

A New Strategy for Improving Business Research

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An objective of scholarly activity is to develop subject knowledge which provides a basis for extending understanding and ultimately enhances decision making. The task of research in this setting is to develop new or question existing knowledge. Yet, despite the volume of scholarly papers appearing in academic journals each year and the intense effort expended on the tools, which facilitate these activities, new knowledge discovery is slow. This paper considers the processes used in business academia to discover new knowledge.

Introduction

The purpose of this paper is to examine a traditional academic research model frequently used in scholarly papers, and the implications of the resulting growth and quality of new knowledge generation. The paper discusses how the model contends with the requirements of researchers in the business disciplines of accounting, finance, management, and marketing. An argument as to how and why this process can restrict new theory development is presented. A new model is then proposed which overcomes these limitations by opening up interactions for the researcher between theory and the issue to which the research applies.

Bass and Wind (1995, p. 1) argued that "Science is a process in which data and theory interact leading to generalized explanations of disparate types of phenomena." Thus, phenomena (empirical generalizations) are the building blocks of science. Some areas in science are directly testable. For example, experimental repeatability in chemistry acts as an effective means of validation. Yet in many disciplines, phenomena are not testable by the direct methods of these sciences.

In non-directly testable disciplines, such as business, the vast volumes of literature indicate that important "building blocks" of knowledge are difficult to discover. Hunt (1991) provided an excellent discussion of the issues in his chapter titled "The Morphology of Explanation", with his discussion of issues involved in deductive-monological and statistical explanation in the inductive and deductive form. Hunt (1991, p. 50) commented that "to seek an answer as to why a phenomenon occurred is to at least show that, given some antecedent condition, the phenomenon was somehow expected to occur." Hunt quoted Brodbeck (1982) "statistical explanations gain in importance when our knowledge is imperfect because we do not know all the variables which influence the phenomena to be explained" (Hunt, 1991, p. 55). Yet statistical explanations may be fundamentally defective. Inductive statistical logic assumes a link between explanations and arguments on the basis of "high probability," a view denied by some authorities as sufficient for knowledge extension acceptance (Ehrenberg, 1990; Salmon, 1971; Jeffrey, 1966; Greeno, 1966; and Suppe, 1977). Deductive statistical logic functions only as explanations of other statistical laws (Hunt, 1991). The issue is thus "statistical relevance" and it is on this basis that inferential statistics attests its validity (Meixner, 1979).

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The substantial developments over recent times in inferential statistics have produced very powerful analytical tools (Sincich 1990; Anderson, *et al.* 1989). However, statistical models are no more than "tools" which contribute to the evaluation process. Without application of the tools nothing results. Conversely, without the idea or initial concept, the tool is of little use and the furtherance of knowledge cannot occur. Such ideas gain an initial credibility from the development of hypothesis and through the rigor of statistical research methodology. However, the tools also have limitations.

Barwise (1995) commented that "our statistical methods and training are geared to drawing inferences from single sets of data" (Barwise, 1995, p. 33), which is inadequate for theory acceptance. Literature generally stresses the importance of replication before theory can be considered robust (Hunt, 1993; Bass, 1993, 1995; Ehrenberg, 1990, 1978; and Barwise 1995). This view is demonstrated by the proposition of Morrison and Silva Risso (1995) that the remarkable results achieved by Ehrenberg in developing robust empirical generalizations in marketing were the result of perseverance and continued study repetition. Statistical applications are tools which often contribute to the process of discovery, but it is the perceptive mind of the researcher, or the research team, which facilitates or "makes" the discovery. The substance behind the statistics constitutes new knowledge. Ehrenberg (1972) argued that "there appear to be no lasting and useable findings in marketing which have been derived by modern statistical or operations research techniques" (Ehrenberg, 1972, p. 101). He further commented: "modern model-building approaches... have led to a sizeable literature but the results do not stand up to the tests of scientific theories" (Ehrenberg, 1972, p. 101, and Ehrenberg, 1990).

