The structure of the legitimacy of health care institutions.

The Polish adaptation of the Legitimacy Questionnaire and its psychometric properties

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Abstract

Aim: The aim of the empirical research was (a) to identify the structure of institutional legitimacy in the health service and (b) to develop a Polish version of the Legitimacy Questionnaire (LQ) and determine its psychometric properties, especially validity and reliability.

Method: To achieve the aim, based on data from two independent measurements, the author performed factor analyses: exploratory (n_{EFA} = 210, 134 women and 76 men, M_{AGE} = 42.37) and confirmatory (n_{CFA} = 298, 184 women and 114 men, M_{AGE} = 37.02). Factor analyses were used to assess validity. Multidimensional reliability estimation was also performed, using several coefficients: classic (Cronbach's α, Jöreskog's CR) and non-classic ones (Aranowska's γ, ϱ_2 intraclass correlation coefficient).

Results: The adopted data analysis strategy yielded a three-factor structure of institutional legitimacy. The results of analyses provided strong evidence of acceptable goodness of measurement using the Polish version of the LQ. Reliability, just like construct validity, were confirmed, their levels were acceptable.

Conclusions: The results indicate that the adapted LQ is a psychometrically valuable measure operationalizing three dimensions of legitimacy: normative alignment, duty to obey, and institutional trust.

Keywords: legitimacy, health service, normative alignment, duty to obey, institutional trust, the Legitimacy Questionnaire

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People use institutional support because fair non-institutional distribution of the resources that society has at its disposal is impossible due to their frequently short supply or due to the difficulties involved in the division among individuals (Prusiński, 2020; Tyler, 2006). No one today challenges the assumption that, in exercising this crucial function, institutional authority requires arguments to be perceived as legitimate (Tyler, 2021). Nowadays, more than ever before, social institutions base their credibility and legitimacy in exercising authority on and justify their existence with subjective factors. What is particularly important is evaluations from those who benefit from the processes of redistribution that these institutions manage (Calton & Cattaneo, 2014).

The traditional model, in which institutional authority is justified by the argument of religion or tradition and in which an individual is simply supposed to comply, is rarely found (Burdziej, 2018). This is also because the democratization of societies inherently and consistently involves concern for the empowerment of individuals. The individual's participation in the evaluation of social institutions has become a superior and unquestionable value (Carroll et al., 2008). Importantly, however, the evaluation and appraisal of the experience of contact with an institution is not entirely based on the criterion of having achieved the anticipated benefits. The distributive outcome is significant but not decisive.

Although the assumption that people are guided in their behaviors and decisions by rational calculation—namely, that they use institutional support and choose solutions that maximize their self-interest and gains—has dominated in social sciences for decades, inspiring numerous models of understanding and explaining human behavior, it was eventually challenged (Miller, 1999).

Contrary to the self-interest assumption, studies in the psychology of justice have shown that people value the way in which they are treated and the quality of the procedures they are required to follow more than they value the outcomes achieved thanks to these procedures (Burdziej, 2018). In contact with social institutions, especially when they experience information asymmetry or when they expect institutions to redistribute resources necessary for life that are unavailable to them or to make conclusive decisions, people constantly and carefully assess if they are fairly treated (the procedural effect; Prusiński, 2020) and if the authority that representatives of a given institutions exercise over them—when imposing various decisions or resolutions on an involuntary basis and when proposing recommendations on a voluntary basis—can be regarded as legitimate (the legitimacy effect; Jackson & Pósch, 2019; Tyler & Jackson, 2014).

Analyses of empirical research results indicate that showing respect, the empowerment of individuals, and people's perception of an institution's representatives as authorities may also regulate willingness to cooperate and to choose effective proposals of solutions to one's problems, and that they may be regulatory factors as important as, if not actually more important than, the outcome achieved thanks to contact with a given institution (Mentovich et al., 2014). In the literature on the sources of authority, authors distinguish authority associated with a person (personal legitimacy) and authority associated with an institution (institutional legitimacy; Cialdini & Trost, 1998; Rasinski et al., 1985).

It is reflections on the latter, institutional legitimacy, that this article is devoted to. The aim of the empirical research reported in this article was to assess institutional legitimacy in the Polish health service (more precisely, in doctors' offices), to identify its possible dimensions, and to develop a Polish adaptation of the measure that met the goodness of measurement criteria, the Legitimacy Questionnaire (LQ).

The aim is important because analyses of institutional legitimacy in the health service, particularly those seeking to determine its structure, have been extremely rare (Tyler & Jackson, 2014). The presented results of these analyses are ambiguous and rather seldom consistent (Levi et al., 2009; Tyler et al., 2013). Importantly, published studies on this issue usually belong to the fields of sociology or economics; they tend to be devoted to the assessment of links between legitimacy and the quality of group processes or group loyalty rather than to the precise operationalization of legitimacy itself. The latter is rare (Díez-Martín, Blanco-González, & Díez-de-Castro, 2021). The dominant perspectives on legitimacy are static ones: philosophical and legal, while the perspective offered by social sciences is only marginally present (Burdziej, 2018). Legitimacy is often reduced to formal and rational aspects.

Polish researchers have no tools operationalizing this construct in health care institutions. What is particularly lacking is scales that would meet the psychometric criteria for goodness of measurement. There are studies concerning other institutions, such as the judiciary (Burdziej et al., 2019). The use of measures designed for the judiciary is pointless due to their thematic scope. Presenting the first results on the structure of the construct and a measure of this construct will not only add importance to the phenomenon to which scholars attribute critical regulatory potential or allow for looking at oneself in terms of its dimensions (Tyler, 2021). In the long term, it will allow for conducting empirical research using a standardized method. This in turn will ensure the possibility of replicating and comparing results. The question arises whether legitimacy will have the same structure in Polish heath service, functioning in different historical and social circumstances. Having a measurement tool will also, in the long term, enable scholars to analyze and discuss a proposed preliminary exploratory model of legitimacy in Polish health service in order to build a stable descriptive model.

