

## LEVEL 7 ASSESSMENT SPECIFICATION

|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                      |                                   |
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| Lecturer:                       | Dr. Andrew Chan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Internal Verifier:                                   |                                   |
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| Submission method:              | <p>All written assessments, where practical and possible, must be submitted via Turnitin unless otherwise instructed by the Lecturer. (Please DO NOT put this assessment specification into Turnitin or it will match many similarities with other students' submissions.)</p> <p><b>Alternative submission method (if applicable):</b></p> <p><b>Late submission of the assessment will result in a late penalty mark.</b> Penalties for late submission: Up to one week late, maximum mark of 50%. Over one week late, 0%. Only the Extenuating Circumstances Panel may approve a change to submission dates.</p> |                                                      |                                   |
| Academic honesty / referencing: | <p>Academic honesty is required. In the main body of your submission you must give credit to authors on whose research and ideas your work is based. Append to your submission a reference list that indicates the books, articles, etc. that you have used, cited or quoted in order to complete this assessment.</p>                                                                                                                                                                                                                                                                                              |                                                      |                                   |

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## **Background**

The outbreak of Covid-19 has caused many traditional industries to re-examine their capabilities in managing and growing their businesses through more in-depth utilisation of technologies. With the World Health Organisation's continuing recommendation to practice social distancing, many organisations globally have begun to deploy technologies in enabling collaborations through virtual online meetings<sup>1</sup>.

The healthcare services industry is inevitably at the centre of everyone's attention, with many providers reinventing their traditional service models to address the challenges posed by Covid-19. Many governments and private healthcare service providers, especially in light of continuing global shortages of protective equipment like masks and clothings, are being forced to innovate their service models to meet the end-market patients' demand for telemedicine.

Telemedicine As A Service ("TAAS") enables medical practitioners to remotely provide, to their patients, health advice, diagnosis, online prescriptions and delivery of medication to the patient's home through the use of tele-communication devices. There are various companies worth multi-billion US dollars that have adopted TAAS as their core service offering<sup>2</sup>, implementing a platform business model that facilitates millions of tele-consultations between doctors and patients every year.

As compared to the rest of the world, Hong Kong has been a comparatively slow adopter of the TAAS business model. The outbreak of Covid-19 has brought much media attention to the TAAS business model again. Hong Kong's healthcare system relies heavily on the contribution of doctors

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<sup>1</sup> See update from Microsoft website regarding usage of its Cloud computer services in Italy - <https://azure.microsoft.com/en-us/blog/update-2-on-microsoft-cloud-services-continuity/> "We have seen a 775 percent increase in Teams' calling and meeting monthly users in a one month period in Italy, where social distancing or shelter in place orders have been enforced."

<sup>2</sup> One of the leading companies globally is Teladoc (TDOC:US), a US\$10bn+ company that provides tele-consultation services. Another company listed on the Hong Kong Stock Exchange is Ping An Good Doctor, also a US\$11bn+ company (stock code 1833:HK)

working in private practice (i.e. doctors not working for the government), with private practitioners delivering approximately 70% of all consultations every year<sup>3</sup>.

There have been various researches examining the factors influencing the adoption and acceptance of telemedicine by doctors working in the public healthcare sector in Hong Kong (i.e. government managed hospitals). So far, researches on the intention of Hong Kong doctors to adopt telemedicine *in private practices* have been limited.

In addition, as compared to other countries, the regulatory framework in Hong Kong regarding the practice of telemedicine remains unclear. Based on preliminary discussions conducted with various doctors in private practice, official guidance on whether the practice of telemedicine is permitted or prohibited by the relevant regulators will likely have an effect on doctors' intention to adopt telemedicine.

