Tax service quality for enterprises: development of a valid measurement scale

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Abstract

Purpose – Measuring tax service quality is important as it may contribute to sustainable tax management. This study aims to develop and validate a scale that measures tax service quality for enterprises.

Design/methodology/approach – This study uses a mixed method consisting of three focus groups with 25 participants in charge of the management of tax service for item generation, a survey of 121 enterprises for scale purification and a survey of 362 enterprises in Vietnam for main study. The scale development is tested through three important steps including exploratory factor analysis (EFA), confirmatory factor analysis (CFA) and structural equation modeling (SEM).

Findings – The findings reveal that the scale of tax service quality for enterprises is represented by 13 items comprising two dimensions: responsiveness and professionalism.

Practical implications – This scale can be used by tax management authorities as a convenient tool to understand and measure tax service quality.

Originality/value – Empirical studies on the measurement of tax service quality are scarce. Most studies have focused on tax service quality for individual taxpayers. There is an absence of research on a process for the development and validation of a specific, orthodox scale of tax service quality for enterprises.

Keywords Tax service quality, Tax authority, Enterprises, Measurement scale

Paper type Research paper

1. Introduction

Much attention has been paid to the quality of public service in general and tax authority's tax service quality in particular over the last few decades (Anita *et al.*, 2017; Psomas *et al.*, 2020; Stiglingh, 2014a). For many emerging economies and developing countries, service quality has been a crucial issue for tax authorities due to poor tax revenue performance (Amoh and Ali-Nakyea, 2019). Given the vital role of tax service quality in shaping taxpayers' compliance behavior, improvement in the quality of tax service may enhance taxpayers' satisfaction and their compliance behavior in paying tax (Hidayat *et al.*, 2014). Consequently, tax authorities worldwide have begun to concentrate on improving their relationship with taxpayers by considering taxpayers as clients and focusing on providing services to "client" taxpayers (OECD, 2007, 2013, 2016; Stiglingh, 2014a). According to OECD (2017), most tax authorities have provided taxpayers with effective services and timely support to enable them to fulfill their tax obligations. Taxpayers avail themselves to these services mainly through telephone, in-person inquiry, letters, emails or websites. This tax service paradigm comprises the provision of support and guidance that help taxpayers to be compliant with their taxes rather than depending on enforcement; this has thereby improved the image of tax authorities (Alm *et al.*, 2010; Carlos Pinho *et al.*, 2011). In Vietnam, the Government approved a strategy for tax system reform over 2011–2020 to improve the tax service quality in general and upgrade e-Tax applications. The aim is for Vietnam to become among the most favorable tax countries in Southeast Asia in 2020 [1], underscoring the importance of the quality of its tax services.

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Over the past 3 decades, much attention has been directed towards various debates with regard to conceptualization and measurement of tax service quality (OECD, 2007; Supadmi, 2009; Alm *et al.*, 2010; Stiglingh, 2014b). A few tax service measurement scales have been developed in different online and offline taxpayers' settings (Floropoulos *et al.*, 2010; Gangl *et al.*, 2013; Mustapha and Obid, 2014; Rusdi *et al.*, 2014). Nevertheless, previous scales have primarily focused on tax service quality for individual taxpayers (Anita *et al.*, 2017; Awaluddin and Tamburaka, 2017; Mustapha and Obid, 2014; Rusdi *et al.*, 2014; Carlos Pinho *et al.*, 2011) and the scale of Jofreh and Rostami (2014) was used for legal entities rather than enterprises. Most of the previous scales focused on offline tax service quality (Anita *et al.*, 2017; Awaluddin and Tamburaka, 2017; Jofreh and Rostami, 2014; Mustapha and Obid, 2014; Rusdi *et al.*, 2014), except Carlos Pinho *et al.*'s (2011) study of online tax service quality. That said, the measurement of tax service quality for enterprises is limited, especially in regard to both the online and offline tax service quality in the current digital era.

To date, research has not established nor validated a scale of tax service quality, particularly for enterprises. The development of a new scale to measure tax service quality for enterprises is necessary to adapt to the demand of tax authorities and enterprises, particularly in today's digital context. Especially, the availability of this new scale will provide tax management authorities with a convenient tool to understand and measure tax service quality for enterprises. Therefore, the objective of this study is two-fold: (1) the development of items for measuring tax service quality in Vietnam and (2) the evaluation of their reliability and validity.

This paper follows the scale development process suggested by Churchill (1979) and Morgado *et al.* (2018). First, a literature review is conducted to point out previous research on tax service quality. Second, a reliable and valid tax service quality scale for enterprises is empirically developed through qualitative, exploratory and confirmatory phases. The research results are presented before implications are discussed.

2. Literature review

2.1 Tax service quality

The quality of service has gained the interest of numerous studies related to several service industries and fields related to service. For example, service quality in tourism (Narayan *et al.*, 2008; Le *et al.*, 2020), transportation (Caro and Garcia, 2007; Bellizzi *et al.*, 2020; Govender and Pan, 2011), banking (Angur *et al.*, 1999; Arasli *et al.*, 2005; Lau *et al.*, 2013), retail service sector (Lee *et al.*, 2019; Parikh, 2006; Simmers and Keith, 2015) or in the healthcare industry (Kitapci *et al.*, 2014). However, Anita *et al.* (2017) suggests that it is not easy to define service quality and proposes quality of service is the source of satisfaction. Thus, the orientation of service quality is necessary to carry out.

There are many views related to tax service quality (e.g. Gangl *et al.*, 2013; Çetin Gerger, 2019; Muhammad and Saad, 2016; Mustapha and Obid, 2014; Mustapha and Obid, 2015). Conceptually, tax service quality refers to the taxpayers' perceptions or evaluation of the services offered by tax authorities. This implies that service quality is a crucial issue to tax offices (Mustapha and Obid, 2015). A tax authority's service could be divided into three categories: information, interaction, and transaction, with the transaction serving as an interior service and the information and interaction serving as support services (Thornton and Shaub, 2014). Further, just like other public services, tax services are free of charge and help users to comply with government legislation (Agus *et al.*, 2007). The readiness of the tax service system assists taxpayers to be compliant with tax regulations and payments (Savitri, 2015), therefore tax authorities are encouraged to establish cooperation with taxpayers, provide service quality for taxpayers and treat taxpayers as clients (Awaluddin and Tamburaka,

2017). Previous studies (e.g. Feld and Frey, 2006; Kirchler *et al.*, 2007; Torgler, 2007) have indicated that taxpayers' compliance behavior is influenced by what they perceive in the process of tax service experience.

