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# Understanding the Adoption of Wearable Technology in South African Organisations

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## *Abstract*

Wearable technology (WT) provides new ways of performing tasks by enabling easy access to valuable information regarding the wearer and their environment. Organisations are seeking to innovate in order to gain a competitive advantage and WT has the potential to improve an organisation's processes as well as their product/service offering. This research looks at the factors that influence an organisation's adoption of WT. The research was performed within the South African context with a focus on organisations in the healthcare, emergency services and education industries. The results of the research were obtained using a thematic coding analysis of the qualitative data gathered through semi-structured interviews with stakeholders from six different organisations. The structure of the interview questions was based on the TOETI theoretical model, a compound model using constructs from the TOE and TTF models. Of these factors, the cost of the technology itself and the level of technological readiness of the adopting organisation were revealed as the most influential negative factors, while competitive pressure and the relative advantage enabled by the technology were identified as the most influential positive factors. Some new factors were added to the model.

## *Keywords*

Wearable Technologies, Organisational Adoption, South Africa, Technology Innovation, Smart Watches, and Google Glass.

## 1. Introduction

The concept of wearable technology is not new; however, advancements in the concept and its supporting technologies in recent years has enabled it to enter the mainstream consumer market (Skiba, 2013). The development of products by brands such as Samsung, Nike, Apple and Google in the form of smart watches, smart glasses and smart garments have acted as a catalyst in the adoption of such devices by the consumer (Edwards, 2013; Parviz, 2014). Use of these devices at an individual level is widespread and growing (Harrop, Hayward, Das, & Holland, 2015). The use of these devices in organisations and the analysis of their effects at firm level, however, are not as common. This lack of organisational application provides the context for this research.

The purpose of this paper is to gain an insight into the various factors that may influence the adoption of wearable technology in organisations. The outcomes of the research are intended to assist organisations in assessing their own context in respect to adopting wearable

technology. By presenting the factors that influence this adoption from an organisational perspective this study will be able to assist firms with understanding the applications of wearable technology in their industry, how the adoption of the technology could be encouraged and the value that this adoption may bring.

The main research question of this study is: What are the factors that influence the adoption of wearable technology in an organisation? This question is addressed through the development of an initial research model through a review of existing literature. Primary qualitative data, in the form of interview transcripts, was then collected and analysed in order to test the accuracy of this research model. The results of this data analysis were then used to refine and improve the research model, which is the main outcome of the study.

# 2. Literature Review

## 2.1 Wearable Technology

Wearable technology (hereafter referred to as WT) is a broad term used to describe electronics and computer devices which are built into clothing or accessories that can be worn on the body (Wright & Keith, 2014). Examples of WT include watches, glasses, jewellery and clothing (Pailes-Friedman et al., 2014; Skiba, 2013). WT can be categorised into two groups: devices and apparel/textiles (Harrop et al., 2015). Apparel and textiles tend to closely combine electrics and electronics and take advantage of recently developed, disruptive technologies. WT in this category is often designed to hide the electronic component of the garment and comes in the form of wearable, washable and flexible materials (Sousa & Oakley, 2011). WT as devices tends to be more rigid and conventional and builds on the evolution of older technologies such as mobile devices and the internet of things (IOT) (Harrop et al., 2015).

WT is capable of performing a number of tasks similar to those of mobile devices. WT, however, enables extended functionality over mobile devices due to the intimate relationship of the wearable device and the wearer. Through the use of physiological, psychological and behavioural sensors, WT allows the user to record valuable data about themselves and their surrounding environment (Profita, 2014). Access to this information enables the advancement of human safety, efficiency and autonomy, and can be applied to various industries such as healthcare, emergency services and education (Carton & Dunne, 2013; Pailes-Friedman et al., 2014; Profita, 2014; Safavi & Shukur, 2014; Skiba, 2013).