## Literature review

Doctors are the principal users of telemedicine services, and their acceptance of and intention to use technologies to practice medicine have a profound influence on the viability of the TAAS business model in Hong Kong. The definitions of telemedicine services have evolved with time, but common themes of definition have converged on the following key elements, centred on (i) medical (i.e. practice of medicine), (ii) technology (i.e. use of communication systems), (iii) spatial (i.e. geographical separation of patients and doctors) and (iv) benefits (i.e. addresses issues of imbalance between supply of and demand for doctors' services) (Sood, et al., 2007). Researches on telemedicine have primarily been based on the application of the Technology Acceptance Model ("TAM") by Fred D. Davis (Davis, 1989), with further extended TAM models (now commonly termed as the Extended TAM model)(Venkatesh & Davis, 2000) that have since added further theoretical constructs of what leads to usefulness and ease of use. The TAM and extended TAM have since been used as the basis for much research conducted globally on telemedicine, such as whether the

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<sup>3</sup> [https://www.fhb.gov.hk/download/press\\_and\\_publications/otherinfo/180500\\_sr/e\\_ch1.pdf](https://www.fhb.gov.hk/download/press_and_publications/otherinfo/180500_sr/e_ch1.pdf), pg 2 "The private sector is the chief provider of ambulatory care, accounting for about 70% of all medical visits and dental visits, and the majority of these encounters occur in primary care settings."

extended TAM apply to doctors (Chismar & Wiley-Patton, 2003), modification of the extended TAM for hospitals (Aggelidis & Chatzoglou, 2009) and researchers assessing factors that predict the acceptance and intention of doctors in using telemedicine in Korean hospitals (Rho, et al., 2014).

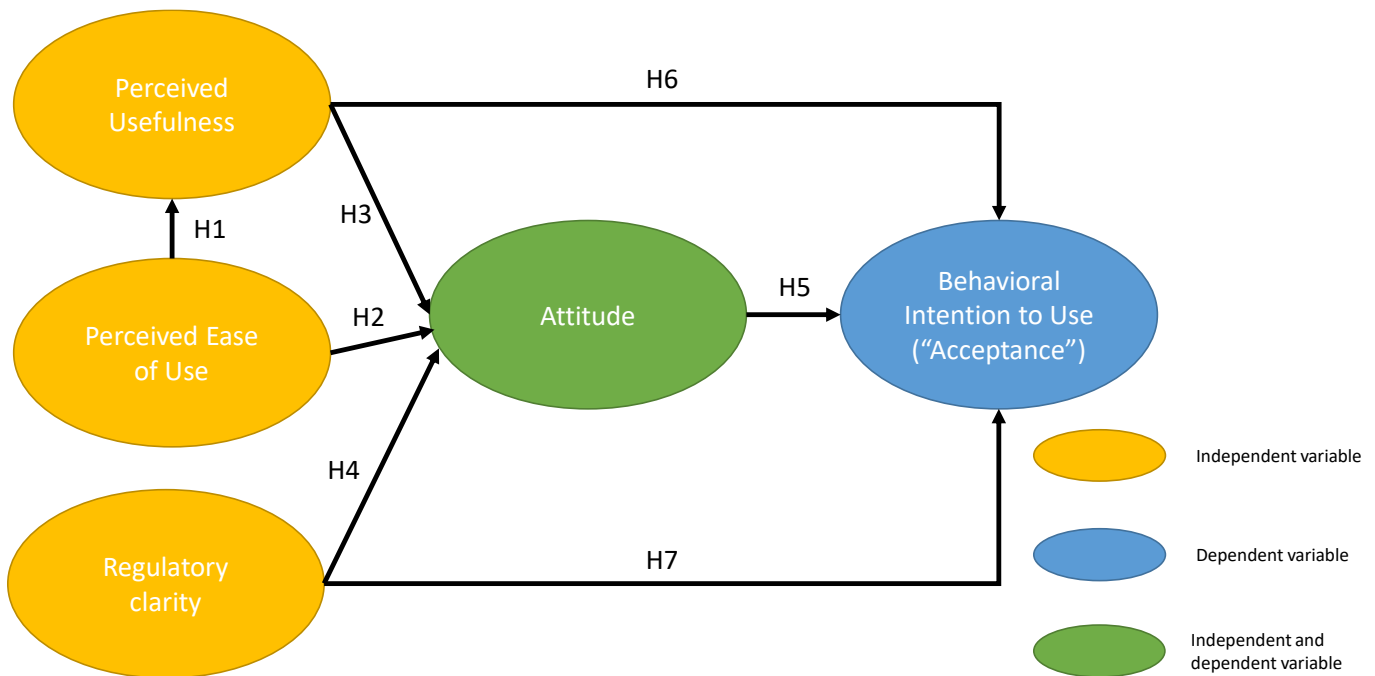
In Hong Kong, a survey was done in 1999 to examine the applicability of the TAM in explaining doctors' decision to use telemedicine (Hu, et al., 1999) in a public hospital setting. The study concluded that while the TAM had explanatory powers, it is necessary to incorporate additional factors to improve the explanatory utility of the TAM model in a healthcare context. More recently, in 2016, an exploratory qualitative study was conducted to examine patient's opinion on telemedicine in a public primary care setting (Kung, et al., 2016). Recurring themes of (i) ease of use of technology and (ii) perceived usefulness were identified during the interviews conducted with the patients.

