QUALITY MODEL FOR KNOWLEDGE INTENSIVE SYSTEMS AND A THEMATIC REVIEW OF THE LITERATURE

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Abstract

Knowledge is a key asset for an organisation. Knowledge management has facilitated the capture and dissemination of knowledge in an organisation. Knowledge capture and dissemination is facilitated by a specialised system called a knowledge intensive system. In turn, knowledge workers can benefit from the knowledge within the system which would improve their performance and the organisation as well. Despite knowledge management being important to an organisation, there is always room for improvement in particular the areas of knowledge quality. Knowledge quality focuses on ensuring that the knowledge is relevant, useful and accurate. Knowledge as it is known is contextual and it must be relevant else it is rendered unusable. Therefore, a knowledge intensive system must have quality control to ensure high quality knowledge is present in the system. Knowledge intensive system itself is a subdomain in information systems. In this study, we provide a comprehensive literature review surrounding knowledge management, knowledge quality and knowledge intensive systems. A review on recent literature, challenges and research gap were identified based on current literature on the subject matter. The study also discusses two existing models based on knowledge quality which are Jennex and Olfman knowledge management Success model and, value-justice model of knowledge integration. These two models are then compared with the proposed model called the Knowledge Quality Model for Knowledge Intensive System. The model is conceived to address the research gaps that was identified in the literature. The main focus of the model is on knowledge context and knowledge quality attributes is imbued to ensure context is present. This is to ensure that knowledge is reliable, relevant, applicable and contextual to the knowledge workers.

Keywords: Knowledge intensive systems, Knowledge management, Knowledge quality.

1. Introduction

Knowledge is power and this statement is quite relatable when it comes to organisations are knowledge is an asset in such a way that it provides a competitive edge to an organisation. Knowledge is acquired from various methods such as experiences or by learning from others. Each and every one of us carries a certain knowledge of a certain domain though it is only useful if it is required. In order to manage knowledge effectively in an organisation, this is where the domain of knowledge management comes in.

Knowledge Management covers four parts which are people, process, technology and governance [1]. The goal of knowledge management is essentially managing knowledge effectively in an organisation. People is defined as users of the system and are given specific roles and responsibilities. Process is defined as method(s) that are used to elicit and document knowledge. Technology is defined as electronic medium(s) that are used to spread knowledge. Governance is defined as strategies that are executed by the organisation to implement the system itself. The focus of this article is towards technology where it will be focusing on knowledge intensive systems as it is an important medium used to facilitate knowledge management. However, to ensure knowledge intensive systems are utilised well, the study focuses on knowledge quality as content (knowledge) plays an integral part. Knowledge quality ensures that the content is useful, accurate and reliable. It also touches on the areas pertaining to people and process as getting the right people and right process is key to generate a good content.

The study will investigate the following areas, intrinsic knowledge quality, contextual knowledge quality and actionable knowledge quality. Even though there are current literature out there on the subject, the study is aiming to expand the body of knowledge in these areas further. Subsequently, the research scope is limited to knowledge intensive system, as the key focus will be knowledge quality and its attributes. An extensive study of the literature will be carried out pertaining to the areas of knowledge quality, knowledge intensive systems and knowledge management. Current challenges and research gaps are discussed alongside recent findings from the literature.

From the literature review, this is where the study proposes a model called the knowledge quality model. The knowledge quality model is then compared to two identified models from the literature which are Jennex and Olfman Knowledge Management Success model and Value-Justice Model of Knowledge Integration. The model is conceived to highlight how knowledge quality can be applied into knowledge intensive system.

The rest of the article are as follows. Background on knowledge management, knowledge quality, knowledge intensive system, knowledge quality attributes, challenges and research gap are in section 2. Section 3 presents the proposed model which the study aims to present based on an extensive study of the literature. Section 4 presents the existing model which were found in the literature. Section 5 discusses current models in the literature and compares the proposed model with current model. The article is concluded in section 6 with a future research in section 7.

2. Literature Review

Knowledge management is explained in areas such as economics, management and technology. This section discusses on the definition and provides an introduction on knowledge management, knowledge quality and knowledge intensive systems. The aim is for readers to have a full insight on the components of knowledge management.

