Towards Increased Construct Clarity in IS Project Management Research

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Emergent Research Forum Paper

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Abstract
Construct clarity is crucial for the proper development, accumulation, and dissemination of scientific knowledge in IS. By reviewing the past four decades of project management literature against six aspects of construct clarity for a specific construct (i.e., risk response), this study aims to evidence that construct unclarity is a legitimate concern in this area and subsequently to propose several avenues for increasing the clarity of project management constructs in general and the risk response construct in particular.

Keywords
Construct clarity, theory building, construct definition, construct labeling, IS project management

Introduction
Strong theories are central pillar of the today’s IS research. While different types of theory are possible (Gregor 2006), oftentimes a theory explains the relationship between two or more constructs (Whetten 2002), making construct clarity critical (Barki 2008; Suddaby 2010). Besides helping us to build, understand, and evaluate one specific theory, construct clarity is essential for knowledge accumulation in the field (Zhang et al. 2016). Moreover, it can facilitate the dissemination of knowledge to practitioners.

Construct clarity has various aspects (Barki 2008; Suddaby 2010). One important aspect is the existence of a formal definition (Barki 2008; Hagger 2014; Suddaby 2010; Wacker 2004). Such definitions are important as constructs are structured in a researcher’s mind (Barki 2008) and different researchers might not share the meaning behind a construct (Wacker 2004). Another important aspect of construct clarity is consistent construct labelling. Such consistency helps us to avoid the “déjà variable” problem (Hagger 2014), a sensation that a variable with similar definition but a different term was encountered in the past, as it facilitates the search and retrieval of prior literature on similar phenomena.

In this paper, we evidence how construct unclarity is a legitimate concern in some areas of IS research hindering the development, accumulation, and dissemination of knowledge. Moreover, we discuss some ways to improve construct clarity in this area. To do so, we focus on a mature sub-domain of IS, project management, due to lack of exploratory research in this highly-applicable area (Raynolds and Yetton 2007) and particularly on the IS project risk management research. In this domain, prior studies have alluded to the issue of lack of clarity of the “risk” construct (El-Masri 2013; Sherer and Alter 2004); however, less has been said about the clarity of the risk response construct. Therefore, our research questions are: What is the extent of clarity of the risk response construct in the IS project risk management research? How could its clarity be improved?

To address these questions, we have developed a framework of the six aspects of construct clarity by synthesizing relevant research (Barki 2008; Hagger 2014; Suddaby 2010; Wacker 2004). We are currently conducting a review of the past four decades of IS project risk management literature to examine different lexical items that refer to the notion of risk response against different aspects of the developed framework. In this research-in-progress, we present the framework and some preliminary findings of the review.
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This research-in-progress intends to make two key contributions. First, it will highlight a need for improved construct clarity in the IS project management research by using the example of the unclarity of one specific construct, i.e., risk response. In doing so, it will demonstrate that the IS project management research experiences an interchangeable use of labels and a rarity of clear definitions regarding the risk response constructs. Second, it will provide some specific avenues towards improving construct clarity in this area.

Background

What is a construct?

Constructs are “conceptual abstractions of phenomena that cannot be directly observed” (Suddaby 2010, citing MacCorquodale and Meehl 1948) and have various functionalities. First, they are used for building theories as they “describe a phenomenon of theoretical interest” (Edwards and Bagozzi 2000, p.156) and “organize knowledge and direct research” (Peter 1981, p.134) regarding that phenomenon. Second, in quantitative research, constructs guide empirical tests of theories. For example, they are used for developing and validating measurement items: the items should measure the defined construct (face validity) and adequately represent its conceptual domain (content validity) (Nunnally and Bernstein 1994). Content validity is especially crucial for formative constructs, where all items constituting a construct should be included in the measurement (Petter et al. 2007). Moreover, the items should load on the intended construct (convergent validity) but not on other constructs (discriminant validity). Third, in qualitative research, constructs (e.g., in a conceptual framework) help with the focusing and bounding data collection (Miles and Huberman 1994). Also, considering that the trustworthiness of the findings is a key quality criteria for qualitative research (Lincoln and Guba 1985), constructs can be used to establish such trustworthiness, e.g., by increasing the transferability of the abstract findings to other contexts. Fourth, besides their academic utility, constructs are used to disseminate knowledge to practitioners as they appear in the title of articles and talks as well as the training materials developed for practitioners.