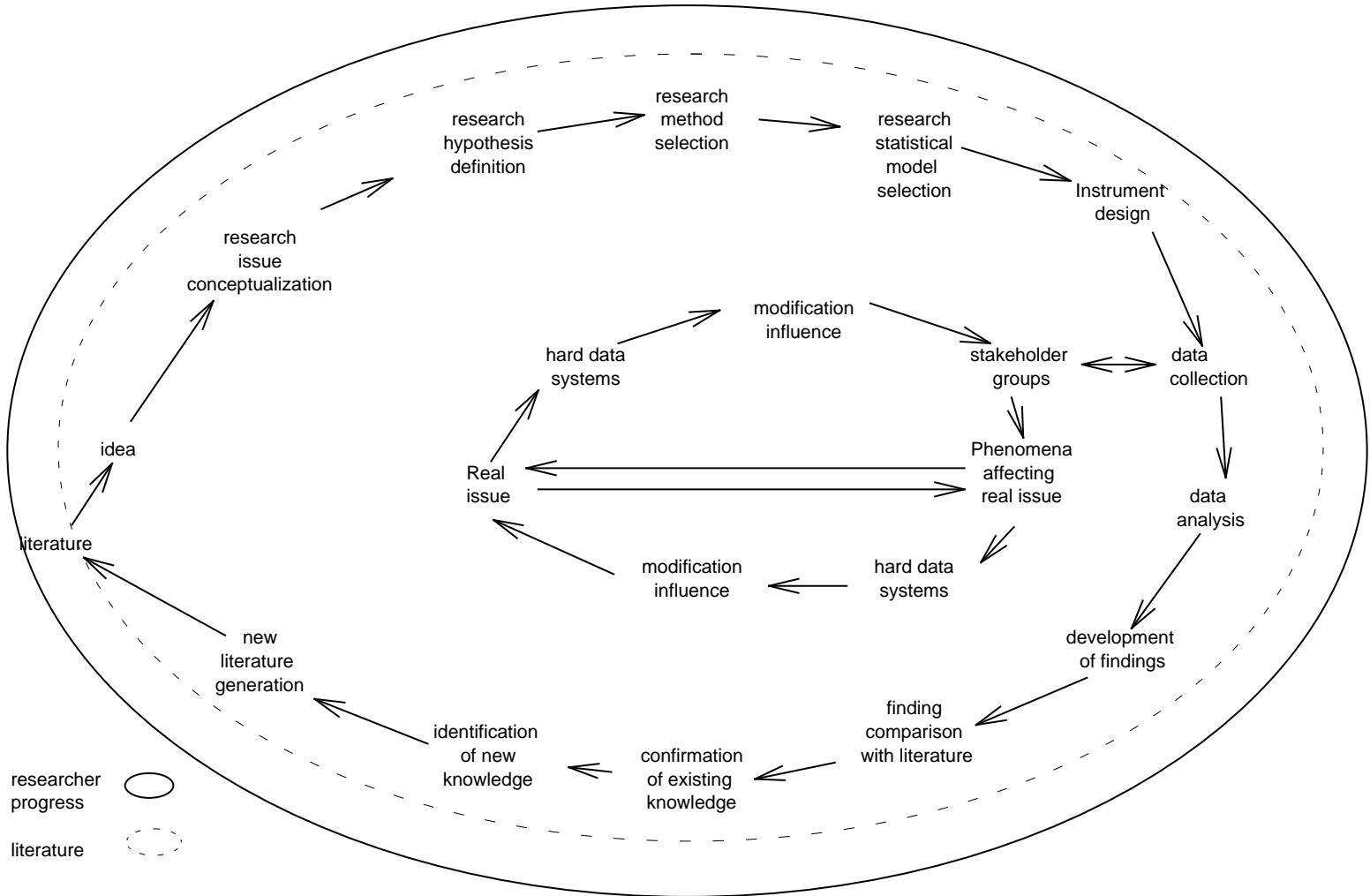
The Traditional Academic Research Process (TARP)

The traditional academic research process (TARP) is portrayed in Figure 1. This diagram is a system-analytical portrayal of a research process frequently evident in academic research. The diagram consists of an activity ring on which the research steps and their sequence are listed. The process is essentially circular because theory development functions as a building block system (Bass and Wind, 1995) and, if the researcher has a viable research direction, should generate future opportunities. Well-conducted research with significant results will find a path into the literature and thus act as a reference for other researchers.

