

A PROPOSED THEORETICAL FRAMEWORK ON IMPROVING COMPLIANCE BEHAVIOUR TOWARDS LEGAL METROLOGY VERIFICATION: THE CASE OF METROLOGY CORPORATION MALAYSIA SDN. BHD. (MCM)

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ABSTRACT

As we all know, moral precepts to ensure the integrity of the measurements were contained within the holy books - e.g. the Qur'an, Torah, and Bible and in The Analects (Lun Yu) of Confucius and in the early India *Arthashastra of Kautilya*. Compliance of the business owners to verify their weights and measures instruments are important and depending on several factors. Qualitative research methodology was used where a thorough review of literature on compliance behavior in the metrology verification in general and the available literature on Metrology Corporation Malaysia Sdn. Bhd (MCM) as well as interviews were conducted, the results suggested the norms, attitude, perceived behavioral control and knowledge to be positively and significantly correlated with compliance behavior of business owners towards legal metrology verification.

Keywords: Compliance behavior, legal metrology verification, Metrology Corporation Malaysia Sdn. Bhd. (MCM)

INTRODUCTION

Calling people to do good and forbidding evil is enshrined in the Qur'an and is a religious obligation for all Muslims. The following verses of the Qur'an indicate a precise injunction to command virtue and forbid vice. And let there be [arising] from you a community inviting to [all that is] good, enjoining what is right and forbidding what is wrong, and those will be prosperous (al-Qur'an, 3:104). Even though the duty of enjoining good and forbidding wrong is required of all Muslims, the state is empowered to make arrangements to oversee the implementation of this obligation. This appears to be the idea behind the establishment of Religious Enforcement Division (RED) in the State Religious Department in each state in Malaysia as one of the functions of RED is to curb immoral activities or *ma'siyāt* by enforcing the *Shariah* provisions as prescribed.

Imam al-Ghazali argued that the Hisbah practice must be seen as a *fard kifayah* for Muslims. Every Muslim is expected to be active in the propagation of good (*ma'ruf*) and suppression of

evil (*munkar*). However, it has been made an obligation on a section of society to remain engaged in it. *Hisbah* is an agency of the government established to monitor the activities of individuals related to morality, religion and economy (the general social life) to uphold justice and honor as required by *shri'ah* (Mohamad Syafiqe Abdul Rahim, 2010). The major functions of the *Hisbah* institution are as follows:

1. To encourage the people to fulfil their religious duties as prescribed by the *shari'ah*.
2. To cultivate high moral standards by combating immoral behaviour in the society.
3. To monitor people's activities, support positive acts and prevent corrupt ones.

Malaysia is a federation of 13 states and three federal territories of Kuala Lumpur, Labuan and Putrajaya. It is a Southeast Asian country and consists of two geographical regions divided by the South China Sea: the peninsular Malaysia (or West Malaysia) and Malaysian Borneo (or East Malaysia) located on the northern part of the island of Borneo. According to September 2016 estimate, Malaysia has a population of 30, 876,845. Malaysia is a multicultural society with Malays, Chinese and Indians living side by side in peace. The Malays are the largest community, comprising about 60 per cent of the population. By constitutional definition, all Malays are Muslim and they follow the Shafi'i school of jurisprudence. The government has established institutions to carry out similar roles of *al-Hisbah* such as Jabatan Kemajuan Islam Malaysia (JAKIM), Majlis Mufti Kebangsaan and all religious institutions at the state level such as Jabatan Agama Islam (JAIS), Majlis Agama Islam Negeri Sembilan (MAINS), and Majlis Agama Islam Pahang (MAIP) In Selangor, there is the Enforcement Division whose duty is to take care of any immoral activities in the state (W. Muhammad, 2015: 34). The duties of the Religious Enforcement Officer, regarded as *multasib*, are to take actions against the Muslims who are involved in such crimes or sins. Taking actions does not mean arresting the wrongdoers and charging them in the courts. In most cases, they are to warn those who have committed or about to commit indecent acts.

Islam, it may be noted, was once the law of the land in Tanah Melayu (Malay Land). After gaining independence, the leaders felt that it was necessary to continue the legacy left by their ancestors to uphold the Islamic values so that the faith of the Muslims are protected, free from any form of distortions. It was also argued that the institutions of *Hisbah* would bring out the beauty of Islam so that Muslims and non-Muslims alike look at Islam as the religion of humanity which brings peace to the community. Since Islam is a state matter, each state has its own department in preventing immoral activities. These institutions may carry different titles but the nature of the work is the same i.e., to curb activities contrary to Islamic law. The immoral activities, according to the Syari'ah Criminal Offence Enactment, are more or less 42 in number listed under four categories: sanctity of the religion of Islam and its institutions, 'aqidah, indecency and miscellaneous. The mandates given to the Religious Enforcement Officer in exercising the functions are basically governed by the statutory law.

The function of the Department of Religious Affairs in each state in enjoining virtue and forbidding evil is generally similar, particularly through the establishment of the Religious Enforcement Division (RED). Among the functions of the Religious Enforcement Division are to receive information of the immoral activities committed in the society either in public or private and accordingly take actions in accordance with the laid down procedures, to implement or enforce the law related to *Shariah* criminal offence, as well as to investigate the cases related to such offences before the arrested person can be prosecuted by the *Syariah* Prosecutor.

Accuracy of measurement for trading is important in Islam for fair and honest trade to take place. The story of Prophet Shu'ayb who was sent to Madyan people who conducted cheating in weights and measures instruments is a clear proof and evidence that Islam put important attention to measurement of a transaction. Allah punish the Madyan people by huge earthquake that finally diminished them from the earth as if they were not there due to their own actions.

The Qur'an (7: 85): "And to Midian [we sent] their brother Shu'ayb. He said: 'O my people! serve God, you have no god other than Him; clear proof indeed has come to you from your Lord, therefore give full measure and weight and do not diminish to men their things, and do not make mischief in the land after its reform; this is better for you if you are believers.'" In addition, the Prophet (pbuh) said: "A truthful and honest trader will be a companion of the prophets, the righteous and the martyrs on the Day of Judgement." [Tirmidhi]. Prophet Muhammad also encourage Muslims to be a truthful and honest trader. These Islamic perspectives might become one of MCM strategies to build institutional linkages with Islamic institutions at every state in Malaysia to promote legal metrology verification in the context of *Shariah Islamiyah*. This strategy in line the finding of this study that MCM needs to influence the subjective norms and attitudes which are not easy to touch. Influencing them through their belief and religion is one of effective way to do it.

Legal metrology has a significant impact on society and the economy, both in terms of regulating measuring instruments to ensure consumer protection and because it lowers measuring uncertainties in measurement instruments, which has consequences for countries' national competitiveness. Legal metrology's economic impact can be easily understood by analyzing the money involved in measurements (Filho & Goncalves, 2015).

