BENEFICIARIES' SATISFACTION WITH RELIEF SERVICES: COMPARING DIFFERENT SCALES

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ABSTRACT

Purpose: This study hypothesises that different beneficiary satisfaction scales should yield consistent results when assessing beneficiary satisfaction with relief service quality. It examines whether the scales are highly correlated and, if not, explores possible explanations.
Design/methodology/approach: Three scales were tested: (1) overall satisfaction (two items), (2) disconfirmation-based satisfaction (10 items, Brady *et al.*, 2002), and (3) an alternative (end-state) scale, adapted from the 10-item disconfirmation-based scale by adding the statement "I am satisfied." Surveys were conducted with 350 beneficiaries in Chiang Rai and 325 in Nong Khai. Correlation and contextual analyses were applied.
Findings: All scales were moderately to highly correlated in Chiang Rai but not in Nong Khai. The difference reflected disaster types: Chiang Rai faced a sudden-onset flash flood with immediate responses, leaving little room for expectations. This was a possible reason that why all scales were correlated. In Nong Khai, beneficiaries had time to form expectations because the flood was slow-onset and relief preparations were made. When all ended up flooded, beneficiaries perceived the relief efforts as falling short of expectations, which made the disconfirmation scale only weakly correlated with the other two measures, while those two remained weakly to moderately correlated.
Research limitations/implications: The study did not capture beneficiaries' qualitative reasons for differing ratings. It requires more evidence whether findings hold across other disaster typologies.
Practical implications: The overall satisfaction scale is suitable for a sudden-onset flood, while the disconfirmation-based scale better detects service gaps in a slow- flood.
Originality/value: The study shows that applying satisfaction theory in humanitarian contexts requires attention to disaster type, onset speed, and beneficiary psychological states.

Keywords: Beneficiary satisfaction, Relief service quality, Disconfirmation-based satisfaction scale, Overall satisfaction scale, Flood disaster

Introduction

Performance measurement is prominent in the humanitarian field (Banomyong *et al.*, 2019b; Anjomshoae *et al.*, 2022). Relief service quality (RSQ) is one important aspect of performance measurement systems emphasised by humanitarian organisations (Heaslip *et al.*, 2018; Banomyong *et al.*, 2019a). Although limited in number, some studies have developed RSQ from beneficiaries' perspectives, such as Schiffling and Piecyk's (2014) Balanced Scorecard, Sheu (2014) attitude theory, Banomyong *et al.*'s (2022) Service Performance Model (SERVPERF), and Cardoso *et al.*'s (2023) inductively proposed performance criteria.

However, these RSQ-focused performance measurement systems alone may lack practical utility, as they primarily capture input measures. Humanitarian organisations are keen to obtain feedback from beneficiaries to improve future relief services (Anjomshoae *et al.*, 2022). For this reason, input measures are not independent but require outcome measures to establish their nomological validity. In the case of RSQ, beneficiary satisfaction is often used as such an outcome measure (Oloruntoba and Gray, 2009; Heaslip, 2013; Sheu, 2014; Banomyong *et al.*, 2022; Cardoso *et al.*, 2023).

Yet limited attention has been paid to conceptualising beneficiary satisfaction with RSQ. Importantly, beneficiary satisfaction cannot be directly equated to customer satisfaction in business contexts, because disasters disrupt market systems and remove buyer–seller dynamics (Holguín-Veras *et al.*, 2013). As a result, adapting commercial constructs to humanitarian settings is problematic (Heaslip *et al.*, 2018; Heaslip and Kovács, 2019).

In service quality research, customer satisfaction with service quality is typically operationalised in two ways: (1) overall satisfaction with service quality (Cronin and Taylor, 1992), or (2) satisfaction measured through summary disconfirmation (Brady *et al.*, 2002). Choosing the wrong operationalisation in

humanitarian settings risks undermining measurement validity, as the scales may not capture beneficiaries' lived experiences or expectations of relief services.

This research therefore focuses on beneficiary satisfaction—the output of many RSQ systems—and tests its measurement validity. Specifically, it examines whether assessing beneficiary satisfaction using different scales yields consistent or highly correlated results. If the results diverge, the study explores possible explanations. Understanding this validity is crucial because biased satisfaction data may lead to misallocated resources and ineffective service improvements in humanitarian contexts (Anjomshoae *et al.*, 2022).

