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116. Re-presenting the Literature Review: A Rich Picture of Service Quality Research in Information Systems

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Abstract

This paper offers an alternative method for conceptualising and presenting an information systems literature review, based on Checkland's Soft Systems Method (SSM). We apply this approach to service quality research in the Information Systems (IS) field. Despite a large volume of existing literature, the number of new articles published in this area continues to increase, without achieving a consensus on a set of generalisable and predictive dimensions of service quality in the information systems context. We perform a CATWOE analysis and develop a rich picture of the development and current status of service quality research in information systems. We find this alternative conceptualisation of the literature review offers fresh insights. We suggest that the potential of service quality research to enact meaningful transformations in the information systems area, plus the active sponsorship of the "owners" of the research explains its continuing popularity, despite weak predictive power.

Keywords: service quality, information systems, Soft Systems Method, literature review

Introduction

Service quality is big business. It can be a major differentiator between competitors (Davenport et al., 2001, Porter, 1980). A well worn axiom within marketing is that it costs much more to acquire a new customer than to retain an existing one. Delivering quality service is an essential component of customer retention. Increasingly, as information technology has matured, information and communications technology (ICT) has become involved in the delivery of a wide range of diverse services across sectors such as banking, health care and local government. Many of these organisations are anxious to measure and manage the quality of their service while making improvements that will assist them to retain and satisfy their customers. Since the mid-eighties, there has emerged a lucrative consulting industry centred on service quality improvement.

From an academic perspective, service quality can be considered a "mature" field of study in the services marketing area originating from studies in the 1970's. It has been adopted within the IS context since 1995. Its popularity in an information systems context continues to increase as online service continues to be an emerging area of inquiry. Our review considered fifty-seven peer-reviewed articles that use, or rely on, ServQual and have an IS contextualisation. The sample begins in 1985 and goes through to mid-2006 with more than half of the sample being published in the last five years (see Figure 1).

We found that many of these papers seek to achieve generalisable and predictive outcomes, typical of a positivist, normal science expectation (Kuhn, 1996). Literature reviews in these articles often assume that there is a cumulative research tradition in the service quality area from which they can draw on. Many information systems research papers in service quality look back to the original Parasuraman, Zeithaml, and Berry (PZB) dimensions of service quality and attempt to equate their findings, either as a direct correspondence (*our 'xyz' dimension is equivalent to PZB's 'uvw' dimension*), or as a descendant (*our 'abc' dimension is descended from PZB's 'def' dimension*). If there were a reliable cumulative research tradition, it might be safe to assume that after examining more than fifty peer reviewed studies, there would be wide-spread agreement about the dimensions on service quality in an information systems context. However, the study of service quality has been routinely punctuated by validity concerns and accusations of unstable dimensionality. The implicit notion is that the research literature is simply piling up with repeated diagnostic studies (albeit useful in their particular contextual setting). However, studies of this kind are not necessarily building toward a cumulative research tradition. We therefore decided to explore alternative methods of representing the tradition of service quality research in an information systems context. We have sought to find generic value in the accumulated body of effort that goes beyond stability of technique issues and recognises the social complexity involved in the study of value laden notions such as 'service' and 'quality'.

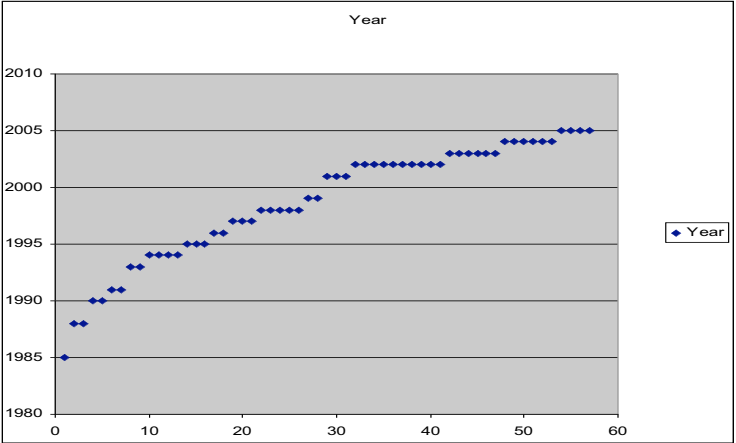


Figure 4 - Article distribution across the timeline

The aims of this paper are to identify a way of examining the accumulation of academic studies in service quality in a manner that could shed new light on the complexity of service quality research in the information systems context, and to identify a suitable way of examining the body of promulgated knowledge in such a way that represents its emergence and adoption in a fair and representative manner.

