

# Clinical utility of MODAPTS during work assessment: Perceptions of South African occupational therapists

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## ABSTRACT

**Introduction:** Clinical utility is an important attribute in selecting an assessment tool. The study aimed to determine the perceptions of South African occupational therapists of the clinical utility of Modular Arrangement of Predetermined Time Standards (MODAPTS) work samples when assessing a client's work ability. The research objectives were to determine whether MODAPTS is perceived to be credible, practical, useful, and easy to use.

**Methodology:** A quantitative, cross-sectional, descriptive research design was used. Non-probability sampling with elements of voluntary response- and snowball sampling was used to recruit respondents. An electronic questionnaire was developed using Qualtrics, which was distributed electronically via the Occupational Therapy Association of South Africa, WhatsApp and Telegram.

**Results:** Data were based on 52 completed questionnaires, analysed through descriptive statistics.

MODAPTS was perceived as practical, useful, credible, and easy to use in practice. Main barriers to the use of MODAPTS included the timeliness of developing work samples, lack of MODAPTS training, and having other more useful and reliable assessment tools. Experienced occupational therapists used MODAPTS more often than inexperienced occupational therapists.

**Conclusion:** Clinical utility of work samples developed using MODAPTS has been confirmed. This supports the use of work samples developed using MODAPTS as part of work assessments as a cost-effective, practical tool.

### Implications for Practice:

- Development of contextually relevant work samples.
- Use of MODAPTS work samples as an outcome measure during intervention.
- Application during rehabilitation goal setting.
- Cost effective application of MODAPTS work samples in a variety of settings.

## INTRODUCTION

Work is an essential tool through which people may find meaning to life, flourish and achieve their goals<sup>1</sup>. It can also act as a stabilising- and balancing factor in life which in turn contributes to health and well-being<sup>2</sup>. However, some clients experience barriers to participating in work due to injury, illness or disability. These clients require vocational rehabilitation services. Vocational rehabilitation is described as services that are provided for starting, re-starting, going back to or staying in work<sup>3</sup>. It is a multidisciplinary strategy offered to people of working age who have health-related impairments, limitations, or constraints on their ability to function at work, with the main goal of maximising work participation<sup>4</sup>.

In vocational rehabilitation, a number of steps, are followed to

determine whether a client can return to, remain in or obtain work<sup>5,6,7,8,9</sup>. An important part of this process is work assessment. Work assessment refers to the assessment of the abilities of a client to be able to perform vocational tasks<sup>5</sup>, and to determine a client's ability to return to work, work readiness and work ability<sup>10</sup>. Occupational therapists play an integral role in the occupation of work because they assess and address the physical-, cognitive-, emotional-, environmental-, and social factors required for adequate performance of work-related tasks<sup>8,9,10,11</sup>. An important consideration during this process is the assessment of work speed<sup>10</sup>. Work speed is important to determine a client's ability to meet productivity demands<sup>8</sup>. Occupational therapists make use of various work assessment methods which include standardised- and non-standardised assessments<sup>12</sup>, work simulation<sup>6,9,13</sup> or on-the-job assessments<sup>3,6,7,9,13,14,15</sup>. In choosing appropriate methods of assessment, safety and adaptability of assessment methods are further identified as important factors<sup>10</sup>.

Work samples are performance-based assessments which require a client to perform a work-related task in conditions that are similar to his/her working environment<sup>8,16,17</sup>. It evaluates not only work performance, specifically in terms of work speed, but also allows the therapist to make observations regarding observable behaviours and traits within context<sup>8</sup>. Work samples can either be self-developed by an occupational therapist or purchased commercially<sup>9</sup>. Work samples have a defined time standard against which a person's performance can be measured<sup>9</sup>. Some universities in South Africa include education on the use of Predetermined Time Standard (PTS) to develop and standardise work samples at both an undergraduate and postgraduate level. One PTS that South African occupational therapists are trained in to develop and administer work samples, is the Modular Arrangement of Predetermined Time Standard (MODAPTS). Occupational therapists use MODAPTS to self-develop work samples<sup>8,9</sup>. When using self-developed work samples (developed using MODAPTS), the PTS is used to determine the reasonable time for a task to be completed by a person, prior to seeing or administering the sample on a client. Times established for basic human motions are used to determine the reasonable time<sup>16</sup>. MODAPTS assumes that all body movements can be described as a multiple of the time that it takes to move a single finger, with the time being 0.129 seconds<sup>8</sup>. When using self-developed work samples, the client's performance is measured against the MODAPTS standard time (the reasonable time) to determine the client's capability in terms of work speed. Observations of the client's performance skills, as well as behaviours can be made during administration of a work sample in addition to measuring work speed.

MODAPTS is a valid assessment method<sup>8</sup>, which indicates that MODAPTS accurately measures work speed. However, occupational therapists appear hesitant to use MODAPTS because they do not feel confident in using it<sup>17</sup>. Along with lack of confidence, other reasons cited for not using self-developed MODAPTS work samples include having no training, it is not cost-effective, it is not time-effective, it is not applicable in the setting and it is unfamiliar or unknown

to the therapists<sup>18</sup>. Concerns were also raised regarding insufficient under-graduate training in MODAPTS for occupational therapists and their confidence in using MODAPTS<sup>17</sup>. Harmse<sup>8</sup> found that occupational therapists viewed MODAPTS as clinically usable, but developing the work samples when making use of MODAPTS was difficult and time-consuming<sup>8</sup>. De Klerk<sup>18</sup> stated that the use of MODAPTS by occupational therapists is infrequent or non-existent<sup>18</sup>. There are various other methods that include speed of performance to assess work speed (such as the series of VALPAR component work samples) but many of these methods are imported and costly for South African occupational therapists whose resources are guarded.