It is relevant to also know what constructs are not. First, constructs are not necessarily “true” in their existence (Barki 2008). Alternatively, a construct is “something that scientists construct (put together) in their own imaginations” (Barki 2008, p.9, citing from Nunnally and Bernstein 1994) as a construct is “deliberately and consciously invented or adopted” (Kerlinger, 1973, p. 31). Second, constructs are not theories but are key building blocks for developing theories (Suddaby 2010; Sutton and Staw 1995) — a theory is the explanation of the relationship between two or more constructs (Whetten 2002). Third, constructs differ from their operationalizations. In reflective measurement, “Measures are […] surrogates to a greater or lesser extent, of the underlying research construct” (Straub et al. 2004). Compared to a measurement item, a construct “is abstract rather than concrete and observable” (Barki 2008, p.9, citing from Nunnally and Bernstein 1994). In the same vein, Bacharach (1989) distinguishes propositions from hypotheses by considering that constructs are used for building propositions and variables (specified by more concrete measures) are used for developing testable hypotheses (p. 499). Accordingly, it is an “operationism” error to define constructs using their measurements (Jaccard and Jacoby 2010).

Construct clarity aspects

Due to the importance of constructs, improving construct clarity is a key characteristic of conducting rigorous research (Barki 2008; Hagger 2014; Suddaby 2010; Weber 2012). As synthesized in the first two columns of Table 1, improving construct clarity involves six key aspects. For example, it involves avoiding an interchangeable use of labels when referring to the same concept. In a colloquial discussion of a theory, a label is used instead of a definition and it is assumed that the conversants share the meaning behind the label. Moreover, a consistent label is a key element for knowledge accumulation, e.g., when journal articles are searched using electronic databases and keywords (i.e., construct labels) rather than definitions. Also, they clarify contribution because when a different label is used, a differing conceptualization would be expected. Additionally, construct labels are widely used for operationalizing constructs and validating them, for example, in some steps of a comprehensive card-sorting exercise. As such, unclear constructs and inconsistent labels increase the Jingle and Jangle fallacies (i.e., using the same measures to operationalize differing constructs and using differing measures to operationalize the same construct) (Block 1995) in a domain.
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Table 1. Towards Increased Construct Clarity