We asked ourselves, firstly: Given that the gaps framework and SERVQUAL has been rigorously critiqued throughout its evolution and concerns voiced. That criticism appears to have not reduced its popularity, is this ongoing popularity justified? And secondly: is the soft systems method a useful mechanism for representing the richness of an evolving research tradition?

Literature Review

In this section, we offer a brief review of the history of service quality research and its application to information systems, an overview and critique of best practice in preparing a literature review, and an introduction to soft systems analysis (SSM) and its potential value for conceptualising an academic literature review.

ServQual Research

The study of service quality was pioneered by PZB, who developed the gaps framework in 1985, and its related ServQual instrument in 1988 (Parasuraman, 1985, Parasuraman et al., 1991, Parasuraman et al., 1988). The gaps framework posits that customers have a pre-determined set of expectations, and then form a perception of whether or not a particular service encounter or set of encounters has met those expectations (Gronroos, 1988, Parasuraman, 1985). The gap between these perceptions and expectations (quality equals perceptions minus expectations) is the central theme of the framework (Parasuraman, 1985).

In their initial study, PZB had suggested that there were ten possible determinants of service quality. These determinants later condensed into five clear dimensions (reliability, assurance, tangibles, empathy and responsiveness) during the subsequent development of the operational ServQual instrument (Parasuraman et al., 1988). The framework, and its associated instrument went on to motivate numerous diagnostic studies across many business domains and now forms a significant branch of the service quality literature. See, for example, (Brown et al., 1993, Buttle, 1996, Carman, 1990, Parasuraman and Zeithaml, 2001). Over time however, the findings of the original studies were subjected to deeper scrutiny and replication (Carman, 1990, Teas, 1993) as positivist researchers sought to uncover generalisable and predictive outcomes. This scrutiny sparked a long-running debate concerning the validity and reliability of ServQual-based research studies.

Information systems (IS) technologies have become the enabling mechanisms behind a wide variety of customer-organisation service delivery interactions (Pitt et al., 1995). The emergence of Internet-based service encounters over the past ten years has seen the rise of new forms of online service encounters. As a result, there has been a proliferation of ServQual variants adapted to the Internet customer service setting (Parasuraman et al., 2005). These variants have relied to a greater or lesser extent upon the substantial body of pre-existing service quality knowledge as exemplars of service quality modelling and assessment. However, most of that prior knowledge was predicated on the idea of the person-to-person service encounter. The recent rise of technology-mediated service encounters has required researchers to undertake a substantial rethink concerning the nature of a customer's service relationship in the online context. As a result, IS researchers now often find themselves with objectives that overlap with marketing researchers in their treatment of similar phenomena as it relates to service quality (McKenna, 2002). The addition of near-ubiquitous information technology (IT) artefacts, such as the Internet and mobile communications technologies to the service encounter context links the emergent service quality research paradigm to the (slightly) more established IS research tradition.

The resulting literature, supplying the service quality body of knowledge has evolved from studies that are dispersed across multiple disciplines, drawn from a wide range of situations, and subject to numerous, and at times contradictory analytical treatments (Parasuraman, 2004). The ServQual instrument has been applied as the method of choice in many organizational settings such as financial services, healthcare and e-commerce. As the number of examples of service quality investigations grew, so did the adaptations, extensions, and

structural examinations. For example, ES-QUAL, aimed at e-service; EX-QUAL, aimed at extranets; and SERVPERF, aimed at performance more than expectations (Cody and Hope, 1999, Cronin and Taylor, 1994, Parasuraman et al., 2005). This body of material served to feed a recurring debate that has questioned ServQual's role as a suitable instrument for providing general insights with predictive capacity (Asubonteng et al., 1996, Buttle, 1996, Grapentine, 1998, Parasuraman, 2004). A common characteristic of the majority of these studies appears to be an implicit positivist epistemology – there is a “normal science” expectation that there are generalisable and predictive dimensions of service quality that can be discovered and empirically built upon (Crane, 1972, Kuhn, 1996).

