

## Examining Scale Internal Consistency: An Empirical Exploration of Social Media's Impact on SMEs Performance

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**Abstract:** Small and Medium Enterprises (SMEs) in Malaysia play a vital role in economic development by creating job opportunities and lowering unemployment rates. Numerous studies have been undertaken to improve business performance, with an emphasis on areas such as finance, SME characteristics, and knowledge management. However, in today's technological context, the importance of social media in business, particularly for Malaysian SMEs, should not be underestimated. As a result, the major goal of this study is to assess the internal consistency of the acquired data, facilitating subsequent systematic analysis. In this study, Cronbach's Alpha is used to validate the customized questionnaire. Data were collected from 141 respondents to investigate the effects of compatibility, cost-effectiveness, interaction, and trust on social media usage, as well as its implications for organizational performance. The questionnaire had 36 items and used a 5-point Likert scale to assess internal consistency. Preliminary reliability analysis revealed strong relationships for all variables, demonstrating the instrument's reliability in improving research quality. Furthermore, the study discovered that social media usage had a significant positive influence on SMEs' non-financial performance, notably in terms of cost saving or cost reduction in marketing, enhanced customer service, better customer interactions, and more convenient access to information. Furthermore, compatibility, trust, cost-effectiveness, and interactivity were identified as the main factors influencing social media adoption among SMEs.

**Keywords:** *Small and Medium Enterprise, Internal Consistency, Social Media, Business Performance, Klang Valley.*

### 1. Introduction and Background

Survey questionnaires are commonly used in data collection by quantitative researchers to gain information from respondents. As a result, it is critical to evaluate the correctness and reliability of the input before advancing to the next level of analysis. This review method, known as testing the instrument's validity and reliability (Taherdoost & Group, 2017), guarantees that the data obtained is consistent and coherent (Nawi et al., 2020). According to Pallant (2011), researchers should determine whether the scale's items are consistent and assess the same concept. Cronbach's alpha coefficient is a widely used indicator in quantitative research for assessing the construct's internal consistency. This stage is critical for researchers when selecting acceptable instruments or considering developing new ones to correspond with study aims and assure instrument quality (Taherdoost, 2021; Taber, 2018).

Chua et al. (2024) and Said (2018) concurred that reliability testing stands as a pivotal component in assessing test quality, encompassing factors such as reproducibility, consistency, and the consistency of examinees' performance on the test. Taherdoost & Group (2017), on the other hand, underlined the need to investigate the validity of instruments during the exploratory phase, arguing that reliability and validity are inextricably linked. The validity evaluation guarantees that the questions properly measure the target constructs (Field, 2005). As a result, determining validity and reliability is a question of degree rather than binary, since it determines how all test components interact and which factors should be preserved, altered, or removed from the instrument.

### 2. Literature Review

#### Social Media Usage

In today's business landscape, small and medium-sized enterprises (SMEs) are increasingly realizing the potential of social media platforms to revolutionize their operations and extend their market reach. As highlighted in a study by Oni (2021), SMEs are adopting social media applications to connect with larger audiences, enhance customer relationships, and retain their clientele. This trend is fueled by the rapid expansion of the internet and the emergence of social media as a pivotal communication channel between

businesses and consumers. With popular platforms like Facebook, Instagram, Twitter, and LinkedIn readily accessible and widely used, SME owners are harnessing these channels to raise brand visibility, advertise their products or services, and interact with their target demographic (Malesev & Cherry, 2021 & Basri & Siam, 2017). This transition towards social media marketing is motivated by its cost-effectiveness and its capacity to tailor advertising efforts to individual preferences.

Numerous companies utilize social media for a variety of purposes, including: 1) engaging with their customer base; 2) actively listening to key stakeholders; 3) providing customer support services; 4) creating valuable content for consumers; and 5) involving consumers in product ideation and development processes (Nilasari, Jaafar & Wahyudi, 2019). Despite the relatively recent surge in social media popularity, businesses have effectively leveraged these platforms to achieve diverse objectives, ranging from long-term goals such as enhancing brand awareness and reputation to more immediate objectives like driving sales (Rust et al., 2021).

