## Done by Monday Evening to then discuss the conclusion that night

## What To Say

* Description of the theme
* Description of the codes
* Summary of the results
* [Separate section] What that says on the impact of that theme on the workflow

Final Report structure for UX

Abstract **[results and discussion sections need completing]**

Introduction **[needs expanding]**

Methods [complete]

qXR Systematic Review [complete]

AI in Radiology Systematic Review [complete]

Study Characteristics and Risk of Bias **[needs to be completed]**

Results **[information about each theme and their codes and summary of results]**

Discussion **[impact of the themes of the workflow, how they interact and limitations]**

Conclusion **[needs to be completed]**

## ***Performance Expectancy (BRONTE)***

Results

Performance Expectancy is defined as “the degree to which an individual believes that using the system will help him or her attain gains in job performance” (Venkatesh et al., 2003). As a construct of the UTAUT model the codes were pre-defined and no changes were required.

Code PE1 refers to the efficiency of the workflow being changed by integrating an AI product into the workflow. There were no direct questions about efficiency and only one data item labelled PE1. This was in relation to a study that looked at the impact of the AI providing explanations in addition to the highlighting of x-rays and a respondent said that explanations “save time for a clinician” (Goel et al, 2022).

PE2 is defined as the effectiveness of the work produced by radiologists when an AI product is introduced into the clinical workflow. For improving effectiveness, 82.8% agreed that AI can help reduce radiation dose levels while maintaining optimal image quality and 75% agreed that it would improve diagnostic practice. A majority also believed that it would improve radiology practice and patient care through providing an avenue for more research (90.6%) and improving the quality assurance for its efficient diagnosis (84.9%). A study which used a NASA-TLX questionnaire to compare between using AI and not using AI, found that using the AI had a statistically significant improvement to the performance measure which is typically the question, “How successful do you think you were in accomplishing the goals of the task set by the experimenter?” (Hart, 1988). However, a concern amongst 42% of respondents was that technical performance was inconsistent, supported by quotes in another study that, “multiple regions are not highlighted properly”, “[need] more precise colour coding”, “all regions need to be highlighted for diagnosis”, "[highlight] patterns of opacities”, and “the system makes mistakes, in some cases made incorrect assessment“. Further, when AI explanations accompanied the highlighting of x-rays, weak explanations decreased perceived reliability of the AI and radiologists preferred either strong explanations or none at all.

PE3 is about the extrinsic motivators and demotivators for radiologists when integrating an AI product into the workflow. Data classified as PE3 focused on the role of radiologists and their job security. For the role of radiologists 76.4% believed that AI would change their role which would lead to extended practices. However, in another study, only 33.33% thought that AI would require professional identity and responsibilities to be reframed. In one study, the radiographers were concerned that AI would replace most jobs and negatively affect the profession rather than just being an assistive tool (61.3%) and especially in the role of image interpretation (67.3%). Further, 57.8% were concerned that AI would reduce their salary and displace them from their job in the future. However, in other studies 62% disagreed that radiologists’ jobs were in danger due to AI and 71% thought that AI provided operational benefits.

Discussion

It was anticipated that efficiency would be an important factor as it is a commonly described benefit of integrating an AI into the clinical workflow (Malamateniou et al, 2021). For instance, if the AI improves the efficiency of the workflow radiologists would more likely agree with integrating the AI. Whereas if it slows down the workflow and increases the workload, radiologists would not want to use it. However, in the included studies there were no direct questions about the efficiency of the workflow when using AI. Although in one survey, 77% of respondents agreed that AI can be used to help diagnostic radiology by workflow optimisation. This highlights that radiologists do expect efficiency to be one of the benefits of integrating AI into their workflow and is an important factor to be considered. Research into efficiency may be present in studies that were not identified through this systematic review, and a potential reason is that it may have been approached through an objective comparison, rather than user experience. It would be beneficial to conduct further research into this factor to determine whether improved efficiency has been actually reported or observed when using AI, or simply remains an assumed benefit.

