two parts: An *evaluation* (judgment) task in which an auditor forms an initial belief about a client's stability that includes evidence updating, and a *decision* stage in which an auditor decides the type of report to issue. The research to be reported brings together two different approaches to the study of decision making: (1) loan officers' and auditors' information processing model (Rodgers and

Housel 2004; Rodgers and Johnson, 1988; Rodgers 1992), and (2) a cognitive model of decision making (Beach 1990, 1993)[1]. The combination of these approaches allows the addition of two key components to the decision making process, that of problem or decision framing (Beach et al. 1992), and the confidence the decision maker has concerning his or her decision process (Christensen-Szalanski 1978, 1980) or decision (Pennington and Hastie 1986, 1988, 1993). Further, the specification of decision frame, confidence, evaluation and decision choice in a single model should contribute to our understanding of the conditions influencing auditors' opinions as to the going-concern status of a client. Finally, this conceptual model depicts biases occurring not only in processing information but also in the search strategy for information, which may improve auditors' judgments (Bamber et al. 1995).

Previously, neither decision framing nor confidence has been included in information processing analyses of auditors' forecasting decisions. It is our view that these components may provide additional insights into auditors' forecasting processes. Also, auditors may benefit immensely by understanding more fully the elaborated steps that influence their evaluations and decisions on forecasted accounting information. A decision frame represents individuals' store knowledge that they use to solve problems. Framing sets the stage for interpretation of forecasted accounting information, and is central to both evaluation and decision[2]. Following Beach (1990, 1992), in this study we differentiated two kinds of frames in audit decisions: (1) the general frame or broader understanding of the client, and (2) the specific frame, generated through the application of GAAP.

On the other hand, confidence symbolizes decision makers' predecisional evaluations of relevant knowledge in reaching a forecast decision, as well as their final degree of belief in the accuracy of that decision. From an auditing point of view, audit efficiency is a function of the

auditor's confidence in memory (Moeckel and Plumlee 1989; Chung et al. 2000). Audit effectiveness is determined by the auditor's knowledge of an event, which is an accurate portrayal of the actual judgment task and subsequent judgment actions (Libby 1995). The view of confidence that will be integrated with the conceptual model derives from empirical evidence obtained by Pennington and Hastie (1986, 1988).

We conducted a field experiment in which auditors assessed a company's forecasted financial statements and made a decision about whether to issue an examination report supporting the statements. Also, we presented a revised information processing model (a covariance structural equation model with a cognitive approach) which added the roles of framing and confidence in auditors' decision making. Partial Least Squares (PLS) method and analysis of variance were used to analyze the interplay between decision framing, confidence and information processing variables. Our results suggest that decision framing influenced auditors' perception in determining client's going concern status. Further, perceived understanding influenced subsequent evaluations of the reasonableness of client-provided financial forecasts, which in turn influenced decisions about whether to issue an assurance letter supporting the forecasted financial statements.

The remainder of the paper is organized as follows: in Section II we discuss the practical issues surrounding auditing engagements of prospective statements. In Section III we justify the theory and hypotheses. Section IV describes our experimental method. Section V shows the results and discussion. Finally, Section VI gathers together the conclusions as well as discussing possible limitations and future lines of research.

II. AUDITING ENGAGEMENTS OF PROSPECTIVE STATEMENT

In October 1985, the AICPA Auditing Standards Board issued the Statement on Standards for Accountants' Services on Prospective Financial Information (AICPA 1985, 2001). This statement was crucial for two primary reasons: 1) The growing use of prospective financial information services performed by accountants, and 2) The requests from practitioners for guidance.

Auditing standards require that prospective financial statements can be performed by an examination, a compilation, or an agreed-upon procedures engagement. Presently, an engagement to review a forecast or projection is prohibited. The rationale is that a forecast or projection is essentially the result of mechanically applying a set of significant assumptions. Defining an examination as to obtaining satisfaction to the completeness and reasonableness of all the assumptions is relatively easy. Also, it is relatively straightforward to define a compilation as involving primarily the computational accuracy of the statements, and not the reasonableness of the assumptions. For example, none of the assumptions could be excluded because they are all significant. Accordingly, being "moderately satisfied" about the assumptions, which is implied by a review service, is likely to perplex creditors and investors. Rather than perplex creditors and investors with this predicament, the AICPA decided to allow only the clearer alternatives.

Prospective financial statements are financial statements that deal with the future, not with the past. There are two general types of prospective financial statements: *forecasts* and *projections*. *Forecasts* are prospective financial statements that present an entity's expected financial position, results of operations, and changes in financial position, to the best of the responsible party's knowledge and beliefs. *Projections* are prospective financial statements that

present an entity's financial position, to the best of the responsible party's knowledge and beliefs, given one or more hypothetical assumptions. Our study centers on an examination of *forecasted* prospective financial statements. This involves: (1) evaluating the preparation of the prospective financial statements; (2) evaluating the support underlying assumptions; (3) evaluating the presentation of the prospective financial statements for conformity with AICPA presentation guidelines; and (4) issuing an examination report. Evaluations by auditors are based primarily on accumulating evidence about the completeness and reasonableness of the underlying assumptions as disclosed in the prospective financial statements. This requires the auditor to become familiar with the client's business and industry, to identify the significant matters on which the client entity's future results are expected to depend (i.e., *key factors*), and to determine that appropriate assumptions have been applied.

Forecasts of financial statements have been encouraged by the SEC, FASB, and AICPA (AICPA 1985, 2001). Advocates of forecast disclosures have argued that the availability of inside information and expertise places management in a position to provide useful information relevant to valuing securities. Several research papers indicate that forecasts are becoming more important to auditors. For example, eliciting and comparing the opinions of experts have been prescribed in preparing forecasts (Jensen 1983). Also, Ijiri (1982) proposed a "triple-entry bookkeeping system" in which the third dimension is a budget or future projection or some measure of the force or rate of change in income accounts. Further, Danos et al. (1982) and Johnson and Pany (1984) addressed auditors' association with forecast information. These studies have, in general, revealed that subjects' involvement with forecasted financial statements resulted in higher confidence about the company, with both bankers and auditors.