### **Social Media Usage And Business Performance**

Business performance is influenced by various factors, with customer orientation being particularly significant and further enhanced by proficient utilization of information technology (Sutrisno et al., 2023). Companies that incorporate social media into their sales strategies aim to enhance communication with both potential and existing customers, thereby potentially improving sales effectiveness (Fraccastoro et al., 2021). Social media platforms provide organizations with tools to support customer orientation efforts, which are crucial for achieving sales performance (Bowen et al., 2021). Information technology is critical to this process because it allows for the collection of consumer data, the comprehension of customer insights, and the facilitation of tailored marketing replies (Payne & Frow, 2005). Furthermore, innovation enhances the effect of customer orientation on SME performance (Domi et al., 2020). Social media platforms improve company performance by supporting customer relationship management (CRM) processes and engaging customers in the value-generation process (Garrido-Moreno et al., 2020). As a technical innovation, social media platforms are critical for SMEs in creating and maintaining customer interactions (Belas, Amoah, Dvorsky, and Suley, 2021), reinforcing the importance of client orientation in driving corporate performance (Neneh, 2018). Given the close ties between entrepreneurs and consumers in small firms, social media platforms are an effective instrument for promoting customer orientation practices (Zontanos & Anderson, 2004).

### **Factors Influencing Social Media Usage**

According to research findings by Odoom, Dorson, and Acheampong (2017), Qalati et al. (2021), and Akbar (2021), the utilization of social media is positively influenced by several factors, including compatibility, trust, cost-effectiveness, and interactivity. These findings are consistent with research that was studied in Malaysia by Ainin et al. (2015), which demonstrated that compatibility, cost-effectiveness and interactivity positively impact Facebook usage, while trust does not. Additionally, Ebrahim (2020) highlighted the significant role of trust in social media, as evidenced by the direct impact of social media marketing activities on brand trust. According to Qalati et al. (2022), although there are several studies on the influence factors of social media usage, there is still a lack of studies about its impact in terms of financial performance. There is also a lack of studies on non-financial performance such as customer loyalty, awareness and brand visibility. Therefore, this study aims to see whether there are significant relationship between compatibility, trust, cost-effectiveness, interactivity, and social media usage and its performance outcomes.

### **Internal Consistency**

Green, Lissitz, and Mulaik (1977) argue that internal consistency is critical for determining the dependability of research instruments because it indicates the degree of interconnection among the items. In contrast, homogeneity refers to a set's unidimensionality. Internal consistency is a required criterion, but it does not ensure homogeneity. According to Jain & Angural (2017), Cronbach's alpha was first proposed by Kuder & Richardson (1937) for dichotomous score data (0 or 1) and was then extended by Cronbach (1951) to accommodate other scoring techniques. Essentially, the reliability of any measurement hinges on its consistency in measuring a concept, with Cronbach's alpha offering a means for researchers to evaluate the strength of data consistency. This assessment is imperative before proceeding to subsequent levels of analysis. According to Hajjar (2018) and Cheung et al. (2023), Cronbach's alpha coefficient assumes that each item has an equal contribution towards their respective constructs and is widely accepted as a measure of construct validity by researchers. Reliability pertains to repeatability, ensuring consistent outcomes in analyses, while

validity focuses on the extent to which a measure accurately captures what it intends to measure, aligning with research objectives. Both concepts are critical in attaining accurate results. Therefore, internal consistency results must exhibit reliability to ensure validity. Sürücü and Maslakçi (2020) define validity as the accuracy of measurement in a quantitative study, while reliability pertains to the consistency of results when the research instrument is repeatedly used in the same context.

