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INTERNAL AUDIT VALUE-ADDED

A LINK BETWEEN KNOWLEDGE MANAGEMENT AND SERVICE QUALITY

Ana Paula Teixeira Henriques

Thesis presented as partial requirement for obtaining the Master's degree in Information Management

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Abstract

The purpose of internal audit (IA) is to add value and improve an organization's operation by supporting management and the Board to execute their functions. Given the importance of IA and knowledge management, our study explores this relationship. We applied a service quality measurement instrument (SERVPERF) to assess IA´s knowledge creation and determine if the knowledge created and transferred by IA influences its value-added, considering the influence of cultural aspects on this relationship. To the best of our knowledge, this is the first empirical research that applies the service quality dimensions (responsiveness; assurance; tangibles; empathy; reliability) to assess the value-added of IA, relating it with the knowledge management phases of knowledge creation and transfer. We used a quantitative approach and surveyed 126 users who had already interacted with the IA team. We applied SEM-PLS to analyse our theoretical model's relationships. Our results show that empathy and tangibles are important dimensions influencing knowledge creation. We confirmed that IA teams add value when they create and transfer knowledge to the organization, facilitated in a cultural context of low uncertainty avoidance.

KEYWORDS

Internal Audit; Knowledge; Value-added; Service-Quality; Uncertainty avoidance

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1. Introduction

According to the Institute of Internal Auditors (IIA), "*internal auditing (IA) is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations* " (The Institute of Internal Auditors, 2017). The audit committee relies upon internal audit (IA) for timely and accurate information about the organization's environment, making IA "eyes and ears" of the governing body. Internal auditors' diverse competences bring enormous value to the Board and the audit committee in their governance and oversight responsibilities (The Institute of Internal Auditors, 2000). Increased business complexity has heightened the reliance on internal auditors as consultants for the organization (Trotman & Duncan, 2018). Research studies have been primarily focused on the IA's multiple roles, IA quality (IAQ), and IA practice (IAP) (Roussy & Perron, 2018), leaving these questions still unanswered: how does IA add value, and how to measure that value? (M. Eulerich & Lenz, 2020).

Simultaneously, knowledge management (KM) has become a trendy buzzword (Olubunmi, 2015). In the competitive and challenging era that we live in, knowledge is crucial for achieving organizational goals. Knowledge is today a strategic asset, and organizations depend on their abilities to manage it for their success (Drucker, 1993; Kogut & Zander, 1992; Nonaka, 1994). The effective use of individuals and collective knowledge resources is a source of competitive advantage (Bibi et al., 2020).

This study proposes to link these two emerging topics: IA value-added and KM practices (Asrar-ul-Haq & Anwar, 2016; A. Eulerich & Eulerich, 2020), incorporating the impact of service quality management practices on knowledge creation activities (e.g., Asif et al., 2013; Linderman et al., 2004; Molina et al., 2007; Tseng, 2016). IA is a service provision that depends on its stakeholder´s satisfaction to define its value-added proposition. As such, we will apply the service quality measurement instrument (SERVPERF) (Cronin & Taylor, 1992) adopted by Botha and Wilkinson, (2020) to assess how that impacts the knowledge creation process of IA.

No study has examined specifically the mediating effect of knowledge creation on the relationships of service quality dimensions and value-added in the auditing context. However, not only is knowledge creation critical, but knowledge creation and knowledge transfer provide a basis for competitive advantage in organizations (Argote & Ingram, 2000) and are influenced by the organization's cultural environment. Using Hofstede's cultural index (as this has been the most popular conceptualization of culture) we will explore how uncertainty avoidance can influence IA knowledge transfer and value-added. We expect to answer the following research questions:

- Which service quality dimensions influence the knowledge creation by internal auditors?
- Does the knowledge created and transferred by IA influence its value-added?

From a managerial point of view, this research allows IA teams to understand how to add value to the organization and focus on having a powerful impact. We believe this to be the first empirical research that applies the service quality dimensions to assess the value-added of IA and relates it to knowledge creation and transfer. The contributions of this work are threefold. First, we identify which service quality dimensions influence the knowledge creation deriving from IA. Several research studies have been undertaken regarding IA and value-added, but we provide further insights on what drives effective value-added. Second, we show the influence of knowledge creation and knowledge

transfer practices on IA value-added. Third, we show the importance of cultural characteristics that moderate value transfer and value-added. Studying this relationship sheds light on the difficulty of adding value to specific backgrounds.

To answer these questions, this study is organized as follows: Section 2 presents the literature review and theoretical background; Section 3 presents the conceptual model and hypotheses; Section 4 presents the methodology, and Section 5 details the data analysis and results. Section 6 explains the theoretical and managerial implications and limitations for future research, and finally, we provide the conclusion in Section 7.

2. Literature review

2.1 Internal audit & value-added

Regardless of what drives an organization, nonprofits, private, and public-owned organizations seek to achieve the organization's goals with the greatest efficiency and effectiveness possible (The Institute of Internal Auditors, n.d.). The audit committee relies upon IA for timely and accurate information about the organization's environment, making IA "eyes and ears" of the governing body. Internal auditors' diverse competences bring enormous value to the Board and the audit committee in their governance and oversight responsibilities (The Institute of Internal Auditors, 2000). Internal Auditors support the organization by assessing risks and recommending measures to mitigate those risks; IA assists top management with analyses, evaluations, counselling, and information on the activities they review; monitor risks associated with new business lines, new system implementation, environmental issues, and/or regulatory compliance. IA is recognized as a trusted advisor and strategic partner. IA key stakeholders are the Board of directors (or a committee such as an audit committee), senior management, operations management, and external parties such as external auditors and regulatory bodies (The Institute of Internal Auditors, 2010).

Research about IA was prompted by the financial scandals of the early 2000s (e.g., Enron) and enactment of the Sarbanes-Oxley Act (SOX) in the United States (Roussy & Perron, 2018). Over the years, the literature on IA has mostly explored three themes; the first two in development and the third a combination of emergent topics: i) the multiple roles of IA; ii) the IA quality (IAQ); iii) the day-to-day practice of IA. Table 1 shows a summary of the leading researchers and their interests.

Table 1 - Summary of IA research ideas

Reference	Research Issues	Main Findings
(Gramling et al., 2004)	Study of IA function (IAF) association with Corporate Governance	It is important to expand the measures used in assessing IA quality to assess how the main governance parties evaluate IAF quality
(Sarens et al., 2009)	Relationship between IAF and the audit committee	IA provides comfort to the audit committee through its reports, internal control reviews, and knowledge.
(Lenz & Sarens, 2012)	Influence of several variables in IAF active role in corporate governance	Risk-based audit plan, quality assurance, and improvement plan are positively associated with IAF's contribution for corporate governance.
(D'Onza et al., 2015)	How does IA add value to the organization?	IA independence, objectivity, compliance with IIA standards, IA evaluation of internal controls, and risk management are positively associated with IA value-added.
(Ma'ayan & Carmeli, 2016)	What is the role of senior management and IA in facilitating learning and improving performance?	Auditors' skills and behaviours influence the relationship between IA and auditees, resulting in positive learning from the audits and efficiency improvement.
(Trotman & Duncan, 2018)	Analysis of IAF quality from a multi-stakeholder perspective	The different stakeholders focus on different dimensions of quality.