The research done in Hong Kong, thus far, have generally remained silent on regulatory considerations for doctors practicing in private, a factor which numerous private doctors have voiced as being highly relevant in deciding whether or not to adopt telemedicine in their practices.

## **Research model and hypotheses**

Figure 1 shows the research model for the relations among the various constructs. For the purpose of this assignment, only correlation analysis (as compared to structural path analysis assessing beta coefficients among the various dependent and independent variables) among the various constructs will be conducted:

Figure 1 - Research model hypotheses



Previous studies have shown that both perceived usefulness and perceived ease of use are important factors towards a positive attitude for using telemedicine. The following hypotheses are proposed:

*Hypothesis 1: Perceived ease of use will have a positive effect on perceived usefulness*

*Hypothesis 2: Perceived ease of use will have a positive effect on attitude to use telemedicine*

*Hypothesis 3: Perceived usefulness will have a positive effect on attitude to use telemedicine*

For this assignment, the TAM was expanded to include regulatory awareness as a new construct. Currently, there are no regulations in Hong Kong prohibiting private doctors from delivering telemedicine services. However, conflicting messages have been expressed in different occasions by both Hong Kong government and regulatory bodies. In light of Covid-19, public hospitals have announced the roll out of telemedicine services for non-critical follow up consultations. Large scale private hospital group, such as the Hong Kong Sanatorium Hospital, has also announced the launch of telemedicine services<sup>4</sup>.

It was not until as recent as December 2019 that the Medical Council of Hong Kong, the core governing body for all doctors, issued its first guideline for telemedicine services<sup>5</sup>. As the medical

<sup>4</sup> <http://www.hksh-hospital.com/sites/default/files/publications/en/cb3a8a8bf511c0dc66e9e85024a4f720.pdf>

<sup>5</sup> <https://www.mchk.org.hk/files/newsletter-26th.pdf>

profession is a highly regulated industry, regulatory awareness should lead to positive attitude to use telemedicine.

*Hypothesis 4: Regulatory awareness will have a positive effect on attitude to use telemedicine*

The TAM model draws a conceptual difference between attitude to use telemedicine and intention to use telemedicine. While a private doctor may believe that the usage of telemedicine is beneficial for patient management, his/her intention to use telemedicine might be held back by other factors such as usefulness and regulatory awareness. Therefore, in addition to examining the relationship between attitude and intention to use telemedicine, the perceived usefulness and regulatory awareness are important factors for assessment. The following hypotheses are proposed:

*Hypothesis 5: attitude to use telemedicine will have a positive effect on behavioral intention to use telemedicine*

*Hypothesis 6: perceived usefulness will have a positive effect on behavioral intention to use telemedicine*

*Hypothesis 7: Regulatory awareness will have a positive effect on behavioral intention to use telemedicine*

## **Methodology**

A structured questionnaire was used to collect responses for the study. Items for the survey were developed by first reviewing articles that adopted the TAM in assessing doctors' intention to adopt telemedicine.