Figure 1 shows a high-level overview of the literature which discusses a brief background on the current literature, the key concepts and tenets so that readers could have a high-level understanding. The literature then moves on towards recent findings, challenges and research gap.
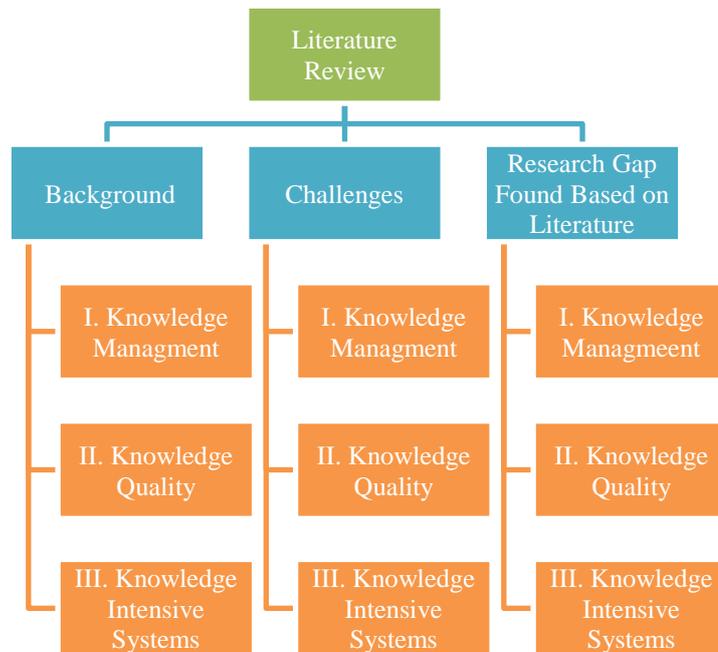

Fig. 1. Breakdown of the literature.

2.1. Background

Knowledge Management spans multiple areas which cover the following technology, people, processes and governance. An in-depth study was made on the literature which a frequency analysis was made on the study of knowledge management. Based on the frequency analysis, the three top areas of discussion are knowledge quality, knowledge management and knowledge intensive system. Hence, the focus of this paper would be on these three top areas.

Table 1 sums up the literature analysis findings which leads to the taxonomy of the study. The taxonomy of the study focuses on knowledge management, knowledge quality and knowledge intensive system.

Table 1. Literature analysis.

Keywords	Count
Knowledge quality	26
Knowledge management	20
Knowledge intensive system	17
Tacit knowledge	11
KM technology	6
Knowledge management processes	6
Knowledge risk	6
Knowledge	5
Knowledge elicitation	4
Artificial intelligence	3
Knowledge sharing	3
Knowledge actors	2
Machine learning algorithm	2
Organisational factors	2
Knowledge management capability	1
Other factors	1
Informal knowledge	1

Figure 2 indicates the word cloud generated based on the keywords. The size of each word is determined by the keyword frequency.

Fig. 2. Word cloud generated based on the keywords.

Knowledge management is defined as managing knowledge effectively within an organisation and treating knowledge as an organisational asset [2-9]. It is broken down to systematic analysis, planning, acquisition, creation, development, storage and use of knowledge [10]. Knowledge is divided to tacit, explicit and contextual knowledge. Tacit knowledge is defined as knowledge gained through experiences and is challenging to codify [8, 11-14]. Tacit knowledge is further divided to relational tacit knowledge (RTK), somantic tacit knowledge (STK) and collective tacit knowledge (CTK) [15]. Explicit knowledge is the opposite of tacit knowledge as it is defined as documented knowledge, shared through various multimedia

means [6, 8, 16-19]. Contextual knowledge is defined as relevant and usable knowledge and is affected by author, purpose, date and language [20-22].

To implement knowledge management in organisations, this is where knowledge intensive systems come in. A knowledge intensive system is defined as managerial and technical system meant to support the implementation of KM within an organisation [7, 23-26]. The system is part of knowledge management technology. Knowledge management technology is defined as the hardware and software infrastructure required to support the following [27]. Knowledge itself is a key component in a knowledge intensive system [8, 28, 29]. Hence why knowledge must remain contextual [8, 28, 29]. This is where knowledge quality is introduced into knowledge management. Knowledge quality is defined as knowledge that is relevant and valuable [29, 30]. From the literature, we identified that knowledge quality is a significant factor when it comes to the success of knowledge intensive systems [23, 30-35]. To preserve and harness the quality of knowledge, great care must be taken when it comes to analysing the knowledge value chains involved [35]. It was further identified that knowledge quality has its own attributes namely: intrinsic knowledge quality, contextual knowledge quality, actionable knowledge quality and accessibility knowledge quality [29, 30, 36]. Intrinsic knowledge quality focuses on accuracy, reliability and timeless of the knowledge [29, 30]. Contextual knowledge quality focuses on whether knowledge is contextual and relevant [29, 30]. Actionable knowledge quality focuses whether knowledge is adaptable or applicable [29, 30]. Accessibility knowledge quality is referred to as the degree of flexibility, ease of use, and ease of access [36].