Effectiveness is another important consideration for determining whether to integrate an AI into the workflow. Increasing the effectiveness of work output can be observed as improved patient care, less incorrect diagnoses, earlier detection, and reduced radiation doses (van Leeuwen et al, 2022). A focus of improved effectiveness is improving diagnostic test accuracy, which refers to how well a test can discriminate between different conditions, for instance, a healthy person and a person with a disease (Šimundić, 2009). This was investigated in section 3.3 of this report which found []. The data from the included studies indicated that the vast majority of people interacting with the field of radiology support the view that AI will increase effectiveness by improving patient care through increased research, quality assurance, and improved practices. However, 42% also reported concerns about the technical performance of the AI. Clinicians in another study reported concerns about the precision of x-ray highlighting and that in some cases the AI made a mistake. Overall, this suggests that while radiologists anticipate that increased effectiveness will be a benefit of integrating AI into their clinical workflow, there are current concerns about the performance of AI.That this concern will likely be addressed as AI algorithms continue to be improved through training and evidence of excellent diagnostic test accuracy emerges.

Extrinsic motivators and demotivators can have significant influence over whether radiologists support the integration of AI into their workflow. The included studies focused on the role of radiologists and their job security, with the responses varying greatly across different studies. When investigating the reason for the significant variance, the level of knowledge of AI emerged as an important factor. In the study where concerns of reduced salary, job loss, and negative impact on the profession were reported, 61.9% of radiographers had a basic knowledge of AI and 31.9% had no knowledge. However, in the study where these concerns were minor, 45% of radiologists had an intermediate or higher knowledge of AI. These findings are supported by the second study which found that a basic knowledge of AI increased the fear of replacement by AI, whereas, intermediate or advanced knowledge of AI decreased the fear of replacement by AI. This is a similar case for questions about the role and responsibilities of radiologists where the majority with no knowledge or a basic knowledge of AI thought that AI would change their role leading to extended practices. Whereas, in another study which did not report knowledge of AI, however, commented that participants were skewed towards those with a particular interest in AI, only a third thought that the role of radiologists would need to be reframed. Therefore, this suggests that assisting radiologists to learn more about AI to increase their knowledge and understanding will decrease their concerns of job security and changing roles, which will in turn increase their support of AI in their workflow.

## **Effort Expectancy (EE)**

## 

## Results

## 

## Effort expectancy is defined as the degree of ease associated with the use of the system. ” (Venkatesh et al., 2003).

## The three constructs that makeup effort expectancy include

## Perceived ease of use (EE1) is the degree to which a person believes that using a system would be free of effort – the questions that answer this construct include asking the user questions such as if they ‘would find the system easy to use?’

## The second construct that is a component of the effort expectancy theme is complexity (EE2), which is the degree to which a system is perceived as relatively difficult to understand and use. – the questions that answer this construct include asking the user questions such as if they believe that ‘working with the system is ‘so complicated?’

## The last construct for the theme is ease of use. (EE3) Which is the degree to which using innovation is perceived as being difficult to use. – the questions that answer this construct include asking the user questions such as if they believe that ‘the system is easy to use’ ?

## 

## Discussion

## 

## In several studies, it reveals that effort expectancy has no significance in influencing behavioural intention This phenomenon is demonstrated Ann Oper Res (2020) study where they found effort expectancy has an insignificant score of (β = 0.078, p > 0.05 when measuring its influence on behaviour intention. This idea is conclusion is further illustrated from the A.V. Prakash and S. Das 2021 study where they had a (β = 0.004 , p > 0.05). where they also measured the impact effort expectancy has on behavioural intention.

## A.V. Prakash and S. Das explain the reason for the insignificance of the effort expectancy metric is that ‘radiologists are used to highly complex machines in their routine clinical practice, and the ease of use associated with the system may not factor in as an influential criterion in the adoption-related decision-making. Another reason may perhaps be that radiologists did not foresee any difficulty in using ICDDSS, and they perceived the use of ICDDSS to be as easy as using their current systems/machines.’

## Despite the study of Prakash and Dash , explaining the surprising finding that effort expectancy is not a major concern of radiologists, other research has demonstrated the importance of effort expectancy. Radiologists may simply assume that the software will have been designed with appropriate UX and that appropriate training will be provided. The product may also have been demonstrated to show the ease of use and radiologists may have had discussions or tested the system before undertaking the effort expectancy study.

