Rigour versus Relevance in Information Systems Research in South Africa

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Abstract

Rigour and relevance division is as a result of many reasons. The gap between the two has promoted debate and argument that has lasted for years. Many believed that IS research is effective and others opposed the argument. Others within or outside the discipline are considering whether IS research output is affecting and impacting decision making in the industry. Meanwhile, the debate on rigour and relevance has lasted for decades but in reality, the debate and the gap still persist, in spite of efforts by researchers. Their efforts and hard-work seems ineffective. The study determined whether the needs of practitioners through rigour and relevance of IS/academic research and also to determine whether this lingering debate over these decades has worth from an academic viewpoint. There is also an on-going criticism that IS research lacks rigour, relevance, effective communication and acceptance in the field as noted in the literature.

Keywords: Rigour, Relevance, Debate, Information Systems (IS), Academia, Collaboration, Research, Academic, Researchers, Practitioners, Applied discipline, Research method and Academic researchers.

Introduction

Rigour and relevance in Information Systems (IS) research is a means for quality in research, rather than an end (Martensson & Martensson 2007). Rigorous

research is research that aims to be credible by being consistent and transparent. Relevant research is presenting meaningful findings to practitioners (Martensson & Martensson 2007). Rigour and relevance have contributory aspects that are working together to achieve research quality (Chukuwere 2013).

The rigour versus relevance debate on IS has been on-going over decades but it has not yet been solved (Glass 2009; Martensson & Martensson 2007; Gulati 2007; Worrall, Lubbe & Klopper 2007). The debate is whether IS researchers and practitioners asking themselves if IS research move from rigour and relevance to reverberating and responsible research that impacts on practitioners' activities and on general society (Desouza, Sawy, Galliers, Loebbecke & Watson 2006).

Problem Statement

It is important to look at whether knowledge produced by IS researchers is applied by IS practitioners on a daily basis and understanding whether the problems and challenges faced by practitioners are addressed by IS research and whether the report is available to IS practitioners (Recker, Young, Darroch, Marshall & McKay 2009; Kraaijenbrink 2010).

The central aim of IS researchers is to conduct research that is rigorous and relevant and applicable by practitioners (Mentzer 2008). For a research study to be relevant researchers and practitioners have to collaborate, the findings must be used by others, it must solve real-world problems and create and add knowledge to both the academic and practitioner body (Kieser & Leiner 2007).

The problem to be investigated can therefore be stated to be: It is presently unknown how rigorous and relevant Information Systems research in South Africa is to meet Information Systems practitioners' expectations.

Research Question

The research questions that are derived from this problem statement can be formulated in one primary and 3 secondary research questions.

The primary research question is postulated as: What is a rigorous and relevant research that meets Information Systems practitioners' expectations?

The three secondary research questions stemming from the primary question are:

1. Is IS research output addressing the concern of IS practitioners?
2. Is rigour versus relevance debate necessary in IS research?
3. What can be done to improve the understanding of rigour and relevance in IS research?

Overview of the Literature

The gap between IS academics and practitioners is worrying (Fitzgerald 2003). Lately, there has also been a debate on how to increase and improve research relevance (Nicolai & Seidl 2010). At this point, rigour has a role to play (Vermeulen 2007) and it is important for relevance to be initiated in research (Huisman & Conradie 2010). Academic editors have also debated among themselves on the amount of rigour needed in research for it to contribute to the field of academia (Pasmore, Stymne, Mohrman & Adler 2007). Researchers and practitioners have also been criticised for conducting research on limited and unproved evidence (Pfeffer & Sutton 2006; Pasmore *et al.* 2007).

The range of innovation today has placed researchers and practitioners in a position where they are seeking help from academic research to cope with ever-increasing changes. At this point, solutions provided by both are in doubt regarding whether the challenges faced by them are really addressed through solutions provided and the research findings accessible by all (Recker *et al.* 2009; Kraaijenbrink 2010). The rigour and relevance debate has been of concern in the academic field for decades now, with little or no solutions to resolve the issue (Straub & Ang 2011; Glass 2009; Rosemann & Vessey 2008).

The Decline of Academic IS Research over the Years

According to Cummings (2007), researchers hardly believe that practitioners pay attention to academic research and if they do, they do not use it in practice. Gill and Bhattacherjee (2009) argued that researchers and the way they inform stakeholders, have decreased in the past and this contributes to the decrease in practitioners as well. They advised that researchers should be committed to publish in practitioners' outlets. In the 1950's and 60s, the argument that academic management research was becoming relevant was raised for the first time (Gulati 2007).

The slogan of publish or perish indicates that researchers are promoted or rewarded based on the number of publications and journals published. This

has led to an increased number of conferences, journals and publications in the discipline with little impact in practice (Moody 2000).

Academic research in research on cross-boundary topics has continued over the decades and its relevancy remains under scrutiny (Chukuwere 2013). Having debated over the decades on rigour and relevance in academic research, it state in particular that practitioners are not using academic research findings in practice (Worrall *et al.* 2007)In the past 50 years, academics have been asking questions on how to impact management practice more positively through research (Bartunek 2007). The debate has been tested that the theory layout of the IS field has been interrogated and found to be soft (Bakshi & Krishna 2007). Presently, many practitioners have little interest in academically published research and see no reason to use this research (Mckelvey 2006). These practitioners are worried as IS researchers are allowed to research in any kind of institution, be it in government organisations, informal groups, online groups and many more (Lanamäki *et al.* 2011). The changes and quick innovation in technology have forced new knowledge emerging over the years from data processing research to Information Systems (IS) and also to Information and Communication Technology (ICT) (Bakshi & Krishna 2007).

The Absence of Theory in Academic IS Research

From inception, the link between IS researchers and practitioners has been under heavy scrutiny. Until today, the relevance of academic research to practice is still debatable (Lanamäki *et al.* 2011; Rosemann & Vessey 2008). Many considered conducting research that is both rigorous and relevant as a conflict of interest (Rosemann & Vessey 2008). There is a level of conflict and distress regarding the irrelevance of academic or organisational studies and many publications have been published to end the debate (Palmer, Dick & Freiburger 2009).

Academic researchers are growing irrelevant, which affects the identity of the discipline (Tushman, O'Reilly, Fenollosa, Kleinbaum & McGrath 2007). Some have argued that academic research is having basic problems (McKelvey 2006). To revive IS theory and the advancement of relevance, the proposal is to change in business schools, in leadership settings and in other areas in an option (Kraaijenbrink 2010). Encouraging editorial board members to be more practical and relevant minded will be an effort in

the right direction (Bartunek 2007; Rynes 2007; Tushman *et al.* 2007). All these suggestions and arguments show a lack of discipline and theory in the discipline (Kraaijenbrink 2010). IS discipline is at the risk of rigour preference over relevance (Recker *et al.* 2009). As Markides (2011) puts it, the link between research and practice is really separated. To date IS research literatures has appeared irrelevant (Cranefield & Young 2007). The reason for the cause of irrelevance is still being questioned (cf. Cranefield & Young 2007).

