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Validity and reliability of instrument to measure social media skills among small and medium entrepreneurs at Pengkalan Datu River

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Abstract

This article will discuss the level of validity and reliability of instrument to measure social media skills among small and medium entrepreneurs in Pengkalan Datu River. The level of validity and reliability of a research instrument is very crucial to ensure research credibility. Through this article, it's clearly stated the definition of validity and reliability, the administrated of pilot test, and face validity of the instrument. The findings show the reliability of the instrument is very high with the value of Cronbach alpha exceeding the index of 0.7. Whereas, through the face validity assessment which is run among expertise shown the level of validity is high according to expertise feedback. While, the validity of the instrument was represent by the correlation value is also shown it's very high, with a value of correlation is exceeding 0.3 index of correlation.

Keywords: Face Validity; Reliability; Social Media Skills; Small Medium Enterprise

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1. Introduction

The tremendous emerging of Information and Communications Technology (ICT) in 21st century has making a business going more competitive (Beatty et al., 2001; Dholakia and Kshetri, 2004; Chonge et al., 2009). Skills of social media are very important and need to be learned among small and medium entrepreneurs (SME). Through good social media mastery, entrepreneurs can take advantages of the social media, as follows:

- 1- Promoting and maintaining products that are produced and traded more effectively.
- 2- Creating a virtual network among entrepreneurs effectively.
- 3- Providing and conveying products information to the customers effectively
- 4- Stimulating and persuading customers to buying a traded products
- 5- Provide effective guidelines to customers to use products that are traded properly

Along the Coast of Pengkalan Datu River, there are a variety of small-scale business activities based on heritages products. Among the types of business carried out on the coast of Pengkalan Datu River are farming Kelulut, Farming Crab Soft, Traditional Batik Manufacturing, Rebana Ubi Souvenir Manufacturing, Traditional Mini Kertuk Manufacturing for souvenir, Kayak's Entrepreneur, Small Boat's Entrepreneur, Nipah Vinegar's Entrepreneur, Traditional Cake sellers, Resort and chalet's Entrepreneur in a medium and small scale enterprises and various other business activities carried out by small and medium entrepreneurs in Pengkalan Datu River (Khairul et al., 2016). According to the location of Pengkalan Datu River is strategically located close to the Pengkalan Chepa Airport, Kota Bharu City Centre and Kubang Kerian New City Centre, it's a major factor that Pengkalan Datu river have a high potential to be develop and will be operate as a main Centre of heritage and tourism in Kelantan. In order to develop the infrastructure and facility along the Coast of Pengkalan Datu River, development of minds and skills among local entrepreneurs also needs to be improved respectively. To boosting business activities among entrepreneurs, they must be mastery of social media application. Entrepreneur must be upgrading their skills to use social media. By applying social media in medium and small entrepreneur activities, they could promote and advertise their products widely, almost around the globe (Chong and Pervan, 2007). In promoting activities, perhaps entrepreneur could be increasing their profitability and productivity. Therefore, the skills of social media among small and medium entrepreneurs need to be improved. To enhance the level of social media skills among small and medium entrepreneurs, it is important to control a certain parameter. A specific parameter was influencing the entrepreneur's income and profited have been identify via this studies. When a specific parameter and data being collected, it's will be analyze. The result outcome will be used to identify an appropriate training need to channel to the entrepreneurs.

Nowadays, social media is a powerful medium to convey and spread any information to the end users. The abilities of social media is covering the use of information and communication software such as WhatsApp's, Twitter, Facebook, Web Site, Blog, or Non information and communication software such as video, cameras, TVs or amateur radio to advertise and introduce products to the public for promotional purposes and advertising. Molla and Licker (2005) said the Internet becomes the preferred choice by entrepreneurs because service costs are cheap and suitable for medium and small entrepreneurs that have a limited financial. Unfortunately, there are many small and medium entrepreneurs who are less skilled to take advantage of existing social media facilities for the purpose of promoting and expanding their business. Most small and