## 

## ***Social Influence (BEN)***

Results

Social influence is defined as the degree to which an individual perceives that important others believe he or she should use the new system (Venkatesh et al., 2003). This construct was adapted directly from the UTAUT model and all the codes were already defined by the UTAUT model. Hence no further changes are required.

Code SI1 is called subject norm which reflects the potential influences from the important people from the participant’s social network (Venkatesh et al., 2003). Based on a study targeting African radiologists regarding the issue of the attitude toward the use of AI in radiology. 69% of the participants believed that most of their patients would be excited about the use of AI technology in their standard care. 26.5% of the participants held a mutual attitude for this topic. Only an insignificant 4.4% of the participants disagree with this statement (Botwe et al., 2021).

Code SI2 represents the social factors of the participants, it is a construct that directly mirrors the individual's agreement with the general trend of the perceived trend of the society held toward the use of AI products in medical imaging practices (Venkatesh et al., 2003). For the statement, ‘I am aware of AI as an emerging trend in medical imaging in Africa?’ 78.2% of the participants agreed with this statement, 19.8% remained neutral, and only 1.9% disagreed. In another study, three of the seven hospitals investigated were rated with innovative managers’, and 42% of the participants identified their hospitals as having ‘local champions’ of AI (Strohm et al., 2020).

There were no questions related to SI3 which is the ‘image’ factor. This factor reflects the degree to which use of an innovation is perceived to enhance one's image or status in one's social System (Venkatesh et al., 2003).

Discussion

Social influence was also an important factor in the UTAUT structure (Ursavaş, 2022), it was hypothesised to have an impact on the participants’ intention of use. For this modified UTAUT model in general, most of the studies related to social impact were able to prove that impact. More than that, some of the articles discover the factors impacting social influence, the most significant one is the factor trust.

It was expected that the use of AI is the current trend in the medical imaging industry because of the publication on how fast and beneficial AI development can be. In other words, even though there are still some doubts against the use of AI, society is embracing the benefits of AI and adapting to the changes AI development brings. As for SI1, ‘subjective norm’, it collects the attitudes from the people who are important to the participants including co-workers, patients, supervisors, and so on. It has been proven in the investigation on the perspective from Africa doctors, that around 70% of the patients were excited about the use of AI in diagnosis, this directly reflects the patients’ attitudes in Africa, and the patients’ attitudes is critical in medical work.

SI2 is the code for social factors which represents the perspective of the participants on the current trend of using AI in radiology, whether the participants believes that there is a trend or not, the opinion on the potential trend, were all evaluated within this factor. Still from the African doctor perspective study, it shows that approximately eighty percent of the participants believed that there is an emerging trend in Africa in the use of AI products in radiology and only two percent disbelieved in the trend. This is a critical evaluation because it successfully distinguishes that the majority of the doctors in Africa are aware that the use of AI is becoming more and more popular. In the other study conducted in the Netherlands, 3 of the 7 hospitals the participants are working are rated to have ‘innovative managers’ by the participants themselves. This could critically impact on the willingness the organisation holds when it comes to the acceptance of the innovative AI technology. The organisation is expected to hold a more open attitude in the use of AI products if there are innovative managers. However, three of seven hospitals is not a significant enough ratio to demonstrate the trend. In the same study, 42% of the participants identified their organisation to have a ‘local champion’ which refers to an individual who is willing to strongly advise the organisation to implement AI in medical work, in other words, an AI promoter. Considering the level of willingness of such promotion, 42% is considered to be reflective of the publication effort of AI products.

More importantly, if the construct ‘social influence’ is considered as a whole, many correlations with other factors in the UTAUT model could be identified. There are also some impacts being shown not only under the traditional UTAUT model but also the reflection of the personal attitude of the participants. In a study conducted internationally, the construct ‘Social Influence’ is proven to be a direct impact of ‘Effort Expectancy’. The theory behind this is that the social network of the participants could provide the necessary support on acceptanting changes due to innovation. If the participant could find assistance within his or her social circle, the effort of adapting new technology can be reduced. The study also proves that social influence has a positive impact on the willingness, trust, and risk regarding AI. It is indicated that if the medical community recommends the use of AI, the participant is less worried about the risks related to such technology and more willing to trust AI, hence gaining more willingness to use AI. This is common because the community is able to offer use cases as evidence, and this could easily affect the perspective of the participants. More importantly, the study also proves that social influence and performance expectancy are positively correlated. This result demonstrates the importance of social influence, and how it could alter the user perspective of AI products (Botwe et al., 2021).