Most prior accounting research tells us much about the characteristics of prospective financial statements, but relatively little about individual analysts and their forecasts (Lys and Sohn 1990). That is, accounting research has been very successful in establishing the superiority of aggregated analysts' forecasts over time-series models (Brown et al. 1987). Another study discussed the type of methods analysts use to seek information (Bouwman et al. 1987). These studies are quite important in delineating how financial analysts utilize accounting information; however, they do not address how auditors are involved in this process. Our study attempts to bridge this gap by depicting how auditors process financial statement information. Auditors have an interest in understanding the needs of financial accounting statement users because they can: (1) receive feedback and thereby facilitate their learning regarding the usefulness of forecasted financial statements; (2) be involved in managing the accounting profession's response to such changes through financial accounting reporting standards; and (3) help structure their processes in a more systematic and consistent manner when reviewing these statements.

III. THEORETICAL DEVELOPMENT

The Nature of Decision Framing

A decision frame is an individual's stored knowledge that she or he uses to solve an problem (Beach 1990). This definition derives from theories of knowledge representation in cognitive science and artificial intelligence (e.g., Dinsmore 1987; Fauconnier 1985; Schoenfeld 1983). For intelligent systems, including human beings, knowledge stored in memory is divided into partitions and each partition is keyed to an environmental domain. The meaning of a domain is specified by the knowledge in its particular partition. Memory includes representations of both specific experiences with various auditing tasks (episodic memory) and general knowledge

of global auditing standards (Johnson 1994). Some auditing research has dealt with the effects of knowledge on performance (e.g., Bonner and Lewis 1990; Frederick et al. 1994; Nelson et al. 1995; Tubbs 1992; Bierstaker et al. 1999). Use of salient cues that are present in a given situation (domain) permit an individual to probe his/her memory in an attempt to locate an appropriate knowledge partition (frame) for that situation (Beach 1964; Hintzman 1986). In the case of human decision makers, the knowledge partition derives from past experience with or instruction about these or similar decision contexts and problems. The goal is to access this knowledge in order (1) to understand the current situation and (2) to use that understanding to guide behavior in the current situation.

It is believed that there are two different kinds of frames (Beach 1990, 1993). The *general frame* provides the context for the decision problem. Frames of this kind serve to give coherence and structure to the problem by placing it within a broader perspective. The *specific frame* defines the problem itself in terms of the available information and issues, and in terms of the broader perspective of the general frame.

Translated into the audit setting, the general frame consists of the auditor's knowledge that this is indeed an audit. Further, this frame uses relevant information about the client and the environment in which the client operates to formulate a coherent picture about the client's past history, current practices, general trustworthiness, particular strengths and weaknesses, and existing or future environmental threats. It is against this background impression of the client and the client's environment that the auditor interprets audit data as he or she sets about dealing with the audit. That is, the ways in which the auditor deals with the details of the ongoing audit (the specific frame) are colored by the larger picture (the general frame) he or she has of the client and the environment.

On one hand, the role of the general frame in guiding decisions arising in the specific frame has been investigated in other than auditing contexts. For instance, the research of Wagenaar and Keren (1986) and Anderson and Pichert (1978) support that different general frames had a marked effect on subjects' subsequent decisions. On the other, the best known work on specific frames on decisions is by Tversky and Kahneman (1981) who found that describing decision alternatives in terms of possible gains or possible losses leads subjects to make different choices--even though the alternatives are objectively identical. However, subsequent research suggests that these specific-frame results are dependent upon the general frame in which the experiment is embedded[3].

In the auditing field, two studies have examined the role played by specific frames. Johnson et al. (1991) examined how information presented by audit clients shapes auditors' specific frames. Auditors were given cases in which clients' financial statements contained either intentional or unintentional misstatements. It was found that intentional misstatements could result in favorable specific frames that led to favorable opinions, but those auditors who were familiar with the industry or who were very experienced could produce alternative frames that led to unfavorable opinions. Finally, Emby (1994) found that framing had a significant effect on auditors' decisions. Also, evidence indicated that most auditors who received neutral versions of the evidence, with no externally imposed frame, acted as if the evidence were framed in terms of strength. The results suggest that to improve a firm's consistency in the execution of the audit examination, it may be beneficial for all firms to provide auditors with a simple decision aid.

The Nature of Confidence

There has been another line of research on confidence, however. This line has not equated confidence and subjective probability and its goal has not been to see if confidence has a specific calculus. Rather, confidence is seen as a by-product, if you will, of the cognitive processes involved in decision making. It is seen as a subjective evaluation of the reliability of the information that is being processed as well as an evaluation of the reliability of the process itself. In this view, confidence is a subjective index of decision precision. For example, Christensen-Szalanski (1978, 1980) found that confidence in the correctness of decisions was higher when decision makers used well-structured, analytic decision processes than when they used less formal processes, unless processing time was constrained by deadlines, in which case confidence was reduced. Moreover, subjects who lacked analytic skills were considerably less confident in decisions requiring even moderate analysis than were subjects who possessed such skills. The conclusion was that confidence in decisions reflected information properties and processing demands rather than the outcomes associated with decision alternatives. As such, confidence provides the decision maker with a measure of how much he or she should depend upon the final decision, how likely it is to be accurate and how much he or she should invest in its implementation.

Pennington and Hastie (1988) also have examined decision confidence in the context of their story model. They found that the coherence of the framework that subjects construct in an attempt to organize incoming evidence is a major determinant of their perceptions of the strength of evidence and of their confidence in their subsequent decisions.

In accounting research, Waller and Felix (1987) performed a laboratory experiment that examined whether auditors were overconfident in their decision to rely on internal controls. They

found that overconfidence may be an assessment of outcome feedback auditors receive. Moeckel and Plumlee (1989) had their subjects review a set of hypothetical audit workpapers, then after one day's delay respond to a recognition test and rate their confidence in their recognitions. They found that auditors are at least as confident in their incomplete and inaccurate memories as they are in their complete and accurate memories.