Two in-depth interviews were conducted, one with a general practitioner, and one with a specialist doctor, to refine the questionnaire. Following such interviews, using the TAM modified from the Korean study (which contained 24 items) (Rho, et al., 2014) and Hong Kong telemedicine studies (which contained 21 items) (Hu, et al., 1999), certain items not related to this study (such as

accessibility of medical records and perceived incentives) and duplicated items were removed. In addition, 4 items on regulatory awareness were added to the questionnaire.

The questionnaire was divided into 3 sections. Due to limited resources and time, it was not possible to verify the identity of the respondents answering the questionnaire (i.e. whether the doctor answering the survey is in public or private sector). An introduction was clearly provided in the survey that the responses will be used to contribute to an assignment in relation to a Doctor of Business Administration programme.

Section 1 collected background information on the respondents' gender, age, nature of medical practice (i.e. generalist or specialist) and years of private practice. Section 2 was divided into 4 segments, namely, (i) perceived ease of use, (ii) perceived usefulness, (iii) attitude and (iv) regulatory awareness. For each segment, respondents were asked to rate each dimension on a Likert Scale of 1 (strongly disagree) to 5 (strongly agree). In section 3, overall intention to use telemedicine in private practice was measured on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strong agree). A non-random sampling design was adopted and relied on the first set of responding doctors to forward the questionnaire to other doctors practicing in private.

A total of 35 respondents were reviewed. Each respondent spent an average of 7 minutes to complete the questionnaire. An option was provided to the respondents on their interest in receiving a copy of the final survey feedback. 17 out of the 35 respondents expressed interest in receiving a copy of the final survey feedback.

Data were analysed using Statistical Package for Social Sciences (SPSS). The 17 items were first transformed by the principal components method, with 5 items removed for final analysis after initial principal component analysis assessment shows that the certain selected items relating to attitude, usefulness and regulatory awareness were not materially contributing to the correlation analysis.

## Results and Findings

A total of 35 responses were collected, comprising 77% male and 23% female. A majority (91.4%) of the respondents were aged between 25-54 (considered to be the prime time for private practice for doctors). More than half of the respondents (57.1%) had between 1 to 10 years of private practice experience. 23% of the respondents were in general practitioner / family medicine practice, and 77% were in specialist practice. The summary descriptions are set out below:

### Descriptive statistics summary

*Table 1 Gender analysis*

|       |        | Gender    |         |               |                    |
|-------|--------|-----------|---------|---------------|--------------------|
|       |        | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Male   | 27        | 77.1    | 77.1          | 77.1               |
|       | Female | 8         | 22.9    | 22.9          | 100.0              |
|       | Total  | 35        | 100.0   | 100.0         |                    |

*Table 2 Age range analysis*

|       |          | Age range |         |               |                    |
|-------|----------|-----------|---------|---------------|--------------------|
|       |          | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 25-34    | 1         | 2.9     | 2.9           | 2.9                |
|       | 35-44    | 10        | 28.6    | 28.6          | 31.4               |
|       | 45-54    | 21        | 60.0    | 60.0          | 91.4               |
|       | 55-64    | 1         | 2.9     | 2.9           | 94.3               |
|       | Above 65 | 2         | 5.7     | 5.7           | 100.0              |
|       | Total    | 35        | 100.0   | 100.0         |                    |

*Table 3 Years of private practice analysis*

|       |                    | Years of Private Practice |         |               |                    |
|-------|--------------------|---------------------------|---------|---------------|--------------------|
|       |                    | Frequency                 | Percent | Valid Percent | Cumulative Percent |
| Valid | less than 1 year   | 4                         | 11.4    | 11.4          | 11.4               |
|       | 1-5 years          | 6                         | 17.1    | 17.1          | 28.6               |
|       | 6-10 years         | 10                        | 28.6    | 28.6          | 57.1               |
|       | 11-15 years        | 5                         | 14.3    | 14.3          | 71.4               |
|       | more than 15 years | 10                        | 28.6    | 28.6          | 100.0              |
|       | Total              | 35                        | 100.0   | 100.0         |                    |

