

# The impact of social intelligence and employees' collective self-efficacy on service provider's performance in the Egyptian governmental hospitals

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## Abstract

**Purpose** – The purpose of this study is to examine the direct impact of social intelligence and collective self-efficacy on two components of service providers' performance: extra-role performance and intra-role one. The study also investigates the indirect effect of social intelligence on service providers' performance and its components via the mediating role of collective self-efficacy.

**Design/methodology/approach** – This study was undertaken to develop a conceptual framework that integrates social intelligence, collective self-efficacy and service provider's performance constructs in one framework. Data was collected from 220 physicians in the Egyptian governmental hospitals. Confirmatory factor analysis explored the latent structure of the research constructs. The current study used structural equation modelling to test the research model hypotheses.

**Findings** – The study finds that social intelligence was positively associated with service providers' performance. The results also support the significant effect of social intelligence on the two main dimensions of service provider's performance: extra-role (contextual) performance and intra-role (task) performance. Moreover, the results indicate that social intelligence competences provide a basis for collective self-efficacy and service providers' performance for physicians in the Egyptian governmental hospitals.

**Research limitations/implications** – This study collected data based on a cross-sectional design, so further studies could test the theoretical model by using longitudinal studies' data, which give the study results more accuracy of results and support generalizing the results. This study considers the synergistic effects between social intelligence and collective self-efficacy on service providers' performance and sheds new light on bringing new drivers for developing extra- and intra-role dimensions of service provider performance in service literature.

**Originality/value** – This study is one of the first studies that integrate social intelligence and collective self-efficacy with service providers' performance and its dimensions in one framework. This study contributes to knowledge by integrating the social exchange theory with the cognitive theory in one study.

**Keywords** Social intelligence, Collective self-efficacy, Egyptian governmental hospitals, Service provider performance

**Paper type** Research paper



Over the past decade, there has been a massive interest in theory and research on social intelligence (Rahim *et al.*, 2018). The necessity of social intelligence in the workplace today has been discussed, explored and considered to be a critical factor in job performance (Ashkanasy *et al.*, 2000; Druskat and Druskat, 2006; Lemisiou, 2013). Several scholars asserted that emotional and social intelligence explains 70% of performance differences within organizations (Cherniss, 2000; Goleman, 1998). Nowadays, there is great interest among management practitioners and scholars regarding the psychological factors that encourage employee performance (De Stobbeleir *et al.*, 2011). Moreover, enhancing employee performance issue is an example of common good dilemma in service literature (REFs). Considerations of social intelligence and collective efficacy should play a prominent role in motivating individuals to engage in teamwork to enhance their performance, as recommended by Rahim *et al.* (2018) and Bandura (2000). The field area of this study is a governmental hospital in Egypt because these hospitals represent the main source of health service in Egypt (Central Bureau of General Mobilization and Statistics, 2019).

One of the main aims of this study is to explore how to enhance the performance of Egyptian governmental hospitals to compete private hospitals. Because of the increasing rate of poverty in Egypt, where 32.5% of Egyptians lived below the poverty line in 2018, up from 27.8% in 2015 and 16.7% in 2000 (The World Bank, 2019: Poverty and Equity Data Portal), most of the Egyptian people cannot carry on the high expenses of the private hospitals, and as a result, they depend basically on the governmental hospitals. Moreover, the large number of populations and a low government investment in the public healthcare system, which is at just 1.5% of the country's gross domestic product (GDP) (Central bank of Egypt, 2019), represent the main constraints to improve the service quality in these hospitals.

As we know, the human element in health service represented in physicians and nurses is one of the requirements of good service quality in this sector. Therefore, enhancing the performance of physicians and creating a collaboration work environment is necessary to enhance the service quality in governmental hospitals. Therefore, this study seeks to explore new practical methods or strategies to enhance the performance of service providers in the Egyptian governmental hospitals through focusing on physicians' social intelligence (SI) competences and encouraging their collective self-efficacies.

Table 1 illustrates the evidences for poor Egyptian governmental performance comparing to private ones. The percentage of spending on governmental hospitals reduced from 5.14% to 4.60% during the period 2013-2019 which affect negatively on their performance. In the same vein, the number of governmental hospitals decreased during the period 2006-2018 from 1,187 to 691 hospitals, whereas the number of private hospitals increased from 686 to 1,157 hospitals. Moreover, the number of physicians in the governmental hospitals increased with 61% (from 46,700 to 75,700) during the period 2006–2018, whereas number of physicians in the private hospitals increased more than 2.5 times (from 9,250 to 25,013) during the same period.

Criteria	Change
The percentage of spending on governmental hospitals in Egypt during the period (2013-2019)	From 5.14 to 4.60%
Number of governmental hospitals (2006-2018)	From 1,187 to 691
Number of private hospitals (2006-2018)	From 686 to 1,157
Number of physicians in the governmental hospitals (2006-2018)	From 46,700 to 75,700
Number of physicians in the private hospitals (2006-2018)	From 9,250 to 25,013

**Source:** Central Bureau of General Mobilization and Statistics (2019)

**Table 1.**  
Statistics about  
governmental and  
private hospitals in  
Egypt

All these indices proved that patients had switched from governmental hospitals to private ones because of the poor performance of most of governmental hospitals in Egypt. Moreover, many clever physicians in governmental hospitals travel abroad or at least switched to private hospitals seeking for better salaries or better working environment. Thus, there is a need for studies that aim to discover new managerial drivers to improve the poor performance of the Egyptian governmental hospitals, and this is one of the main practical objectives of this study. Thus, this study aims to creating new innovative strategies to enhance service providers' performance in Egyptian governmental hospitals.

Researchers are beginning to better understand how SI affects work outcomes (Judge *et al.*, 2004) through nourishing its role in enhancing employee achievement within organization (Zautra *et al.*, 2012). Effectiveness of organizations depends on the attributes and interaction among three underlying domains, including the organizational environment, the behaviour of employees and the management of available resources (Kurt *et al.*, 2011). Thus, the collective efficacy concept is an essential addition to the study of organizational environment because people are social beings and rely upon each other to find solutions to problems relevant to improve their work performance (Bandura, 1986). Bandura defined collective efficacy as (1997:477) "a group's shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments". In addition, while self-efficacy has been widely applied to health outcomes in behaviour change science, there is a shortage of collective efficacy studies in the health sector (Ashford *et al.*, 2010; Schwarzer and Renner, 2000).