An important aspect considered by occupational therapists in selecting an assessment method is clinical utility. Clinical utility is described as the usefulness and relevance of an assessment tool or measure<sup>19</sup>. Clinical utility includes aspects such as safety, practicality, reliability<sup>10</sup>, cost-effectiveness, time-effectiveness, applicability, credibility<sup>8</sup>, accuracy, flexibility, suitability, comprehensiveness, feasibility, value and adaptability<sup>20</sup> of an assessment or assessment tool. Therefore, clinical utility is important because it determines the practitioner's views/judgment about an assessment tool<sup>21</sup> and will most likely influence their use thereof. Currently, there is no research available on the clinical utility of MODAPTS by occupational therapists. Establishing clinical utility of MODAPTS may increase its use in practice, as a cost effective, performance-based assessment which could strengthen work assessments delivered by occupational therapists in many settings.

For South African occupational therapists, the use of MODAPTS could prove to be valuable for the assessment of work speed as it focuses on the time<sup>22</sup>, is available in South Africa, has been proven to be valid and is not costly. Occupational therapists can self-develop work samples, using MODAPTS, which suit the client's work context and is individualised to the client. Within the South African context, occupational therapists can also make use of resources and equipment available to them when developing and setting up the MODAPTS samples, which is beneficial and cost-effective. MODAPTS has great potential value during work assessments but is not utilised by many occupational therapists during work assessments. To our knowledge, no research could be found by the authors addressing the clinical utility of MODAPTS in occupational therapy. Therefore, research was undertaken to establish how South African occupational therapists perceived MODAPTS and how this influenced their use of MODAPTS.

## LITERATURE REVIEW

Recent literature indicates that occupational therapists are placing a greater emphasis on work/vocational rehabilitation and providing it as part of their services<sup>5,14,15,22</sup>. This is important as occupational therapists play an important role in assessing a client's function and providing targeted interventions<sup>26</sup>, with vocational rehabilitation a central part of practice<sup>10</sup>.

In contrast to occupational therapists, industrial engineers use PTS to estimate the duration of manual tasks in

projects (therefore, they look at the PTS itself). MODAPTS is used by industrial engineers internationally in the manufacturing industry<sup>8</sup>. The effectiveness of MODAPTS as used in engineering was compared to other PTS by Glopîra<sup>23</sup>. The results revealed that MODAPTS were in line with other, more recognised, PTS<sup>23</sup>. It was therefore concluded that MODAPTS was superior due to its simplicity, easiness to set up and cheaper costs<sup>23</sup>.

Advantages of using MODAPTS as part of occupational therapy practice have been explored by researchers. Van Biljon<sup>17</sup> indicated that by using MODAPTS, clients are motivated to improve their task completion times<sup>17</sup>. Participation in MODAPTS work samples provides immediate feedback to clients, and observations and self-evaluations can be made while administering the work sample<sup>17</sup>. MODAPTS tasks can be smaller parts of a larger activity and can be used in various contexts. MODAPTS is cost-effective and easy to use for the occupational therapist and the MODAPTS tasks are easy for the client to follow<sup>17</sup>. Occupational therapists find it easy to administer a MODAPTS sample for assessment once the MODAPTS task has been developed<sup>8</sup>. However, disadvantages of MODAPTS have also been raised. Van Biljon<sup>17</sup> argued that when making use of MODAPTS, the environment and pathology are not considered, only a smaller part of a larger task is used, it just measures the client's performance at a point in time (and not for a full work shift), and that it should not be used in isolation for assessment or treatment<sup>17</sup>.

Occupational therapists do not have many available methods to assess ability to work which includes a time component. Most commonly used are the Valpar Component Work Samples (VCWS) and other commercially available assessments, that mainly focus on fine motor control. MODAPTS samples, used in assessment, include a time component. However, when considering an assessment method, researchers generally consider aspects such as usage, choice, frequency of use, knowledge and type of measurement tool when they determine the clinical utility of an assessment method<sup>10,18,20</sup>, and it is unknown which aspects South African occupational therapists consider regarding MODAPTS.

According to a study conducted by van Biljon<sup>17</sup>, occupational therapists were encouraged by the Gauteng Vocational Rehabilitation Task Team (VRTT) to develop their own MODAPTS samples which they can use in clinical settings with confidence and ease<sup>17</sup>. This would allow for specific client centred assessments that is based on a client's specific job demands and/or limitations. Adopting such practice would be in line with the continued recommendation for moving toward performance-based assessment as opposed to novel and abstract tasks used for assessment. Although occupational therapists are encouraged to make use of MODAPTS in some settings, there is no research available on the clinical utility thereof. The question was therefore raised: What are the perceptions of South African occupational therapists of the clinical utility of MODAPTS during work assessment? This research therefore aimed at determining the perceptions of South African occupational therapists of the

clinical utility of MODAPTS during work assessment. The objectives of the research were to:

- Determine whether occupational therapists consider MODAPTS as a PTS to develop work samples that delivers credible (valid, reliable and accurate) results during the assessment of work speed.
- Determine whether occupational therapists perceive MODAPTS as a practical (practicality, time management, cost-effectiveness, applicable) and useful PTS used to develop work samples that can be used frequently in work assessment.
- Determine whether occupational therapists find it easy to develop work samples using MODAPTS.