Framing and Confidence in Audit Decisions

A general frame for an audit (and other engagements performed by auditors)[4] is generated by what is known initially about the client, together with initial information procured by the auditor, to produce a broader understanding of the client in anticipation of creating a specific frame for the audit itself. The specific frame is generated through application of generally accepted auditing procedures that produce further information about the client, and results in an evaluation of the fairness of the client's financial statements. The evaluation is then used to generate a decision about the kind of opinion to be issued. Paralleling all of this is the auditors' confidence in their understanding of the information that has been generated, and their evaluations and decisions. Confidence is engendered by information, but it underlies the auditor's willingness to use that information in important decisions, particularly the ultimate audit decision about the opinion to be issued.

As can be inferred from the foregoing, part of the audit decision process is 'objective' and part is 'subjective.' That is, the information itself and the auditing procedures can best be thought of as objective, in that trained persons would tend to agree about them. However, the interpretations of the information, both general and audit specific, are subjective, as are the feelings of confidence they engender. We contend that both the objective and subjective

components are necessary parts of the audit decision process; to fail to understand either is to fail to understand the audit process itself.

This analysis leads to four hypotheses about auditor use of information in forecasting decisions:

H1a: The more coherent the general frame is perceived, the more auditors will feel that they understand the audit information, and (**H1b**) the more confident they will be about their understanding of that information.

H2a: The more the auditors feel they understand the information presented by the client, the more positive their evaluations are of the reasonableness of the client's financial statements (irrespective of whether those statements are positive or negative), and (**H2b**) the greater will be their expressed confidence in their evaluations.

H3a: The auditors' evaluation of the reasonableness of the client's financial statements, and their confidence in that evaluation will dictate their decisions about issuing an examination report, (**H3b**) as well as indicate their confidence in that decision.

H4: Financial statement information will have a positive and significant influence on auditors' evaluations of forecasted information.

The Conceptual Model

The above four hypotheses are embedded in a conceptual model that is composed of three stages connected to a measurement model. We propose a model that capitalizes on the complementary strengths of symbolic (latent) representation derived over individual units (or variables) corresponding to a causal structure. This conceptual model purports to make

inferences based on financial accounting information from the income statement, balance sheet, and statement of cash flow; as well as knowledge structures concerning coherence, understanding, evaluation, and decision. We also have incorporated confidence in auditors' evaluation and decision.

This conceptual model or unobservable concepts produce a measurement model of individuals' responses on tests, experimental questionnaire items, etc. The measurement model (which will be discussed in detail in the method section) represents a lower level of cognitive processing, but yet one important. These measures represent traces or observable responses resulting from one's cognitive processes. Often times these traces or responses are implemented in research studies to reflect higher order mental processes such as judgment. However, higher level operations should be captured by unobservable concepts.

We believe our model captures the key determinants of the equation: Performance = *f*(Ability, Knowledge, Environment, Motivation) as advocated by Einhorn and Hogarth (1981) and Libby and Luft (1993). That is, the general frame involves the encoding of a set of facts processed by the decision maker. This set of facts, or declarative knowledge, is represented in the measurement system (discussed in the Method section). The individual perceiver uses the available information and searches for more in order to construct or test an encoded description of an event. In the specific frame, auditors use selective procedural knowledge that enables them to select operators forming a useful solution. This procedualization, where facts are turned into procedures, is represented in the measurement system. The environment, which is represented in the general frame, includes financial statement information pertinent to the task evaluated as part of the specific frame.

IV. RESEARCH METHOD

Participants

Sixty-four senior auditors who were attending a KPMG Peat Marwick training school participated in the research. Their mean auditing experience was 3 years (minimum = 2 yrs, maximum = 4 yrs, std deviation = .217 yrs). The experiment took about an hour. The results of Frederick et al. (1994) and Nelson et al. (1995) suggest that this is sufficient time to have developed an adequate knowledge structure of general auditing experience. Further, they had participated in assurance reviews involving forecasts or have dealt with these issues in a training seminar.

Task

The subjects were asked to read two cases, to use the information in each of them to assess the forecasted financial statements for the company in each case, and to make a decision about whether to issue an examination report supporting the statements. The information in each case consisted of financial statements, a management profile, and an outlook story. The management profile and outlook story described the company's achievements and difficulties, as well as its forecasted future directions.

Of the four cases only two were seen by any subject. Two cases were clearly defined and had internally consistent management profiles and outlook stories while the other two were less clear and less consistent. Each subject was randomly assigned two cases; one of the former and one of the latter. The financial data for the cases were based upon annual reports from the paper industry (1984-1986) and consisted of ratios, an income statement, a balance sheet, and a statement of cash flow for each case.

After the subject read each case, he or she used 10 point rating scales to assess: (1) The degree to which the information provided a coherent, complete, and adequate picture about the company depicted in the case; (2) The usefulness of the economic and management information in the management profiles in making his or her evaluations about the company; (3) The degree to which he or she understood the information in the outlook story about the overall performance, liquidity, leverage, and profitability of the company, each rated separately; (4) The reasonableness of the outlook story's forecasts of liquidity, leverage, and profitability; (5) Confidence in his or her assessments of the reasonableness of the forecasts of liquidity, leverage, and profitability; (6) His or her decision about whether or not to issue an assurance letter supporting the forecasted financial statements; (7) Confidence in his or her decision about issuing the examination report; (8) An estimate of the number of additional hours by which the engagement would have to be extended before the auditor would be willing to make a decision (scale from 0 to 20).

Data Analysis

The structural model used in this study, PLS, has been useful in understanding business events in several business disciplines, including economics (Apel 1977), marketing (Jagpal 1981; Fornell and Robinson 1983), organizational behavior (Graham et al. 1994), and business strategy (Cool et al. 1989).