The Lack of Discipline in Academic IS Research

Recker *et al.* (2009) believe that the IS discipline will lose it legitimacy if it fails to conduct relevant research that informs practitioners. The debate also relates to the IS status as an academic discipline, its operation and its future. Some concern has been expressed on the methodology used in IS research, and a comparison between positive and interpretive approaches, quantitative against qualitative methods and many more has led to debate in the discipline. The fact remains that all the research methods can be suitable in any situation depending on the prospective research question at hand and whether the questions asked will be addressed by the method (Moody 2000).

This means the discipline should focus on reference to its own research, not only borrowing from other disciplines (Bakshi & Krishna 2007). The level of doubt in the on-going debate and argument on IS research may force it to lose organisational understanding and usability in future and being unable to generate problem statements and answer questions from academic practitioners (Vermeulen 2007).

Rigour and Relevance

IS research is mandated to achieve this mission through its rigorous (figure 1) and relevant research (figure 2) and thereby sustaining its legitimacy and identity as discipline (Raghupathi & Friedman 2009). A paradigm shift has been realised from the mandated mission, when a call was made to refocus from just the rigour and relevance debate (concept) to what Desouza *et al.* (2006) called responsibility and reverberation research. This called for more focus on societal pressing needs and challenges (Raghupathi & Friedman 2009).

IS research should be more on challenges confronting practitioners, as this will help to promote IS identity (Huisman & Conradie 2010). IS research relevance has three dimensions; importance, accessibility and suitability (applicability) (Rosemann & Vessey 2008; and Klein, Jiang & Saunders 2006). By definition, importance research is research that is manageable and able to solve or address real-world problem Rosemann and Vessey (2008).

Secondly, accessibility of a research is based on whether the research can be readable, understandable and usable by the targeted audience. Lastly, applicability of research to practitioners is a question of whether a research is directive and providing informative recommendations as needed (Rosemann & Vessey 2008). Relevant research is not published in academic journals but in practitioners' journals (Lanamäki *et al.* 2011).
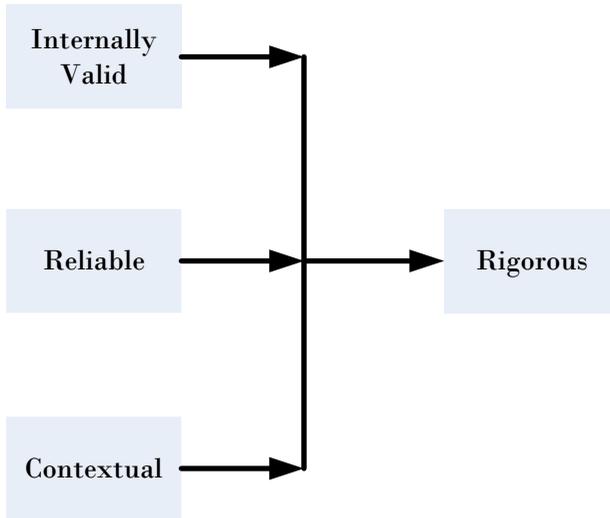

Figure 1: Components of rigorous research in Martensson & Martensson (2007)

According to Vermeulen (2007) rigour is an avenue whereby a theory can be consistent and reliable. Rigorous research can be described as a scientific research study that passes through the reviewer process and makes a contribution to practitioners. To facilitate rigour, applicability checks ensure

that academia and practitioners collaborate well on acceptable research (Huisman & Conradie 2010).

Straub and Ang (2008) argues that the rejection and acceptance of a paper is through readability, because if not readable, it makes no sense in practice. The lack of readability in a research renders it valueless. Some believe that acceptance and rejection of any research should be based on rigour and relevance and others argue that rejection of a research paper based on rigour will be killing and hindering the discipline from new innovations and ideas but both should also be regarded in a research. Rigorous research without relevance is unimportant. Whitworth (2007) advised that IS researchers should not kill the discipline in the name of rigour. The advancement of IS research in the future depends on the compounding of rigour and relevance. Rigour may be important to show practical reality and researchers and practitioners should try to agree on a rigorous standard and working towards relevance (Vermeulen 2007).
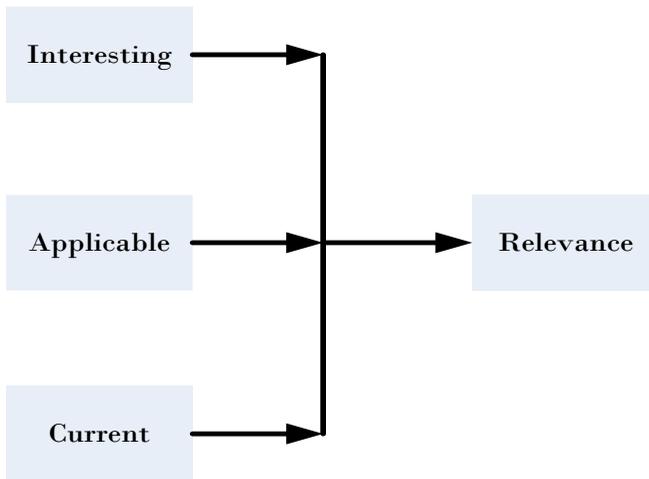

Figure 1: Components of relevant research in Martensson and Martensson (2007)

Relevance in research ensures that research is reliable, actionable and applicable in solving real-world challenges but irrelevant studies cause a research finding to lose its identity (Raghupathi & Friedman 2009). So far,

practitioners regard academic research to be out-of-date, over-rigour and increasingly immaterial (Whitworth 2007). Researching rigorous and practical relevance remains difficult and challenging and many studies support the argument that academic research is not based on practitioners' expectations (Markides 2007; Tushman & O'Reilly 2007; Vermeulen 2007).

According to Moody (2000) the IS discipline cannot establish legitimacy through rigorous or theoretical methods but through practical relevance and usefulness. Another area of concern is that academic research is divided into applied and basic research.

Applied research needs an immediate application in practice and basic research is aimed at a long-term application basis (Fitzgerald 2003). Benbasat and Zmud (2003) state that IS research has tried to copy the research rigour of other disciplines and losing sight of relevance in the process.

Major Challenges Facing Academic IS Research

The contract between academics and practitioners is not properly formed to produce important or relevant research. Only limited academic research presents practitioners' concerns and only a few practitioners read academic articles, therefore this is a major challenge (Desouza *et al.* 2006. Shapiro, Kirkman and Courtney (2007) attribute the growing gap between academics and practitioners on the lost in or before translation problem. Markides (2007) defined the existing gap problem as a result of academics having concluded that the gap exists, without defining what practitioners expect.

However, attaining the twofold mandate of IS research and making contributions is challenging. Academics and practitioners have different areas of interest, aspirations, missions and objectives and balancing all these can be challenging and problematic (Dooley & Kirk 2007). This could lead to a conflict of interest among the parties. From editorial comments it was realised that collaborative research also yields different aims among the parties (Pasmore *et al.* 2007). Moreover, academics are judged on promotion and practitioners are judge on impact (Steinbach & Knight 2006). To this point, a professional survey conducted in IS shows the gap between both is rooted, so much so that practitioners often have no idea of IS research findings, maintaining that IS research is out-of-date, difficult to read and insignificant (Serenko & Turel 2010).