## 2.2 Factors influencing wearable technology adoption in organisations

Based on the TOE framework, the factors can be assessed from technological, organisational and environmental perspectives (Tornatzky & Fleischer, 1990). A study of the adoption of RFID technology in the manufacturing industry conducted by Wang, Wang and Yang (2010) served as guideline for the assessment of the TOE factors relating to organisational adoption of WT technology. The Task/Technology Fit (TTF) framework proposed by Goodhue & Thompson (1995) was then used to extend the TOE framework and include consideration for the degree of fit between WT and the tasks that the technology is used for.

### *2.2.1 Technological Factors*

Technological factors include availability, relative advantage, complexity and compatibility (Wang et al., 2010). WT availability is increasing with the recent release of various products

into consumer markets (Skiba, 2013), serving as a **positive** contributor to WT adoption. Relative advantage is also proposed as a **positive** contributor as WT allows for the extension of mobile device capabilities and the quantifying and recording of a user's condition and their surroundings (Patel et al., 2012). Complexity is predicted to serve as a **negative** factor for WT adoption due the advanced technical requirements and low level of maturity of WT in today's context (Backman & Tenfalt, 2015). Finally, the compatibility factor is proposed to **positively** influence the adoption of WT due to the ubiquity of mobile devices and the close relationship of this technology to WT (Profita et al., 2013).

*2.2.2 Organisational Factors*

Organisational factors include top management support, firm size and technology readiness (Tornatzky et al., 1990). Top management support is important for the organisational adoption of WT as it has the power to influence the attitude of the organisation towards innovation, and is therefore proposed as a **positive** factor in WT adoption. Firm size is relevant to WT adoption as the costs and risks associated with introducing WT to the workplace will be more manageable by larger firms (Safavi & Shukur, 2014). The IT infrastructure and professionals of an organisation will have to adapt to handle the connectivity, security and privacy requirements of WT (Backman & Tenfalt, 2015; Skiba, 2014); technology readiness is thus a **positive** factor of WT adoption.

*2.2.3 Environmental Factors*

Environmental factors include competitive pressure, trading partner pressure, information intensity and government regulation (Wang et al., 2010). By adopting WT, organisations may be able to achieve a competitive advantage in their market through improved operational efficiency and increased data accessibility and accuracy (Bloss, 2015; Swan, 2009). Competitive pressure is therefore considered a **positive** factor for WT adoption. Actual use cases of WT in organisations are still uncommon and most examples are still in beta phases (Backman & Tenfalt, 2015; Skiba, 2013; Wright & Keith, 2014). Trading partner pressure is therefore considered a **neutral** factor for WT adoption in the context of 2015. WT is fundamentally reliant on the monitoring and transmission of information and its users can gain value from this information in a number of ways (Profita, 2014). Information intensity is therefore considered a **positive** factor for WT adoption. One of the main barriers to WT adoption for organisations is the issue of information security, privacy and the consent for its use in customer interactions (Safavi & Shukur, 2014; Skiba, 2013) Government regulation is therefore considered a **negative** factor of WT adoption.

*2.2.4 Task/Technology Fit*

The degree of Task-Technology Fit is an aspect of innovation adoption that is overlooked by the technology, organisation and environmental factors (Trang, Zander, & Kolbe, 2014). This degree of fit, according to the TTF model, is dependent on various factors that can be grouped into three categories: technology, task and individual characteristics (Goodhue & Thompson, 1995). The technology characteristics from the TTF model align well with the technology construct of the TOE model. The task characteristics consist of *variety and difficulty*, *interdependence* and the *"hands on" degree* of tasks. The individual characteristics consist of *training*, *computer experience* and *motivation* levels (Goodhue & Thompson, 1995).

