Political Skill Improves the Effectiveness of Emotional Intelligence: Bayesian Network Analysis in the Construction Industry

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Abstract: Political conduct is a normal occurrence in every organization in today's business environment. The political environment in the construction industry is particularly problematic because of the engagement of many stakeholders with distinct expectations and agendas, along with the limited control of project personnel over influential stakeholders. Today, political skill and emotional intelligence are considered to be crucial skills in managing complex interpersonal relationships at work. Therefore, this research investigated the relationship between the two in the context of the construction industry. Data were collected from 273 project personnel working in construction projects in Australia and a Bayesian network was used to analyze the data. This research found that political skill was the precursor of emotional intelligence. Therefore, in the construction industry context, project personnel should exercise their political skill to improve the effectiveness of emotional intelligence when managing stakeholder relationships. Construction organizations could use this finding in their human resource management process when recruiting or promoting individuals to higher managerial levels. **DOI: 10.1061/(ASCE)AE.1943-5568.0000417**.

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Introduction

Changes to contemporary globalized society, including social, economic, and technological changes, have created an environment in which successful organizations are compelled to adopt new ways of doing business. Today's organizations are becoming more dynamic, flexible, and social (Robbins et al. 2015). People spend less time on individual isolated tasks and, instead, cooperative and coordinated interactions between personnel from different organizational levels are commonly required to achieve established goals. Ferris et al. (2000; 2005a) asserted that social skills to work with and influence others are decisive qualities of effective personnel. Consequently, politics has become a significant and inevitable dimension of successful organizations and personal careers (Vigoda 2003).

Despite its relatively traditional workplace norm, the construction project environment is highly political. Project personnel are required to work with and manage the expectations and agendas of diverse stakeholders, such as government officials, contractors, designers, and clients, who influence the success of a project. The construction industry is also moving toward an integrated project delivery approach, where project stakeholders with differing agendas are expected to work in close partnerships early in the project life cycle. Managing relationships, trust, and win–win mentality are considered to be success factors of integrated project delivery (Kent and Becerik-Gerber 2010). All this requires project personnel to use their political skills to ensure overall satisfaction (Kerzner 2009; Rosenau and Githens 2005). Peled (2000) argued that political skill is a secret weapon for project managers to manipulate their interpersonal relationships with various stakeholders to achieve project success. Research has also validated the significance of political skill across different contexts (Ahearn et al. 2004; Ferris et al. 2000, 2005a; Holden 1998; Peled 2000; Pinto 2000; Sunindijo and Zou 2012b; Vigoda 2003).

Other studies have also claimed that emotional intelligence is an important quality at work. Côté and Miners (2006) collected data from a large public university and found that emotional intelligence has a compensatory feature where it becomes a stronger predictor of job performance as cognitive intelligence decreases. Gardner and Stough (2002) stated that emotional intelligence among high-level managers is strongly correlated with all components of transformational leadership, a leadership style that has been invariably successful in promoting greater performance in organizations. Bradberry and Greaves (2009) ventured further by stating that emotional intelligence is the foundation for many critical skills, including social skills, communication, and decision making. They also suggested that "emotional intelligence is the strongest predictor of performance in the workplace and the key driver of leadership and personal excellence" (p. 21). Sunindijo (2012) found that emotional intelligence facilitates successful relationship management, which contributes to the achievement of project objectives.

The relationship between political skill and emotional intelligence has not been adequately discussed, especially in a politically charged, conflict-laden environment such as the construction industry. By understanding the relationship between the two, construction organizations could use this knowledge to recruit or promote the right candidates to higher management levels. As such, this present research aimed to establish and solidify the relationship between these two seemingly indispensable qualities, particularly in the context of the construction industry. Based on the existing premise,

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emotional intelligence, as the more inward skill of the two, should serve as the foundation of political skill (Sunindijo and Zou 2012a, 2013). Therefore, it was hypothesized that one of the manifestations of emotionally intelligent people would be their ability to expertly tread on the political webs of today's work environment. This research used Bayesian network analysis to test the hypothesis and determine the relationship between the two concepts. This technique is useful for facilitating learning about causal relationships between variables, has strong predictive accuracy, and can be combined with decision analytic tools to aid management. As such, it has been widely used in practice (Uusitalo 2007).