Table 4 Practice area analysis

| Practice Area |                                    | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------------|------------------------------------|-----------|---------|---------------|--------------------|
| Valid         | General Practice / Family Medicine | 8         | 22.9    | 22.9          | 22.9               |
|               | Specialist                         | 27        | 77.1    | 77.1          | 100.0              |
|               | Total                              | 35        | 100.0   | 100.0         |                    |

The final results for the level of agreement for the items under each construct is set out in Table 5, where a higher number denotes a higher level of agreement with a particular item. The mean score for the independent variables range from 2.34 to 3.83. For completeness of illustration, both independent and dependent variables are summarised in Table 5:

Table 5 Item statements analysis (N = 35)

| Variables                                                    |                                                                                                 | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree | Mean Score* |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------|----------|---------|-------|----------------|-------------|
|                                                              |                                                                                                 | (%)               | (%)      | (%)     | (%)   | (%)            |             |
| <u>Perceived ease of use ("EOU") - independent variable</u>  |                                                                                                 |                   |          |         |       |                |             |
| EOU1                                                         | It is easy for me to use technology to deliver tele-consultations                               | 5.7%              | 17.1%    | 37.1%   | 31.4% | 8.6%           | 3.20        |
| EOU2                                                         | It is easy for me to learn how to use technology devices to deliver tele-consultations          | 2.9%              | 2.9%     | 14.3%   | 68.6% | 11.4%          | 3.83        |
| EOU3                                                         | It is easy for me to perform my job using tecnology devices to deliver tele-consultations       | 5.7%              | 22.9%    | 37.1%   | 25.7% | 8.6%           | 3.09        |
| <u>Perceived usefulness ("U") - independent variable</u>     |                                                                                                 |                   |          |         |       |                |             |
| U1                                                           | Tele-consultation will postively affect the treatment plan I offer to my patient                | 2.9%              | 20.0%    | 34.3%   | 34.3% | 8.6%           | 3.26        |
| U2                                                           | I am able to provide more comprehensive care for my patients using tele-consultations           | 5.7%              | 20.0%    | 42.9%   | 25.7% | 5.7%           | 3.06        |
| U3                                                           | It is efficient for me to schedule to meet with my patients via tele-consultations              | 5.7%              | 20.0%    | 31.4%   | 40.0% | 2.9%           | 3.14        |
| U4                                                           | I am able to provide diagnosis to my patients through tele-consultations                        | 5.7%              | 22.9%    | 37.1%   | 28.6% | 5.7%           | 3.06        |
| U5                                                           | I am able to more effectively monitor my patient's conditions using tele-consultations          | 2.9%              | 2.9%     | 34.3%   | 54.3% | 5.7%           | 3.57        |
| <u>Regulatory awareness ("RA") - independent variable</u>    |                                                                                                 |                   |          |         |       |                |             |
| RA1                                                          | I am familiar with the recommendation in the ethical guideline published by the Medical Council | 8.6%              | 34.3%    | 22.9%   | 28.6% | 5.7%           | 2.89        |
| RA2                                                          | I am familiar with the risks and limitations of tele-consultations                              | 2.9%              | 31.4%    | 17.1%   | 45.7% | 2.9%           | 3.14        |
| RA3                                                          | I am confident that the provision of tele-consultations is covered by insurance                 | 14.3%             | 45.7%    | 31.4%   | 8.6%  | 0.0%           | 2.34        |
| RA4                                                          | I am aware I can prescribe medication and/or laboratory tests via tele-consultations            | 8.6%              | 25.7%    | 25.7%   | 37.1% | 2.9%           | 3.00        |
| <u>Attitude ("ATT") - independent and dependent variable</u> |                                                                                                 |                   |          |         |       |                |             |
| ATT1                                                         | I am able to care for patients living at further distances from my practice                     | 11.4%             | 8.6%     | 20.0%   | 48.6% | 11.4%          | 3.40        |
| ATT2                                                         | I am able to be in contact with patients who seldom come to my practice                         | 11.4%             | 14.3%    | 20.0%   | 48.6% | 5.7%           | 3.23        |
| ATT3                                                         | I am able to make contact with patients who may find it inconvenient and unable to travel       | 11.4%             | 5.7%     | 14.3%   | 51.4% | 17.1%          | 3.57        |
| ATT4                                                         | I am willing to provide tele-consultations to my existing patients                              | 11.4%             | 17.1%    | 17.1%   | 48.6% | 5.7%           | 3.20        |
| ATT5                                                         | I am willing to provide tele-consultations to new patients whom I have not met in person        | 28.6%             | 20.0%    | 31.4%   | 20.0% | 0.0%           | 2.43        |
| <u>Intention to use ("INT") - dependent variable</u>         |                                                                                                 |                   |          |         |       |                |             |
| INT1                                                         | I intend to use tele-consultations for my existing patients                                     | 11.4%             | 14.3%    | 37.1%   | 28.6% | 8.6%           | 3.09        |
| INT2                                                         | I intend to use tele-consultations for potential new patients                                   | 22.9%             | 22.9%    | 37.1%   | 14.3% | 2.9%           | 2.51        |
| INT3                                                         | To the extend possible, I would use tele-consultation frequently in my patient care             | 14.3%             | 20.0%    | 45.7%   | 20.0% | 0.0%           | 2.71        |