## METHODOLOGY

### Theoretical framework

According to Smart<sup>21</sup>, clinical utility is a multi-dimensional judgment made by practitioners about the usefulness, advantages and disadvantages of an intervention<sup>21</sup>. The core concepts and dimensions of the multi-dimensional model of clinical utility are what practitioners consider when determining the clinical utility of a tool or assessment method<sup>21</sup>. In this study, the researchers used the core concepts and dimensions of the multi-dimensional model of clinical utility, developed by Smart<sup>21</sup>, to guide the research. The core concepts included the following:

- Ease of use of materials and methods (availability, price, clear instructions, and the location requirements).
- Training and qualifications required (knowledge used, training and availability of training).
- Time of administering.
- Format (acceptability to client and clinician and the role of the client).
- Interpretation (ease, information technology, support, requirements and training interpretation).
- Meaning and relevance of information obtained (information gained, use of information, responding to clinical change and factors that compromise the use of the information)<sup>24</sup>.

The dimensions of clinical utility include appropriateness (effectiveness and relevance), accessibility (resource implications and procurement), practicality (functionality, sustainability, training and knowledge) and acceptability (to the clinician, client and society)<sup>21</sup>. For this study, clinical utility referred to the usefulness and practicality of MODAPTS during work assessment, including credibility (validity, reliability and accuracy), practicality (practical, time management, cost-effectiveness, applicable) and ease of utilising MODAPTS.

### Research design

A quantitative, cross-sectional, descriptive research design<sup>24,25,26</sup> was used for this study. A quantitative approach allowed for drawing comparisons between the objectives, occupational therapists' years of experience (level of expertise) and various other questions to be able to determine their perceptions. This design also allowed for specific, quantifiable data. By using a descriptive design, an understanding of the occupational therapists' perceptions of

the clinical utility of MODAPTS could be understood, formulated and presented.

### Population

The research population consisted of South African occupational therapists who conducted work assessments, in both the private and public health sectors at the time of data collection. According to the Occupational Therapy Association of South Africa (OTASA) annual report, there were 356 occupational therapists registered who reported conducting work assessments.

### Sampling method

Non-probability sampling<sup>24</sup> with elements of voluntary responsesampling<sup>24</sup> and snowball sampling<sup>27</sup> was used to recruit respondents. Only occupational therapists currently conducting work assessments were included in the sample, their participation was voluntary, and respondents were asked to redistribute invitations to potential respondents so that the response rate could be increased. Methods of distribution included an email distributed by OTASA using their database, and a research invitation that was distributed through WhatsApp and Telegram groups with special interest in work assessments and vocational rehabilitation services. The link to the online questionnaire was included in all distributions. The respondents had to be registered with the Health Professions Council of South Africa (HPCSA) and conduct work assessments as part of occupational therapy practice to be eligible to participate in the study. Occupational therapists who practiced outside of South Africa or who were employed full time as occupational therapy lecturers at institutions of higher learning were excluded from the study.

### Data collection instrument

Data were collected through an electronic questionnaire developed using on-line survey software, Qualtrics. The questions were based on the theoretical framework and the questionnaire was piloted. It was sent to three occupational therapists with varied expertise (one in research design, one in vocational rehabilitation and one in work and vocational rehabilitation) to evaluate the questionnaire's content, usefulness and face validity. The feedback was obtained on pre-developed feedback forms that were distributed and received via email. The feedback received from the pilot study was incorporated into the final online questionnaire. The questionnaire was divided into three sections with subsections. The first section included information on the inclusion criteria and informed consent. The second section contained questions relating to demographic information of the participants, which assisted in compiling the respondent profile. The third section focused on the credibility, ease of use, practicality and usefulness of MODAPTS work samples. A four-point Likert scale (strongly agree = 4, agree = 3, disagree = 2 and strongly disagree = 1) was used in the third section. Table I (adjacent) provides an overview of the questions that were asked to determine the occupational therapists' perceptions of the credibility, practicality and usefulness, and ease of use of MODAPTS work samples, both in terms of using existing samples and developing new samples. The respondents had to rate their level of agreement with the statements on the four-point Likert scale.

**Table I: MODAPTS-focused questions to determine perceptions on its clinical utility**

Aspect of clinical utility	Do you agree with the following statement:
Credibility	<ul style="list-style-type: none"> <li>• MODAPTS work samples are consistent (reliable) in measuring the work speed of the client.</li> <li>• MODAPTS work samples deliver accurate assessment results.</li> <li>• MODAPTS work samples deliver reliable assessment of work speed in work assessments (the results can be trusted).</li> </ul>
Ease of use	<ul style="list-style-type: none"> <li>• MODAPTS work samples are easily incorporated into your clinical practice and during work assessment.</li> <li>• MODAPTS work samples can be easily adapted and applied to different work assessment environments and contexts.</li> <li>• You consider MODAPTS work samples to be feasible (easy and convenient).</li> <li>• It is easy to develop MODAPTS tasks.</li> <li>• The equipment/tools/materials used in MODAPTS work samples are portable.</li> <li>• It is easy to understand and make use of the codes of MODAPTS in your experience.</li> <li>• It is easy for other stakeholders to understand the results of a MODAPTS assessment sample.</li> </ul>
Practicality and usefulness	<ul style="list-style-type: none"> <li>• MODAPTS work samples are appropriate (suitable) to use for work related assessments.</li> <li>• You consider MODAPTS work samples to be feasible (easy and convenient).</li> <li>• Administration of MODAPTS work samples are time-effective.</li> <li>• Administration of MODAPTS work samples are cost-effective (inexpensive in terms of tools, equipment or other resources).</li> <li>• The equipment/tools/materials used in MODAPTS work samples are portable.</li> </ul>

### Data collection methods

The final questionnaire was distributed to all occupational therapists registered on the OTASA database. The questionnaire was sent on three different occasions to increase the response rate. An invitation to participate was also distributed via WhatsApp and Telegram groups for occupational therapists with a special interest in vocational rehabilitation on three occasions. Responses were electronically submitted through Qualtrics and exported to Excel.