Some continue to debate on whether rigour and relevance should be combined in one research (*Tushman et al.* 2007). Disciplines, such as engineering and medicine place less importance on the rigour and relevance gap (Kieser & Leiner 2007). Furthermore, the challenge is that practitioners take time to understand academic research and researchers take time to interpret its findings in a meaningful way to the audience (Kieser & Leiner 2007). Because of the language barrier, academic educators find it challenging to transfer knowledge and difficult to analyse practitioners' problems and concerns.

The changing technological world also poses a challenge to IS research relevance, meaning, the pace at which technologies are changing is far faster than the speed at which academic research is being delivered. Before research problems and questions are formulated and research conducted the business environment has changed and this disables relevant research being delivered (Raghupathi & Friedman 2009). The challenge why the gap persists is that researchers keep talking about it but not much has been done to close it (Markides 2011).

Based on the argument of Kieser and Leiner (2009), one can be forced to believe that closing the gap is impossible. Narrowing the gap is huge to many, because the way rigour and relevance are measured is actually bad (Markides 2011).

The task of being an academic and practitioner researcher can be laborious, due to the fact that academics must publish (Moody 2000). There is little engagement between the two because each has his/her own conferences and journals and practitioners cannot publish in academic journals because of the high rigour requirement and procedures to attend conferences together and vice versa. The way forward is for academics to publish academic and non-academic papers (Moody 2000).

Problems of Information Systems

The present reflection in the IS discipline shows it is facing the challenges of identity establishment. The IS research rigour standard is in doubt, IS researchers are busy researching rigorous against relevance research (Bakshi & Krishna 2007). However, the social system is characterised as self-referential, so that researchers cannot communicate their findings to practitioners (Kieser & Leiner 2007). They can only irritate when interacting

(Kieser & Leiner 2007). They are autonomous with a limited communication link, distribution of knowledge and problems and academic make decisions excluding practitioners (Cranefield & Young 2007).

IS researchers are not really working hard to make their research findings relevant to students or practitioners and to other audiences (Fitzgerald 2003). Academics and practitioners are all worried about practitioners' challenges but their research suggests the opposite and they are operating in a parallel-line. There is no proper engagement between academia and practitioners to close the gap (McNatt, Glassman & Glassman 2010). Each party has its own knowledge, questions, different approaches in answering questions and producing answers with different expectations (McNatt *et al.* 2010).

Bartunek and Rynes (2007) discovered that 42% of research papers from academics do not present significant results. Practitioners may understand current challenges in the industry and researchers know theories that can be applied (McNatt et al. 2010). However, research findings are considered irrelevant and less used in practice and the publication-time-cycle is problematic, because practitioners need immediate solutions to solve immediate problems (McKelvey 2006).

The Engaging Practice between Researchers and Practitioners

Government and other organisational institutions have increased dependency on knowledge produced by academic researchers for them to make policies and to advance productivity (Worrall *et al.* 2007). The term partnership is being used in the study for it encourages balance commitment in research projects among practitioners and researchers (Naudé, Nowak, Thomas & Rowe 2009). In the camp of researchers and practitioners they use different terminology to explain the association between them (Naudé *et al.* 2009).

The level of collaboration and engagement among researchers and practitioners is what brings about the rigour and relevance debate (Kraaijenbrink 2010). Currently, many debate on the rigorous standard and others on relevance in solving confronting challenges facing practitioners (Kraaijenbrink 2010). Basically, mutual research promotes partnership between academics and practitioners, but it is not the only way both can learn from each other, it is also important to strengthen this relationship and any form of challenge will help to smooth the path (Bartunek 2007).

Collaborative research can also be seen as research that impacts on practice, engaging with each other and consulting each other to produce vital knowledge that can add value to practice (Mohrman & Lawler III 2010). Collaborative research always faces connection difficulties (problems); practitioners do not see themselves as co-researchers (Kieser & Leiner 2011). Collaborative research projects have not really generated results that are simultaneously rigorous and relevant and their output reflects the trade-off between rigour and relevance (Kieser & Leiner 2011). Mckelvey (2006) proposed engaged scholarship within the academic body of fields and departments whereas Lanamäki *et al.* (2011) propose that academic research should be presented in understandable language.

Importantly, knowledge are driven through interaction among parties, many advised for an improvement of relevance, they states that for a continuous closely collaboration between the parties. Delivering relevant research, researchers have to see themselves as belonging in the camp of practitioners (Mohrman & Lawler III 2010).

Scholarly research produces ideas that restructures and modifies a discipline with impacting knowledge (Tushman *et al.* 2007; Tushman & O'Reilly 2007). The benefit of collaborative research is still numerous in providing informing knowledge to both researchers and practitioners, more benefits of collaborative research is that practitioners will know research better vice versa and researchers will understand opportunities that lie in the discipline (Hodgkinson & Rousseau 2009).

Rynes (2007) and Kraaijenbrink (2010) propose that the way forward, is the restructuring, enhancement, formulation of new kind of journal publication and distribution, conferences, network of interaction and new incentive which will empower relevance. Generated knowledge from collaborative research should be actionable and implementable in action and influence operation and claim relevance in practice. This, according to Pasmore *et al.* (2007).

Research Methodology

This section presents the two main types of research but with emphasis on quantitative research type and methodology used in the study. It will also address the nature of data that will be collected to answer the research questions as well as the ethical considerations.

Quantitative research is a predetermined scenario which is standardised (Durrheim & Blanche 1999). This study deployed quantitative research methodology because the study investigates whether the expectations and needs of practitioners are met through rigorous and relevant research and also to understand whether academic research output addressing practitioner's issues and concerns.

Questionnaires will be used to collect data. The questionnaire essentially covers the four research questions in four sections or parts with the added aspect of demographics as the initial part or section.

This study's population is set on academic lecturers attending the South African Institute for Computer Scientists and Information Technologists (SAICSIT 2012) conference and the North-West University (Mafikeng Campus) academics. The population size is 90 lecturers/academics. According to Krejcie and Morgan's theory, 73 questionnaires would be sufficient (Krejcie & Morgan 1970).

Analysis of Variables

The age ranges 18-30 and 31-40 represent the majority of the respondents (55 or 76%). This indicates that the majority of the respondents are young researchers with potential. The study also found that the majority of the participants where male (60%).
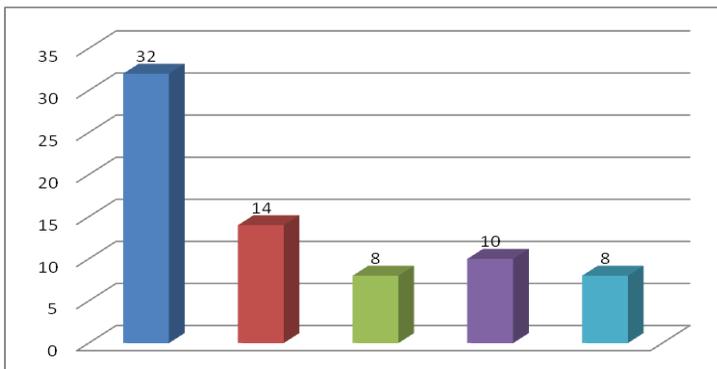

Figure 3: Number of years in academia

Figure 3 depicts the academic maturity of the respondents. This was aimed to determine how long (years) each participant has been in the academic

field. The bar chart above shows that 32 (44%) of the participants have only been in academic arena between 0 to 5 years. This illustrates that most of the respondents are young academics. Fifty five (75%) of the respondents have published. This indicates that many of the participants are publishers. Drawing inference from the results shows that 47 (65%) of the participants have published their research paper at conferences. Their publication status and experience will have some impact on the findings because many that published have an understanding of the survey.