\* a 5-point Likert Scale was used, where 1 = Strongly Disagree and 5 = Strongly Agree

### **Factor and reliability analysis**

Principal Components Analysis ("PCA") with Varimax rotation was conducted on the 17 items. Using SPSS, items with a factor loading greater than 0.4 were retained for further analysis. There were 7 items which appeared in 2 components and 3 items which appeared in 3 components. A review of these cross loading items, with reference to the qualitative discussions in the various published journal articles relating to TAM and telemedicine would suggest that such items, even if excluded, would not materially affect the overall analysis. A further PCA excluding such items was then conducted, the results of which are set out in Table 6 below:

Table 6 – Factor analysis with Varimax Rotation of level of agreement with selected items (N=35)

| Items                   | Factor Loading       |                         |                        |                        | Communality |
|-------------------------|----------------------|-------------------------|------------------------|------------------------|-------------|
|                         | Factor 1<br>Attitude | Factor 2<br>Ease of use | Factor 3<br>Usefulness | Factor 4<br>Regulatory |             |
| Attitude Q3             | 0.891                |                         |                        |                        | 0.837       |
| Attitude Q2             | 0.836                |                         |                        |                        | 0.748       |
| Attitude Q1             | 0.799                |                         |                        |                        | 0.834       |
| Attitude Q4             | 0.678                |                         |                        |                        | 0.735       |
| Ease of use Q1          |                      | 0.773                   |                        |                        | 0.717       |
| Ease of use Q3          |                      | 0.753                   |                        |                        | 0.790       |
| Ease of use Q2          |                      | 0.733                   |                        |                        | 0.685       |
| Usefulness Q4           |                      |                         | 0.790                  |                        | 0.782       |
| Usefulness Q2           |                      |                         | 0.783                  |                        | 0.684       |
| Usefulness Q5           |                      |                         | 0.773                  |                        | 0.703       |
| Regulatory Q1           |                      |                         |                        | 0.849                  | 0.839       |
| Regulatory Q2           |                      |                         |                        | 0.817                  | 0.848       |
| Total Scale Reliability | 0.86                 |                         |                        |                        |             |

|                               | Factor 1 | Factor 2    | Factor 3   | Factor 4   |
|-------------------------------|----------|-------------|------------|------------|
| Description                   | Attitude | Ease of use | Usefulness | Regulatory |
| Eigenvalue (EV)               | 3.02     | 2.49        | 2.22       | 1.47       |
| Variance (%)                  | 25.15    | 20.76       | 18.51      | 12.27      |
| Cumulative Variance (%)       | 25.15    | 45.91       | 64.41      | 76.68      |
| Cronbach's Alpha              | 0.89     | 0.82        | 0.77       | 0.63       |
| Number of items (12 in total) | 4        | 3           | 3          | 2          |

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.  
a. Rotation converged in 6 iterations; Loadings >0.4

As depicted in Table 6, results show that 4 factors were extracted with an Eigenvalue >1.0. All revised list of items had high loading on the expected constructs of Attitude, Ease of Use, Usefulness and Regulatory Awareness. Total scale reliability which included all 12 items was 0.86. Each factor, except for Regulatory Awareness (with a Cronbach's Alpha value of 0.63), retained acceptable levels of reliability, with Cronbach's Alpha ranging from 0.77 to 0.89.