From the literature, we identified a few salient points regarding to KM. It was identified that KM is an important component for an organisation's growth and to maintain a competitive edge [37-39]. The literature highlighted that knowledge creation, sharing and utilisation has a strong impact on an organisation's performance and innovation [40-43]. However, documenting and transferring tacit knowledge is difficult [44, 45]. It was identified that tacit knowledge must be regarded as an important asset due to its value [46]. This is where online platforms can be used to facilitate tacit knowledge sharing [47]. It was also identified that knowledge workers are key to an organisation's growth and success [48]. Therefore, organisations must encourage and sustain knowledge interactions between knowledge experts and workers [49]. Organisations however must realise that KM performance is measured through KM activities, KM outcomes and KM factors [50-56]. In a nutshell, knowledge is an important asset as it facilitates organisation growth and the creation of new added value [53, 56, 57]. However, when it comes to integrating knowledge efficiently, relevant social groups, organisation's information needs, and knowledge must be identified [58]. This is where knowledge intensive system comes in.

It was mentioned in the literature that technology can be used to facilitate knowledge sharing within an organisation [52, 57, 59]. This is where the literature mentioned that the system must be integrated to the organisation's business process [60]. Knowledge intensive system must facilitate in sharing of knowledge as it helps organisation to build, hold, pool and use knowledge altogether [55, 61]. The success of a knowledge intensive system lies on the individual and knowledge management practice of the organisation [62-65]. In organisations, knowledge intensive systems are mainly used for knowledge sharing and to aid decision-making process [52, 66]. We identified also that knowledge quality is influenced primarily by knowledge

sharing and knowledge integration behaviour [67-70]. This is why it is important to capture knowledge within an organisation to ensure knowledge quality [70]. Furthermore, to prevent loss of quality or, to enhance the quality value, a proper framework must be developed as this will aid in knowledge retrieval and usage [70].

The usage of knowledge intensive system is affected by the quality of knowledge present in the system [71-73]. Recent findings have highlighted that there is a positive relationship between system quality, knowledge quality and user satisfaction when it comes to the success of a knowledge intensive system [74, 75]. Organisations must have quality knowledge that can be reused and must be considered when creating new knowledge [70, 73, 76]. Knowledge quality is also a catalyst for innovation within an organisation [77, 78]. By mapping the quality dimensions to the KM processes, the quality of these processes will be and the quality of the KIS in general will be enhanced [79].

2.2. Challenges

This section discusses the challenges for knowledge management, knowledge quality and knowledge intensive systems. The aim is to provide researchers identified limitations on the subject matter. Figure 3 identifies the challenges in the literature.

Fig. 3. Identified challenges in the literature.

KM is one of the key drivers for organisational success [80-84]. This furthers reinforces the importance of KM in organisations out there as organisations must stay on its competitive edge in order to survive [80-84]. From an employee's perspective, knowledge that is not managed well would corrode easily [80-84]. It must be noted that factors which stimulate knowledge workers to share their knowledge are classified into three areas, namely personal, social and technological factors [41]. The implementation of knowledge intensive systems plays an integral part in an organisation success [1-4]. This is further reinforced as knowledge intensive systems facilitates the knowledge sharing activity between employees to ensure a knowledge sharing organisation [3, 5, 6]. In essence, an effective knowledge intensive system which utilises the organisation's knowledge capital is crucial for an organisation to stay competitive in today's market [7-9]. Knowledge loss has become a significant corporate risk caused by an employee's exit from an organisation due to various reasons risk [5, 10, 11]. Knowledge must be managed

well and managing aspects of knowledge acquisition and assimilation should be an organisation's top priority [12-17, 66]. As knowledge is key to ensure the organisation's survivability and having an edge over its competitors [2]. In a competitive business environment, it is primary focus should be in creating knowledge and expertise in order to leverage on the competitive advantage [2]. Subsequently, the emergence of knowledge-based economies had placed a significant importance on effective management of knowledge [4]. These were some of the identified challenges when it comes to knowledge management, knowledge intensive system and knowledge quality.