Despite the extensive history of writing about SI, we seem to have made only limited progress in understanding its implications for work within organizations (Zautra *et al.*, 2012). Moreover, the study of SI dimensions and its impact on service providers' performance had been neglected in the management literature (Rahim, 2014). In addition, in spite of SI and collective self-efficacy being two significant constructs in management literature, and they can affect positively on a service provider's performance, there is no empirical study that investigated the mediating role of collective self-efficacy in the relationship between SI and service provider performance (Rahim *et al.*, 2018). Therefore, the main contribution of this study is to explore the role of collective employees efficacy in strengthening the positive effect of SI on service provider's performance in the Egyptian governmental hospitals.

Unfortunately, after reviewing the abstracts for most relevant articles (Table 2) that integrate SI, collective employee efficacy and service providers' performance, we found absence for studies that link the three concepts in one framework, and there is scarcity in studies that explore the role

Keywords database	SI	CSE	SPP	SI and CSE and SPP	SI and CSE and SPP and E
<i>ProQuest</i>					
Scholarly journals	335,743	2,417	324,982	2,417	199
*Relevant	335,743	2,417	324,982	Non	Non
Science Direct	94,107	29,639	122,689	688	30
*Relevant	94,107	29,639	122,689	Non	Non
<i>Academic search complete – EBSCO</i>					
	22,823	1,444	60,864	Non	Non
*Relevant	22,823	1,444	60,864	Non	Non

**Table 2.**  
Summary of research  
results

**Notes:** Date 27 June 2020; \*We reviewed and analysed the abstracts of the most relevant articles to our study; \*\*SI = social intelligence; CSE = collective self-efficacy; SPP = service provider performance; E = Egypt

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of collective efficacy in strengthen the linkage between SI and service providers' performance or its dimensions.

This integration contributes theoretically and practically to the SI literature, where this study is one of the first studies that explore the mediating role of collective self-efficacy between SI and service provider performance. Thus, this study aims to fill these gaps through examining the interactions among the three concepts in one framework.

### Social intelligence

Despite, [Thorndike and Stein \(1937\)](#) are the first scholars who talked about intelligence in business environment. [Rahim \(2014, p. 46\)](#) was one of the first scholars who handled the overlaps between social and emotional intelligence, as they are the main streams for intelligence in workplace. He asserted that:

Social intelligence is associated more with affect than cognition. SI is expected to create collaborative cultures in organizations, which will generate positive affect leading to innovative behaviour of service providers.

[Dewey \(1909\)](#) was the first psychologist to suggest that the “ultimate moral motives and forces are nothing more or less than social intelligence – the power of observing and comprehending social situations” (p. 43).

SI is defined as a skill to read other's emotions and act in desirable way with respect to others' rules, values and norms in specific social context ([Hedlund and Sternberg, 2000](#)). In the same vein, [Sternberg \(2002\)](#) revealed that intelligence includes three types of intelligence: creative, analytical and practical that are needed to succeed in workplace, and SI represents the practical side of intelligence. Moreover, SI has been defined as the ability to establish relationship with others, intrapersonal knowledge, ability to judge about others' feelings, temperaments and incentives, effective social performance/function, ability to sympathize and being skilled in decoding nonverbal signs ([Ebrahimipour et al., 2013](#)).

Moreover, SI was defined as:

The ability to be aware of relevant social situational contexts; to deal with situational contexts or challenges effectively; to understand others' concerns, feelings and emotional states; and to build and maintain positive relationships and to behave appropriately in social relations ([Rahim, 2014, p. 246](#)).

It is appropriate to build on [Rahim's \(2014\)](#) definition and broaden the concept of SI. [Rahim \(2014\)](#) and [Rahim et al. \(2018\)](#) suggested that SI consisted of four dimensions: situational awareness, situational response, cognitive empathy and social skills. Firstly, the theoretical foundation for situational awareness is derived from [Endsley's](#) “theory of situation awareness” ([Endsley, 2006](#)). Situational awareness reflected the employee's ability to collect information for the diagnosis and formulation of customers' problem(s). It also means to diagnose an issue and its causes and “to decide on the best course of action” ([Schmidt and Tannenbaum, 1960, p. 7](#)). Situational awareness reflects the employee's ability to understand and read situations and realize the social context that affects behaviour of other party and select the more appropriate strategies to face each situation ([Albrecht, 2007](#)).

Secondly, situational response is related a service provider's ability to use this information to make effective decisions to reach favourite results. [Kaukiainen et al. \(1999\)](#) suggest that “the cognitive component of empathy forms an essential part of SI” (p. 83). This component is linked with one's competence or ability to adapt to or deal with any social situations effectively and is an essential part in forming SI (p. 83). Thirdly, cognitive empathy is related to a person's ability to realize the thinking, feelings, intentions, moods and impulses of people inside and outside the organization. Cognitive empathy refers to one's ability to intentionally put individual self into the

mind of another person, to be aware and recognize what that person is thinking or feeling (Decety, 2015).

Finally, social skills are associated with one's ability or competence to speak in a clear and convincing manner that involves knowing what to say, when to say it and how to say it. Social skills also involve building and maintaining positive relationships, to act properly in human relations, to deal with problems without demeaning those who work with him or her and to negotiate and manage conflict with tact and diplomacy. Rahim *et al.* (2018) also added that situational awareness and situational response are classified as primary abilities that are necessary for one's career success, whereas cognitive empathy and social skills are classified as secondary abilities that can help an individual to remain aware of various social situational contexts, thus improve their situational response competence. In this paper, we will adopt the viewpoint of Rahim (2014) and Rahim *et al.* (2018) in operationalizing the SI construct, which asserted that SI has four dimensions, which are: situational awareness, situational response, cognitive empathy and social skills.