Legal metrological control comprises activities in legal metrology, including verifications and surveillance in measuring instruments before and after they are released to the market. Checking for errors to enforce trust in measurements reduces unfair competition and ensures consistency in trade.

When legal metrology is related to the economy, society, health and the environment, an improvement in legal metrological control represents an improvement in the entire ecosystem, which improves overall efficiency. Thus, increasing efficiency in legal metrological control means increasing confidence in the measurement instruments under legal metrological regulation (Filho & Goncalves, 2015).

In Malaysia, all weighing and measuring instruments use for trade need to be verified first before use and re-verified once every twelve months thereafter as stipulated by the Weight and Measures Act 1972. It is an offence to use weighing or measuring instrument without valid verification or re-verification (MCM Brochure)

Background of the Company

Metrology Corporation Malaysia Sdn Bhd (MCM) was incorporated with the sole objective of providing the verification and re-verification services for all weighing and all measuring instruments use for trade in Malaysia. The company started operation on 4 April 2005. Before that all the weighing and measuring instruments were verified and re-verified by the Metric Unit, Enforcement Division, Ministry of Domestic Trade and Consumer Affairs (MDTCC) (MCM Company Profile).

The main objective of the government in privatizing the verification and re-verification works is to enable more weighing and measuring instruments be verified and re-verified as well as the services could be provided faster. This will benefit the people as well as the business community and the country. Accurate and correct weighing and measuring is one of the basic tenets of trade, fair to the buyer as well as the seller (MCM Company Profile).

Metrology Corporation Malaysia Sdn. Bhd. (MCM) is a company incorporated and registered with the Companies Commission of Malaysia (SSM) commencing on 4 April 2005 through a privatization agreement dated 7 December 2004 between the Malaysian Government and MCM (MCM Company Profile).

The Company operates under one licence issued under section 26A of the Weights and Measures Act 1972 (Act 71) which is exclusively authorized to provide verification and re-verification of weights, measurements and weights or dimensions relating to testing, verification, marking with the stamp, confirmation or certification of any weight or size throughout the country. MCM has a target for each device that is verified and re-verified to achieve the effectiveness of the national measurement standard as stated in the national measurement system Act 2007 (MCM Company Profile).

Centered in Kuala Lumpur, MCM also has 34 branches nationwide covering 5 regions namely, Northern Region, Central Region, Southern Region, Eastern Region and Region of Sabah and Sarawak which are ready to carry out verification and weight measurement activities. The vision of MCM is “to continuously be an effective and efficient service provider in the field of verification and re-verification of all weight and measures meeting fully the needs of the business, industries, the government and the public” while its mission is (1) to provide the service efficiently and promptly, (2) to continuously promote awareness to the business communities, factories and the general public on the benefits of doing verification and re-verification; towards attaining practically total market coverage, (3) to be committed to introduce new technologies and systems towards improving and enhancing our service to be at par with those in developed countries, and (4) to be committed to having a well-trained manpower, excellent in technical skills as well as able to work effectively as a group (MCM Company Profile).

As for the number of employees, MCM has about 220 employees. Ex-KPDNKK employees were 103 in 2005, has decreased become 28 employees in 2018. Meanwhile, new employees were 31 employees in 2005, has increased to become 131 employees in 2018. This composition change indicates shifting in corporate culture from previously public organization culture to become efficient private corporate culture which is in line the purpose of privatization. Below are some photos that show MCM activities (MCM Company Profile, MCM website).



VERIFICATION OF SPRING BALANCES



VERIFICATION AT PETROL PUMP



VERIFICATION OF PARKING METER



VERIFICATION OF GOLD BALANCES



VERIFICATION OF LINEAR SCALE



AXLE SCALE VERIFICATION

Verification and re-routing works can be done at any of MCM's 34 branches that are also stationary stamping. It can also be done at the owners of the instruments on their premises. In addition, the MCM creates stamping stations following the requirements of the Inspector General's approval. The location of stamping station is abundant in Sabah and Sarawak and a small portion of stamping station sites are found in Peninsular Malaysia such as Tioman Island, Pulau Pangkor and Pulau Ketam (MCM Annual Report).

The stamping station service is being held by the MCM to verify all weighing and measuring devices in rural areas throughout the country. Stamping points are created with the aim of creating awareness on the importance of weight and size tools that need to be verified. This stamping point is held in remote areas and new areas with the potential to use weight and size for trading. Sometimes, this stamping point is repeated at the same location at the request of KPDNKK (MCM Annual Report).

In 2017, this service was enhanced with the use of a more modern and neat stamping counter to improve the quality and image of verification work in the interior. Most of the stamping points that run involve high operating costs exceeding the amount of quoted fees. However, in order to ensure that all weighing instruments and measurements are verified, this activity is held annually in the same location. Starting in 2015, MCM has begun running e-stamping point and e-stamping station where the entry of verification data into the system is made online at the place of verification to replace the system manually used before. Information is incorporated into the system online as well as a validation and tax invoice certificates printed on the verification site (MCM Annual Report).

Operating with KPDNKK and government agencies, MCM is working with KPDNKK to carry out weighing and measuring operations throughout the country throughout the year to

ensure that traders do not manipulate weight and size manipulation. Operations run at selected premises such as in markets, petrol stations and massage houses. This joint operation has succeeded in increasing the number and coverage of tools in 2005, balances and measurements which are verified and thus ensure fair trading processes between sellers and buyers. Joint operations are also conducted with other government agencies such as Malaysia Palm Oil Board (MPOB) and Malaysian Rubber Board (MRB). This operation is aimed at ensuring that weighing and measuring instruments are under the control of the MPOB and LGM regulators and there is no element of fraud. MCM also has links and cooperation with oil companies, merchant associations, fishing associations and other merchant associations. Relationships and Collaboration with Overseas Metrology Institutions The MCM is also closely linked with international agencies in metrology such as the International Organization of Legal Metrology (OIML), Physikalisch-Technische Bundesanstalt (PTB) Germany, the Asia Pacific Legal Metrology Forum (APLMF), the ASEAN Consultative Committee on Standard and Quality (ACCSQ) as well as standard and metrology departments of ASEAN countries (MCM Annual Report).

In 2005, MCM started its operation with only seven cranes lorries purchased from the Government. All these crane trucks have been replaced with new ones with MCM having added crane lorries from time to time. To date, MCM has 21 crane lorries (MCM Annual Report).

MCM has purchased eight units of 4WD vehicles and has added four more 4WD units to Malaysian peninsula branches. The cost of a crane truck with a standard ten tonnes of work costs up to RM500,000.00 (MCM Annual Report).

During 2016 and 2017, at the request of the Malaysian marine department, MCM purchased 240 units of roller weight standard capacity of 250 kg each worth RM480,000.00 and 45 units of one tonne weight block work standard each worth RM450,000.00 is intended for the verification of weighing devices at all ports in line with the implementation of safety of life at sea (SOLAS) regulated by the Malaysian marine department (MCM Annual Report).