## **Facilitating Conditions (FC)**

## Results

## Facilitating conditions is defined as the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system. (Venkatesh et al., 2003).

## Perceived behavioural conditions (FC1) are the perceptions of internal and external constraints on behaviour and encompass self-efficacy, resource-facilitating conditions and technology-facilitating conditions. FC1 refer to the user's beliefs about the ease of use of the system and their ability to use it effectively. This includes factors such as self-efficacy, resource availability, and technology familiarity. – the questions that answer this construct include asking the user questions such as if they were “Given the resources, opportunities and knowledge it takes to use the system, it would be easy for me to use the system”.

## 

## The second construct is, support, (FC2) (due to the confusing name we changed the original construct name, facilitating conditions to support) are the objective factors in the environment that observers agree to make an act easy to do including the provision of computer support conditions. FC2 refers to the objective factors in the environment that make it easy to use the system, such as dedicated support staff, training materials, and user-friendly interfaces. the questions that answer this construct include asking the user questions such as if ‘Guidance was available to me in the selection of the system?’.

## 

## The last construct for the facilitating conditions theme is, compatibility (FC3). It is defined as the degree to which an innovation is perceived as being consistent with existing values, needs and experiences of potential adopters’ conditions. FC3 refers to the degree to which the system is perceived as being compatible with the values, needs, and experiences of users. This includes factors such as system flexibility, system interoperability, and data security. Questions that answer this construct include asking the user questions such as if they felt that ‘Using the system is compatible with all aspects of my work?’

## 

## Discussion

## 

## Results F.M. Calisto et al.(2022) and several other studies demonstrate that facilitating conditions in the clinical workflow would impact attitude and intention to use AI systems, as well as a positive impact on belief and usage of these systems.

## A common key barrier to an effective implementation for a CAD in the clinical workplace is the lack of key knowledge given to the stakeholders. This idea is illustrated by every answer given in the B.O. Botwe, T.N. Akudjedu, W.K. Antwi et al. study where they asked about what they belive the greatest barriers the faced in regards to AI system useage. They responded with the ‘lack of dedicated courses and learning materials: 219 (21.5%); Lack of mentorship, guidance and support from “experts" 136 (13.3%); Lack of evidence-based material and proof of improved clinical outcomes 117 (11.5%); Lack of time to learn new technologies 33 (3.2%); Lack of funding/investment for new technologies 360 (35.3%); Lack of motivation for change and interest to learn 66 (6.5%); Fear of the unknown 89 (8.7%)’.

## FC plays a significant factor in the expected user intentions in using the technology as demonstrated in the F.M. Calisto et al. 2022 study (β = 0.313 , p < 0.05) in the same study they also found that FC has a positive affect on behavioural intention (β = 432 , p < 0.05).

## Facilitating Conditions (FC) is important because they provide the infrastructure and support needed to use a system effectively. FC links to results because it impacts attitude and intention to use AI systems, as well as a positive impact on belief and usage of these systems. Increasing knowledge about FC can improve trust because it can help to overcome common barriers to effective implementation, such as lack of key knowledge.. Facilitating Conditions (FC) play an important role in the successful adoption and implementation of clinical decision support systems (CDSSs), as they help to ensure that users have the necessary resources and support to use the system effectively.