Literature Review

Political Skill

Political skill is defined as "the ability to understand others at work and to use that knowledge to influence others to act in ways that enhance one's personal or organizational objectives" (Ferris et al. 2005a, p. 7). Politically skilled managers are those who, while expecting resistance to achieving established goals and deadlines, repeatedly bring into play carefully selected initiatives to eventually achieve the results they desire (Hayes 1984). They strive to optimize the array of experiences, abilities, and perceptions of their work colleagues (Baddeley and James 1987).

Politics is stigmatized as distasteful and damaging to organizations. However, when used effectively, political skill can greatly contribute to career development. This is because organizations are political in nature, and the effective development of activities depends on the everyday management of competing interests, limited resources, coalition building, and the exercise of power and influence (Ferris et al. 2000). Politics is inherent in management skills, rather than only being exercised in deteriorating managerial circumstances (Baddeley and James 1987). Despite the existing contempt about the exercise of politics, it is one of the strongest driving forces in organizations, for better or worse (Ferris et al. 2000; Pinto 2000).

Blickle et al. (2009) characterized the enterprising job environment as ambiguous, and asserted that it is where politically skilled people are more likely to thrive. This is because being enterprising requires performing multiple roles, engaging with a wide range of people in different contexts, and the extensive use of verbal facility. The construction project environment can be accurately described in the same way. It is known to be an ambiguous work environment because of the great variety of project components that have to be managed. There are many external, uncontrolled variables that generate potential uncertainties and influence the achievement of project objectives. In addition, there is a diversity of internal and external stakeholders involved in construction projects, requiring project personnel to build relationships with people who have different agendas and backgrounds (Zou and Sunindijo 2015).

Political skill has four dimensions, namely, social astuteness, interpersonal influence, networking ability, and apparent sincerity (Ferris et al. 2005a, b, 2007). First, social astuteness refers to someone's level of receptivity to diverse social circumstances. Socially astute people are characterized as self-aware and, at the same time, sensitive to others and their behavior. Such qualities allow these people to more accurately understand social interactions and to skillfully deal with different social situations.

Second, interpersonal influence is someone's ability to influence others through discreet and persuasive personal qualities. Interpersonal influence involves the flexibility to adapt to different situations to induce the intended response from others. This is different from interpersonal skill, although there are some overlapping aspects between the two. Interpersonal skill is the ability to build relationships and get along with others, while interpersonal influence is a tool to manipulate interpersonal relationships to ensure the ultimate success of a project or organization (Peled 2000). People with high interpersonal influence not only appear pleasant and productive to others, but they have the ability to control their environments (Ferris et al. 2005a).

Third, networking ability means an aptitude for easily developing and using social networks. People with high networking ability can easily develop a rapport with others and build significant alliances, which is essential to organizational and personal success. They are often good negotiators and confident in managing conflicts. Networking ability is a highly valuable, essential quality in achieving personal and organizational goals.

Finally, apparent sincerity refers to inspiring the perception of possessing high levels of integrity, authenticity, and genuineness. This contributes to someone's ability to successfully influence others because being perceived as honest and forthright, rather than manipulative and coercive, helps to build trust and confidence.

Emotional Intelligence

Emotional intelligence is defined as "the capacity for recognizing our own feelings and those of others, for motivating ourselves, and for managing emotions well in ourselves and in our relationships" (Goleman 1998, p. 375). Emotional intelligence is increasingly being recognized as an important factor in the workplace. In fact, emotional intelligence is a stronger predictor of success in a job than intelligence quotient (IQ), which is a factor that determines someone's profession or career (Goleman 2001b). There are other studies that have demonstrated the importance of emotional intelligence. For example, Carmeli (2003) found that emotionally intelligent senior managers employed in public-sector organizations are more successful in instilling positive work attitudes and behaviors in their staff, and, consequently, generating better outcomes. Another study found that emotional intelligence in construction project managers and engineers manifests in delegating, open communication, and proactive behavior, which in turn positively influence project outcomes (Sunindijo et al. 2007). In addition, project managers and project engineers with high emotional intelligence are more open to using a collaborating conflict resolution style, which is important in generating win–win solutions (Sunindijo and Hadikusumo 2014).