For verification of offshore weighing equipment, MCM has purchased a 3-ton truck for transporting weight standards to the owner of the appliance. The truck is equipped with a high lift hydraulic to facilitate the standard weight lifted in and out of the truck. This can ease the burden of staff while also avoiding the risk of injury and accidents in the workplace (MCM Annual Report).

Each weighing device that has passed the verification test will be affixed with a security sticker that records the validity period, verification number, tool capacity and tool category. This safety sticker is the most important element in the process of carrying out verification activities. Each sticker has different code following the tool category and the value of payment for a weighing device. Now, there is a security sticker that has a QR code to make it easier to access the status of the weighing tool that has been verified (MCM Annual Report).

E-verification was developed and has been deployed by MCM since its first day of operation to replace the manual system of records and data practiced by the government before privatization. System e-verification is constantly updated and upgraded from time to time to enhance efficiency and change including when the government's tax system (GST) is enforced. In the e-verification system, each verified tool is given a verification number and a valid date. For every year the information for over 400,000 recorded and accessible tools.

The information of each weighting and measuring instrument made by the verification is entered into the e-verification system at 34 MCM branches which can be accessed online at MCM headquarters and also by MDTCC (MCM Annual Report).

MCM Performances in 2017

Based on E-verification database, the following charts show performances of MCM in its activities from different perspectives.

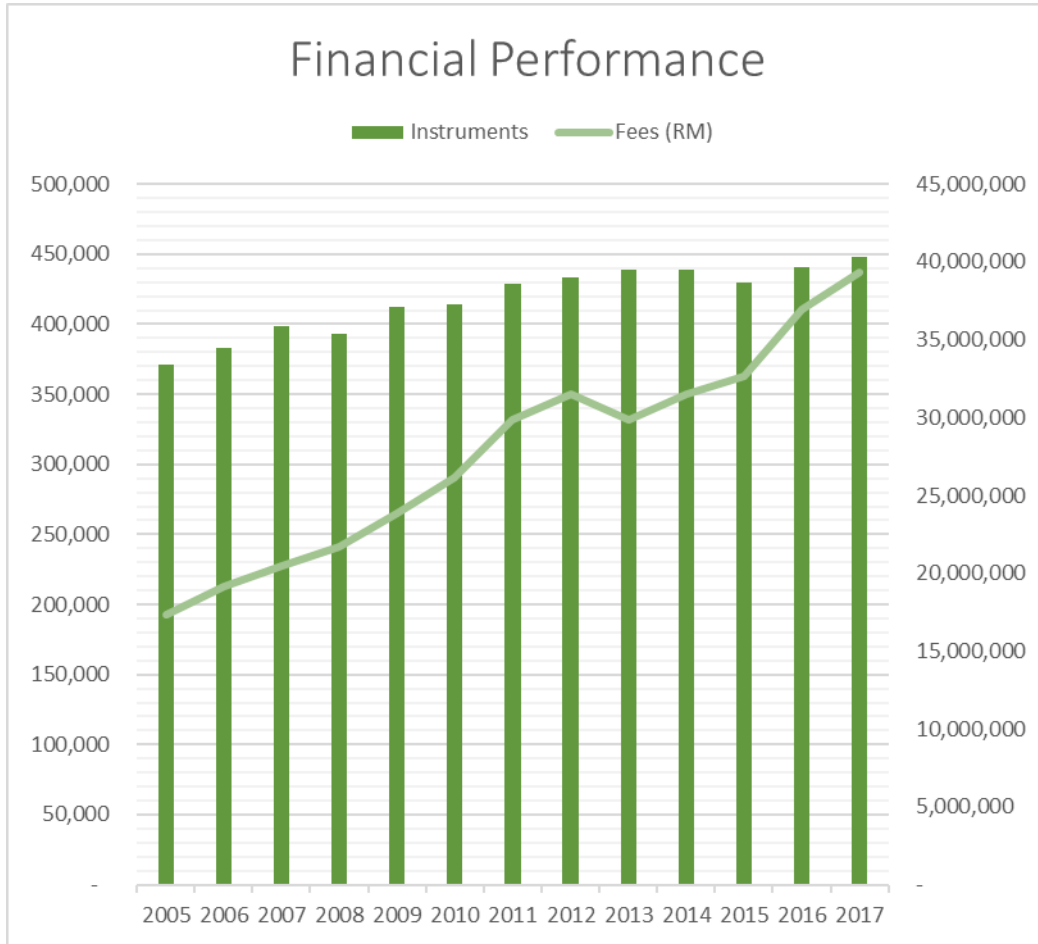


Figure 1: Financial Performance

Figure 1 shows MCM financial performance from 2005 to 2017. Since its establishment in 2005 until end of 2017, MCM revenues have doubled from around MYR20 million to almost MYR40 million. In terms of numbers of instruments verified, has increased from 200 thousand instruments in 2005 to about 450 thousand instruments in 2018.

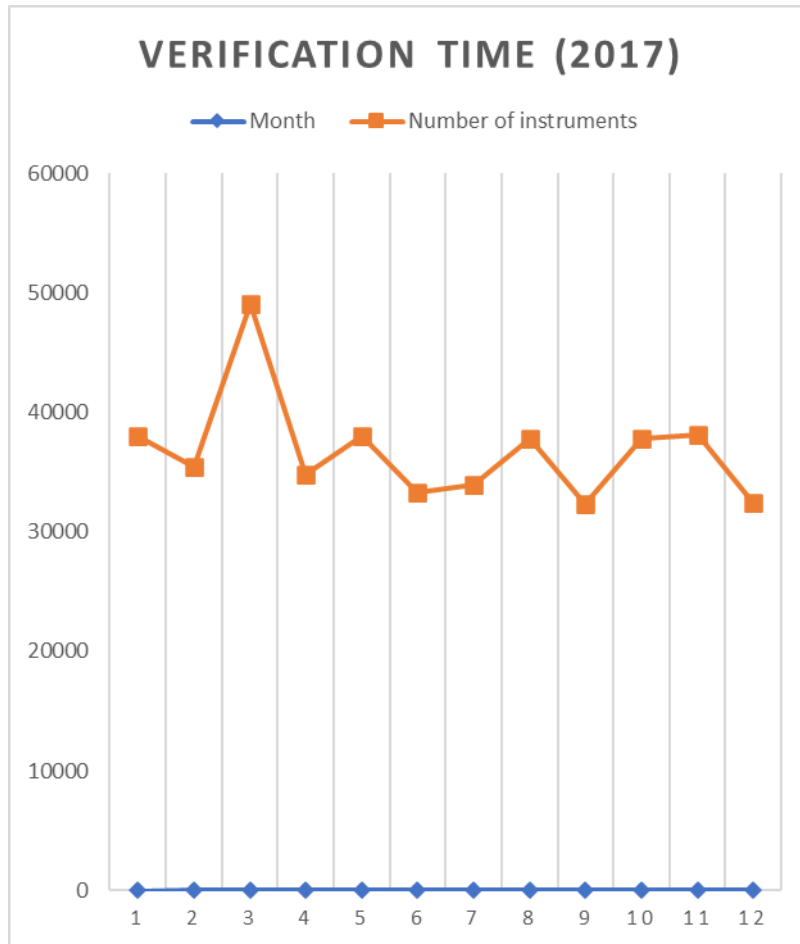


Figure 2: Verification Time

Figure 2 shows that peak time of verification activities is in the month of March. This happens almost at every MCM branch all over Malaysia. In March, almost 50 thousand instruments were verified, while other months less than 40 thousand instruments were verified.