### Data analysis

Descriptive statistics were used to analyse the quantitative data which summarised, organised, compared, evaluated and interpreted the data. The data was cleaned by applying filters on Qualtrics to exclude questionnaires that were incomplete. The frequencies of responses were calculated by Qualtrics, based on internal response rate whereby the percentage rate was calculated based on the number of respondents responding to a specific question. Pivot tables were generated using Microsoft Excel spreadsheets to compare the results, to analyse the relationship between specific questions, such as questions concerning experience in MODAPTS and ease of incorporating MODAPTS in practice. The percentage agreement was calculated using the numbers associated with

the four-point Likert scale (strongly agree = 4, agree = 3, disagree = 2 and strongly disagree = 1) by summing the chosen answer numbers (of the four-point Likert scale) on MODAPTS focused questions, dividing the total of each question by 208 (total number of responses for each answer of the four-point level Likert scale) and multiplying the answer by 100 to obtain a percentage. Thereafter, Lynn's content validity index proportions were used to interpret the results using the collective agreement<sup>28</sup>. The internal consistency of the questionnaire was calculated using Cronbach's Alpha<sup>29</sup> and was calculated to be 0.938 which proves that the Likert-scale questions were consistent, which demonstrates the rigour of the study.

### Ethical considerations

This research protocol was approved by the Research Ethics Committee of the University of Pretoria, approval number 694/21. Informed consent was included in the first section of the online questionnaire. The nature and purpose of the study, explanation of the procedures and the expectations of the respondents should they wish to participate, was included in the informed consent. The respondents provided their informed consent on the questionnaire after they had read and understood what was required of them to participate in the study.

## RESULTS

### Respondent profile

According to the OTASA annual report, there were 356 occupational therapists registered who conducted work assessments during 2021. This represented 13% of OTASA members<sup>30</sup>. The number of responses received were 63. Of the 63 responses, 52 responses were included after data cleaning. The majority of respondents (n=35) practiced in the Gauteng province (67%). Further, majority (n=41) indicated working in urban/suburban areas (79%).

Years of experience in vocational rehabilitation ranged from less than one year to more than 30 years. Most respondents (n=18) indicated having between 6 and 10 years of experience in vocational rehabilitation (34.6%). Of the 52 respondents, 33 (63%) reported having a postgraduate qualification. These included 16 post-graduate diplomas (30%), 13 master's degrees (25%), three honours degrees (6%) and 1 PhD (2%). Twenty-two (42%) respondents indicated having received MODAPTS training in undergraduate programs with 15 respondents (29%) who reported that their training was received at a post-graduate level. Five respondents (10%) indicated that they received training at a course or workshop, while nine (17%) received training at their place of work either through in-service training or from colleagues. One respondent (2%) indicated obtaining knowledge from publications. Respondents were able to indicate more than one practice setting where they worked. The most prevalent practice setting was private healthcare practices, clinics and hospitals (n=45). This was followed by public healthcare settings (n=9), the insurance sector (n=6), and the mining industry (n=2).

### MODAPTS in practice

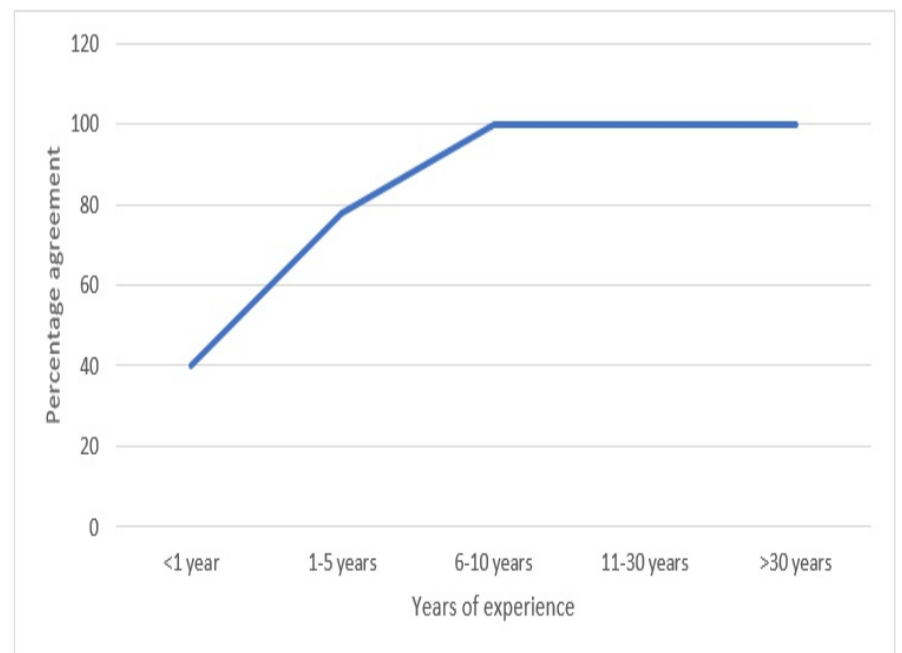
At the time of data collection 33 respondents (65%) reported administering MODAPTS work samples. Reasons reported for

not administering MODAPTS work samples included, lack of understanding and training, the use of other standardized assessment methods, and that MODAPTS was not practical for the setting. Twenty-three (n=23) respondents (44%) were not aware of published evidence on the use of MODAPTS. Thirty-six (n=36) of the respondents (69%) agreed that they were confident in the use of MODAPTS work samples.