<table>
<thead>
<tr>
<th>Construct Clarity Aspect</th>
<th>Sample Guideline</th>
<th>Current State in the Literature on Risk Response</th>
<th>Towards Increased Construct Clarity – The Risk Response Construct</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Providing a formal, clear construct definition</td>
<td>“Construct clarity involves the skillful use of language to persuasively create precise and parsimonious categorical distinctions between concepts” (Suddaby 2010, p.347)</td>
<td>A scarcity of formal definitions, some exceptions are: “action to deal with the risk and progress of the project” (Gemino et al. 2008, p.13); “deliberate actions to tackle risks” (Lyytinen et al. 1996, p. 60); “procedures and techniques to mitigate the defined risks” (Kutsch and Hall 2010, p.246)</td>
<td>- Leverage theories of construct definition (e.g., Stenner et al. 1983; Wacker 2004), especially the facet theory (Zhang et al. 2016), to reconceptualize the risk response construct.</td>
</tr>
<tr>
<td>2. Examining the dimensions of constructs and their relationships</td>
<td>“specifying the relationships between constructs and their dimensions” (Barki 2008, p. 16)</td>
<td>A rarity of construct dimensions, some exceptions are:</td>
<td>- Examine the interrelationships between different dimensions of the risk response construct, e.g., does formal control motivate internal integration and external integration? - Develop dimensions for the risk response construct based on the hierarchical nature of projects: Using WBS, distinguish project-level and work-package-level risk responses.</td>
</tr>
<tr>
<td>3. Expanding the definition of a construct</td>
<td>“Expanding the conceptualization of a construct” (Barki 2008, p.16)</td>
<td>None identified.</td>
<td>- Update the three categories of risk response developed by McFarlan (1981). Use the approaches named in Nelson (2007) as a starter. - Expand the notion of risk response into additional domains (e.g. program management)</td>
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<td>4. Delineating a construct from other constructs</td>
<td>“not only must the theorist offer clear conceptual distinctions, but he or she must also show their semantic relationship to other related constructs” (Suddaby 2010, p. 347; original emphasis)</td>
<td>Some unclear conceptual boundaries, for example:</td>
<td>- Clarify whether a risk response differs from a typical project management activity. For example, delineate specific risk responses from common project management activities.</td>
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<td>5. Specifying the scope conditions of the construct</td>
<td>“construct clarity requires the author to delineate the scope conditions or contextual circumstances under which a construct will or will not apply” (Suddaby 2010, p. 347); Weber (2012, p. 6, original emphasis)</td>
<td>None identified.</td>
<td>- Address the dynamic nature of projects: Expand the separation of a priori and emergent risk responses (Gemino et al. 2008) using project phases in Markus and Tanis (2000). - Address the implication of different project management approaches (e.g., agile vs. waterfall) for various risk responses.</td>
</tr>
<tr>
<td>6. Labeling similar constructs consistently</td>
<td>Avoid “the déjà-variable phenomenon; the feeling that one has seen a variable with the same definition and content before only referred to by a different term.” (Hagger 2014, p. 1)</td>
<td>A wide-spread interchangeable use of terms: “risk management practice” (El-Masri 2013, p. 68); “Risk-handling strategies” (Gemmer 1997, p. 38); “Risk treatment strategies” (Baccarini et al. 2004, p. 289); “control measures” (Bannerman 2006, p. 2121); “risk-resolution techniques” (Boehm 1991, p.34)</td>
<td>- Adhere to the labels provided by an agreed-upon body of knowledge such as PMBoK (PMI 2013).</td>
</tr>
</tbody>
</table>
Research Methods

To examine the state of construct clarity in IS project management research, we focused on a mature sub-domain that we were familiar with—the risk management literature. In this domain, researchers have alluded to the unclarity of the risk construct. For example, Sherer and Alter (2004) identify five different meanings of the term “risk,” and El-Masri (2013) identifies and analyzes various “lexical items” pertaining to the risk construct. In their analysis, they demonstrate the overlaps and differences between various definitions of this construct before reconceptualizing it. Therefore, we focused on discussing the clarity of another key construct in this domain, i.e., risk response.

We are currently conducting a literature review. Using online database search (e.g., ProQuest’s ABI/INFORM), we are including papers from the earliest publications on IS project risk management in the 1970’s to present in both academic and practitioner-oriented peer-reviewed journals. We are seeking for lexical items (e.g., mentions, definitions) related to risk response. Moreover, we are examining the identified lexical items against the six aspects of construct clarity discussed above.

Preliminary Findings

So far, we have found 29 studies comprising a total of 69 lexical items pertaining to risk response. The third column of Table 1 provides some examples of our analysis of these items against the six aspects of construct clarity. Two areas warrant discussion. First, among these studies, our review revealed that only few have formally defined risk response. Second, this literature uses several different labels to refer to the same concept. This list includes, but is not limited to, risk management (although this refers to the entire process of identifying and responding to risks) and risk mitigation (although this is just one risk response strategy). Therefore, the need for improved construct clarity is evident.

Conclusions

In this paper, we highlighted the issue of construct unclarity in some areas of IS project management research. We are performing a literature review to evidence this problem regarding a specific construct—risk response. We identified six different construct clarify aspects. Our preliminary findings suggest that the phenomenon of construct unclarity in this area requires further attention. The last column of Table 1 includes our initial plans to implement the six aspects of construct clarity for the risk response construct. In doing so, besides drawing from the literature, we plan to conduct semi-structured interviews with IS project managers and academic project management experts to further clarify the risk response construct. We will finally offer a formal definition of the risk response construct.

REFERENCES

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