2.2 Measuring tax service quality

The conceptualization of service quality and the development of the SERVQUAL instrument (the name stands for SERVice QUALity) in order to measure service quality was conducted by Parasuraman *et al.* (1988). This instrument was positioned as a generic scale to assess both the aspects of users' service expectations and their perceptions of performance (McAlexander *et al.*, 1994).

It is worth noting that the current measurements of service quality have been traced in the research of Parasuraman *et al.* (1988). SERVQUAL has been widely spread and is considered a reliable and valid instrument to measure service quality. Although Parasuraman *et al.* (1988) claim that their five service quality dimensions (tangible, reliable, responsiveness, assurance and empathy) are generic, service quality dimensions may, in fact, be inconsistent in differing contexts. For instance, Khudri and Sultana (2015) measured service quality in the sector of beverage food suppliers in Bangladesh by personal interaction, appearance, reliability, policy, and problem solving; Pekkaya *et al.* (2019) considered tangible, responsiveness, reliability, empathy and assurance to evaluate healthcare service quality. In the context of tax service quality, both offline and online modes, service quality dimensions have been proposed differently by researchers (see Table 1). For example, while Mustaphar and Obid (2014) proposed tax service quality with five dimensions, including responsiveness, reliability, informativeness, assurance and usability, Jofreh and Rostami (2014) measured tax service quality by tangible, reliability, empathy, assurance and confidence. Therefore, further research is necessary to model the service quality in a specific service sector and in each specific market, especially in the context of tax service quality for enterprises in Vietnam.

Although there is an acceptance of the SERVQUAL as a useful instrument to measure service quality in different contexts, there have been many arguments that suggest that customers' evaluation of service quality, depending on the nature of the discrepancy between

Study	Country of context	Type of taxpayers	Type of services	Dimensions
Anita *et al.* (2017)	Indonesia	Individuals	Offline	Tangible, Reliability, Responsiveness, Assurance, Empathy
Awaluddin and Tamburaka (2017)	Indonesia	Individuals	Offline	Responsiveness, Reliability, Tangible, Empathy, Assurance
Jofreh and Rostami (2014)	Tehran	Legal entities	Offline	Tangible, Reliability, Empathy, Assurance, Confidence
Mustapha and Obid (2014)	Nigeria	Individuals	Offline	Responsiveness, Reliability, Informativeness, Assurance, Usability
Rusdi *et al.* (2014)	Indonesia	Individuals	Offline	Tangible, Reliability, Responsiveness, Assurance, Empathy
Carlos Pinho *et al.* (2011)	Portugal	Individuals	Online	Research facilities, Provides detailed Information, Privacy and security, Interaction facilities and Contacts, Speed and facility of access, Availability of relevant Downloads, Reliable and up-to-date Information, Searching facilities, Claims and Suggestions

Table 1.
Selected studies related to tax service quality

the service expectation and perceived service, is not absolutely exact (Cronin and Taylor, 1994). Due to the abstraction of the quality concept and other factors and a wide interpretative margin of the meaning of service, customers' evaluation of service quality has had the tendency to be based on their perceptions and experience of reality rather than the difference between their perceptions of performance vs their expectations of service quality (Ali *et al.*, 2010). Accordingly, a SERVPERF model which represents "performance-based measures" has been proposed to measure customers' perception after their experience (Cronin and Taylor, 1994). Other recent studies that align with this were conducted by Akdere *et al.* (2020) in the context of Turkish hospitals; Fragoso and Espinoza (2017) in the field of banking service quality; Ingaldi (2016) with the evaluation of service quality in the transport company; and Psomas *et al.* (2020) in their own study of citizen's service. Hence, the current study adopts the SERVPERF to measure tax service quality for enterprises.

In summary, the literature indicates that there has been inconsistency in the dimensions of service quality in general and tax service quality in particular. More importantly, there has been no research to date indicating the process of developing a scale to measure tax service quality, especially for enterprises. As such, the current study aims to fill in this gap by conducting a scale development process for measuring tax service quality for enterprises.

3. Scale development

This study combines both qualitative and quantitative methods in exploring the dimensionality of the tax service quality scale, following a three-step approach in its design: (1) generation of scale items, (2) scale purification, and (3) testing the validity and reliability of the tax service quality scale as suggested by Churchill (1979) and Morgado *et al.* (2018).

3.1 Generation of scale items

The process of item generation involves two main stages following suggestions by Morgado *et al.* (2018) and Tracy (2019). In the first stage, an extensive literature review was conducted in regard to the measurement of tax service quality applied in some industrial contexts. In the second stage, focus group discussions were made with local and central tax experts, enterprises, and academic lecturers/researchers to confirm the items and to check the form and content validity of the items.

In the first stage, the results of an extensive literature review show that the items that previous studies (e.g. Anita *et al.*, 2017; Awaluddin and Tamburaka, 2017; Jofreh and Rostami, 2014; Mustapha and Obid, 2014) manipulate and revolve around five dimensions of responsiveness, assurance, empathy, reliability and tangibility (see Table 1). Although these items were used for tax service quality for individuals and legal entities, we adopted these items for further adjustment in the next phase.

As for the second stage, a focus group discussion technique was selected as a suitable way to collect the participants' opinions in regard to tax service quality for enterprises (Neuman, 2014). In doing so, participants in focus groups are encouraged to express their opinions openly (Neuman, 2014), which could help to identify broad issues and gain new insights (Barbour and Kitzinger, 1999). In this stage, a total of three focus groups with 25 participants was carried out to explore the main elements of tax service quality including: (1) tax authority, (2) enterprises and (3) experts. These participants were selected as they are involved in the provision and the use of tax services, and they gain experience in tax service quality. The group discussion's profile is presented in Table 2.