medium entrepreneurs, especially Malays entrepreneurs in Malaysia mainly operating in rural areas still tend to use conventional methods due to less exposure to the method of E-Trade (Morganosky, 1997; Poon and Swatman, 1999; Riquelme, 2002). Therefore, proper and appropriate training should be identified to enable appropriate training with the actual needs among the small and medium entrepreneurs will be able to channel to the right and coincide place. To obtain the credible data of this study, the instrument to measure a level of skills to use social media among small and medium entrepreneurs at Pengkalan Datu River were developed by consider with 10 constructs that where setting with a several of expertise in field of multimedia and entrepreneurship. Constructing the constructs in this instrument is made via literature review, interviewing four (4) experts in multimedia and entrepreneurial and expert feedback from the implementation of face validity test. The ten constructs are: (1) Awareness of the Importance of Using Social Media in Business, (2) Skills to use social media (3) Skills to use social network, (4) Skills to use internet search engines, (5) Skills to use Microsoft office software, (6) Skills to use graphic software, (7) Skill to use digital aid tools, (8) Skills to use the financial transaction systems, (9) Ethical knowledge in social media, and (10) Maintenance knowledge in Social Media

2. The validity of research instrument

The validity of research instrument is referring to capabilities of the questionnaire to measure a construct or variable to be measured (Cresswell, 2014). Construct was chosen based on the design of the study and the objective to be achieved in the study. The content validity or face validity refers to the ability of the instrument to collect data that will meet the objectives of the study (Noah, 2002). An instrument has a high validity if its degree of ability to measure what is supposed to be measured is high (Majid, 1990). The validity of the questionnaire refers to the specific use of a questionnaire to measure a community group at the time of its occurrence and for a specific use only. For example, instruments developed to measure the level of skills to use social media among small and medium entrepreneurs in Pengkalan Datu River can only be considered to have high legality and can be used within the scope of small and medium entrepreneurs only, it is not valid for use to entrepreneurs in Beyond the scope of small and medium entrepreneurs. The developed instrument is considered to have a high level of validity and able to measure the level of skills to use social media among small and medium entrepreneurs at the Pengkalan Datu River, but it is no longer valid to measure the level of skills to use social media amongst other entrepreneurs at other place. Therefore, the validity of the research instrument is used to refer to the use of specific measures to a specific group. The value of validity will be represented by a specific number to show the level of assessment of the validity of an instrument developed. There are three (3) main types of validity there are face validity, construct validity and Criterion Validity. Face validity is also known as content validity. The face validity or content validity was referred to the expert's recommendation in assessing the entire instrument at a glance based on their expertise and prior experience. Experts will evaluate the instrument by ascertaining whether the instrument covers the whole context to be asked basically, ensuring that the format used is also appropriate to the data to be obtained, covering the scope that is relevant to the objective of the study and meeting the requirements of the respondents to be used in the research.

The validity of instrument to measure the level of skills to use social media among small and medium entrepreneurs at the Pengkalan Datu River only use the face validity or content validity. Stoner et al. (2011) stated that the face validity meant that the instrument was assessed at a glance by the expert and found it suitable and appropriate to apply in measuring the predetermined domain in a study without looking in more detail. In a nutshell, an appropriate instrument to use terms of content and format. The criterion validity and construct validity does not apply in this study, it's because the instrument developed is more of a survey and there is no comparison that involves a particular variable. Criterion validity is usually apply when there is any comparison between two specific groups or any predictions that are expected to occur within a specified period of time during the test. Creswell and Miller (2000) states that the validity of the criteria is divided into two namely predictive validity and concurrent validity. Golafshani (2003) stated that the criteria validity is only apply if the instrument is use to determine the score of the particular achievement among respondent. Typically, criteria validity will be use when its involve questions form such as pre-test and post-test on control groups and treatment groups in a quasi-experimental study. While the construct validity refers to the construct used to develop a variable. The constructs used need to be validated by the relevant experts before they are used (Mohd Majid Konting in Sidek Mohd Noah, 2002). Construct validity is divided into two that is discriminant validity and Convergent Validity (Healy and Perry, 2000)