PLS Version 1.8 was used to perform a latent variable path analysis following the methods initially described by Wold (1966, 1980b), elaborated by Bookstein (1982), and programmed by Lohmoller (1984). PLS executes a series of multiple regression equations in the theoretical order specified by the researchers, applying them to either a correlation or covariance

matrix. While these regressions are estimated, the effects are partialled out as a means of approaching the true effects of the different variables on one another. The Latent Variable Path (LVP) model is a combination of a factor model (measurement model) and a path model (structural equation model). The factor model represents the relation between observed variables and unobserved (latent) variables as a linear equation system. The path model represents the relation between the latent variables as a linear equation system[5]. The latent variables are estimated as weighted aggregates of their indicators. The weights for the aggregates and the regression coefficients are estimated iteratively by the PLS algorithm (Fornell and Bookstein 1982; Graham et al. 1994). This iterative method provides successive approximations for the estimates, subset by subset, of loadings and structural parameters, based on Wold's (1965, 1980a, 1980b) theory of fixed-point estimation for structural models with unobservable variables.

The main advantage of PLS is that it uses a rapid least-squares based estimation technique (Lohmoller 1988). For application and prediction, the PLS approach is superior to regression and covariance structural models because all observed measure variance is treated as useful variance and is explained[6]. Further, to validate PLS results we conducted ANOVA and MANOVA designs for the understanding and confidence measures in auditors' judgments and decision making.

Model Equations

Listed below are the structural model equations for each of the three stages of the audit process. Conceptually, the first stage captures the general frame using the coherence of the information that was presented in the case, together with economic and management

information, and culminates in the auditors' feeling of understanding (a latent variable) of the

company-specific information about overall performance, liquidity, leverage, and profitability.

The second stage represents generation of the audit-specific frame using the information about

forecasted liquidity, leverage, and profitability for the company together with the degree to

which the auditor felt that he or she understood that information to arrive at an evaluation of the

company's financial statements (a latent variable). The third and final stage represents the use of

the evaluation of the company's financial statements to make a decision whether to issue an

examination report. Thus, the general frame (coherence, economic and management information)

leads to understanding. The specific frame (understanding, forecasts of liquidity, leverage, and

profitability) leads to an evaluation of the company. The evaluation leads to the decision about

whether to issue the report.

Conceptually, confidence is seen to operate in parallel with the foregoing description of

the use of information to create frames and to make the decision. Thus, increased understanding

is seen to contribute to increased confidence in evaluations about the reasonableness of

forecasted liquidity, leverage, and profitability, which in turn is seen to lead to increased

confidence in the final decision.

The structural equations are:

$$y_1 = \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \varepsilon \qquad (1)$$

$$y_2 = \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_1 + \beta_7 y_1 + \varepsilon \quad (2)$$

$$y_3 = \beta_8 y_2 + \varepsilon \qquad (3)$$

The equations for confidence follow the same form:

$$y_{C1} = \beta_9 y_1 + \varepsilon \qquad (4)$$

$$y_{C2} = \beta_{10}y_{C1} + \varepsilon \qquad\qquad (5)$$

Formally, equation 1 indicates that the β_1 value for the effect of coherence on y_1 (understanding) is the effect of coherence after controlling for β_2 (economic factors), and β_3 (management factors). Equation 2 shows the $\beta4$ value for the effect of liquidity on y_2 (evaluation), after controlling for β_5 (leverage), β_6 (profitability), and β_7 (understanding) variables in the equation. Equation 3 indicates the effect of β_8 (evaluation) on y_3 (decision). The residual of the structural equation is represented by ε.

x_1 represents perceived coherence as measured by ratings of the degree to the (1) company's information presented a coherent picture, and (2) company's information presented a complete and adequate picture.

x_2 represents economic factors as measured by rated usefulness of information about (1) foreign competition, (2) labor costs due to union activity, (3) overall industry sales effects on the company, and (4) possible takeover bids, all contained in the outlook story.

x_3 represents management factors as measured by rated usefulness of information about (1) lost contract bids affecting sales, (2) management policy changes affecting stock prices, (3) some of the company's customers filing bankruptcy that affected sales growth, and (4) management implementing changes by their auditors that affected net income, all contained in the management profile.

x_4, x_5 and x_6 were measured in terms of the liquid assets, leverage, and profitability of the company, respectively. x_4 = current ratio, x_5 = debt/equity ratio, x_6 = net margin ratio. These ratios were used in the model because loan officers generally rely on them when considering short-term loan requests (Rodgers and Johnson 1988).

y_1 (equations 1, 2, and 4) represents the subjects' understanding of the information. This latent variable was measured by ratings of understanding of (1) the overall performance of the company, (2) liquidity, (3) leverage, and (4) profitability.

y_2 (equations 2 and 3) represents the evaluation. This latent variable was measured by ratings of the reasonableness of forecasted (1) liquidity, (2) leverage and (3) profitability.

y_3 (equation 3) represents decisions. This variable was measured by (1) whether or not the auditor stated that he or she would issue an examination report, and (2) the estimated number of additional engagement hours required to make an appropriate decision.

The confidence variables represent confidence in evaluation and confidence in decisions.

yc_1 (equations 4 and 5) represents confidence in evaluation. This latent variable was measured by ratings of confidence in forecasted (1) liquidity, (2) leverage, and (3) profitability.

yc_2 (equation 5) represents confidence in decisions. This latent variable was measured by the degree of confidence the auditor had in the decision about issuing an examination report.

V. RESULTS

PLS analysis

As shown in Figure 2, a constellation of variables (coherence, economic factors, and management factors), is directly related to understanding; this constellation can be interpreted as the general frame of the audit engagement. A second constellation (understanding and financial information about liquidity, leverage, and profitability) is directly related evaluation; this constellation can be interpreted as the specific frame for the audit itself. At the next stage, evaluation alone affects the decision.