Due to distance between central and local tax departments (about 650 km), the first online group was conducted by the central and local tax participants between Hanoi (the capital of

Vietnam) and Thua Thien Hue Province (located in central Vietnam). It is vital to note that the discussion with the central tax staff is very important for standardizing the scale of tax service quality because of the central tax staffs' abundance of experience in the management and reforming of tax service.

The second meeting that was organized included 8 participants as the representatives of enterprises (either directors or accountants involved in the use of tax service). The key informants were selected in a purposive way in relation to covering a range of business types (e.g. Joint Stock Company or private company) and fields (e.g. production, trading, service, transportation, and agriculture). The aim of this meeting was to gain a better understanding of enterprises' expectations as they use tax services. As Tracy (2019) suggested, focus groups do not require a high number of participants; a reasonable number of participants should be at least five. Therefore, the number of participants in our study is sufficient enough to provide the necessary information.

The third meeting for the academic group was conducted with five academic lecturers/researchers including two lecturers who specialize in economics and management; one lecturer/researcher in law; and two lecturers/researchers in tax service and tax policy. These participants played an indispensable part in this research to the extent that they helped to reinforce the theoretical and academic background.

For these focus groups, more attention was paid to the diversity of the participants in order to capture a comprehensive understanding of all the stakeholders involved as they relate to the tax service quality (Tracy, 2019) and their readiness for discussion with the tax staff. On average, it took around 120 min in the first meeting and 90 min in the second and the last.

These focus groups were asked to state their agreement or disagreement with the description of the scales and some problems involved in the scale of tax service quality. The invitations were sent to participants for selecting the location and time of meeting. In each meeting, participants introduced themselves; issues such as the measurement criteria for tax service quality and specifying each criterion were exchanged; and opinions were collected. These meetings resulted in a list of proposed items that could be used in the next stage of this research (see Table 3). These proposed items were selected on the basis of a high level of agreement between participants (70% or above) after the three meetings.

The results of these focus groups give important suggestions for tax service quality. There were common points proposed to all three meetings: supporting tax compliance or carrying out tax declaration or tax payment; tax staff having a polite, friendly, proper communication attitude and respect for businesses; the concept of employees being well dressed with a neat appearance online and offline to provide immediate solutions; and reminders of deadlines, and avoidance of freezing tax service processes by tax authorities. Specifically, the first meeting emphasized the aspects of the professionalism of tax authorities

Table 2. Group discussion's profile

Detail	*N*
Gender	25
Female	14
Male	11
Position	25
Local tax officers	10
Central tax officers	2
Manager/Director	2
Accountant person/Chief	6
Academic lecturers/researchers	5

Item no	Items
1	Tax staff is always ready to provide service
2	Tax service is delivered quickly and timely
3	The problems related to the tax support application system of the tax authority are regularly overcome in time
4	Pages at this site do not freeze after order information is entered
5	Unit functions of the tax authority are very well together as a team
6	Tax authority actively cooperates with other units (such as banks) to solve problems for businesses when paying taxes
7	Tax staffs are knowledgeable about professional skills to handle jobs clearly and easily to understand
8	Tax staffs have a polite, friendly, proper communication attitude and respect for businesses
9	Tax authority allows the implementation of service which does not distinguish the class or status of the communities
10	When you have problems, tax authority is sympathetic and reassuring
11	The tax authority always listens to ideas and understands the needs of businesses
12	Tax authority delivers orders when promised
13	Tax authority keeps its records accurately
14	Tax authority makes accurate promises about delivery time of services
15	Tax authority protects information about businesses
16	Tax authority has up-to-date equipment
17	Tax staffs are well dressed and appear neat
18	Tax authority is professional in its site which is visually appealing

Table 3.
Results of focus groups about items of tax service quality

in tax service provision. According to the staff at the central tax office, the professionalism of tax authorities reflects not only on the tax system (e.g. facilities and means of interaction between taxpayers and tax authorities), but also on the attitudes and behaviors of the tax staff (e.g. tax staff's professional qualifications meeting requirements of taxpayers and being considered trustworthy to taxpayers). The results of this focus group concentrated on the items related to the professionalism of tax service and the needs of taxpayers which had a wide range including waiting time, appearance of tax staff, accurate information and accurate promises in service delivery, facilities and equipment, and visually appealing websites of tax authorities. According to The Declaration on Vietnam Taxation Industry [2] associated with the process of tax reform and modernization, the aspect of professionalism, both in the tax staff and the tax management, is crucial in the provision of tax services.

In the second meeting, all the enterprises that participated in the meeting claimed that they lacked an updated knowledge on tax information and therefore they expected that tax authorities should provide more training activities, the assistance of functional units in tax declaration and information to help enterprises resolve their business problems. In the third meeting, the experts emphasized security of information and readiness to provide service by tax authorities. According to these experts, Vietnam aims to enhance public services, including tax service, thus tax service needs to be provided in a timely manner to meet the demand of enterprises. Further, experts agreed with the results of the first and second meeting regarding the professionalism in the provision of tax services.

3.2 Initial scale purification

After these processes, the tax service quality's scale was proposed for pre-testing. Data was collected from 121 enterprises in a central province in Vietnam for the pre-testing of the scale. The aim of the pre-testing was to ensure that the items elicit appropriate responses and to uncover any ambiguous wording or errors before the survey was launched.

To assess the construct validity of the scale, an exploratory factor analysis (EFA) was conducted with the Varimax rotation method and the criterion of minimum eigenvalue of 1.0 (Coakes and Steed, 2001). The suitability for EFA was first examined by using two criteria: the Kaiser-Meyer-Olkin (KMO) test and Bartlett's Test of Sphericity (Tran *et al.*, 2017a, b). The examination indicated that EFA achieved an adequate level to proceed as KMO values was 0.94 and Bartlett's Test of Sphericity was significant ($p < 0.001$). The results of EFA (Table 4) identified the two-dimensional construct and the scree-plot results also supported the two-dimensional solution. As such, this two-dimensional construct was selected for further analysis in the main study. Out of 18 items generated from phase one, five items were removed due to cross loading of 0.5 or higher on two factors (Nunnally, 1978), 13 items were retained including 5 items loaded in the first factor (Responsiveness) and 8 items loaded in the second factor (Professionalism). These two factors explained 75.8% of the variance.