Legitimacy in the Health Service

As an important institution managing and distributing various resources, the health service plays a key role in society because it serves an important individual and social interest—namely, human health and the prospect of a long life.

Research shows that although compliance with various decisions and orders—which, in the health service, can take the form of compliance with medical advice—should be in the patient's best interest, patients often do not comply with the recommendations received from their doctor during a visit (Smith, 2001). Despite successive visits to the doctor's office, patients continue to choose

or adhere to a lifestyle that effectively leads to the aggravation of illness (Mentovich et al., 2014). In these circumstances, a major increase in the cost of health care and the presence of avoidable health problems are the main but not the only problems faced by health care institutions.

As in the case of other social institutions (courts, police, work), it turns out that institutional legitimacy can be a significant factor in the evaluation of health care institutions. Highly evaluated legitimacy can motivate a person to follow the recommendations these institutions provide regarding health behavior. Institutional legitimacy proves to be one of the factors regulating attitudes to health via attitude towards the very institution that provides solutions enabling health care or—in the case of illness—recovery (Tyler et al., 2013).

Why can the regulatory potential of legitimacy be considered in the context of health care institutions? Legitimacy is a kind of motivation for action, which consists in positive, deliberate, and voluntary belief in the institution's right to exercise power and influence. Tyler and Jackson (2013) note that an individual's recognition of the legitimacy of an institution results in the individual also regarding it as appropriate and reasonable that the institution has the right to impose certain behaviors on them. The acceptance of institutional legitimacy allows the representatives of institutions to expect individuals to comply with their requirements and decisions, and for individuals it is a source of justification for compliance.

There are still relatively few empirical studies investigating the size of the effect of legitimacy on patients' behavior during treatment (Pérez-Arechaederra, 2019). The existing empirical evidence from research conducted in medical institutions indicate that the evaluation of contact with an institution shapes people's feelings and behaviors associated with a sense of responsibility for adopting certain attitudes and complying with recommendations (Tyler et al., 2013). It is due to the high legitimacy effect that people assume they should comply with the decisions, rules, or recommendations they receive from their doctor. As noted by Tyler and Jackson (2014), they do it out of a sense of duty to obey, acknowledging the legitimacy of the medical authority, rather than out of fear of punishment or because of an expected reward. Maintaining a high level of legitimacy in the health service should be a highly desirable state, because in such circumstances willingness to follow recommendations stems from conscious respect for this institution and for the values it serves (Tyler, 2021). What is more, the legitimacy of the health service may be a key factor shaping patients' attitudes, since other solutions, based on mechanical compliance with institutional requirements due to legal sanctions for non-compliance, seem to be impossible to apply.

Elaborate empirical analyses concerning the significance of legitimacy in public hospitals, conducted by Prado-Roman et al. (2020) with both patients and medical staff as participants, supported the predictions regarding the important role of legitimacy in improving organizational efficiency. In highly institutionalized environments, where public interests converge with conformity with social norms and the durability (over time) of organizations (hospitals), legitimacy is a necessary condition that is taken for granted, generating a significant

effect on the expected performance. The most legitimized organizations will find it easier to develop their activities, since they will receive greater support from their stakeholders. A lack of legitimacy can lead to a systematic questioning of organizational activities, negatively affecting the implementation of processes (Prado-Roman et al., 2020).

Importantly, previous research (Tyler et al., 2013) tentatively showed that the relationship between the perception of a health care institution as just, legitimate, and trustworthy and compliance with medical advice was a cause-and-effect relationship, with the perceived quality of the institution's functioning as the cause. Experimental research allowed for rejecting the alternative hypothesis, according to which when people comply with doctors' decisions they are more likely to perceive the decisions as just and the doctors' authority as legitimate.

Tyler's Model of Legitimacy

As rightly observed by Díez-Martín and colleagues (Díez-Martín, Blanco--González, & Díez-de-Castro, 2021), legitimacy is a multidimensional construct, and the choice of a valuable model requires struggling through a tangle of diverse terminologies, approaches, and theories. What emerges from this diversity is various conceptual proposals consolidating measurement methodology. However, diversity generates uncertainty regarding the choice of the best model. In the case of institutional legitimacy, what sometimes poses a problem is the fact that measurement proposals are difficult to generalize. This is due to the specificity of how a particular institution operates, stemming from the unique functions assigned to it, from its characteristic ways of functioning, and from the aggregate system of experiences based on which institutional personnel emerges and evolves (Suddaby et al., 2017). There are integrating proposals, some of them highly valuable, which suggest that legitimacy can be measured on a general level, where all its types are included and integrated (Díez-Martín, Blanco-González, & Díez-de-Castro, 2021).

The proposal presented below, which is the theoretical framework for legitimacy in this article, was developed through decades of diverse empirical research and offers specific measures, including one that directly concerns health service and that, importantly, is meant to assess this phenomenon in the context of medical staff. This restriction is valuable because it enables measuring the legitimation process on a very specific level—that of health service staff, and in the future it will enable treating the assessment of legitimacy in this regard as an important factor in solving the previously mentioned key problems in the health service.