The *variety* and *difficulty* of tasks refer to how non-routine the task in question is, or simply, how much the demands of the task vary between each execution (Goodhue & Thompson, 1995). According to Goodhue and Thompson (1995), individuals that perform non-routine

tasks tend to rate the technology used for the task lower than those performing routine tasks. This lower rating is supposedly due to the ever-changing demands placed on the technology used for non-routine tasks, which exposes the weaknesses of the technology more so than routine tasks would (Goodhue & Thompson, 1995; Goodhue, 1995). The task *variety* and *difficulty* factors are therefore proposed to have a **negative** influence on WT adoption. The *interdependence* factor of tasks describes the degree of information sharing with other organisational units involved in the task and is believed to expose any incompatibilities of the technology being used (Goodhue, 1995). Task *interdependence* is therefore proposed to have a **negative** influence on WT adoption. The *"hands on" degree* of tasks describes the degree to which tasks require users to access information in non-preprogrammed ways, in other words "out in the field". Goodhue (1995) suggests that more "hands on" users are less insulated from the complexity and difficulty of the technology and are therefore more likely to realise its shortcomings. The "*hands on" degree* of tasks is therefore proposed to be a **negative** influence on the adoption of WT. The individual factors: *training*, *computer experience* and *motivation* influence how well an individual would be able to utilize WT and are all proposed to have **positive** influences on the adoption of WT.

## 2.3 Theoretical Model

The theoretical framework used in this research is based on the TOE framework for two reasons. Firstly, the TOE framework specifically considers the technology available to an organisation as an influence in adoption decisions and is therefore appropriate for a technical innovation such as WT (Cao et al., 2012). Secondly, the TOE framework has been used in the research of similar and related technical innovations such as the use of RFID in the healthcare and manufacturing industries (Wang et al., 2010). Although the TOE framework is the most appropriate for the research topic, it does not account for the degree of fit between WT and the tasks performed within an organisation. For this reason, the model used in this research is an extension of the TOE framework, which uses constructs from the TTF model (Goodhue & Thompson, 1995). The resulting compound model has been named the Technology-Organisation-Environment-Task-Individual (TOETI) model and can be seen in Figure 1.

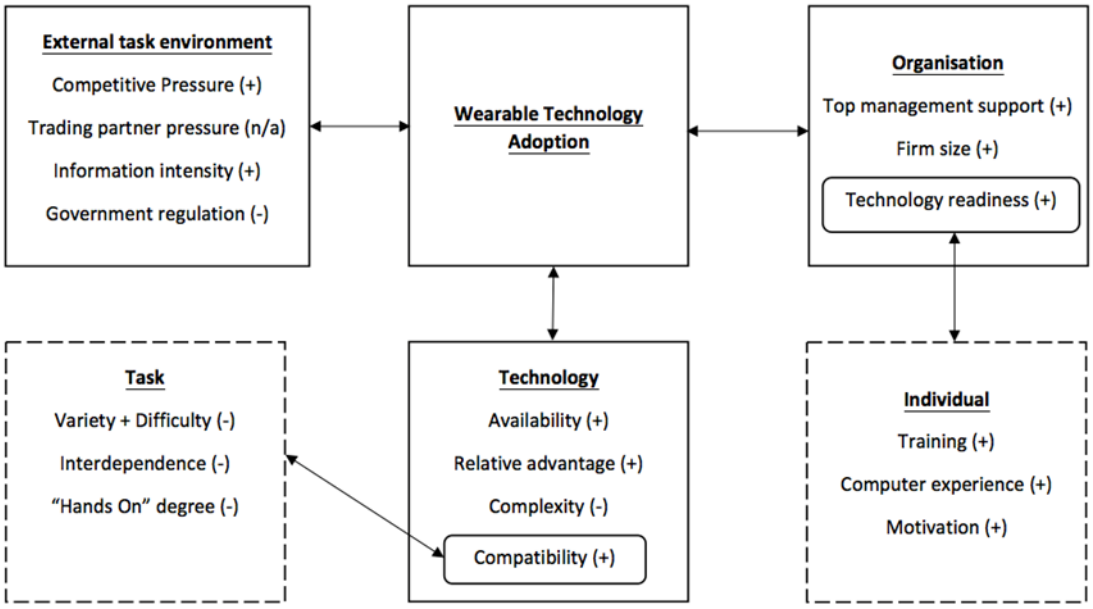


**Figure 1:** Technology-Organisation-Environment-Task-Individual (TOETI) Model

# 3. Research Methodology

The philosophy used for this research was positivist as it was an objective observation of the current factors influencing the use of WT in organisations as well as the implications of such use. The research is both descriptive and exploratory in nature.