To evaluate the internal consistency of the scale, Cronbach's Alpha for each scale was calculated. The coefficient alpha values need to be higher than or equal to 0.7 for reliability criterion (Nunnally, 1978). In this pre-test study, the Cronbach's Alpha for the two factors were: responsiveness (0.92) and professionalism (0.94), which exceeded the value of 0.7. These results indicated that the scale had a satisfactory level of internal consistency.

3.3 Main study

3.3.1 Sampling method. The size of the sample depends on the estimation technique used (i.e. ML, GLS, PLS or ADF). The use of the maximum likelihood technique in confirmatory factor analysis (CFA) requires the sample size to be at least 150 respondents (Hair *et al.*, 1998). Further, the minimum sample size should be five or ten times of an estimated parameter (Bollen, 1989). Accordingly, this study determined that the minimum sample size was 200

Code of items	Items	Professionalism	Responsiveness
Pro1	Tax authority allows the implementation of service which does not distinguish the class or status of the communities	0.74	
Pro2	Tax authority delivers orders when promised	0.77	
Pro3	Tax authority keeps its records accurately	0.77	
Pro4	Tax authority makes accurate promises about delivery time of services	0.77	
Pro5	Tax authority protects information about businesses	0.79	
Pro6	Tax authority has up-to-date equipment	0.73	
Pro7	Tax staffs are well dressed and appear neat	0.80	
Pro8	Tax authority is professional in its site which is visually appealing	0.74	
Res1	Tax staff is always ready to provide service		0.75
Res2	The problems related to the tax support application system of the tax authority are regularly overcome in time		0.82
Res3	Pages at this site do not freeze after order information is entered		0.83
Res4	Unit functions of the tax authority are very well together as a team		0.75
Res5	Tax authority actively cooperates with other units (such as banks) to solve problems for businesses when paying taxes		0.74
Eigenvalues		12.58	1.07
Variance explained (%)		39.3	36.6
Cumulative variance explained (%)		39.3	75.9
Cronbach's alpha		0.92	0.94

Table 4. Exploratory factor analysis of tax service quality

respondents. The enterprises were contacted on the basis of proportionate stratified random sampling. After calculating the sample size, the enterprises were selected proportionately from each tax department to obtain the required sample size.

To ensure that the minimum sample size was obtained, a main study was conducted by distributing the survey questionnaire to 450 enterprises. The sample included both managers and accountants/accountant chiefs of enterprises in all districts, towns and cities in Thua Thien Hue, a province in Central Vietnam. Respondents returned their filled out questionnaires in a sealed envelope to the one-stop service counters in tax offices for researchers' subsequent collection. A total of 362 valid questionnaires were obtained, resulting in a response rate of 72.4%. At the same time, emails were also sent to 450 enterprises located in these places to remind them to fill out the surveys. Consequently, 362 enterprises agreed to take part in the study with a few sent by email. To assess the construct validity of the scale, reliability analysis, CFA and structural equation modeling (SEM) were conducted.

3.3.2 Confirmatory factor analysis (CFA). The proposed two-factor tax service quality's scale derived from EFA was examined using CFA in order to assess the measurement model and establish convergent and discriminant validity for the scale. In this measurement model, all factor loadings were significant ($p < 0.001$). As shown in Table 5, all the items were significantly loaded on their proposed dimensions and their factor loadings ranged from 0.64 to 0.84. The proposed two-factor measurement model also obtained an adequate fit with the data (Chi square/df = 3.05; GFI = 0.93; CFI = 0.97; RMSEA = 0.076).

Table 5. Results of confirmatory factor analysis

Item no	Variables and items	Factor loading	CR	AVE	Cronbach's alpha
Responsiveness			0.88	0.64	0.90
Res1	Tax staff is always ready to provide service	0.82			
Res2	The problems related to the tax support application system of the tax authority are regularly overcome in time	0.81			
Res3	Pages at this site do not freeze after order information is entered	0.79			
Res4	Unit functions of the tax authority are very well together as a team	0.78			
Res5	Tax authority actively cooperates with other units (such as banks) to solve problems for businesses when paying taxes	0.75			
Professionalism			0.92	0.59	0.92
Pro1	Tax authority allows the implementation of service which does not distinguish the class or status of the communities	0.72			
Pro2	Tax authority delivers orders when promised	0.83			
Pro3	Tax authority keeps its records accurately	0.78			
Pro4	Tax authority makes accurate promises about delivery time of services	0.84			
Pro5	Tax authority protects information about businesses	0.64			
Pro6	Tax authority has up-to-date equipment	0.77			
Pro7	Tax staffs are well dressed and appear neat	0.80			
Pro8	Tax authority is professional in its site which is visually appealing	0.76			

Note(s): All factor loadings are significant at 0.001 level

The Cronbach's Alpha for Responsiveness and Professionalism was 0.90 and 0.92, respectively and was higher than the accepted value of 0.7. The construct reliability (CR) for the two dimensions was 0.88 and 0.92, respectively, exceeding the cut-off value of 0.8 (Hair *et al.*, 2010). The average variance extracted (AVE) values for the two dimensions were above 0.50, indicating a satisfactory level of convergent validity (Hair *et al.*, 2010). Results of the data analyses suggested that the proposed two-factor tax service quality scale had a high level of convergent validity.

Fornell and Larcker (1981) suggested that discriminant validity should be examined by comparing AVE values with squared correlation estimate. The results indicated that the AVE values (Table 5) for dimension of responsiveness (0.64) and professionalism (0.59) were greater than the squared correlation estimate (0.49), which satisfied the criteria of discriminant validity. Further, for the purpose of comparison and to assess the discriminant validity, following Tang *et al.*'s (2018) suggestion, a measurement model of 13 items loaded in one factor was tested and compared with the two-dimensional model. The fit indices for the one factor model were Chi square/df = 3.88; GFI = 0.91; CFI = 0.95; RMSEA = 0.09. The Chi square difference between the two models was 50.4, $p < 0.001$ (Table 6). This indicated that the two-factor model offered a better fit than the one-factor model and the discriminant validity of the two factors in this model was satisfactory.

