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# **Validating a New TQM-Benchmarking Measurement Model in an International Humanitarian Setting**

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## **Abstract**

The research aims to empirically validate a multi-dimensional measure of total quality management (TQM) benchmarking within a humanitarian setting. This study is the first to investigate the dimensionality of the TQM benchmarks as used by international non-governmental organisations (INGOs). The proposed four-dimensional construct for measuring quality lends itself to lean and practical TQM framework for INGOs, allowing them a greater awareness and an appetite for aligning their operations with TQM principles. Utilizing survey data collected from participants working for United Nations agencies in the Middle East, the methodology consisted of a set of literature-backed quantitative procedures to test the validity of the previously suggested theoretical TQM-measurement model. An alternate model emerged and revealed that the TQM-benchmarking measurement model is a four-factor variate. The implications of the proposed model for implementing lean management practices by INGOs are discussed.

**Keywords:** Total Quality Management, Benchmarking, Measure, Validation, International Non-Governmental organization, Humanitarian sector, Middle East

## **Introduction**

A large body of the Total Quality Management (TQM) scholarly work has focused on the private sector with numerous evidences linking TQM and organisational performance. While extant research reveals that TQM is a vital methodology to improve corporate performance and sustainable competitive advantage (e.g., Al-Dhaafri & Al-Swidi, 2016; Boateng-Okrah & Fening, 2012), most of the research has focused on profit driven organizations. Less is known about how TQM is linked to performance in the non-profit sector, particularly within humanitarian organizations.

Pressured by donors and the mainstream media to optimize performance and improve accountability, humanitarian agencies started exploring the use of private sector proven management philosophies. In this context, many international initiatives aiming at improving the quality of international humanitarian assistance through focus on both donor and beneficiary satisfaction have emerged (Campbell, DiGiuseppe & Murdie, 2019).

Yet, there is no scholarly consensus on how to measure the quality of humanitarian assistance. One recently proposed TQM-Benchmarking model (Sweis, et al., 2016) emerged as a conceptual framework that was specifically developed to assist international non-government organizations (INGOs) to carry out their interventions effectively and efficiently.

The TQM-Benchmarking model (Sweis, et al., 2016) offered a six-dimensional framework for improving INGOs performance while satisfying donors and beneficiaries: 1) Leadership and Management Commitment; 2) Beneficiary Focus and Participation; 3) Partnership Quality Management for Sustainability; 4) Human Resource Focus; 5) Process Management, Learning and Continuous Improvement; and 6) Use of Quality Information. While the model was derived from extensive literature reviews of TQM practices in private sector as well as practical adoptions of TQM in humanitarian relief settings based on two major

INGOs located in Jordan, the research offered no validation or evaluation for the proposed framework. The authors attempted to adapt each of the six identified dimensions to the specifics of TQM implementations for INGOs while conforming to the principles of TQM. Since this exercise has seldom been done (Paton, Foot & Payne, 2000), our research represents a significant contribution to the field of international humanitarian assistance.

The objective of the research is to continue the previous efforts by focusing on providing empirical evidence to validate the TQM-Benchmarking measurement model. Utilizing a survey instrument, we evaluate the extent to which the UN agencies located in the Middle East employ the six dimensions of the TQM-Benchmarking model. In the process of validating the previously developed model, an alternate more-streamlined model emerged and was tested using an exploratory factor analysis which revealed that the TQM-benchmarking measurement model is indeed a four-factor variate.