Literature review

Service quality and satisfaction

Service quality is assessed from the customer's perspective, referring to their evaluation of the overall excellence of services (Zeithaml, 1988). It is a key determinant of behavioural outcomes such as satisfaction, loyalty, and intentions (Zeithaml *et al.*, 1996). Among these outcomes, satisfaction is the most frequently used output measure of service quality performance (Ranjan *et al.*, 2015).

Satisfaction refers to a consumer's emotional response to service quality (Parasuraman *et al.*, 1985; Brady *et al.*, 2002). Based on Rust and Oliver's (1994) cognitive–affective–conative theory, customers first evaluate service quality at the cognitive level, which in turn shapes their emotional state, including satisfaction (Brady *et al.*, 2005; Seth *et al.*, 2005). In the service quality literature, satisfaction is operationalised in two main ways (Table 1). Overall satisfaction assesses the customer's holistic feeling about the service received (Cronin and Taylor, 1992), while disconfirmation-based satisfaction assesses whether the customer feels satisfied with the service performance compared with their expectations (Brady *et al.*, 2002). These two approaches are not interchangeable, and choosing between them has implications for how satisfaction is measured and interpreted in different contexts.

Scale	Overall Satisfaction	Disconfirmation-based Satisfaction
Paradigm	A global evaluative judgement	The expectancy-disconfirmation
Explanation	Customers provide an overall assessment of their satisfaction with the service quality they received.	Satisfaction is understood as the gap between what customers expected and what they experienced.
Strength	- Captures the customer's holistic feeling - Do not need to break down specific aspects - Simpler to measure	- Provides more diagnostic information about where service delivery may be falling short of or exceeding expectations
Weakness	- Too holistic and cannot capture details	- More cognitively complex, as it requires customers to mentally process both their prior expectations and their perceived performance, then evaluate the difference

Table 1: Two main approaches to conceptualising customer satisfaction

Beneficiary satisfaction

Beneficiary satisfaction is described as beneficiaries' evaluation of specific relief services (Oloruntoba and Gray, 2009; Heaslip, 2013; Sheu, 2014; Cardoso *et al.*, 2023). In this study, satisfaction is defined, following Parasuraman *et al.* (1985) and Brady et al. (2002), as beneficiaries' emotional responses to relief services. Evidence from humanitarian studies also supports that beneficiary satisfaction is shaped by cognitive appraisal of RSQ (Heaslip, 2013; Sheu, 2014; Cardoso *et al.*, 2023). However, beneficiary satisfaction cannot be directly equated to customer satisfaction in business contexts because disasters disrupt market dynamics, removing the buyer–seller relationship (Holguín-Veras *et al.*, 2013). This makes the adaptation of customer satisfaction concepts to humanitarian contexts problematic (Heaslip *et al.*, 2018; Heaslip and Kovács, 2019).

Few studies have attempted to develop indicators of beneficiary satisfaction. For example, Cardoso *et al.* (2023) used satisfaction only as a single indicator to capture their proposed RSQ criteria. This approach is inadequate, since satisfaction is a latent construct that typically requires multiple observed indicators (Oliver, 1993), as opposed to directly measurable variables such as financial performance.

Observed indicators of satisfaction have been developed by Banomyong *et al.* (2022), who adapted two items from Cronin and Taylor (1992): (1) “My feelings towards the relief organisation’s services can be described as” and (2) “My satisfaction with the relief services is.” While this represents the only overall satisfaction scale adapted to a humanitarian setting, it still has limitations, as it captures only an overall assessment rather than multidimensional aspects of satisfaction. Therefore, while the present study adopts this overall satisfaction scale, it also highlights the need for exploring alternative scales, which will be addressed in the next section.

Methodology

Developing beneficiary satisfaction scales

The aim of this study was to assess whether different beneficiary satisfaction scales yield consistent or highly correlated results. The first scale, borrowed from Banomyong *et al.* (2022), was an overall satisfaction scale comprising two items, assessed using Likert scales anchored on a 7-point range: 1 = Very dissatisfied, 2 = Dissatisfied, 3 = Somewhat dissatisfied, 4 = Neutral, 5 = Somewhat satisfied, 6 = Satisfied, 7 = Very satisfied.