A literature review revealed healthcare, emergency services and education industries as having the most common organisational use cases of WT. South African organisations which had a similar context to early adopters identified in these industries were targeted for further research. The sample consisted of key stakeholders from six organisations. The researcher attempted to conduct interviews with stakeholders in business roles, technical roles and end user roles in order to make use of triangulation and to ensure more than one view of the organisation was revealed (Saunders, Lewis, & Thornhilll, 2009).

A non-probability sampling technique based on the snowball sampling method was used to identify stakeholders (Saunders et al., 2009). All interviews were conducted face to face and participation was voluntary. Full ethics approval was obtained from the University's Research Ethics Committee. Due to the exploratory element of the research, the primary data was collected by means of semi-structured qualitative interviews (Saunders et al., 2009). The interviews were structured around the TOETI model in order to allow for a degree of standardisation between interviews. The transcriptions were analysed by applying thematic and axial coding in the qualitative data analysis tool, Atlas.ti.

# 4. Data Analysis

## 4.1 Wearable Technology Adoption

In this study, WT adoption was defined as the degree to which an organisation uses WT in their operations or as part of their product or service offering. WT was defined as any form of technology that is worn by an employee or client, and makes use of the data provided by this intimate relationship enabled by the proximity of the device and the wearer.

The first clear outcome identified by the research was that the adoption of WT by organisations is still in its infancy. Despite this low level of adoption, the majority of respondents did indicate that they appreciated the potential value that WT could have for the organisation. Participant D1 indicated an anticipation of WT's increased adoption and made a favourable comment regarding the perceived value of WT: *"I think it is coming and the sooner we can get it, the better".* Participant D1's opinion was similar to that of participant A2: *"…certainly it seems to be the way forward".* The general outlook of the respondents indicated an awareness and understanding of the potential value of WT in their organisations despite the currently low levels of adoption.

## 4.2 Factors Influencing the Adoption of Wearable Technology

The objective of this research was to identify and understand the factors that influence the adoption of wearable technology by organisations.

### *4.2.1 Technology*

The technology code family consisted of 19 codes and was the most populated code family. The high number of codes in this family suggest that technology related factors were the most prominent topic in the respondent's train of thought when considering the adoption of WT.

**Availability:** Respondents from 4 of the 6 organisations mentioned availability of WT as a barrier to their organisation's WT adoption. Participant A2 stated*: "We just don't have the technology"*. Participant C2 elaborated on this theme by stating: *"Finding suppliers with a wide enough footprint across the country is another tough one"*. From the responses gathered, the availability of WT is seen to have a **negative** influence on its adoption by organisations. A sub factor of availability is the **cost** of WT, which was presented as the most significant influence on an organisations decision to adopt the technology*: "The problem comes in with the funding model and affordability. The tech is not cheap"* (Participant A2).

**Relative Advantage:** The **positive** influence of WT's relative advantage on adoption was acknowledged by most respondents, with improvements in educational or training use cases being the most commonly mentioned. Participant A1 gave a good example of such an advantage: *"As soon as the data becomes something that is from themselves, or more personal, then it becomes useful and the students engage with it a lot more. Rather than […] some obscure table of data that they are expected to interpret".*

**Complexity:** The perceived complexity of WT was seen as a **positive** influence on adoption by most candidates, with many mentioning this factor as critical to the successful adoption of WT. Participant A2 provided a good point for why this factor was seen as positive: *"I think technology recently has become a lot more complex and sophisticated, but a lot more usable, with a focus on user interaction and the interface".* Participant E1 illustrates the critical nature of this factor: *"people don't want something complex".*