Traditional Approaches to Literature Reviews

Conceptualisations of service quality in the traditional IS literature often follow a standard structure based on received wisdom for presenting previous academic research. The literature review is generally expected to focus on the presentation of knowledge without consideration of the context in which that knowledge was created (Hart, 1998). The literature review is expected to answer questions such as What are the key theories, concepts and ideas?, How is knowledge on the topic structured and organised?, What are the major issues and debates about the topic?, and (importantly) How have approaches to these questions increased our understanding and knowledge (Hart, 1998)?

This conceptualisation of a literature review includes a number of assumptions. First, the literature review is assumed to present a rational summary of the current state of knowledge about an external reality. Second, it is assumed that the aim of the researcher is to present this knowledge in a comprehensive and balanced way. The researcher is assumed to be politically neutral and disinterested.

These assumptions imply an epistemology of positivism and a realistic ontological viewpoint. The literature review is assumed to be contributing to a cumulative research tradition. In service quality research, the literature review is often presented as a meta-analysis of generalisable service quality constructs (see for example, Alzola et al 2005). The method of natural science is invoked, even though the phenomena of interest are social (Kuhn, 1996).

The issue is that despite more than 50 peer-reviewed studies, a stable and valid set of dimensions for information systems service quality has not yet emerged. New literature reviews continue to propose new dimensions (for example, Tate et al 2007), or new combinations of existing dimensions (for example, Alzola et al 2005). As we suggested earlier, there is a real possibility in the case of the study of Service Quality in Information Systems research, that research is “piling up” rather than “building up”, and is not increasing our understanding and knowledge significantly.

We sought an alternative conceptualisation of the service quality literature, as it pertains to IS, that might provide fresh insights into the enduring popularity of ServQual-based research in the IS area, despite the apparent lack of generalisable and repeatable findings. By changing the emphasis of the literature review to include a consideration of the stakeholders and actors in the research process, and their interactions with each other and with their environment, we aim to generate new insights in this research area.

SSM and CATWOE

In this IS area, one of the most influential methodologies to accommodate the 'human factor' in information systems has been Checkland's Soft Systems Method (SSM) (Checkland 1981).

SSM has been used to frame social science research projects (Rose, 2006), and to model the human dimensions in IS research (Johnstone et al., 2004). We extend this approach by applying SSM to developing and presenting an IS literature review. SSM will allow us to accommodate the 'human factor' in the service quality research tradition, while still applying the rigorous reductive process usually associated with structured forms of analysis.

SSM posits that meaning is created through discourse between stakeholders, and interaction between actors and their environment (Mitchell et al., 1997, Checkland and Holwell, 1998). This seemed to offer an opportunity for elucidating the political and social context of service quality research as it relates to information systems, and for understanding the enduring influence of ServQual despite well documented concerns about its rigour. The Rich Picture is an SSM technique that represents the relationships between the Clients, Actors, Transformations, World-view, Owners, and Environment (CATWOE), within the scope of the system of interest (Checkland and Scholes, 1990).

When we applied SSM thinking to the analysis of academic research, we identified a number of significant differences between the 'traditional' and the 'SSM' literature reviews. SSM acknowledges that the literature reviewed is a selection made by the researcher, in a social and political context, as part of a wider academic and social discourse. This approach also allows for the possibility that the researcher may be acting out of self-interest. Table 1 summarises the different assumptions between traditional and SSM literature reviews

**Table 1: Comparisons of assumptions between traditional and SSM
Conversions of a literature review (adapted from Checkland & Howell 1998)**

Assumptions of a traditional literature review	Assumptions of an SSM literature review
A literature review presents a rational summary of the current state of knowledge about an external reality.	A literature review represents selected data to which meaning is applied in a context.
Academic research occurs in a neutral context.	Academic research occurs in a social and political context.
Reviews of academic literature are used to build a cumulative research tradition.	Reviews of academic research are used to serve the purposes of individuals and of the wider academic and practitioner communities (including political purposes).
Academic research should be conceptualised as a summary of findings independent of the social and political context of the researchers themselves.	Academic research can be conceptualised using SSM and CATWOE analysis and presented as a rich picture.

Methodology

The first design challenge we faced involved devising a means to identify those articles that should be included in a soft system analysis of the discourse relating to the PZB gaps model and the ServQual instrument in the information systems context. The manner in which we chose to enact this was to develop a recursive process with six iterative stages (Gorman and Clayton, 1997). This process is outlined in Figure 2.