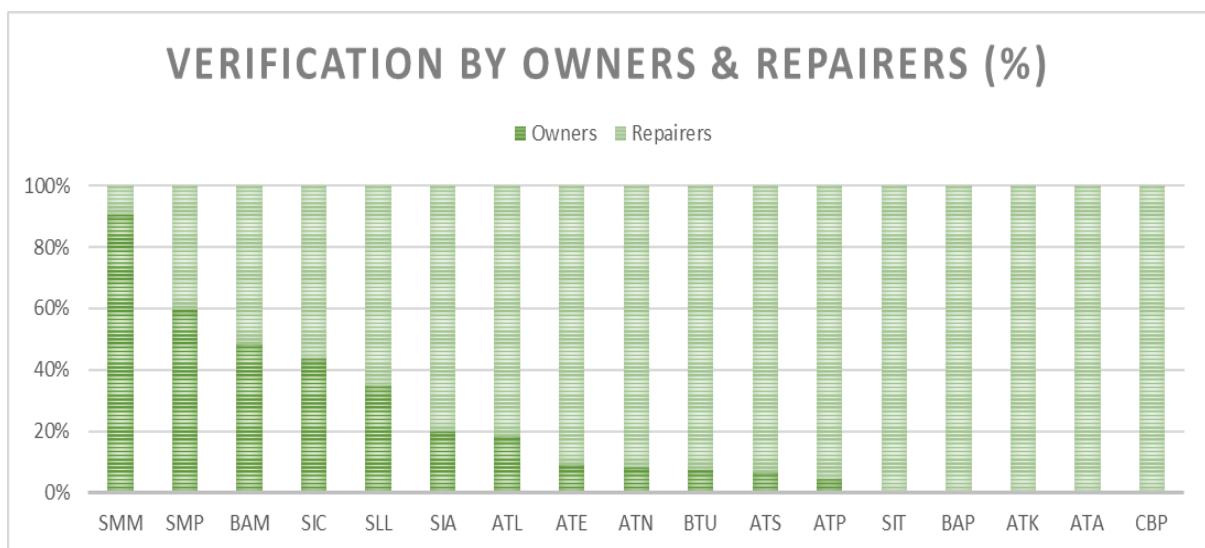


Figure 3: Percentage verification by Instrument Types

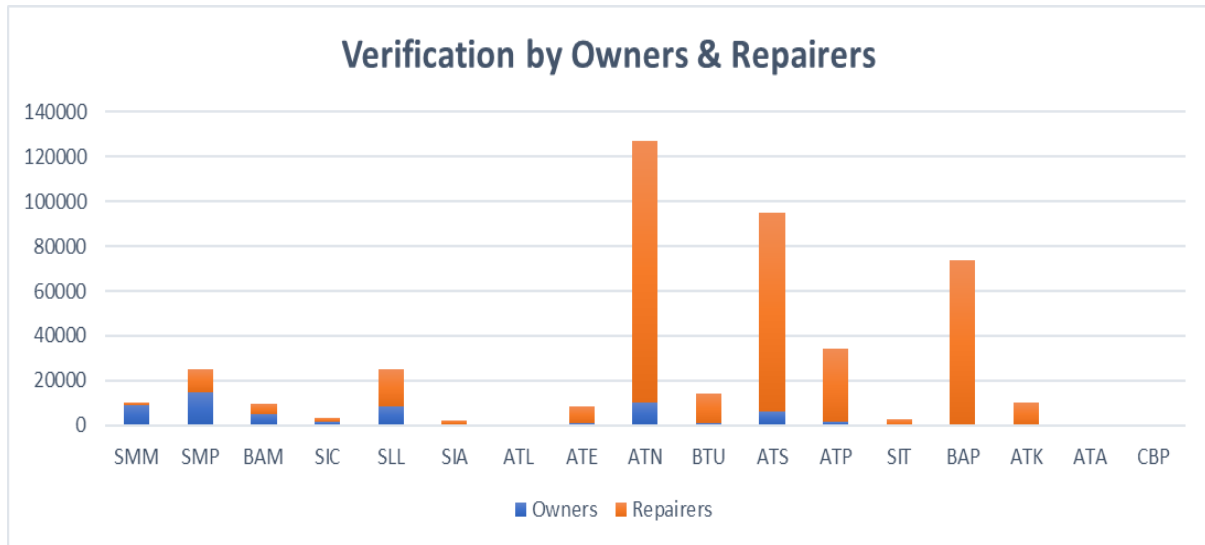


Figure 4: Verification by Instrument Types

Figure 3 and figure 4 show the verification done by repairers and owners based on type of instruments verified. Those figures show that for manual instruments like spring balance and other manual instruments, owners verified their instruments directly to MCM, while for automatic/digital balance, most of verification activities were done through the repairers.

This fact is due to complexity of digital instruments that owners normally need expert to repair the instruments before applying for verification at MCM.