The first wave of researchers focused on the analysis of the IA as an oversight governance mechanism. The different authors' views can vary, suggesting that there is no straightforward answer to IA's role and how it creates value. IA can be seen as the "jack of all trades" playing at the same time the role of "helper" of the management and "comfort" for the audit committee. (Roussy & Perron, 2018). The IA definition update in 2017 by the IIA also reinforces this "ambiguity" of the IA role. Later, the focus was on IA quality, namely the criteria used to assess it and the stakeholders' perceptions of IAQ. Trotman and Duncan (2018) proposed a framework that identifies four dimensions that can influence IA effectiveness: organization, IA resources, IA processes, and IA relationships. The literature review suggests that more research is needed to clarify the stakeholders' perspectives on IAQ and how to assess it. The last theme of research addresses the IA practices and how IA agents perform their activities. However, this area of research is scarce. It would be valuable to understand how organizations comply with IA recommendations and whether or not management had perceived those recommendations as a contribution to improve their organizational processes (Roussy & Perron, 2018). The IIA's International Professional Practice Framework (IPPF) defines IIA value in the following way, "The IA activity adds value to the organization (and its stakeholders) when it provides objective and relevant assurance and contributes to the effectiveness and efficiency of governance, risk management, and control processes" (The Institute of Internal Auditors, 2015).

IA unique value is defined by three key characteristics (The Institute of Internal Auditors, n.d.-b):

- **Objectivity:** IA is an independent body, providing objective and independent opinions to the senior management and the board.

- **Assurance**: IA provides assurance that the organization´s risks are understood and properly managed.

- **Insight**: IA provides insights and recommendations for management and the board based on their understanding of governance processes and structures. Those insights on risks and controls, processes, and governance facilitate changes and innovation within the organization. IA can also provide foresight regarding emerging risks and trends that can affect the organization in the future.

Although the definition of value seems to be clear, its interpretation is complex since "value added" is a multidimensional construct (A. Eulerich & Eulerich, 2020), the interpretation of which can vary depending on the organization, on the position of the IA in the organization, and even on the stakeholders. The literature review shows that the concept of value-added derived from IA has been associated with different attributes. Table 2 is a brief overview of those themes:

Table 2 - IA value concept by researchers

Attribute associated with IA value	Authors
Alignment: IA is aligned with organizational objectives and follows a risk-based audit approach.	(D'Onza et al., 2015; M. Eulerich et al., 2019)
Scope of Services: IA broadens its scope of activities, expanding it over compliance and financial auditing. Areas such as fraud detection, business process improvements, or playing an educational	D'Onza et al., 2015; M. Eulerich et al., 2019)

Attribute associated with IA value	Authors
role become highly important.	
Relationship: IA has an educator role and builds relationships with the auditees, preventing them from seeing IA as "police".	(PriceWaterhouseCoopers, 2016)
Independence and objectivity: IA is independent and objective.	(D'Onza et al., 2015)
Service-Oriented: The IA team is service-oriented and emphasizes service excellence.	(PriceWaterhouseCoopers, 2016)
Responsiveness: IA communication is clear and adaptive, and responds to the needs of the stakeholders.	(Lenz et al., 2018)
Informative: IA reports and presentations provide practical recommendations that are clear, informative, and professional.	(M. Eulerich et al., 2019; Sarens et al., 2009)

Having this background, Eulerich and Lenz (2020) conducted research with 336 IIA members worldwide. The study sought to respond to the following research questions about how internal auditors:

1. define their added value for the organization.

2. measure their value-added and which metrics are used.

Regarding "value-added definition," the survey shows that the value created by IA is still primarily associated with assurance and assessment of risks and controls. However, this value increases as the scope of activities performed by IA expand from providing assurance services, governance, risk, and control to play an advisory role and focus more on efficiency and effectiveness (Trusted Advisor), trying to be innovative and a step ahead (Value Driver). (Figure 1)

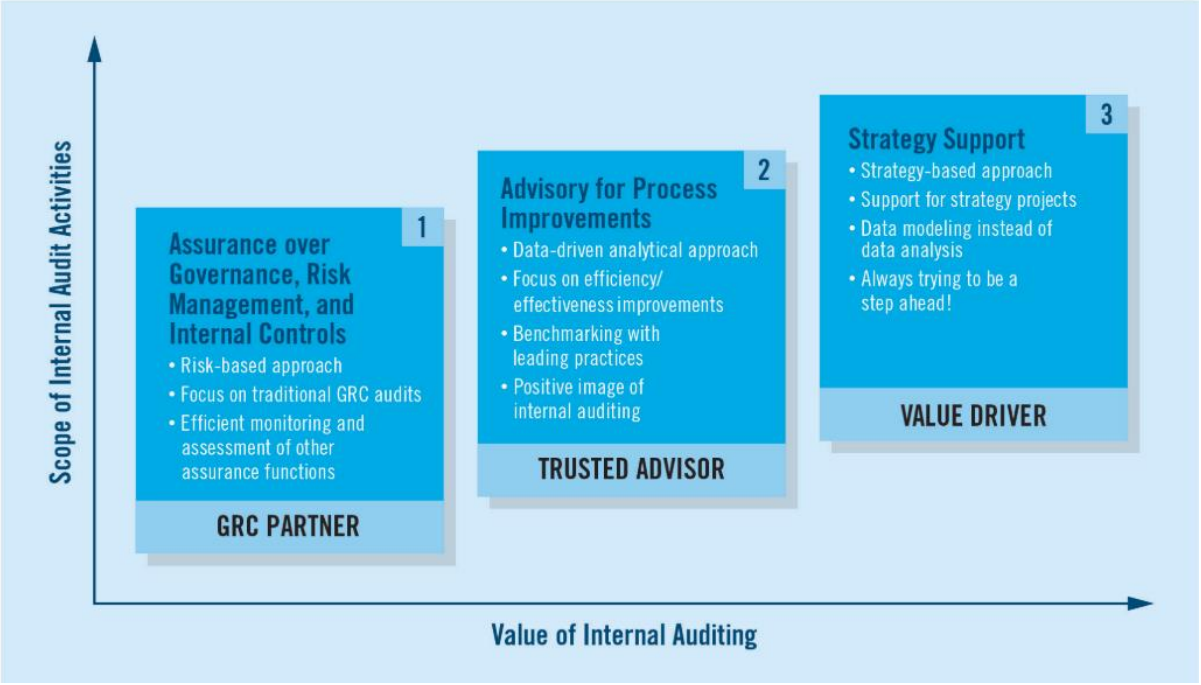

Figure 1 – Value on Internal audit from Eulerich and Lenz (2020)

With regard to the way that IA measures its value, the research shows that the most frequent methods are:

- key performance indicators (KPIs): such as "percentage of audit plan completion" or "timely closure of audit issues";
- surveys of key stakeholders or audit clients;
- results of an external quality assessment.

It is critical for the IA teams to know and clarify the expected value-added and, consequently, align their function to that definition, identifying balanced KPIs to measure its activity (M. Eulerich & Lenz, 2020). Internal auditors need to be closer and aligned with the stakeholders´ expectations to answer the "so what" question.

Lenz and Hahn (2015) compared the concept of value from the auditors' perspective ("supply side") with the auditees´ perception ("demand side"). While for internal auditors the concept of value seems to be more associated with being independent and having a risk-based approach, the demand side seems to associate value with meeting the expectations of the Board, management, auditees, or external auditors. Because the concept of value is very subjective and highly correlated to the stakeholders' perspectives (M. Eulerich et al., 2019; Lenz et al., 2018), Botha and Wilkinson (2019) developed a framework for evaluating the perceived value of IA by applying the SERVPERF service quality measurement instrument dimensions to IA. Using service quality dimensions is innovative as historically the measures to assess this value have been quantitative in nature (Botha & Wilkinson, 2020). A recent literature review of IA research points out that the literature review is still not sufficient to understand what contributes to an impactful IA department (Kotb et al., 2020). As a result, we consider it worthwhile to adopt and apply the Botha and Wilkinson (2019) framework to clarify which attributes are associated with the value-added deriving from IA.