The other two scales were adapted from Brady *et al.* (2002), who proposed a disconfirmation-based satisfaction measure. The original version comprised 10 items assessing customer satisfaction with service quality (Table 2), which were modified to fit the study context. This scale used a Likert format similar to the original but anchored on a 7-point range: 1 = Much lower than expected, 2 = Lower than expected, 3 = Slightly lower than expected, 4 = As expected, 5 = Slightly higher than expected, 6 = Higher than expected, 7 = Much higher than expected.

The final scale was also based on the disconfirmation approach but included the item “I am satisfied” to create an alternative end-state scale. This version used a 7-point Likert agree/disagree format: 1 = Strongly disagree, 2 = Disagree, 3 = Slightly disagree, 4 = Neutral, 5 = Slightly agree, 6 = Agree, 7 = Strongly agree.

Original	Adapted Disconfirmation-based Satisfaction	Code	Alternative Scale	Code
The reliability, consistency, and dependability of the employees were	The reliability, consistency, and sense of dependability provided by the officials/volunteers.	D1	I am satisfied that the officials/volunteers provided relief services in a reliable, consistent, and dependable manner.	A1
The willingness and ability of the employees to provide services in a timely manner were	The willingness and ability of the officials/volunteers to provide relief services in a timely manner.	D2	I am satisfied that the officials/volunteers were willing and able to provide relief services in a timely manner.	A2
The competence (knowledge and skill) of the employees was	The knowledge and competence of the officials/volunteers in delivering relief service.	D3	I am satisfied that the officials/volunteers had the knowledge and competence to deliver relief services.	A3
The approachability and ease of contact of the employees were	The accessibility and ease of contacting the officials/volunteers.	D4	I am satisfied that the officials/volunteers were accessible and easy to contact.	A4
The levels of courtesy, politeness, and respect I received were	The politeness, humility, and respect you received.	D5	I am satisfied that the officials/volunteers were polite, humble, and respectful.	A5
How the employees listened to me and spoke in a language that I could understand were	The ability of the officials/volunteers to listen to you and explain things clearly.	D6	I am satisfied that the officials/volunteers listened to me and explained things clearly.	A6
The trustworthiness, believability, and honesty of the employees were	The honesty and integrity of the officials/volunteers.	D7	I am satisfied that the officials/volunteers demonstrated honesty and integrity.	A7
The environment for care in terms of being free from danger, risk or doubt was	The extent to which relief operations prioritised safety and minimised risks…	D8	I am satisfied that the officials/volunteers carried out relief service operations with a focus on safety and without risk.	A8
The effort of the employees to understand my needs was	The efforts of the officials/volunteers to respond to your needs.	D9	I am satisfied that the officials/volunteers made efforts to respond to my needs.	A9

The neatness and cleanliness of the facilities and staff were	The suitability of equipment, tools, or other physical support, including the attire of officials/volunteers, for disaster relief operations.	D10	I am satisfied that the equipment, tools, and other physical support, including the attire of officials/volunteers, were appropriate for disaster relief work.	A10

Table 2: The disconfirmation satisfaction and its adaptations

Contexts
Flood disasters in Thailand were selected as the study context. In September 2024, the Northern and Northeastern regions of Thailand experienced floods. Two sites with different types of flooding were selected (Table 3). The Department of Disaster Prevention and Mitigation (DDPM) was the main relief organisation, operating through its sub-administrative units located in the disaster sites.

