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MEASURING EMPATHY IN TRADITIONAL AND REMOTE WORKPLACES

Abstract

Empathy is a pivotal leadership skill that shapes the quality of workplace interactions, particularly within today's dynamic organizational environments. Yet, existing empathy measurement tools are largely tailored to clinical or therapeutic contexts (psychology, medicine, social work), leaving a critical gap in instruments suited to the demands of modern organizational settings, including traditional, hybrid, and remote work arrangements.

This study introduces the Lartey Empathy Measurement Scale (LEMS), a pioneering 12-item tool designed to assess empathy in professional environments. Developed using DeVellis's eight-step scale development methodology, LEMS captures empathy through a three-factor model: Emotional Perception, Dispassion, and Dependability.

Psychometric validation was conducted with a sample of N = 650 professionals across diverse industries, split evenly for exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). CFA results confirmed the model's structure with strong fit indices: CMIN/DF = 2.04, GFI = .949, CFI = .958, TLI = .946, NFI = .922, IFI = .959, and RMSEA = .057 with PCLOSE = .225, indicating a close model fit. Internal consistency was supported across both samples, with each of the three factors demonstrating good reliability and stability. These results, along with strong validity evidence, confirm the robustness of the LEMS framework.

LEMS offers researchers and practitioners a reliable and contextually relevant framework for assessing empathy in the 21st-century workplace, supporting efforts to foster more empathetic, resilient, and engaged organizational cultures.

Keywords: empathy, LEMS, Lartey Empathy Measurement Scale, emotional perception, dispassion, dependability, psychometric validation, social cognitive theory, remote work, hybrid work, organizational behavior

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Introduction and Background

Empathy is increasingly recognized as a critical factor in workplace effectiveness, shaping employee relationships, customer loyalty, and organizational outcomes. In organizational contexts, empathy strengthens engagement, trust, and satisfaction by enabling individuals to understand and respond to the emotions of others. Research has shown that even modest increases in empathy can significantly improve customer loyalty, with Lartey (2015) demonstrating that a one-point increase in empathy raised the likelihood of a customer becoming a loyal promoter by over 11 percent. Within a broader model that included tangibles, reliability, responsiveness, empathy, and assurance, empathy emerged as the strongest determinant of loyalty. Empathy has been the object of various research studies. While many of the studies present the effect of empathy from a conceptual, contextual, theoretical, and empirical standpoint, some focus on the development of instruments to measure empathy. One of the earliest instruments identified, Empathy Ability, was developed by Dymond (1949). It is a 24-item scale containing four dimensions: I-Myself, I-Him, He-Him, and Him-Myself. Hogan (1969) developed the Hogan Empathy Scale, a 64-item instrument containing four dimensions: social self-confidence, even-temperedness, sensitivity, and non-conformity. Mehrabian and Epstein (1972) developed the Emotional Empathy Tendency Scale (EETS), a 33-item instrument containing seven dimensions. Davis (1980) created the Interpersonal Reactivity Index (IRI), a four-factor 28-item instrument. Based on the work of Dymond (1949), Mehrabian (1997) developed the Balanced Emotional Empathy Scale (BEES), a 30-item instrument with two dimensions: vicarious experience of others' feelings and interpersonal positiveness. Hojat et al. (2002) developed the Jefferson Scale of Physician Empathy, a 20-item instrument targeting the medical field. Baron-Cohen and Wheelwright (2004) developed the Empathy Quotient (EQ), a 60-item questionnaire containing 40 real questions and 20 filter-items. Spreng et al. (2009) developed the Toronto Empathy Questionnaire, a 16-item instrument containing four dimensions: emotional contagion, emotional comprehension, sympathetic Physiological arousal, and conspecific altruism. All these instruments were developed for application in the fields of psychology, psychiatry, and medicine. King and Holosko (2012) developed the Empathy Scale for Social Workers (ESSW), a 41-item instrument for measuring empathy in the social work field.

Although numerous empathy instruments have been developed over the decades, they were largely designed for psychology, psychiatry, medicine, or social work contexts and therefore lack relevance for organizational settings. Earlier measures often emphasized clinical or interpersonal dimensions of empathy without accounting for the realities of contemporary workplaces, such as remote and hybrid environments where interactions are mediated by technology. As a result, these instruments lacked contextual relevance for professional environments where empathy is expressed through computer-mediated communication, collaboration across distance, and organizational dynamics. The Lartey Empathy Measurement Scale (LEMS) addresses this gap by offering a concise, psychometrically validated tool designed specifically to capture empathy in modern workplace contexts, making it more relevant for business, leadership, and organizational research.

Purpose and Gap in Knowledge

While there are many instruments for measuring empathy in specialized fields, as presented by Neumann et al. (2015), the current literature does not show any instrument for measuring empathy in the general workplace, and specifically in a virtual environment where employees work remotely and do not see each other on a regular basis. To that effect, the first purpose of this article is to fill the identified knowledge gap in a first study, by developing and validating a scale for measuring empathy in the 21st-century workplace, which includes the traditional workplace in general and the virtual work environment in particular. This instrument will allow researchers to assess the impact of empathy in the virtual work environment. It will also provide practitioners with the ability to identify

missing skills and develop or promote effective training programs that keep employees engaged and increase customer satisfaction and loyalty.

The shift toward telework–the performance of professional responsibilities beyond the boundaries of the conventional office setting–has significantly impacted workplace dynamics, with empathy, the ability to understand and share others' feelings, emerging as a critical component in maintaining connection, motivation, and well-being in virtual settings (Wang et al., 2025). In remote work settings, empathetic leaders and coworkers can foster a sense of belonging and support, bridging the gap created by physical distance (Goleman, 1995). This is also true for traditional work environments.

The purpose of this study was to empirically establish a tool to measure empathy in the 21st-century workplace. This will offer insights into strategies that organizations can leverage to foster an empathetic culture in the overall workplace, be it traditional onsite, hybrid (onsite and remote), or remote work settings. In that regard, the goal of this article is twofold: (1) to present the development of the Lartey Empathy Measurement Scale (LEMS), designed for use in both traditional and virtual workplaces, and (2) to evaluate the instrument's validity and reliability.