There are three main categories of journals (academic journal, practitioner or professional journals and academic-practitioner journals) (Straub & Aug 2008; Lanamäki *et al.* 2011). Only 35 (49%) of the participants have published between 1 to 5 journal papers aimed at academia.
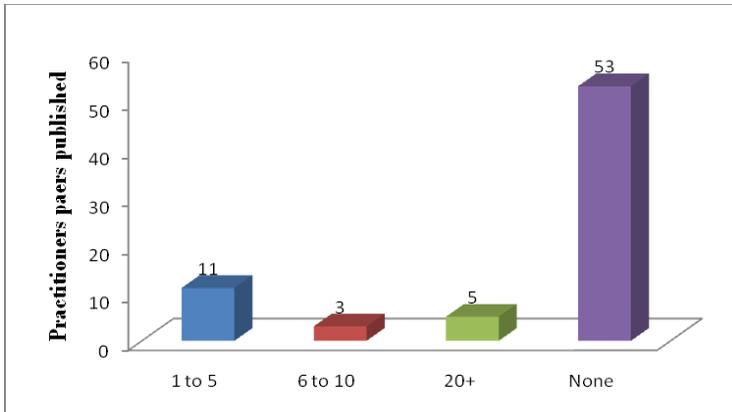

Figure 4: Total number of practitioners' papers published

According to Lanamäki *et al.* (2011) relevant research is not published in academic journals but in practitioner's journals. Of the three categories of journal papers, one of the categories aims on practitioners specifically. Figure 4 indicates that 53 (74%) of the respondents have not published any journal paper that focused specifically at practitioners. Only 11 (15%) of the participants have published between 1 to 5 journal papers.

This indicates that practitioner's journals have been ignored in the discipline. This makes building practitioner interest and drawing practitioner

attentions in reading academic research difficult. This finding thus supports the statement made by Lanamäki *et al.* (2011).

Rigorous research has been defined differently by different researchers. For the sake of this study, the above summarised definition of rigorous research was listed for participants to select their suitable choice. The question helps in the study to decide respondent understanding of the research topic. Forty (56%) of the respondents chose rigorous research as a scientific research in nature. The response shows that practitioners highly value scientific piece of research for it promotes good research standard (Huisman & Conradie 2010).
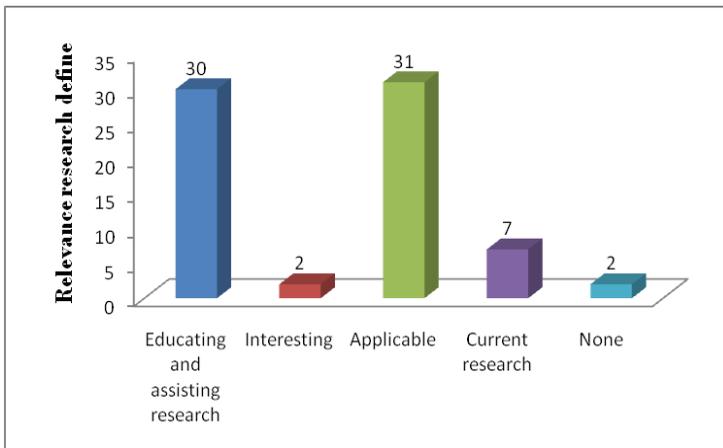

Figure 5: The definition of relevant research

Recker *et al.* (2009) define relevant research as a research that educate and assist practitioners solve their problems and challenges. According to Hodgkinson and Rousseau (2009) deep collaborative research efforts from the researcher produces relevant research. Relevant can be defined as practical and applicable research (Lanamäki *et al.* 2011). Thirty one respondents (43%) understood relevant research to be an applicable piece of work in practice and 30 (42%) understood relevant research to be educating and research on an assisting nature

The findings as reflected in figure 5 confirms the argument of Vermeulen (2007) and Huisman and Conradie (2010) that relevant research

should be research that users and practitioners can apply in practice in decision making at any given time.

The response to the question reflected in figure 6, aims to understand participants' view on the rigour and relevance debate. Ideally, the rigour and relevance debate ought to encourage more research output that will meet (internal and external) needs and expectations of the practitioners. The opposite is the case. 33 (46%) of the respondents still believes that the on-going debate will help in producing rigorous and relevant research that practitioners at all levels will be of benefit. But the benefits of rigour and relevance in a research is yet to be seen (Sambamurthy 2010).
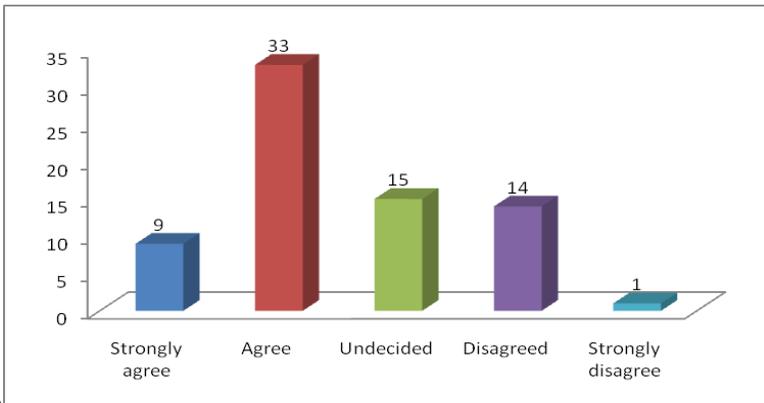

Figure 6: Solving challenges facing practitioners

Practitioners argued that academic research is not informative in a real world setting and to their needs but researchers are mandated to research on informative knowledge that has practical relevance (Recker *et al.* 2009). The response from figure 6 expressed 33 (46%) of the participants believed that practitioners are getting assistance and a further 9 (12%) strongly support this notion. This indicates that IS research outputs have a significant impact in the industry.