Case	Chiang Rai	Nong Khai
Disaster	Flash floods and landslides	River overflows from the Mekong River
Cause	Heavy rain from the monsoon, along with Typhoon Yagi in early September, which exacerbated the overall flood situation	The same regional monsoon conditions but focused on the swelling of the main Mekong River system, which Nong Khai sits on.
Topography	Located in a mountainous region with rivers like the Kok and Ngao, which are tributaries of the Mekong. The steep terrain contributes to rapid flash flooding.	Located on the bank of the Mekong River. The flood risk is tied directly to the water level of this major international river, which can affect surrounding districts for extended periods.
Duration	9-15 September 2024	14-19 September 2024
Relief organisation	DDPM Chiang Rai	DDPM Nong Khai

Table 3: Study context

Data collection and analyses
Surveys were conducted with 350 beneficiaries in Chiang Rai and 325 in Nong Khai. Pearson correlations were performed to compare the three scales. To compare the disconfirmation-based and the alternative scales, a correlation test was calculated for each item. Next, all items of the disconfirmation-based and alternative scales were independently averaged to derive mean scores. These mean scores were then analysed for correlation with each of the two items of the overall satisfaction scale. The items of the overall satisfaction scale were also correlated with each other to establish internal consistency.

Correlation results showed some inconsistency among the scales. Criterion for interpretation followed Schober *et al.* (2018): 0.10-0.39 = Weak; 0.40-0.69 = Moderate; 0.70-0.89 = Strong. Contextual analyses were applied to explore possible explanations for these divergent results, leading to insights into theoretical and methodological discussions.

Findings

Tables 4 provides the correlation results for both sites, comparing the mean scores, while Tables 5 and 6 report the correlation results for each site regarding its comparisons between the disconfirmation-based and alternative scales.

Scale	Alternative	Overall Satisfaction (Item1)	Overall Satisfaction (Item2)
Chiang Rai			
Disconfirmation-based	0.871**; *0.757***	0.727**; *0.604***	0.699**; *0.559***
Alternative	-	0.739**; *0.544***	0.742**; *0.588***
Overall Satisfaction (Item1)	-	-	0.904**; *0.738***
Nong Khai			
Disconfirmation-based	0.605**; *0.522***	0.351**; *0.102**	0.359**; *0.105**
Alternative	-	0.603**; *0.276***	0.606**; *0.240***
Overall Satisfaction (Item1)	-	-	0.837**; *0.754***
Note: Regular text shows Pearson correlations; *italic* text shows Spearman correlations. '*' and '**' indicate significance at the 0.01 and 0.05 level, respectively.			

Table 4: Correlation results for both sites, comparing the mean scores

Disconfirmation-based	Alternative									
	A1	**A2**	**A3**	**A4**	**A5**	**A6**	**A7**	**A8**	**A9**	**A10**
D1	0.800; *0.710*	0.648; *0.417*	0.677; *0.510*	0.689; *0.517*	0.716; *0.544*	0.784; *0.680*	0.662; *0.429*	0.690; *0.503*	0.686; *0.496*	0.713; *0.521*
D2	0.761; *0.590*	0.742; *0.559*	0.718; *0.544*	0.747; *0.582*	0.770; *0.594*	0.733; *0.548*	0.747; *0.570*	0.741; *0.550*	0.733; *0.547*	0.763; *0.576*
D3	0.756; *0.603*	0.714; *0.520*	0.737; *0.597*	0.743; *0.604*	0.751; *0.604*	0.750; *0.603*	0.736; *0.569*	0.721; *0.549*	0.731; *0.571*	0.747; *0.586*
D4	0.787; *0.666*	0.713; *0.528*	0.732; *0.595*	0.762; *0.627*	0.770; *0.636*	0.760; *0.625*	0.734; *0.566*	0.742; *0.592*	0.724; *0.567*	0.761; *0.606*
D5	0.794; *0.673*	0.720; *0.532*	0.732; *0.599*	0.757; *0.634*	0.781; *0.660*	0.772; *0.639*	0.729; *0.560*	0.736; *0.582*	0.749; *0.608*	0.758; *0.604*
D6	0.800; *0.689*	0.690; *0.452*	0.676; *0.491*	0.688; *0.486*	0.711; *0.504*	0.835; *0.754*	0.688; *0.462*	0.701; *0.492*	0.719; *0.532*	0.736; *0.542*
D7	0.776; *0.591*	0.778; *0.594*	0.743; *0.577*	0.779; *0.637*	0.789; *0.616*	0.773; *0.599*	0.794; *0.646*	0.774; *0.603*	0.764; *0.585*	0.799; *0.638*
D8	0.784; *0.635*	0.733; *0.522*	0.738; *0.590*	0.751; *0.594*	0.776; *0.623*	0.785; *0.644*	0.736; *0.553*	0.750; *0.577*	0.751; *0.587*	0.779; *0.622*
D9	0.795; *0.650*	0.730; *0.521*	0.735; *0.587*	0.756; *0.613*	0.785; *0.640*	0.774; *0.625*	0.736; *0.553*	0.749; *0.585*	0.753; *0.597*	0.766; *0.601*
D10	0.796; *0.649*	0.729; *0.526*	0.754; *0.620*	0.767; *0.623*	0.788; *0.650*	0.784; *0.644*	0.752; *0.583*	0.767; *0.621*	0.758; *0.611*	0.806; *0.683*