Literature Review

Empathy Defined

Most researchers align on the definition of empathy. Kalisch (1973) defined empathy as "the ability to enter into the life of another person, to accurately perceive his current feelings and their meanings" (p. 1548). Spreng et al. (2009) see empathy as "the consequences of perceiving the feeling state of another as well as the capacity to do so accurately" (p. 62). Carré et al. (2013) explain that "empathy makes it possible to understand another person's view and his or her feelings" (p. 680). In a recent article, Zhou et al. (2021) define empathy as "the tendency to understand and share others' thoughts and feelings" (p. 1). While different researchers provide different definitions of empathy, all these definitions align with the fact that empathy is the process of understanding another person's situation (cognitive empathy) and feeling their emotions (affective or emotional empathy).

Empathy is viewed by many researchers as a dual-dimensional construct. The two dimensions commonly identified are "affective" and "cognitive" dimensions (Carré et al., 2013; Cliffordson, 2002; Davis, 1983; Guidi & Traversa, 2021; Hoffman, 1977; Hogan, 1969; Lawrence et al., 2004; Mehrabian & Epstein, 1972; Saracco-Álvarez et al., 2020). Other researchers add a third dimension based on their field of study. For example, King and Holosko (2012) considered the "behavioral" dimension in their development of an empathy scale for social workers, while Carré et al. (2013) suggest "emotional disconnect" as the third dimension. Similarly, Gerdes and Segal (2009) identify "conscious decision making" as a third dimension of empathy and argue that while the first two dimensions are widely accepted, the third dimension is not required to fully experience empathy (p. 121). In other words, evidence of empathy does not necessarily require decision or action. This study will thus look at empathy from its two generally accepted dimensions: affective response and cognitive processing.

The Affective Dimension of Empathy

Empathy can be viewed from an affective standpoint. The affective dimension of empathy also referred to as "emotional empathy" (Guidi & Traversa, 2021), "emotional contagion" (Bensalah et al., 2016; Carré et al., 2013), or "affective response" (Berthoz et al., 2006) is defined by Guidi and Traversa (2021) as "the emotional engagement that occurs when confronted with the suffering of another person" (p. 5). This emotional engagement can also occur in relation to joy or happiness. In that regard, Gerdes and Segal (2009) define the affective dimension of empathy as "an involuntary, physiological reaction to another's emotions and actions" (p. 120). In other words, the affective dimension suggests the ability of a person to accurately feel what another person is feeling.

The Cognitive Dimension of Empathy

Cognitive empathy, as compared to affective empathy, promotes awareness of a person's emotions. Saracco-Álvarez et al. (2020) define cognitive empathy as the ability of a person to perceive, understand, and explain the emotions of someone else. Guidi and Traversa (2021) explain that it is the ability to perceive emotion in others and the capacity to attribute mental states to them. Cognitive empathy is the understanding of another person's emotional state. For example, cognitive empathy allows a person to know when someone else is angry, sad, happy, or fearful, and the reason why. It is different from affective empathy, in which a person shares the other person's feelings. To share a

feeling, one needs to accurately understand what is being felt by another person; thus, the importance of the cognitive dimension.

Cognitive empathy is also assimilated to the theory of mind (ToM). The ToM refers to the ability to understand people and their behaviors, and the capacity to identify their mental state (Kampf et al., 2022; Kim et al., 2021; Quesque & Rossetti, 2020). In that regard, cognitive empathy can be seen as part of ToM as it focuses on understanding a different person's situation.

Remote Work

Remote work, also known as "virtual work," "telework," or "telecommuting," refers to the performance of professional duties beyond the traditional office setting. This trend began in Germany in 1967 as "flextime," where employees chose when to work, and later evolved into "flexplace," where employees chose where to work (Allen et al., 2010; Lartey & Randall, 2021b). The expansion of communication technologies, combined with the global disruptions of the COVID-19 pandemic, accelerated this shift, pushing most knowledge workers into home-based arrangements during 2020 and 2021. Research has since highlighted the organizational dynamics of this transformation: Saurage-Altenloh et al. (2023a) demonstrated that organizational culture shapes employee attitudes and behaviors, which in turn drive engagement, commitment, and performance during operational change. With many companies performing strongly under remote conditions, polls and industry commentary suggest that remote work has become a lasting feature of the modern workplace.

In a virtual working environment, employees work and collaborate from different locations such as their home offices (Lartey et al., 2025). In such a setting, the concept of empathy is different to assimilate as compared to a traditional setting where people are visible all the time, and body language can easily be read. For that reason, empathy in the remote work environment should be viewed from a different perspective.

Empathy involves emotions generated by interpersonal interactions. In the virtual or remote work environment, such interactions are in the form of audio, video, or text. These include emails, text messages, chats, phone calls, voice messages, audio conference calls, video conference calls, and other forms of communication and collaboration (Randall et al., 2020). In these settings, empathy can be manifested when a person feels an emotion from another person's communication through text, audio, and/or video, for the most part.

In a remote environment, empathy can be displayed through computer-mediated communications (CMC), which represents the main work and communication mechanism used by remote workers (Lartey & Randall, 2021a; Tate et al., 2019). Usable tactics include the consideration of topics initiated by others, the appropriateness of questions, social support to team members, politeness, display of concern for others, and appropriateness of message contents, among others.

Theoretical Framework: Social Cognitive Theory (SCT) and Empathy in Employee Behavioral Outcomes

SCT, developed by Albert Bandura (1986), provides a dynamic and robust framework for understanding the relationship between empathy and employee behavior. SCT emphasizes the triadic interplay between personal factors, behavioral outcomes, and environmental influences, illustrating how human behavior is influenced by both internal and external factors. In the context of empathy, personal factors, such as cognitive and affective empathy, interact with behavioral outcomes and are mediated by the workplace environment, particularly in remote work settings. This framework positions SCT as a powerful theoretical lens for examining how empathetic interactions foster trust, motivation, and emotional well-being within technology-driven organizational contexts.