2.2 Knowledge & knowledge management

"A firm's competitive advantage depends more than anything on its knowledge: on what it knows-how it uses what it knows – and how fast it can know something new." – HR Magazine 2009, p.1. (Olubunmi, 2015). Knowledge is nowadays a strategic asset of any organization. The society we live in has become a "knowledge society" (Drucker, 1968).

Knowledge is a diverse concept. Drucker (1993) introduced the role of knowledge in the context of organizations and productivity by highlighting the importance of managing workers' productivity and knowledge (Drucker, 1993). Nonaka (1994) defined knowledge as a "dynamic human process of justifying personal beliefs as part of an aspiration for the truth that increases the organization's 'justified true belief'". In today´s complex and challenging environment, organizations are looking at new ways of making their knowledge more productive as they have realized that knowledge management is a source of competitiveness, with special focus for knowledge creation (Mehralian et al., 2018), and knowledge sharing (Wang & Wang, 2012). Knowledge creation is a journey from "being to becoming" (Nonaka et al., 2006). Through a continuous and collaborative spiral flow, materialized in the SECI model (Socialization, Externalization, Combination, Internalization), individuals exchange their individual knowledge and create new knowledge. At the same time, it is the knowledge transfer that permits organizations to leverage the knowledge created (Olubunmi, 2015), protecting their legacy while simultaneously developing new competencies (Wang & Wang, 2012).

Through the process of internalization and socialization, an individual´s knowledge is converted into collective knowledge. Also, through externalization and combination, individual knowledge is converted into collective knowledge (Wang & Wang, 2012). New knowledge always begins with the individual (Nonaka & Toyama, 2003). One individual socializes with others and shares his tacit knowledge (Nonaka, 1994). The tacit dimension comprises cognitive (such as individual's mental models, beliefs, paradigms, and viewpoints) and technical elements (such as know-how, crafts, and skills applicable to a specific context). Tacit knowledge resides in the human mind and is embedded in the individual´s behaviour, actions, attitudes, and emotions, and is therefore hard to transmit to others and convey through language. Tacit knowledge is subjective and evolves from people's experiences and interactions with others and the surrounding environment. Tacit knowledge becomes translated in the form of written documents or images. This conversion is usually triggered by a "meaningful dialogue", in which metaphors facilitate the exchange, as words and concepts are not easily articulated (Nonaka, 1994). Tacit knowledge is at the core of the socialization process.

Through a shared experience, individuals communicate their thinking processes and emotions. This stage usually starts with the building of a team or the creation of a dialogue. Examples of activities that facilitate this process are employee rotation across areas, brainstorming activities, cooperation between different areas in a project, and individual or group meetings. The knowledge exchanged between the individuals is reconfigured, sorted, and recategorized into explicit knowledge. Existing data is combined with the new concepts formed, documenting it in a more sharable form (Nonaka, 1994). The explicit dimension is codified and articulated with symbolic form and natural language, making it easy to communicate, transmit, and store. By contrast with the tacit knowledge, explicit knowledge is formal and systematic and can be easily articulated, expressed in words, documented

and shared (Olubunmi, 2015). Explicit knowledge can be thought of as the part of the iceberg above the water, i.e., it represents the knowledge that we identify and can codify and transfer. This explicit knowledge rests on the tacit knowledge (the underwater part of the iceberg) linked with our experiences, routines, habits, and context (Farnese et al., 2019). Explicit knowledge is at the core of the combination process.

As new explicit knowledge is shared throughout the organization, knowledge is applied and used in practical situations, becoming an individual's base for new routines. Experimenting and “learning by doing” are the primary triggers for this conversion. Organizational knowledge takes place when the cycle of these four modes occurs (Nonaka, 1994). It is like an upward spiral that starts with the individual and can go to the inter-organizational level in some cases. Those four nodes are interdependent and intertwined, as they contribute and influence each other. They create a spiral of knowledge and not a circle, as it becomes amplified through the four modes (Nonaka & Toyama, 2003). This “knowledge conversion” process is influenced by the interaction with the surrounding dynamic dimensions.

Nonaka and Toyama (2003) suggested that this process is facilitated if a "ba" existed; this is a shared space for creating and sharing knowledge. Even though it is easier to visualize the ba as a physical space such as a room, the ba should be visualized as multiple interactions between individuals. Ba is an “existential place” where participants interact, creating new meanings. The ba is kept active through the constant dialectic thinking and synthesis of the contradictions that occur. Dialectics is a form of thinking that seeks the absolute truth, which may never be found (Nonaka & Toyama, 2003). It is this process of looking for responses and trying to solve contradictions that drive knowledge creation and consequently organizational learning (Brix, 2017).

3. Research model

Value-added is at the heart of IA activity (The Institute of Internal Auditors (IIA), 2021). The IIA highlights its importance through its mission, standards, core principles, and value proposition. The definition of value is highly subjective (M. Eulerich et al., 2019) and linked with the stakeholders´ expectations and perceptions (Sarens et al., 2016). Stakeholders expect IA to expand beyond assurance and compliance areas and focus on soft areas, such as culture, governance, or strategic risks. Lenz et al. (2018) leave an open research question: how to measure this value? However, the increasing expectations from IA, and the growing number of stakeholders make it challenging to measure the value-added (The Institute of Internal Auditors (IIA), 2021). Organizations are increasingly dependent on the relationship they have with their customers (Tseng, 2016). As such, it is critical to comprehend the factors that influence their perception of value.

Aligned with the theoretical bases, we developed eight hypotheses that support the two main research questions. This model (Figure 3) aims to evaluate which factors contribute to IA value-added. This study postulates a relationship between audit service quality dimensions, knowledge creation, and value-added. No published study has examined specifically the effect of service quality dimensions on knowledge creation and the relationships on value-added in the auditing context. Only recently have academics started relating knowledge and quality management (Linderman et al., 2004). Several authors (e.g., Asif et al., 2013; Linderman et al., 2004; Molina et al., 2007; Tseng, 2016) have studied the impact of quality management practices on knowledge creation and retention activities. Linderman et al. (2004) propose an integrated view that quality management practices support the knowledge conversion cycle. If we consider the quality management definition by Sitkin et al. (1994) quality management is described as conveying customer satisfaction, continuous improvement, and systems view of the organization. As such, those three elements can be fully articulated with Nonaka´s theory of knowledge creation (Nonaka, 1994).

- When organizations promote customer contact and interaction between their members, encouraging improvement activities, it creates a context for socialization.
- When organizations articulate and conceptualize customer needs, convey improvement ideas, and analyse cause and effect relationships, they promote externalization.
- When organizations analyse customer dissatisfaction and understand gaps between expectations and requirements using data analysis tools, they facilitate combination.
- When organizations monitor customer satisfaction and obtain customer feedback, implementing corrective actions when deviations occur, they learn and interiorize information about the customer.