## **Literature review and hypotheses**

### ***TQM implementation in humanitarian NGOs***

While TQM has long been accepted as a prevalent management paradigm (Hackman & Wageman, 1995), little is known about its adoption or implementation from an international NGO perspective (Sweis et al., 2016; Baidoun, Salem & Omran, 2013). Indeed, most early applications of TQM were in industrial firms, where the quality of goods or products is relatively easy to measure via quantitative tools (Kearns, Krasman, & Meyer, 1994). As with other managerial thoughts and practises, quality management has made some effort to move from its unique home in for-profit businesses to the non-benefit world (Cairns, Harris, Hutchison, & Tricker, 2005). TQM, with its emphasis on continuous improvement to achieve customer satisfaction and long-term organizational success, promotes an integrated process

improvement approach encompassing all the departments of the organization (Baidoun et al., 2013). Emphasis on customer satisfaction, continuous improvement, problem-solving processes and employee empowerment (Zbaracki, 1998) lends TQM as one of the most obvious ways for organizations (profit and non-profit) to reduce costs and enhance revenues (Hornig & Huarng, 2002). In the same perspective, Suykens, De Rynck & Verschuere, (2018) argue the potency of systematic private-sector like measurement in non-profit management. NGOs have borrowed several practices from the private sector, e.g. benchmarking, strategic planning, supply chain, customer service/care, etc., suggesting that TQM should not be an entirely alien concept for voluntary sector organizations.

The lack of TQM application in international humanitarian organizations is surprising given that such organizations have a long history of responding to people in need and are important players in the international community's response to emergencies (Ferris, 2005). According to the Yearbook of International Organizations, the number of INGOs more than quadrupled from 1990 to 2000 (cited by Ferris, 2005, p.312). International humanitarian organizations are not exempt from the challenges of the modern competitive business environment which is characterized by fierce competition and increasingly demanding customers (Hack-polay & Igwe, 2018; Sweis et al., 2016). Competing for scarce resources in an overcrowded NGO market requires a strategic approach in order to ensure effectiveness and sustainability. To this end, a number of business models for NGOs have been suggested, including those focusing on efficiency measurement (Baidoun, et al., 2013; Development Initiatives, 2016), those focusing on performance measurement (Hughes, 2013) and those suggesting a stricter financial accountability (Ryan & Irvine, 2012; Stirrat, 2006).

The limited take-up of TQM in NGOs might be explained by several intertwined dynamics. Baidoun, et al. (2013) found that organisational cultures within NGOs are not always

supportive of critical approaches such as TQM. This is inextricably linked to the fact that many workers in these organisations are perceived as volunteers giving time that is not always commensurately rewarded. Therefore, any structured approach to managing performance could deter volunteers. Hack-polay & Igwe (2018), in turn, find that implementation of some aspects of TQM is associated with the insufficiency of personnel and funding pressures; this argument is prevalent in the NGO literature (see also Daar et al., 2018; Saavedra, & Knox-Clarke, 2015; McGoldrick, 2011). Another significant barrier to embracing TQM in NGOs appears to be associated with the limited independence of some of the key organizations in the field. This could be influenced by the institutional context (Campbell, et al., 2019; Dany & Schneiker, 2015; Donini, 1995), by funder priorities (Vaux, 2006); or by political pressure (Vaux, 2006; Porter, 2003) which constrain humanitarian organisations into particular types of behaviour and management, especially when the agencies are involved in humanitarian action conflict zones. A further barrier to the implementation of TQM outside the business world is associated with its theoretical complexity, which may lead to loss of focus, excessive paperwork and more complicated procedures (Dahlgaard et al., 2013).

Accordingly, we formulate Hypothesis 1 to test the extent of the use of TQM practices within the surveyed audience of UN agencies.

*Hypothesis 1: UN agencies exhibit positive levels of TQM practices.*

### ***TQM-Benchmarking model***

Since our study aims to validate the six dimensions of the TQM- Benchmarking model formulated by Sweis, et al. (2016) within the international humanitarian setting, each of the six dimensions is discussed below.



*Leadership and management commitment.* Leadership and management commitment to TQM have found academic support among many prominent quality scholars (Gherbal et al. 2012). The findings suggest that leaders and decision-makers have the responsibility to manage the vision, mission, and strategy for the benefits of the organization and its performance.