Cortina (1993) argues that internal consistency assesses the uniformity of results across various factors within a test. Hence, Cronbach's alpha emerges as the most commonly employed measure of internal consistency, typically calculated as the mean of all possible split-half coefficients. Cronbach's alpha is a widely used measure of scale reliability in research studies. However, recent advancements in statistical methods and research techniques have sparked a novel approach to utilizing Cronbach's alpha in research. Researchers are now exploring the potential of utilizing Cronbach's alpha not only as a measure of scale reliability but also as a tool for identifying and evaluating the underlying factor structure of a set of survey items (Taber, 2018). By conducting factor analyses alongside Cronbach's alpha calculations, researchers can gain deeper insights into the dimensionality and validity of their scales (Ayoub et al., 2023). According to Aithal & Aithal (2020), examining the internal consistency of data seeks to determine the dependability of respondents' comments on a research instrument or questionnaire domain, demonstrating tool stability. Cronbach's alpha is used to determine the consistency or dependability of various objects, measures, or ratings. Furthermore, Cronbach's alpha assesses the stability of instruments used to measure study variables, showing the degree of internal consistency. It represents the number of components on the scale and the depth of their interrelationships, with values ranging solely from zero to one. Cronbach's alpha measures the fraction of variability shared by components and is theoretically expressed as:

$$\alpha = \frac{K r}{[1+(K-1)r]}$$

The average correlation among all factors ( $r$ ) is calculated by taking the mean of the  $K(K-1)/2$  non-redundant correlation coefficients (i.e., the mean of an upper or lower triangular correlation matrix).

Conversely, Panayides (2013) claimed that the alpha value helps researchers overcome two main difficulties. To begin, he noticed that alpha does not always imply the scale's unidimensionality, since high alpha values can be achieved with multidimensional scales including a significant number of items. Second, he advised against thinking that larger alpha values are necessarily better, as they might be the result of long scales, duplicate objects, or inadequate build coverage. Furthermore, high alpha values may indicate insufficient coverage of the construct, jeopardizing the precision of a major number of individual measurements.

### Types of Reliability

Table 1 illustrates the type of analysis for internal reliability:

**Table 1: Internal Reliability (Jain & Angural, 2017)**

	Types of analysis	Description of analysis
<b>Internal Reliability:</b>  It evaluates the consistency of responses across test items. Dividing into two sections may provide comparable results.	Average inter-item correlation	Mean of all correlations of a correlation construct
	Average item-total correlation	Mean of total correlation of each item
	Split-half correlation	Correlation of split-half scores for a construct.
	Cronbach's alpha	Correlation between all potential split-half ratings for a construct

### **Low and High Value of Cronbach's Alpha ( $\alpha$ )**

A low Cronbach's alpha value can negatively impact the data's validity, often stemming from insufficient item numbers, partially correlated items, or inconsistencies in the instrument's construction. In such cases, item revision or removal may be necessary. Conversely, an excessively high alpha value suggests redundancy among items, indicating an overlap in the constructs being measured. Additionally, the duration of the test administration can influence the alpha value. One strategy to enhance the alpha value involves adding more related items to assess the same concept, as suggested by Jain & Angural (2017).

### **The Minimum Sample Size in Calculating Cronbach's Alpha**

Gül (2008) recommends a minimum sample size of 30 respondents when the first (largest) eigenvalue from Principal Component Analysis (PCA) exceeds 6.00. However, if the first eigenvalue falls between 3.00 and 6.00, a larger sample size of 100 is suggested. Similarly, Conroy (2016) advises a pilot testing sample of 30 respondents to assess reliability using Cronbach's alpha, particularly when the scale items show strong intercorrelations.

### **The Rule of Thumb of Reliability**

According to Surucu and Maslacki (2020) and Sideridis (2018), in validating Cronbach's alpha, there are several conditions should be considered:

- The item scores should be based on interval data with no range restrictions, without the need to use the K-R 20 calculation.
- Homoscedasticity and the linearity of errors.
- Small measurement errors and corrections for variance and covariance attenuation.
- Similar distributions across all the items.
- Unidimensional.
- Absence of systematic sources of error.
- Items are independent in terms of content.
- Equality of factor loadings across indicators

Taherdoost & Group (2017) state that during the pilot research phase, the reliability result should be at least 0.60 (Straub et al., 2004). Several scholars have proposed four degrees of reliability: excellent (0.90 and above), high (0.70-0.90), moderate (0.50-0.70), and low (0.50 and below) (Hinton et al., 2004). While many writers feel that an alpha value of 0.70 shows good self-consistency, this may not always be true. Another recommendation stated by Said (2018) indicates that Cronbach's alpha score of 0.6 to 0.8 is appropriate. To assess construct validity in an empirical method, item-to-total correlations and inter-item correlations can be explored. According to Cohen (1988), inter-item correlations between 0.10 and 0.29 indicate a weak connection, 0.30 and 0.49 indicate a medium correlation, and 0.50 to 1.00 show a strong correlation.

