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Controllable Factors affecting Compliance with Quality Standards for Statistics

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Abstract

The problem explored in this explanatory sequential mixed methods study with a correlational design was the unknown controllable factors affecting compliance with quality standards for statistics. A sample of 94 staff were selected for the study within a statistical organization. Both quantitative and qualitative data were collected in a sequential phased way. Quantitative data was collected first through a survey and the responses were measured using a 5-point Likert scale. Qualitative data was collected through face-to-face interviews which sought participants' views on the emerging compliance issues identified from the survey. The findings showed that of the 42 factors assessed, 17 emerged as controllable factors affecting compliance with a mean score ≥ 4. These covered a policy and structure which supports compliance, staff perceptions and efficacy beliefs and the leadership's role in influencing compliance behavior. The implications from this study are: 1) A concentered compliance training program for staff, 2) Pivotal leadership involvement and deployment of an organizational policy to enforce quality compliance.

Keywords: Compliance, Quality Standards, Compliance Behavior

INTRODUCTION

Compliance with regulations and standards is a critical issue (Becker, Delfmann, Dietrich, Steinhorst, & Eggert, 2016). Noncompliance on a large scale undermines the acceptance of regulations or even provokes their complete failure (Brousseau & Farès, 2000). Snell (2004) described compliance as an organizational outcome traditionally understood as conformity or obedience to the law and associated regulations. Not only do regulators require organizations to meet regulatory obligations (Parker, 2002), but

the stakeholder and community scrutiny require that organizations operate according to expected norms and values (Interligi, 2010). Mendrinou (1996), Jordan (1999), Neyer and Zürn (2001) observed that the factors associated with non-compliance were often attributed to the complex policy-making structure, vague and poorly drafted policies that sprung from it. As a consequence, resulting policies were often open to different interpretations (Falkner, Hartlapp, Leiber, & Treib, 2004). Linked to the research problem, it was evident that compliance could hardly be attributed to a distinct factor or explained by a single perspective (Neyer & Zürn, 2001). Rossi (2010), Winter and May (2001) argued that other factors like individual motivators came into play which influenced people's decisions to either comply or not comply. Evidently, the issue of compliance with quality standards is paramount to National Statistical Systems. Not only does it revitalize productivity and performance (James, 2012), compliance is a critical management function which attracts significant financial resources in organizations (Interligi, 2010). While evidence from previous studies showed the critical role of compliance, it was not known what controllable factors affected compliance with quality standards. This issue makes it difficult for organizations to determine how compliance gaps may arise and how to address them, given its legal mandate to promote standardization, quality and compliance across statistical systems. Compliance with quality standards is a strategic pillar of organizational leadership.

LITERATURE AND RELATED WORKS

While existing studies attempted to identify motivators for non-compliance and compliance behavior, the controllable factors affecting compliance with quality standards were unknown. Studies by Lunenburg (2012), Bandura (2001), Prorokowski and Prorokowski (2014), Lu and Mande (2014) identified some of the key factors influencing compliance with standards. Lunenburg's (2012) compliance theory laid the theoretical foundation for the study and classified organizations by the type of power they used to direct staff involvement and compliance behavior (Lunenburg & Ornstein, 2012; Etzioni, 1997). Understanding compliance theory, in general, was essential in determining the confluence of compliance and leadership role in directing staff compliance behavior . Similarly, a study by Mahoney and Thelen (2010) underlined compliance as a crucial factor in institutional change. While compliance theory brought to light the anticipated combinations of leadership power and people involvement, it did not take into account individual motivators and human factors. This created the assumption that all participants involved in the organization were united by a single driver (Rossi, 2010).

Bandura's (2001) Social Cognitive theory on the other hand brought to light human factors that influenced choice behavior, and gave critical insight and understanding into how staff acted on the outcomes of their prospective performances based on their compliance beliefs. Studies by Ly, Fabrizio, Montali, Rinderle-Ma, & Aalst (2015) argued that compliance requirements stemmed from different sources such as legislation, regulatory requirements or guidelines that were often available as textual

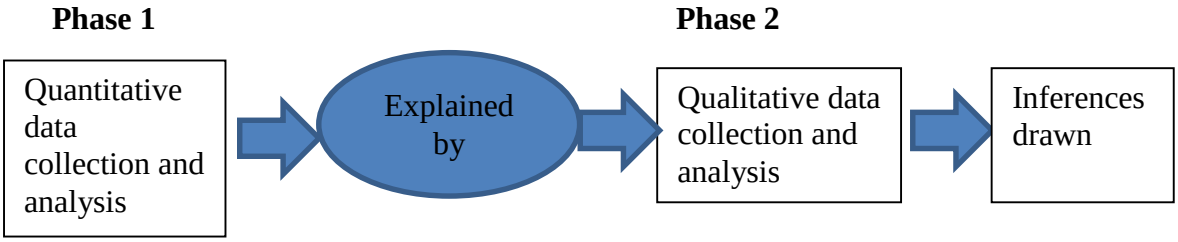
descriptions. An important task towards compliance monitoring was the interpretation of these requirements as compliance objectives and consequent specifications, rules or constraints (p.2). While Prorokowski and Prorokowski (2014) attributed compliance behavior to the relationship with regulators and regulatory frameworks, Lu and Mande (2014) underlined the effectiveness of internal controls and the external auditor's role as key institutional and firm-specific factors affecting compliance.