In the planning stage, we established the research questions in order to provide a boundary for our literature search. Initially, we decided to restrict the scope of the articles chosen to those studies whose phenomenon of interest was clearly an IS, or a related technology,

artefact. In practice, greater latitude was necessary; particularly in the case of conceptual material where the impact of the work had a profound influence on the subsequent evolution and history of the paradigm. It was also necessary to include a selection of conceptually focused articles in order to fairly capture the theoretical debates that punctuate the history of this research area. The initial selection criteria for articles was intentionally broad in order to allow the greatest possible opportunity for meaningful dissection, analysis and subsequent re-synthesis at later stages (Huberman and Miles, 2002, Mingers, 2003).

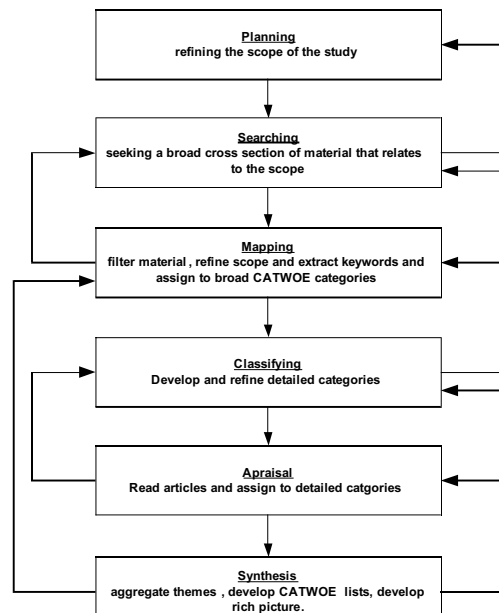


Figure 2 - The recursive nature of the stages

In the *searching* stage, we followed a broad and inclusive approach. The sources used included physical library stacks and interloan services, online bibliographic databases, and professional subscriptions (for example; IS-World, ACM, and IEEE). The articles were not to be screened for reputation of journal, quality of methods, academic focus or any criteria other than that they met the basic test of being broadly within the scope of the study. This process provided a set of 87 candidate items. This allowed a 'first-go' at identifying the seminal papers and events that might be representative of the development of the research paradigm.

The scope was then adjusted to include seminal “ServQual” papers, regardless of whether they were directly related to an information systems artefact. The criteria for the selection of seminal papers were:

- is it building on the established research tradition?
- does it make a substantial scholarly contribution?
- does it set a new research agenda for the research tradition?
- has it subsequently been cited sufficiently often to be regarded as a guiding influence on the tradition?

The *mapping* stage represents the first part of the sense-making process. In this stage, we refined the selection according to recurring themes and extracting keywords and phrases for the subsequent classifying exercise. This filtered out those articles that did not stand up to more detailed scrutiny according to the scope and elicited those key terms and phrases to guide the subsequent classification stage. The result of this pass was that the set of articles initially reduced to 74 candidate items and a list of 98 keywords and phrases were distilled from the abstracts of those articles. The mapping stage helped to establish the identities and contributions of the milestone actors and the major events.

The *classifying* stage involved devising a process to refine the 98 item list of keywords into a classification structure that would honestly represent the language of service quality - as seen through an SSM lens. This contributes to the truthfulness of the study by identifying how aspects of the terms and phrases actually used in the material relate to one another, and providing a means for consistent and repeatable treatment in the appraisal stage. We distilled and grouped the 98 keywords and phrases into the six CATWOE broad categories with 30 items and 13 sub items.

The *appraisal* stage involved a detailed reading of each article, and applying the coding categories. Additional codes were added as required in an iterative process of coding and recoding. The primary researcher initially coded the transcripts. Approximately 20% of the data was coded independently by a second researcher, with an inter-rater agreement of 85%, which indicates sufficient reliability. During this stage we further refined the article set, as some articles that had 'slipped through' the preceding stages were rejected at this stage. Additionally, some important material was added where it was frequently cited by authors but had not been captured in the previous evaluations. The result was that the sample size fluctuated up and down during the process and finally settled down at 59 validated and reviewed articles.

In the *synthesis* stage the material was evaluated holistically in terms of the research questions. This was done with a view to identifying and reporting the ways in which the research tradition is addressing items such as concerns about validity and reliability, the continued use of the ServQual instrument in the IS setting, the application of ServQual to the e-Business context, and the development of the rich picture of ServQual research in an IS context.