Fonseca (2015) advocates that senior management commitment is one of the core principles of TQM since senior management plays a vital role in supporting the process required to successfully achieve quality through commitment, leadership style, and encouragement. Furthermore, senior management is accountable for the level of organizational performance (Valmohammadi, 2011), as well as being responsible for creating the work environment, culture, and framework of operations within the organization. Therefore, the managers must align their practice to the tenets of TQM and demonstrate commitment to it (Boateng-Okrah & Fening, 2012).

*Beneficiary focus and participation.* Gherbal et al. (2012) stress that quality could be obtained through the customer's satisfaction in the context of the private sector and through the beneficiary's satisfaction in the context of the humanitarian sector (see also Griekspoor & Sondorp, 2001). Therefore, the beneficiaries should be regarded as the primary stakeholder because they not only benefit from the services provided by the organization but have the right to be involved in the design of the intervention and be part of the decision that affects their lives (Wellens & Jegers, 2014).

The appropriate assistance and the correct timing for delivering humanitarian aid are two of the nine commitments created by the Core Humanitarian Standard on quality and accountability (The Core Humanitarian Standard, 2014). These can be achieved by giving the beneficiaries an opportunity to participate in the intervention design, regular need assessment,

and information sharing, therefore encouraging them to actively participate at various stages of the process.

The beneficiary's satisfaction is not only measured by the quality of assistance but also by how they receive this assistance, which means that the process and system followed by the organization are important in satisfying the beneficiaries. Therefore, the internal stakeholders (the employees) should be aware of this and should be committed to the quality, both of which can be cultivated by the top management via appropriate leadership style.

*Human resource focus.* Human resource focus is one of the Malcolm Baldrige National Quality Award dimensions (MBNQA) (Tickle, Mann, & Adebajo, 2016) and as such represents a vital factor that affects organizational performance. When employees deliver the interventions to the beneficiaries with a high level of performance, the organization meets the beneficiary's satisfaction. Altayeb & Alhasanat (2014) establish that employees' engagement, training, and empowerment are obligatory for successful TQM implementation, while Analoui & Samour (2012) find that strategic HR management is the most important factor to improve the strategic performance particularly in non-governmental organizations due to the diversity of actors involved, e.g. paid staff, volunteers and community activists, etc. whose coordination requires more than standard HR processes (Hack-polay & Igwe, 2018). Ridder, Piening & Baluch (2012) confirm the rising importance of HR management in a non-profit setting, particularly as a result of funding cutbacks, and the need to serve multiple stakeholders while facing a scarcity of resources. Furthermore, NGOs with sufficient human resource capacity are more likely to seek collaboration than are other organisations to effectively and efficiently respond to challenges that cannot be cracked, or solved easily, by single NGO (AbouAssi, Makhlouf, & Whalen, 2016).

*Process management, learning, and continuous improvement.* Process management is a set of activities that optimize organizational processes, clarify the responsibilities, evaluate performance of the process, and recognize opportunities for continuous improvement (Wienclaw, 2017). One of the most important aspects of process management is re-engineering, which gives the organization the opportunity to discover process errors and to identify and remove non-value adding activities, thus supporting the idea of quality because the process can be changed to be more flexible, effective, and efficient (Wienclaw, 2017).

The philosophy of TQM, with its preventive focus, relies on an assessment of organizational processes to identify and correct the cause of failure early. The organization then ensures that the process is designed to deliver the assistance to customer/beneficiary quickly and easily (Yong & Wilkinson, 2001).

Supporting the virtues of process management, Lassiter (2007) advises non-profit organizations to utilize process improvement. Similarly, Steketee (2010) finds process management to be important for handling managerial problems and social issues. Cheng & Chang (2012) reveal how the quality concepts, such as the Lean Six Sigma, improve the quality of humanitarian interventions and support the organization to deliver the required assistance within a short time despite limiting resources.

The learning and continuous improvement in the humanitarian setting is one of the six benchmarks of standards listed by HAP (Humanitarian Accountability Partnership, 2010). It is argued that it can best be achieved through diligent documentation, internal monitoring, evaluation and auditing.