One of the leading scholars exploring the issues of institutional fairness and institutional legitimacy in the field of social sciences is Tyler. His studies, often conducted by research teams, concern various social institutions. These are usually legal institutions such as courts (Tyler, 2007), prisons (Jackson et al., 2010), or the police (Sunshine & Tyler 2003), and less often the institutions of work. Tyler considers institutional legitimacy from the viewpoint of an individual

participating in institutional processes. The individual is never in full control of these processes and, voluntarily or otherwise, is subject to institutional decisions and resolutions. The final evaluation of contact with a given social institution may indeed influence their personal decisions and shape their behavior. The condition is that the institution, taking a stance on issues important for the individual through its representatives, is legitimate.

Institutional legitimacy is understood as a feature attributed to a given body or institution that makes the people who are under its authority consider it appropriate, right, and just (Tyler, 2006). In the case of the health service, legitimacy is the patient's subjective belief (the cognitive dimension) and the related feeling (the affective dimension) about the power this institution has over them (Tyler et al., 2013). Legitimacy manifests itself in the patient's sense of duty or willingness to obey and cooperate with the authority represented by the medical staff, particularly doctors (Tyler, 2009). A crucial element of legitimacy understood in this way is trust in the health service—the belief that its representatives exercise their power in accordance with the legal order and social norms accepted by the patient (Cao & Graham, 2019). This definition draws attention to the fact that two elements—recognizing authority and treating it accordingly in practice, which means following the staff's recommendations—are the key dimensions of legitimacy. It can therefore be said that the expectations of a medical institution that is considered legitimate by patients translate into and are satisfied by patients' actual compliance with its recommendations.

The nature of legitimacy is relational, and the affective dimension is clearly present in this model. The Tylerian operationalization of legitimacy is based on individuals' personal feelings. It includes the component of identification with a given institution at the emotional level (Díez-Martín, Blanco-González, & Díez-de-Castro, 2021).

The previous (pre-Tylerian) definitions of institutional legitimacy were focused on formal and legal issues. A valuable review of conceptual diversity in this regard was performed by Díez-Martín's team (Díez-Martín, Blanco-González, & Prado-Román, 2021). The legality of an institution stemmed from meeting certain formal requirements, namely, from maintaining a certain level of bureaucratization and from the fact that the institution was bound by external laws and regulations (Burdziej, 2018). Legitimacy had an objective character (Schulhofer et al., 2011). The achievement of a certain level of formality in action and in the performance of tasks satisfied the conditions attesting to legitimacy. Tyler (2006, 2021) points out that it is the individual using an institution who makes the ultimate judgment concerning the legitimacy of its decisions and proposed solutions. Legitimacy is finally determined and confirmed in the individual's actual compliance with these guidelines and recommendations, eliminating the imbalance. The main criterion is the individual's evaluation. This evaluation takes into account non-instrumental factors, such as the treatment received or recognition and respect for the medical staff, to a greater degree than objective factors associated with the effectiveness of the assistance provided.

Tyler's model of institutional legitimacy usually comprises three components: duty to obey, institutional trust, and normative alignment (Jackson

& Gau, 2015; Tyler & Jackson, 2014). The first dimension concerns the belief that, in principle, one ought to submit to authority, regardless of the calculation of gains and losses. The second dimension, trust, is the belief and the related feeling that the representatives of a given institution themselves act in accordance with the norms they require others to adhere to. Finally, normative alignment is understood as a sense that the representatives of an institution essentially share their main values with the members of the community they work for.

The Measurement of Legitimacy in the Health Service: The Legitimacy Questionnaire

Measuring legitimacy in the health service, Tyler proposed an assessment tool, the Legitimacy Questionnaire (LQ; Tyler et al., 2013). It measures the legitimacy of health care institutions as subjectively perceived by patients. Legitimacy is operationalized in accordance with Tyler's model. Legitimacy assessment is based on assertions referring to patient's experience of contact with physicians. Importantly, however, the LQ—a measure developed to assess the level of legitimacy of health care institutions—has no subscales and does not assess the three dimensions usually conceptualized in the literature.

What therefore remains an unresolved problem is the factor structure of institutional legitimacy. As regards other social institutions, such as courts, most published studies on legitimacy support the three-factor structure of this construct (Tyler & Jackson, 2014). There are also studies suggesting two dimensions of legitimacy (Levi et al., 2009). However, the specificity of the functioning of each institution makes it impossible to develop a single legitimacy scale without taking into account the type of institution in which the construct is to be measured. For this reason, the LQ is a separate scale intended to measure legitimacy in the health service, and Tyler does not publish reports concerning its factorial structure. The existing empirical evidence seems to suggest that the LQ measures a general one-factor construct of legitimacy in the health service (Mentovich & Satyavada, 2013). This gap calls for further research into the dimensionality of the institutional legitimacy construct and for checking whether the LQ measures exclusively general legitimacy or whether, as suggested by theoretical predictions, the legitimacy it measures is a meta-variable composed of dimensions.

Institutional legitimacy can be measured at different levels: for institutions and for specific institutional roles. It can also be investigated for specific institutional processes (Blanco-González et al., 2017). Tyler's proposal allows for measuring legitimacy in the context of a specific type of medical authority. Introducing a psychological perspective, it expands the existing range of formal and normative proposals to include significant new elements. In a way, Tyler's model affords precision in defining legitimacy. Tyler (2006) distinguished it, for instance, from morality (which is crucial to other conceptions of legitimacy), noting fundamental differences between these concepts and underscoring their sometimes interchangeable role. He draws on the social control model, in which cooperation between members of society and an institution is based on the

competence and honesty of the institution's representatives. Thus, legitimacy in Tyler's model is operationalized as a factor distinct from though consistent with the significant processes increasing the validity of the functioning of social institutions: procedural justice or institutional empowerment (Tyler, 2021). Legitimacy is the basis rather than an element of procedural justice here. The Tylerian model is therefore valuable because it incorporates the legitimacy phenomenon into a broader theory accounting for the emergence of social order.