3.3.3 Assessing the predictive validity of tax service quality scale. At the final stage of scale development, predictive validity needs to be tested (Le *et al.*, 2020). Predictive validity or nomological validity refers to the relationship of the scale with a consequence (Tran *et al.*, 2017a, b). In this study, predictive validity was tested by using SEM to assess how each of the dimensions of tax service quality affects enterprises' satisfaction. The dependent variable (enterprises' satisfaction) was measured by 4 items adapted from Loureiro *et al.* (2013). The results are shown in Table 7.

The model shows a good fit with the data (Chi square/df = 2.74; GFI = 0.9; CFI = 0.96; RMSEA = 0.07). As expected, both dimensions of tax service quality are important predictors of enterprises' satisfaction. Specifically, responsiveness ($r = 0.19$, $p < 0.05$) and professionalism ($r = 0.69$, $p < 0.001$) were positively related to enterprises' satisfaction. The two factors explain 74% of the variance of enterprises' satisfaction. Therefore, the proposed tax service quality scale shows predictive validity.

4. Discussion, implications, limitations and future research

4.1 Discussion and implications

4.1.1 Discussion. Although several prior studies have applied SERVQUAL or SERVPERF to measure the service quality in different industries, limited attention has been given to

Alternative models	Chi-square	df	GFI	CFI	RMSEA	Chi-square difference
Model 1: Two-factor model	174.34	57	0.93	0.97	0.076	
Model 2: One-factor model	224.74	58	0.91	0.95	0.090	50.4***

Note(s): ***$p < 0.001$

Table 6. Model comparison

Paths	Coefficient	*P* value
Responsiveness → Satisfaction	0.19	*
Professionalism → Satisfaction	0.69	***

Note(s): *$p < 0.05$, ***$p < 0.001$

Table 7. SEM analysis of tax service quality on enterprises' satisfaction

measuring the tax service quality. With only a few studies on measuring tax service quality, the previous studies have primarily focused on tax service quality for individual taxpayers (Anita *et al.*, 2017; Awaluddin and Tamburaka, 2017; Mustapha and Obid, 2014; Rusdi *et al.*, 2014; Carlos Pinho *et al.*, 2011). This study is one of the first efforts to develop a scale for measuring tax service quality for enterprises. By combining both qualitative and quantitative methods, research results indicate two concepts that are recognized as key dimensions to reflect tax service quality for enterprises, comprising (1) responsiveness, and (2) professionalism. The method we used in this study emphasizes the relevance of the three-step approach for developing a measurement scale, including a literature review and focus group discussion for generation of research items, initial scale purification and testing the validity and reliability of the scale (Churchill, 1979; Morgado *et al.*, 2018). The results indicate a good model fit of the measurement scale and provide strong empirical evidence to support that our two-dimensional scale for measuring tax service quality is both reliable and valid. This study also enriches the current literature through emphasizing the predictive role of tax service quality on taxpayers' attitudes (Mustapha and Obid, 2015; Anita *et al.*, 2017). The SEM results show that both dimensions of tax service quality have positive influence on enterprises' satisfaction, which indicates the predictive validity of this tax service quality scale. A notable finding is that the dimension of professionalism is the stronger predictor of enterprises' satisfaction. Major findings and implications for each of these dimensions are as follows.

First, responsiveness is found to be a crucial dimension of tax service quality for enterprises, especially in the Vietnamese context. Responsiveness is understood as readiness, promptness, and timeliness in tax service quality. There is an agreement in the relevant literature that responsiveness is the ability to provide services quickly to meet expectations of taxpayers (Awaluddin and Tamburaka, 2017; Carlos Pinho *et al.*, 2011). Jofreh and Rostami (2014) recommended the provision of quality tax service and better communication with taxpayers. The responsiveness of the tax authorities to the needs of taxpayers was proposed by McKee *et al.* (2018) or IRS (2018). According to IRS (2018), public confidence in the IRS was low due to the lack of responsiveness to taxpayer needs. Based on responsiveness, tax authorities regularly alert taxpayers to solve taxpayers' problems in order to reduce the risk of tax penalties (Awaluddin and Tamburaka, 2017). Carlos Pinho *et al.* (2011) proposed that the improvement of communication between tax authorities and taxpayers could increase the overall trust in tax systems. In addition, this newly discovered responsiveness also includes cooperation of the tax staff, internally and externally, with other units (e.g. banks) in resolving problems for enterprises in a timely manner. This could therefore help enterprises decrease tax costs. Thus, this proposed dimension supports research conducted by OECD (2017) which suggests the need for high performing staff during the supply of tax service quality.

Second, this study confirms that professionalism is a new dimension which reflects tax service quality. This dimension shows that waiting time, accurate service delivery and guidance of tax service quality by tax authority, physical facilities, equipment, and appearance of tax staff are all aspects that reflect professionalism. Professionalism is one of the constituent elements of the Vietnamese tax industry Declaration with tax staff, tax management, and innovation of administrative procedure reform (Vietnam General Department of Taxation, 2019). It requires that tax service quality is supplied fairly, accurately, and fully for enterprises. There is an agreement in the relevant literature that theoretical and empirical studies support this notion (Mustapha, 2015; Awaluddin and Tamburaka, 2017; Jacobs *et al.*, 2013; Alm *et al.*, 2010; IRS, 2020). In particular, Mustapha (2015) emphasized that tax authorities need to provide tax services equally and fairly between taxpayers. IRS (2020) also proved that providing the fairest level of service to taxpayers in tax administration and the highest level of legal professionalism is required to avoid taxpayers' dissatisfaction. Mustapha (2015) identified that reliable and updated

equipment are important while supplying e-tax service quality. Further, Awaluddin and Tamburaka (2017) proposed that while sufficient ability, good knowledge and attitudes of the tax staff are required for the responsiveness dimension, the appearance of neat and well-dressed tax staff are required for professionalism. Particularly, Jacobs *et al.* (2013) demonstrated that tax administrations need to redesign electronic systems for enterprises to interact based on secure information and they must be able to quickly secure answers for taxpayers. According to OECD (2017), taxpayers have the right to be informed, assisted, and heard; therefore professionalism requires the proper training for tax staff, convenient digital services, intelligent data for tax service and a future-ready workforce. As such, the dimension of professionalism in our study provides evidence of the importance of professionalism in the tax service administration of tax authorities.