According to Shapiro *et al.* (2007) the gap on the IS rigour and relevance debate is rooted in translation and communications and lost before translation. Van de Ven (2007) states that the root cause (gap) is as a result of

the knowledge distribution problem. According to Lee and Mohajeri (2012) researchers in the academic discipline, including IS, have two basic problems, one lack of practical relevance and the gap between academics and practices. Rigorous research in IS lays on theoretical relevance and methodologies but differ in practical relevance. Furthermore, IS research topics are selected based on academic ideas and not on practitioner's ideas (Lee & Mohajeri 2012).
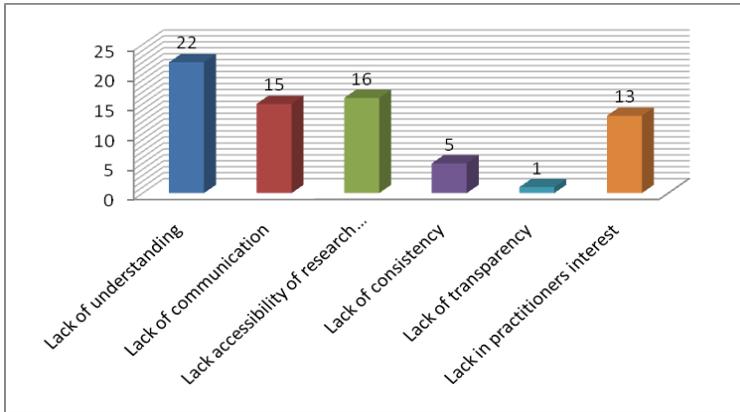

Figure 7: The root cause of rigour and relevance debate

The question as reflected in Figure 7 tries to understand the participants' view on the cause of the rigour vs. relevance debate. Figure 7 suggested that only 22 (31%) of the response believed that lack of understanding between researchers and practitioners have caused the debate to linger all these years. This is possible because both parties view their environment dependently from each other and both are working parallel from each in contrast to other discipline like medical discipline.

According to Worrall et al. (2007) IS research lack relevance. This can be traced because of a lack of incentive and motivation from top academia to conduct relevant research (Rosemann & Vessey 2008). The question seeks to determine how respondents categorised IS/academic research. Lee and Hubona (2009) argued that researchers are encouraged to be relevant in their research output.

Looking at the results (figure 8), relevant and important represent 53 (74%) of the respondents who still believe that IS/academic is relevant and

important to the practitioners and industry. This suggests that the debate has not stopped the practitioners from using the academics' research work. The response contradict some researchers' view on irrelevance of IS research output.
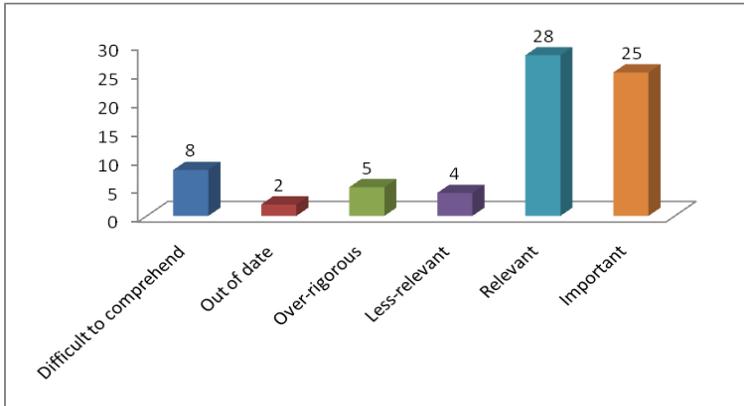

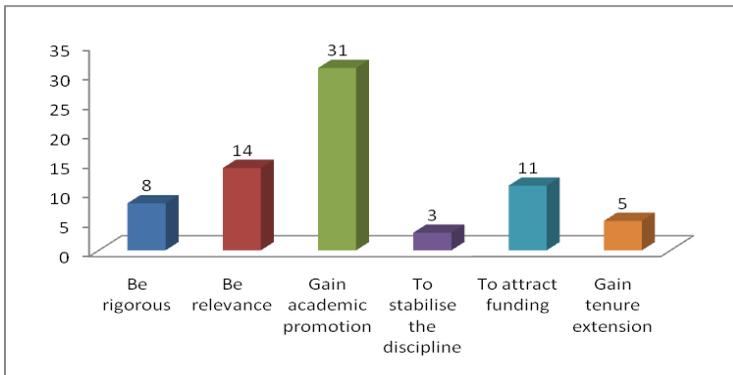**Figure 8: The classification of IS/academic research**

Figure 9: The consequences of publish or perish slogan on IS/academic

Researchers like Moody (2000) and Young, Darroch and Toleman (2006) see the slogan *'publish or perish'* as a hindrance toward publishing

impacting academic research. The indication from the above chart states that merely 31 (43%) believed that researchers across the discipline publish to gain promotion for their self-reward and benefits.

According to Kieser and Leiner (2009) the rigour-relevance gap cannot close. The parties are researching on different interests (Hodgkinson & Rousseau 2009). They strongly believe that no matter any kind of effort, approach or method deplored, rigour and relevance cannot coexist. This suggest that researchers will continue to research for their self-interest in future as is depicted in figure 9.

Researchers have said a lot regarding the impact of IS/academic research. To investigate this, the question seeks to understand the informative standard of IS research on the stakeholders. The results found that 43 (60%) of the respondents agreed/strongly agreed that IS research output is informing and impacting enough for different stakeholders. Informative research makes different for stakeholders. Respondent views read together with the findings reflected in Figure 8, support the notion that academic researchers be active in conducting informative research that benefits different stakeholders (Mathiassen & Nielsen 2008).
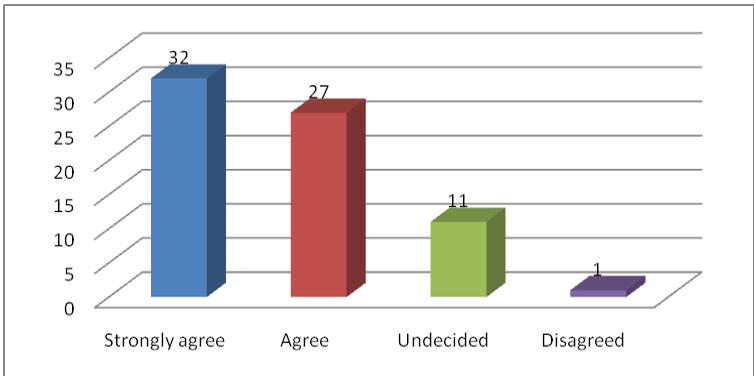

Figure 10: Practitioners benefits on IS/academic

Because there are different kinds of journal papers, each audience has a specific place where they access their research. The benefit of research can only be seen when targeted audiences access it. In contrast to multiple arguments on irrelevance of IS research, the results (as depicted in figure 10)

show that 32 (46%) of the respondents strongly believed that IS/academic research are benefiting practitioners. This shows that research findings and outputs are really used in practice by practitioners.