Aims of the Present Research

The research presented in this article had two main aims:
(1) to investigate the factor structure of legitimacy in the polish health service
(2) to develop a Polish adaptation of the Legitimacy Questionnaire and to determine its psychometric properties, including validity and reliability.

Method

Participants

The participants were recruited from among patients of independent primary health care facilities and specialist hospital outpatient clinics and from among patients using private health care all over Poland. In the validation study, institutional legitimacy was assessed based on results from 508 individuals. The participants made up two samples. The first one was composed of 210 patients, while the second one consisted of 298 patients. The participants were patients in treatment for a health problem.

Statistical Methods

The SPSS 26 and IBM SPSS AMOS 26 statistical packages were used. Preliminary analyses of the participants' sociodemographic data, exploratory factor analysis (on the first sample, $n = 210$), reliability and correlation analyses were performed by means of SPSS 26. To analyze CFA models (on the second sample, $n = 298$), I used the AMOS 26 package.

Measures

The Legitimacy Questionnaire – Adaptation

The LQ was translated from English into Polish by a specialist, an independent bilingual translator; an alternative translation was done by a psychologist

proficient in English. The two Polish translations thus obtained were compared, checked, and revised, which eventually resulted in establishing the final wording of the items, refined not only in terms of language correctness but also in terms of semantic and functional equivalence to the original. The outcome was the preliminary Polish version of the questionnaire.

The version of the questionnaire thus prepared was used in a measurement on a sample of 11 subjects, aimed at the baseline assessment of whether the instruction and the items were comprehensible to the respondents. The sample was composed of 5 women and 6 men (aged 23 to 26 years, with secondary or higher education). After the study the respondents were invited for an interview, during which they were given an opportunity to share the feelings they had experienced when completing the measure. They were asked whether the instruction and the items were clear and comprehensible and whether any of the items raised doubts or caused difficulties. The participants evaluated the questionnaire as comprehensible and not tiring to complete.

This verification stage was followed by a back translation procedure, in which a different translator rendered the Polish version back into the original language (i.e., into English). The original version and the back translation were then compared, and all the differences and language nuances were discussed, which resulted in a more unambiguous wording of the Polish questionnaire. The alterations concerned a small number of individual terms, and the Polish scale thus developed was treated as the final version to be used in research.

The validated LQ comes in one version, completed by the patient. It consists of 14 assertions operationalizing the construct of legitimacy, which respondents rate on a Likert scale as accurately or inaccurately describing their experience of contact with the health service. The questionnaire includes 6 positive and 8 negative assertions.

Demographic Data

The measurement was supplemented with an extensive survey that allowed for controlling demographic variables and variables pertaining to the context of treatment. The survey included questions about standard sociodemographic data, such as sex, age, education, and place of residence; it also included questions about variables relevant to the issues investigated in the study: doctor's specialty (primary care physician/family practitioner or medical specialist), duration of treatment for the current health problem, and the number of visits at a given doctor's office.

Measurement Procedure

Legitimacy was measured directly after the patient had left the doctor's office. Before commencing the measurement, the researcher made sure, through a conversation, that the patient had just consulted a physician and that the basic interactions with the physician during the visit allowed them to form

an opinion about how their health problem was treated, what was expected of them, and what the medical recommendations were.

Patients evaluated institutional legitimacy in the context of treatment for one health problem and, in the context of that treatment, their experience of contact with one physician of their choice.

Before the study, each person was informed about its purpose and asked to give their consent to take part in it. After giving such consent, they completed the measures.

I analyzed data collected in a single measurement. Participants received no remuneration for taking part in the study. Before conducting the study, I obtained consent from the directors of the health care institutions and hospitals where research was to be held.

The study was approved by the Research Ethics Board at The Maria Grzegorzewska University in Warsaw (decision no. 209-2019/2020), which raised no ethical objection to the proposed research project.

Results

Participants' Sociodemographic Characteristics

The participants in the first study were 134 women and 76 men. Their age ranged from 17 to 79 years ($M = 42.37$, $SD = 15.49$); most of them had secondary (41%) or higher education (38.6%). The sample was balanced in terms of place of residence: 30.5% of the participants lived in villages, 28.6% lived in small towns with a population up to 20,000, and 41% lived in big cities in Poland. During their participation in the study, 27.1% of the respondents were in treatment for a health problem that was conducted by a family practitioner, while the remaining 72.9% were undergoing treatment under the care of a medical specialist; 20.5% of the respondents were after their first doctor's visit when taking part in the study, 25.2% had had two doctor's visits before the study, 17.1% had had three visits, and 37.2% had consulted their physician four times or more. Participants had been in treatment for their health problem for the past month (16.7%), between one and three months (21.9%), between three and six months (15.7%), or for more than six months (45.7%).

The participants in the second study were 184 women and 114 men. Their age ranged from 18 to 85 years ($M = 37.02$, $SD = 16$); most of them had secondary (41.6%) or higher education (49.3%). As regards their place of residence, 21.85% of the participants lived in villages, 8.7% lived in small towns with a population up to 20,000, and 69.5% lived in big cities in Poland. During their participation in the study, 42.3% of the respondents were in treatment for a health problem that was conducted by a family practitioner, while the remaining 57.7% were undergoing treatment under the care of a medical specialist; 26.5% of the respondents were after their first doctor's visit by the time of the study, 18.1% had had two doctor's visits before the study, 11.4% had had three

visits, and 44% had consulted their physician four times or more. Participants had been in treatment for their health problem for the past month (21.1%), between one and three months (15.8%), between three and six months (11.7%), or for more than six months (51.1%).