The task of the research will determine the steps required in the investigative process. The researcher may add additional steps, use all the steps displayed in the diagram, or use only a few steps identified. The selection of number of steps to be used will depend on the task. Research projects which search for wide knowledge implications, or are in less well charted areas of knowledge, will tend to use more of the steps than projects which are aimed at adding empirical depth to embryonic theory.

The body of literature available to the researcher as a reference point is depicted as the literature ring. This area contains information, observation, and research which provides a history of academic contact with the issue. Such information is not restricted to the issue or topic to be studied, but also is a source of knowledge relevant to the technologies pertinent to any stage of the research process. Around the literature ring is the research process ring that is read in a clockwise direction. The process ring surrounds the literature ring because this gives room for developments which go beyond publications. Progress is depicted as a ring because the research process for any particular project can commence at any point. As mentioned earlier, progress can be on a step by step basis or can bypass particular steps.

Figure 1
Model of the Traditional Academic Research Process (TARP)



In the middle of the model is a simple dynamic portrayal of the issue or subject with some of the factors and interactive processes pertinent to its function. This is not to suggest that the issue portrayal is complete; for many situations the process is much more complicated and requires substantial expansion. The aspects essential for an expanded discussion of the process are also included in this diagram.

The TARP model can be criticized in the following respects. First, only one point of contact between the research and the issue is provided. Second, the assumption that data in the literature is robust, relevant, and in a terminology which allows the researcher to use it in instrument design is questionable. Instruments should use language appropriate to the respondents if they are to be successful (Malhotra, 1996). Third, the prime communication means is through the stakeholders and it relies on this group's interpretation of the issue. Fourthly, communication in the TARP model is a one way process, so that if there is an error in the literature or researcher's perception of the issue under investigation, there is no room for this to become apparent.

Poorness of statistical model "fit" is the only safety net, but statistical models do not provide the essential information about errors in project conceptualization or fundamental assumptions. It can be argued that if such errors are not identified, progress of knowledge is retarded. Certainly it can be argued that the researcher is not exposed to new logic options in a proactive manner from which new opportunities might be identified.

The fact that the TARP model provides only one point of contact, and the one-way nature of that contact, means that the research process is predominantly divorced from the issue. The process precludes checking of the relevance of the research question to the issue under investigation. Other than providing a response to a predetermined instrument, there is no interaction between researcher and issue. This is particularly questionable in projects where the issue is only loosely understood by the researcher, loosely connected to the literature, or where the assumptions in the literature might obscure the important issues. For example, the accounting and finance literature consists of a "network of core models with adapted models around assumption changes" (Ryan Scapens and Theobald, 1992, p. 24). The same comment could be aimed at economics, where barriers to mathematical progress are covered by the insertion of assumptions. Without interaction among research process, hard data, and stakeholders, a validation of the underpinning research assumptions does not exist.

The point of contact in the TARP model is not restricted to stakeholder contact. Positive theory researchers (*i.e.*, investigators of phenomena who attempt to explain their observations in some comprehensive way) in all business disciplines have for some time argued the need to extract data from hard data bases (Watts and Zimmerman, 1990; Watts, 1992, 1995; Hopper, 1995; Ehrenberg, 1994a, 1994b; Bass, 1995; Barwise, 1995; Buzzel and Gale, 1987). The TARP model copes with "hard data base" requirements of positive research theory by changing the connection point in the activity ring and the issue/idea ring from "data collect/stakeholder" to "data collection/hard data system." While such a change overcomes the assumption that attitudes are useable predictors of behavior (Fishbein and Ajzen, 1975), it does not overcome the danger of that assumption. The failure of researchers to develop an effective new product prediction model based on attitude measurement indicates the dangers of research where data bases do not have a "hard data" non-attitudinal component. Literature identifies that probability of accurate prediction of behavior from attitudes is no better than a 5% probability (Leon and Olabarri, 1993). This suggests that research which relies on attitudinal raw data as the only data source is fundamentally flawed regardless of how good the statistical tools are.