Reciprocal Determinism

Reciprocal determinism, a core concept in SCT, highlights the cyclical relationship between personal factors, behavior, and the environment. In workplace settings, empathy serves as a critical personal factor encompassing cognitive awareness (understanding others' emotions) and affective response (sharing others' emotions). These dual dimensions of empathy shape employees' perceptions of workplace relationships and significantly influence their emotional well-being. Behavioral outcomes arising from empathetic interactions include increased dedication, vigor, and absorption—key components of employee engagement conceptualized by Schaufeli and Bakker (2004). The mutual trust and support fostered by empathetic exchanges further reinforce these behaviors.

The environmental context plays a pivotal role, particularly in remote work settings where face-to-face interactions are limited. CMC, including video calls, messaging platforms, and emails, serves as the primary conduit for empathetic interactions and directly influences behavioral outcomes (Lartey & Randall, 2022). For instance, empathetic leaders who acknowledge employee burnout during remote interactions foster trust and morale, thereby enhancing employee engagement (Jin & Ikeda, 2023; Qin, 2024). This highlights the dynamic reciprocity between empathy, behavior, and the mediated remote work environment, central to SCT's conceptualization of reciprocal determinism.

Observational Learning (Modeling)

Observational learning, another key component of SCT, emphasizes that behaviors are learned through observation and imitation. In organizational settings, leaders serve as role models whose empathetic behaviors can inspire similar actions among employees, fostering a culture of support and engagement. This is particularly relevant in remote work environments, where leadership behaviors become highly visible and influential during virtual interactions. For example, leaders who demonstrate empathy by recognizing employee stress, offering solutions, or engaging in compassionate communication during video calls serve as behavioral models for team members (Lartey et al., 2025).

Empathy, therefore, becomes a "contagious" behavior, as employees are more likely to emulate supportive interactions observed in leadership and among peers. This ripple effect not only normalizes empathetic behavior but also enhances team collaboration, trust, and engagement (Jin & Ikeda, 2023). Leaders who actively express concern and understanding during virtual meetings inspire employees to adopt similar empathetic practices, thereby strengthening team morale and cohesion (Qamar et al., 2023).

Self-Efficacy and Empathy

Self-efficacy, a central tenet of SCT, refers to an individual's belief in their ability to succeed in specific tasks. Empathy plays a pivotal role in enhancing self-efficacy by fostering environments where individuals feel valued, supported, and understood (Younis et al., 2021). Positive empathetic exchanges reinforce employees' confidence, particularly in remote work settings where physical isolation can limit opportunities for traditional social reinforcement. In such contexts, empathetic interactions from leaders mitigate feelings of disconnection and enhance employees' belief in their ability to perform and contribute effectively (Bandura, 1991).

For example, when leaders acknowledge employees' challenges and provide reassurance during virtual interactions, employees develop greater confidence in overcoming obstacles, which directly enhances their engagement levels (Steenkamp & Dhanesh, 2023). This demonstrates how empathetic leadership cultivates a sense of competence and efficacy, which serves as a driving force behind employees' motivation and engagement.

Outcome Expectations

Outcome expectations in SCT refer to the anticipated rewards or consequences of a behavior. Empathetic interactions create positive emotional responses, leading employees to expect fairness, support, and inclusion within their workplace. These positive expectations become critical drivers of engagement, particularly in remote settings where communication relies on CMC. Empathy-driven communication, such as personalized feedback, acknowledgment of achievements, or expressions of concern, increases employees' trust in leadership and enhances their overall job satisfaction (Tussey, 2023).

Employees who experience empathetic interactions also develop expectations of professional growth and organizational support, which further align their efforts with organizational goals (Hajjami & Crocco, 2024). For instance, when leaders express empathy through timely and supportive communication, employees perceive fairness and alignment with organizational values, encouraging them to remain dedicated and engaged (Sims, 2021).

Environmental Context: Empathy in Remote Work

The remote work environment introduces challenges to traditional displays of empathy due to its reliance on digital communication tools. SCT provides a valuable framework for understanding how empathy manifests in virtual settings, emphasizing the need for intentional and enhanced behavioral capabilities. Employees and leaders alike must develop skills to express and interpret empathy effectively through CMC, such as video calls, instant messaging, and emails (Lartey et al., 2025).

The virtual environment acts as a mediator for emotional exchanges, necessitating deliberate efforts from leaders to maintain engagement through empathetic communication. For instance, leaders who conduct regular check-ins, demonstrate active listening, and offer personalized support mitigate workplace loneliness and improve team morale (Jin & Ikeda, 2023). However, Saurage-Altenloh et al. (2023b) emphasized that these practices achieve their fullest impact when embedded within an organizational culture of shared values, beliefs, and behaviors that foster connection and belonging. These practices reinforce trust, inclusion, and cohesion, essential components for sustaining employee engagement in remote work settings (Luque, 2023).

Integration of SCT into the Study Framework

This study integrates SCT principles to examine the elements of empathy through a multi-dimensional approach. Empathy, as a personal factor, is measured using the Lartey Empathy Measurement Scale (LEMS), which captures both cognitive and affective dimensions. The environmental context, particularly remote work mediated by CMC, serves as a critical factor shaping how empathy is expressed and experienced.

Development of the LEMS

Scale Items Generation

The development of LEMS followed the recommendations from DeVellis (2016). DeVellis proposed an eight-step approach for scale development. These steps include 1) the determination of the construct to measure; 2) the generation of the pool of items, including redundancy and negatively worded items; 3) the determination of the items measurement scale such as Likert scale, semantic differential, binary, etc.; 4) expert review of the initial pool of items; 5) inclusion of validation items; 6) administration of the items to an initial or development sample; 7) items evaluation including dimensionality, reliability, variance, correlations, etc.; and 8) scale length optimization

A preliminary pool of 52 items was created. The items derived from the review of current literature on empathy scales (Carré et al., 2013; Hojat et al., 2002; King & Holosko, 2012; Mora-Pelegrín et al., 2021; Moudatsou et al., 2021; Spreng et al., 2009). All identified items were adapted to be used in a traditional office environment as well as in a remote workplace where the use of CMC is ubiquitous.