### Collective self-efficacy

The concept of collective efficacy is rooted in notions of self-efficacy, but these are theoretically distinct constructs and have different implications for group performance (Feltz and Lirgg, 1998). Whereas self-efficacy refers to the beliefs that individuals hold about themselves, collective efficacy refers to group members' perceptions about the capacities of the group (Tasa and Whyte, 2005). Mainstream arguments are primarily based on Bandura (2001) who suggested that personal and collective efficacy could be better understood, if viewed through the lens of the social cognitive theory (SCT), that is the extent to which mutual personal and collective interaction is congruent with the values and goals of a social system (Fearon *et al.*, 2013). Collective efficacy represents a group's belief about their abilities. According to the social impact theory, beliefs can be altered when a majority of a group has the ability to influence those beliefs (Budworth, 2011). Therefore, it is likely that training a majority of the group's members ensures an increase in collective efficacy.

Collective efficacy, defined as "the group's shared belief in their conjoint capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 2003, p. 708). According to Stajkovic *et al.* (2009), collective efficacy has roughly the same definition as the concept of "group potency", except that, according to Shea and Guzzo (1987), the latter refers to generalized beliefs about the broad capabilities of a team in a variety of contexts and tasks, whereas collective efficacy relates to tasks in a specific setting (Esnard and Roques, 2014). It also refers to a group's belief in its capability to do a task (Gibson and Earley, 2007).

Collective efficacy, thus, refers to a group's shared perception of its ability to successfully perform a task (Tasa and Whyte, 2005). These task-specific performance perceptions in turn can:

Influence the type of future (people) seek to achieve, how they manage their resources, the plans, and strategies they construct, how much effort they put into their group endeavor, their staying power when collective efforts fail to produce quick results or encounter forcible opposition, and their vulnerability to discouragement (Bandura, 1997, p. 418).

In other words, collective efficacy, in short, does for groups what self-efficacy does for individuals.

Shamir (1990, p. 316) defined perceived collective efficacy as "the perceived probability that collective effort will result in collective accomplishments". He suggested that perceived collective efficacy influences the amount of effort an individual will choose to exert towards achievement of group goals. Shamir (1990) notes also that there is little reason for an individual to exert effort if he/she believes that the group lacks the wherewithal to succeed.

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Other scholars agree that more research is needed to understand collective efficacy's antecedents and consequences and its importance to effective group behaviour (Atasoy and Çakıroğlu, 2020; Cohen and Bailey, 1997; Zaccaro *et al.*, 1995; Kellett *et al.*, 2009)

Collective efficacy as a group-level construct assumes that individual perceptions can be aggregated into a higher-level construct expressed as perceptual consensus (Bandura, 2003; Feltz and Lirgg, 1998; Liu, 2019; Zaccaro *et al.*, 1995). In other words, we must be certain that group members share the same perceptions about their team or the place of personal abilities within this team (Esnard and Roques, 2014). Although research on SCT has emphasized individual-level mechanisms (e.g. self-efficacy) and outcomes, the theory is also concerned with how people work together within teams and other social units. For instance, collective efficacy, the group counterpart to self-efficacy, is a key social cognitive element that may help to explain how groups function more or less well together (Lent *et al.*, 2006; Band *et al.*, 2019).

Collective efficacy is defined as the group's shared belief or confidence in its joint capabilities to organize and execute courses of action aimed at achieving given levels of attainment (Lee *et al.*, 2002; Jong and Wetzels, 2008). People's shared belief in their collective power to produce desired results is crucial to solving collective problems such as climate change (Chen, 2015). Collective attainments are the product of a social system that involves not only the shared intentions, knowledge and skills of its members, but also the interactive, coordinated and synergistic dynamics of their transactions. Perceived collective efficacy is an emergent group-level property and not simply the coping that requires people to focus on their collective rather than their individual-level resources (Band *et al.*, 2019; Van Zomeren *et al.*, 2008).

Bandura (1997) has suggested that individuals are most likely to obtain their efficacy beliefs from their performance experiences, which are the most influential efficacy information because they provide the most authentic evidences. In addition, research has also shown that self-efficacy can be enhanced by modelling the successful performance of similar others (Bandura, 1986). Several studies have specifically shown that individuals' self-efficacy contributes significantly to their sense of collective efficacy (Band *et al.*, 2019; Fernandez-Ballesteros *et al.*, 2002; Wang and Lin, 2007).

Collective efficacy is the belief of a team in the abilities of its members to successfully complete tasks (Bandura, 1997; Fan, 2018; Gibson, 1999, 2001), i.e. it is a shared belief in the ability of a group to achieve specific goals (Bandura, 1997). Gibson and Earley (2007) indicated that collective efficacy is a cognitive phenomenon, a belief in a general context. Fan, 2018 (p. 2828) defined collective efficacy as "a collective belief in the success of a specific task, which reflected the expectation of a group to accomplish a specific task". Bandura (1982) described four sources of efficacy perceptions. In decreasing order of importance, they include enactive mastery (past performance), vicarious experience, verbal persuasion and physiological and affective states. Collective efficacy also arises through group interaction and forms as group members acquire, store, manipulate and exchange information about each other and about their task, context, process and prior performance (Atasoy and Çakıroğlu, 2020; Tasa and Whyte, 2005). Efficacy perceptions are, therefore, potentially dynamic and may change as experience changes (Lindsley *et al.*, 1995; Zambo and Zambo, 2008). Perceptions of collective efficacy arise whenever people join together and pool their resources so as to reach a mutual goal or solve a common problem (Lev and Koslowsky, 2009).

It has also been argued that collective efficacy may be a more relevant construct than self-efficacy to measure efficacy beliefs in collectivistic contexts, whereas group goals and shared outcomes are considered of higher importance than a sense of personal identity or self-actualization (Van Straten *et al.*, 2008; Roos *et al.*, 2013; Wang and Lin, 2007). Collective efficacy is structured through psychosocial processes and focuses more on individuals' capacities and outcomes (Band *et al.*, 2019). It is an unfortunate fact, though, that in spite of its potential impact,

the majority of research on self-efficacy and collective efficacy has been done in western, individualistic contexts (Chen *et al.*, 2001; Atasoy and Çakıroğlu, 2020; Kim and Park, 2018; Sui, Lu *et al.*, 2007), whereas there is shortage in studies in eastern, individualistic contexts (Roos *et al.*, 2013).