Twenty-eight (n=28) respondents (54%) stated that they never developed work samples, 18 respondents (35%) developed samples yearly, and six respondents (11%) developed samples every six months. The main barriers to developing samples were reported as it being time consuming to develop samples and that the respondents have other tools they preferred to use. MODAPTS work samples were used weekly by 18 respondents (35%), monthly by 13 respondents (25%), rarely by 12 respondents (23%) and never by nine respondents (17%). Seventeen (n=17) of the respondents, (33%) reported that they were reluctant to make use of MODAPTS when assessing clients, and the main reason for the reluctance was reported as difficulty to develop MODAPTS work samples.

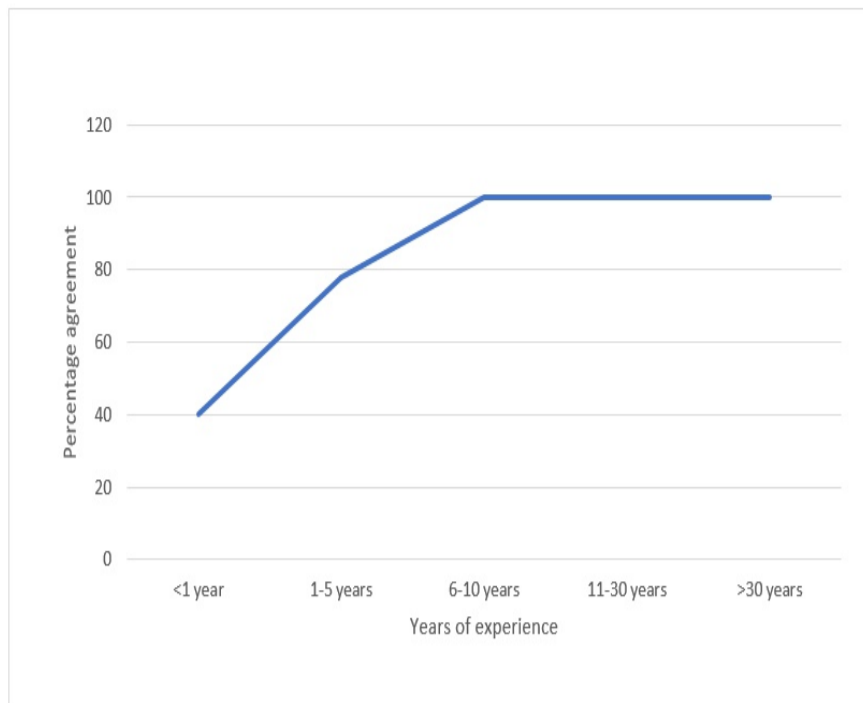
The majority (40) of the respondents (77%) indicated an interest in training in the use of MODAPTS, while the remaining respondents indicated no interest. Reasons for disinterest included already being trained in the use of MODAPTS or preferring another assessment tool. From the results, it was found that most (n=27) of respondents (52%) supplemented MODAPTS with other work samples and reasons for this included triangulation and consistency testing.

Figure 1 (below) displays the correlation between having experience in MODAPTS and perceiving it to be an accurate assessment method of work speed. Occupational therapists who had been using MODAPTS longer (measured in years) perceived MODAPTS to be more accurate (percentage agreement).



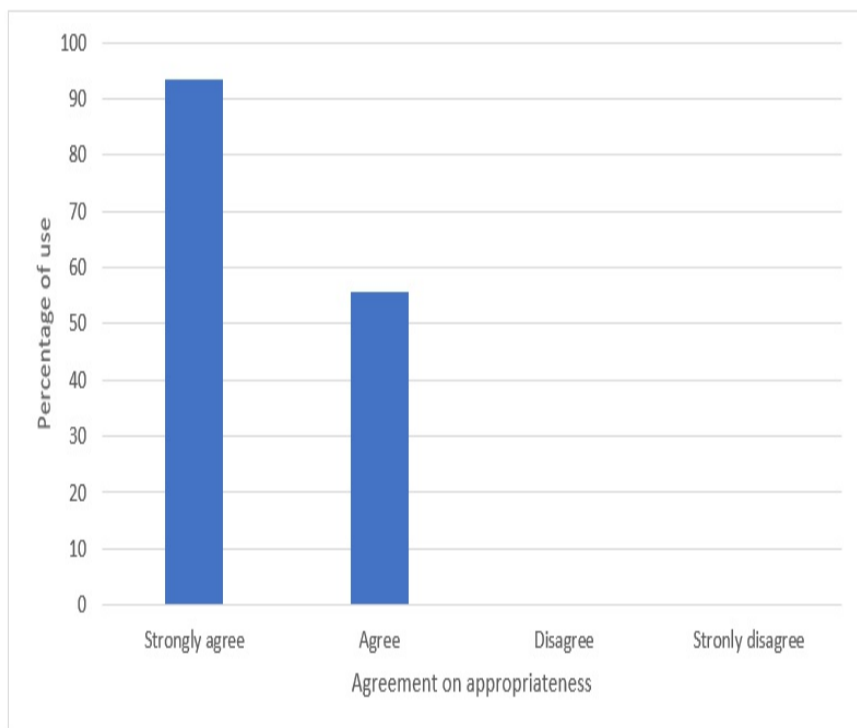
**Figure 1: Correlation between years of experience and perceived accuracy (n=52).**

Figure 2 (page 50) demonstrates the correlation between years of experience and perceived ease of incorporating MODAPTS into practice.