There are four dimensions of emotional intelligence: self-awareness, self-management, social awareness, and relationship management (Bradberry and Greaves 2001–2010; Goleman 2001a). First, self-awareness means being attuned to one's feelings and using them in decision making. People who are self-aware are conscious of their strengths and weaknesses, open to feedback, and willing to learn from past experiences. Second, self-management is the ability to regulate distressing emotions, such as anxiety and anger, and to restrict impulsive behavior. Self-management helps people promote positive attitudes and to motivate one's self and others by sustaining the positive feelings from achieving goals; it also inhibits negative feelings. Third, social awareness is the ability of individuals to recognize other people's feelings, whether implicit in nonverbal expressions or made explicit. This skill helps to improve job performance, particularly when the focus is on interactions with people. Lastly, relationship management is the ability to be aware of and influence the emotions of others (Goleman 2001a), which helps to successfully manage social interactions (Bradberry and Greaves 2001–2010).

Hypothesis

Emotional intelligence is considered to be the foundation of many critical skills, particularly those related to managing people

(Sunindijo and Zou 2012a, 2013). Due to the politically charged nature of construction projects, project personnel need to embrace this reality by politicking to achieve project success. Based on this theory, the present research argued that emotional intelligence is a prerequisite or predictor of political skill. As such, the hypothesis was that emotional intelligence would positively influence the level of political skill in the construction project environment.

Research Methods

Quantitative research methodology rooted in the positivist philosophical assumption was adopted because the research aimed to test a theory and identify general relationships among measured variables. A questionnaire survey was the method applied to collect the large amount of quantitative data required for testing the hypothesis. The questionnaire consisted of two sections. The first section was the 28-item Emotional Intelligence Appraisal (EIA) that uses a six-point Likert-scale format ranging from "never" to "always." The EIA is a valid tool, which has been tested across different industries and jobs positions to assess the four dimensions of emotional intelligence (Bradberry and Greaves 2001–2010). The second section was the Political Skill Inventory, which consists of 18 items and uses a seven-point Likert-scale response format ranging from "strongly disagree" to "strongly agree" (Ferris et al. 2005a). It measures the four dimensions of political skill, and its validity and reliability have been thoroughly tested by different approaches, including criterion-related, convergent, and discriminant validities (Ferris et al. 2005b).

Based on the research objectives, targeted participants were project personnel working in large construction organizations (annual turnover >$500 m) in Australia. Large organizations were relevant to the research because of their involvement in major projects, which often include other influential stakeholders, making the conduct of politics essential. Project personnel here refers to managerial-level staff, such as construction managers, project managers, site managers, engineers, and supervisors, who are exposed to such project politics. Data were collected using a web-based survey and all project personnel of the participating organizations were invited to participate.

Data Analysis

Data mining techniques have facilitated automatic retrieval of valuable information from sources of data. In construction management literature a wide range of machine leaning techniques have been used to solve practical problems such as constructability analysis (Skibniewski et al. 1997), supply chain management (Maghrebi et al. 2016b), activity recognition (Akhavian and Behzadan 2015), risk assessment (Jiang et al. 2018), productivity estimation (Maghrebi et al. 2016a), and cost estimation (Adeli and Wu 1998).

In this studywe utilized a Bayesian network (BN), which is a supervised scheme to determine relationships among the available database.