### Service provider performance

Employees' performance is important for the endurance of companies in a severely competitive environment (Sliter *et al.*, 2010). Service employee performance plays an important role to the success of the service organizations through serving and helping customers (She *et al.*, 2020). It referred to employees' behaviours in serving and helping their customers (Liao and Chuang, 2004). It is a concept describing how a person can use their own potential or real knowledge, skills and abilities to able to reach their own goals or expectations (Altındağ and Köseadağ, 2015).

Service employee performance means the task-related actions expected from an employee and how those actions are achieved (Goodall, 1992; Iqbal and Asrar-ul-Haq, 2018). Service provider performance can be conceptualized as comprising two dimensions: in-role (task) performance and extra-role (contextual) performance (Podsakoff *et al.*, 2000; Restubog *et al.*, 2006; Scotter, 2000). As mentioned by Saks (2006), the focus of engagement is one's formal role performance rather than extra-role and voluntary behaviour. In-role performance refers to behaviours that are described in job descriptions (Cheng *et al.*, 2020; Riketta, 2002). The in-role component refers to the main tasks included in the job description such as being well informed of the delivered service, conducting proper product displays and handling client orders (Suhartanto *et al.*, 2018, p. 131). The role (task) performance is the job-related tasks and activities that are formally specified in the employment contract and represent the employee's formal organizational role (Restubog *et al.*, 2006). Service provider performance (SPP) means using technical skills and knowledge to produce goods or services through the organization's core technical processes to complete specialized tasks (Scotter, 2000). It is a function of the capacity, opportunity and desire to perform a task (Ivancevich *et al.*, 2005). It reflects the outcome of the employees' efforts on their tasks in form of goods and services to customers (Kalkavan and Katrinli, 2014). It also indicates to what extent a service provider succeeds in achieving their tasks and duties in their jobs. In the same line, Pugh (1991) consider SPP as the understanding of a task by an employee.

Service providers will be motivated and perform better when they think that their jobs are meaningful, and they are able to complete their job responsibilities, which in turn affect positively on their customers (Ellinger *et al.*, 2013; Liden *et al.*, 2000; Thomas and Velthouse, 1990). High SPP showed a high-quality task performance (Yang *et al.*, 2008) that increase level of customer service (Davis *et al.*, 2000).

Extra-role of service providers is defined as "discretionary behaviors of contact employees in serving customers that extend beyond formal role requirements" (Bettencourt and Brown, 1997, p. 41). Extra-role behaviour refers to discretionary behaviours that go beyond formal role descriptions (Bettencourt and Brown, 1997; Cheng *et al.*, 2020). Extra-role towards customers is employee discretionary behaviours that indirectly affect the value chain of delivering the product such as providing extra service to the clients, while extra-role behaviour towards the organization refers to employee willingness to promote the organization's welfare (Suhartanto *et al.*, 2018, p. 131). It reflects the willingness to exert efforts to go the extra mile in serving customers (Moliner *et al.*, 2008) and readiness to go beyond their formal role requirements for helping customers. Bateman and Organ (1983) suggested that contextual performance might show a service provider's willingness to help the organization through the voluntary behaviours that are used to enhance the skills and abilities of service providers to perform his/her job in serving customers in an appropriate way (Karatepe, 2013).

The main advantages of contextual performance of service providers appeared in increasing their persistence, effort, thinking compliance and self-discipline, which are expected to rise the effectiveness of service providers in serving customers (Motowildo *et al.*, 1997; Suhartanto *et al.*, 2018; She *et al.*, 2020). It also minimizes the resistance among employees and endorsing a social and psychological context that help in task performance effectively (Scotter, 2000). The voluntary behaviours of service providers improve an organization's ability to face unexpected situations and adapt to any change in the business environment through handling disciplinary problems, overcoming communication problems and providing closer monitoring of employee performance (Motowildo *et al.*, 1997; Restubog *et al.*, 2006). Actually, governmental hospitals are also in need of service providers who would frequently go out the way to help patients. Therefore, this paper will operationalize SPP as a cumulative construct including two main dimensions: in-role (task) and extra-role (voluntary behaviour) performance.

### Developing research model and hypotheses

#### *The relationship between social intelligence and service provider performance*

SI considered to be a critical factor in job performance (Ashkanasy *et al.*, 2000; Druskat and Druskat, 2006). The organizations with higher scores in SI suggested to have higher performance (Cherniss, 2000; Goleman, 1998; Lemisiou, 2013). Employees with high score of SI achieved high level of performance (Boyatzis, 1999; De Stobbeleir *et al.*, 2011; Rahim, 2014; Rahim *et al.*, 2018; Spencer and Spencer, 1993).

SI may be a better predictor of work performance (Judge *et al.*, 2004). SI gives employees great experience that result in greater capacity to put novel information into useful context. Several researchers accept that SI is considered as a trainable competence (Boyatzis, 2008) that can lead to increased creativity and enhanced employee performance. Moreover, organizations with high scores of SIs support creativity and collaboration that affect positively on business performance (Zautra *et al.*, 2012). Many studies have linked SI to productivity (Zautra *et al.*, 2012). Pavlovich and Krahuke (2012) see SI to be at the core of successful organizations. Amabile (2011) focuses on building a creative workplace through attention to the quality of everyday interactions that generate a daily work-life that nourishes creative performance.

#### *The relationship between CSE and service provider performance*

Collective efficacy affects positively on individual performance (Hsieh *et al.*, 2012). Meta-analytic findings support a relationship between collective efficacy and performance (Budworth, 2011; Gully *et al.*, 2002; Stajkovic *et al.*, 2009). Collective efficacy is also now commonly measured as the collective estimate of a group's ability to perform a given task, or in relation to a group's general capability to perform (Gibson, 1999; Fearon *et al.*, 2013; Whiteoak *et al.*, 2004). Stajkovic and Lee (2001) recently reported a meta-analysis of collective efficacy performance relations, and the results approved that there is a positive correlation between collective efficacy and performance (Lent *et al.*, 2006). Finding that collective efficacy relates more highly to performance at the team than at the individual level of analysis (Gully *et al.*, 2002), collective efficacy has started capturing attention of researchers and practitioners alike, as the research in different organizations has tied the collective efficacy to a variety of organizational outcomes (Kurt *et al.*, 2011).