Furthermore, Robinson (1991) proposes that in an empirical method, if the item-to-total correlation score surpasses 0.50 and the inter-item correlations exceed 0.30, the concept validity is good. Additionally, Poythress, Douglas, Cruise, and Murrie (2006) suggest that to examine the internal consistency dependability of a scale, Nunnally and Bernstein (1994) recommend that a Cronbach's alpha value of 0.70 or above shows good reliability. However, as Taber (2018) points out, having an abnormally high alpha value is not necessarily ideal.

According to Hair et al. (2016), reliability analysis values may be interpreted using the Rule of Thumb, in which the strength association determination are; <0.6 is considered poor, 0.6 to < 0.7 is moderate, 0.7 to < 0.8 is good, 0.8 to < 0.9 considered very good and > 0.9 is excellent.

## **3. Research Methodology**

The quantitative technique was utilized to gather and analyze the data provided by all respondents. The researcher created and finalized the questionnaire before distributing it to Small and Medium Enterprises (SMEs) in Klang Valley, Malaysia.

### Population and Sampling

Based on most current statistics from the Department of Statistics, Malaysia (DOSM) (2020), Malaysia's total number of SMEs in 2021 was 1,151,339, which is 97.2 percent across all commercial businesses, over 400,000 (34%) SMEs reported in the Klang Valley alone. Simple random sampling procedures were utilized to elicit responses from respondents. As a result, this study will require 141 respondents as samples.

### Research Instrument

In this study, a survey questionnaire comprising 31 questions divided into six sections was employed to examine the relationship between compatibility, trust, cost-effectiveness, interaction, and social media usage. Respondents were given the questionnaires and instructed to read the statements, then select their responses on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 26, incorporating both descriptive and inferential analyses. Descriptive analysis was performed to calculate the frequency and percentage of the total population across various demographic groups.

## 4. Results

### Demographic Profile

**Table 3 illustrates the demographic characteristics of respondents**

Demographic	N	%
Type of business		
Services	29	20.6
Product	112	79.4
<b>Total</b>	<b>141</b>	<b>100</b>
Type of Company Ownership		
Sole Proprietor	76	53.9
Private Limited Company	52	36.9
Partnership	13	9.2
<b>Total</b>	<b>141</b>	<b>100</b>
Age of Business		
1-5 years	92	65.2
6-10 years	37	26.2
11-15 years	6	4.3
Above 15 years	6	4.3
<b>Total</b>	<b>141</b>	<b>100</b>
Number of Employees		
20 or less employees	115	81.6
21-40 employees	8	5.7
41-60 employees	9	6.4
61-80 employees	9	6.4
<b>Total</b>	<b>141</b>	<b>100</b>
Type of Social Media Usage		
Twitter	12	8.5
Facebook	80	56.7
Instagram	91	64.5

TikTok	86	61
Years of Using Social Media for Business Purposes		
1-5 years	96	68
6-10 years	42	29.9
Above 10 years	3	2.1
<b>Total</b>	<b>141</b>	<b>100</b>
Location		
Selangor	81	57.4
Federal State of Kuala Lumpur	35	24.8
Federal State of Putrajaya	25	17.8
<b>Total</b>	<b>141</b>	<b>100</b>