## 

## 

## Increasing knowledge about FCs can help to improve trust in the users, as it can help to ensure that users understand the importance of these factors in the successful use of the system. In addition, increasing knowledge about FCs can help to identify potential barriers to adoption and implementation, and help to develop strategies to overcome these barriers. Hence why focus on providing knowledge to the stakeholders, including the information documentation/training to increase their trust with the system and the benefits it provides, the effectiveness and efficiency that comes when integrating a CAD system into a radiological practice? In addition, providing users with experience in working with technology so users that have had limited experience using technology are not scared of using technology in their work practises and can get excited for the advantages that adopting technology can provide. However, due to the limited research showing the impact that FC has on trust, our advice is for the client to track what resources made the biggest impact on users’ trust towards AI in their radiological practises. So future companies can then ensure their users have been provided the needed resources to ensure they have a smooth integration process. N

## 

## 

## ***Personal Attitude (BEN)***

Results

As the research advanced to the data extraction process, it is to the team’s recognition that the four initial factors adapted from the UTAUT model are not sufficient. The team discovered that a significant percentage of the data extracted points toward the subjective opinion of the participants because of the nature of these articles are evaluation user experience. Thus, a new factor ‘personal attitude’ is added after group discussion. This factor directly reflects the subjective attitude of the participants toward AI technology used in medical imaging from four aspects: acceptance, willingness, trust, and risk.

The factor labelled as PA1 is ‘Acceptance’, it intentionally examines the personal level of acceptance of the participants. There are three evaluations from the survey from the Africa doctor perspective evaluation which relates to PA1. Overall , 82% of participants believe that ‘I am excited about the integration of AI tools into medical imaging practice worldwide’, 14.3% remain neutral and only less than 4% disagree. 67.5% were concerned about the integration of AI into medical imaging practice worldwide, 22.5% remained neutral on that topic, and around 10% disagreed. 76% of the participants agree that the use of AI will bring more benefit than harm to this industry in Africa, 20% of the participants stay neutral, less than 4% disagree. Also, the study demonstrates what kind of AI tools the participants are looking for. The majority, over 85%, of the participants are looking for ‘Tools that support image reporting by detecting or flagging common conditions like tuberculosis’ (Botwe et al., 2021). A study evaluating the opinions from world-wide doctors reveals that 79% of the participants think radiologists should take the lead on the development of AI technology for medical imaging. 17% marked this question as maybe, and only 4% disagreed. Also, 48% of the participants hold an open and proactive attitude (Huisman et al, 2021). According to part two of the same study, 89% of the participants marked ‘maybe’ as an answer for the question ‘Can AI help improve diagnostic radiology?’, only 10% were certain. 78% and 77% believed that AI can help their work by becoming a second reader and work flow optimizer respectively (Huisman et al, 2021). 79% held an opinion on AI should be incorporated in the residency programs, only four percent were against it.

PA2 is the factor ‘willingness’, it is the degree of the intention the participant holds on using AI in medical imaging. The article ‘Introduction of human-centric AI assistant to aid radiologists for multimodal breast image classification’ indicates that with a specific kind of assistant, 51% of the participants strongly agreed to use the system compared to only 4% without the assistant. The level of confidence in using the tool increased from 31% to 67% after receiving the special assistance (Calisto et al,2021). In the Huisman study mentioned earlier, 77% of the participants would have chosen to become a radiologist again with the current AI knowledge, 15% of them were uncertain, and only 8% opposed this statement. Apart from that, 85% of the participants were willing to use AI software in the clinical setting, 14% thought maybe and only 1% believed no. 70% of the participants were interested in collaborating with computer scientists or data scientists to develop AI algorithms, 75% were considering learning AI as a topic even if it is not a requirement. In user experience evaluation using a modified UTAUT model, the construct ‘Behaviour Intention’ is measured using a five-point scale. The mean for this construct is 3.088, and the standard deviation is 1.038 (Praskash and Das, 2021).

PA3 is ‘Trust’, it is the degree to which the participant has faith in the innovation. For the study conducted by Fan et al, the participants found the AI interpretations with strong explanations the most trustworthy, the mean on a five-point scale is 2.12, the results with no explanations 2.10, and the results with weak explanations only 1.78 (Fan el al, 2021). The study ‘Medical practitioner’s adoption of intelligent clinical diagnostic decision support systems: A mixed-methods study’ pointed out that, on a five-point scale, the trust index for AI used in medical imaging is at the mean of 2.68, and the standard deviation is 0.983. The initial trust index mean is 2.797, standard deviation is 0.840 (Praskash and Das, 2021). For a study done in the Netherland hospitals, 58.5% of the participants revealed inconsistency in accepting and trusting the use of AI products. Only 25% showed acceptance and trust of referring clinicians (Strohm et al, 2021). Based on the Botwe study, 45.4% of the participants agree that ‘The use of AI tools could lead to unethical utilisation of patient data for unwarranted commercial purposes.’, 34.5% remains neutral and 20% disagreed (Botwe et al, 2021).