Considering the link between service quality and knowledge creation, we study the impact of IA service quality dimensions on knowledge creation as a mediator for value-added. Etzel, Bruce, and William (2001) stated that customers determine the service quality and value by comparing their expectations with the real experience; when genuine experience exceeds the customer´s expectations, service quality is assessed to be greater. (Cronin & Taylor, 1992) proposed five dimensions to evaluate service quality: responsiveness, assurance, tangibles, empathy, and reliability. To assess the quality of the audit service we used the framework proposed by Botha and

Wilkinson (2019). They applied the service quality measurement instrument (SERVPERF) to assess the value added by IA, as service quality is a critical part of customers' perceptions of value (Ismail et al., 2006). Although the service quality instrument allows for evaluating the value-added by IA, we adopted the SERVPERF to study its impact at the knowledge creation level.

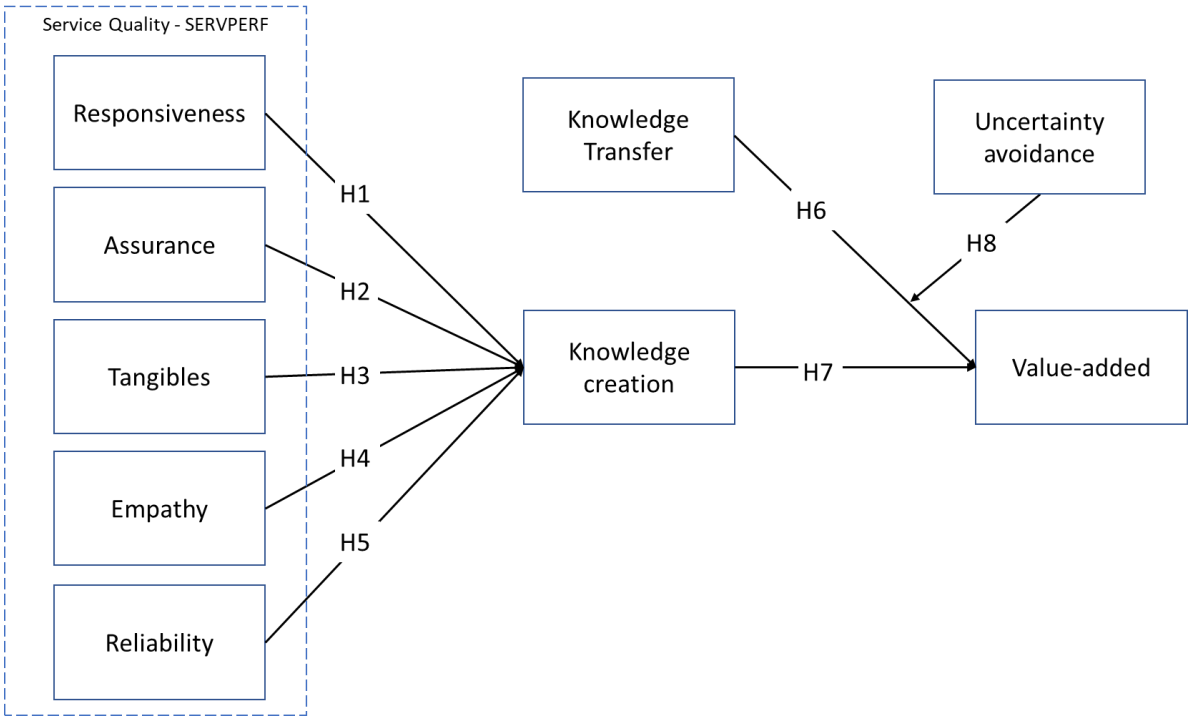

Figure 2 - Conceptual model

Berry et al., (1988) refer to responsiveness as the willingness to provide prompt service to support customers. It is anticipated that knowledge creation circumstances are established when Internal auditors show a willingness to help and have a service-oriented attitude, responding to stakeholders' requests and providing prompt feedback. Knowledge creation from socialization happens with group discussions between the various teams, aiming to find better ways to improve the organization's processes (Khedhaouria & Jamal, 2015). As such, we expect this relationship to hold:

H1: Responsiveness of the auditors positively affects knowledge creation.

Employees' knowledge, courtesy, and their ability to inspire trust and confidence are measured by assurance (Berry et al., 1988). IA is expected to instil trust and credibility and give comfort to the audit committee and senior management. By inspiring trust, the interaction and share of tacit knowledge between groups are facilitated (socialization) (Khedhaouria & Jamal, 2015). As such, we expect the following relationship to hold:

H2: Assurance characteristics of IA positively affect knowledge creation.

Tangibles relate to physical facilities, equipment, and outputs delivered (Berry et al., 1988). It is expected that stakeholders perceive IA as having sufficient assets and produce clear, adequate, and relevant outputs to support operations. By sharing best practices with the organization, IA will foster knowledge creation practices. Knowledge creation from combination occurs when information gathered through meetings and discussions is documented and reviewed. At the same time, the

review of existing processes and procedures through management reviews facilitates the externalization of knowledge (Khedhaouria & Jamal, 2015). We expect the following relationship to hold:

H3: Tangible characteristics of IA positively affect knowledge creation.

Empathy relates to the caring and individualized attention provided to customers (Berry et al., 1988). By collaborating with management and understanding the auditee's perspectives, it is expected that IA fosters knowledge creation through customer feedback activities and discussions with the auditees (socialization) (Khedhaouria & Jamal, 2015). We expect the following relationship to hold:

H4: Empathy of IA positively affects knowledge creation.

Reliability is the ability to execute the promised service dependably and accurately (Berry et al., 1988). It is expected that by having IIA staff with the necessary technical competencies and by striving for excellence and productivity, IA can foster knowledge creation practices. Through internalization knowledge creation occurs when employees use procedures and guidance from IA to execute their tasks. We expect the following relationship to hold:

H5: Reliability of IA positively affects knowledge creation.

IA feeds top management with an analysis of risks and recommendations to mitigate those risks. At the same time, IA counsels and provides insightful information about the organization and emerging risks (The Institute of Internal Auditors, 2000). Those processes contribute to the knowledge creation of the organization and drive its competitive advantage. This contribution is seen as a source of added value for the organization (Seago, 2015). As a result, we hypothesize that there is a positive relationship between knowledge creation and the value added by IA:

H7: Knowledge creation positively influences IA value-added.

IA impact on the organization's performance will depend on its ability to share the knowledge created. This impact can be measured by evaluating how IA shares the information and knowledge necessary with other teams, improving the operation´s efficiency (Lee et al., 2005). As Internal auditing's purpose is to "add value and improve an organization's operations" (Kao, Shu-Chen Chien, 2016), we hypothesize that there is a positive relationship between knowledge transfer and the value added by IA.

H6: Knowledge Transfer positively influences IA value-added.

Knowledge transfer cannot be regarded to be isolated, as the organization's cultural environment has a significant influence on the KM processes of the organization (Dalkir, 2013). Culture is a broad concept that has been defined from multi-layered perspectives. Kroeber and Kluckhohn, (1952) identified 164 definitions of culture (Kroeber & Kluckhohn, 1952). Citing only some of the most known definitions, Hofstede defined culture as "the collective programming of the mind that distinguishes the members of one group or category of people from another" (Hofstede, 1980). Other authors define culture as a set of understandings (often unstated), such as values, norms, beliefs, attitudes, and paradigms, that the community shares in common (Sathe, 1985). This core set of values impacts employees' attitudes toward change and their willingness to implement something new (Schein, 1985). To date, the most popular conceptualization of national culture has been

Hofstede's (Leidner & Kayworth, 2006). Using Hofstede's cultural index, we explore how uncertainty avoidance can influence IA knowledge transfer and IA value-added. Uncertainty avoidance is defined as "the extent to which the members of a culture feel threatened by uncertain or unknown situations" (Hofstede, 1980). It deals with the tolerance for ambiguity and the extent to which individuals feel more or less comfortable with uncertain, unknown, or unstructured situations. A culture that seeks to minimize those situations tends to be more strict, following established rules and laws.