The second defective aspect of the TARP model is that it relies heavily on the assumption that the literature is robust. The TARP research process is driven by interaction between

researcher and literature. Limiting contact with the issue under investigation to data collection limits the opportunity to validate the fundamental theories on which the research is based. The absence of an issue interactive research culture in business research generally increases the risk of invalid theory propagation and survival along with acting as a barrier to effective research.

The risk of such error in marketing is lower than in other business disciplines. The act of marketing is a particularly ruthless empirical test of how effective the process and theory underlying the launch or activity actually are. Marketing results are observable in a non-forgiving "cash register" format. The review process is frequent in the real world and never ends. Most importantly, the results are constantly noticed in the applied world because "cash register transactions" constitute cash flow from operations which is the most critical input component of business survival (Geursen, 1996). Other disciplines do not have this direct unavoidable review process which constantly feed back notification of application or theory errors.

One could go further and argue that non-marketing business disciplines can sustain incorrect theory and perpetuate misconceptions due to lack of an objective "reality check." Such misconceptions act as a barrier to productive research. For example, in small business research, two very substantial and impressive longitudinal studies exist. The Williams (1989) study covered a sample of over ten thousand small businesses and a time span of ten years. Both survivors and non-survivors were studied. The study provided an excellent and comprehensive catalogue of the penetration of what literature in accounting, economics, and management suggest are the control elements of small business. The same observations can be concluded about the Storey, *et al.* (1990) small business study, although the information items tested were substantially from economics literature. Yet neither of these studies collected data which resulted in the building of small business models, let alone models useful to the understanding or functioning of small business (Geursen, 1996).

The third issue in the TARP model is that prime communication between the issue and the research process is limited to questionnaire contact between stakeholders and researcher. Stakeholders themselves are interpreters of what is occurring in the issue domain and are subject to interpretive error. This was the error previously commented on in the discussion dealing with positive research. The fourth defect, that communication between researcher and issue is one way (research instrument to research process), assures that the process is literature driven and thus further limits feedback. Some of these aspects can be overcome during instrument design. Discussion on overcoming weaknesses are well embedded in literature, especially the marketing research literature of the seventies (Malhotra, 1996). Good examples are: 1) respondent memory accuracy in questionnaire design (Cook, 1987; Cannel, *et al.*, 1977; Hawkins and Coney, 1981), 2) the presence of checkable behavioral data and methods to improve respondent ability of to accurately answer questions (Eay, 1973; Secrest, 1979), and 3) the use of measurement scales (Jagdip, Howell, and Rhoads, 1990). The literature on empirical research strongly addresses the issues of non-sampling error and the methods by which such error might be overcome (Malhotra, 1993; Aaker and Day, 1990).

An Alternative Model for Increased Output

The fundamental weakness of the TARP model was that it was literature driven with very limited interaction between research process and the issue under investigation. The model we suggest to overcome these weaknesses is a model for higher academic research process output (HARPO). This is portrayed in Figure 2. We postulate that research processes are about producing information which helps in the identification and understanding of issues or

phenomena. The research design therefore needs to develop levels of contact with the issue under investigation in a pro-active manner. The model in Figure 2 provides a system dynamic schema of how the process might be changed to increase interaction, creating an environment for increased pro-active activity.

The model achieves issue and process pro-active interaction in a number of ways. First, contact is established between the idea and the formulation of the research at its first conceptual point. Second, a process of interaction is instituted between the research activity area and the issue area. Interaction is achieved by utilizing depth interviews, focus groups, or case studies in a manner which allows the researcher to develop an intimate and thorough understanding of the issue. Only after considerable contact with the benefits of two-way communication (Schramm, 1971) does the researcher develop a definition of the research task. It is believed that this method provides a far greater sensitivity and understanding from which to determine what empirical support is required to complete the research process. Appropriate hypothesis or questions and selection of statistical models are now possible. Instrument design can be tested and applied to test the hypothesis contextually with stakeholders while simultaneously referencing data in the hard data systems of the issue areas. The HARPO model thus provides an empirical database that is cross-referenced between the issues, hard data systems, and stakeholder groups. This acts as protection against stakeholder perceptual error of the real situation.