**Compatibility:** The issue of compatibility had mixed responses. Some indicated that the compatibility of WT had a positive influence on its adoption: *"I can't see it being a problem. The hospitals all have Wi-Fi already".* More respondents, however, believed the influence was **negative**: *"… something that is compatible and can be integrated with the web is vital. So these services have to be accessible, they can't be protected. If you go down the road of a closed Apple-type environment, that makes it meaningless for us, we need to be able to integrate that with our pre-existing systems"* (Participant B1).

**Rate of Change (NEW):** The rate of change of WT was mentioned as an important factor to consider in the decision to adopt WT. The point made by 2 respondents was that the current rate of change of WT is too rapid to justify investing in the technology just yet*: "…a roll out of this technology across 54 hospitals, it is a huge commitment, which we are willing to do, but if, in 5-8 years' time, there is something faster, neater, more accurate, maybe cheaper too as the volumes increase and it becomes the norm…it will cost us a lot more money"* (Participant C1) and: *"at this point, it is kind of like the goal posts are moving the whole time and we choose to use slightly more mature technologies before we actually choose to adopt. So, at this point, we are keeping an eye on things and waiting for the industry to mature a bit before we start throwing resources at it"* (Participant B1). These responses indicate the current rate of change of WT as a **negative** influence on its adoption.

**Perceived Value (NEW):** The perceived value of WT was pointed out as a major factor in the decision to adopt. At least one respondent from every organisation mentioned this as a critical factor: *"The main question is, what is your ROI? At the end of the day there has to be a return on the investment"* (Participant C1). Participant A1 also illustrated the importance of perceived value, but from the perspective of employee acceptance: "*as soon as you can show that the tech is actually going to save them time in the long run, they will be willing to give it*

*a go*". From the large number of comments made regarding this factor, it is argued that it is a strongly **positive** influence in the adoption decision.

**Ubiquity (NEW):** Although respondents acknowledged that WT is not entirely ubiquitous just yet: *"at this point, it is not as pervasive as a mobile device"* (Participant B1), the general expectation was that this will improve: *"as these new measuring devices become cheaper and more accessible, so we will have much more wearable technology incorporated into our daily life"* (Participant E2). Some comments were made in favour of the increasing ubiquity being a **positive** influence to the adoption of WT. Participant B1 stated this point well: *"if wearables start becoming adopted in the wider market and the cost of wearables is driven down, then it might be a legitimate option for us moving forward"*.

**Design and Functionality (NEW):** Some respondents revealed the design and functionality of WT devices as a critical consideration in the decision to adopt WT: *"it has to have total wireless connectivity and easy charging capabilities"* (Participant A1). The critical design features mentioned, in order of significance, included: connectivity, form factor, power source, loose hardware/software coupling, reliability and durability. The influence that the design and functionality of WT has on an organisation's decision to adopt the technology is dependent on the tasks performed by the organisation in question and is therefore **contextual**.

*4.2.2 Organisation*

Factors related to the organisation itself were found to be the second most significant. This ranking is understandable considering that top management are essentially the final decision makers and highly influential in the adoption of WT. Another strong influencing factor is the level of technological readiness of organisations, which tend not to be flexible, implying adoption decisions are highly restricted by this factor.

**Top Management Support:** This was seen as having a **positive** influence on the adoption of WT by many of the respondents, although it was often pointed out that this is closely related to the perceived value of the technology. Participant D1 said: *"at our organisation, our CEO is very, very keen on innovation. Everyone is looking at innovation at the moment, so [wearable tech] would be a nice thing to introduce into the system, I think management would be very receptive"*. Participant B1 had a similar response but mentioned the close link to value proposition: *"Support from management would be a driver as long as the use of wearable tech was strategically aligned and the return on investment was positive"*.