Therefore, in the development of instruments to measure the level of social media skills among small and medium entrepreneurs at Pengkalan Datu River, there is no comparison or achievement test as well as measurements to expectations of changes that will occur as a result of a particular treatment in the study to be made. In addition, these instruments are also designed to conduct social media use surveys only, and do not involve any use of constructs to develop any particular variables. Accordingly, the validity of this instrument is only determined by using the face validity. Kirk and Miller (1986) stated that the validity of the questionnaire was measured by determining the value of correlation between the scores of each item and the total score. The Pearson correlation is used to analyze the score of each item by the total score of the item of a construct. Abu Bakar (1995) also states that the minimum correlation coefficient value and acceptable is 0.30. Nunally and Bernstein (1994) stated that the correlation value between items with a total score of more than 0.25 is considerably high. Cohen (1988) classifies the value of the correlation coefficient into three categories, small (0.10 to 0.29), medium (0.30 to 0.49) and high (0.50 to 1.00). Norusis (1977) stated that the validity of an instrument can be determined according to the value of the corrected item with total correlation. That is the Pearson correlation coefficient between the score of each item and the total of the scores without the item concerned. In determining the value of the instrument's validity to measure the level of skills to use social media among small and medium entrepreneurs at the Pengkalan Datu River, two methods are used, there is (1) using the correlation value between the scores of each item and the total scores, and (2) using correlation value of the corrected item with total correlation.

2.1. Execution of face validity on research instruments

The instrument to measure the level of skills to use social media among small and medium entrepreneurs at Pengkalan Datu River are measured by referred to four (4) senior lecturers in various fields at the Faculty of

Creative Technology and Heritage (FTKW) and the Faculty of Entrepreneurship and Business (FKP), University Malaysia Kelantan (UMK). The verification form is provided to the expertise in order to verify the instrument by use face validity technique. The expert feedback will be accounted to make improvement against an instrument. Some of the comments received are in terms of obfuscation, inaccurate terms used, unclear item selection, suggestion to add certain pertaining items and formatting issue.

3. Reliability of research instruments

The reliability of the instrument refers to the stability and consistency of the instrument developed (Creswell, 2010). The reliability level of the instrument is represented by Alpha Cronbach (Creswell, 2010). Pallant (2001) states Alpha Cronbach's value above 0.6 is considered high reliability and acceptable index (Nunnally and Bernstein, 1994). Whereas, the value of Alpha Cronbach is less than 0.6 considered low. Alpha Cronbach values in the range of 0.60 - 0.80 are considered moderate, but acceptable. While Alpha Cronbach in the ranges of 0.8 and up to 1.00 is consider very good. Therefore, through this article the determination of Alpha Cronbach values on instruments developed is used to determine the degree of reliability of the instruments.

4. Pilot Test

The instrument's reliability is very important in determining the level of stability and internal consistency on an instrument. To obtain reliability's value of the instrument, face validity and pilot studies have to be carried out. After getting good feedback from related expertise regarding to face validity of the instrument, the pilot test will be conducted to determine the reliability of the instrument. Pilot test was conducted by determining 25 respondents who would not be involved with the actual study to be conducted later. All 25 respondents were asking to answer the questionnaire distributed. Respondents are required to answer the questionnaire, and in the meantime the time will be taken to determine the time taken by the respondent to answer the whole questionnaire. Respondents are also required to provide any pertaining comments and feedback, marking spelling errors, grammatical clarity, vague sentences, and any related suggestions to improving and enhance the quality of an instrument. Then, all completed questionnaires will be analyzed by including the associated data into the SPSS software version 20.0. The Cronbach Alpha calculation will be made, and if the Cronbach Alpha value is at 0.60 and below, it would mean that the instrument has a low reliability and it's unacceptable. If the value of Cronbach Alpha is within the range of 0.60 to 0.80, it means that the value of Cronbach Alpha is moderate and acceptable. Then, if the value of Cronbach Alpha is above 0.80 to 1.00, then the value of Cronbach Alpha is very good. In this study, it is found that the value of Cronbach Alpha for each constructs is exceeding 0.8 and it's considered to be very high and acceptable. Table 1 shows the value of Cronbach Alpha for each constructs respectively.