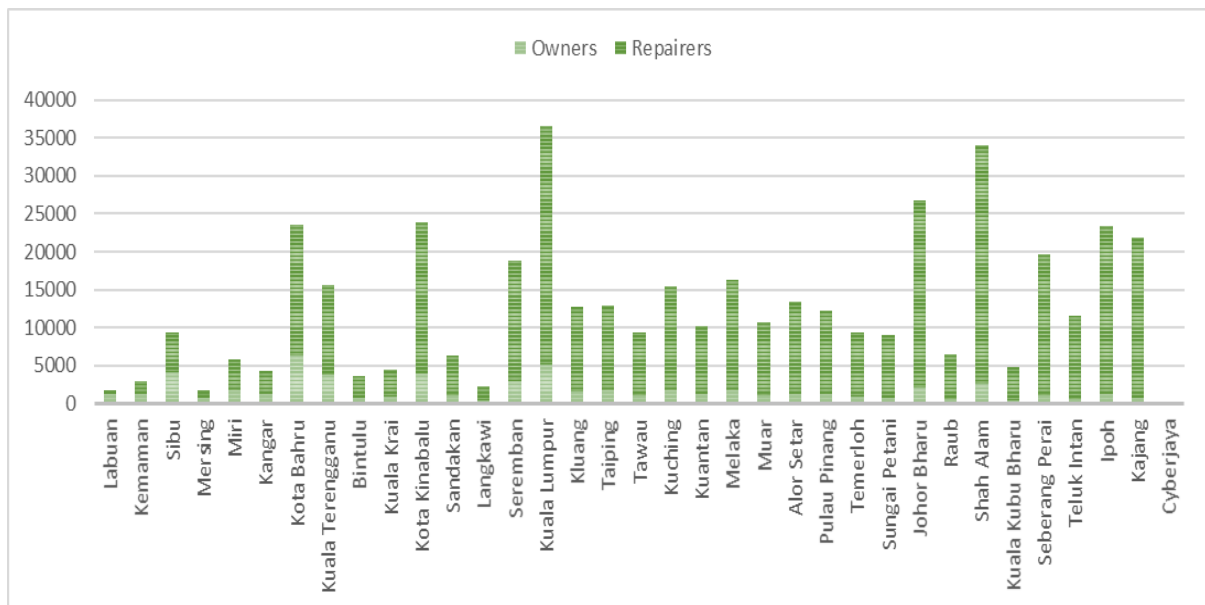


Figure 5: Percentage Verification by Branches

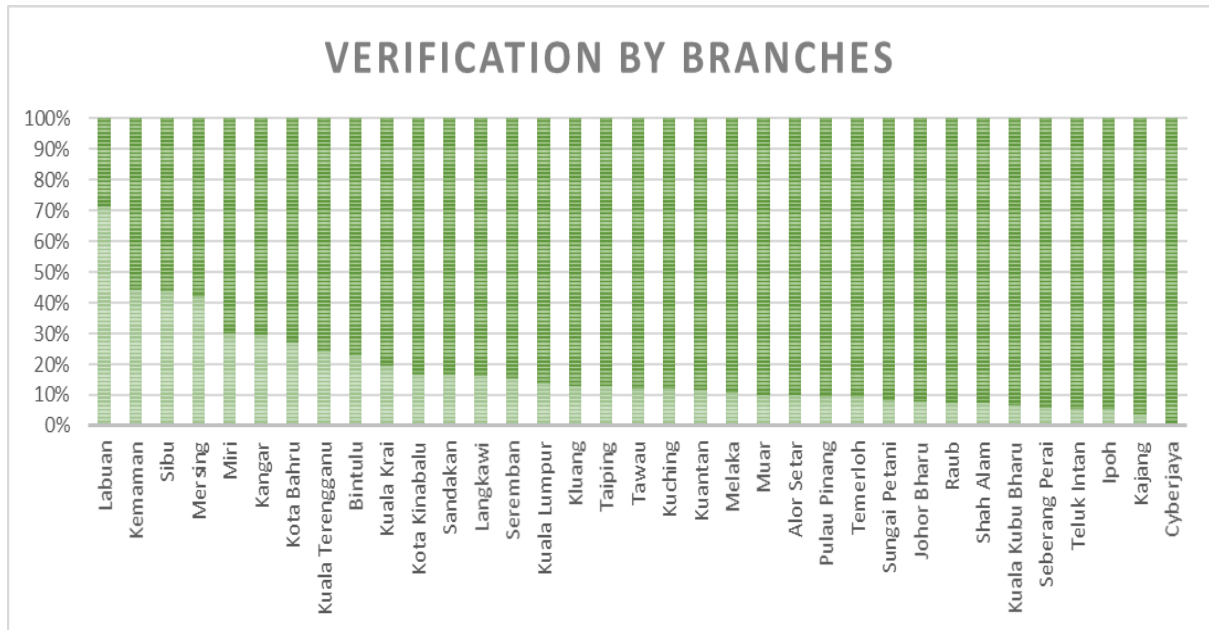


Figure 6: Verification by Branches

Figure 5 and figure 6 show that most of MCM branches interact through repairers in performing verification activities, while some branches interact mostly with instrument owners directly like Labuan branch. This might be related to types of instruments available in related areas.