*Use of quality information.* TQM scholars consider information as one of the critical success factors in organizational performance (Gherbal et al. 2012). Furthermore, quality information is one of the dimensions of MBNQA (Tickle, Mann, & Adebajo, 2016). The

attributes of quality information are accuracy, timeliness, appropriateness, reliability, completeness, relevance, as well as the need for information to be cost-beneficial and user-targeted to enable senior management to take a corrective decision (Murtala, 2012) and deliver the interventions at the right time. In an NGO context, information is a key factor in meeting the beneficiaries' needs; thus, information is required in all project/program cycles from planning to completion. Moreover, AbouAssi, et al. (2016) find NGOs with more technological resources are more likely to seek collaboration.

*Partnership quality, management for sustainability.* The collaboration and cooperation with stakeholders such as local communities, governmental officers, and private companies positively affect the quality of humanitarian interventions (Jacobs, 2011).

Rathi, Given & Forcier's (2014) research on non-profit organizations shows that partnership means collaboration between organizations to support one another by sharing organizational resources including finance, staffing, experience, and information. Partnerships are beneficial (Buckup, 2012; Jackson, 2012; Samu & Wymer, 2001 cited by Rathi, Given & Forcier, (2014, p. 868)), and assist the partner organizations to concentrate on joint objectives (Mandell, 1999), cited by Rathi, Given & Forcier (2014, p. 868).

According to Proulx, Hager, and Klein (2014), non-profit organizations cooperate to save funds and to share information, and therefore improve humanitarian services. Meanwhile, Fitzpatrick and Molloy (2014) find that non-profit organizations need to create partnerships with local NGOs because the local actors have a better understanding of how to implement humanitarian activities smoothly (Coate, Handmer and Chong, 2006). Collaboration and cooperation allow the humanitarian actors from UN agencies, INGOs, and from local NGOs achieve their common objectives in an effective and efficient manner and avoid the overlapping that might occur.

Based on the review of the six dimensions of the TQM measurement model, Sweis et al.'s framework can be credited with the merit of attempting to connect each dimension with the NGO context. However, the framework still suffers from theoretical complexity, which hinders the application of TQM in INGOs. Thus, considering the need to validate and evaluate the model, we designed a quantitative instrument to assess the dimensionality of the TQM measurement model (See Figure 1). Hypothesis 2 below posits the six-dimensional construct of the model.

*Hypothesis 2: TQM Benchmarking measurement model is a six-factor structure comprising: Leadership and Management Commitment (LMC); Beneficiary Focus and participation (BFP); Human Resource Focus (HRF); Process management, Learning and Continuous Improvement (PMLCI); Use of Quality Information (UQI) and Partnership Quality Management for Sustainability (PQMS)*

PLACE FIGURE 1 ABOUT HERE

## **Methods**

The survey instrument consisting of 27 statements (originally loading on six dimensions) was constructed based on the theoretical framework developed by Sweis et al. (2016) and rated on a five-point Likert scale. Our sample (N = 1,982) was comprised of various grades professional members of staff of the UN organisations operating in Syria, Egypt, Cyprus, Palestinian Territories, Israel, Lebanon, Iran, Iraq, and Turkey. We distributed 1,982 self-administered questionnaires in 2017-2018 and had 739 returned responses prior to data analysis. We followed Covariance Based Structural Equation Modelling (CBSEM) using