Table 1. The value of Cronbach Alpha for each constructs of instrument to measure the level of skills to use social media among small and medium entrepreneurs (SME) at Pengkalan Datu River

| No | Constructs | Alpha Cronbach |
|----|--|----------------|
| 1 | The awareness of the important to use social media in business | 0.902 |
| 2 | Skills to use a social media | 0.955 |
| 3 | Skills to use a social network | 0.904 |
| 4 | Skills to use an Internet Search Engine | 0.953 |
| 5 | Skills to use a Microsoft Office Software | 0.868 |
| 6 | Skills to use a graphic software | 0.988 |
| 7 | Skills to use a digital aid tools | 0.939 |
| 8 | Skills to use a financial transaction system | 0.761 |
| 9 | Ethical knowledge in social media | 0.988 |
| 10 | Maintenance knowledge in social media | 0.834 |

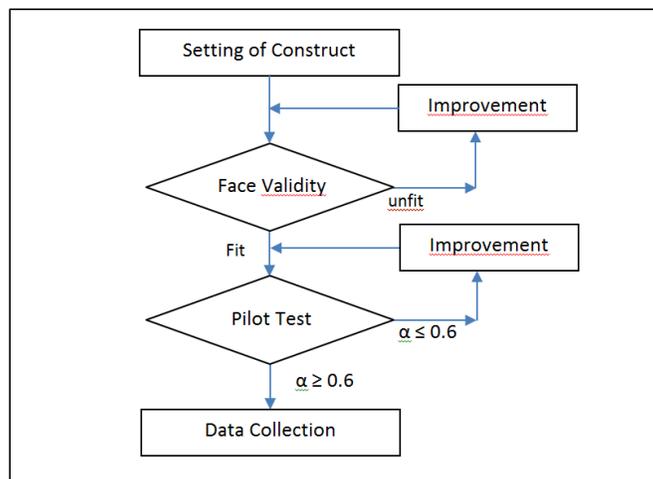


Figure1. Flow chart of pilot test

5. Validity and reliability of research instruments

The following is an analysis of the findings to determine the validity and reliability of the questionnaire for measuring the level of skills to use social media among small and medium entrepreneurs at Pengkalan Datu River. Table 2 shows the values of correlation and Cronbach Alpha for all constructs in the instrument. The validity of each items in questionnaire uses (1) correlation value of item score with total score, and (2) Corrected Item - Total Correlation. Whereas the value of Cronbach Alpha is used to obtain the reliability index for each aspect or related construct. Table 2 shows the constructs of awareness to the important of using social media in business has correlation value of item score with total score is ranging 0.729 to 0.886 and the value of corrected item with total correlation is between 0.618 to 0.826. While, the overall value of Cronbach Alpha is 0.902.

Table 2. The values of correlation and Cronbach Alpha for the construct of awareness to the important of using social media in business

| Construct | Item | Correlation Value of Item Score with Total Score | Corrected Item – Total Correlation | Cronbach Alpha's if item Deleted | Cronbach Alpha's |
|---|------|--|------------------------------------|----------------------------------|------------------|
| The awareness to the Importance of Use Social Media In Business | 1 | 0.866 | 0.805 | 0.876 | 0.902 |
| | 2 | 0.796 | 0.687 | 0.893 | |
| | 3 | 0.729 | 0.618 | 0.901 | |
| | 4 | 0.866 | 0.805 | 0.876 | |
| | 5 | 0.796 | 0.687 | 0.893 | |
| | 6 | 0.886 | 0.826 | 0.871 | |

Table 3 shows the construct of skills to use social media has correlation value of item score with total score is ranging in between 0.719 to 0.909 and the value of corrected item with total correlation is between 0.656 to 0.889. While, the overall value of Cronbach Alpha is 0.955.

Table 3. The value of correlation and Cronbach Alpha for the construct of skill to use social media

| Construct | Item | Correlation Value of Item Score with Total Score | Corrected Item – Total Correlation | Cronbach Alpha's if item Deleted | Cronbach Alpha's |
|----------------------------|------|--|------------------------------------|----------------------------------|------------------|
| Skills to use social media | 1 | 0.719 | 0.656 | 0.956 | 0.955 |
| | 2 | 0.909 | 0.889 | 0.948 | |
| | 3 | 0.719 | 0.656 | 0.956 | |
| | 4 | 0.868 | 0.841 | 0.950 | |
| | 5 | 0.868 | 0.841 | 0.950 | |
| | 6 | 0.909 | 0.889 | 0.948 | |
| | 7 | 0.719 | 0.656 | 0.956 | |
| | 8 | 0.868 | 0.841 | 0.950 | |
| | 9 | 0.868 | 0.841 | 0.950 | |
| | 10 | 0.909 | 0.889 | 0.948 | |
| | 11 | 0.868 | 0.841 | 0.950 | |
| | 12 | 0.719 | 0.656 | 0.956 | |

Table 4 shows that the construct of skills to use Social Networks has correlation value of item score with total score in ranging from 0.727 to 0.914 and the value of Corrected Item with total correlation is in between 0.588 to 0.871. While, the overall value of Cronbach Alpha is 0.904.