Uncertainty avoidance moderates the effects of knowledge transfer on value, such that the effects are weaker among users with greater uncertainty avoidance. The main reason to select this dimension is that uncertainty avoidance plays a key role in how people interact and share their knowledge. Wilkesmann et al. (2009) compared the impact of knowledge transfer in a high uncertainty avoidance environment (Germany) with a low uncertainty culture (Hong Kong). It was confirmed that in the context of high uncertainty, knowledge transfer would follow strict rules, taking longer for employees to feel secure to transfer their knowledge. Conversely, in the context of low uncertainty, knowledge transfer happens more quickly and without strict rules. According to Chen et al. (2010), there was substantial evidence that cultural dimensions (such as uncertainty avoidance) significantly impacted knowledge transfer in a cross-cultural transfer of organizational knowledge. Thus, we hypothesize the following:

H8: Uncertainty avoidance moderates the effects of knowledge transfer on value-added, such that the effects are weaker among contexts with greater uncertainty avoidance.

4. Methods

4.1 Measurement

We gathered data using an online questionnaire directed to users who had already interacted with IA teams. We used Microsoft forms to create the survey and collect the responses. The survey was first developed in English and then translated to Portuguese. Both questionnaire versions were sent. The measurement items were adopted from several authors with slight adjustments. The items for all constructs are included in Appendix A.

4.2 Data

All items were measured using seven-point Likert scales, anchored from totally disagree (1) to totally agree (7). A pilot study was conducted to test the instrument (the respondents were not included in the primary survey). The data were collected through an online survey in Europe between May 6, 2021 and June 10, 2021. We obtained 126 valid responses.

Our demographic analysis (Table 3) indicated that of the 126 respondents, 76 (60%) are men. In terms of age, 53 (42%) of the respondents are below 40 years, 26% are between 40 and 50 years, and the rest (32%) are over 50 years.

Table 3 - Sample Characteristics

Distribution					
Age			***Participant´s contact with IA during the year***		
< 30	16	13%	Up 1 week	26	21%
Between 30-39	37	29%	1 to 4w	20	16%
Between 40-49	33	26%	> 4 to 8w	11	9%
Between 50-59	36	29%	> 8weeks	48	38%
≥ 60	4	3%	none or don't know	21	17%
Gender					
Female	50	40%			
Male	76	60%			

Note n=126

Concerning user´s contact with IA, 25% of the participant's interaction with IA ranges between one to eight weeks per year. Most of the participants (48) have an interaction greater than eight weeks.

5. Results

5.1 Measurement model

The data analysis was carried out using partial least squares structural equation modelling (PLS-SEM) supported by SmartPLS 3.3.3 (Ringle et al., 2015).

In order to verify if indicators of each construct measure what they are supposed to, we assessed the i) internal consistency, ii) convergent validity, and iii) discriminant validity. The (i) internal consistency is measured with two tests: composite reliability (CR) of constructs, and Cronbach's alpha. The (ii) convergent validity is measure by average variance extracted (AVE) by constructs (Fornell & Larcker, 1981). The (iii) discriminant validity is assessed by two factors. The square roots of AVEs (diagonal elements) should be greater than the correlation between any two constructs' off-diagonal elements (Fornell & Larcker, 1981). Second, the loadings should be greater than the cross-loadings (Chin., 2002). Tables 4 and 5 report the measurement model results.

Table 4 - Standard deviations, correlations, and reliability and validity measures (CR, CA, and AVE) of latent variables

Constructs	Mean	SD	CA	CR	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
(1) Responsiveness	5.380	1.222	.940	.951	**.858**								
(2) Assurance	5.824	1.064	.912	.938	.839	**.889**							
(3) Tangibles	5.445	1.277	.944	.960	.831	.742	**.925**						
(4) Empathy	5.531	1.147	.923	.946	.836	.836	.874	**.902**					
(5) Reliability	5.441	1.257	.890	.932	.857	.789	.884	.848	**.905**				
(6) Knowledge transfer	5.201	1.419	.949	.963	.779	.668	.869	.805	.830	**.931**			
(7) Knowledge creation	5.271	1.343	.959	.967	.812	.741	.890	.854	.856	.909	**.910**		
(8) Value	5.735	1.229	.924	.943	.748	.691	.830	.761	.770	.831	.836	**.876**	
(9) Uncertainty avoidance	5.871	1.027	.831	.922	.347	.367	.298	.270	.297	.218	.281	.342	**.925**

Table 5 - PLS loadings and cross-loadings

Constructs		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
(1) Responsiveness	RES1	**.867**	.753	.794	.770	.727	.773	.753	.719	.272
	RES2	**.867**	.716	.736	.725	.747	.710	.737	.689	.319
	RES3	**.850**	.669	.740	.722	.716	.652	.679	.661	.322
	RES4	**.838**	.649	.681	.674	.717	.648	.672	.637	.310
	RES5	**.840**	.759	.674	.719	.760	.622	.684	.562	.256
	RES6	**.866**	.750	.658	.679	.745	.600	.671	.594	.286
	RES7	**.875**	.737	.692	.722	.730	.657	.669	.615	.320
(2) Assurance	ASS1	.703	**.876**	.669	.738	.683	.607	.688	.643	.312
	ASS3	.746	**.890**	.658	.760	.703	.571	.596	.563	.396
	ASS4	.746	**.868**	.605	.701	.676	.548	.631	.565	.281
	ASS6	.789	**.923**	.702	.774	.742	.641	.709	.674	.322
(3) Tangibles	TAN4	.778	.658	**.914**	.808	.759	.736	.788	.746	.265
	TAN6	.797	.687	**.957**	.808	.859	.812	.844	.769	.252

	TAN7	.781	.725	**.940**	.832	.839	.814	.829	.772	.280
	TAN8	.717	.674	**.889**	.788	.811	.850	.831	.785	.306
(4) Empathy	EMP2	.790	.791	.827	**.921**	.776	.716	.780	.700	.235
	EMP3	.758	.703	.788	**.907**	.795	.726	.756	.670	.213
	EMP4	.749	.731	.777	**.895**	.733	.701	.744	.661	.259
	EMP6	.718	.787	.760	**.883**	.754	.757	.797	.709	.266
(5) Reliability	REL2	.765	.754	.745	.741	**.886**	.657	.704	.652	.284
	REL6	.758	.631	.816	.724	**.896**	.799	.788	.721	.332
	REL7	.803	.761	.835	.836	**.934**	.789	.824	.713	.196
(6) Knowledge transfer	TRA1	.703	.655	.795	.766	.760	**.939**	.846	.753	.182
	TRA2	.736	.657	.837	.770	.794	**.957**	.873	.791	.240
	TRA3	.724	.604	.827	.738	.773	**.927**	.828	.783	.185
	TRA5	.738	.571	.773	.722	.765	**.900**	.836	.766	.203
(7) Knowledge creation	CRE1	.722	.643	.807	.773	.791	.812	**.883**	.736	.201
	CRE3	.792	.732	.834	.790	.794	.849	**.922**	.785	.250
	CRE4	.686	.681	.742	.770	.741	.754	**.895**	.711	.243
	CRE5	.754	.710	.791	.749	.782	.837	**.919**	.775	.303
	CRE6	.738	.664	.835	.795	.773	.847	**.923**	.792	.325
	CRE7	.739	.616	.845	.786	.791	.859	**.919**	.764	.210
(8) Value	VAL1	.729	.657	.719	.730	.747	.725	.759	**.842**	.225
	VAL5	.594	.576	.650	.591	.571	.646	.637	**.854**	.339
	VAL7	.521	.483	.657	.566	.582	.664	.663	**.851**	.299
	VAL8	.663	.570	.773	.690	.679	.790	.769	**.911**	.298
	VAL9	.747	.723	.819	.736	.771	.798	.817	**.920**	.341
(9) Uncertainty avoidance	CUL5	.351	.370	.274	.269	.291	.222	.261	.321	**.927**
	CUL6	.289	.308	.277	.230	.258	.181	.258	.312	**.923**