The HARPO model provides the opportunity for the knowledge gained from the research process to be returned to the real issue area. Because the interaction between the issue and the research process has been so close, the lines of communication between the two groups are established to a level where stakeholders in the issue area involved in the research are sufficiently involved to want to implement study conclusions. The feedback link is thus provided at the identification of new knowledge point.

The HARPO model does not change the interaction between literature and its role in the research process. However, it does initiate close interaction between the issue and the research process. In this manner the issue now becomes pro-active with the process. This provides the opportunity for the researcher to check the assumptions and material extracted from literature. The fundamental premises of the project are thus expanded. The original question the TARP research process could answer was: does this literature identified issue or phenomena exist in this data or group and to what extent? The new HARPO model expands the question to add to it an establishment of whether the premises are relevant or appropriate in this research case. Thus the fundamental assumptions of the process are tested as an integral test component in the research process.

The importance of validating the assumptions drawn from literature become evident by comparing the accounting finding outputs of Williams (1989) and Geursen (1996). The Williams (1989) study indicated a TARP research approach; Geursen (1996) used the HARPO approach. Williams in his study of small business included a substantial number of variables, but for the purposes of this paper the discussion is limited to the accounting content. Williams (1989) assumed that the reports that the accounting literature identifies perform the roles literature attributed to them. He further assumed these reports are an integral part of the small business management information system. The acceptance of these assumptions by Williams focused the data collection on accounting report existence. By applying the models of differential statistics Williams examined whether the use of accounting reports had a bearing on small business "success". Williams was able to further examine this question for particular reports. Williams's results did not support or reject the strong links expected in the literature.

On the other hand, Geursen (1996) used the HARPO research approach and found, at the exploratory stages of his research, that accounting literature discussion of accounting document function was inconsistent with observations. He thus established what the function of these documents were and then used the subsequent empirical phase of the study to add an empirical check. The conclusion was that the earlier observations were correct and the literature assumptions were incorrect for this group of businesses. By using a process which provided in-built checks on the assumptions in literature, areas of new inquiry were thus discovered.

Conclusion and Limitations

In this paper a traditional research process was developed and its major limitation, i.e., reliance on literature for researcher thought development without reference to the issue or phenomena being researched, was identified. An alternate model which introduced an interface reactive process with the issue or phenomena was suggested. A substantial interface occurs prior to the establishment of research hypothesis so that the researcher becomes intimately aware of the realities of the issue to be studied and not just those interpretations reflected in literature. By introducing a three-way communication process which brings together the pertinent literature, the researcher and the issue, any assumptions on which the research might be based can be validated as pertinent to the real issue under examination. Thus, it becomes possible to develop a system dynamic model of the issue or the context of the phenomena under study. Such models provide valuable illumination of the issue as is evidenced by the two models in this paper (TARP, HARPO) and in system dynamic modeling literature (Morecroft and Sterman, 1994). With such insights, the final empirical stage of the research can be closely defined and progress using hypothesize, methods and research instruments which have been validated as relevant to the study can be determined. The quality of output can thus be expected to be superior and more extensive to research which is driven by literature.

The proposed model is particularly useful for examination of areas where assumptions are embedded in the literature, such as accounting, management or economic research projects. In areas where the task is the establishment of empirical generalizations, the suggested model is not as appropriate because empirical generalizations are achieved by the repetition process or gaining validity by multiple observations of the same phenomena over many studies (Ehrenberg, 1990). In these latter studies, data used for the research is usually hard data (for example, Ehrenberg's use of shoppers' checkout data as the source.) The proposed model is still appropriate as a method to determine why a particular phenomena or empirical generalization occurs. Such understanding may be critical in the development of further knowledge.

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