AMOS v. 23 to analyse the dimensionality of the proposed construct and performed a Confirmatory Factor Analysis (CFA) utilizing the returned responses. However, testing the normality of observed variables represents a key condition that should be satisfied before conducting a CFA (Bentler, 2005; Mahmoud & Khalifa, 2015; Mardia, 1970; Meyers, Gamst, & Guarino, 2017). Despite the fact that having non-normally distributed observed variables may be linked to a potential breach of the multivariate normality condition, the contrary is not necessarily true (Mahmoud & Khalifa, 2015). In other words, there might be a chance where the construct lacks the multivariate normality although the representing observed variables are univariate normally distributed (Byrne, 2010; Meyers et al., 2017; West, Finch, & Curran, 1995). Thus, we tested the variable set against both univariate and multivariate normalities after excluding the cases that caused kurtosis. Additionally, we dropped 232 cases that caused inflation in the critical ratio and the multivariate kurtosis. Subsequently, we had critical ratios of less than 5 for all of the observed variables (Bentler, 2005). Additionally, the Mardia's (1970) multivariate kurtosis ratio dropped from 18.3 to 1.848 for the basic model and from 15.489 to 1.622 later for the alternate model, which, in both cases, is less than 1.96 (Meyers et al., 2017). Thus, both the univariate and multivariate normalities conditions were met, and CFA was suitable to be run on our final sample of 507 cases. Further, we conducted exploratory factor analysis (EFA) with Varimax rotation (Mahmoud & Khalifa, 2015), using SPSS v. 23, after the basic model had exhibited poor fit to our data. Profiling our participants, the majority of our sample were males (57%), educated to a postgraduate level (63%), with five years or more experience in their current position (73%). Eventually, one sample T-test was executed, using SPSS v. 23, to evaluate the final dimensions of the measurement model against the neutral value (i.e., 3).

## Results

Using structural equation modelling (SEM), we test the theoretically hypothesised structure stating TQM-Benchmarking measurement model as a six-factor variate. We employ a set of model-fit indices to judge the validity of the measurement model. The adopted fit-indices set includes the following statistics:  $\chi^2/df$  = Chi-square divided by degrees of freedom (Mahmoud & Grigoriou, 2017), RMSEA = Root Mean Square Error of Approximation (MacCallum, Browne & Sugawara, 1996), SRMR = Standardised Root Mean Square Residual (Byrne, 2006; Hu & Bentler, 1995), CFI = Comparative Fit Index (Bentler, 1990), and TLI = Tucker-Lewis index (Tucker & Lewis, 1973). Our results ( $\chi^2/df = 3.127 > 3$ ; RMSEA = .102 > .08; SRMR = .0686 < .08; CFI = .787 < .9; and TLI = .758 not close to .95) show that all fit indices but SRMR demonstrate a poor fit of the basic measurement model to the collected data. We therefore reject Hypothesis 2 and conclude that an exploratory factor analysis (EFA) is needed to explore the dimensionality of the TQM-Benchmarking measurement model before running another CFA (Byrne, 2010). Accordingly, we run EFA to elicit a new set of dimensions for TQM-Benchmarking measurement model before running another CFA. Our results (Table 1) show that the items of the TQM-Benchmarking measurement model are loaded on four factors. We thus performed another CFA for the alternate four-factor measurement model (see Figure 2).

PLACE TABLE 1 ABOUT HERE

The fit indices of the second CFA (i.e.,  $\chi^2/df = 1.915 < 3$ ; RMSEA = .067 < .08; SRMR = .0471 < .08; CFI = .941 > .9; and TLI = .928 very close to .95) support the results of the EFA and we conclude that TQM-Benchmarking model is a four-factor variate composed of LMC = Leadership and Management Commitment; PQMS = Partnership Quality Management for

Sustainability, PMLCI = Process management, Learning and Continuous Improvement; and UQI = Use of Quality Information. Furthermore, the reliability tests were run for the new four dimensions and yielded Cronbach's alpha values higher than .7 (in Table 2), suggesting that the new TQM-Benchmarking model is deemed to be internally consistent (Nunnally & Bernstein, 1994). The one-sample T-test is run for each of the four validated dimensions to evaluate the levels of TQM-Benchmarking demonstrated by the participants. The results of T-test indicate that the participants report positive levels of TQM-Benchmarking within their organizations suggesting that the participants' organisations tend to show high levels of leadership and management commitment ( $t = 27.035$ ,  $p < .0001$ ), and partnership quality management for sustainability ( $t = 17.622$ ,  $p < .0001$ ) accompanied with effective and efficient practices of process management, learning and continuous improvement ( $t = 21.310$ ,  $p < .0001$ ) as well as quality information ( $t = 17.843$ ,  $p < .0001$ ). This leads to conclude that Hypothesis 1 is accepted.