The Factor Structure of the LQ:
The Validity of the Polish Adaptation of LQ Scales

Exploratory Factor Analysis

The factor structure was analyzed in two steps. Because in the literature authors often argue that legitimacy is not a homogeneous construct (Burdziej, 2018), and because Tyler himself points out its three-dimensionality (Tyler & Jackson, 2014), I decided, in the first step, to perform a free estimation of the factorial structure of legitimacy. The matrix of correlations for the answers collected from the first sample was subjected to exploratory factor analysis (EFA) performed using principal axis factoring (PAF). Expecting intercorrelations between the components of legitimacy, I used Oblimin oblique rotation. Solutions were sought for different values of factor skewness, for the delta parameter ranging from 0 to + 0.4. I proposed no preliminary structure of the components of legitimacy and no such structure was imposed.

I adopted the solution at the delta value of 0, where both the values of standardized item coordinates (in the pattern matrix) and item-dimension correlations (in the structural matrix) were high and did not differ significantly between the two matrices, reproducing the same pattern of the strength of item-factor relations and, consequently, making it possible to accept the solution thus determined. To identify the number of factors, I applied two methods: the main one was the Kaiser method (indicating the number of factors for which the eigenvalues are higher than 1), and the solution it yielded was then verified using Cattell's method, based on the scree plot.

I tested the assumptions of factor analysis. The solution obtained from EFA was characterized by a high sampling adequacy index (KMO = .88). The determinant of the correlation matrix was very low; its value was .001, which meant that the data set could be used in a factor analysis. Bartlett's sphericity test yielded a value of 1552.76 and proved to be statistically significant, which means the correlation matrix contained correlations significantly different from zero. There was a moderate but definitely acceptable percentage of total explained variance in scores (61.03% for the entire solution). Table 1 (p. 140) presents the coordinates of items on oblique factors for legitimacy in the analyzed solution. Only those values are provided that could be considered as significantly contributing to a given factor.

The EFA yielded a four-factor solution. The fourth factor was composed of only one item, and therefore I immediately decided not to take it into account. The factorial matrix assuming the oblique character of the factors showed their small fragmentation. The factor loadings of individual items of the questionnaire, making up an interpretable factor structure, are high or moderate.

Table 1

Factor Loadings of the Legitimacy Questionnaire Items for the Four Factors of the Solution (n = 210)

Item	Factor			
	1	2	3	4
LQ2	.869			
LQ6	.809			
LQ3	.799			
LQ5	.775			
LQ12	.714			
LQ10		.828		
LQ4		.805		
LQ14		.773		
LQ7			.796	
LQ8			.770	
LQ1			.675	
LQ9				.546

As mentioned before, when interpreting the results of EFA concerning the number of factors, I used the Kaiser criterion for eigenvalues, a scree plot, and the most restrictive criterion for factor loadings, which means I considered loadings higher than or close to .70 (Aranowska, 2005). I also applied the factor content interpretability criterion.

The methods applied identified the same number of factors. Eigenvalues above 1 were found for three factors only: 6.11 for Factor 1, 1.78 for Factor 2, and 1.20 for Factor 3. As far as the scree plot is concerned, the slope ended at Factor 4, so the solution comprised only the three factors above that point.

Ultimately, based on the values of factor loadings saturating the dimensions, I distinguished three factors in the structure of legitimacy. The solution yielded by the EFA included 11 out of the 14 items of the LQ. Importantly, the meaning that can be attributed to the identified clusters of questionnaire items corresponding to distinct dimensions of legitimacy is the same as that proposed by Tyler and Jackson (2014).

And thus, the distinctly interpretable factors extracted were: normative alignment (mean factor loading is .79, and the factor explains 41% of the variance), duty to obey (mean factor loading is .80, and the factor explains 10.4% of the variance), and institutional trust (mean factor loading is .75, and the factor explains 5.6% of the variance). Normative alignment[2] is a person's feeling that representatives of the health service, in this case physicians, share the values and norms significant

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[2] Example items: "Doctors protect the people in power, not the average Pole.", "There are things about doctors that need to be changed."

to the community they work for. The second factor, duty to obey[3], is the belief that one should submit to the authority of the doctor, who exerts influence on the patient through the treatment process and through the guidelines provided in this process. The third factor, institutional trust[4], is the belief that the representatives of a given institution act in accordance with the norms they require others to adhere to.

Finally, table 2 presents the correlations between the factors generated.

Table 2

Oblique Factor Correlation Matrix (n = 210)

Factor	1	2	3
1	1.00	.447	.394
2		1.00	.400
3			1.00

Observing the values of correlations between factors, presented in table 2, one will see that the relations between different dimensions are moderate, bordering on low. The dimensions of legitimacy: normative alignment, duty to obey, and institutional trust, are intercorrelated, but only to a moderate degree.

The factor analyses were continued, because the current form of the proposed model of legitimacy could only be treated as an exploratory empirical descriptive model (Jonkisz, 1998; Szymańska, 2016). As such, it may have been universal, though it not necessarily was. One must not make final judgments regarding the structure of legitimacy after the first analysis. The model obtained from EFA required further evidence of its structural stability. Such evidence was sought in further analyses, following the second questionnaire-based measurement.