**Figure 2: Correlation between experience and perceived ease of incorporation (n=52).**

Lastly, Figure 3 (below) demonstrates the correlation between perceived appropriateness and use of MODAPTS in practice.

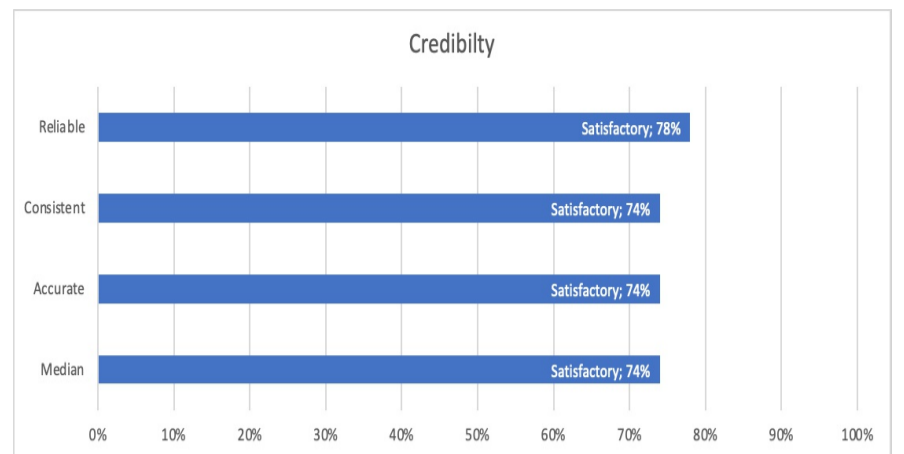


**Figure 3: Correlation between perceived appropriateness and use of MODAPTS (n=52).**

### Perceived utility of MODAPTS

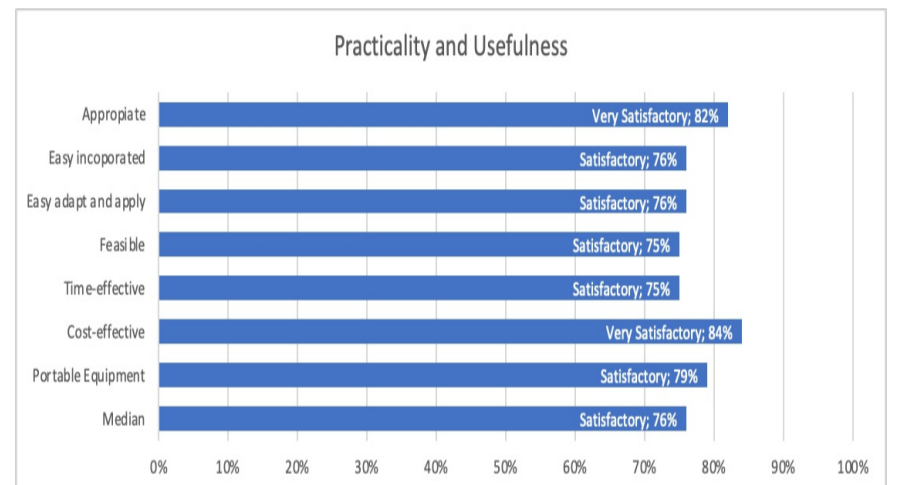
The results demonstrated in figures 4, 5, and 6 (adjacent, respectively) are based on the analysis of the four-point Likert scale questions and speak to the level of agreement within the sample about the various aspects included in credibility, practicality and usefulness, and ease of use. Based on Lynn's content validity index, proportions from 60-69% can be interpreted as acceptable, 70-79% as satisfactory and 80-100% as very satisfactory<sup>28</sup>.

Regarding *credibility*, the respondents' perceptions regarding consistency, accuracy and reliability of MODAPTS were considered, which is indicated in Figure 4 (adjacent).



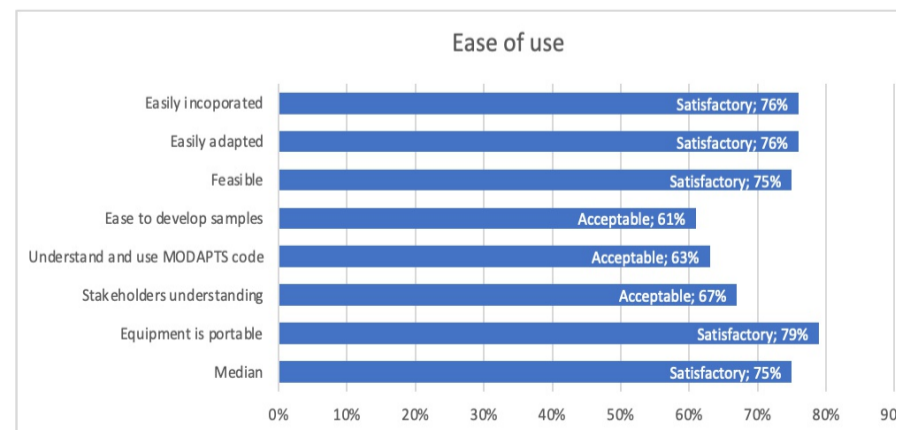
**Figure 4: Credibility of MODAPTS (n=52).**