Table 1 contains the PLS parameter estimates for the auditors' measurement models, respectively. Average variance extracted (ovc) ranges from 0.50 to 0.86 (except economic factors, for which ovc = 0.42), indicating satisfactory convergent validity for the constructs. In addition, the very low average squared correlations among constructs show that the model also satisfies the condition for discriminate validity[7]. Thus, it can be concluded that the constructs are measured with sufficient precision[8].

As a further test of our model, generalized least squares (GLS) from the LISREL program was used to estimate the model parameters. The parameter values and the nonstatistical goodness-of-fit measures were close to the PLS estimates. The goodness-of-fit measure is $\chi^2 = 205$ with 170 degrees of freedom represents a reasonably good fit.

In contrast to what would be expected from the Pennington and Hastie (1988) results, confidence does not have its roots in the coherence of information about the client's company. Rather, confidence is engendered by understanding (in a sense, understanding and confidence are the output of the general frame) and then it parallels evaluation and decision making.

Following PLS results, H1a was supported (p <.05) by increased perceived coherence of the general frame contributed to greater perceived understanding of the audit information for the company (specific frame). However, H1b was partially unsupported in that the increased coherence did not lead to increased confidence.

H2a was supported (p <.05) in that increased perceived understanding contributes to higher judged usefulness and reasonableness of client-specific information. Moreover, increased feelings of understanding were accompanied by increased feelings of confidence (H2b) in the

usefulness and reasonableness of the information, suggesting that increased understanding, rather than coherence, is the key to increased confidence. That is, understanding is related to coherence and confidence reflects understanding.

H3a was supported (p <.05) in that higher judged usefulness and reasonableness of information contributes to the decision about whether to issue the examination report. Similarly, H3b was supported in that greater confidence in judged usefulness and reasonableness of client-specific information is related to greater confidence in the decision, whether that decision be positive or negative.

H4 was supported (p <.05) in that liquidity, leverage, and profitability had a significant influence on auditor's evaluation. That is, these sources of accounting information can be viewed as being meaningful to auditors' evaluation processes.

Analysis of Variance

In order to further confirm PLS results, we also implemented a 2 x 2 x 2 analysis of variance (ANOVA) design.   This design included   "coherence x economic factors x management" factors of the first processing stage of the auditors' general frame with "understanding" as the dependent variable (Table 2, panel A)[9]. The results support H1a since coherence was highly significant (F= 27.13, p= .000)[10]. Further, the three-way ANOVA shows the absence of interactions between factors.

For the measurement of the second stage (specific frame) two designs were executed. First, performed a 2 x 2 ANOVA to test the role played by "coherence" and "understanding" latent variables in auditors' confidence on the forecasted information (Table2, panel B). The results bear out previous PLS conclusions in that a higher level of coherence did not affect

understanding. Further, the higher understanding caused a significant higher confidence in evaluation (F=16.46, p= .000). Again, the two-way ANOVA did not show significant interactions between factors. Thus, H1b and H2b were confirmed.

Second, we used several 2 x 2 (understanding x financial information) ANOVA with the evaluation of each type of information as the dependent variables (Table 3, panel A, B, C). The results indicate that the variables of "understanding" and "financial information" were highly significant. In one respect, these findings support that the more *understanding*, the more positive evaluations. In another respect, current liquidity, leverage and profitability affected auditors' evaluation of forecasted information. Thus, H2a and H4 were confirmed.

Finally, to examine the third stage (decision making) we executed two new designs. First, table 4 (panel A) depicts a 2 x 2 MANOVA with decision and extended hours as the dependent variables and understanding and judgment as the independent ones. MANOVA results (see table 4) indicated a significant main effect of evaluation on the decision of the issuance of an examination letter (F= 31.98, p= .000) but not in the estimation of additional hours. Second, a 2 x 2 ANOVA was implemented with "confidence in the decision" on the examination report as the dependent variable and "understanding and confidence in evaluation" as the independent variables. The results (see table 5) show how the confidence in evaluations (F= 31.98, p= .000) affected significantly the confidence in the issuance of the examination report. Thus, MANOVA and ANOVA findings seem to support H3a and H3b.

VI. CONCLUSIONS

Forecasted financial statements can provide auditors with additional information to help shape and aid their judgments regarding a company future operations and potential performance. This study examined auditors' processes in evaluating a forecast and forming an opinion as to the going-concern status of a client. The results depicted a model displaying a constellation of variables (coherence, economic factors, and management factors) directly related to auditors' understanding of the general frame of an auditing engagement. A second constellation (understanding and financial information about liquidity, leverage, and profitability) directly influenced their evaluation; this constellation can be interpreted as the specific frame for the audit itself. Finally, evaluation had a significant affect on auditors' decisions.

This study combined a covariance structural equation modeling approach to auditors' decision making with a cognitive approach, with particular emphasis on stages of framing the decision problem and the role of confidence in the decision process. The thesis was that the coherence of the general frame derived from background and initial information about the client contributes to a feeling of understanding and confidence. This was only partially supported by the results; coherence was related to understanding, but it did not directly influence confidence. Rather, confidence appears to grow out of understanding, and they both contribute to the specific frame of the audit task and are reflected in evaluation (and confidence in that evaluation) of the financial forecasts provided by the client. This evaluation then appears to drive the decision while the confidence in the evaluation appears to drive confidence in the decision.

The interpretation of the results of this experiment is fairly straightforward. It suggests that the conceptual differentiation between general and specific framing may have value and deserves further investigation. Furthermore, the results suggest that confidence in evaluations

and subsequent decisions do not depend upon coherence, as was suggested by the Pennington and Hastie (1988) results for jury decision making. Rather, confidence appears to have been related to the level of understanding that arose both from coherence and from substantive information about economics and management. Note however, that understanding and confidence are not merely two words for the same thing; they are not perfectly related in Figure 2. Rather, it may well be that understanding is related to coherence and other information, and confidence is engendered by understanding. The relationship between understanding and confidence suggests that confidence tells the decision maker how much to rely upon what he or she knows when evaluating the client's statements and, as a result, how much faith to put in the subsequent decision about whether to issue the examination report. Our model ties together important features of a decision making model, that has yet been integrated, as well as those factors that affects auditors' decision making.