Confirmatory Factor Analysis

In the second stage, I performed a confirmatory factor analysis (CFA) on the results from the second sample. Two models were considered. The first one indicated that all LQ items made up one general latent factor of legitimacy. The aim was to check whether a one-factor solution was possible and whether it would be revealed in the next measurement. The second model, in accordance with Tyler's theoretical proposal (presented in Introduction) and with the results of EFA, postulated a three-dimensional structure of legitimacy, with three latent factors (normative alignment, duty to obey, and institutional trust) and the institutional legitimacy metavariable. The two models, with the latent variables and their measurement model, are shown in figure 1 (p. 142).

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[3] Example items: "Doctors are legitimate authorities and people should follow their guidelines.", "The best way to maintain heal this to follow the recommendations of doctors."

[4] Example items: "I have confidence that doctors do their jobs well.", "Doctors are as thorough as they should be."

Figure 1

Confirmatory Factor Analysis (CFA) With Path Analysis Results (Standard λ Path Coefficients)
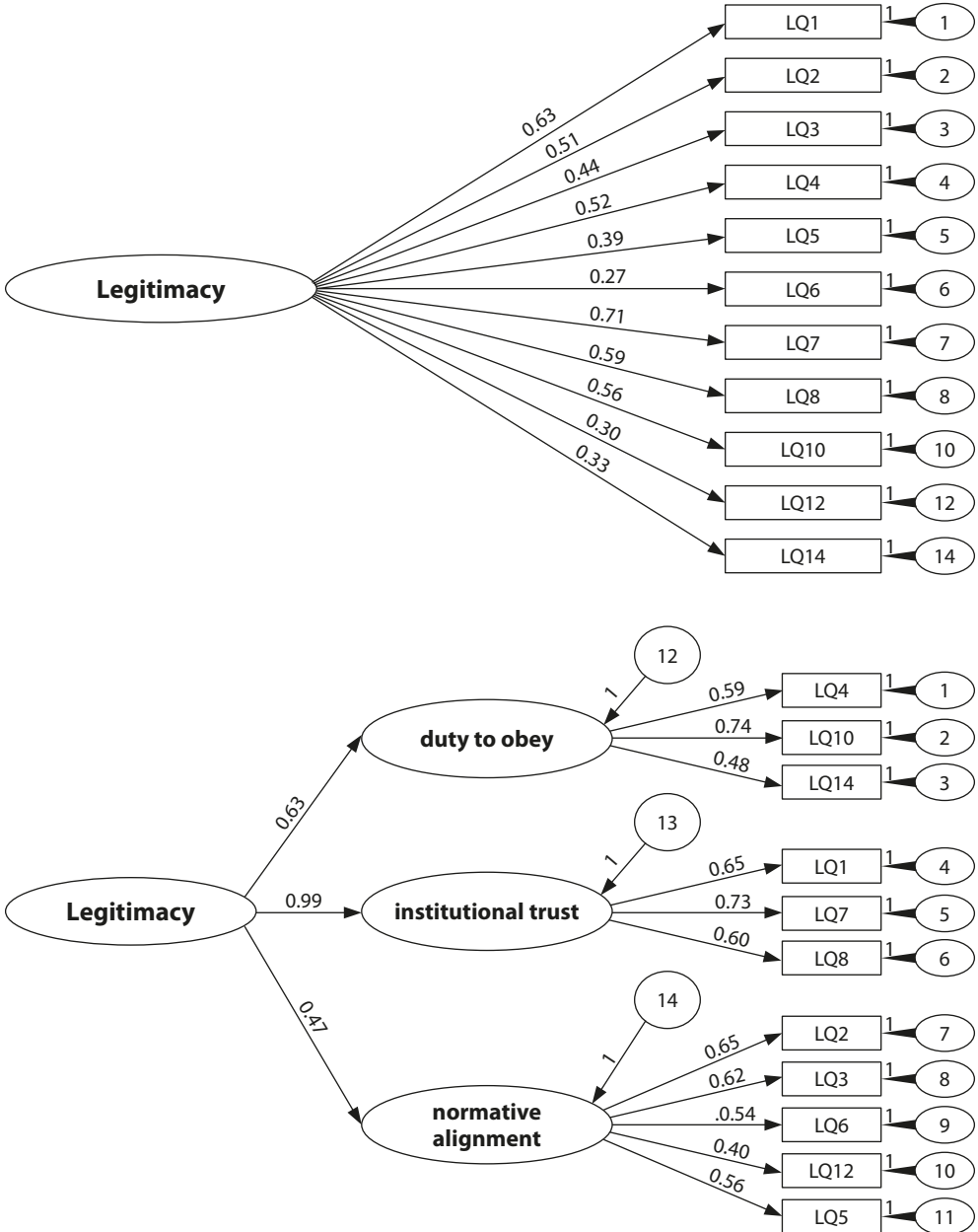
Note. The first model – the original one-dimensional model; the second model – the three-dimensional model. LQ (numbered 1 to 14) = individual LQ items (partial indicators) operationalizing specific latent variables or directly operationalizing the legitimacy meta-trait.

The results of analyses are summarized in table 3, which presents fit indices for the two models considered.

Table 3

Fit Indices for Two Models of Institutional Legitimacy (n = 298)

MODEL	χ^2	df	χ^2/df	RMSEA	RMSEA LO	RMSEA UP	CFI	TLI	ECVI	MECVI	M (λ)
One-factor	223.78	44	5.09*	.117	.102	.133	.73	.66	.90	.91	.48*
Three-factor	87.35	41	2.13*	.062	.044	.080	.93	.91	.46	.47	.60*

Note. χ^2 = chi² model fit statistic; *df* = degrees of freedom; χ^2/df = chi² statistics divided by degrees of freedom; RMSEA = root mean square error of approximation; RMSEA LO – lower bound of the value of root mean square error of approximation; RMSEA UP – upper bound of the value of root mean square error of approximation; 90% CI (confidence interval) for RMSEA (LO/UP); CFI = comparative fit index; TLI = Tucker-Lewis index; ECVI and MECVI = information criteria for comparing the quality of models; $M(\lambda)$ = mean value of regression factor loadings.