The reliability indicator was evaluated based on the criterion that the loadings should be greater than 0.70 (Chin., 2002). In order to meet the cross-loading criteria the following items were excluded from our model estimation: REL1, REL5, CUL7, and CUL8. After the exclusion, and as seen in Table 5, the loadings are above 0.70, and no indicator has loadings (in bold) with values lower than their cross-loadings. The CR results are greater than 0.9, indicating that the model has good internal consistency (Table 4). AVE results should be higher than 0.5, so that the latent variables explain more than half of the variance of their indicators (Henseler et al., 2009; Ketchen, 2014). We also observe that the square root of AVE (in bold) is higher than the correlation between constructs. To summarize, the measurement model results indicate that the model has good internal consistency, indicator reliability, convergent validity, and discriminant validity. As such, our constructs can assess the conceptual model and its hypotheses.

5.2. Structural model

Upon determining that the measurement model and the results meet the necessary criteria, we proceeded with the assessment of the research model and examined the significance of the paths in the structural model. Path coefficients, t-statistics derived from bootstrapping with 5,000 samples, and the R^2 values are reported in Figure 3. The coefficient estimates obtained from a bootstrap distribution suggest an approximation of the sampling distribution and its standard deviation, and

can be used as a proxy for the parameter's standard error in the population. We therefore calculated t-values to assess the significance of the weight of each indicator (Ketchen, 2014).

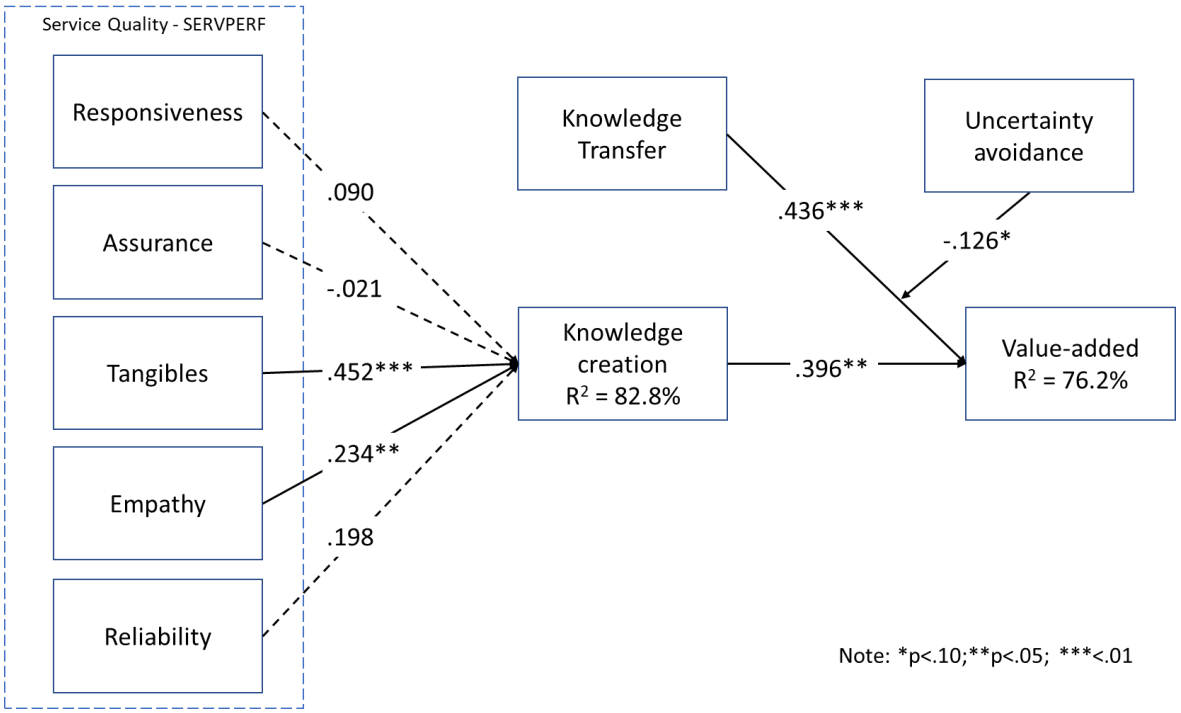

Figure 3 - Structural model results

The model explains 82.8% of the variation in knowledge creation. Tangibles' characteristics ($\hat{\beta}$=.452, p<.01) and empathy's characteristics ($\hat{\beta}$=.234, p<.05) are statistically significant in explaining knowledge creation. The hypotheses H3 and H4 are confirmed. H1, H2, and H5 are not confirmed.

The model explains 76.2% of the variation in value-added, which is explained by knowledge transfer ($\hat{\beta}$=.436, p < .01) and knowledge creation ($\hat{\beta}$=.396, p<.05), providing support for hypotheses H6 and H7.

Regarding the culture moderators, H8 is confirmed. Because of the negative beta value of uncertainty avoidance ($\hat{\beta}$= -0.126, p<.10), the high value of uncertainty avoidance will be weaker in the relationship between knowledge transfer and value-added.

6. Discussion

The main objective of this research is to determine which factors influence IA value-added. To the best of our knowledge, this is the first empirical research that applies the service quality dimensions to assess the value-added of IA and relate it with the KM phases of knowledge creation and transfer.

As indicated in Figure 3, our research model accounts for 82.8% of the variation in knowledge creation, thus supporting H3 and H4. These results show that characteristics of both tangibles and empathy of IA have a positive effect on knowledge creation. This result is aligned with prior research that suggests that organizations can generate more knowledge if they implement quality management practices (Linderman et al., 2004). The research model explains 76.2% of the variation in value-added. Knowledge transfer and knowledge creation were found to influence IA value-added, thus supporting H6 and H7.

We tested the moderator effect of uncertainty avoidance in the relationship between knowledge transfer and value-added, as an organization's cultural environment has a key influence on the KM processes of the organization (Dalkir, 2013). Figure 4 shows the impact of statistically significant moderators, the uncertainty avoidance over knowledge transfer to value-added. Our result shows that uncertainty avoidance is statistically significant, confirming hypothesis H8. Because of the negative beta value for contexts with high uncertainty avoidance propensity, the effects of knowledge transfer on IA value-added will be weaker than in a context with low uncertainty avoidance propensity. The uncertainty avoidance moderator suggests a major impact of high knowledge transfer on value when the context in which IA operates has low uncertainty avoidance.