Table 4. The value of correlation and Cronbach Alpha for the construct of skills to use a social networks

| Construct | Item | Correlation Value of Item Score with Total Score | Corrected Item – Total Correlation | Cronbach Alpha's if item Deleted | Cronbach Alpha's |
|-----------|------|--|------------------------------------|----------------------------------|------------------|
|-----------|------|--|------------------------------------|----------------------------------|------------------|

| | | | | | |
|---------------|---|-------|-------|-------|-------|
| Skills to use | 1 | 0.727 | 0.588 | 0.912 | 0.904 |
| social | 2 | 0.914 | 0.871 | 0.868 | |
| networks | 3 | 0.727 | 0.588 | 0.912 | |
| | 4 | 0.855 | 0.790 | 0.880 | |
| | 5 | 0.855 | 0.790 | 0.880 | |
| | 6 | 0.914 | 0.871 | 0.868 | |

Table 5 shows that the construct of skills to use internet search engines have correlation score of items with the total score in ranging from 0.936 to 0.937 and the value of corrected Item with total correlation is in between 0.885 to 0.886. While, the overall value of Cronbach Alpha is 0.953.

Table 5. The value of correlation and Cronbach Alpha for construct of skills to use an internet search engines

| Construct | Item | Correlation Value of Item Score with Total Score | Corrected Item – Total Correlation | Cronbach Alpha's if item Deleted | Cronbach Alpha's |
|---------------|------|--|------------------------------------|----------------------------------|------------------|
| Skills to use | 1 | 0.936 | 0.885 | 0.939 | 0.953 |
| an internet | 2 | 0.937 | 0.886 | 0.938 | |
| search | 3 | 0.937 | 0.886 | 0.938 | |
| engines | 4 | 0.936 | 0.885 | 0.939 | |

Table 6 shows the construct of skills to use Microsoft office software has a correlation value of items with the total score in ranging from 0.780 to 0.871 and the values of corrected Item with total correlation is in between 0.628 to 0.794. While, in overall the value of Cronbach Alpha is 0.868.

Table 6. The value of correlation and Cronbach alpha for the construct of skills to use a Microsoft office software

| Construct | Item | Correlation Value of Item Score with Total Score | Corrected Item – Total Correlation | Cronbach Alpha's if item Deleted | Cronbach Alpha's |
|-----------------|------|--|------------------------------------|----------------------------------|------------------|
| Skills to use a | 1 | 0.780 | 0.628 | 0.859 | 0.868 |
| Microsoft | 2 | 0.871 | 0.794 | 0.817 | |
| office software | 3 | 0.780 | 0.628 | 0.859 | |
| | 4 | 0.823 | 0.724 | 0.834 | |
| | 5 | 0.823 | 0.724 | 0.834 | |

Table 7 shows the construct of skills to use graphic software has correlation value of item score with total score in between of 0.947 to 0.994 and the value of corrected item with total correlation is in between 0.906 to 0.989. While, in overall the value of Cronbach alpha for this construct is 0.988.

Table 7. The value of correlation and Cronbach alpha for the construct of skills to use a graphic software

| Construct | Item | Correlation Value of Item Score with Total Score | Corrected Item – Total Correlation | Cronbach Alpha's if item Deleted | Cronbach Alpha's |
|----------------------------------|------|--|------------------------------------|----------------------------------|------------------|
| Skills to use a graphic software | 1 | 0.994 | 0.989 | 0.978 | 0.988 |
| | 2 | 0.994 | 0.989 | 0.978 | |
| | 3 | 0.947 | 0.906 | 0.988 | |
| | 4 | 0.994 | 0.989 | 0.978 | |

Table 8 shows the construct of skills to use a digital aid tools has a correlation value of the item score with the total score in ranging from 0.885 to 0.973 and the value of corrected Item with total correlation is in between 0.754 to 0.937. While, in overall the value of Cronbach alpha is 0.939.