There is ample evidence for the positive relationship between collective efficacy and performance at the team level (Burr and Corderly, 2001; Campion *et al.*, 1993; Gibson, 1999; Jong and Wetzels, 2008; Pearce *et al.*, 2002). The self-efficacy of individual group members is likely to have little bearing on group performance, except perhaps for those tasks that involve low levels

of interdependence (Gully *et al.*, 2002). Collective efficacy is thus best measured as a function of individual judgements of group capacity to attain specific levels of performance (Gibson *et al.*, 2000; Tasa and Whyte, 2005). Collective cognitive processes have been proven to be positively correlated to group functioning, especially the level of effort, persistence and achievement (Bandura, 1997; Cohen *et al.*, 2008; Roos *et al.*, 2013). The existing literature on collective efficacy converges on the conclusion that groups that are confident in their ability to succeed are more effective than those who doubt themselves (Bandura, 1997, 2000; Goncalo *et al.*, 2010; Gully *et al.*, 2002).

#### *The relationship between social intelligence and collective self-efficacy*

Writers (Mayer *et al.*, 2008; Van Dyne *et al.*, 2009) reported that SI is one of the three dimensions of intelligence. Udayara *et al.* (2020) investigate the mediating role of self-efficacy between intelligence and performance, and the result of this relationship was not significant, and the research model was not fit. Many scholars revealed that there is a link between SI and both of the social and cognitive dimensions of self-efficacy (Grieve *et al.*, 2014; Kirk *et al.*, 2008; Petrides *et al.*, 2007). Self-efficacy was positively associated with empathy attitudes (Michael *et al.*, 2019). Several scholars asserted that cognitive empathy affects positively on collective self-efficacy (Bacq and Alt, 2018). Individuals with high levels of cognitive empathic concern are thus “likely to have previously internalized norms and values related to helping and the importance of others’ needs” (Eisenberg *et al.*, 1989, p. 63).

On the other hand, social skills are a series of behaviours required to interact with others effectively and satisfactorily, which affect positively on performance in future (Kinnaman and Bellack, 2012). Moreover, social skills had a direct and significant effect on group self-efficacy (Kumar and Lal, 2006; Salavera *et al.*, 2017). Several scholars also asserted the positive relationship between collective self-efficacy and situational judgement (Iskandar and Sanusi, 2011; Ji *et al.*, 2017). Constructed on the previous discussion between the three research constructs: SI, collective self-efficacy and SPP in our suggested research model, the following hypotheses are proposed:

- H1. SI affects directly on collective self-efficacy.
- H2. SI affects directly on SPP.
- H3. Collective self-efficacy affects directly on SPP.

Based on the vital role collective efficacy plays in connecting people to their work environment, we expect different dimensions of SI to have different effects on service employee performance because of how they influence collective efficacy (Chen *et al.*, 2019). So, regarding to the mediating role of collective self-efficacy between SI and SPP and its dimensions (in- and extra-role), we can suggest the following hypotheses:

- H4. SI affects indirectly on SPP via collective self-efficacy.
- H4a. SI affects indirectly on in-role (task) SPP via collective self-efficacy (CSE).
- H4b. SI affects indirectly on extra-role (contextual) SPP via CSE.

### **Research methodology**

#### *Research instrument development – measures*

The scales’ development is based on the survey of extant theoretical items and a review of the literature. This survey included three constructs with their respective items: SI, CSE and SVP,

which are modified for the research context ([Appendix](#)). Following Schaffer and Riordan's (2003) translation and back-translation procedure, the Arabian version from the original English scales was used for the Egyptian sample. After necessary adjustments, the final version of the instrument was administered to 400 physicians in governmental hospitals in Egypt.

### *Data collection*

The data for this study were obtained from physicians in governmental hospitals in four governorates: Gharbia, Dakahlia, Kalyoubia and Cairo. We used the drop-and-collect method to deliver and collect questionnaire to assure high response rate ([Ibeh and Brock, 2004](#)). A total of 220 physicians from governmental hospitals responded to our survey, with a usable response rate of 55.5%. Of the respondents ( $N = 220$ ), 20.5% ( $N = 45$ ) were female and 79.5% ( $N = 175$ ) were male. In terms of geographical distribution, the respondents were as follows: 35.5% ( $N = 78$ ) from Gharbia; 20.7% ( $N = 46$ ) from Dakahlia; 15.8% ( $N = 35$ ) from Kalyoubia and 28% from Cairo ( $N = 61$ ).

Furthermore, we conducted univariate analysis (e.g. independent samples *t*-test, analysis of one variance: ANOVA) and multivariate analysis (e.g. multivariate analysis of one variance: MANOVA) to examine the non-response bias and responding sample representativeness. The results of these tests did not statistically produce significant differences at 95% confidence level for any attitudinal items in terms of categorical items such as early and late respondents, gender and geographical distribution. To determine the impact of common method variance, we computed Harman's one-factor test as suggested by [Podsakoff and Organ \(1986\)](#). No single factor accounted for the majority of the covariance, indicating that common method variance is not problematic.

## **Research results**

### *Confirmatory factor analysis*

Confirmatory factor analysis (CFA) was performed to assess the overall model fit with the data and measure the unidimensionality of research constructs. To assess the goodness of the CFA model fit, numerous scholars recommend that ( $\chi^2/df$ ) should be less than 3, all fit indices such as: GFI, CFI and RFI should exceed 0.9, whereas SRMR should be  $\leq 0.05$  ([Anderson and Gerbing, 1988](#)).

A joint CFA, with all of the variables was conducted using AMOSv20; the result of our CFA model in [Figure 1](#) and [Table 3](#) illustrated the overall fit statistics indicate a satisfactory model fit as all obtained fit statistics met the recommended cut-off values. Secondly, average variances extracted (AVEs) for all research constructs are above the minimum threshold of 0.5. Accordingly, our CFA results demonstrate signs of strong convergent validity of all research constructs, as recommended by [Jöreskog and Sörbom \(1989\)](#).