Regarding *practicality and usefulness*, the following was considered: the participants' perceptions of the appropriateness and ease of incorporation of MODAPTS into clinical practice and during work assessment, if work samples can be easily adapted and applied to different work assessment environments and contexts, if MODAPTS work samples are feasible (easy and convenient), time effective, cost-effective and if MODAPTS work samples have portable equipment/tools/materials. Figure 5 (below) indicates the responses on the different aspects of practicality and usefulness:



**Figure 5: Practicality and usefulness of MODAPTS (n=52)**

Regarding *ease of use*, the following was considered: the participants' perceptions on the ease of incorporation and adaptation of MODAPTS work samples, the feasibility, the ease of developing work samples, the understanding and use of MODAPTS codes, whether stakeholders understand MODAPTS and the portability of equipment and tools used for the MODAPTS work samples. Figure 6 (below) indicates the responses on the different aspects of the ease of use of MODAPTS:



**Figure 6: Ease of use of MODAPTS (n=52).**

## DISCUSSION

The results indicated that many respondents were not aware of published evidence supporting MODAPTS and, based on the response rate, a deduction can be made that occupational therapists are unwilling or unable to contribute to further research on MODAPTS. It can be assumed that the lack of awareness of published evidence on MODAPTS is also a reason for the PTS not being used to develop work samples.

In addition, by comparing the therapists' experience in vocational rehabilitation/work assessment and MODAPTS with their confidence in the use of MODAPTS, it was clear that more experience correlated with more confidence in using MODAPTS. Similarly, respondents who received formal training in MODAPTS, have increased confidence in using the PTS to develop and administer work samples. Comparison of previous training and frequency of use, revealed that an increase in training and education in MODAPTS leads to an increase in the use of MODAPTS. This also correlated with the research findings that indicated that more experienced occupational therapists develop work samples, using MODAPTS, more often. Therefore, it can be assumed that an increase in formal training and opportunities to gain experience in the use of MODAPTS will increase the use thereof. This finding is supported by O'Brien et al<sup>31</sup> and Prior et al,<sup>32</sup> who found that occupational therapists were more confident in work-related services after they had received training<sup>31,32</sup>. The findings are also supported by van Biljon<sup>17</sup> who stated that under-graduate training in MODAPTS is insufficient to enable occupational therapists to feel comfortable with using MODAPTS<sup>17</sup>. Occupational therapists who were not trained in the use of MODAPTS tend to not use it in practice<sup>17,18</sup>. Respondents with increased experience and confidence in the development of work samples using MODAPTS reported greater ease in adapting MODAPTS samples and incorporating them in the work assessments.

MODAPTS was reported as being most useful for the assessment of clients with physical conditions, and as less useful for other conditions, such as neurological- and mental health conditions. This is supported by the results that indicate that all respondents conduct work assessments for physical-, neurological- and mental health conditions with relatively equal distribution; however, MODAPTS is used during work assessment mainly for physical conditions.

Only a few respondents found mental operations MODAPTS codes easy to use. This could allude to the fact that MODAPTS is not used in the assessment of clients with mental health conditions and/or with mainly cognitive limitations. Developing work samples has been identified as time-consuming. If practitioners find it difficult to use some of the codes, and therefore have difficulty with determining which codes to use, additional constraints are placed on their time. Therefore, the difficulty of using some of the codes is a contributing factor to the clinical utility of MODAPTS during work assessments.

### Credibility

The respondents perceived MODAPTS as a consistent measure of work speed with a satisfactory level of agreement. Similarly, the respondents' agreement level regarding the

delivery of accurate results when utilising MODAPTS is also satisfactory. This is supported in a study by Glopîra<sup>23</sup> where he found that MODAPTS delivers accurate and reliable results<sup>23</sup>. However, the findings are contradicted by another study, where the results indicated that occupational therapists do not believe that MODAPTS yields accurate results<sup>8</sup>. This is possibly attributed to the confidence level in developing work samples, because if an occupational therapist lacks confidence in developing a work sample, using MODAPTS, then the occupational therapist will most likely doubt the accuracy of the results yielded from the sample. The results reflected that the more experience occupational therapists have in using MODAPTS, the more they view it as an accurate assessment method.

Regarding the reliability of MODAPTS, the respondents' agreement was satisfactory, therefore, the assumption can be made that the respondents perceive it as reliable. A study conducted by Glopîra<sup>23</sup> yielded similar results in which MODAPTS was found to deliver reliable and accurate results<sup>23</sup>. Although the validity of MODAPTS has been proven<sup>8</sup> and occupational therapists perceive MODAPTS as reliable, consistent and accurate in this study, occupational therapists are infrequently using MODAPTS in practice. During the research it was clear that three aspects heavily impact on the use of MODAPTS work samples, and these are the time required and difficulty in development of tasks, and lack of confidence. This then begs the question: if occupational therapists are perceiving MODAPTS as a credible PTS, why is it not being utilised more as part of work assessments?

### Practicality and usefulness

The respondents' level of agreement was satisfactory in terms of MODAPTS being an easily incorporated PTS, as well as MODAPTS tasks being easily adapted and applied. Other studies support the findings in stating that MODAPTS is easy to apply<sup>8,17,23</sup>. Based on the agreement level of feasibility, it can be assumed that the sample perceived MODAPTS as a feasible PTS. Similarly, it can be assumed that the sample perceived MODAPTS as a time-effective PTS, which was also confirmed in previous studies<sup>8,18</sup>. However, this contradicts the participants' comments where they stated, amongst other things, that they did not use MODAPTS due to the timeliness associated with developing samples. MODAPTS is perceived as a cost-effective PTS, which correlates with findings in other studies completed on MODAPTS<sup>17,23</sup>. Glopîra<sup>23</sup> also found that MODAPTS was cost effective when compared to other PTS.