The last factor in the personal attitude section is ‘Risk’, labelled as PA4, it demonstrates different hurdles AI will bring to the participant itself and the radiology community in general. The aspects evaluated include ethical issues, legal issues, funding, and safety. In Botwe et als’ study, 64% of the participants agreed that ‘There is a possibility of errors associated with AI technologies integrated into my clinical radiography practice’, 10% of them disagreed, and 26% remained neutral,(Botwe et al, 2021). For the Huisman study part two, 35% of doctors identified ‘costs of development’ and anticipated hurdles to implementation, 38% identified ‘costs of software itself’ and anticipated hurdles to implementation. The major failings for implementation are ‘Knowledge of stakeholders’(56%) and ‘Generalizability of the software’ (39%) (Huisman et al, 2021). For the Praskash and Das study, on a five-point scale, the participants rated the medico-legal risk for using AI with a mean of 3.763, and performance risk with a mean of 3.624 (Praskash and Das, 2021). Lastly, the Strohm study highlighted that 21% of the participants for that study believed that the development of AI in the medical imaging industry pressures the healthcare budget. 42% of the participants doubted the quality and safety of the application. 58% of the participants the funding is uncertain. 33.33% of them thought there were legal and regulatory issues. 21% of them believed that the use of AI should be ‘Reference to post-market surveillance MDR’ and have ‘Legal responsibility for mistakes’ (Strohm et al, 2021).

Discussion:

It is fair to say, without the acceptance from the users, any further developments of AI as an innovation is effortless, therefore it is critical to evaluate the general personal attitude of the users and identify potential hurdles they are feeling. Only by then, the development and implementation of AI find the correct direction of development and grow healthily. The studies found according to this project’s specific PRISMA protocol highlights many personal attitude evaluations, more than that, there are some valuable relationships between personal attitude factors and other constructs from the UTAUT model identified by the articles.

PA1 reflects whether or not the participant welcomes AI as an innovative factor to the medical imaging industry as well as personal career development. In general, the majority of the radiologists are willing to accept the use of AI based on the result from PA1. Furthermore, the radiologists already figured out the designated roles for AI, including abnormal detector, second reader, and work flow optimizer. However, less than 50% of the participants do not hold an open mind regarding this matter, and around 80% of them do not believe AI will make a difference in their work quality, the main benefit AI brings are indicated as efficiency. They also showed both excitement and concern for the use of AI, 82% and 67.5% respectively, which demonstrated the mixed feelings they hold in the use of AI. It is also proven by the Fan study that there is a significant positive correlation between PA1 and effort expectancy in general. This is a direct proof that if the user is willing to accept the product at a higher level, he or she will find the product easier to use. This phenomena has been shown in many other innovative products as well, for example smartphones. Another correlation is that inertia has a positive relationship with resistance to change, which is also not surprising because inertia basically means resistance to change.

PA2 measures the perceived intention to trust the algorithm, the intention to learn about AI technology, and the intention to cooperate. It represents the personal inner willingness to use this technology. The interesting finding of this factor is that radiologists are more willing to trust the AI with assistance, and are more confident using the system with assistance. It is understandable that the radiologists require some level of assistance when using an innovative system. Therefore it is important for further developers to consider not only to develop with more functionalities but also offer proper assistance. The result of willingness is optimistic, almost all of the evaluations show more than 70% of the radiologists are willing to accept, trust, and use AI in their workflow. The important factors impacting PA2 are quite obvious, they are facilitating conditions in general, performance expectancy in general, perceived security and effectiveness, initial trust, Extrinsic motivation, and social influence in general. Hence, these factors should all be considered when developing and promoting AI products in medical imaging in order to make the development and promotion process more comprehensive. On the other hand, willingness is also proven to impact factors including trust and risk. After discussion, it is to the team's belief that if the participants have the will to trust and use that certain product could be transformed into the actual trust for an individual.