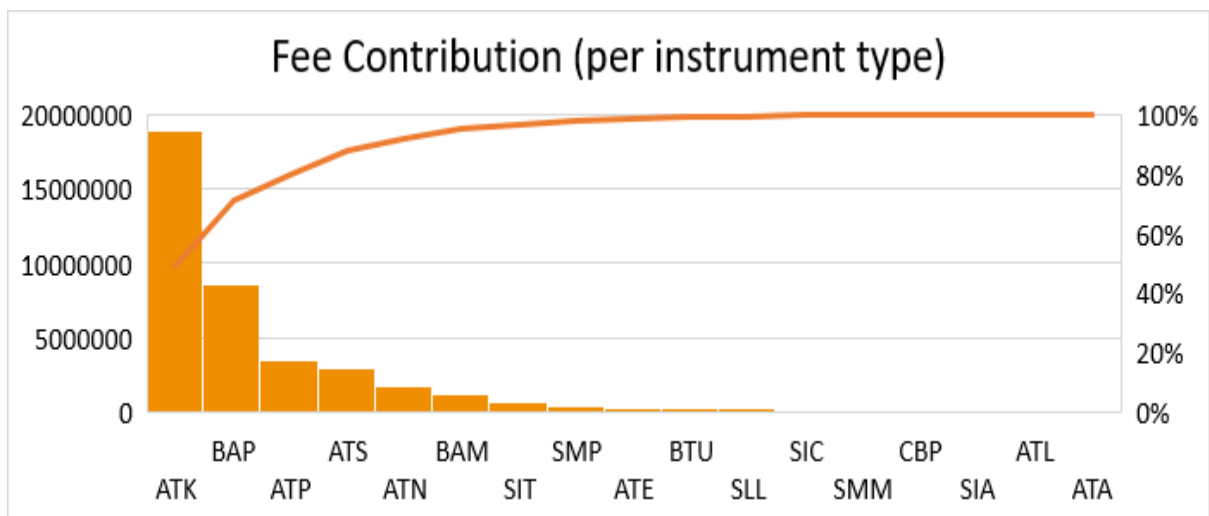


Figure 7: Pareto Chart Fee per Instrument Type

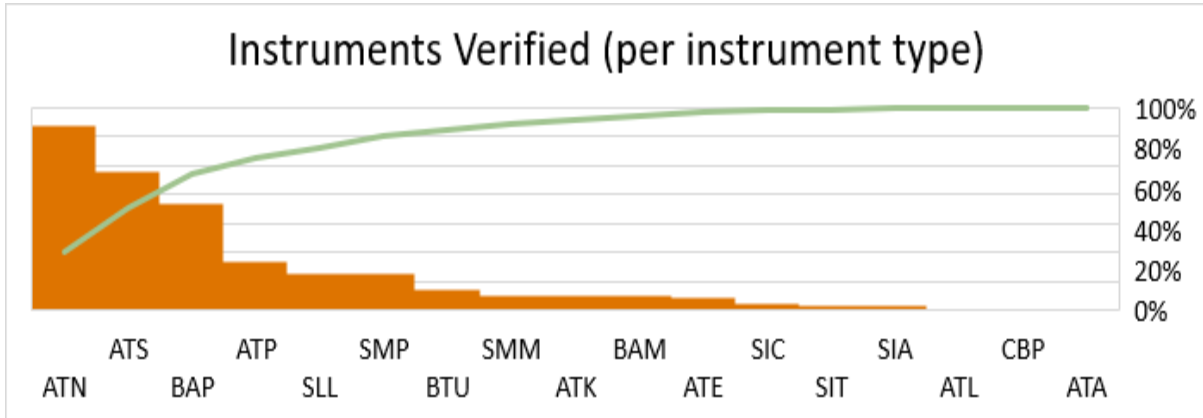


Figure 8: Pareto Chart Verified instruments per type

Figure 7 and figure 8 show Pareto chart. The chart contains both bars and a line graph, where individual values are represented in descending order by bars, and the cumulative total is represented by the line to highlight the most important among a (typically large) set of factors. In quality control, it often represents the most common sources of defects, the highest occurring type of defect, or the most frequent reasons for customer complaints, and so on.

Those figures above show that in terms of fees, ATK and BAP contribute about 80% of MCM total revenue, while in terms of numbers of instruments verified, ATN, ATS and BAP accounted for about 60% of total instruments verified in 2017.