Moreover, [Table 4](#) highlights composite Cronbach's  $\alpha$ , correlation matrix and AVE for research variables, confirming the discriminant validity ([Fornell and Larcker, 1981](#); [Eisingerich and Bell, 2007](#)).

### *Structural equation modelling (SEM) results*

Structural equation modelling (SEM) is assessed through the following two criteria: the overall model goodness ( $\chi^2/df$ , GFI, CFI, RFI and SRMR) and the statistical significance for the models' hypothesised parameters. The fit measures for the structural model showed satisfactory values as shown in [Table 5](#) and [Figure 2](#). The relationships in our proposed model encompassing the six hypotheses investigate the interactions among SI and SPP via CSE. Our results show that all paths are significant with  $p < 0.05$ . Our findings confirm that SI has significant positive direct impact on CSE which support  $H1$  ( $\beta = +0.37$  with  $p < 0.001$ ). In line with the earlier findings of [Druskat and Druskat \(2006\)](#) and [Lemisiou \(2013\)](#), our study illustrates a link between SI and SPP

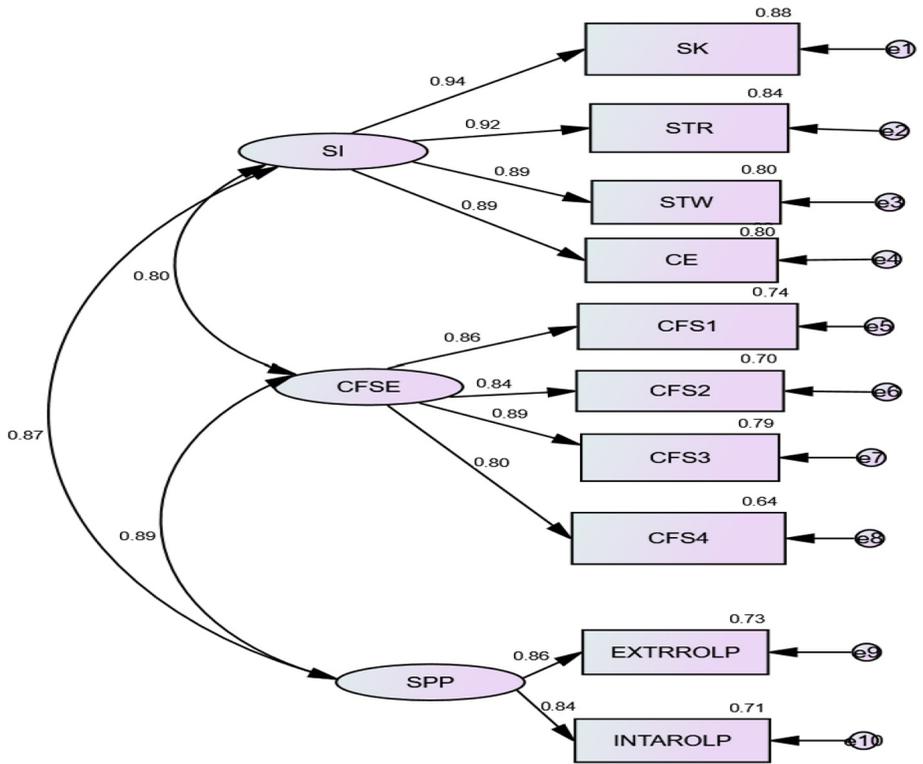


Figure 1.  
CFA model

Construct	Factor loadings	AVEs	Construct reliability
<i>SI</i>		0.83	0.95
CE	0.90		
STW	0.89		
STR	0.92		
SK	0.94		
<i>CFSE</i>		0.72	0.91
CFS1	0.86		
CFS2	0.84		
CFS3	0.89		
CFS4	0.80		
<i>SPP</i>		0.72	0.84
Extra-role	0.86		
Intra-role	0.84		

Table 3.  
CFA results

Notes: Goodness-of-fit indices:  $\chi^2/df = 2.55$ ,  $GFI = 0.94$ ,  $CFI = 0.97$ ,  $RFI = 0.95$ ,  $SRMR = 0.025$ . Cut-off values for: *factor loading*  $\geq 0.5$ , *AVE*  $\geq 0.5$ , *construct reliability*  $\geq 0.7$

*H2*, that is similarly positive and significant ( $\beta = +0.44$  with  $p < 0.001$ ). Our research results also prove that CSE has a significant and positive impact on SPP ( $\beta = +0.54$  with  $p < 0.001$ ) that approve *H3*, as recommended by Budworth (2011), Gully *et al.* (2002) and Stajkovic *et al.* (2009).

With respect to the indirect effects among the elements of our research model as illustrated in Table 5, our results indicate that the indirect effects of our model augment our understanding of the role of CSE in strengthening the impact of SI on SPP and its dimensions. These indirect linkages among research constructs are significant relationships (Kline, 1998). Our findings show that SI has an indirect effect on SPP through CSE as a mediating variable ( $\beta$  for indirect impact via CSE = +0.33 while  $\beta$  for direct impact = +0.44), which supports *H4*. Our results show that this indirect effect increases the standardised coefficient between the two variables from 0.44-0.77.

Regarding to the indirect relationship between SI and SPP dimensions: in-role (task) and extra-role (contextual) performance, via CSE, our results demonstrated that SI has an indirect effect on SPP via CSE ( $\beta$  4a for indirect impact via CSE = +0.33), which supports *H4*. Moreover, SI significantly and indirectly affects task dimension of SPP via CSE ( $\beta$  4a for indirect impact via CSE = +0.49), which confirms *H4a*. Finally, SI indirectly affects positively contextual dimension of SPP via CSE ( $\beta$  4b for indirect impact via CSE = +0.55), which supports *H4b*.