PA3 mainly reflects the level of trust on the accuracy of AI in diagnoses. Some minor aspects related to implementation and job security. The result of the evaluation against trust reveals some neglectable issues. Multiple studies show that, on a five point scale, the mean index for trust evaluated is less than 3. Based on one of the studies, 58% of the participants showed inconsistency in trusting the product, and only 25% trust and accept a certain type of AI. These statistics are direct indications that even the radiologists are willing to embrace new technology, they do not trust the technology wholeheartedly. Another intriguing finding is that radiologists trust AI results with strong explanations rather than weak explanations, they even prefer no explanations more than weak explanations. This indicates that weak results can be confusing to radiologists which is a point the developers should hold accountable when developing AI products. It was assumed that risk will have a major impact on trust, and it was proven by multiple studies. The existing risks are undermining the trust of the users, so it is important for the AI community to tackle those risks. More importantly, trust is found to have an impact on effort expectancy and willingness. The reason behind this is because doctors will need to do more investigation into the technology in order for them to trust the technology which is effortsome. More than that, there are four factors influencing trust which are effort expectancy, performance expectancy, social influence, and willingness. None of these correlations shown are surprising.

PA4 is the factor reflecting the risks in implementing AI products based on the radiologists’ perspective. Almost all of the studies related to this topic are able to point out risks this industry is currently having. Around half of the participants are worried that AI products will produce both legal risks and performance risks. The participants are worried that the current legal system is not being able to hold anyone or hold the wrong person accountable if an AI related product makes a mistake medically. Another risk that the users are concerning is lack of funding. The ratios of the doctors identified risks were significant because risk evaluation is unlike performance evaluation, there is not an absolute safety barrier for risks, the best statistics for risk is always zero especially in the field of medical, it is related to peoples’ lives. It is proven that social influence and willingness are the impactors for risks. It is important that the studies highlighting the more willing a radiologist is, the less he identifies the risks. The insight on social influence impacting risks is also a critical piece of advice when it comes to tackling those risks. Furthermore, risk is considered as a factor impacting willingness, trust, and effectiveness which are not surprising.

In general, the evaluation of personal attitude shows a level of contradiction, even though high willingness and high acceptance are shown, the level of trust is low and the risks are obvious. It is encouraging to see the performance of AI being recognized and accepted, but the risks and trust issues are not being paid enough attention to by the developers or the government. The analysis toward trust and risk reveals there are still significant efforts to be made to eliminate those risks because the current results are not satisfactory.

Conclusion ideas

* Job security (PE3) and trust are primary concerns
* To reduce these concerns, more knowledge is needed
* Knowledge about AI and its benefits, such as increased efficiency and effectiveness in detecting diseases to improve patient care and outcomes.
* Further studies to determine the importance of knowledge in influencing factors such as trust and job security
* Efficiency needs to be further investigated
* SI is important in encouraging other people to seek knowledge
* Reassurance is important for people, mob mentality
* FC is a separate factor as it can occur without SI or knowledge
* Tech experience made it less intimidating because it was easier to use and less complex because they had somewhat similar experience.

Reference

Ursavaş, Ö. F. (2022). Unified theory of acceptance and use of technology model (UTAUT). *Springer Texts in Education*, 111–133. https://doi.org/10.1007/978-3-031-10846-4\_6

Botwe, B. O., Akudjedu, T. N., Antwi, W. K., Rockson, P., Mkoloma, S. S., Balogun, E. O., Elshami, W., Bwambale, J., Barare, C., Mdletshe, S., Yao, B., & Arkoh, S. (2021). The integration of artificial intelligence in Medical Imaging Practice: Perspectives of African radiographers. *Radiography*, *27*(3), 861–866. <https://doi.org/10.1016/j.radi.2021.01.008>

Strohm, L., Hehakaya, C., Ranschaert, E. R., Boon, W. P., & Moors, E. H. (2020). Implementation of Artificial Intelligence (AI) applications in radiology: Hindering and facilitating factors. *European Radiology*, *30*(10), 5525–5532. https://doi.org/10.1007/s00330-020-06946-y