4.1.2 Policy and managerial implications. The results of this study provide the scale with two new dimensions (responsiveness and professionalism) to measure tax service quality. This scale can be used by tax management authorities as a convenient tool to understand and measure tax service quality. Tax authorities need to be aware of certain aspects of tax service quality before they can provide tax service quality. This study also helps tax authorities determine whether there is a gap between the desired tax service quality and the current tax service quality; from this, solutions can be found to improve tax service quality. This necessitates them to orientate the tax authority's operations and strategies around the concept of the perceived value of tax service quality to improve the satisfaction of enterprises and their trust in the government. To meet the increasing demand of enterprises, tax authorities need to understand and supply what they need rather than what tax authorities have.

According to the findings, responsiveness and professionalism are the two key dimensions of tax service quality and are the crucial factors that could improve enterprises' satisfaction. Based on the responsiveness of tax services, a quick response with the readiness of an e-tax system or tax staff are necessary to serve the needs of enterprises. It is important to build a tax service with the willingness to support or serve as soon as possible. The cooperation between internal and external members needs to assure close cohesion, so each position should have and follow regulations in the response process. For enterprises, enterprises need to actively provide feedback for tax authorities to improve their services to better serve the needs of enterprises.

Further, professionalism is an important dimension of tax service quality to improve enterprises' satisfaction. Several service attributes in this dimension are related to tax staff and tax authorities' facilities. Thus, in addition to the appearance of well-dressed tax staff, tax authorities' commitments should be made professionally through updated, accurate and safe information provided for the required services. Moreover, the fairness of tax services offered is very important for enterprises in tax authority communication. Thus, it is fundamental to provide training plans to the tax staff and monitor the appropriateness of the level of interaction, knowledge and attitude towards enterprises to achieve improved levels of satisfaction. Regarding the service attributes related to tax authorities' facilities of professionalism dimension, the visual or lively websites of tax authorities will attract businesses to look up and access tax information. With the advent of global digitalization, eTax, application (software) through the Internet or mobile applications or social networks are needed to improve tax service quality and enhance enterprises' satisfaction. Additionally, enterprises need to invest in compatible information technology equipment in accordance with the requirements of tax reform and modernization associated with 4.0 technology to facilitate the process of accessing the tax services provided by tax authorities. Thus, investment in information technology and human resources is also a requirement for enterprises to actively back up data when the development of the business places requirements on data security.

4.2 Limitations and future research

This research was conducted in Vietnam, an emerging Asian economy where many tax issues need to be reformed. Further studies should be done for other emerging countries with similar characteristics to validate the scale in a cross-national context.

This research has developed the tax service quality scale and investigated the relationship between tax service quality and business satisfaction. Future studies should use the developed scale and explore the relationship between this scale and other dependent variables such as attitude and behavior of taxpayers. In particular, this study approaches tax service quality as supportive of tax compliance for businesses. Therefore, future research can test the relationship between tax service quality and tax compliance of businesses.

Notes

1. Decision No. 732/QD-TTG of the Prime Minister of Vietnamese: On the approval of the strategy for tax system reform for the period 2011–2020.
2. Declaration of the Vietnam Tax Industry "Transparency – Professionalism – Integrity – Innovation" is stipulated in Decision No. 1766/QD-TCT dated November 1, 2012 on the promulgation of the Declaration of Vietnam Tax Industry.

References

Agus, A., Barker, S. and Kandampully, J. (2007), "An exploratory study of service quality in the Malaysian public service sector", *International Journal of Quality and Reliability Management*, Vol. 24 No. 2, pp. 177-190.

Akdere, M., Top, M. and Tekingündüz, S. (2020), "Examining patient perceptions of service quality in Turkish hospitals: the SERVPERF model", *Total Quality Management and Business Excellence*, Vol. 31 Nos 3-4, pp. 342-352.

Ali, M.H., Ali, N.A. and Radam, A. (2010), "Validating SERVPERF model in government agencies", *The Journal of Human Resource and Adult Learning*, Vol. 6 No. 1, pp. 84-93.

Alm, J., Cherry, T., Jones, M. and McKee, M. (2010), "Taxpayer information assistance services and tax compliance behavior", *Journal of Economic Psychology*, Vol. 31 No. 4, pp. 577-586.

Amoh, J.K. and Ali-Nakyea, A. (2019), "Does corruption cause tax evasion? Evidence from an emerging economy", *Journal of Money Laundering Control*, Vol. 22 No. 2, pp. 217-232.

Angur, M.G., Nataraajan, R. and Jahera, J.S. (1999), "Service quality in the banking industry: an assessment in a developing economy", *International Journal of Bank Marketing*, Vol. 17 No. 3, pp. 116-125.

Anita, J., Tri, R. and Sigit, S. (2017), "Analysis of effect of knowledge and service quality, accessibility of information, awareness and behavior of taxpayers and impact on satisfaction and compliance with taxpayers of land and buildings in the city Batam Island Riau province", *International Journal of Business and Management Invention*, Vol. 6 No. 8, pp. 73-83.

Arasli, H., Mehtap-Smadi, S. and Katircioglu, S.T. (2005), "Customer service quality in the Greek Cypriot banking industry", *Managing Service Quality: An International Journal*, Vol. 15 No. 1, pp. 41-56.

Awaluddin, I. and Tamburaka, S. (2017), "The effect of service quality and taxpayer satisfaction on compliance payment tax motor vehicles at office one roof system in Kendari", *The International Journal of Engineering and Science (IJES)*, Vol. 6 No. 11, pp. 25-34.

Barbour, R. and Kitzinger, J. (1999), "Introduction: the challenge and promise of focus groups", in Barbour, R. and Kitzinger, J. (Eds), *Developing Focus Group Research: Politics, Theory and Practice*, Sage, London, pp. 1-20.

Bellizzi, M.G., Eboli, L. and Mazzulla, G. (2020), "Air transport service quality factors: a systematic literature review", *Transportation Research Procedia*, Vol. 45, pp. 218-225.

Bollen, K.A. (1989), "A new incremental fit index for general structural equation models", *Sociological Methods and Research*, Vol. 17 No. 3, pp. 303-316.