Determination of Constructs to Measure

The purpose of this study is to propose a scale that will help measure empathy in the workplace. This scale can be used in the traditional office workplace as well as in the virtual or remote working environment. As such, empathy is the construct to measure.

Measurement Format

All items in the pool were measured using a five-point Likert scale. To that effect, the items were scored from 1 to 5, where 1 – *strongly disagree*, 2 – *disagree*, 3 – *neither agree nor disagree*, 4 – *agree*, and 5 – *strongly agree*.

The five-point Likert scale can be used as a continuous variable. This allows for the use of exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) to establish and validate the factor structure of the instrument. Additional statistics are also available, such as Cronbach's alpha, skewness, kurtosis, etc. To achieve this, all negatively stated statements must be reversely coded using the formula *6 - score*. As such, if someone answers *strongly disagree* to a negatively stated question and thus scores 1, the formula transforms the score to 6 - 1 = 5.

Expert Review

The initial pool of 52 items was reviewed by three experts in human resources and employee psychology. The experts assessed all 52 items in the pool for clarity, appropriateness, and adequacy. "Clarity" refers to the coherence and simplicity of the question; "appropriateness" is the suitability or acceptability of the question, and "adequacy" is the relevance of the question as related to the concept of empathy in the workplace.

As a result of the expert review process, eight items were removed from the pool as they had a very low clarity score, and 10 were removed because they were either redundant or were more aligned with sympathy or compassion than empathy. The remaining items were retained for the scale's creation. This effort thus resulted in a pool of 34 items for the initial scale.

Validation Items

Some reversely stated items were included in the creation of the initial pool of items. The expert panel retained all of them. These reverse or negatively stated items act as validators in identifying and eliminating inadequate responses.

Factor Structure Data and Analysis

Factor Structure of LEMS Through EFA on 50% of the Split Dataset

Sample & Data Collection

Data were collected from participants in the United States of America to discover and confirm the underlying factor structure of empathy as described by LEMS. The initial sample of 650 cases was used without any missing cases. A data split of 50:50 was performed, resulting in two datasets. The first dataset with 325 records was used to discover the structure of LEMS through an EFA. The second dataset with 325 records was used to confirm the identified factor structure through a CFA.

The EFA dataset was made up of 36.6% males and 63.4% females. Overall, 36.3% of participants worked remotely at least 25% of the time, and 13.5% worked remotely all the time. The CFA dataset had 42.5% males, 56.9% females, and 2 participants self-identifying as nonbinary, representing 0.6% of the sample. Of this group, 41.5% of participants worked remotely at least 25% of the time, and 19.1% worked remotely all the time. As presented, the creation of two random samples from the dataset generated two subsets with adequate representation of the population in terms of gender as well as work location. Both samples properly represented the workplace of the 21st century, characterized by gender representation and remote work implementation.

Data Analysis

There were no missing data, and no data cleanup was necessary since the surveying firm proceeded with the elimination of speeders, straight-liners, and randomers from the final dataset. All negatively stated questions were reverse-coded using the formula *6 - score* as previously suggested.

The assumptions of EFA were validated as recommended by Tabachnick and Fidell (2013). No outlier was identified; the data were considered normal, as the values for skewness and kurtosis were within acceptable ranges, namely between -3 and +3 for skewness and between -10 and +10 for kurtosis when using SEM (Brown, 2006).

The total sample of 650 cases included 34 measured items identified in the initial definition of empathy. As such, the first sub-sample of 325 cases had a ratio of cases to items of 9.56 to 1, well above the 5 to 1 ratio recommended by Tabachnick and Fidell (2013) and used by Bubaš et al. (2003). An EFA was conducted using IBM SPSS version 24.

The Kaiser-Meyer-Olkin measure of sampling adequacy (KMO), which measures the adequacy of the sample for factor analysis, was .818, well above the commonly recommended value of .6, with values closer to 1 indicating better suitability. Bartlett's test of sphericity, which checks whether the correlation matrix is an identity matrix indicating that variables are unrelated and unsuitable for structure detection, was significant (χ^2 (66) = 2,232.22, $p <$ .001), suggesting that the variables are sufficiently correlated to proceed with factor analysis. Given these indicators, an EFA was deemed suitable.

Results

An EFA was conducted on a sample of 325 cases utilizing maximum likelihood extraction with Varimax rotation across 34 items. The initial eigenvalues indicated that three factors had eigenvalues greater than 1, explaining 60.37% of the total variance. The three-factor solution thus explained a substantial portion of the variance, indicating that they properly captured the underlying structure of the data

Various solutions were extracted using maximum likelihood extraction for models with two, four, five, and six factors, along with varimax, direct oblimin, promax, equamax, and quartimax rotations. Only the three-factor solution showed an acceptable fit. The four-factor solution loaded only 2 items on the fourth factor, and they were eliminated. In addition, any item loading below .4 or loading significantly on more than one factor was eliminated. As such, the final solution yielded a three-factor solution with 12 total items.

Factor 1 was labelled EMOTIONAL PERCEPTION because it contained statements describing a profound sense of perception of others' emotions. This factor included five statements suggesting attunement to others' emotions through various forms of communication. The factors' statements are presented in Table 1 below.

Table 1

Items Loading Under Factor 1

Item #	Item
EMPA_11	I can feel another person's emotions in their video or audio messages
EMPA_08	I can spot when someone feels uncomfortable in an interaction or a communication
EMPA_06	I can tell if someone is interested or bored with what I am saying from their facial expression and nonverbal cues
EMPA_05	I can understand a person's emotional state based on their written or spoken communication
EMPA_12	I can feel my coworkers' emotions in face-to-face interactions

Factor 2 loaded four items and was named DISPASSION. It included statements that capture a sense of "indifference" or "dispassion" toward the emotional aspects of workplace interactions. Those statements are represented in Table 2, which follows.