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## **Discussion**

Although the humanitarian sector has recently received attention in the implementation of quality driven initiatives, with a myriad of initiatives developed to optimize the quality performance and increase the impact of interventions on people's lives, there is no consensus on any one specific approach to be considered superior. Consequently, scholars took the initiative to find an appropriate model to help non-profit organizations maximize the people's benefit from the interventions. To this extend, qualitative surveys and extensive literature reviews have led researchers to identify the TQM-Benchmarking model as the one that has



gained practice among international humanitarian actors involved with INGOs (Sweis et al., 2016). Our study was designed to present empirical evidence concerning this TQM-Benchmarking model.

The results show that the TQM-Benchmarking measure is a four-dimensional structure instead of the originally suggested six-dimensional one (thus Hypothesis 2 is rejected). The two rejected dimensions are Beneficiary's Engagement and Participation (BEP); and Human Resource Focus (HRF). While it is perplexing that survey respondents did not find these two critical components of TQM relevant and significant to their work, we believe that the two missing dimensions are indeed important, but participants captured them within other variables. In fact, it appears that the rejected dimensions are embedded in the four reformed dimensions that our analysis arrived at. As Sheehan (1998) argues, the human resource focus is about concern for people and this encapsulates both beneficiaries and employees whose interest in and subject of compassion are tightly intertwined. Therefore, the four dimensions cannot be articulated outside of or be divorced from the people concern. For example, the high level of leadership dimension we found is linked to leadership of people and activities. Some research has gone as far as suggesting only two dimensions – 'results' and 'enablers' (Elissetche, 2002). However, we found the two-way approach restrictive in providing systematic benchmarking and adequate guide for organisations that aspire to implement TQM approaches. The four dimensions identified here are significant for lean management practices in INGOs which require prompt intervention encapsulating speed and efficiency in the delivery of compassionate action. Stone (2012) and Rother & Shook (1999) see lean thinking in action as a process of "continuous identification and elimination of waste from an organisation's processes, leaving only value-added activities in the value stream" (Stone, 2012). Often heavy bureaucratic structures and processes consume significant amounts of managers' and professional time in NGOs and obfuscate key project objectives, leading to inefficiencies

(Narayana, 1992). Our results also reveal that the participants have positive levels of practice regarding the four accepted dimensions. Our reduced framework of four TQM dimensions for INGOs contributes to resolve one of the key barriers – theoretical complexity – that these organisations face in applying TQM principles (Dahlgard, et al., 2013). Accordingly, Hypothesis 1 is accepted and confirmed that the UN agencies apply a high level of TQM practice.

## **Conclusion**

This study investigated the validity of the previously proposed theoretical TQM-Benchmarking model that was created to improve the quality of humanitarian assistance. We tested the model based on six suggested dimensions to reveal that only four dimensions are valid in lieu of six: 1) Leadership and Management Commitment-LMC; 2) Process Management, Learning, and Continuous, Improvement-PMLCI; 3) Use of Quality Information-UQI; 4) Partnership Quality, Management for Sustainability-PQMS.

From our results, we note that organizations should address the issue of quality during the whole project cycle. As Donini (1995) argues, international NGOs are no longer merely providers of information or services, but they gain importance in the context of policy shaping. This evolved role of NGOs demands active and proactive actions to stress quality outcomes by senior management and all relevant employees (Hack-polay & Igwe, 2018). It is noteworthy, that the results of this study show the important role of local partners that help in carrying out the planned activities with the identified quality. For this purpose, the capacity of the partners and their staff in terms of quality and accountability should be given attention to make certain that their work achieves organizational objectives. Finally, we conclude that the quality goals

are achieved by shared efforts and joint responsibility of management with all internal and external stakeholders.