* $p < .001$

Following Cirasola's guidelines (Cirasola et al., 2020), in order to assess model fit, I used different categories of indices for models analyzed in the CFA ($\chi^2/df < 2,5$; RMSEA $\leq. 80$, CFI value close to or higher than .90, TLI values close to .95), took into account and analyzed the values of path parameters and variance estimating the model, and applied information criteria in the form of ECVI and MECVI tests. The model regarded as the best is the one with the lowest ECVI and MECVI values.

Based on the values of indices for the one-factor model ($\chi^2/df = 5.09$; $p < .001$; RMSEA = .117, CFI = .73, TLI = .66, ECVI = .90, and MECVI = .91), I concluded that the one-factor structure of legitimacy was not fitted to the empirical data set. The model postulating one general legitimacy factor was therefore not considered further.

The model postulating the existence of three dimensions of legitimacy and the main construct, originally obtained in EFA, was confirmed based on indices from confirmatory analyses. The model is characterized by very good values of most fit indices (RMSEA = .062, CFI = .93, TLI = .91). Particularly good is the value of the most important model fit estimator, RMSEA. The values of ECVI and MECVI information indices are better for the model postulating a three-factor structure.

The values of factor loadings (λ) indicating the strength of the relationship between individual items and latent variables proved to be statistically

significant in each of the analyzed item–latent variable relations, which means all of them can be subject to interpretation. These are not high values, but they are moderate and acceptable. The mean value of regression factor loadings is $M\lambda = .554$ for normative alignment (with λ values ranging from .650 to .404), $M\lambda = .602$ for duty to obey (λ from .741 to .476), and $M\lambda = .662$ for institutional trust (λ from .735 to .603). The R^2 multiple correlation coefficient indicates that the three-factor model explains an average of 44% of the variance.

The results of confirmation analyses ultimately sealed the acceptance of the three components of legitimacy. This is consistent with the theoretical assumptions made by the scholars who originated and investigated the legitimacy construct. The results of these analyses are also strong evidence of the construct validity of measurement using the LQ—strong, because they are based on two independent measurements and confirmed in two independent elaborate factor analyses. Further analyses, concerning other psychometric properties, will be presented for the 11-item questionnaire yielding a total score on institutional legitimacy and scores on its three dimensions: normative alignment, duty to obey, and institutional trust.

Intercorrelations of LQ Subscales

Important information about the validity of the LQ was provided by the examination of intercorrelations between its subscales. Table 4 presents Spearman's *rho* correlation coefficients between the subscales.

Table 4

Matrix of Correlations Between LQ Subscales

SUBSCALES	Normative Alignment	Duty to Obey	Institutional Trust
Normative Alignment		.178*	.437*
Duty to Obey			.507*
Institutional Trust			

* $p < .001$

The values presented in table 4 indicate that the subscales are significantly intercorrelated. The correlations are moderate or low. From the psychometric point of view, subscales characterized by orthogonality offer a better possibility of assessing legitimacy. The moderate independence of the subscales makes it legitimate to assume that each dimension of legitimacy has a unique share in this construct.

The Reliability of the LQ

Based on the data collected in the second measurement (n = 298), I computed the reliability of the LQ. Reliability indices were estimated for each subscale and for the total score. To obtain a multidimensional reliability assessment, I used several coefficients (Aranowska, 2005). Reliability was estimated by means of Cronbach's α internal consistency coefficient, Jöreskog's composite reliability (CR) index (the key index for the subscales obtained in CFA), Aranowska's γ coefficient (correcting the CR index), and the ϱ^2 intra-class correlation coefficient. The results of the analyses are provided in table 5.

Table 5

Reliability Indices for LQ Subscale Scores and LQ Total Score (n = 298)

	Scale and subscales	α	*CR*	γ	ϱ_2
LQ	Normative Alignment	.69	.69	.56	.30
	Duty to Obey	.62	.64	.60	.36
	Institutional Trust	.70	.70	.66	.43
	Legitimacy	.77	.86	.60	.23

Note. α = Cronbach's internal consistency coefficient; CR = Jöreskog's composite reliability coefficient; γ = Aranowska's reliability coefficient; ϱ_2 = intra-class correlation coefficient.

The values of estimators presented in table 5 indicate that the measurement of institutional legitimacy by means of the LQ is characterized by moderately good reliability for the total score and the Institutional Trust subscale. Especially as far as Cronbach's internal consistency coefficient is concerned, the reliability values for the remaining two subscales—Normative Alignment and Duty to Obey—were barely acceptable or slightly below the threshold of acceptability (the threshold value being .70).

In order to check if the subscales showed a permanent tendency to have low measurement reliability, I performed an additional estimation of reliability for the LQ total score and subscale scores using Cronbach's α internal consistency coefficient. For this purpose, I used the data collected in the first measurement (n = 210). The values of Cronbach's α were as follows: .89 for Legitimacy_TOTAL SCORE, .89 for Normative Alignment, .85 for Duty to Obey, and .81 for Institutional Trust. The additional estimation yielded acceptable reliability values. This result indicates that the low reliability of the subscales is not their permanent attribute. Nevertheless, in future empirical studies one should be very careful when interpreting and analyzing LQ scores on the two dimensions of institutional legitimacy mentioned above. It is also recommended that authors perform their own reliability analyses, using their own data. With reference to the remaining results presented

in table 5 (p. 145), it should also be noted that the more restrictive reliability criteria—Aranowska's ɣ and Jöreskog's CR— support the conclusion that measurement using the LQ is reliable.