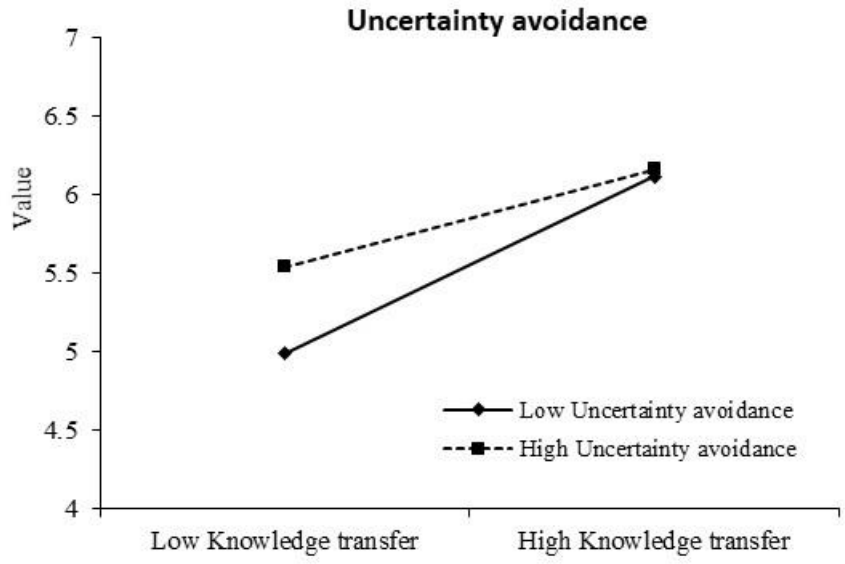

Figure 4 - Moderator effect

6.1. Theoretical implications

This research makes various contributions to theory and practice of IA. The literature review has shown that the central questions around IA value-added are still to be answered (M. Eulerich & Lenz,

2020). Botha and Wilkinson (2019) propose a framework for evaluating the value added by IA functions, using the SERVPERF dimensions. As the perspectives from internal auditors and stakeholders could diverge (Botha & Wilkinson, 2020), it is appropriate to use a structured evaluation method to do that assessment.

We did more than simply apply this framework, as we also linked it to KM and cultural factors. The value of IA was evaluated using the SERVPERF dimensions in conjunction with the KM practices. First, we evaluated how the five SERVPERF dimensions (Responsiveness, Assurance, Tangibles, Empathy, and Reliability) could impact knowledge creation in an organization, understanding which elements influence the knowledge creation by IA. Identifying those elements is critical, as the knowledge creation cycle is facilitated when those service quality dimensions are considered (Linderman et al., 2004). Second, we linked knowledge creation and knowledge transfer with value-added by adding cultural characteristics as a moderator of the path between knowledge transfer and value-added. The degree to which members of a culture feel threatened by uncertainty avoidance can influence the knowledge transfer practices.

Our study demonstrates that two of the five SERVPERF dimensions are significant for knowledge creation: tangibles (H3) and empathy (H4). Performing audits with a tangible output (H3), such as preparing quality IA reports with clear and practical recommendations, was confirmed to support knowledge creation. When internal auditors share best practices and produce clear documentation to support the business operations, tacit knowledge is converted into explicit knowledge. Collecting data on the gaps between current processes/practices and expected practices and documenting that data through audit reports or dashboards for management promotes combination processes that create new knowledge (Linderman et al., 2004). Providing an IA service with empathy (H4) means giving attention to the auditees and listening to their perspectives and points of view. Empathetic audit teams understand the organization's needs and collaborate with management, moving from a “problem finder” posture to a “problem solver” by offering insight and advice (The Institute of Internal Auditors, n.d.). Showing empathy, interacting, and listening to its auditees facilitates socialization and, consequently, the knowledge creation cycle (Asif et al., 2013).

On the other hand, three of the SERVPERF dimensions were not confirmed: responsiveness (H1), assurance (H2), and reliability (H5). The non-corroboration of assurance (H2) confirms that the stakeholders do not associate IA´s assurance services with value-added. Stakeholders' views of value are linked with IA playing an advisory role (more than an assurance role). The literature shows that stakeholders’ expectations that IA needs to move away from the traditional role of assurance provider (focusing only on governance, risk management, and internal controls) and toward being a trusted advisor. Stakeholders see IA as a value-added when it provides insights and is more strategic (M. Eulerich & Lenz, 2020). Contradictory to what was expected, the constructs responsiveness and reliability were not linked with knowledge creation (H1 and H5 were not confirmed). The literature suggests that socialization is facilitated when teams are willing to help, have a service-oriented attitude, respond to stakeholders' requests, and provide prompt feedback (Asif et al., 2013). We expected that responsiveness and reliability would facilitate knowledge creation. However, our study did not confirm these hypotheses. On the other hand, reliability (H5) is associated with delivering IA services as promised and accurately. Reliability can be associated with completing the IA plan, having technically competent staff, and complying with the IIA´s standards and code of ethics.

The quality dimensions primarily associated with the Nonaka SECI cycle are customer satisfaction, continuous improvement, and system view of the organization (Linderman et al., 2004), as those three elements fuel the knowledge creation wheel. This relationship helps us to understand why auditors´ skills and competencies seem not to be associated with the knowledge creation cycle. It does not mean that those dimensions are not important, but stakeholders do not associate them with knowledge creation and IA value-added.

Both hypotheses regarding the impact of knowledge creation and knowledge transfer practices on value-add (H6 and H7) were confirmed. Even though no literature links KM practices with IA, IA teams operationalize the SECI model in their day to day activities (Farnese et al., 2019). IA facilitates knowledge creation by communicating with the organization, understanding their practices and processes, providing feedback on the activities to be improved, providing insights about emerging risks, and assisting the organization to improve their operations (M. Eulerich & Lenz, 2020). IA also facilitates knowledge transfer by sharing best practices and transmitting information based on the overall understanding of the company processes and operations. Auditors transmit good practices between business units and the industry best practices (Argote & Ingram, 2000). Our study also confirmed that for people with a high propensity for uncertainty avoidance, the effect of knowledge transfer and value-added would be weaker than for people with a low tendency for uncertainty avoidance. Employees will take longer to feel secure about exchanging information with IA teams in a context of high uncertainty avoidance (H8 was confirmed). In a culture with high uncertainty avoidance, as in Germany, for example, auditees will be more resistant to accept the suggestions of internal auditors, as everything needs to be proven before they can accept it (Wilkesmann et al., 2009).

6.2. Managerial implications

From a practical point of view, our research shows that an IA team adds value when supporting the organization with clear and feasible recommendations and improvements, playing an educational role (tangibles), understanding the organization's needs, and collaborating with management by sharing good practices (empathy). This corroborates the study conducted by the IIA (M. Eulerich & Lenz, 2020): when IA moves from playing a governance, risk management, compliance (GRC) role to a strategic role providing management recommendations for business and operational improvements, the value of IA increases. The value-added is facilitated when the IA expands beyond assurance and compliance areas, empathizing “soft areas” such as collaboration with management to provide helpful insights and share best practices approaches. It is essential to highlight that “assurance” characteristics were not deemed significant in explaining the knowledge creation variance (H2 was not confirmed).

Today, IA needs to connect with the business, listen to management needs and concerns, and adjust its audit plans to activities aligned with its strategy and needs. Internal auditors can make a difference only by thinking differently and assessing and addressing the gaps in stakeholders' expectations vs. the IA focus and capabilities. IA teams must be aligned with stakeholders, communicate effectively with the C-suite, and become strategic partners. The organization expects that IA becomes more “tangible” and moves away from being an assurance provider. Organizations want IA to take a more proactive attitude and suggest meaningful improvements and insights. This position can be achieved only by being more “empathetic” and having open and transparent

communication with the key stakeholders. Auditors need to create spaces/circumstances that facilitate that interaction and sharing, such as conducting brainstorming meetings, teamwork sessions, and management reviews, and by gathering data to understand problems better and find solutions. Leveraging data analytics and dashboards, it is mandatory nowadays for an IA team to add value. Data analytics allow auditors to analyse all of the data (instead of using representative samples) and gain real-time insights.