#### *Limitations and future research*

For generalizability, this study recommends replication in other countries where the UN agencies work to provide humanitarian assistance in order to confirm the empirical evidence related to the TQM-Benchmarking model and its dimensions. Conducting a similar study in another geographic region may help to shed additional light on the reasons for rejecting the BEP and the HRF dimensions of the basic model as cultural differences could play a role in how TQM is implemented by UN organizations working in humanitarian relieve settings throughout the world. Moreover, this study recommends conducting a qualitative survey to discuss in-depth the drivers and barriers of implementing the TQM-Benchmarking model within the UN agencies working in the Middle East and beyond.

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**Table 1: EFA results**

		<b>Rotated Component Matrix</b>			
		<b>Component</b>			
<b>Item</b>		<b>LMC</b>	<b>UQI</b>	<b>PQMS</b>	<b>PMLCI</b>
		<b>Leadership and Management Commitment</b>	<b>Use of Quality Information</b>	<b>Partnership Quality Management for Sustainability</b>	<b>Process management, Learning and Continuous Improvement</b>
LMC1	In the organization that I work for, the quality of beneficiary care is clearly identified in the organization’s mission, vision and mandate	.742			
LMC2	In the organization that I work for, the accountability to beneficiaries, donors, and other stakeholders are well reflected in the organization’s mission, vision, and mandate.	.788			
LMC3	In the organization that I work for focuses on establishing and delivering approved accountability framework for organization's staff and partners' staff	.538			
LMC4	In the organization that I work for, providing quality services is an integral part of the organizational culture	.632			
LMC5	In the organization that I work for, one of the key aspects of its organizational culture is promoting continuous improvement	.671			
LMC6	The organization that I work for aims at improving beneficiaries' care	.582			
PQMS1	The quality in the organization that I work for is the priority when it comes to selecting partners			.627	
PQMS2	In the organization that I work for, the quality standards and accountability frameworks are clearly communicated with its stakeholders			.705	

**Rotated Component Matrix**

Item	Component			
	LMC Leadership and Management Commitment	UQI Use of Quality Information	PQMS Partnership Quality Management for Sustainability	PMLCI Process management, Learning and Continuous Improvement
PQMS3 The organization that I work for cares about building the capacity of the partner's staff in terms of quality standards			.707	
PQMS4 The organization that I work for cares about building the capacity of the partner's staff in terms of accountability frameworks			.788	
PMLCI1 The organization that I work for, Standard Operating Procedures (SOPs) are well documented, approved, communicated and agreed on				.556
PMLCI2 The organization that I work for conducts frequent internal reflections and audits				.811
PMLCI3 The organization that I work for tends to share monitoring and evaluation findings with the implementing parties				.666
UQI1 The use of information is run in a timely and an accurate manner the organization that I work for		.634		
UQI2 The organization that I work for, the information relevant to intervention is updated in a timely manner		.746		
UQI3 The organization that I work for provides a constant collection of monitoring and evaluation data		.802		
UQI4 The organization that I work for uses a modern technology in data collection		.778		

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**Rotated Component Matrix**

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<b>Item</b>	<b>Component</b>			
	<b>LMC</b> <b>Leadership and</b> <b>Management</b> <b>Commitment</b>	<b>UQI</b> <b>Use of Quality</b> <b>Information</b>	<b>PQMS</b> <b>Partnership Quality</b> <b>Management for</b> <b>Sustainability</b>	<b>PMLCI</b> <b>Process management,</b> <b>Learning and Continuous</b> <b>Improvement</b>
Eigenvalues	3.348	1.942	2.951	2.882
% of Variance	19.696	11.424	17.356	16.951
Cumulative %	19.696	65.427	37.052	54.003

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**Table 2: Inter-correlations and reliability test**

<b>Correlations</b>	<b>M</b>	<b>SD</b>	<b>Alpha</b>	<b>LMC</b>	<b>PQMS</b>	<b>PMLCI</b>
LMC	4.06	0.56	0.85			
PQMS	3.76	0.62	0.82	.632**		
PMLCI	3.91	0.61	0.72	.599**	.500**	
UQI	3.79	0.64	0.85	.595**	.569**	.540**