Practitioners in accounting have viewed forecasted financial information services for many years. The results suggest that in the interest of enhancing consistency within a firm in evaluating a firm forecast, it may be beneficial for all firms to provide auditors with a checklist or decision aid to facilitate the consistent use of framing, evaluations and choice about a client's going-concern status. Also, our results may aid accountants in tax planning and compilation of prospective information to better understand the information they are using. Then perhaps, better clarity by individuals, potential investors, bankers, and business owners will result in using these prospective forecasts.

The results of this study must be interpreted with respect to several limitations. The first limitation of our experimentation could be the sample size. Even thought we found out a

satisfactory goodness of fit in our PLS model, the number of participants in the experiment was less than ideal. However, the conclusions from the analysis of variance seem to resolve this potential limitation since these results are consistent with PLS parameters estimates. The second limitation is that all respondents were from one international auditing firm. This circumstance limits our ability to generalize the results to other firms but potentially increases the power of the statistical test. Second, this design is an abstraction containing limited information. In this respect, it could be objected that it was impossible for the auditor to look for evidence added to that included in the experiments. Finally, the subjects may not pay the same level of attention into the case study that they might invest in real situations.

This study also has implications for future research. Since the going concern evaluation has been considered as a non-structured task (Abdolmohammadi and Wright 1987), our research into auditors' forecasting decisions partially explains the complex process of evaluating client's ongoing status. The next step in this research should consider auditors' mental integration of significant aggravating and mitigating circumstances, including management plans, and its effect on auditors' judgment and choice of an audit opinion. Furthermore, some research has suggested that audit quality could be affected by auditors' overestimation of the management plans when evaluate the going concern status (Goodman and Braunstein 1995; Lennox 2005). In this sense, further research should analyse the role played by framing and confidence on the consideration of forecasted financial information as a potential mitigating factor of the going concern doubt.

Footnotes

[1] The conceptual modeling research by Rodgers and his associates has found that loan officers' and auditors' decision making can be described in a manner not unlike Brunswik's (1955) Lens Model. That is, loan officers and auditors use the information present in the financial data to derive evaluations about the client's financial condition and the fairness of the client's financial statements. These evaluations then determine the loan officer's or auditor's subsequent decisions about the loan application or about the presence of material misstatement in the client's statements.

[2] In this regard, Kida (1984) Trotman and Sng (1989) and O'Clock and Devine (1995) studies have found that framing mattered in auditors' judgments.

[3] Pennington and Hastie (1986, 1988) investigated the way in which jurors created both general (background lading up to the crime) and specific (specific crime's events) frames as evidence was presented to them in the course of a trial. It was found that the general and specific frames provided the basis for making well-considered decisions about the appropriate verdict.

[4] We use the word 'audit' to include all forms of auditor attestation engagements, although the task in the present study was not in fact an audit in the usual sense.

[5] This LVP model is common to several modeling programs: Joreskog and Sorbom's LISREL (1988), Bentler's EQS (1985), and Muthen's LISCOMP (1985).

[6] PLS uses a principal-component model in which no random error variance or measure-specific variance (i.e., unique variance) is assumed. Parameters are estimated in a manner that maximizes the amount of explained variance in a set of observed measures. Fit is evaluated on the basis of the percentage of variance explained in the specific regressions. Because the PLS approach estimates the latent variables as exact linear combinations of the observed measures, it offers the advantage of exact definition of component scores. Further, since regression coefficients are estimated iteratively in PLS, sample size is normally not a problem like it is when using programs as EQS and LISREL.

[7] As with EQS and LISREL, convergent and discriminate validity can be evaluated within the PLS model. Convergent validity of a construct is measured by the ratio of the amount of variance of its indicators captured by the construct, relative to the total amount of variance. This includes the variance of its indicators captured by the

construct, relative to the total amount of variance, including the variance due to measurement error ("average variance extracted", *ovc*). As a rule, a ratio of less than 0.5 is judged inappropriate because more variance is due to error. Satisfactory discriminate validity among constructs is obtained when the squared correlation between any two constructs is statistically less than the *ovc*. This implies that the variance shared between any two constructs is less than the variance shared between a construct and its indicators. See Fornell and Larcker (1981) for a detailed discussion of validity assessment within PLS.

[8] PLS also provides an overall test of the fit of a model to the data. Falk (1987, 84) emphasizes that the goodness of fit indicator in PLS is The Root Mean Square (RMS). A lower coefficient indicates a better fit of the model to the data. The goodness of fit in our model is 0.05, which suggests a superior overall fit of the model. Lastly, another meaningful indicator of the fit of the model with respect to its measurement, is the overall communality coefficient (in this case equaling 0.68). This exceeds Falk's (1987) recommendation that this coefficient should be greater than 0.30.

[9] The independent variables were categorized in two intervals considering their medium responses: "high", when the value was above the medium and "low", when the value was below or equal to that value.

[10] A MANOVA was implemented with four dependent variables (i.e., the understanding of company performance, liquidity, leverage and income) and the same independent variables. Again, the results show that only coherence affected significantly the four measures of auditors' understanding.

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Table 1

Measurement Model Parameter Estimates - Auditors

Constructs and Indicators	Loadings	Error Variance	Convergent Validity	Discriminant Validity[a]
Perceived Coherence			0.86	0.14
Coherent picture	0.93	0.13		
Complete picture	0.92	0.15		
Economic Risk Perception			0.42	0.09
Foreign competition	0.10	0.99		
Labor costs/union activity	0.68	0.54		
Industry sales	0.89	0.20		
Takeover bids	0.65	0.58		
Management Risk Perception			0.54	0.13
Loss contract bids	0.76	0.43		
Policy changes	0.74	0.45		
Bankrupt customers	0.76	0.42		
Changes implemented	0.66	0.57		
Understandability			0.73	0.15
Company performance	0.85	0.27		
Liquidity	0.86	0.26		
Leverage	0.85	0.28		
Income	0.85	0.28		
Evaluation			0.69	0.15
Liquidity	0.76	0.43		
Leverage	0.87	0.24		
Income	0.85	0.28		
Confidence in Evaluation			0.75	0.04
Liquidity	0.89	0.21		
Leverage	0.91	0.18		
Income	0.79	0.37		
Decision choice			0.50	0.12
Issue assurance letter	0.99	0.01		
Extend audit hours	0.01	0.99		

[a] The entry in each row is the average of the squared correlations of the particular construct with all other

constructs.