**Firm Size:** The respondents had varying opinions on the influence that firm size had on the adoption decision. A valid point, in support of firm size being a negative influence, was made by participant C1, saying that a larger firm was more susceptible to the effects of bureaucracy: *"Things just take time in the corporate world. We are a R30 Billion turnover so things take time…things go backwards and forwards as it is a big spend and we need to make the right decision as whatever we do, we are going to apply in 54 hospitals".* Another point, made by participant A1, in favour of firm size being a positive influence, was that a larger organisation has access to more resources and was therefore more capable of undergoing WT adoption; however, it was mentioned that this was dependant on how the organisation managed its resources: *"I think the size of the organisation definitely does influence adoption, but I think it is a complex issue… its degree of positive or negative influence is also affected by the use of resources and how the individuals within the organisation, regardless of its size, are valued and their decision making power".* From these responses, it would be invalid to

define the influence of firm size as either **positive** or **negative**, as it is dependent on the organisation in question.

**Technology Readiness:** This was mentioned as a strong **negative** influence on the adoption decision regarding WT. The majority of respondents described their organisation's infrastructure as not ready for WT adoption and considered it one of their main barriers: *"our main concern for adopting something new is the consideration of our backbone infrastructure…you can't bring tech into a space without changing the environment so that it supports the new tech. If the infrastructure doesn't exist already to some extent, then the barriers to adoption are much higher"* (Participant A2). Participant B1 commented on the large amount of effort that would be required before WT could be adopted: *"From our perspective, it would take a re-orientation of a large amount of our processes, systems and technology in order to facilitate that".*

*4.2.3 Environment*

Environmental factors were revealed as the third most significant theme. Competitive pressure and regulation were found to be the most significant influencing factors in this category, whereas trading partner pressure and information intensity were found to be non-influential, in contrast to what the initial research model suggested.

**Competitive Pressure:** This was one of the most frequently mentioned factors related to the adoption of WT. Some respondents viewed it as a strong influence*: "There is no doubt about it, it's quite fascinating that every aspect…is compared to our competitors at least one way or another"* (Participant A1), while others saw it as only a small consideration: *"[Competitive pressure] would probably be a driver, rather than a hindrance. I don't think it would be a very strong driver though"* (Participant D1). Respondents from all organisations presented it as a **positive** factor in the decision to adopt WT.

**Regulation:** This was a factor that was mentioned as a **negative** influence by respondents from six organisations: *"[Regulation is] a huge barrier. So we have to be very careful how we position ourselves around these regulations"* (Participant E1). Although government regulation was mentioned an adaption from the original construct "Government Regulation" is necessary as the comments made were often not related to government regulations, but rather regulation by regulatory boards or internal governance: *"In terms of regulations, not government regulations but those coming from sports bodies and federations, that's something that can really bite you if you're not on top of it"* (Participant E1).

**Trading Partner Pressure** was rarely mentioned as a factor in the decision to adopt WT and, when it was mentioned, it was only to point out that it did not have an influence: "*Not much trading partner pressure within the context of our school*" (Participant A1). Similarly, **Information Intensity** was not mentioned by any respondents WT.

**Surrounding Infrastructure (NEW):** A few respondents remarked on the **negative** influence that infrastructure on a national level has on an organisation's decision to adopt WT. The main observation made was regarding Internet provision: *"I think your biggest challenge in the educational space, besides the actual cost of the technology, is the cost of the internet connection itself…We have a really good backbone and a good networking infrastructure, but it's not so much about that, but more about internet provision"* (Participant A2). This factor, of course, is only applicable to the South African context, but was substantial enough to point out as a factor to consider.

*4.2.4 Individual*

Factors relating to the individual within an organisation were found to be the fourth most significant. This is understandable considering that an organisation is merely a collection of individuals and so their attitude towards an adoption decision is highly influential. Motivation was largely discussed and was clearly related to how well the value of WT was perceived by individuals. Another critical factor was the need for sufficient training.