Carlos Pinho, J., de Lurdes Martins, M. and Macedo, I. (2011), "The effect of online service quality factors on internet usage: the web delivery system of the taxation department", *International Journal of Quality and Reliability Management*, Vol. 28 No. 7, pp. 706-722.

Caro, L.M. and García, J.A.M. (2007), "Measuring perceived service quality in urgent transport service", *Journal of Retailing and Consumer Services*, Vol. 14 No. 1, pp. 60-72.

Çetin Gerger, G. (2019), "Tax services and tax service providers' changing role in the IoT and AmI environment", in Mahmood, Z. (Ed.), *Guide to Ambient Intelligence in the IoT Environment: Principles, Technologies and Applications*, Springer International Publishing, Cham, pp. 203-216.

Churchill, G.A. Jr (1979), "A paradigm for developing better measures of marketing constructs", *Journal of Marketing Research*, Vol. 16 No. 1, pp. 64-73.

Coakes, S. and Steed, L. (2001), *SPSS without Anguish: Version 10.0 for Windows*, John Wiley, Queensland.

Cronin, J.J. Jr and Taylor, S.A. (1994), "SERVPERF versus SERVQUAL: reconciling performance-based and perceptions-minus-expectations measurement of service quality", *Journal of Marketing*, Vol. 58 No. 1, pp. 125-131.

Feld, L. and Frey, B. (2006), "Tax evasion in Switzerland: the role of deterrence and tax morale", Working Paper Series ISSN 1424-0459, University of Zurich, Institute for Empirical Research in Economics.

Floropoulos, J., Spathis, C., Halvatzis, D. and Tsipouridou, M. (2010), "Measuring the success of the Greek taxation information system", *International Journal of Information Management*, Vol. 30 No. 1, pp. 47-56.

Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.

Fragoso, J.T. and Espinoza, I.L. (2017), "Assessment of banking service quality perception using the SERVPERF model", *Contaduría y Administración*, Vol. 62 No. 4, pp. 1294-1316.

Gangl, K., Muehlbacher, S., de Groot, M., Goslinga, S., Hofmann, E., Kogler, C., Antonides, G. and Kirchler, E. (2013), "'How can I help you?' Perceived service orientation of tax authorities and tax compliance", *FinanzArchiv: Public Finance Analysis*, Vol. 69 No. 4, pp. 487-510.

Govender, J.P. and Pan, Q. (2011), "Enhancement of service quality in the intercity bus transport industry", *Alternation*, Vol. 4, pp. 181-202.

Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2010), *Multivariate Data Analysis*, 7th ed., Pearson, New York.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (1998), *Multivariate Data Analysis*, Prentice-Hall, Upper Saddle River, New Jersey.

Hidayat, R., Suhadak, D., Siti, R. and Bambang, W. (2014), "Measurement model of service quality, regional tax regulations, taxpayer satisfaction level, behavior and compliance using confirmatory factor analysis", *World Applied Sciences Journal*, Vol. 29 No. 1, pp. 56-61.

Ingaldi, M.K. (2016), "Use of the SERVPERF method to evaluate service quality in the transport company", *Independent Journal of Management and Production*, Vol. 7 No. 1, pp. 168-177.

IRS (2018), *The Taxpayer Assistance Blueprint: 'Tax Services Improvements'*, Internal Revenue Service, Washington, District of Columbia.

IRS (2020), *Internal Revenue Manuals: General Legal Services - Professionalism and Government Ethics Programs*, Internal Revenue Services, Washington, DC.

Jacobs, A., Crawford, D., Murdoch, T., Hodges, Y., Lethbridge, C., Jimenez, G., Osinski, D., Hinsz, S., Pulse, D. and Kamenov, A. (2013), "Detailed guidelines for improved tax administration in Latin America and the Caribbean", *Organizational Structure and Management*, Deloitte Consulting LLP., USAID, available at: https://pdf.usaid.gov/pdf_docs/pnaed062.pdf (accessed 20 April 2020).

Jofreh, M. and Rostami, A. (2014), "An investigation the effect of improving taxpayer service satisfaction VAT department in Tehran", *International Journal of Basic Sciences and Applied Research*, Vol. 3 No. SP, pp. 198-203.

Khudri, M.M. and Sultana, S. (2015), "Determinants of service quality and impact of service quality and consumer characteristics on channel selection", *British Food Journal*, Vol. 117 No. 8, pp. 2078-2097.

Kirchler, E., Muelbacher, S., Kastlunger, B. and Wahl, I. (2007), *Why Pay Taxes? A Review of Tax Compliance Decisions*, Georgia State University, Altanta.

Kitapci, O., Akdogan, C. and Dortyol, İ.T. (2014), "The impact of service quality dimensions on patient satisfaction, repurchase intentions and word-of-mouth communication in the public healthcare industry", *Procedia-Social and Behavioral Sciences*, Vol. 148, pp. 161-169.

Lau, M.M., Cheung, R., Lam, A.Y. and Chu, Y.T. (2013), "Measuring service quality in the banking industry: a Hong Kong based study", *Contemporary Management Research*, Vol. 9 No. 3, pp. 263-286.

Le, V.H., Nguyen, H.T.T., Nguyen, N. and Pervan, S. (2020), "Development and validation of a scale measuring hotel website service quality (HWebSQ)", *Tourism Management Perspectives*, Vol. 35, 100697.

Lee, C.H., Zhao, X. and Lee, Y.C. (2019), "Service quality driven approach for innovative retail service system design and evaluation: a case study", *Computers and Industrial Engineering*, Vol. 135, pp. 275-285.

Loureiro, S.M.C., Almeida, M. and Rita, P. (2013), "The effect of atmospheric cues and involvement on pleasure and relaxation: the spa hotel context", *International Journal of Hospitality Management*, Vol. 35, pp. 35-43.

McAlexander, J.H., Kaldenberg, D.O. and Koenig, H.F. (1994), "Service quality measurement", *Journal of Health Care Marketing*, Vol. 14 No. 3, pp. 34-40.

McKee, M., Siladke, C.A. and Vossler, C.A. (2018), "Behavioral dynamics of tax compliance when taxpayer assistance services are available", *International Tax and Public Finance*, Vol. 25 No. 3, pp. 722-756.