Despite the positive perceptions of the cost-effectiveness of MODAPTS samples, some respondents indicated that they prefer other standardized assessments, such as the VCWS series which is more expensive. This may be due to the belief that MODAPTS is insufficient in work assessments, a lack of experience and confidence in MODAPTS or the timeliness and difficulty in self-developing samples, since the VCWS series is already developed and self-development is not required. It was noticed that the more experience an occupational therapist has in using MODAPTS, the easier it is for them to use it. Harmse<sup>8</sup> has also found that it is difficult for occupational therapists to develop MODAPTS as adequate in assessing work speed of clients<sup>8</sup>.

### **Ease of use**

Regarding the ease of developing MODAPTS work samples, the respondents' level of agreement just fell within the acceptable range. A sizable number of respondents indicated that they are reluctant to make use of MODAPTS samples when assessing a client and this is due to the difficulty in developing the MODAPTS samples. This correlates with other results obtained where the respondents indicated that they do not develop MODAPTS samples because it is time consuming, and they would rather use other assessment tools. Harmse<sup>13</sup> yielded similar results regarding participants' reluctance in developing work samples using MODAPTS and also yielded similar reasons for their reluctance which included lack of confidence, it being time consuming and the availability of other test<sup>8</sup>. Cho, Lee and Park<sup>16</sup> also argue that MODAPTS is a complicated process.

Although respondents experienced difficulties in developing work samples, they found it easy to use developed work samples and find certain codes easier to use than others.

According to van Biljon<sup>17</sup>, MODAPTS is objective and easy to use<sup>17</sup> and Glopîra's<sup>23</sup> study results agreed that MODAPTS is easy to apply. Cho, Lee and Park<sup>16</sup> however argued that MODAPTS is a complicated process which is difficult to learn. Additionally, an acceptable level of agreement was reached regarding stakeholders' understanding of results of a work sample developed using MODAPTS.

Occupational therapists should not be deterred from using MODAPTS to develop work samples because it is clinically useful, less costly and easy for other stakeholders to understand. Work samples, developed using MODAPTS, can be developed to be unique to a client and their needs. In spite of this and the results indicating that MODAPTS is clinically useful (and accessible and less costly in South Africa), occupational therapists are still reluctant to use MODAPTS, unless they are experienced and have confidence in using it. It is important to note that more formal training in MODAPTS may therefore lead to more positive perceptions on the ease of use of MODAPTS including the development of the work samples, resulting in larger quantities of occupational therapists using MODAPTS. This assumption can be justified by the results indicating that formal training and experience increase ease of use.

### **CONCLUSION**

The findings of this study support the clinical utility of MODAPTS, to varying degrees. It was perceived as very satisfactory in terms of practicality and usefulness; whereas it was perceived as credible and easy to use at a satisfactory level, by the South African occupational therapists during work assessments. The greatest barriers in using MODAPTS was the difficulty in generating new samples, having other assessment tools that are perceived to be more useful and reliable and not having enough training and confidence in the use of MODAPTS. The findings also implied that experienced occupational therapists, those who were currently using MODAPTS and had sufficient knowledge and experience using MODAPTS, found it easy to use and adapt to different settings as well as find it easy to develop new work samples. However, in relation to the information provided, many

occupational therapists are still not making use of MODAPTS in clinical practice. This study contributes to further development of the clinical utility of MODAPTS in clinical settings, focusing mainly on its credibility, practicality and usefulness, and ease of use.

### **Limitations**

A total of 63 respondents participated in the online questionnaire, but a full response number of 52 respondents completed the questionnaire. This represented 13% of the population, therefore limiting generalisation of the findings of this study. Another limitation noted was the lack of diversity within the sample as most respondents were from Gauteng or Western Cape provinces as well as most respondents working in private practice and none working in rural settings. None of the respondents worked in the primary healthcare or banking sectors. There were no respondents from the Eastern Cape, Northern Cape or Limpopo provinces. It is unclear whether this is representative of limited occupational therapists working in these areas and practice settings, or whether responses were low from those areas and settings. A respondent profile including more diversity in demographics would have strengthened the results of the research. A higher response rate would have further strengthened the research.

### **Recommendations**

The results of this study indicated a need for increased published research on the use of MODAPTS in occupational therapy. It is also deduced from the results that earlier exposure to and incorporation of MODAPTS into undergraduate programmes could lead to an increase in use of MODAPTS - this statement can be justified by the comparison between experience, confidence and use of MODAPTS as it has been mentioned that an increase in experience and confidence leads to an increase in the use of MODAPTS.

The results indicated that within vocational rehabilitation in South Africa, assessment far exceeds treatment, including work hardening and work conditioning. Further investigation into the occurrence and its reason is recommended.

Due to the perceived difficulty in developing samples, establishing a global network to upload/share and peer review MODAPTS samples is suggested. This could further lead to a network of occupational therapists that can help develop and moderate work samples.

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### **Author contributions**

Caitlin Slawson, Sian Furniss, Karma Jacobs, Boitumelo Rapolai and Kwena Rapotu completed this study as part of their Bachelors degree in Occupational Therapy (BOccTher) and they were responsible for gathering information on the research topic, data collection, analysis and writing of the article. Dr Tania Buys and Suzanne Harmse were supervisors of the study and guided the process by providing regular feedback. All authors contributed to the conceptualisation of



of the research, proposal development, writing up of the research and approved the article for publication.

### Conflicts of interest

The authors have no conflicts of interest to declare.

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