2.3. Research gap found based on the literature

This section discusses future directions for knowledge management, knowledge quality and knowledge intensive systems. The aim is providing research directions for future researchers in further investigations and improvements on the subject matter.

For knowledge management we have identified that knowledge must be captured effectively to enhance organisational performance [18]. This is because there is a need to capture tacit knowledge during knowledge creation, a need for improved knowledge tools and at the same time incorporating latest digital tools. Figure 4 shows relations in knowledge creation enhances organisational performance.
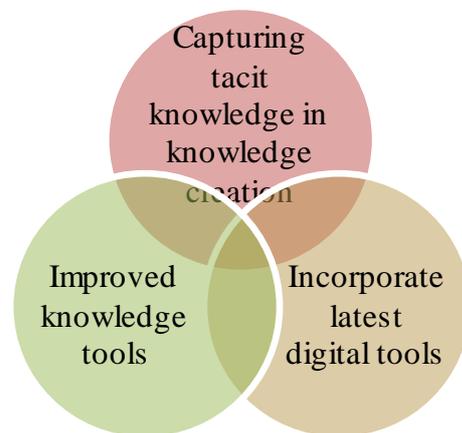

Fig. 4. Research gap 1-Knowledge creation enhances organisational performance.

When it comes to capturing tacit knowledge in knowledge creation, we identified that current KM development leans on explicit knowledge hence there is a need to develop new model or framework to facilitate tacit knowledge sharing [12, 19, 44, 45, 76]. When it comes to improved knowledge tool, we identified that there is a need to develop new methods of representing, organising, and presenting knowledge [13, 40, 41, 47 49, 84]. Furthermore, there was a need to investigate the relationship on how knowledge tools impact enterprise performance or knowledge management process and organisation discipline [2, 87]. When it comes to incorporating latest digital tools, there was a need to investigate areas such as machine learning or artificial intelligence due to the perceived benefits in the field of KM. Table 2 illustrated research gap in knowledge management.

Table 2. Research gap in knowledge management.

Ref (year)	Research type	Research contribution	Research gap
[84]-2018	Research Paper	Development of a new human-centred process. E.g.: knowledge management, flow	Improvement of current knowledge tools
		New methods to support decision making and to optimise knowledge utilisation	Improvement of current knowledge tools
		Artificial intelligence, machine learning could enhance KM	Incorporate latest digital tools in KM
[49]-2019	Review Paper	Map end user conceptualisation of newly introduced business processes	Improvement of current knowledge tools
[47]-2018	Survey Paper	Investigate the relationship between KM and human information behaviour	Improvement of current knowledge tools
[41]-2019	Review Paper	Investigate the relationship between KM and human information behaviour	Improvement of current knowledge tools
[45]-2018	Conference Paper	KM development leans towards explicit knowledge and causes imbalance of types of knowledge	Capturing tacit knowledge effectively
		Development of a new model or framework to support tacit knowledge sharing	Capturing tacit knowledge effectively
[12]-2019	Research Paper	Development of a new model or framework to support tacit knowledge sharing	Capturing tacit knowledge effectively
[44]-2019	Conceptual Paper	Development of a new model or framework to support tacit knowledge sharing	Capturing tacit knowledge effectively
[76]-2018	Research Paper	Development of a new model or framework to support tacit knowledge sharing	Capturing tacit knowledge effectively
[19]-2018	Research Paper	Investigate mechanisms of external knowledge	Capturing tacit knowledge effectively

		sourcing in employee innovation behaviour	
[4]-2019	Research Paper	New methods to support decision making and to optimise knowledge utilisation	Improvement of current knowledge tools
[85]-2017	Research Paper	New technologies required as it has perceived benefits for KM	Incorporate latest digital tools in KM
[86]-2019	Research Paper	Artificial intelligence, machine learning could enhance KM	Incorporate latest digital tools in KM
[87]-2018	Research Paper	Study the relationship between knowledge tools and practices with enterprise performance	Improvement of current knowledge tools
[40]-2019	Review Paper	Study the impact of KM on knowledge worker productivity	Improvement of current knowledge tools
[50]-2019	Research Paper	Investigate the impacts of knowledge intensive system and knowledge stock	Incorporate latest digital tools in KM
[13]-2018	Conference Paper	Lack of knowledge on debriefing in KM	Improvement of current knowledge tools
[2]-2019	Research Paper	Lack of knowledge at learning organisation disciplines with KM processes	Improvement of current knowledge tools