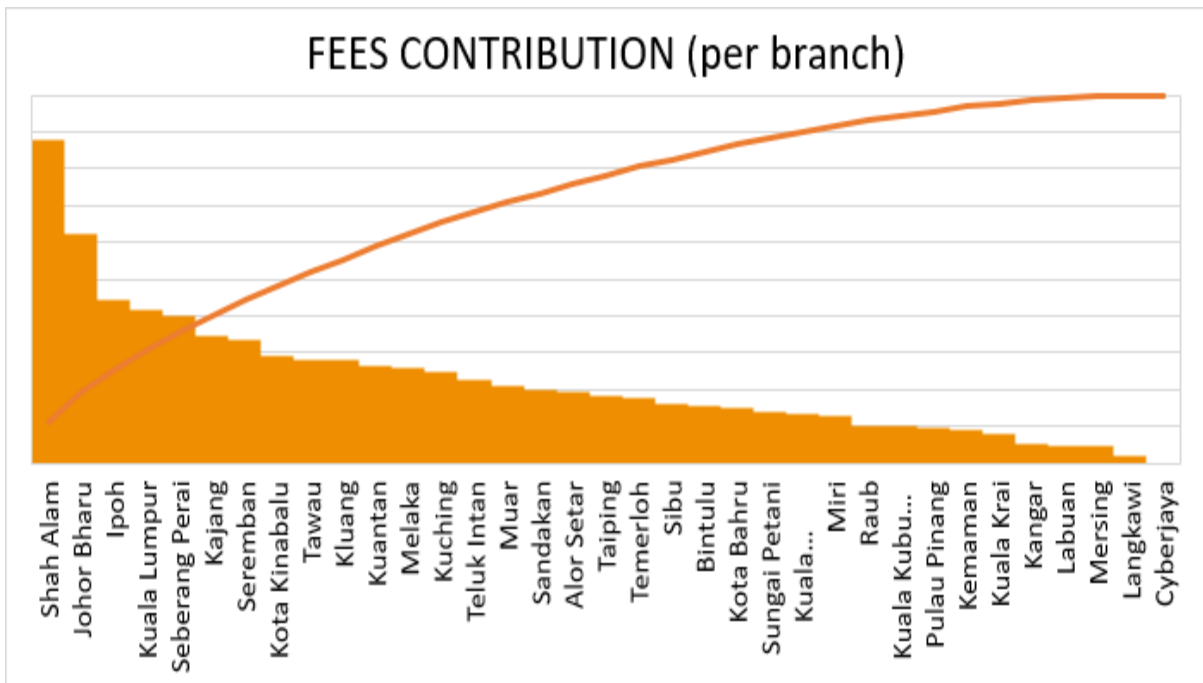


Figure 9: Pareto Chart Fee per Branches

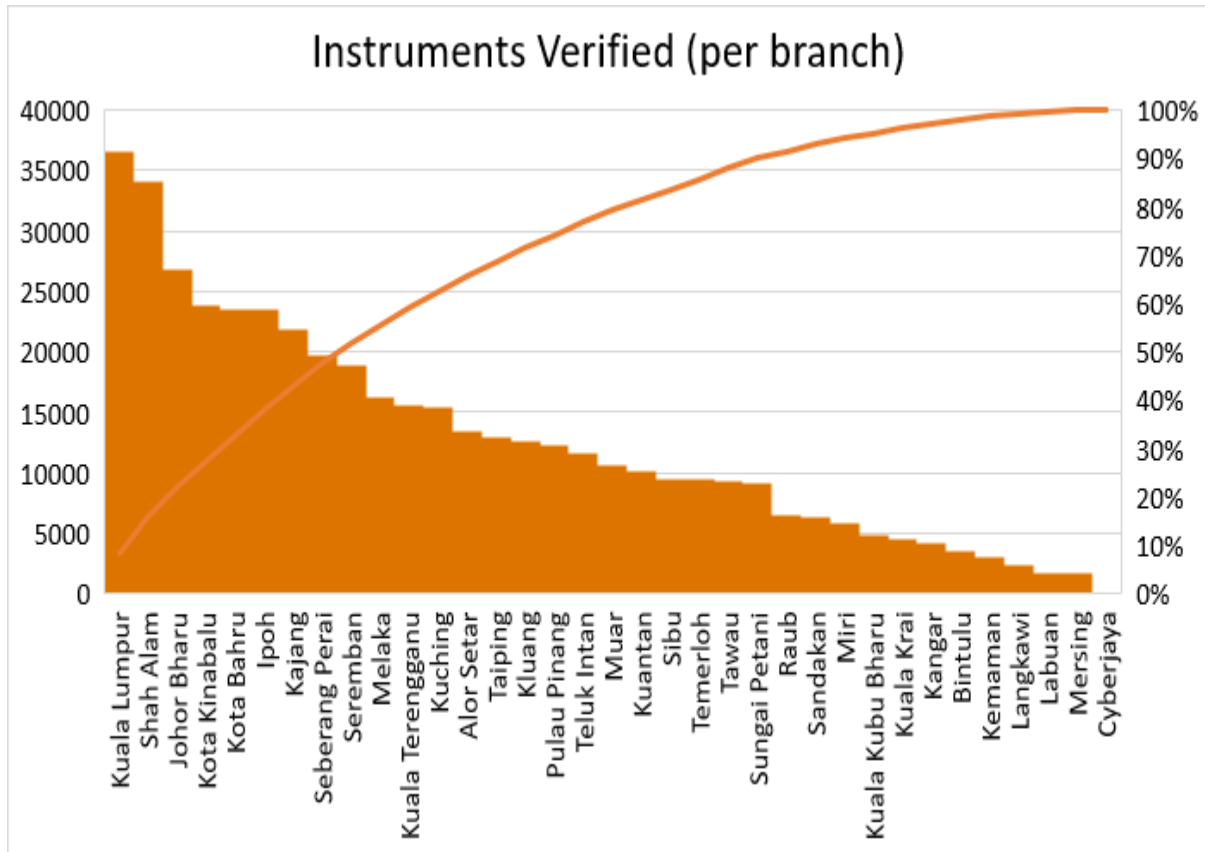


Figure 10: Pareto Chart Instruments verified per branches

Figure 9 and figure 10 show that MCM branch Shah Alam, Johor Baru, Ipoh, Kuala Lumpur, Seberang Perai contribute to about 40% of MCM revenue. In terms of numbers of instruments verified, eight MCM branches were accounted for 50% of numbers of instruments verified in 2017.

These last four figures could be useful for MCM in formulating performance indicator target and performance based benefit for MCM employees.

Research Objective

The main purpose of verification and re-verification policy is to protect the customers' interest to be treated fairly in the market transaction. To effectively reach the outcome of the policy, the existing system relies more on the compliance of the business owners to verify/ re-verify their instruments. The sole objective of MCM is to provide the verification and re-verification services for all weighing and all measuring instruments used for trade in Malaysia. Therefore, it is crucial for MCM together with MDTCC to improve the level of compliance of the business owners. Thus, this paper proposes a theoretical framework, which has the variables that explain compliance behavior.

RESEARCH METHODOLOGY

A comprehensive literature review was conducted. In addition, both document review and in-depth interview were conducted to understand the variables that could lead to compliance behavior.

The researcher conducted piloting interview with one of MCM staff and continue with the other informants from 2 MCM verification officers, 1 repairer, 2 business owners, 1 NMIM deputy director, 1 Enforcement Division, MDTCC senior manager. All interviews were tape recorded except for the owners and repairer which were done through face to face on the spot meeting without any appointment arrangement.

Profile of the informants is presented in Table 1 below. All the informants are familiar with the verification of weights and measures instrument.

Table 1: Informants Profile

No	Name	Experience in legal metrology verification	Position	Time
1	Neela Megan	13-year verification and 15-year enforcement	Verification Officer, KL Branch	16 May 2018, KL Branch
2	Ean Li Sern	5-year verification	Verification Officer, KL Branch	17 May 2018, KL Branch
3	N/A	Digital Balance	Business Owner	16 May 2018, KL Branch
4	N/A	Spring Balance	Business Owner	16 May 2018, KL Branch
5	C.C. Chong	More than 15 years	Repairer	18 May 2018, KL Branch
6	Dr. Nasir	NMIM	Deputy Director	24 May 2018, NMIM Office
7	Mr. Peter	MDTCC, Enforcement Division	Senior Manager	24 May 2018, MDTCC Office

FINDINGS AND DISCUSSIONS

As the result of the analysis of the interview data seven themes presented in Table 2 below were developed.

Table 2: Generated Themes

Research Questions	Themes
Factors influencing compliance behavior toward verification in legal metrology	Cost / fees (I1, I2, I5, I3, I4) Attitude (I1, I2, I5, I6, I7) Monitoring and enforcement (I1, I2, I5, I6, I7) Knowledge (I2, I6, I7) Ethical behavior (I1, I2) Perceived usefulness (I1, I2, I6, I7) Norms, values and belief (I1, I2, I6, I7)

The findings of the present study indicate the importance of several dimension of behaviors that influence the compliance behavior that will be used to find the antecedents of the targeted behavior thus building solution to promote the behavior of interest. The findings show that costs/fees were mentioned by 5 informants (I1, I2, I5, I3, I4), attitude was mentioned by 5 informants (I1, I2, I5, I6, I7), lack of monitoring and enforcement was mentioned by 5 informants (I1, I2, I5, I6, I7), lack of knowledge was mentioned by 3 informants (I2, I6, I7), ethical behavior was mentioned by 2 informants (I1, I2), perceived usefulness was mentioned by 4 informants (I1, I2, I6, I7), and norms, values and belief were mentioned by 4 informants (I1, I2, I6, I7).

High cost in doing verification was seen as one significant factor that will adversely affect the compliance behavior of the business owner to verify their instruments to MCM. Being ethical in running a firm in ethical industry was also seen as an important factor for a business owner in verifying their instruments. Attitudes, norms, values and beliefs of the business owners also significant dimension of the factors affecting targeted behavior.

It was also believed that knowledge of the business owners on legal metrology rules and regulations will control their behavior to comply with the rules, especially if this factor is supported by well implemented monitoring and enforcement system by the regulators.

These series of interviews were carried out to identify possible factors of non-compliance toward the legal metrology. From the discussion, factors of non-compliance will be identified such as 'lack of knowledge in legal metrology concept', 'cost of implementation', 'repairer issues', 'demand from consumer', 'governance issues' and 'lack of monitoring and enforcement'. These factors of non-compliance will be included as perceived behavioral control component of the TPB model.

It can be wrapped up by stating that compliance behavior toward verification of legal metrology was influenced by several factors and dimensions in more than one ways.

Conceptual Framework

After gathering necessary information from qualitative study, the conceptual framework in Figure 11 highlights the proposed conceptual framework of the study.

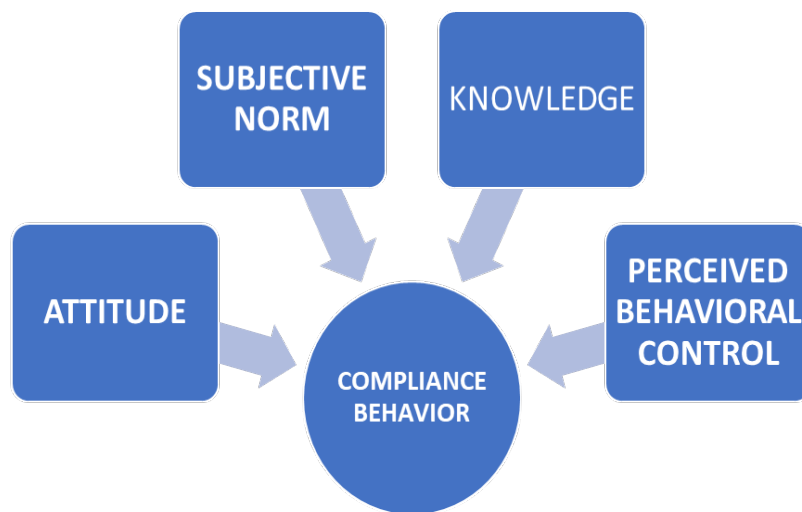


Figure11: Conceptual Framework

The theoretical model for the study is based on the theory of planned behavior (TPB). This model consists of factors towards non-compliance which is considered as ‘perceived behavioral control (PBC)’; attitude towards non-compliance as ‘attitude’; religion as ‘subjective norm’ and compliance behavior of business owners in legal metrology verification as ‘compliance behavior’.