Morgado, F.F., Meireles, J.F., Neves, C.M., Amaral, A.C. and Ferreira, M.E. (2018), "Scale development: ten main limitations and recommendations to improve future research practices", *Psicologia: Reflexão e Crítica*, Vol. 30 No. 1, pp. 3-23.

Muhammad, S. and Saad, R.A.J. (2016), "Determinants of trust on Zakat institutions and its dimensions on Intention to pay Zakat: a pilot study", *Journal of Advanced Research in Business and Management Studies*, Vol. 3 No. 1, pp. 40-46.

Mustapha, B. (2015), "Evaluation of E-tax quality implementation criteria: the case of self-employed taxpayers", *International Journal of Computer and Electronics Research*, Vol. 4 No. 2, pp. 39-45.

Mustapha, B. and Obid, S.N.B.S. (2014), "Reengineering tax service quality using a second order confirmatory factor analysis for self-employed taxpayers", *International Journal of Trade, Economics and Finance*, Vol. 5 No. 5, pp. 429-434.

Mustapha, B. and Obid, S.N.B.S. (2015), "Tax service quality: the mediating effect of perceived ease of use of the online tax system", *Procedia-Social and Behavioral Sciences*, Vol. 172, pp. 2-9.

Narayan, B., Rajendran, C. and Sai, L.P. (2008), "Scales to measure and benchmark service quality in tourism industry: a second-order factor approach", *Benchmarking: An International Journal*, Vol. 15 No. 4, pp. 469-493.

Neuman, W.L. (2014), *Social Research Methods: Qualitative and Quantitative Approaches*, Pearson Education, Essex.

Nunnally, J.C. (1978), *Psychometric Theory*, 2d ed., McGraw-Hill Education, New York.

OECD (2007), *Guidance Note: Improving Taxpayer Service Delivery, Channel Strategy Development*, OECD, Paris.

OECD (2013), *Managing Service Demand: A Practical Guide to Help Revenue Bodies Better Meet Taxpayers' Service Expectations*, OECD Publishing, Paris.

OECD (2016), *Rethinking Tax Services: The Changing Role of Tax Service Providers in SME Tax Compliance*, OECD Publishing, Paris.

OECD (2017), *Tax Administration 2017-Comparative Information on OECD and Other Advanced and Emerging Economies*, OECD Publishing, Paris.

Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1988), "Servqual: a multiple-item scale for measuring consumer perc", *Journal of Retailing*, Vol. 64 No. 1, pp. 12-40.

Parikh, D. (2006), "Measuring retail service quality: an empirical assessment of the instrument", *Vikalpa*, Vol. 1 No. 2, pp. 45-56.

Pekkaya, M., Pulat İmamoğlu, Ö. and Koca, H. (2019), "Evaluation of healthcare service quality via Servqual scale: an application on a hospital", *International Journal of Healthcare Management*, Vol. 12 No. 4, pp. 340-347.

Psomas, E., Bouranta, N., Koemtzi, M. and Keramida, E. (2020), "Determining the impact of service quality on citizens' satisfaction and the role of citizens' demographics. The case of the Greek citizen's service centers", *The TQM Journal*, Vol. ahead-of-print No. ahead-of-print.

Rusdi, H.N., Siti, R.H. and Bambang, W.O. (2014), "Measurement model of service quality, regional tax regulations, taxpayer satisfaction level, behavior and compliance using confirmatory factor analysis", *World Applied Sciences Journal*, Vol. 29 No. 1, pp. 56-61.

Savitri, E. (2015), "The effect of tax socialization, tax knowledge, expediency of tax ID number and service quality on taxpayers compliance with taxpayers awareness as mediating variables", *Procedia-Social and Behavioral Sciences*, Vol. 211, pp. 163-169.

Simmers, C.S. and Keith, N.K. (2015), "Measuring retail store service quality: the disparity between the retail service quality scale (RSQS) and comment cards", *Academy of Marketing Studies Journal*, Vol. 19 No. 2, pp. 117-125.

Stiglingh, M. (2014a), "Service quality framework for the South African Revenue Service from the perspective of the tax practitioner", *Public Relations Review*, Vol. 40 No. 2, pp. 240-250.

Stiglingh, M. (2014b), "A measuring instrument to evaluate e-service quality in a revenue authority setting", *Public Relations Review*, Vol. 40 No. 2, pp. 216-225.

Supadmi, N.L. (2009), "Improving compliance through taxpayer service quality", *Journal of Accounting and Business*, University of Udayana, Vol. 4 No. 2, pp. 1-14.

Tang, G., Chen, Y., Jiang, Y., Paille, P. and Jia, I. (2018), "Green human resource management practices: scale development and validity", *Asia Pacific Journal of Human Resources*, Vol. 56 No. 1, pp. 31-55.

Thornton, J.M. and Shaub, M.K. (2014), "Tax services, consequence severity, and jurors' assessment of auditor liability", *Managerial Auditing Journal*, Vol. 29 No. 1, pp. 50-75.

Torgler, B. (2007), *Tax Compliance and Tax Morale*, Edward Elgar Publishing, Cheltenham.

Tracy, S.J. (2019), *Qualitative Research Methods: Collecting Evidence, Crafting Analysis, Communicating Impact*, John Wiley and Sons, Hoboken.

Tran, B.X., Mai, H.T., Nguyen, L.H., Nguyen, C.T., Latkin, C.A., Zhang, M.W. and Ho, R.C. (2017a), "Vietnamese validation of the short version of internet addiction test", *Addictive Behaviors Reports*, Vol. 6, pp. 45-50.

Tran, T.P., Ho, B., Le, T. and Hoang, H. (2017b), "Application and validation of a consumer ethnocentrism scale in a young Vietnamese market segment", *Journal of Global Scholars of Marketing Science*, Vol. 27 No. 1, pp. 60-77.

Vietnam General Department of Taxation (2019), *Report on Assessment of Effectiveness of Tax Administration Activities of Provincial Tax Authorities in the Mid-term Period 2016–2018*, Vietnam General Department of Taxation, Hanoi.

Further reading

Ţîţu, M.A., Răulea, A.S. and Ţîţu, Ş. (2016), "Measuring service quality in tourism industry", *Procedia-Social and Behavioral Sciences*, Vol. 221, pp. 294-301.

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