Today, for an IA team to add value, it is vital to connect with the organization, assess stakeholders' expectations, and align IA operations accordingly, considering its culture. An internal auditor working in a culture with a high score on uncertainty avoidance needs to be more formal and communicate with explicit instructions, reducing ambiguity. The key takeaway from this study is that internal auditors can add value only when they know their stakeholders well, their expectations, and their needs. Empathy is vital. A solid and trusting relationship is essential for value-added. Based on those expectations, auditors can align their activities to the organization´s needs and provide tangible insights, fostering knowledge creation and transfer among the various business units and cultures.

6.3. Limitations and future research

Contrary to what was expected, our research showed that responsiveness and reliability were not linked with knowledge creation and value-add (H1 and H5 were not confirmed). Further investigation could be undertaken to explore the impact of those dimensions on value, as we expected those hypotheses to be linked with IA value-add.

Our research was conducted by inviting users from Europe to respond. It would be interesting to expand our study to other cultures and analyse the impact of uncertainty avoidance on those results.

This study applied only one of Hofstede’s cultural dimensions – uncertainty avoidance. Including other cultural dimensions could be interesting in future studies and could provide further insights on knowledge transfer and value-added.

7. Conclusions

To better understand how IA creates value in an organization, we propose a research model that combines the service quality measurement instrument (SERVPERF) with KM theories, considering the impact that a cultural dimension (uncertainty avoidance) can have on the relationship between knowledge transfer and value-added.

We tested this model with 126 users who had already interacted with IA teams in Europe. We find that two of the five SERVPERF dimensions are significant for knowledge creation: tangibles and empathy. Performing audits that produce a tangible output, such as preparing quality IA reports with clear and practical recommendations and providing an IA service with empathy were deemed to support knowledge creation.

We also confirmed that IA teams add value by creating and transferring knowledge to the organization. IA teams operationalize the SECI model in their daily activities, which is perceived as adding value. This transfer of knowledge is facilitated in a cultural context of low uncertainty avoidance.

Despite the limitations of our study, we can conclude that internal auditors can create value only when they know their stakeholders well and understand their expectations and needs. Being empathetic, constantly communicating with the organization, and being a step ahead are the required ingredients for an IA function that is a value driver.

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Appendix A - Instrument

Constructs		Items	Adapted from
Responsiveness	RES1	IA uses clear and adaptive communication with stakeholders.	(Botha & Wilkinson, 2020)
	RES2	IA provides prompt and timely services based on stakeholders' needs.	
	RES3	IA shows a willingness to help and has a service-oriented attitude.	
	RES4	IA responds to stakeholders' requests and provides prompt feedback.	
	RES5	IA identifies risks and performs risk-based audits.	
	RES6	Audit priorities are aligned with the strategic objectives of the organization.	
Assurance	ASS1	IA provides comfort and confidence to the audit committee, senior management, and other stakeholders on risk management, control, and governance processes.	
	ASS2	IA performs their work with confidentiality.	
	ASS3	IA applies the correct level of professional scepticism to provide the correct level of assurance.	
	ASS4	IA plays an active and leading role in assurance initiatives.	
	ASS5	IA acts with independence and objectivity.	
	ASS6	IA instils trust and credibility.	

Constructs		Items	Adapted from
Tangibles	TAN1	IA uses advanced technology and improved audit methodologies such as continuous auditing and data analytics.	
	TAN2	IA equipment and resources are sufficient.	
	TAN3	The audit team presents itself professionally.	
	TAN4	Findings and recommendations for improvement are clear and feasible.	
	TAN5	Implementation of IA recommendations leads to measurable improvements in business operations (e.g., cost savings or increased revenue).	
	TAN6	IA produces clear, concise, and relevant audit reports.	
	TAN7	IA delivers confident and clear presentations.	
	TAN8	IA plays an educational role, by sharing best practices.	
Empathy	EMP1	IA provides individual attention to auditees, the audit committee, and the board.	
	EMP2	IA understands the needs of the organization.	
	EMP3	IA plans and schedules audits while considering operational impact and requirements.	
	EMP4	IA listens to auditee and management perspectives.	
	EMP5	IA engages with the audit committee and understands their concerns.	
	EMP6	IA collaborates with management.	
Reliability	REL1	IA performs audits in a timely way to minimize footprint and operations impact.	
	REL2	IA´s staff has technical competencies and/or insources skills when needed.	
	REL5	IA has an independent line of reporting in the organization and complies with the Institute of Internal Auditor´s Code of Ethics.	
	REL6	IA´s findings, reports, and communications reduce information asymmetry in the organization by sharing standard practices.	
	REL7	IA strives for excellence and productivity.	

Constructs		Items	Adapted from
Knowledge creation	CRE1	My team obtains useful information and suggestions from brainstorming meetings with IA.	(Lee et al., 2005)
	CRE2	I am ready to accept IA recommendations and apply them when necessary.	
	CRE3	IA knowledge contributes to performance improvement.	
	CRE4	I learn lessons with an audit project.	(Mardani et al., 2018)
	CRE5	IA encourages me/my team to find alternative solutions in my workspace.	
	CRE6	The IA team often invents/proposes new ideas to resolve non-routine situations.	(Khedhaouria & Jamal, 2015)
	CRE7	The IA team is highly imaginative in thinking about new or better solutions to resolve problems.	
Knowledge Transfer	TRA1	IA shares information and knowledge based on their overall understanding of the company processes and operations.	(Lee et al., 2005)
	TRA2	IA improves task efficiency by sharing information and knowledge.	
	TRA3	IA promotes the sharing of information and knowledge with other teams.	
	TRA4	IA´s knowledge is distributed through documentation such as audit reports, emails, intranet pages, etc.	(Mardani et al., 2018)
	TRA5	IA frequently adapts existing solutions for resolving new problems.	(Khedhaouria & Jamal, 2015)
	TRA6	Myself (and/or my team) frequently consult with Internal Audit to improve knowledge on a topic or issue.	
Value Added	VAL1	Your internal audit activity adds value.	(J. Chen & Lin, 2011)
	VAL2	Independence is a key factor for your internal audit activity to add value.	
	VAL3	Objectivity is a key factor for your internal audit activity to add value.	
	VAL4-VAL7	I associate the following activities with the value added by IA: - Assuring the adequacy and effectiveness of the	(M. Eulerich & Lenz, 2020)

Constructs		Items	Adapted from
		organization's internal control system/Risk management processes; - Recommending business and operational improvements; - Informing and advising management/senior management/Board; - Identifying emerging risks.	
	VAL8	Would you seek internal audit's assistance in the future?	
	VAL9	I consider that internal audits add high value to the organization.	
Culture	CUL1	Managers should make most decisions without consulting subordinates.	(Baptista & Oliveira, 2015)
	CUL2	Managers should not ask subordinates for advice, because they might appear less powerful.	
	CUL3	Decision-making power should stay with top management in the organization and not be delegated to lower-level employees.	
	CUL4	Employees should not question their manager's decision.	
	CUL5	Rules and regulations are important because they inform workers about what the organization expects of them.	
	CUL6	Order and structure are very important in a work environment.	
	CUL7	It is better to have a bad situation that you know about, than to have an uncertain situation which might be better.	
	CUL8	People should avoid making changes because things could get worse.