For knowledge intensive system we have identified that there is a need to have an improved knowledge flow from source to target [19]. This is due to a need to improve the current system today, an improved process for the system and to incorporate AI into the system. Figure 5 shows improved knowledge flow from source to target.
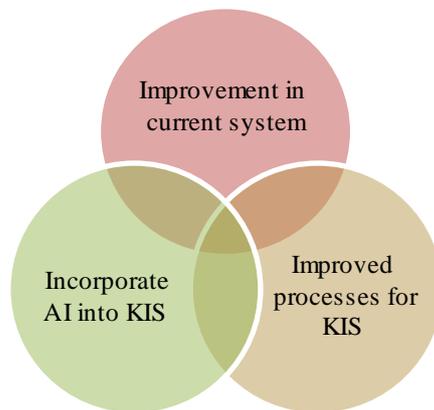

Fig. 5. Research gap 2-Improved knowledge flow from source to target.

When it comes to improvement of current system, we identified that lack of technology hampers smooth transfer and sharing of knowledge [58, 59, 80, 89]. Practitioners could investigate on factors that affects informal knowledge transfer in digital technologies [31]. Furthermore, we identified that practitioners could examine the relationship current knowledge intensive system to other information systems [11, 60]. For incorporating artificial intelligence, we identified that impact of AI could be examined due to its perceived impact [51, 63]. For improved processes, we identified a strategic knowledge plan must be created to address all areas of explicit and tacit knowledge and knowledge risk [3, 27, 55, 62, 69, 88]. Table 3 shown research gap in knowledge intensive system.

Table 3. Research gap in knowledge intensive system.

Ref (year)	Research type	Research contribution	Research gap
[88]-2018	Review Paper	Strategic knowledge plan to address all areas of explicit and tacit knowledge	Improved processes for KIS
[80]-2016	Review Paper	Lack of technology hampers smooth transfer and sharing of knowledge identified as a major barrier	Improving current KIS
[89]-2017	Review Paper	Other technologies to enhance current KIS	Improving current KIS
[60]-2018	Survey Paper	Investigate the impact and benefit on KM processes to other information systems	Improving current KIS
[27]-2019	Conference Paper	Investigate KM processes such as knowledge creation or knowledge reuse	Improved processes for KIS
[55]-2018	Conference Paper	Investigate the impact of human aspects on knowledge sharing behaviour	Improved processes for KIS
[3]-2019	Conference Paper	Investigate the impact of human aspects on knowledge sharing behaviour	Improved processes for KIS
[58]-2018	Conference Paper	KIS as a boundary object for knowledge integration and sharing	Improving current KIS
[11]-2019	Conference Paper	Measure the effectiveness of implemented knowledge intensive systems	Improving current KIS
[59]-2018	Conference Paper	Investigate theoretical and practical implication of technology between KM and firm performance	Improving current KIS

[31]-2019	Research Paper	Investigate factors which affects informal knowledge transfer	Improving current KIS
[69]-2018	Research Paper	Investigate knowledge tacitness as a potential knowledge moderator	Improved processes for KIS
[63]-2019	Research Paper	AI Impact on knowledge sharing and implementing new technologies	Incorporating AI into KIS
[51]-2019	Review Paper	Implementing AI to analyse knowledge used or knowledge recommendation to users	Incorporating AI into KIS

For knowledge quality, we identified that knowledge creation processes require knowledge to be gathered, process and used in a measured manner [18]. This is due to the need to measure knowledge quality over time, identify what factors that affects knowledge quality and to mitigate knowledge loss, shown in Fig. 6. Table 4 shows the research gap in knowledge quality.

When it comes to measuring knowledge quality, we identified that tacit knowledge and variables related to knowledge quality must be evaluated from time to time [67, 68]. In doing so, it will result in a more refined framework in measuring knowledge [78]. For factors that affect knowledge quality, we identified that there is a need to investigate conditions required for knowledge quality to transform knowledge to innovative outcomes [77]. Furthermore, we identified that there is a need to investigate the relationship between other organisational factors and user behaviours when it comes to the development of newer models for knowledge intensive systems could facilitate the development of newer models for knowledge intensive system [23, 36, 90]. When it comes to knowledge loss mitigation, organisations must manage its knowledge to mitigate knowledge loss regardless of industry or sector [88]. Furthermore, we identified that there is a need to investigate factors that influences user perception and attitudes towards knowledge intensive systems [28, 33, 71].