Table 2

Three and two-way ANOVA (General Frame) with Understanding and Confidence

in Evaluations as Dependent Variables

SOURCE OF VARIANCE	df	Mean Square	F-statistic	p-value
Panel A: Understanding (mean)				
Coherence (CO)	1	50.24	27.13	.000
Economic (EC)	1	2.21	1.19	.277
Management (MA)	1	5.96	3.21	.075
CO x EC	1	3.85	2.08	.152
CO x MA	1	.832	.449	.504
EC x MA	1	4.88	2.64	.107
CO x EC x MA	1	.614	.332	.566
Error	120	1.85		
Total	127			
Panel B: Confidence (mean)				
Coherence (CO)	1	.189	.093	.761
Understanding (UN)	1	33.51	16.46	.000
CO x UN	1	1.768	.869	.353
Error	124	2.03		
Total	127			

Table 3

Two-way ANOVA (Specific Frame) with Evaluations of Forecasted Liquidity, Leverage and Profitability as Dependent Variables

SOURCE OF VARIANCE	df	Mean Square	F-statistic	p-value
Panel A: Evaluation of forecasted Liquidity				
Understanding (UN)	1	57.45	16.78	.000
Current Liquidity (CLI)	1	11.05	3.23	.025
UN x CLI	1	3.25	.952	.418
Error	120	3.42		
Total	127			
Panel B: Evaluation of forecasted leverage				
Understanding (UN)	1	51.29	17.80	.000
Current Leverage (CLE)	1	30.69	10.65	.000
UN x CLE	1	7.134	2.47	.883
Error	124	2.88		
Total	127			
Panel C: Evaluation of forecasted profitability				
Understanding (UN)	1	39.90	12.89	.000
Current Profitability (CP)	1	21.11	6.82	.000
UN x CP	1	3.35	1.084	.359
Error	124	3.09		
Total	127			

Table 4

Two-way MANOVA (Decision Stage) with the decision about issuing

an examination report and estimation of additional hours as Dependent Variables

SOURCE OF VARIANCE	df	Mean Square		F-statistic		p-value	
Panel A: MANOVA		decision	hours	decision	hours	decision	hours
Understanding (UN)	1	5.87	24.82	31.98	.883	.000	.349
Evaluation* (EV)	1	.251	34.07	1.36	1.21	.245	.273
UN x EV	1	.142	37.02	.773	1.31	.381	.253
Error	120	22.77					
Total	127	29.74					

* Mean of the evaluation of forecasted liquidity, leverage and profitability.

Table 5

Two-way ANOVA (Decision Stage) with Confidence

in Decision as the Dependent Variable

SOURCE OF VARIANCE	df	Mean Square	F-statistic	p-value
Confidence in Evaluations (CE)	1	1.69	.641	.000
Understanding (UN)	1	127.1	48.12	.425
CE x UN	1	.248	.094	.760
Error	120	2.64		
Total	127			

Figure1. Auditors' Three Stage Decision Making Model

General Frame

Specific Frame

Decision

Coherence

Economic Factors

Management Factors

Understanding

Confidence in Evaluation

Confidence In Decision

Evaluation

Decision

Liquidity

Leverage

Profitability

β_1
β_2
β_3
β_4
β_5
β_6
β_7
β_8
β_9
β_{10}

Note: Unidirectional arrows are similar to regression coefficients
Bi-directional arrows are comparable to correlation coefficients.
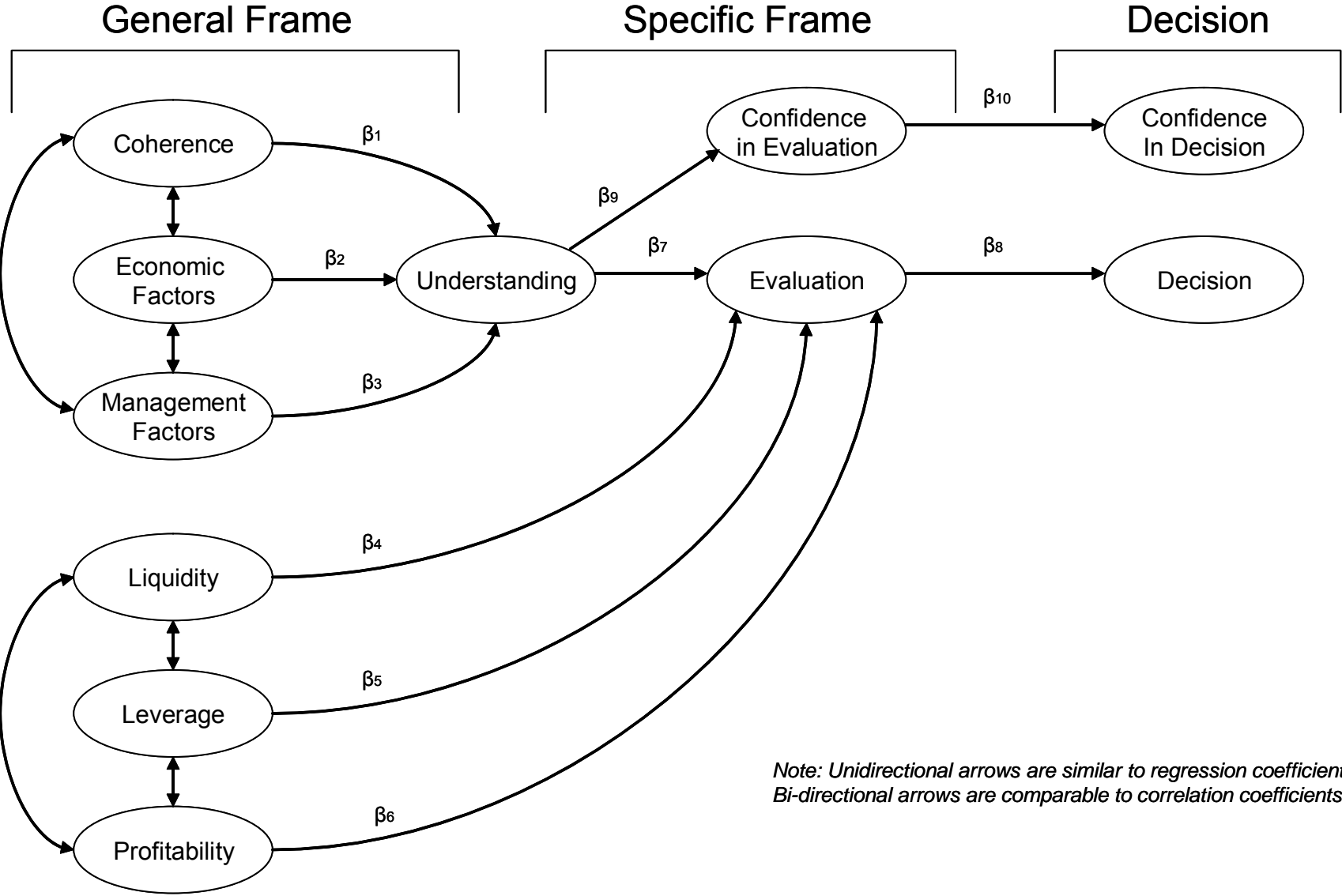
Figure 2. Results of Auditors' Three Stage Decision Making Model