Table 8. The value of correlation and Cronbach alpha for the construct of skills to use a digital aid tools

| Construct | Item | Correlation Value of Item Score with Total Score | Corrected Item – Total Correlation | Cronbach Alpha's if item Deleted | Cronbach Alpha's |
|-----------------------------------|------|--|------------------------------------|----------------------------------|------------------|
| Skills to use a digital aid tools | 1 | 0.973 | 0.937 | 0.860 | 0.939 |
| | 2 | 0.885 | 0.754 | 1.000 | |
| | 3 | 0.973 | 0.937 | 0.860 | |

Table 9 shows the constructs of skills to use financial transaction system has correlation value of items with the total score in ranging from 0.727 to 0.914 and the value of corrected Item with total correlation is in between 0.569 to 0.794. While, in overall the value of Cronbach alpha is 0.761.

Table 9. The value of correlation and Cronbach alpha for the construct of skills to use a financial transaction system

| Construct | Item | Correlation Value of Item Score with Total Score | Corrected Item – Total Correlation | Cronbach Alpha's if item Deleted | Cronbach Alpha's |
|--|------|--|------------------------------------|----------------------------------|------------------|
| Skills to use financial transaction system | 1 | 0.914 | 0.794 | 0.550 | 0.761 |
| | 2 | 0.855 | 0.681 | 0.588 | |
| | 3 | 0.727 | 0.569 | 0.950 | |

Table 10 shows the construct of ethical knowledge in social media has correlation value of item score with total score is in between 0.966 to 0.984 and the value of corrected item with total correlation is in between 0.947 to 0.975. While, in overall the value of Cronbach alpha is 0.988.

Table 10. The value of correlation and Cronbach alpha for construct of Ethical Knowledge in Social Media

| Construct | Item | Correlation Value of Item Score with Total Score | Corrected Item – Total Correlation | Cronbach Alpha's if item Deleted | Cronbach Alpha's |
|-----------------------------------|------|--|------------------------------------|----------------------------------|------------------|
| Ethical Knowledge in Social Media | 1 | 0.984 | 0.975 | 0.983 | 0.988 |
| | 2 | 0.984 | 0.975 | 0.983 | |
| | 3 | 0.966 | 0.947 | 0.988 | |
| | 4 | 0.984 | 0.975 | 0.983 | |
| | 5 | 0.966 | 0.947 | 0.988 | |

Table 11 shows the construct of maintenance knowledge of Social Media has correlation value of item scores with total score in ranging from 0.724 to 0.864 and the value of corrected Item with total correlation is in between 0.548 to 0.727. While, in overall the value of Cronbach alpha is 0.834.

Table 11. The value of correlation and Cronbach alpha for the construct of maintenance knowledge in social media

| Construct | Item | Correlation Value of Item Score with Total Score | Corrected Item – Total Correlation | Cronbach Alpha's if item Deleted | Cronbach Alpha's |
|---------------------------------------|------|--|------------------------------------|----------------------------------|------------------|
| Maintenance Knowledge in Social Media | 1 | 0.864 | 0.727 | 0.761 | 0.834 |
| | 2 | 0.809 | 0.669 | 0.789 | |
| | 3 | 0.864 | 0.727 | 0.761 | |
| | 4 | 0.724 | 0.548 | 0.837 | |

6. Conclusion

Table 2 to table 11 shows the correlation value of the item score with the total score and (2) The correlation value of the corrected Item with total correlation is greater than 0.30. It is concluded that the item has a high validity value as suggested by Abu Bakar (1987), Cohen (1988), Norusis (1977) and Nunally (1987). Meanwhile, the Cronbach Alpha value exceeds 0.60 which concludes that items have a good internal stability and consistency (Cresswell 2005, 2010; Pallant 2001; Sekaran 1992). The value of Cronbach Alpha concludes that items have good reliability and can be applied as stated by Mohd Majid (1990), Pallant (2001), Sekaran (1992) and Siti Rahayah (2003). The value of total correlation and alpha Cronbach demonstrate a very high value of validity and reliability of the instrument. In quantitative research, instrument to collect data is a most crucial part, to raise the credibility of research finding. However, to get a good result of validity and reliability value researcher need to design and conduct a proper pilot test. The aim of pilot test is to evaluate the level of validity and reliability on the research instrument.

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