4. Results: the CATWOE Analysis

The CATWOE framework is a pictorial representation of the synthesis stage (Checkland and Scholes, 1990). The rich picture that emerged from this research is provided in Figure 3.

The following section provides more detail on each of the categories used in the CATWOE analysis.

4.1 Clients – those who instigate purposeful activity

Within the context of the ServQual paradigm, the clients are those constituencies that benefit from the outcomes of diagnostic ServQual studies, such as:

Customers – These are the customers who take part in a service encounter. They have a preconceived expectation of the nature of the service encounter, and this will ultimately be used to form their perception of whether or not the service encounter was of inadequate, sufficient, or exceptional quality; this is the principle behind gap 5 of the PZB gaps model. Within the IS context this is especially relevant where there is a clear IT artefact, such as with the technology-mediated, online customer.

Organisations – In this context, this applies to those firms that have an organisational structure geared towards providing services to a prescribed quality standard. How those standards are derived, translated, and turned into an operational reality is the basis of gaps 1-4 of the PZB gaps model. In the IS context, this is the way in which organisations acquire, store and communicate customer information using information technology.

Employees – This applies to those customer-facing service staff, and the management of the organisations providing services to customers, whether or not those customers are internal or external to the organisations. In the IS context, those employees are using IT to support business functions, provide technology-augmented transactions, or for delivering online information content to eliminate the face-to-face aspect of the service encounter.

4.2 Actors – those who enact purposeful activity

The actors in the ServQual paradigm are those individual researchers and the constituencies of researchers who have chosen to use the gaps model and ServQual instrument to enact or support their research activities. For example:

The champions – PZB themselves, who have built their careers and staked their personal reputations on the work that formed the basis for ServQual and its subsequent variations.

The critics – is that group of researchers who have been forthright enough in their opinions to openly question the base of assumptions that underlie ServQual and to offer alternative approaches. In the ServQual paradigm, critics have emerged from within both marketing and IS domains.

The researchers and consultants – the group of investigators who are carrying out ServQual studies in order to diagnose a particular firm or industry. This group is usually seeking diagnostic value that they can apply to individual situations. In addition, this group overlaps with the critics group, when confirmatory studies are used to situate the study in a particular domain.

Transformations – meaningful process outcomes

In the context of analysing the ServQual paradigm, the transformations represent those outcomes that clients are seeking as a result of taking steps to improve their understanding of service quality, using the ServQual paradigm. For example:

Customer outcomes – the transformation of the service encounter by the reduction or

elimination of Gap 5. One example would be a setting that enables the use of ServQual to enable the diagnosis of senior management setting inadequate service standards.

Organisational outcomes – for most organisations, improved technology-mediated service means improved profit, or improved accountability for expenditure.

Worldview – taking notice of the wider context - The ServQual paradigm is based on the notion that the customer is the arbiter of service quality (Parasuraman, 1985). Additionally it is predicated on the Q=P-E disconfirmation theory. This is consistent with the social context of the authors; namely the North American market-economy ethos, where the customer has sufficient choice, and the resulting strong buying power, to accept or reject services on the basis of perceived quality (Gronroos, 1988, McKenna, 2002).

Owners – those who have a financial or practical stake in the transformations
In as much as anyone can 'own' a research paradigm such as ServQual the owner/stakeholders are:

PZB – as the originators and champions of the model and instrument no ServQual discussion proceeds very far without mentioning them. They have continued to champion their own work, publishing extensively, and frequently publishing vigorous responses to critiques.

Consultants – both marketing and IS consultants have done much to popularise and implement the diagnostic capabilities of ServQual.

Researchers – whether seeking predictive outcomes with theoretical value or producing consumable diagnostic publications. ServQual has enjoyed adoption and diffusion within multiple research traditions.

Environment – impacts and consequences beyond the domain of interest

The ServQual paradigm is relevant to the 'western' model of a market-driven economic model that encourages competitive choice for consumers amongst multiple service providers. ServQual would not necessarily translate well into different environments. The rich picture in Figure 3 illustrates the ServQual paradigm and emphasises its context for the IS research tradition.

Discussion

The aim of this paper was to identify a way of examining the accumulation of academic studies in service quality in information systems in a manner that could shed new light on the socially complex nature of service quality research in the information systems context. We first consider the insights offered into the ServQual research discourse, then consider the application of SSM to a literature review.