Table 3 shows the characteristics of the participants in the study. Out of the total group (n=141), 29 respondents offer services in their businesses, which is 20.6%, while 112 respondents sell goods, making up 79.4% of the group. The analysis also looks at the type of companies involved. Most respondents are sole proprietors, with 76 participants (53.9%), followed by private limited companies with 52 respondents (36.9%), and partnerships with 13 respondents (9.2%). Additionally, the years in business are examined, with the majority, 92 SME owners (65.2%), having been in business for 1-5 years. There are 37 respondents (26.2%) with 6-10 years of business experience, 6 respondents (4.3%) with 11-15 years of experience, and another 6 (4.3%) with over 15 years of experience. Moreover, the number of employees is considered, with 115 respondents (81.6%) having 20 employees or fewer. Eight respondents (5.7%) have 21-40 employees, 9 respondents (6.4%) have 41-60 employees, and another 9 respondents (6.4%) have between 60-80 employees. Among the 141 respondents, 12 use Twitter as one of their social media platforms, while 80 use Facebook, 91 use Instagram, and 86 use TikTok for their businesses. Most respondents, 96 (68%), have been using social media for their businesses for 1-5 years, while 42 respondents (29.9%) have been using it for 6-10 years, and only 3 SME owners (2.1%) have used social media for over 10 years. The location of the businesses is also taken into account, with 81 SMEs (57.4%) located in Selangor, 35 (24.8%) in the Federal State of Kuala Lumpur, and 25 (17.8%) in the Federal State of Putrajaya.

#### Assessing The Missing Data

Table 4 offers an examination of the dataset's missing values. The result revealed that there were no missing data for the count or percent. As a result, we may infer that this dataset has no missing values. The third technique for detecting missing values is to do a descriptive analysis of the data. Table 4 further reveals that there are no missing values in this dataset, allowing for additional research.

**Table 4: Assessing the missing data**

Constructs	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
Compatibility	141	100%	0	0.00%	141	100%
Trust	141	100%	0	0.00%	141	100%
Cost-effectiveness	141	100%	0	0.00%	141	100%
Interactivity	141	100%	0	0.00%	141	100%
Social Media Usage	141	100%	0	0.00%	141	100%
SMES Performance	141	100%	0	0.00%	141	100%

#### Reliability Analysis on Constructed Items

Table 5 presents the reliability analysis of the study concept. The reliability technique is employed to determine the relationship between the scores for each item. Using this method, items with high correlation values with

the test index score exhibit high reliability, while items with low correlation values demonstrate low reliability and are removed from the test. Dennis, Chan, and Funk (2006) refer to this concept as the internal consistency approach. According to the table, Cronbach's alpha value ranges from 0.80 to 0.90, indicating a very strong relationship, whereas a value of 0.9 or above signifies excellent correlation, as noted by Hair et al. (2016).

**Table 5: The Summary of Reliability Analysis on Constructed Items**

Section	Construct	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Item	Strength of association
A	Social Media Usage	0.953	0.954	6	Excellence
B	Compatibility	0.967	0.967	5	Excellence
C	Trust	0.898	0.898	5	Very Good
D	Cost-effectiveness	0.807	0.817	5	Very Good
E	Interactivity	0.898	0.901	5	Very Good
F	SME Performance	0.906	0.908	5	Excellence

## 5. Conclusion and Discussion

As shown in Table 5, the Cronbach's Alpha value for the 31 elements suggests a strong relationship. The strength of the association finding indicates that the dependent variable is great, but the independent variables only have one item of excellence (compatibility) and the other three (trust, cost-effectiveness, and interaction) are very good. This result demonstrated that the research equipment is suitable and dependable in measuring responses. Based on the stated rule of thumb, the majority of the references agreed that 0.9 suggested a good level of dependability. As a result, it appears that, despite many writers adhering to the rule of thumb that alpha should reach 0.70 for an instrument to have an acceptable level of self-consistency, this study effectively met the reliability cut-off marks.

### Conclusion

This article offers a helpful guide for estimating Cronbach's alpha, a commonly used method to measure the internal consistency of research instruments. In quantitative studies, assessing reliability and validity is crucial for researchers to ensure the quality of their study and achieve their research objectives. However, there are various options available for measuring internal consistency, depending on the research instrument used. Therefore, when interpreting the results, researchers should consider the factors that may influence the value of Cronbach's alpha, potentially inflating or decreasing its values.

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