In psychology, the theory of planned behavior (abbreviated TPB) is a theory that links one's beliefs and behavior. The theory states that attitude toward behavior, subjective norms, and perceived behavioral control, together shape an individual's behavioral intentions and behaviors. The concept was proposed by Icek Ajzen to improve on the predictive power of the theory of reasoned action by including perceived behavioural control. It has been applied to studies of the relations among beliefs, attitudes, behavioral intentions and behaviors in various fields such as advertising, public relations, advertising campaigns, healthcare, sport management and sustainability.

TPB devised by Ajzen in 1991 was widely used to explain the behavior of individuals in various domains of social science including that of consumer marketing. In fact, it became one of the most applied theories that were used to explain customers’ purchase behavior due to its unique practicality and prescriptive ability (Bray, 2008). According to TPB any behavior of an individual, including that of purchase behavior, is predicted by behavioral intention. Behavioral intention in its turn has three antecedents – attitude towards the behavior, subjective norm and perceived behavioral control (attitude towards legal metrology verification, subjective norm towards legal metrology verification and perceived control of legal metrology verification in the context of this study which is verification situation).

Finally, each of its antecedents is influenced by corresponding behavior related beliefs of an individual. In this study, one additional factor was added which is ‘knowledge’ that has been mentioned and highlighted in qualitative result. Accordingly, this study proposes the theoretical framework below that show the variables that explain compliance behavior. Figure 11 below shows the proposed theoretical framework.

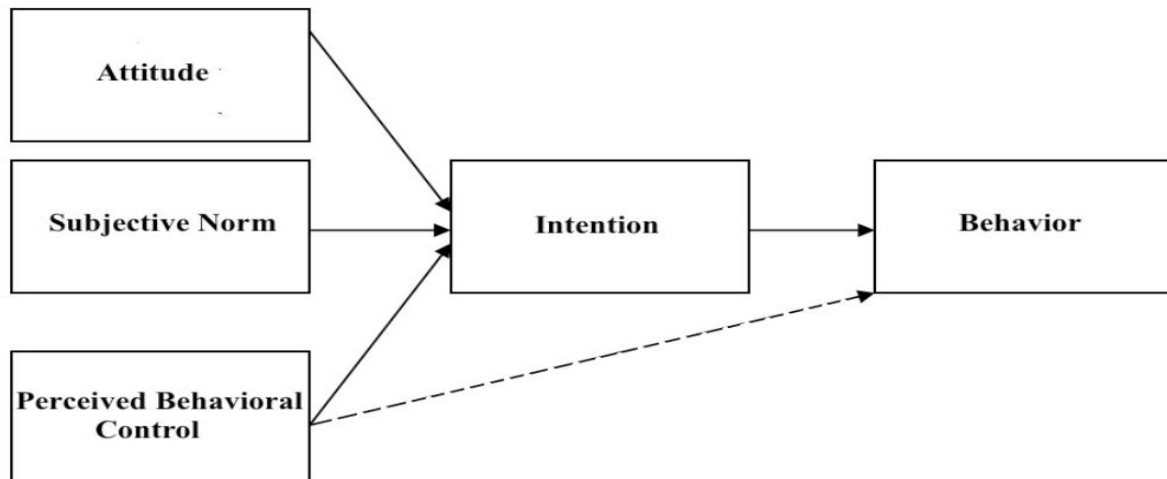


Figure 12: Proposed Theoretical Framework

Although TPB belongs to the group of so called cognitive theories one of the most important cognitive constructs which is knowledge was not included into the model by its author. In fact, the author of the theory specifically pointed out that knowledge, defined as information accuracy, “is neither necessary nor sufficient; indeed, it can be irrelevant to decision making” (Ajzen, Joyce, Sheikh, & Cote, 2011, p. 115). However, this study argues that knowledge construct, although might be indeed irrelevant to certain types of behavior, should be included in models aimed to explain compliance behavior as supported in previous qualitative result.

Table 3: Underlying Theories of Conceptual Framework

Theoretical construct	Underlying theories
Compliance Behavior	Theory of Planned Behavior (Ajzen, 1991)
Attitude	
Subjective Norm	
Perceived Behavioral Control	
Knowledge	Theory of Buyer Behavior (Howard & Sheth, 1969)

Attitudes influences consumer’s trust, confident, feeling, value and tendency to act which will produce stimulation whether to support or to dispute (Schiffman & Kanuk, 1994).

Subjective norm or motivation to comply is individual's perception of social normative pressures, or relevant others' beliefs that he or she should or should not perform such behavior. There are many studies which have proven that religion could influence consumers’ attitude and behavior (Delener, 1994; Pettinger et al., 2004).

Perceived behavioral control also captures the motivational factors that influence the behavior and indicates how hard people are willing to try to perform the behavior in question (Ajzen, 1991). In this study, it is hypothesized that the higher the perceived level of

compliance toward legal metrology verification, the more likely the individual will comply with legal metrology verification.

In this study knowledge will be a combination between subjective and objective knowledge in the measurement items. Subjective product knowledge is defined as an individual's level of confidence regarding how much he/she knows about a given product (Brucks, 1985) while the objective product knowledge is the amount of all information linked to a product in the long-term memory of the individual that is "objectively accurate" (Park et al., 1994, p. 72).

Subjective product knowledge is self-evaluation (Laroche, Cleveland, Bergeron, & Goutaland, 2003) or self-report of individual's his/her knowledge of a product (Raju, Lonial & Mangold, 1995), whereas objective product knowledge is measured by impartial third party. Per its definition subjective product knowledge can be measured with a standardized scale. In the present research subjective product knowledge is measured with the adapted standardized highly reliable scale developed by Flynn and Goldsmith (1999).

Unlike subjective product knowledge its objective counterpart necessitates the development of a very specific and contextualized measure that is usually done in the form of test that examines knowledge of a series of factual question. The content of these factual statements may include attributes of the product and attributes evaluation, brand facts, discrimination from similar products, purchase and decision-making procedures, specific terminology related to the product or usage situations (Brucks, 1985, 1986). Therefore, the objective product knowledge test for the purpose of this study was developed by analyzing all the available sources of descriptive and technical information about legal metrology verification and identifying facts pertaining to legal metrology verification, decision-making procedures and other possible content delineated above.

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