Note: Regular text shows Pearson correlations; *italic* text shows Spearman correlations. All values were significant at the 0.01 level.

Table 5: Correlation results for the Chiang Rai site, comparing the disconfirmation-based and alternative scales

Disconfirmation-based	Alternative									
	A1	**A2**	**A3**	**A4**	**A5**	**A6**	**A7**	**A8**	**A9**	**A10**
D1	0.608; *0.565*	0.463; *0.372*	0.429; *0.348*	0.446; *0.374*	0.475; *0.393*	0.371; *0.280*	0.415; *0.384*	0.407; *0.289*	0.431; *0.285*	0.426; *0.304*
D2	0.505; *0.435*	0.469; *0.358*	0.415; *0.304*	0.375; *0.283*	0.437; *0.338*	0.338; *0.236*	0.434; *0.410*	0.372; *0.208*	0.391; *0.209*	0.395; *0.239*
D3	0.544; *0.514*	0.399; *0.306*	0.422; *0.355*	0.389; *0.303*	0.402; *0.319*	0.281; *0.183*	0.442; *0.450*	0.366; *0.255*	0.321; *0.163*	0.395; *0.282*
D4	0.530; *0.456*	0.406; *0.271*	0.407; *0.305*	0.556; *0.488*	0.505; *0.392*	0.297; *0.209*	0.412; *0.389*	0.339; *0.227*	0.435; *0.295*	0.366; *0.252*
D5	0.494; *0.437*	0.441; *0.370*	0.397; *0.305*	0.433; *0.348*	0.560; *0.492*	0.316; *0.239*	0.339; *0.299*	0.343; *0.229*	0.381; *0.264*	0.293; *0.194*
D6	0.424; *0.388*	0.327; *0.269*	0.372; *0.313*	0.294; *0.237*	0.388; *0.337*	0.440; *0.393*	0.498; *0.478*	0.443; *0.374*	0.372; *0.241*	0.396; *0.295*
D7	0.342; *0.321*	0.273; *0.213*	0.305; *0.210*	0.331; *0.255*	0.381; *0.293*	0.376; *0.283*	0.503; *0.459*	0.398; *0.308*	0.373; *0.250*	0.347; *0.260*
D8	0.355; *0.337*	0.291; *0.235*	0.320; *0.277*	0.290; *0.253*	0.320; *0.267*	0.302; *0.226*	0.407; *0.379*	0.437; *0.383*	0.382; *0.250*	0.370; *0.275*
D9	0.342; *0.306*	0.281; *0.216*	0.331; *0.265*	0.341; *0.295*	0.425; *0.390*	0.308; *0.266*	0.361; *0.346*	0.349; *0.285*	0.470; *0.384*	0.312; *0.238*
D10	0.408; *0.373*	0.331; *0.281*	0.382; *0.326*	0.299; *0.253*	0.355; *0.298*	0.386; *0.336*	0.422; *0.382*	0.429; *0.362*	0.392; *0.265*	0.436; *0.353*

Note: Regular text shows Pearson correlations; *italic* text shows Spearman correlations. All values were significant at the 0.01 level.

Table 6: Correlation results for the Nong Khai site, comparing the disconfirmation-based and alternative scales

The results show that the mean values of the three scales were moderately to strongly correlated for the Chiang Rai site, ranging from 0.70 to 0.87 (Pearson) and 0.56 to 0.76 (Spearman) (Table 4). The item-level correlations between the disconfirmation-based and alternative scales for this site were also moderately to strongly correlated, ranging from 0.74 to 0.83 (Pearson) and 0.56 to 0.75 (Spearman) (Table 5).