Some results regard the on-going debate as a waste of time. The rigour and relevance debate means something to people in a discipline, to understand the stand point of view of the participants in this study. At present only 36 (51%) of the respondents believe that the on-going debate is necessary. This implies that the debate can help the balancing of rigour and relevance in IS research and achieving a research that meet a practitioner's expectation and needs applicable. The worth of rigour and relevance debate indicates the continuity of debate. The summary makes rigour and relevance worth debating but the implementation of ideas from the debate is vital. The results suggest that 43 (61%) of the respondents would like to see the debate going on because it's worth it. The present debate can aid researchers and practitioners to close the rigour and relevance separation (Hodgkinson & Rousseau 2009).
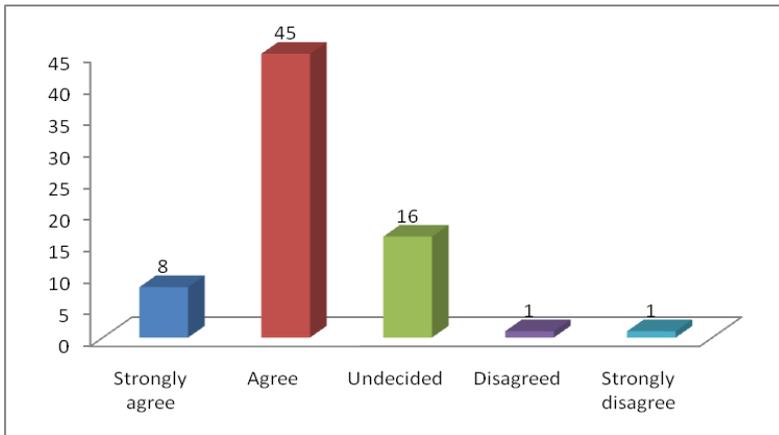

Figure 11: The contribution of the debate to other disciplines

Based on Benbasat and Zmud's (2003) opinions and views, discipline is balanced when other disciplines use its research in their respective fields. This can help to bridge the gap in bringing out the best from IS research that can benefit others outside the discipline. The results (as depicted in figure 11)

show the 45 (64%) of the respondents believed that on-going debate in the discipline can help other external disciplines seek a contribution from IS research.

The continued debate on whether rigour and relevance should be combined in one research has heated up (Tushman *et al.* 2007). The results support the argument of these researchers that both should be combined in any piece of research. Thirty two (46%) of the respondents agreed on the combination of rigour and relevance. This will help in producing impacting research on real world setting.

Thirty six (51%) of the respondents agreed on co-existence of rigour and relevance in research because of the benefits. According to Kieser and Leiner (2009) the academic management rigour-relevance gap cannot close because parties are researching different interests (Hodgkinson & Rousseau 2009). They believe that no approach of rigour and relevance can coexist. The response is that the view is in contrast with Kieser and Leiner and Hodgkinson and Rousseau.

The lack of readability in research renders it valueless. Some believe that acceptance and rejection of any research should be based on rigour and relevance. The results show that 52 (74%) respondents indicated that rejection or acceptance of a research paper by editorial reviewing committee for publication should be based on the presence of both rigour and relevance.
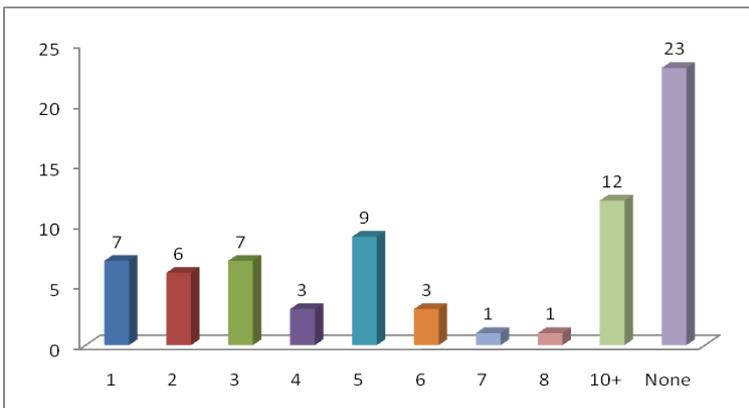

**Figure 12: Number of years working in
practitioners' industry**

To suggest a solution in bridging the gap between the researchers and practitioners, some researchers in academia believe that IS discipline should copy the footprint of medical discipline that encourages academia to work partly in industry and academy (Moody 2000). To gain insight on that argument, the question aimed to determine the viewpoint of respondents in the study depicted in figure 12 (above) which shows that 23 (32%) of the respondents have not as practiced in industry. Only 12 (17%) of the respondents have engaged in industry practice. This indicates that researchers have seen the need to be involved in the industry.

According to Deadrick and Gibson (2007) and Pasmore *et al.* (2007) researchers and practitioners should co-operate and work at the same field in following the footstep of medical discipline where people are allowed to work partly on both (Moody 2000). The research found that 31 (43%) of the respondents have engaged on both industry and practice simultaneously (mirroring the medical profession). The collaboration and engagement among the both is missing.
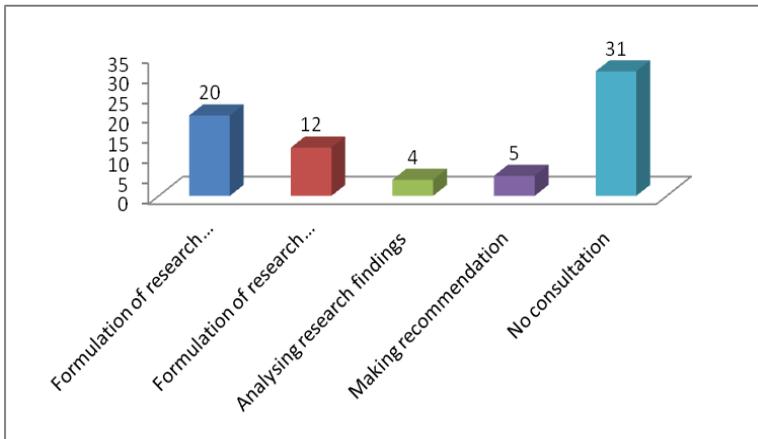

Figure 13: Partnering with practitioners

Depicted in Figure 13 is the question on whether the researchers consult with practitioners when engaging in research. From the listed options, however, only 20 (28%) of the respondents consult with the practitioners at the level of research question formulation and 31 (43%) of the respondents have

not consulted with the practitioners in any form when carrying out research in the industry. This shows that both are independent thinkers and doing things differently.
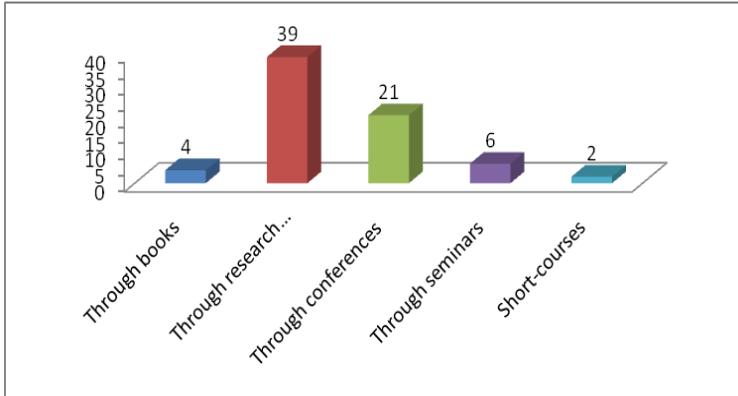

Figure 14: Communicating with practitioners

According to Kieser and Leiner (2007) self-referential as characterised to social research, means that researchers cannot communicate their findings to practitioners effectively. Research papers have to be communicated to targeted audiences through the right channel and available to them. The literature review study shows that it's difficult for researchers and practitioners to publish journal papers in the same publication. The question as reflected in Figure 14 seeks to augment the argument. The bar chat shows that 39 (54%) of respondents have communicated their research output through research paper publication. These publications are available on the internet. Conference publications are the second highest method of communication (21 respondents (28%). In contrast to the findings of Kieser and Leiner (2007), researchers have managed to communicate their research findings to stakeholders using different channels as seen in the chart.