Discussion

Although health behaviors, just like other areas of human functioning, are not entirely free from institutional regulation, they are the least regulated domain, subject to external pressure and legal regulations only to a small degree (Thüm et al., 2012). Those who applied repressive solutions in managing the health service domain soon found that these solutions failed to bring the desired outcomes (Dietz et al., 2009). People put up incredibly strong resistance and feel aversion to sanctions being imposed on them for lifestyle choices (Parker & Nielsen, 2011; Puhl & Heuer, 2011). Health, however, is a fragile resource, and its maintenance or recovery requires institutional support (Tyler et al., 2013). This provokes the question of what measures can be used to motivate a person to comply with solutions conducive to health and derived directly from institutional recommendations or requirements if self-interest is not a sufficient reason to comply (Tyler, 2021).

The legitimacy factor proposed by Tyler suggests that it is necessary to go beyond the current theses concerning the emergence of social order, which point exclusively to the existence of instrumental factors influencing human behaviors in the domain mentioned above. Institutional legitimacy as a factor motivating people to recognize institutional solutions as their own is based on the assumption that people voluntarily cooperate with the institution and accept its recommendations due to the legitimate authority that the institution has in their eyes (Burdziej, 2018).

The main aim of the analyses presented in this article was to check if institutional legitimacy in the health service context was a homogeneous construct, as pointed out by empirical research (Tyler et al., 2013), or a multidimensional one, as indicated by the literature (Burdziej, 2018; Tyler & Jackson, 2014). The participants in the study were individuals in treatment for a health problem and having current experience of interactions with a physician, which maximized the likelihood that they had developed an evaluation of how their health problem was treated, what was expected of them, and what medical recommendations they were to adhere to.

The result of this empirical study provided strong grounds to reject the assumption about the homogeneity of the legitimacy construct and enabled the identification of its three dimensions. The Tylerian three dimension—normative alignment, duty to obey, and institutional trust—were found to be well fitted to the empirical data set. Thus, while the existing findings point to legitimacy as a significant argument for individuals to recognize the solutions proposed by institutions and to take a favorable view of their recommendations or decisions, the research reported here shows that, in the health service, motivation to recognize

and accept them is organized into three elements. Judgment concerning legitimacy is the outcome of three evaluations, concerning the duty to obey and comply, trust in physicians, and normative alignment. Importantly, it turns out that the component with the greatest contribution to institutional legitimacy is normative alignment (results of EFA). Health service legitimacy depends on whether the doctors making decisions about health issues important for people hold values and moral standards consistent with those held by the people they serve. The belief that, as a general rule, authority should be obeyed and institutional trust are significant for the overall legitimacy evaluation, though their contribution is not so great as that of normative alignment (results of EFA). The results of EFA also eliminated uncertainty about whether there were other components of legitimacy in the Polish population. In contrast, the CFA result indicated a different contribution of each factor. It is institutional trust that contributes most to legitimacy. This result may indicate the importance of the relational dimension in the contact between patient and health care system professionals.

An important aim of my research was to develop a Polish adaptation of the Legitimacy Questionnaire and to determine the goodness of measurement using this version of the tool. To assess the construct validity of measurement using the LQ, I performed exploratory and confirmatory factor analyses. The results of both analyses were consistent with the assumptions of the theoretical model describing the structure of institutional legitimacy. Validity was confirmed, its levels being were acceptable. It should be stressed that, thanks to two separate samples, the exploratory analyses performed to determine the tentative structure of legitimacy were confirmed by the confirmatory analysis, which is crucial for discussion concerning the structure of the construct. The aim of further research on the validity of measurement using the LQ should be to determine criterion validity, defined as correspondence between test scores and an external criterion. The external criterion, mentioned in the literature as a condition of legitimacy, is procedural justice (Levi et al., 2009; Murphy et al., 2009).

The consistency coefficients for the three subscales, estimated by intercorrelations, were moderate or low, which indicates a small degree of identicalness and small overlap between the items operationalizing specific dimensions of legitimacy. A comparison of the subscales reveals their moderate heterogeneity. It can therefore be concluded that, to a considerable extent, they are distinct and assess essentially different dimensions of the main construct. Consequently, in order to accurately capture the phenomenon of legitimacy, it is necessary to consider its multiple aspects simultaneously. The independence of subscales it not the highest and might be a more complex problem, which means it should be analyzed in further empirical studies.

The elaborate analysis of the reliability of the LQ, including not only the standard estimators, ultimately showed that the values of reliability coefficients were good and, importantly, acceptable for all subscale scores and for the total score. Some of the low reliability values initially obtained for the subscales were not confirmed by the subsequent estimation. As regards the reliability of measurement using the LQ, it would be valuable to obtain even higher values of the analyzed estimators in further rounds of validation.

To sum up, although research on the psychometric characteristics of the LQ in the Polish population has only begun, and although the validation concerned a relatively broadly defined population and was based mainly on non-randomly selected samples, the statistical arguments presented in this article are more than sufficient to recommend the measure for use in further empirical research.

Limitations

The various limitations of the present study should be mentioned. In future studies the sample size should be increased, so that the empirical support for factor analysis can be stronger. The validity of the measurement should be estimated using various methods. Measurement samples need to be more carefully selected to obtain adequate representations of most values of important contextual variables.

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