**Training:** Respondents from six organisations mentioned sufficient training as a critical factor to ensuring WT adoption by the individuals within an organisation: *"you actually have to create a support structure, which teaches the people how to use the tool"* (Participant F1). Participant C1 further supports the critical nature of sufficient training: *"there is still a huge amount of work to be done to get everyone's heads around it and get the training and to get the efficiencies".* The responses indicate a strong awareness of the need for sufficient training during the rollout of WT in an organisation and is therefore argued to be a **positive** influence.

**Computer Experience:** This was often mentioned as a potential barrier to WT adoption. Participant A1 put this quite succinctly: *"The level of computer experience will be a barrier to the adoption".* Participant F1 goes into more detail as to why computer experience is positioned as a barrier: *"the adoption rate of technology by each of these individuals differs greatly. Some are less likely to want to adopt this new technology, and you can't force it on them very easily. So this definitely plays a role in the decision of using new technology or not".* The level of computer experience of the individuals within an organisation is therefore viewed as a **negative** influence on WT adoption.

**Motivation:** This was another factor mentioned often by respondents and was viewed as a **positive** influence on the adoption of WT: *"The people would generally be motivated*" (Participant F1). This relationship, however, was closely linked to other factors such as the individual's perceived value and perceived complexity associated with WT*: "If they understood the value, the staff would be motivated to adopt the technology"* (Participant B1).

*4.2.5 Task*

Task related factors were the least most significant theme. Although significant enough to justify their own theme, these factors are closely related to the technology related factors of compatibility and design and functionality.

**Variety and Difficulty:** The consideration for the variety and difficulty of tasks was presented by a few respondents and was seen as a **negative** influence on the adoption of WT: *"for us, online education is a series of activities, rather than just one activity. It is not just one isolated activity that results in you completing a course…until such time that the technology standards have opened up, and we can use wearables as an integrated part of the course, we would be slow in adopting that specific piece of technology*" (Participant B1).

**Interdependence:** The interdependent nature of tasks was seen as a **positive** influence on the decision to adopt WT*: "I don't think it would be a barrier. It would probably be more of a driver"* (Participant D1). Participant F1 stated: *"Also, the interdependence on others…we have our AIS tracking system that tracks within a line of sight of the VHF range. Which has a limited range. So a wearable that could mitigate this range issue would be helpful*".

**"Hands On" Degree:** The "hands on" degree of tasks was seen as a **negative** factor in the decision to adopt WT. The reasoning for this was that "hands on" tasks were too complex or not suited for WT: *"it becomes quite difficult to manage those exterior factors, you know, no two physical areas are the same so it becomes difficult to manage the complexity around that"* (Participant B1).

# 5. Findings: Refined Research Model

The primary data collected aligned well with the literature and confirmed a number of the initial constructs identified. Some of the initial constructs were found to be less significant than initially thought and were thus removed from the model. In contrast to this, the primary data also revealed new constructs, which were consequently added to the model to further aid in the understanding of WT adoption by organisations. The latter are discussed briefly below.

The most significant new construct revealed by the primary data was the **perceived value** of WT. Respondents mentioned that this perceived value was a direct influence on not only the top management's decision to adopt, but also on the motivation of employees to accept a new technology into their processes. Another highly discussed aspect of the technology was the various features included in the **design and functionality** of WT devices. These were seen as an important factor in the decision to adopt but were dependant on the characteristics of the tasks performed by the organisation. This construct can have a positive or negative influence on the adoption decision. Rate of change and ubiquity were the other two new constructs in the technology category of the model. **Rate of change** was discussed as a negative factor by respondents due to the tendency for WT devices to become obsolete quickly due to the current rate of development in the industry. **Ubiquity** was seen as having a positive influence by respondents due to the costs and acceptance of the technology becoming more viable as the technology expands into the wider consumer market. The only other additional construct was the surrounding infrastructure available in an organisation's environment. The limited surrounding infrastructure available in South Africa was shown to have a negative influence on the adoption decision, primarily relating to the availability and cost of the Internet infrastructure in the country.