## Correlation analysis for hypothesis testing

Correlation of all the independent and dependent variables are set out in the table and in the structural path below:

*Table 7 Correlation analysis of independent and dependent variables*

|             | Attitude      | Ease of Use   | Usefulness    | Regulatory | Intention |
|-------------|---------------|---------------|---------------|------------|-----------|
| Attitude    | 1             |               |               |            |           |
| Ease of Use | <u>.578**</u> | 1             |               |            |           |
| Usefulness  | 0.329         | <u>.551**</u> | 1             |            |           |
| Regulatory  | 0.244         | 0.297         | 0.145         | 1          |           |
| Intention   | <u>.389*</u>  | <u>.667**</u> | <u>.698**</u> | 0.319      | 1         |

\*\**. Correlation is significant at the 0.01 level (2-tailed)*

\**. Correlation is significant at the 0.05 level (2-tailed)*

Based on the correlation analysis, set out below is a summary of the results of the hypotheses testing:

*Table 8 – Summary of results for hypotheses testing*

| Hypothesis no. | Summary                                                                                              | Statistically significant at 0.05 and/or 0.01 level (yes/no)? | Null hypothesis rejected (yes/no)? | Alternative hypothesis - Correlation coefficient |
|----------------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|------------------------------------|--------------------------------------------------|
| 1              | Perceived ease of use will have a positive effect on perceived usefulness                            | Yes                                                           | Yes                                | 0.551                                            |
| 2              | Perceived ease of use will have a positive effect on attitude to use telemedicine                    | Yes                                                           | Yes                                | 0.578                                            |
| 3              | Perceived usefulness will have a positive effect on attitude to use telemedicine                     | No                                                            | No                                 | -                                                |
| 4              | Regulatory awareness will have a positive effect on attitude to use telemedicine                     | No                                                            | No                                 | -                                                |
| 5              | Attitude to use telemedicine will have a positive effect on behavioral intention to use telemedicine | Yes                                                           | Yes                                | 0.389                                            |
| 6              | Perceived usefulness will have a positive effect on behavioral intention to use telemedicine         | Yes                                                           | Yes                                | 0.698                                            |
| 7              | Regulatory awareness will have a positive effect on behavioral intention to use telemedicine         | No                                                            | No                                 | -                                                |

The summary results show that:

### *Hypothesis 1 and 2*

Hypothesis 1 and 2 shows that perceived ease of use are positively correlated with perceived usefulness and attitude to use telemedicine, respectively. The strengths of the positive correlation are acceptable, at 0.551 and 0.578, respectively.

### *Hypothesis 5 and 6*

Attitude to use telemedicine medicine (hypothesis 5) is positively correlated with intention to use telemedicine, the strength of the correlation is comparatively weaker at 0.389. The effect of perceived usefulness on intention to use telemedicine is shown to have the highest correlation efficient (0.698) among all the statistically significant hypotheses.

## **Regression analysis**

Overall intention to adopt telemedicine was regressed against the four factors. The regression results are set out below:

*Table 9 Regression analysis with intention set as dependent variable*

### **Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | .787 <sup>a</sup> | 0.620    | 0.569             | 0.61166                    |

a. Predictors: (Constant), Ease of Use, Regulatory, Usefulness, Attitude

### **ANOVA<sup>a</sup>**

| Model |            | Sum of Squares | df | Mean Square | F      | Sig.              |
|-------|------------|----------------|----|-------------|--------|-------------------|
| 1     | Regression | 18.281         | 4  | 4.570       | 12.215 | .000 <sup>b</sup> |
|       | Residual   | 11.224         | 30 | 0.374       |        |                   |
|       | Total      | 29.505         | 34 |             |        |                   |

a. Dependent Variable: Intention

b. Predictors: (Constant), Ease\_of\_Use, Regulatory, Usefulness, Attitude

### Coefficients<sup>a</sup>

| Model |             | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig.  |
|-------|-------------|-----------------------------|------------|---------------------------|--------|-------|
|       |             | B                           | Std. Error | Beta                      |        |       |
| 1     | (Constant)  | -0.930                      | 0.569      |                           | -1.633 | 0.113 |
|       | Regulatory  | 0.148                       | 0.122      | 0.143                     | 1.211  | 0.235 |
|       | Attitude    | -0.016                      | 0.128      | -0.017                    | -0.124 | 0.902 |
|       | Usefulness  | 0.585                       | 0.165      | 0.478                     | 3.544  | 0.001 |
|       | Ease of Use | 0.421                       | 0.181      | 0.370                     | 2.330  | 0.027 |

a. Dependent Variable: Intention

The regression model was significant at 0.05 and explained 62% of the variance in the dependent variables. In assessing the Beta coefficients of each of the factors, only Usefulness and Ease of Use were statistically significant predictors at the 0.05 level. Usefulness had the greatest predictor effect on intention to use telemedicine and had the highest standardized Beta coefficient value of 0.478, followed second by Ease of Use which had a standardized Beta coefficient value of 0.37. The remaining two factors and the constant value were not statistically significant to be considered for the regression model. These findings suggest that usefulness and ease of use were the most important predictors for private doctors' intention to use telemedicine.

### Discussions and conclusion

The findings of this investigation shows that the TAM model continue to have validity in predicting Hong Kong private doctors' intention to adopt telemedicine. Based on the regression model, usefulness and ease of use appear to be good predictors on doctors' intention to adopt telemedicine. In the Hong Kong private doctors context, the concept of attitude as an intermediate construct, as proposed in the TAM model, appears to be statistically insignificant. The construct of regulatory awareness was also statistically insignificant in being used as a predictor on intention to adopt telemedicine.

Pending further investigations, it might be that private doctors in Hong Kong take the stance that the adoption of telemedicine technology *must already have be permitted by regulations* in the first place when they consider such technology for their practice, and hence the decision to adopt

telemedicine is not materially affected by their awareness of the regulations relating to telemedicine. In other words, if the adoption of telemedicine is strictly prohibited by regulations, the doctors simply might not have any intent to consider telemedicine in the first place. For the construct of attitude, further studies should be conducted to analyse the predictive power of such construct, in the Hong Kong context, on the intention to adopt telemedicine.

This investigative study has important implications for the Hong Kong private doctors market. As the private healthcare sector continue to face business challenges caused by Covid-19, private doctors need to innovate and identify new avenues to reach out to patients and new revenue sources to sustain and grow their private practices. Other global healthcare organisations who have embraced telemedicine have benefited financially in terms of new market opportunities, and also achieved greater brand awareness by contributing their expertise in using technology to make their healthcare services more accessible to those in need.

By identifying (i) the positive factors contributing to, and (ii) potential obstacles hindering the adoption of telemedicine by Hong Kong private doctors, market practitioners, technology companies and regulators can collaborate together to widely adopt telemedicine as new means for patients to access healthcare, ultimately benefitting both the society and the private medical practitioners, together.

## **Limitations**

This investigative study has a few limitations. The results were limited by the small sample size gathered due to the limited time and resources for this assignment. There were also problems in identifying a focused group of doctors for the survey. The practice of medicine is inherently complex, and certain specialties such as Obstetrics and Gynecology and Orthopedics do not easily lend themselves to telemedicine as tools for their practices, and on the other hand, certain specialties such as radiology (i.e. the examination of medical images) and dermatology would more naturally lend themselves to telemedicine as a tool to enhance their practices. The sample chosen was also non-probabilistic and relied on doctors referring other doctors to complete the survey.

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