Table 2

Items Loading Under Factor 2

Item #	Items
EMPA_03r	I believe emotions are not relevant to the work I do
EMPA_09r	As long as I get what I need, it doesn't concern me if someone feels offended by my message
EMPA_02r	Understanding the emotions of people affected by my work is not necessary for me
EMPA_13r	My coworkers' emotions do not affect me at all

Factor 3 loaded items describing a strong sense of "camaraderie" with coworkers. This factor states how much the respondents feel supported, cared for, and understood by their coworkers. As such, this factor was named DEPENDABILITY and contained the statements shown in Table 3.

Table 3

Items Loading Under Factor 3

Item #	Item
EMPA_34	I can rely on my coworkers to help me when I need it
EMPA_31	My coworkers have my best interests at heart
EMPA_32	My coworkers understand when I am happy or sad

Table 4 shows a summary of the factors in the resulting rotated factor matrix. Items are grouped by loading for the facility of interpretation, and no item loaded significantly on more than one factor. As discussed earlier, Factor 1 represents EMOTIONAL PERCEPTION; Factor 2 represents DISPASSION, and Factor 3 represents DEPENDABILITY.

Table 4

Rotated Factor Matrix[a]

Item	Factor 1	Factor 2	Factor 3
EMPA_11	.690		
EMPA_06	.669		
EMPA_08	.650		
EMPA_05	.637		
EMPA_12	.614		
EMPA_03r		.737	
EMPA_09r		.678	
EMPA_02r		.668	
EMPA_13r		.586	
EMPA_34			.753
EMPA_31			.668
EMPA_32			.487

Note. Extraction Method: Maximum Likelihood.
Rotation Method: Varimax with Kaiser Normalization.
[a.] Rotation converged in 4 iterations.

Confirmation of the Factor Structure of the LEMS Through a CFA on 50% of the Split Dataset

Data Sample

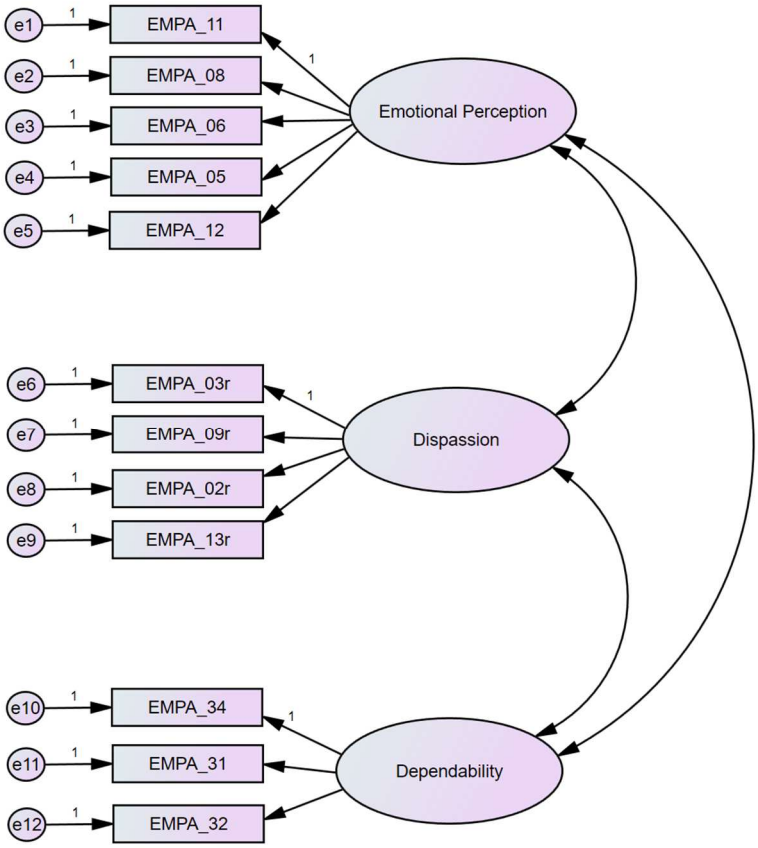
Following the exploratory factor analysis (EFA) that identified three factors underlying empathy, a CFA was conducted using Amos™ v. 20 to validate the identified factor structure. The CFA sought to confirm whether the data fit the hypothesized model deriving from the EFA, given a different set of data randomly selected from the same population. CFA was conducted on a sample of 325 cases representing 50% of the initial 650 cases.

Model Specification

The hypothesized model is represented in Figure 1 with three factors depicting LEMS, namely: (1) EMOTIONAL PERCEPTION, (2) DISPASSION, and (3) DEPENDABILITY. The three factors are represented in the figure by large oval figures. These are latent or unobserved variables, with underlying measured variables represented by rectangles. Error measures are represented by little circles named from e1 to e12.

Figure 1

Hypothesized LEMS model



Assumptions of the CFA

With three factors and a minimum of three items loaded per factor, the model was deemed suited for CFA as it was over-identified with 51 degrees of freedom. The dataset used for CFA consisted of 325 cases and 12 observed variables, resulting in a ratio of 27:1 for cases to observed variables and 12:1 for cases to estimated parameters. This ratio is deemed adequate for CFA as per Tabachnick and Fidell (2013). Descriptive statistics were computed using IBM SPSS v. 24, showing that the variables exhibited normality, with skewness and kurtosis within the range of -1 to +1, and standardized values not exceeding 3.75, in accordance with established guidelines. Linearity was confirmed through graphical analysis, with all fit lines displaying an upward trend.

No univariate outliers were detected, as all *z*-scores fell within the acceptable range of -3.29 to +3.29. The Mahalanobis distance was used to assess multivariate outliers, confirming their absence. The determinant of the covariance matrix indicated no multicollinearity or singularity. The residuals were evaluated as part of the model assessment, confirmed by fit indices.