**Fig. 6. Research gap 3-Knowledge must be
gathered, process and used in a measured manner.**

Table 4. Research gap in knowledge quality.

Ref (year)	Research type	Research contribution	Research gap
[88]-2018	Review Paper	Present knowledge within an organisation must be managed to curb knowledge loss	Mitigate Knowledge Loss
[67]-2019	Survey Paper	Tacit knowledge in a KIS must be evaluated	Measuring knowledge quality over time
[23]-2018	Review Paper	Studying user feedback, can facilitate the development of complex models	Factors affecting knowledge quality
[28]-2015	Research Paper	Investigate factors which influences user perceptions and attitudes in using KIS	Mitigating knowledge loss
[36]-2017	Survey Paper	Investigate the relationship between other organisational factors, and innovation	Factors affecting knowledge quality
[90]-2016	Survey Paper	Investigate the relationship between other organisational factors, and innovation	Factors affecting knowledge quality
[71]-2018	Conference Paper	Studies can investigate factors which affect the use of a knowledge intensive system	Mitigating knowledge loss
[77]-2018	Survey Paper	Investigate the conditions required for knowledge quality to transform external knowledge transfers into innovation outcomes	Mitigating knowledge loss
[33]-2018	Research Paper	Social exchange theory to measure outcome expectation and knowledge quality on user behaviour	Mitigating knowledge loss
[78]-2016	Review Paper	Other factors in measuring knowledge quality will result in a more refined framework	Measuring knowledge quality over time
[68]-2019	Survey Paper	Evaluate variables related to knowledge quality must be studied	Measuring knowledge quality over time

3. Existing KM Success Models

This section discusses two KM success models that were identified in the literature. The aim is to provide a detailed explanation of the two models as how these models are relevant to knowledge management, knowledge intensive systems and knowledge quality. The two models are Jennex and Olfman knowledge management success model and value-justice model of knowledge integration.

3.1. Jennex and Olfman knowledge management success model

The Jennex and Olfman Knowledge Management Success Model focuses on six dimensions: System Quality, Knowledge Quality, Service Quality, User Satisfaction, Intent to Use, and Net Benefit [20, 21]. According to Jennex, knowledge quality is defined as usefulness and accuracy of content [74, 91]. For Jennex, knowledge quality is broken down into knowledge content, richness, and linkages [74, 91]. Knowledge content, is defined as processes in identifying knowledge sources, capture and storage format [74, 91]. Richness is defined as accuracy and timeliness of the stored knowledge while having sufficient knowledge context [74, 91]. Linkages is defined

as identifying the right expert for a particular [74, 91]. Using the model, Jennex argued that the success of a knowledge intensive system depends on system quality, knowledge quality and user satisfaction [23, 74, 75].

3.2. Value-justice model of knowledge integration

The Value-Justice model of knowledge integration focuses on the following dimensions: perceived justice, perceived value, knowledge equivocality, knowledge integration and knowledge quality [69]. The model was tested, and a few key findings were identified. Knowledge integration has a significant impact on knowledge quality [69]. It was understood that knowledge equivocality moderates the relationship between perceived justice / perceived value, knowledge integration and the relationship between knowledge integration and knowledge quality [69].

4. Proposed Knowledge Quality Model (KQM)

This section discusses the outline of the proposed model and its components. The model was conceived as to address the research gaps that was identified in the literature review notably around knowledge management, knowledge intensive system and knowledge quality. The aim of the model is to ensure the successful implementation and usage of knowledge intensive system in organisation.

To ensure the success of a knowledge intensive system, it was identified that three factors affected its success which are system quality, knowledge quality and user satisfaction. System quality focuses on the usability of the system, for example ease of use or system reliability [23, 74]. User satisfaction focuses on whether the system fits the user's expectation, and these are measured based on feedbacks given from end users which can be subjective [23, 74]. Knowledge quality ensures that the knowledge in the system is contextual and relevant to the end users [23, 74]. System quality focuses on the knowledge intensive system, user satisfaction focuses on the end users while knowledge quality focuses on knowledge present. Knowledge quality is further divided to three different constructs, knowledge process, knowledge context and knowledge source (Fig. 7). These three constructs are divided into three categories namely, process, content and people. Process is defined as a series of actions or steps; content is defined as the medium or the substance offered by the system and lastly people is defined as the end-users and source of the content.