## Discussion and conclusion

SPP has always been one of the main concerns of organizations. From this point of view, organizations that manage this issue gain competitive advantage compared with the competitors. Although much has been made about the importance of SI in enhancing service employee performance, there is little empirical evidence about the role of CSE in

Variables	$\alpha$	SI	CSE	SPP
SI	0.88	<i>0.91</i>		
CSE	0.89	0.80**	0.85	
SPP	0.92	0.82**	0.84**	0.85

**Notes:** \*Correlation is significant at the 0.01 level (two-tailed),  $\alpha$  = composite Cronbach's alpha, SI = social intelligence, CSE = collective self-efficacy, SPP = Service provider performance. Diagonal elements (in italic) are the square root of the AVE. Off-diagonal elements are the correlations among constructs. For discriminant validity, diagonal elements should be larger than off-diagonal elements

**Table 4.** Discriminant validity assessment for research variables

Criterion variable	Predictor variables	Direct effect	Indirect effect <sup>a</sup>	Total effect <sup>b</sup>
SI	CSE ( <i>H1</i> )	0.37	–	0.37
SI	SPP ( <i>H2</i> )	0.44	0.33	0.77
CSE	SPP ( <i>H3</i> )	0.54	–	0.54
SI	SPP via CSE ( <i>H4</i> )	–	0.33	0.33
	<i>In role (task) performance via CSE (H4a)</i>	–	0.29	0.29
	<i>Extra-role (contextual) performance via CSE (H4b)</i>	–	0.35	0.35

Goodness-of-fit indices:  $\chi^2/df = 2.75$ ,  $GFI = 0.93$ ,  $CFI = 0.98$ ,  $RFI = 0.95$ ,  $SRMR = 0.026$

**Notes:** <sup>a</sup>Indirect effects were computed only for cases in which the relevant structural parameters were statistically significant (Akamavi *et al.*, 2015). <sup>b</sup> Insignificant direct effects were not included in the computation of total effect (Challagalla and Shervani, 1996; Mohamed, 2020)

**Table 5.** Direct, indirect and total effects among research variables

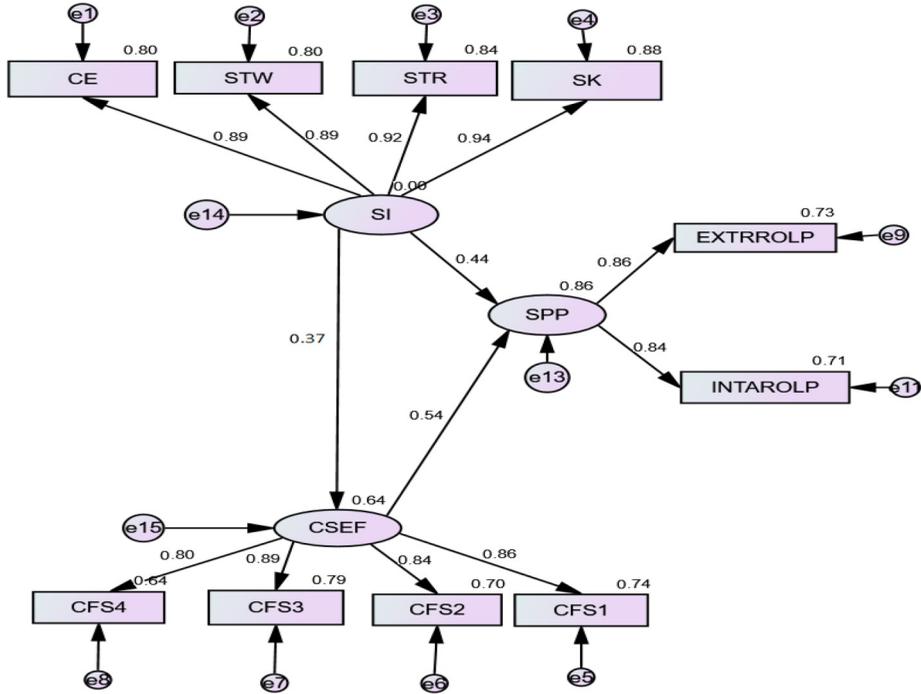


Figure 2.  
The research model

strengthening this relationship. In this study, we investigated the effect of SI on the service providers' performance and the mediator role of CSE.

Our theoretical model is mainly based on the social exchange theory and SCT. The present study contributes to our understanding of the microfoundational linkages between SI and SPP, as supported by [De Stobbeir et al. \(2011\)](#), [Rahim \(2014\)](#) and [Rahim et al. \(2018\)](#). Our findings support also the positive role of SI competencies for service providers in enhancing their creativity and collaboration within organizations, as proposed by [Boyatzis \(2008\)](#) and [Zautra et al. \(2012\)](#). Our findings also support the positive association between SI and CSE and explain why people with SI competences generates a daily work-life that nourishes creative performance, as recommended by [Amabiie \(2011\)](#), [Grieve et al. \(2014\)](#), [Kirk et al. \(2008\)](#) and [Petrides et al. \(2007\)](#). So, our findings confirm that social persuasion and affective states as the main sources of collective efficacy for employees, as recommended by [Atasoy and Çakıroğlu \(2020, p. 476\)](#) and [Liu \(2019\)](#), are shaped by social skills and cognitive empathy competencies for employees. In the same vein, [Goddard et al. \(2004\)](#) asserted that the negative situations can decrease the collective efficacy level of group members. So, employees with high situational awareness and situational respond competencies are able to deal promptly with the emotional state for other colleagues, which in turn enhance the positive outcome of collective efficacy. Our findings also support that collective efficacy has been found to be one of the important influencing factors in enhancing service employee performance and creating an innovative work environment in the health sector, as recommended by [Kim and Park \(2018\)](#). This study is one of the first studies that examined the relationship between SI and CSE, and we expected that our findings about this link will encourage many other scholars to go in deep discussion to the consequences of this relationship on many other aspects within organizations. Our findings also support the positive association

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between CSE and SPP. This result agrees with Budworth (2011), Gully *et al.* (2002) and Stajkovic *et al.*'s (2009) earlier findings.