Model Estimation

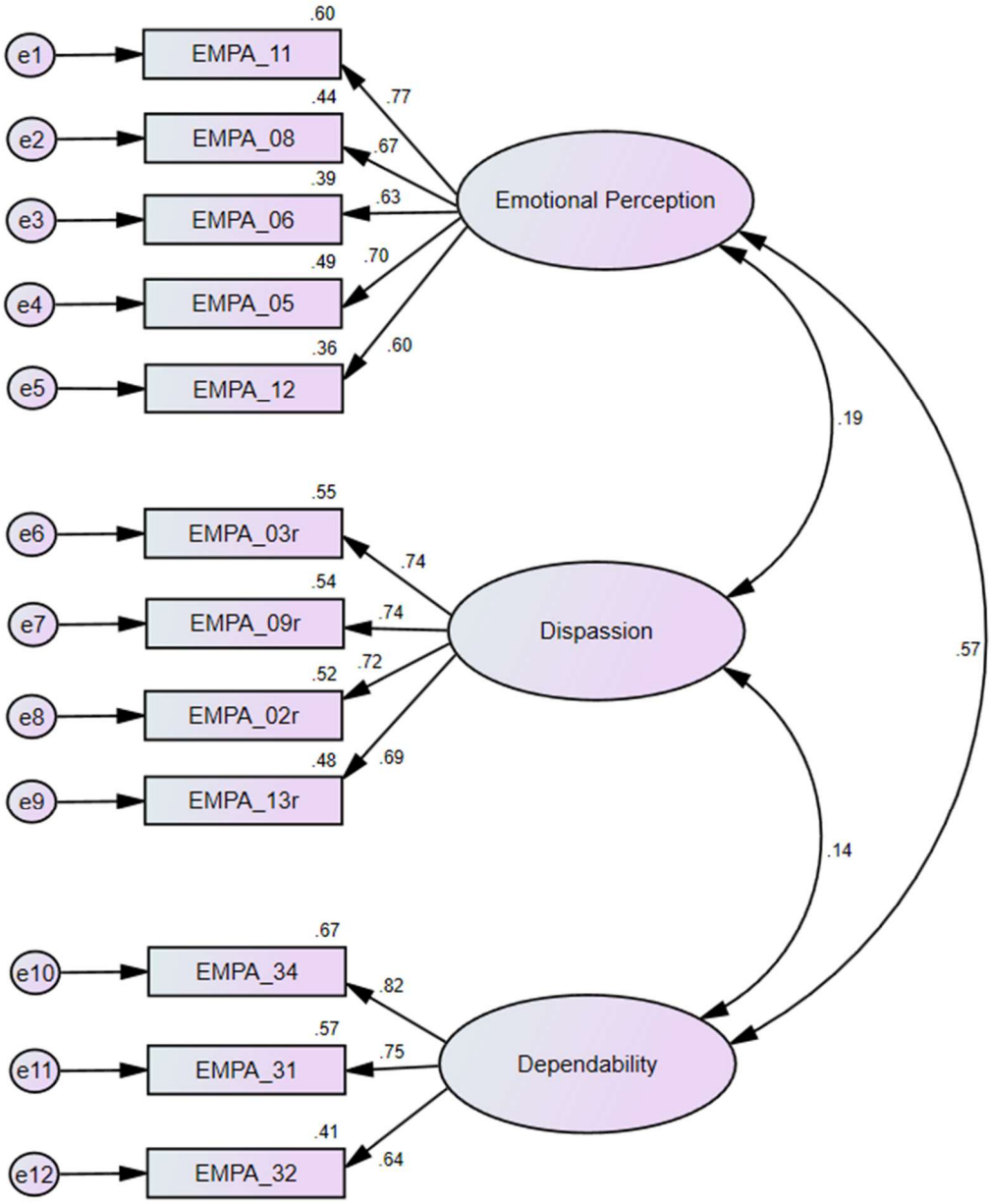
A CFA was conducted using Amos™ v.20 on a sample of 325 cases to determine if the hypothesized model with three factors matched the data. The analysis used maximum likelihood estimation. Although the chi-square for the model was significant, χ^2 (27, N = 325) = 104.26, $p < .05$, the normed chi-square value (CMIN/DF = 2.04) was below 3.0, indicating a good fit between the model and the data. The null hypothesis, which suggested a discrepancy between the model and the underlying data structure, was rejected. Additionally, other fit indices supported this good fit. The goodness of fit index (GFI = .949), comparative fit index (CFI = .958), Tucker-Lewis Index (TLI = .946),

Normed Fit Index (NFI = .922), and Bollen's (1989) incremental fit index (IFI = .959) all had values greater than the suggested .9, indicating a good fit.

In addition, the root mean squared error approximation (RMSEA = .057) was less than .10. The PCLOSE = .225 (PCLOSE > .05) indicates the presence of a close fit model. Therefore, it was confirmed that there was a good fit between the hypothetical model and the data. Since the hypothesized model fits the data well, no modifications to the model were necessary. The results of the CFA, as shown in Figure 2, confirmed the three-factor structure of LEMS, leading to Table 5, the final LEMS instrument.

Figure 2

CFA Model of Three-Factor Structure of LEMS



Note. Standardized loading estimates taken from the sample (N = 325).

Table 5

Items of the LEMS Instrument

Item #	Factor	Statement
EMPA_05	1	I can understand a person's emotional state based on their written or spoken communication
EMPA_06	1	I can tell if someone is interested or bored with what I am saying from their facial expression and nonverbal cues
EMPA_08	1	I can spot when someone feels uncomfortable in an interaction or a communication
EMPA_11	1	I can feel another person's emotions in their video or audio messages
EMPA_12	1	I can feel my coworkers' emotions in face-to-face interactions
EMPA_02r	2	Understanding the emotions of people affected by my work is not necessary for me
EMPA_03r	2	I believe emotions are not relevant to the work I do
EMPA_09r	2	As long as I get what I need, it doesn't concern me if someone feels offended by my message
EMPA_13r	2	My coworkers' emotions do not affect me at all
EMPA_31	3	My coworkers have my best interests at heart
EMPA_32	3	My coworkers understand when I am happy or sad
EMPA_34	3	I can rely on my coworkers to help me when I need it

Reliability and Validity Assessment

Reliability of the LEMS

The reliability of LEMS was assessed using the two samples previously discussed. The first sample was made of 325 cases, and the second of 325 cases. Each represented a random selection of 50 percent of the initial 650 cases obtained for the study.