In a related argument, Mendrinou (1996), Jordan (1999), Neyer and Zürn (2001) attributed the problems associated with compliance with the complex policy-making structure, vague and poorly drafted policies that sprung from it. As a consequence, the resulting policies were often open to different interpretations (Falkner et al., 2004). Börzel (2002) also argued that non-compliance existed because 'actors had not internalized the customs yet, and did not accept the norms as standards for appropriate behavior. To address this dilemma, Versluis (2010) proposed solutions of 'managing' rather than 'sanctioning' to reduce problems associated with non-compliance. These solutions had a cooperative and problem-solving approach based on capacity building, structured training (Dwomoh et al., 2017), sharing best practices and rule interpretation. In addition, it was important to note that Managerialists did not believe in exclusive reliance on enforcement (Chayes & Chayes, 1995, pp: 32-33). The issue of compliance manifested across multiple literature studies reviewed. It was also evident that noncompliance was hardly attributed to a distinct factor or explained by a single perspective (Neyer & Zürn, 2001). Summarily, the thematic analysis of compliance theory, Social cognitive theory and related studies provided a basis for understanding the controllable factors affecting compliance from a human perspective.

METHODOLOGY

The study used an explanatory sequential mixed methods research design to explore the controllable factors affecting compliance with quality standards. This involved collecting quantitative data first and later explaining the quantitative results with in-depth qualitative data (Creswell, 2015; Creswell, 2014). In the first phase of the study (quantitative), survey data was collected from staff engaged in statistical production and management using structured questionnaires. The second, qualitative phase was conducted through interviews as a follow-up to the quantitative results which helped explain the emerging issues from the quantitative results. Ethical clearance was sought at two levels; Institutional Review Board (IRB) and Uganda National Council for Science and Technology (UNCST) approvals were issued prior to the research study.

Two-phase explanatory sequential design



Source: Creswell (2015)

Purposive random sampling was used to determine the selection of participants for the quantitative phase (Kothari, 2004). This ensured that participants in each category had an equal chance of participating in the research study. The Key Informant Technique (KIT) was used in both phases of the research study (Kothari, 2004). A total population size (N) of 100 staff were the study population. Participant categories included Leadership and management personnel, Principal Personnel, Senior Personnel, Officers and Statisticians. A sample (n) of 94 was derived from the total population using Yamane's (1973) sample size determination formula: n= N/ [1 +N (e2)]. To ensure valid input was acquired, Yamane's formula applied to each category of the study population (N). To identify the 5 participants for the qualitative follow-up sample, the researcher asked for volunteers when collecting quantitative data using the data collection instruments (Creswell, 2015). The first (quantitative) and second (qualitative) phases of the study used the structured questionnaires to collect primary data from the selected sample. Face-to face interviews were also conducted during the second phase (qualitative). Minitab 17 software was used to analyze the data collected from both phases 1 and 2 To determine validity and reliability, content validity was used to determine how well the instrumentation and questions measured the purpose they intended to measure through an independent expert review. A reliability test was done using Cronbach Alpha and an average score of (0.7559), greater than the 0.70 alpha coefficient (Cronbach, 1951; Santos, 1999) was achieved.

Results from the Quantitative Phase

A total of 100 questionnaires were distributed within a statistical organization. A response rate of 100% was achieved with over 94 questionnaires completed and returned for further analysis. Similarly, all five participants targeted in phase 2 responded to the interviews. Descriptive analysis was used to assess all factors, and then determine which of these were the controllable factors affecting compliance. They included; factors 1-3 *(knowledge, awareness and understanding on compliance)*, factors 8 (*enforcement*), 15 -18 and 25 *(staff perceptions and efficacy beliefs)*, factors 32, 34, 35, 38, 39 and 40 *(leadership role and quality)*.

Factor 41 is not presented in the analysis because it represents the compliance levels

(dependent variable) for the factors under assessment. Analysis for factors 1-40 and 42 are presented in tables 1 and 2 below.

Table 1: ***Descriptive analysis of compliance factors (1-20)***

Descriptive Statistics Report

Variable	N	Mean	StDev	Minimum	Maximum
Factor 1	94	4.0532	0.87211	1	5
Factor 2	94	4.1383	0.78427	2	5
Factor 3	94	4.1596	0.73767	2	5
Factor 4	94	3.8404	0.98705	1	5
Factor 5	94	3.8617	0.83732	2	5
Factor 6	94	3.1064	1.2484	1	5
Factor 7	94	3.7128	0.99052	1	5
Factor 8	94	4.3617	0.73105	2	5
Factor 9	94	3.9681	0.84817	2	5
Factor 10	94	3.6170	0.98490	1	5
Factor 11	94	3.8404	0.79384	2	5
Factor 12	94	3.1489	1.0365	1	5
Factor 13	93	3.3763	0.83294	1	5
Factor 14	94	2.5745	0.95590	1	5
Factor 15	94	4.0426	0.90298	1	5
Factor 16	94	4.3936	0.72168	1	5
Factor 17	94	4.2766	0.70945	2	5
Factor 18	94	4.0638	0.86520	2	5
Factor 19	94	3.7340	1.1089	1	5
Factor 20	94	1.9574	0.80208	1	5