Trading partner pressure and information intensity were part of the initial research model (Wang et al., 2010). Perhaps due to the currently low level of adoption of WT in most organisations (Backman & Tenfalt, 2015) trading partner pressure did not appear to have an influence to the decision to adopt WT. Information intensity was also not presented as an influence in the adoption decision. These constructs were therefore both removed from the model. The final, refined model is shown in Figure 2.

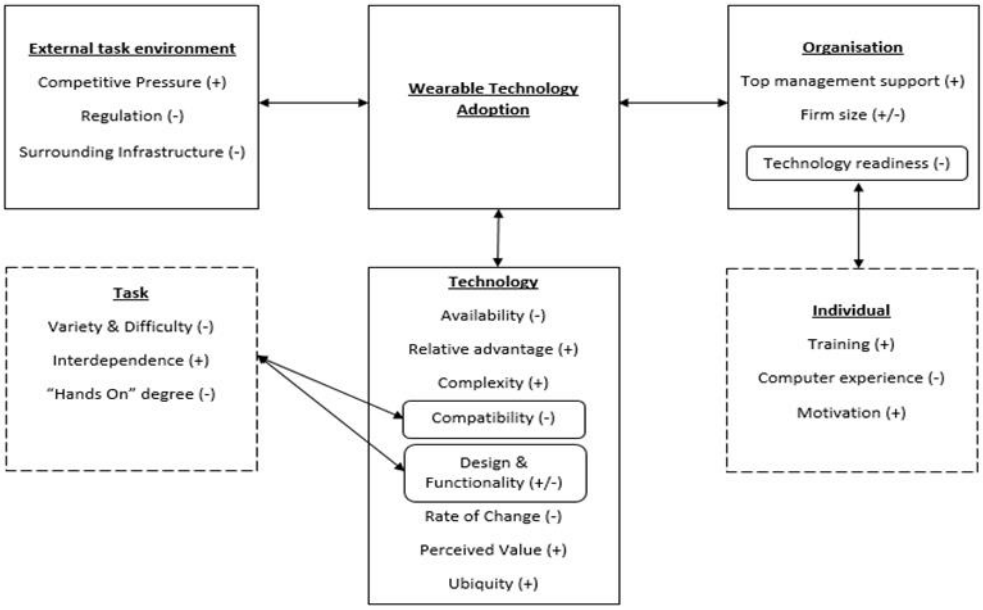


**Figure 2.** Revised TOETI Model for Organisational WT Adoption

# 6. Conclusion and Future Research

The primary outcome of this research was a validation and refinement of the various factors that influence the adoption of wearable technology in organisations. The outcomes of this research are encapsulated by the resulting TOETI model. The model has been derived from literature on the topic of innovation adoption and has been refined by primary research. The model can be used as a tool to aid in the understanding of the factors associated with the adoption of WT at an organisational level. Organisations that are considering the use of WT in their operations could make use of this model to guide their decision making process, using each factor as an initial consideration and deciding on the relevance of each to their own context. If the decision to adopt WT is made, the model may then serve as a guide for the adoption process, with each construct serving as a discussion point for the critical success factors that may need to be implemented in order to ensure the adoption is successful.

As a limitation, the relative strength or importance of the various factors influencing WT adoption were not assessed in detail; future quantitative research could perhaps explore this. Also, an in depth assessment of the potential impacts of WT adoption in an organisation could prove useful to organisations considering WT adoption. The final recommendation regarding future research is the consideration of a wider range of organisations and industries as the target population for the data collection process. This study was limited to the perspectives of organisations within the healthcare, emergency services and education industries. These industries, although leading in terms of WT use cases, are closely associated to government and non-profit organisations, which may have influenced the results of the study. An expansion into more financially driven, business orientated organisations, may reveal new factors and further insights regarding the adoption of WT at an organisational level.

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