Researchers and practitioners collaborating well will produce acceptable research in practice (Huisman & Conradie 2010). However, researchers and practitioners in IS discipline are living apart (Markides 2011) resulting in little knowledge transfer between them (Moody 2000). To confirm the independence of both parties, 35 (49%) of the respondents have not

collaborated with practitioners when conducting research. The survey confirms that researchers are not mindful in working with practitioners in any way.
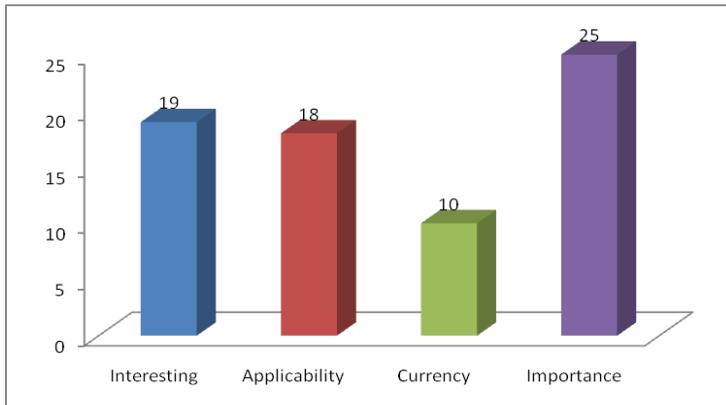.

Figure 15: The principle that guides academic discipline

According to Rosemann and Vessey (2008); Klein *et al.* (2006) and Huisman and Conradie (2010) IS research relevance has three dimensions; importance, accessibility and (suitability) applicability. Applicability in IS research that is directive and informative in recommendation is reflected in question depicted in Figure 15. This figure shows that only 25 (35%) of the respondents believe that IS researchers are focusing on journal importance while publishing research papers. The second and third sets, 19 (26%) and 18 (25%) of respondents are also a concern for researchers. The respondents confirm that the researchers are working toward rigour and relevance.

Van de Ven (2007) argued that collaborative research is conducted with audiences to learn a particular problem. Collaborative research can also be seen as a research that impacts on practice, engaging with each and consulting each other to produce knowledge that can add value to practice (Mohrman & Lawler III 2010).

Furthermore, bridging the gap, practitioners can be trained to become researchers and undertaking collaborative research (Moody 2000). The research found that 42 (58%) of the respondents agreed that the collaborative approach will be the platform to be used to achieve research that is both rigour and relevance, because researchers and practitioners will work with one aim

and objective in collaborative research.

According to Bartunek (2007) the establishment of equal researchers needed to establish equal an association with audiences (practitioners) and practitioners that remain appreciative of academic research knowledge and practitioners and other outside the discipline are the source of academic idea and aspirations in the world. To ascertain the level of confidence other disciplines have on IS research, the question was designed to determine the level. Only 32 (44%) of the respondents accept that practitioners and other discipline are using IS research. They response as depicted agree with Bartunek who believes that practitioners and other discipline still believe in IS research.

Statistical Analysis: Chi-Square

Table 1 was used to test the degrees of freedom between published papers and the number of year's academics has been in the academic field.

Table 1: Published and number of years in academia

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.795[a]	4	.066
Likelihood Ratio	10.668	4	.031
Linear-by-Linear Association	6.069	1	.014
N of Valid Cases	72		

H_0: Academia must publish.
H_1: Academia do not have to publish.

The Chi-square statistic is ($x^2 = 8.785$), predetermined alpha level of significance of (0.025) and the degrees of freedom (df = 4). Arriving at the Chi-square distribution table with 4 degree of freedom and reading along the row at the value of x^2 to be 8.785. The alpha level of significance is 0.025 at the proposed probability levels. That means that the p-value is above 0.025 (0.066). Since the p-value of 0.066 is greater than the accepted significance level of 0.025 (i.e. p > 0.025) fails to reject the null hypothesis. There is no statistically significance that academics should publish research papers.

Table 2 tested the degrees of freedom between publish or perish slogan on IS/academic research and the total number of academic papers published.

Table 2: Consequences of publish or perish slogan

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	33.495[a]	25	.119
Likelihood Ratio	31.851	25	.162
Linear-by-Linear Association	.000	1	.987
N of Valid Cases	72		

H_0: Publish or perish slogan is not an issue for academia.
H_1: Publish or perish slogan is an issue for academic.

The Chi-square statistic is ($x^2 = 33.495$), a predetermined alpha level of significance of (0.025), and the degrees of freedom (df = 25). Arriving at the Chi-square distribution table with 25 degree of freedom along the row with the value of x^2 at 33.495 value. The probability is 0.025 at the acceptable probability levels. That means that the p-value is above 0.025 (0.199). Since the p-value of 0.199 is greater than the accepted significance level of 0.025 (i.e. $p > 0.025$) the study fails to reject the null hypothesis. In other words, there is no statistically significant difference in the proposition of publish or perish slogan.

Table 3: The consequences of publish or perish and the worth of the debate

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.449[a]	20	.371
Likelihood Ratio	23.107	20	.284
Linear-by-Linear Association	2.521	1	.112
N of Valid Cases	72		

H_0: There is a need for rigour and relevance debate.
H_1: No need for the rigour and relevance debate.

Table 4 depicts the Chi-square statistic is ($x^2 = 21.449$), and the predetermined alpha level of significance of 0.025, and the degrees of freedom (df = 20). Arriving at the Chi-square distribution table with 20 degree of freedom and reading along the row at the value of x^2 to be 21.499. The alpha level of significance is 0.025 probability levels. That means that the p-value is above 0.025 (0.371). Since the p-value of 0.371 is greater than the accepted significance level of 0.025 (i.e. p > 0.025) the study fail to reject the null hypothesis. In other words, there is no statistically significance of the need on rigour and relevance debate.

The tested the degrees of freedom between total number of academic papers published and its contributions to other discipline.

Table 4: Number of academic papers published and the contribution of the debate to other disciplines

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22.070[a]	20	.337
Likelihood Ratio	20.299	20	.439
Linear-by-Linear Association	.001	1	.972
N of Valid Cases	72		

H_0: IS/academic research papers are contributing to other disciplines.
H_1: IS/academic research papers are not contributing to other disciplines.