Our results also contribute to our understanding of the associations between SI and CSE, as they relate to SPP. In other words, service providers who have high score of SI and CSE achieve high performance than others. Regarding the indirect effects among SI and SPP dimensions in Table 5, our results demonstrate CSE as a mediating variable strengthening the association between SI and SPP, which increases the total effect between SI and SPP via CSE from 0.44 to 0.77. This increase in total effect reflects the significant role of CSE in strengthening the association between SI and SPP. In the same line, our findings also confirm the indirect effect of SI on SPP dimensions: extra- and intra-role performance through fostering CSE in governmental hospitals. In addition, our results confirmed that the indirect effect of SI via CSE on extra-role dimension of SPP is greater than the effects on intra-role dimension of SPP (coefficient values for the two variables are 0.35 and 0.29, respectively).

### Theoretical and managerial implications

Notwithstanding the extensive history of writing about SI, we seem to have made only limited progress in understanding this important concept and its implications for organizations performance. This study agrees with these researchers on the need for construct validation as well as the need for experimental designs that demonstrate the utility of SI in generating specific outcomes at different levels of analysis, whether individual, team, community or organization (Zautra *et al.*, 2012, p. 29). This study agrees with findings of Rahim (2014) that consider SI as a construct that encompasses of four dimensions: situational awareness, situational response, social skills and cognitive empathy. Not surprisingly, the operationalization of SI suffers the same weakness as its measurement because most of SI studies examine the unidimensionality of this construct rather investigate its multidimensionality (Zautra *et al.*, 2012). Based on the SCT that acknowledges that both individual and environmental factors are crucial determinants of behaviour (Band *et al.*, 2019; Bandura, 1998), our results support where SI dimensions and collective efficacy for employees are considered as the main causes of employee performance. That means integrating SI with SCT can enrich the theory.

This research contributes to the marketing literature, particularly to the recent studies on SI in the service context in different ways. Finally, the current work considers the impact of the integration between SI and CSE on SPP that sheds new light on bringing new drivers for developing extra-role and intra-role dimensions of SPP in service literature.

On the other side, our study has several implications for management. Firstly, as our model proposes that high service providers' performance dimensions: extra and intra-role performance are outcomes of high levels of SI. Moreover, the integration between SI and CSE enhances the performance of physicians in the Egyptian governmental hospitals. In general, integrating SI with CSE for service providers in governmental hospitals could provide a strategic competitive advantage for these hospitals, particularly when targeted on customer service representatives who engage in voluntarily activities. Secondly, it is clear that cognitive empathy, social skills, situational awareness and situational response are important for the success of SPP. Those SI factors have a direct and indirect influence on the SPP.

Thirdly, the results of the study confirmed that physicians need to acquire the four components of SI to improve their performance in handballing different situations in governmental hospitals. This will hopefully lead to constructive resolutions of many conflicts between physicians and their teams within hospitals and also with patients. CSE may be needed to improve service providers' SI competencies that would involve going extra mile to enhance SPP and hospitals' performance as well.

Fourthly, the physicians in Egyptian governmental hospitals should also be encouraged to enhance their SI abilities through continuous self-learning and belief in the importance of extra-role (voluntarily) work. In the same vein, the management of governmental hospitals should provide positive reinforcements for learning and improving a service provider's SI competencies needed for enhancing the performance of these hospitals. Finally, the findings from this research show that governmental hospitals are exploring new and exciting SI competences that go beyond the traditional strategies to improve a doctor's performance by adopting new concepts in marketing such as: social intelligence and CSE.

### Future research and study limitations

The findings of this study should be viewed within the context of its limitations. The first limitation of our model is the absence of other individual and organizational factors that could affect demonstrated levels of SI such as organization culture, size and leadership style. *Second*, this study collected data based on cross-sectional design, so further studies could test our theoretical model by using longitudinal studies' data, which give our results more accuracy of results and support generalizing the results. Thus, further studies could test our theoretical model by using longitudinal research design. *Third*, the sample of this study consisted of respondents from the health service sector; therefore, further studies could test our theoretical model in different sectors. Data were collected from a convenience sample and might limit generalizability of the results. *Fourth*, there is a need for scale validation for SI dimensions to explore if it is a unidimensional or multidimensional construct. *Finally*, conceptual and empirical work should attempt to integrate social intelligence dimensions as a multidimensional construct with employee behaviours such as job performance, employee performance, employee engagement and employee citizenship in one framework and investigate the relationships between these elements.

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## Appendix. Instrument operationalization for research constructs

### Construct Items

#### 1. Social intelligence dimensions (Rahim, 2014; Rankovsky et al., 2019)

##### 1.1 Situational awareness (STW)

- **STW1:** I often feel that it is easy to understand others' choices.
- **STW2:** People rarely surprise me with the things they do.
- **STW3:** I find people predictable.

##### 1.2 Situational response (STR)

- **STR1:** I use others for my own benefit pleases me.
- **STR2:** I can use my behaviour to persuade people to do for me what I want.
- **STR3:** If I want, I know how to use others for my own benefit.
- **STR4:** I know how to persuade others to take my side.

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1.3 Social skills (SK)

- **SK1:** I deal with problems without demeaning those who work with him or her.
- **SK2:** I negotiate and manage conflict with tact and diplomacy with others.
- **SK3:** I interact appropriately with a variety of people.
- **SK4:** I am good at becoming acquainted with people and being involved in new social circles.

1.4 Cognitive Empathy (CE)

- **CE1:** I know what an individual is thinking.
- **CE2:** I understand the moods of people.
- **CE3:** I understand people's feelings transmitted through nonverbal messages.
- **CE4:** I know when people disguise their true feelings.

2. Collective self-efficacy (Gully *et al.*, 2002)

- **CFS1:** I assist members who are having difficulty with certain tasks.
- **CFS2:** I communicate well with one another despite differences in cultural background.
- **CFS3:** I adapt to changes in group tasks or goals.
- **CFS4:** I work well together even in challenging situations.

3. Service providers' performance (Babin and Boles, 1996; Ellinger *et al.*, 2013; Scotter, 2000)

3.1 Extra-role (task)

- **EXT1:** I persist in overcoming obstacles to complete a task.
- **EXT2:** I voluntarily do more than the job requires to help others or contribute to unit effectiveness.
- **EXT3:** I support and encourage a coworker with a problem.

3.2 Intra-role (contextual)

- **INT1:** I manage my work time effectively.
- **INT21:** I know what my customers expect.
- **INT3:** I am good at my job.

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