- **Knowledge context**

Knowledge context touches on the content itself as the knowledge must be intrinsic, contextual and actionable, adhering to the knowledge quality attributes. Intrinsic in such a way that the knowledge is accurate, contextual in such a way that the knowledge is relevant and actionable in such a way that the knowledge is useful to the users and organisation. These three elements must be present to ensure knowledge remains contextual and relevant.

- **Knowledge process**

This is a process or guideline when it comes to defining the knowledge capture and knowledge storage. Knowledge capture is a process that defines how knowledge is captured from a knowledge worker. Knowledge storage looks at how the knowledge is stored in the system, and it touches on the format on how the knowledge is stored and documented.

- **Knowledge source**

It focuses on identifying and listing experts also known as knowledge sources to ensure knowledge is captured effectively especially from the right person. Knowledge sourcing identifies the knowledge sources in the organisation and these individuals are listed and classified as knowledge experts.
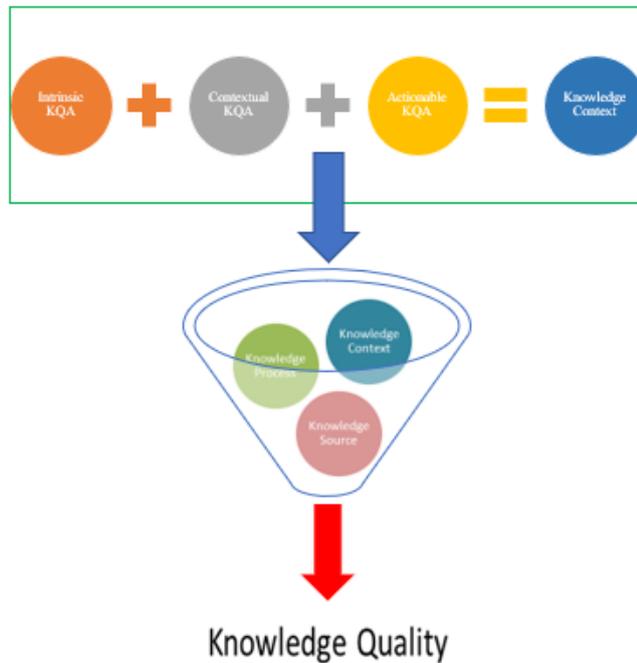

Fig. 7. Knowledge quality model for knowledge intensive system.

The study of previous literature pertaining to knowledge quality contributes to the current model stated in Fig. 7. Based on the findings from Vijay, Jennex and Olfman, Valaei and Kyoon, we propose a model called the knowledge quality model for knowledge intensive system. To ensure knowledge is contextual, this is where Knowledge Quality (KQ) attributes plays a big role in knowledge context. By linking knowledge context to intrinsic, contextual and actionable KQ attributes, this ensures that the knowledge itself is useful, accurate, reliable and contextual. Figure 8 shows how the KQ model flows in a system. A specific algorithm needs to be identified and these could be either artificial intelligence or machine learning algorithms. These algorithms could be utilised as they possess learning capabilities that could identify whether knowledge is useful, accurate, reliable and contextual. By applying these technologies into the model, the effectiveness of this model can be measured and subsequently, the model could be improved further. Therefore, high quality knowledge can be achieved in a knowledge intensive system and subsequently, improve its usage. This in return would encourage knowledge creation and knowledge sharing in an organisation, thus minimising knowledge loss due to effective management of knowledge.
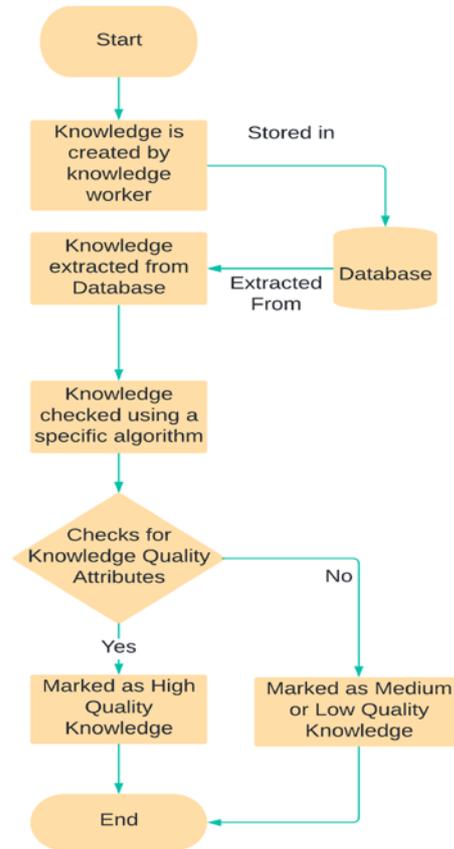
Fig 8. Flow diagram of the knowledge quality model in a KIS.