Construct Reliability of the Factors

To assess the construct reliability of the factors, a Cronbach's alpha reliability test was computed for each factor and its measured items. The results of the tests on the two samples are represented in Table 6, where Sample 1 is the sample of 325 cases used for EFA and Sample 2 is the sample of 325 cases used for CFA.

Table 6

Construct Reliability of Factors

Factor	Items	Sample 1 α	Sample 2 α	Result
EMOTIONAL PERCEPTION	5	.798	.803	Good
DISPASSION	4	.763	.814	Good
DEPENDABILITY	3	.683	.778	Good

While one alpha coefficient was acceptable ($\alpha > .6$ but $< .7$), all others were either good or very good ($\alpha > .7$ or $> .8$) as suggested by Lartey and Randall (2022). The construct reliability of the factors was considered achieved.

Reliability of the LEMS Scale

The internal consistency of LEMS was evaluated using Cronbach's alpha for all items in the measurement instrument. To do this, all 12 LEMS items were included in the test. Each of the two samples was assessed separately. The results of Sample 1 ($\alpha = .730$) and Sample 2 ($\alpha = .786$) demonstrate that the LEMS instrument

exhibits very good internal consistency reliability. This indicates that all questions in the instrument effectively measure the same construct.

Validity of the LEMS Scale

Validity, as explained by Ghauri and Gronhaug (2005), indicates how well the collected data measures what it intends to measure. The assessment of validity can be done using different types of validity. Researchers identified four types of validity, including face, content, construct, and criterion (Parasuraman et al., 1991; Vogt, 2007).

Face Validity

Face validity is a subjective measure that reflects how meaningful the scale items are and how well they represent the construct being evaluated. It assesses the extent to which the items are perceived to be related to the construct in question (Zamanzadeh et al., 2015).

LEMS demonstrates strong face validity because each item was meticulously derived from previous literature specifically focused on empathy. This intentional grounding in well-established research ensures that the items effectively capture the various dimensions of empathy. By aligning with recognized academic sources, the LEMS instrument benefits from a validated foundation that bolsters its credibility and relevance in measuring empathetic traits accurately. This careful construction guarantees that the instrument resonates with the construct it aims to assess, providing reliable and meaningful insights.

Content Validity

Content validity evaluates how well the content of an instrument measures the intended construct. According to Vogt (2007), this is assessed through judgments by experts, such as expert panels.

This study utilized a panel of three experts to meticulously review all items on the LEMS scale. Additionally, the items were carefully selected from existing literature on empathy. As a result, the study confidently achieved content validity, ensuring that the instrument accurately measures the intended construct.

Construct Validity

Construct validity encompasses both convergent and discriminant validity, both of which were assessed for LEMS. Convergent validity was assessed using two key metrics: average variance extracted (AVE) and composite reliability (CR). AVE measures the amount of variance that a construct captures from its indicators relative to the amount of variance due to measurement error. CR is similar to Cronbach's alpha and evaluates the overall reliability of a construct by examining the internal consistency of its indicators, but relies on the assumption of equal loadings. The AVE and CR values obtained for the model are presented in Table 7.

Table 7

Values of AVE and CR

Factors	EMOTIONAL PERCEPTION	DISPASSION	DEPENDABILITY
Average Variance Extracted (AVE)	0.455	0.523	0.549
Composite Reliability (CR)	0.85	0.814	0.784
Convergent Validity	Established	Established	Established

All composite reliability (CR) values exceeded the recommended threshold of 0.70, indicating robust internal consistency across the measured constructs. The average variance extracted (AVE) for DISPASSION and DEPENDABILITY surpassed the conventional benchmark of 0.50, thereby supporting their convergent validity in accordance with Fornell and Larcker (1981). Although the AVE for Emotional Perception fell slightly below the 0.50 threshold, Lam (2012) suggests that convergent validity may still be considered adequate when CR exceeds 0.60, particularly in applied research contexts. Given the consistently high CR values and supporting evidence from prior literature, the convergent validity of the LEMS constructs is deemed established.

The discriminant validity of LEMS was evaluated by comparing the squared correlations and AVE scores for each pair of constructs, as recommended by Fornell and Larcker (1981) and implemented by Lartey and Randall (2022). Discriminant validity confirms that the constructs do measure different things. The calculation of discriminant validity and findings are presented in Table 8, which shows the discriminant validity for the paired constructs.

Table 8

Pairwise Discriminant Validity of LEMS' Factors

Factor 1	Factor 2	Standard Correlation	Square Stdzed Correlation	AVE Factor 1	AVE Factor 2	Discriminant Validity (AVE > Sq Correlation)
EMOTIONAL PERCEPTION	DISPASSION	-0.191	0.036	0.406	0.562	Established
EMOTIONAL PERCEPTION	DEPENDABILITY	0.571	0.326	0.455	0.549	Established
DISPASSION	DEPENDABILITY	-0.138	0.019	0.523	0.549	Established

Table 8 confirms that LEMS exhibited discriminant validity between its pairwise factors. The AVE values for each pair of factors were higher than their squared standardized correlations. As a result, the discriminant validity of LEMS was confirmed.

Criterion Validity

Criterion validity measures how well the instrument predicts the outcome. In the case of LEMS, the criterion validity would assess how well an employee's level of empathy can be predicted from their answers to the instrument's statements. Initial criterion validity was inferred here because all items retained for this instrument were derived from previously validated instruments. Nonetheless, this study acknowledges the need for additional research to establish criterion validity from data collected for such purpose.