However, the correlations calculated from Nong Khai respondents diverged. The mean values of the three scales were weakly to moderately correlated, ranging from 0.35 to 0.61 (Pearson) and 0.10 to 0.52 (Spearman) (Table 4). The item-level correlations between the disconfirmation-based and alternative scales for this site were also weakly to moderately correlated, ranging from 0.42 to 0.61 (Pearson) and 0.34 to 0.57 (Spearman) (Table 6).

Regarding the contextual insights, in Chiang Rai, the DDPM's flood relief efforts centred on immediate response to the flash floods and landslides. This included activating provincial authorities, deploying rescue teams, and distributing relief kits to affected households. In contrast, in Nong Khai, the DDPM focused on anticipating and responding to the rising levels of the Mekong River. Relief efforts involved assisting local communities in filling sandbags and reinforcing flood barriers along the riverbanks to mitigate potential overflow.

Based on these insights, it can be concluded that the flood relief in Chiang Rai was in the response phase, while in Nong Khai it was in the preparedness phase before the real response phase occurred. The inconsistency among the three satisfaction scales may stem from differences in disaster type: the prolonged

nature of riverine flooding (Nong Khai) compared with the sudden impact of flash floods (Chiang Rai). These differences in flood type may have influenced beneficiaries' perceptions and expectations.

Discussion

The findings challenge the common assumption that satisfaction scales are interchangeable across contexts. Instead, the results indicated that disaster type and onset speed could influence how beneficiaries form and process their evaluations. Specifically, the cognitive appraisal of relief service quality and the subsequent affective evaluation of satisfaction appear to differ depending on whether the disaster was sudden- or slow-onset.

In sudden-onset disasters such as flash floods, beneficiaries could be primarily concerned with survival. Under such urgent circumstances, expectations of relief service quality may be less likely to be formed beforehand. Beneficiaries may therefore base their satisfaction on immediate relief performances, rather than on preconceived criteria of relief service performance. By contrast, in slow-onset disasters such as river overflows, beneficiaries may have more time to form expectations about relief operations. When these expectations were unmet—such as when floodwaters eventually reach and damage their homes—satisfaction judgments could become more negative, as relief efforts were evaluated against their pre-established criteria.

Theoretical Implications

First, the findings contribute to theory by highlighting the role of expectation formation. In sudden-onset contexts, the absence of prior expectations weakens the applicability of disconfirmation theory. In slow-onset contexts, however, beneficiaries have time to generate specific expectations, making disconfirmation-based evaluations more salient.

Second, the results suggest differing evaluation reference points for evaluating relief service quality. Flash flood beneficiaries appear to rely on basic survival needs—such as rescue and food security—as their main evaluative criteria. In contrast, river overflow beneficiaries observe preparedness and mitigation activities over time, using these as reference points when judging relief service quality. Hence, there could be some respondents' biases from the preparation phase that contaminated the real evaluations of the response phase.

Third, the study reveals a potential temporal evaluation bias. Prolonged exposure to rising threats in river overflow contexts may create heightened stress and negative emotional states. These emotional conditions may bias satisfaction judgments downward, even when service delivery meets objective standards.

Conclusion

This study demonstrates that applying satisfaction theory in humanitarian contexts requires careful consideration of disaster-specific characteristics. The type of disaster, the time taken for the event to emerge, and beneficiaries' exposure to risk all shape how satisfaction judgments are formed. Moreover, psychological states such as stress and negative emotions can introduce biases into these evaluations, challenging the assumption that satisfaction scales function uniformly across settings.

Several avenues for further inquiry remain open. First, future studies should examine other factors that may shape beneficiary satisfaction, such as organisational communication, trust in authorities, or previous disaster experiences. Second, the generalisability of these findings should be tested across other disaster typologies, including man-made crises such as industrial accidents or conflict situations, where the dynamics of expectation formation and evaluation may differ substantially. Finally, cultural contexts may play an important role. Cross-cultural investigations could reveal whether beneficiaries in different societies interpret, form, and express satisfaction in comparable ways, or whether cultural norms reshape these processes.

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