5. Discussion

This section discusses the proposed model and comparing it with two other existing models. The aim is to provide a comparison between the proposed model and two models that were identified in the literature.

The model exhibits certain properties from the J&O model. The J&O Model focuses on six dimensions which are system quality, knowledge quality, service quality, user satisfaction, intent to use and net benefit. The proposed model focuses on three dimensions only which are system quality, knowledge quality and service quality as literature has identified that these three dimensions play a key part in the success of a knowledge intensive system. The function of these three dimensions remains the same as defined in the J&O Model and much focus is emphasized on knowledge quality. In the J&O model, knowledge quality is broken down into process, content and people which is the same for the proposed model. However, the proposed model emphasised strongly on content. Content must be accurate, relevant and useful, in line with the knowledge quality attributes. These were not mentioned explicitly in the J&O Model.

For the value-justice model, the model argues that knowledge quality is tied to perceive justice, perceive value, knowledge equivocality and knowledge integration. It further argues that knowledge integration has a strong impact on knowledge quality. The proposed model focusses on three dimensions namely system quality, knowledge quality and service quality. Knowledge quality is further broken down to people, process and context while the value-justice model focuses mainly on context. Holistically, the proposed model covers not only context, but the people involved and the processed required. The value-justice model only covers in-depth on context, but it does not touch on people nor process. These two are also important when it comes to knowledge management as process sets the guideline or framework while people are the contributors and consumers and they in turn will rate the content (knowledge).

6. Conclusion

Knowledge quality is an integral part of knowledge management as it ensures the content is useful, accurately and relevant. Knowledge as it is understood must be contextual in nature as this is what separates knowledge from information. Knowledge must be regarded as an asset and captured by an organisation due to its importance and usefulness. Knowledge is divided into two parts, tacit and explicit knowledge and knowledge itself must be contextual.

This study discusses in detail the aspects of knowledge quality, knowledge management and knowledge intensive systems. It is further understood from the study that the success of knowledge intensive system lies in three domains, namely knowledge quality, system quality and service quality. Knowledge context however must be imbued with three KQ attributes, namely intrinsic, contextual and actionable to ensure that it is reliable, relevant, and applicable. By effectively capturing and storing knowledge, knowledge workers can benefit out from it and then further improve the organisation's performance and innovative capabilities.

The system is only useful if the organisation encourages knowledge sharing amongst knowledge workers. The study proposes a knowledge quality model which could improve the performance of current knowledge intensive system. In the model, knowledge quality is divided to knowledge context, knowledge source and knowledge process after comparing it with the two existing models. The main focus of the model is on knowledge context and is imbued with knowledge quality attributes to ensure context is present. This is to ensure that knowledge is reliable, relevant, applicable and contextual to the knowledge workers. The model itself is beneficial as with the implementation of current digital technologies, it could improve performance knowledge intensive system due to the presence of high-quality knowledge. This in turn would encourage knowledge creation and knowledge sharing, thus mitigating knowledge loss and ensuring effective management of knowledge.

7. Future Work

Future research can be taken into the implementation of the model in a knowledge intensive system as the model is yet to be tested. We are working to test this model during our research progress. The model can be demonstrated by implementing current machine learning algorithm or used as KM process.

Acknowledgement

Abbreviations	
AI	Artificial Intelligence
CTK	Collective Tacit Knowledge
J&O	Jennex and Olfman
KIS	Knowledge Intensive System
KM	Knowledge Management
KQ	Knowledge Quality
KQA	Knowledge Quality Attributes
KQM	Knowledge Quality Model
RTK	Relational Tacit Knowledge
STK	Somantic Tacit Knowledge

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