Source: Primary Data (Minitab 17)

Table 2: ***Descriptive analysis of compliance factors (21-40 and 42)***

Descriptive Statistics Report

Variable	N	Mean	StDev	Minimum	Maximum
Factor 21	94	1.7660	0.80890	1	5
Factor 22	94	2.9574	1.4804	1	5
Factor 23	94	1.5851	0.78164	1	4
Factor 24	94	3.4681	0.92402	1	5
Factor 25	94	4.1915	0.80691	2	5
Factor 26	92	3.8804	0.87508	2	5
Factor 27	94	4.0532	0.95453	1	5
Factor 28	94	3.5106	0.90095	1	5
Factor 29	94	2.4362	0.98982	1	4
Factor 30	94	3.5638	1.1126	1	5
Factor 31	94	3.2553	0.98304	1	5
Factor 32	93	4.3763	0.64123	2	5
Factor 33	94	4	1.0575	1	5
Factor 34	94	4.5745	0.53860	3	5
Factor 35	93	4.1183	0.77809	1	5
Factor 36	94	3.9894	0.94465	1	5
Factor 37	94	3.4681	0.87623	1	5
Factor 38	94	4.0213	0.97251	1	5
Factor 39	94	4.2340	0.67880	2	5
Factor 40	93	4.2688	0.70925	2	5
Factor 42	93	3.8172	1.0315	1	5

Source: Primary Data (Minitab 17)

The survey analysis further showed that 17 out of 42 factors with a mean score of 4

and above were considered the controllable factors affecting compliance with quality standards for statistics. These included; factors 1-3 *(existing policy and structure which supports compliance with quality standards),* factors 15 -18 *(staff perceptions and efficacy beliefs on compliance),* factors 32, 34, 35, 38, 39 and 40 *(leadership role and quality).*

Summary Results from the Qualitative phase

Views of the 5 Participants interviewed on compliance factors and suggestions for improvement.		
Controllable factors on compliance with quality standards	*Reasons why staff attitudes and perceptions affect compliance.*	*Suggestions to improve staff compliance with quality standards*
• Staff passion for their work influences compliance. • Leadership-management buy-in • Common understanding and appreciation of quality standards	• Biased pre-set mindsets resulting from limited understanding of what compliance means	• Wider dissemination of quality standards and stakeholder trainings on compliance • Purposeful lobbying and buy-in from organizational leadership
• Knowledge about the quality standards • Individual staff initiatives to comply • Leadership involvement & action	• Fear of the unknown. Compliance often viewed as a foreign or new area due to preset mindsets.	• A rapid assessment to determine the compliance gap.
• Enforcement of compliance. • Appreciation and common understanding about compliance •	• Individual views and opinions about what compliance means and its benefits across position levels.	• Define compliance in the context of organizational performance. • Induct staff on compliance from a performance perspective.
• Targeted organization policies provide an enabling legal framework for compliance • Laid down procedures, quality standards and guidelines on compliance. • •	• Inadequate individual accountability in compliance management	• Leadership ability to set precedence for a quality culture, trainings and continuously communicate compliance messages within the organization. • Re-branding and re-packaging standards to ease use and interpretation • Identification of champions to drive compliance initiatives. • Investment of more time and resources towards quality compliance

CONCLUSION

Summarily, the study revealed 17 controllable factors out of the 42 factors assessed affect compliance with quality standards for statistics. Some of these factors included policy structure, knowledge, awareness and understanding about compliance as well as efficacy beliefs and the leadership's role. The exploration of compliance perceptions, self-motivation, self-confidence, self-determination and self-commitment from both phases 1 and 2 emerged as key efficacy beliefs of staff towards compliance. The pivotal role of leadership to influence staff compliance behavior and set precedence for a quality culture confirmed the application of compliance theory and the social cognitive theory to the study. Findings also pointed to varying compliance levels across all position levels from phase 1 as well as the various views provided by the personnel interviewed in phase 2. In addition, the findings from phase 2 also highlighted a few antecedents that shaped compliance culture and behavior of staff in the organization, these included pre-set biased mindsets across positional levels towards compliance and inadequate individual accountability in compliance management. The combination of quantitative and qualitative approaches provided extensive understanding into compliance with quality standards and created a research outcome stronger than either approach applied individually.

Practical implications

This study also provided novel insight into the organization's performance from a quality compliance perspective, and opportunities for targeted compliance interventions by the leadership. The main study limitation was the focus on only two national quality standards for statistics (US 942: Code of Practice for Official Statistics and US 943: Guidelines for production of quality statistics) given their current application in statistical work. It remains to future research to examine compliance with regional and international quality standards that are also used in statistical work.

Originality/ Value

The paper assesses existing research, provides scientific evidence into the controllable factors affecting compliance with quality standards in statistical work and provides suggestions for future research.

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