Insights into the ServQual Discourse

ServQual has been rigorously critiqued throughout its evolution and concerns voiced. It has maintained its popularity, in spite of criticism, but is this ongoing popularity justified?

It would appear from the analysis in this study that the popularity is, indeed, justified. The critics have influenced and assisted the model to develop methods for contributing knowledge. At the same time, increased awareness that the methods used have practical limits that should be recognised. Researchers today can confidently carry out legitimate diagnostic ServQual studies. The potential for predictive capability is less clearly demonstrated.

Is the gaps framework and the ServQual instrument as legitimate for information systems research today, as when Pitt et al brought it to the information systems research disciplines attention in 1994, and as a result, has it withstood the test of time? The changed nature of organisational forms, the nature of the online customers' service-encounter and the need for customer focus in contemporary, ubiquitous IS, has created an even greater demand for service quality to be on the IS research agenda today than when Pitt et al alerted IS to its potential usefulness. Since repeated application, extension and modification of the instrument has not produced consistent and repeatable results, it is possible that the ontological assumptions of realism are flawed.

The Application of SSM to a Literature Review

We used a non-traditional approach to representing the literature of interest. How effective is SSM for examining the body of promulgated knowledge in such a way that fairly represents its accumulated character?

The technique of developing and using a novel approach based on a qualitative, systematic literature analysis, as described in this study, appears to be a good way of providing a fair and truthful analysis of the state of the ServQual paradigm derived from the representative sample used. By taking an iterative and incremental approach, the considerable amount of learning and discovery about the process of using the literature was able to be incorporated into the study during the process. The SSM approach allowed the research to be viewed in context, and offered fresh insights about the actions and motivations of key actors.

The CATWOE analysis provides insights into the purposes and motivations of a wide range of stakeholders in ServQual research. The ongoing popularity of ServQual-related research in information systems, although it can be considered a mature research area, is partly explained by its high relevance to organisations, marketing professionals, and consultants, by the potential to enact meaningful transformations for customers and organisations, and by its diagnostic capabilities in a changing business and technology environment. While these things remain true, we can expect that the number of peer-reviewed articles published will continue to grow steadily.

Our analysis provides a social context by situating ServQual research in a (largely) positivist research tradition. Knowledge claims made in IS, that are based on ServQual, are able to draw in a substantial body of knowledge that at least partially support these claims, despite ongoing research issues: the presence of causal ambiguity, lack of strong discriminant validity, and the resulting low predictive value compared to diagnostic capacity.

The CATWOE analysis provides a cultural context and worldview, by situating information systems-related ServQual research firmly in a Western business environment. Implicit in this context is the possibility of choice between multiple service providers. This suggests that conceptualisations of service quality may need to be different in other cultural contexts.

By analyzing the human factors and motivations operating in the literature we reviewed, the notion of "ownership", and the identification of people with a personal or financial stake in the research provided interesting insights. Both PZB and service quality consultants have a considerable vested interest in the truth claims of ServQual research. Both have actively championed these claims. It is possible that the selection of a positivist paradigm for studies of service quality, the presentation of research issues as an ongoing scientific discourse, where critics are refuted with fresh truth claims has disguised the extent of personal involvement by

the “owners”.

Limitations

The scope was confined to the inception of ServQual in marketing and its subsequent diffusion into the IS context. We acknowledge that we, as the researchers, were engaged in making selections about which papers were included in our study, although we note that we were not able to identify a tradition of research that offers an alternative approach to the study of service quality in information systems to the “traditional” one that we critique. Other contexts exist that have picked up ServQual equally vigorously as IS, such as healthcare and hospitality. It would be interesting for future research to examine the diffusion of the ServQual paradigm across multiple contexts using a similar technique and compare them to this exercise. The pool of available ServQual studies is large and growing all the time; while the selected sample was deemed to be representative, it would be interesting to expand the sample.

Conclusion

In conclusion, the “traditional” literature review frequently contains a number of implicit assumptions about knowledge. It is generally decontextualised from the personal, organisational, social, and cultural contexts in which it is created, selected, and presented. By applying an alternative approach, based on soft systems analysis, CATWOE analysis, and rich pictures to analysing, classifying and presenting a literature review of the use and adaptation of the ServQual instrument and the gaps model in information systems research, we were able to offer fresh insights into its ongoing popularity, relevance and the factors influencing the evolution of the research tradition.

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