Note: Unidirectional arrows are similar to regression coefficients. Bi-directional arrows are comparable to correlation coefficients.

All relationships shown are significant at p < .05.
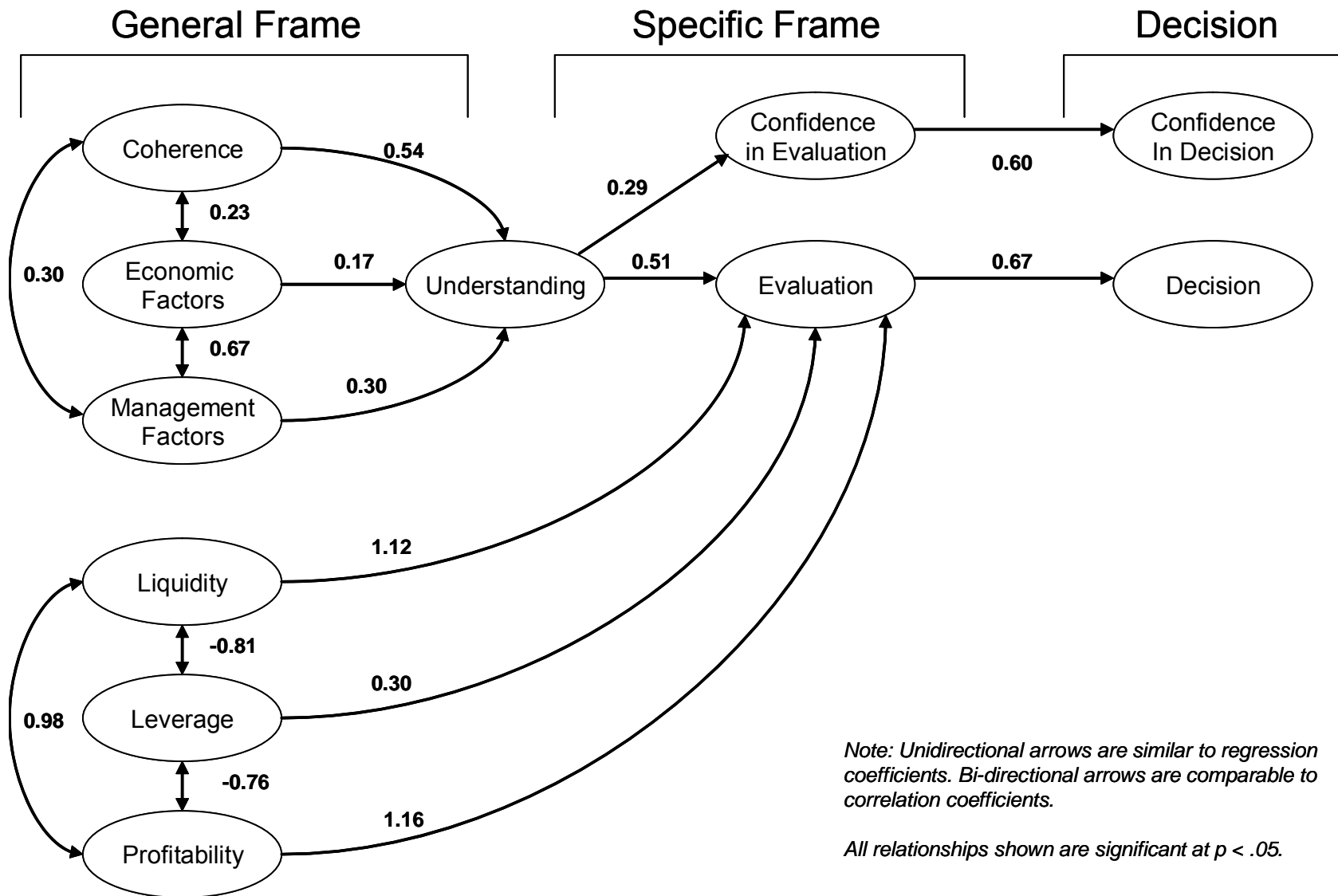
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