\*\* P < .001



Figures

Figure1: The basic measurement model

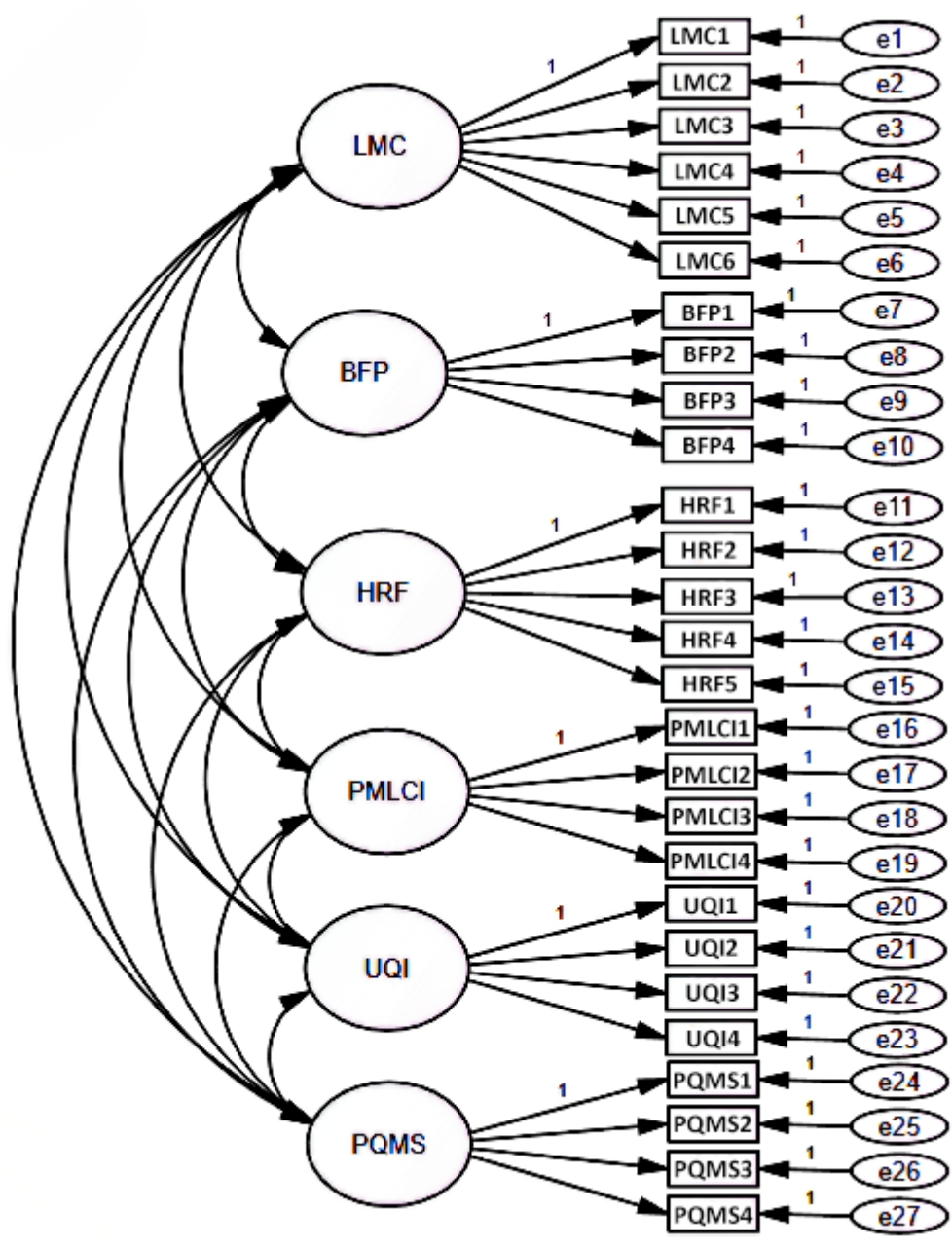


Figure 2: CFA Results for the alternate measurement model