The Chi-square statistic is $x^2 = 22.070$ which in the predetermined alpha level of significance of 0.025, and the degrees of freedom (df = 25). Arriving at the Chi-square distribution table with 25 degree of freedom and reading along the row the value of x^2 to be 33.495. The probability is 0.025 which in the probability levels. That means that the p-value is above 0.025 (0.337). Since the p-value of 0.337 is greater than the usually accepted significance level of 0.025 (ie p > 0.025) the study fails to reject the null hypothesis. In other words, there is no statistically significance that academic research papers are contributing to other disciplines.

Table 5 tested the degrees of freedom and relationship between published papers and the number of practitioners' papers published by practitioners.

Table 5: Published and number of practitioners' papers published

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.418[a]	7	.387
Likelihood Ratio	11.431	7	.121
Linear-by-Linear Association	5.257	1	.022
N of Valid Cases	72		

H_0: Academia's must publish practitioner's papers.
H_1: Academia's are not publishing practitioner papers.

The Chi-square statistic is $x^2 = 7.418$ on the predetermined alpha level of significance of 0.025 and the degrees of freedom (df = 7). Entering at the Chi-square distribution table with 7 degree of freedom and reading along the row of x^2 at the 7.418 level. The alpha level of significance is 0.025 probability levels. That means that the p-value is above 0.025 (0.387). Since the p-value of 0.387 is greater than the conventionally accepted significance level of 0.025 (i.e. $p > 0.025$) the study fails to reject the null hypothesis. In other words, there is no statistically significance that academic should publish practitioner papers.

Table 6: The number of practitioners' papers published and solving challenges facing practitioners

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.617[a]	12	.042
Likelihood Ratio	16.116	12	.186
Linear-by-Linear Association	.143	1	.706
N of Valid Cases	72		

H_0: Practitioner papers are solving practitioners' challenges.
H_1: Practitioner papers are not solving the challenges of practitioners.

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Table 6 showed the degrees of freedom and relationship between the number of practitioner's paper published and practitioners' addressing their challenges through the use of academic research papers.

The Chi-square statistic is $x^2 = 21.617$ on the predetermined alpha level of significance of 0.025, and the degrees of freedom (df = 12). Arriving at the Chi-square distribution table with 12 degree of freedom and reading along the row at value of x^2 to be 21.617. The probability is at the 0.025 probability level. That means that the p-value is above 0.025 (0.042). Since the p-value of 0.042 is greater than the conventionally accepted significance level of 0.025 (ie p > 0.025) the study fail to reject the null hypothesis. In other words, there is no statistically significance that practitioner papers are solving practitioner's problem.

Table 7 depicts the degrees of freedom and relationship between the coexistence of rigour and relevance and the separation of rigour and relevance in a research.

Table 7: The coexistence of rigour and relevance and the separation of rigour and relevance in a research

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	44.347[a]	12	.000
Likelihood Ratio	48.408	12	.000
Linear-by-Linear Association	6.534	1	.011
N of Valid Cases	72		

H_0: Rigour and relevance are separated in IS research.
H_1: Rigour and relevance are not separated in IS research.

The Chi-square statistic is $x^2 = 44.347$ at the predetermined alpha level of significance of 0.025, and the degrees of freedom (df = 12). Arriving at the Chi-square distribution table with 12 degree of freedom and reading along the row at value of x^2 to be 44.347. The p-value is below 0.025 (actually at 0.000). Since the p-value of 0.000 is less than the conservatively accepted significance level of 0.025 (i.e. p > 0.025) supports the null hypothesis. This shows there is a statistically significant difference in the proposition of separation of rigour and relevance.

Answer to the Research Questions

The research questions postulated at the onset of this paper was a primary and 3 secondary question. The primary research question was postulated as: What is a rigorous and relevant research that meets practitioners' expectations?

Secondary research questions stemming from the primary question are:

1. Is IS research output addressing the concern of IS practitioners?
2. Is rigour versus relevance debate necessary in IS research?
3. What can be done to improve the understanding of rigour and relevance in IS research?

With regards to the primary question, this question needed to understand that rigour and relevance in research meets the needs, support and expectations of practitioners. According to the information gathered, respondents indicated that IS/academic research that meets practitioners' needs should be scientific research in nature so that it can be applicable in real-world setting (Chukuwere 2013).

In accordance to multiple opinions from other researchers like Huisman and Conradie (2010), Dipboye (2007) and Vermeulen (2007) on the way to move IS research forward, whom also recommend that researchers should be scientific on any chosen research topic. Researchers should base their research on what practitioners need to know and use. Researchers should also partner with practitioners on every step in conducting research.

With regards the first secondary research question, this research question aimed to understand whether IS research is relevant and impact practice. Although the response was positive many of the respondents had varied viewpoints. Most of the respondents agreed that academics on addressing the needs and expectations of practitioners, in contrast to some opinion of others in the study, it shows that practitioners are benefiting from research outputs. Challenges are that many believed that 'publish or perish' slogan hindering the success of academic research. Many agreed that researchers engage in research to gain academic promotions and self-rewards for research and attending conferences. Furthermore, the slogan of 'publish or perish' might be hindering the rigour and relevance of academic research in general. IS and academic researchers should produce research papers that deals with practitioner needs and expectations and the publications should balance between rigour and relevance (Chukuwere 2013).

The second secondary research question was to determine if IS research debate on rigour and relevance has value. Many have argued that IS should be rigorous, some stated relevance and others stood on balancing both in research. This has been issue of concern all these years in academia.

Respondents argued that the debate should continue and was worth debating. They believed that rigour and relevance should coexist in research and not be separated as it helps in identifying some gap in the discipline. Their response demonstrates that the debate is generally to the advantage of the discipline and that the lack of rigour and relevance should be a base on accepting or rejecting academic research during review for publication.

Considering the final secondary research question, the findings was for the IS/academic research to move forward pushing for progression of the discipline. The overall feedback from participant is that communicating of research to practitioners should be through a channel acceptable to practitioners. Collaborative research between researchers and practitioners is recommended as this improves the final outcome in terms of usability and applicability.

It can be suggested that researchers and practitioners should collaborate in formulating research problem statement and research questions. This might lead to the correct research problems being addressed.

Managerial Guidelines

Following Chukuwere (2013), it is recommended that:

- Researchers publish research papers directed specifically to practitioners. Academic researchers are not publishing practitioner's research papers.
- Researchers and practitioners should engage in debate at conferences.
- Researchers should engage practitioners when drafting research problem statement and questionnaires.
- Both parties should regard themselves as co-authors and researchers.
- IS academics should be allowed to combine part-time work in teaching and practicing in the industry as well.
- The combination of rigour and relevance in research is essential.
- Researchers should be able to inform and communicate to practitioners whenever research papers are published.

- A website should be created where practitioners can post their problems and challenges in the industry and researchers should have access to these.
- Both parties should advocate one goal, vision and objectives when conducting research so as to benefit both parties.
- There should be a dedicated research journal for practitioner and one for researchers and a combined journal for common interests.

Final Conclusion

The four research questions were answered and analysed. The result shows that four of them were answered in the questionnaires distributed. The overall result findings indicate from the participant that IS research is making impact in the industry in contrast to multiple views of others in literature review, to determine on whether academic research are making impact in the industry, the similar should conducted around practitioners in the industry.

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