Discussion

The findings of this research contribute significantly to the understanding of empathy in the workplace, addressing a critical gap in the literature by presenting an instrument tailored for both traditional and remote work environments. The Lartey Empathy Measurement Scale (LEMS) provides a validated and reliable method for assessing empathy across diverse workplace contexts, a necessity in today's evolving organizational landscapes characterized by increasing reliance on remote work.

SCT offers a robust theoretical framework for understanding the influence of empathy in the workplace. By emphasizing reciprocal determinism, observational learning, self-efficacy, and outcome expectations, SCT explains the complex interplay between personal empathy, employee behaviors, and the environmental context of remote work. Empathetic interactions serve as a catalyst for fostering trust, motivation, and collaboration, particularly in technology-mediated environments. This study contributes to SCT literature by introducing a tool for measuring empathy, which can be used to demonstrate how empathetic leadership and interpersonal interactions enhance organizational success. In doing so, it delivers critical insights into workplace dynamics within the evolving landscape of 21st-century organizations.

Theoretical Contributions

This study extends the application of SCT to the measurement and application of empathy in the workplace, demonstrating how cognitive, emotional, and behavioral factors interact to influence employee engagement. SCT posits that learning and behavior are shaped by the dynamic interplay between personal, behavioral, and environmental influences. By framing empathy as a measurable construct within this framework, the LEMS provides a tool to evaluate how individual capacities for emotional perception, dispassion, and dependability interact with workplace environments to drive engagement outcomes.

Empathy's foundational role in SCT is reflected in its capacity to facilitate observational learning and self-regulation within social interactions. Emotional perception, a key factor in LEMS, aligns with the cognitive component of SCT by enabling employees to recognize and interpret emotional cues from others, a critical mechanism for developing mutual understanding and adaptive responses in dynamic work environments. This ability enhances social learning, teamwork, and trust, contributing to stronger engagement and more cooperative workplace behavior.

Dispassion, defined as emotional regulation and maintaining composure under pressure, highlights the behavioral regulation aspect of SCT. Individuals exhibiting high levels of dispassion manage their emotional responses effectively, reducing interpersonal conflict and promoting resilience. Dispassion as an SCT-informed construct supports sustainable engagement by mitigating emotional burnout and maintaining focus on goal achievement despite workplace stressors.

Dependability, the third dimension of LEMS, relates to the behavioral consistency emphasized in SCT. Dependability reflects an individual's reliability and trustworthiness, which are central to effective modeling of positive behaviors within teams. High dependability enhances perceived fairness, psychological safety, and organizational commitment, reinforcing engagement by fostering a supportive and predictable work environment. The interaction of these factors within SCT provides a comprehensive lens to understand how empathy-related capabilities influence individual motivation, performance, and collective efficacy.

This study contributes theoretically by positioning empathy as a dynamic and actionable construct within the SCT framework, directly linked to cognitive, emotional, and behavioral components of employee engagement. It further emphasizes the reciprocal relationship between personal empathy-related attributes and environmental factors, such as workplace culture and leadership practices. Future research can build upon this foundation by exploring empathy's role in shaping self-efficacy, collaborative problem-solving, and adaptive behaviors, offering deeper insights into how social-cognitive mechanisms drive organizational success.

Practical Implications

For organizations managing hybrid or fully remote teams, LEMS serves as a diagnostic and developmental tool. Companies can design empathy training programs focused on enhancing virtual interactions, recognizing non-verbal cues, and fostering emotional presence in digital communication. Regular feedback, empathetic leadership practices, and inclusive communication policies can create more cohesive, engaged teams. By embedding empathy in organizational culture, businesses can cultivate trust, reduce turnover, and enhance employee experiences.

Limitations and Future Research

While this study provides significant insights and a robust new tool for measuring empathy in modern workplaces, it is not without limitations. First, the sample used for validating the LEMS was primarily drawn from knowledge-based workers in the United States, which may limit its generalizability to other professions and international contexts. Cultural differences in the perception and expression of empathy can affect the applicability of LEMS across global regions. Future research should explore cross-cultural adaptations and validation of the scale to ensure its utility in diverse cultural settings and industries, such as manufacturing, healthcare, and customer service, where empathy may manifest differently.

Second, this research focused on a quantitative approach to empathy measurement, leaving opportunities to complement these findings with qualitative and mixed-methods studies. In-depth interviews, ethnographic research, and case studies could provide richer, contextualized insights into how empathy influences workplace dynamics, leadership, and team cohesion. Additionally, future studies could incorporate longitudinal designs to examine how empathy evolves over time, particularly in response to organizational change, technological advancements, and evolving communication practices in remote work environments.

Finally, this study did not explicitly examine the role of empathy training interventions. Future research should evaluate the impact of empathy on engagement and productivity. Investigating whether targeted empathy enhancements sustain long-term behavioral changes would offer valuable insights into organizational strategy and human resource development. Together, these avenues of research would further validate and extend the utility of LEMS, shaping the future of empathetic leadership and employee engagement in a rapidly transforming world.

Conclusion

In an era where emotional intelligence and empathetic leadership are increasingly recognized as key drivers of organizational effectiveness, this study offers a timely and impactful contribution to the SCT literature. Through the development and validation of the Lartey Empathy Measurement Scale (LEMS), this research provides scholars and practitioners with a rigorous framework for assessing and strengthening interpersonal dynamics in professional settings. LEMS equips organizations to navigate the complexities of a dynamic, interconnected world by cultivating more empathetic, resilient, and engaged workforces.

Future research may extend this foundation by examining cross-cultural applications of the tool, evaluating the longitudinal effects of empathetic leadership, and exploring integration with digital platforms for real-time feedback and development. Ultimately, this work advances a more human-centered paradigm for organizational success in the 21st century.

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Declaration of Generative AI and AI-assisted Technologies in the Writing Process

During the preparation of this work, the authors used ChatGPT and CoPilot in order to refine the readability of some passages to be clearer, more succinct, and appropriately scholarly. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