Bayesian Network

Identifying the stochastic relations between a set of parameters is traditionally investigated by testing a hypothesis in a manually built naïve Bayes (NB), such as in research by Jingzhu and Ng (2013) and Yafei et al. (2014). Although this approach is valid, it needs expert judgment and is very difficult to prove that the proposed hypothesis represents the optimum relation among the parameters. To overcome this issue in the current research, NB was implemented and machine learning techniques were also used to determine the optimum correlations. From a machine learning point of view, NB can be categorized as a probabilistic learning scheme (Friedman et al. 1997). Theoretically, NB relies on Bayes theorem and naïve independence assumptions. If $A = \{a_1, a_2, \ldots, a_i\}$ the probability (likelihood) of A is conditioned on class A,

$$P(A|C) = P(a_1|C) \times P(a_2|C) \times \cdots \times P(a_i|C) = \prod_{j=1}^{i} P(a_j|C)$$

According to Bayes theorem, posterior probability is determined by using the following equation:

$$P(C|A) = \frac{P(A|C)P(C)}{P(A)}$$

where $P(C)$ = prior probability of class C; and $P(A)$ = predictor of prior probability. Also, if there are different classes $\{c_1, c_1, \ldots, c_1\}$, then the class of new instances is obtained as follows:

$$\underset{c_k \in C}{\text{argmax}} \quad P(c_k|a_1, a_2, \ldots, a_i) = P(C|A)$$

$$= \underset{c_k \in C}{\text{argmax}} \frac{P(a_1, a_2, \ldots, a_i|c_k)P(c_k)}{(a_1, a_2, \ldots, a_i)}$$

then,

$$\underset{c_k \in C}{\text{argmax}} \frac{P(c_k)\prod_{j=1}^{i} P(a_j|c_k)}{\prod_{j=1}^{i} P(a_j)}$$

According to maximum a posteriori hypothesis (Stephenson 2000),

$$\underset{c \in C}{\text{argmax}} \; P(C|A) = \underset{c \in C}{\text{argmax}} \; \frac{P(A|C)P(C)}{P(A)}$$

$$\underset{c \in C}{\text{argmax}} \; P(C|A) = \underset{c \in C}{\text{argmax}} \; P(A|C)P(C)$$

therefore,

$$c_{\text{NB}} = \underset{c_k \in C}{\text{argmax}} \frac{P(c_k)\prod_{j=1}^{i} P(a_j|c_k)}{\prod_{j=1}^{i} P(a_j)}$$

$$c_{\text{NB}} = \underset{c_k \in C}{\text{argmax}} \; P(c_k)\prod_{j=1}^{i} P(a_j|c_k)$$

where c_{NB} = the class assigned by NB to a test instance. Moreover, NB is not an updatable learning scheme, which means it first constructs a model that fits the provided training instances and then uses the built model to classify the new unseen instances. Although the NB method is relatively simple, in some contexts it obtains reasonable results (Weber et al. 2012). BN is very similar to NB but it is mainly used to demonstrate conditional dependencies. A BN outcome is a probabilistic directed acyclic graph (DAG) where nodes are parameters and an edge represents a conditional dependency between two parameters (Stephenson 2000). If we have n attributes $\{a_1, a_2, \ldots, a_i\}$, and then the DAG is built using conditional independency,

$$p(X) = \prod_{i=1}^{n} P(a_i|a_1, a_2, \ldots, a_n)$$

where for each node we have

$$P(a_i|a_1, a_2, \ldots, a_{n-1})$$

It has been proven that the search process of BN for large networks is NP-hard (Chickering et al. 2004; Dagum 1993); thus,

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Table 1. Respondent profile

Demographic	Category	Frequency	%
Gender	Male	255	93.4
	Female	18	6.6
Age	18–24	12	4.4
	25–29	28	10.3
	30–34	45	16.5
	35–39	46	16.8
	40–44	42	15.4
	45–49	37	13.6
	50–54	30	11.0
	55 and above	33	12.1
Education	High school	12	4.4
	Vocational training	29	10.6
	Diploma	55	20.1
	Bachelor's degree	133	48.7
	Master's degree	40	14.7
	Doctoral degree	0	0.0
	Others	4	1.5
Position	Construction manager	26	9.5
	Project manager	53	19.4
	Site manager	28	10.3
	Engineer	58	21.2
	Supervisor	23	8.4
	Safety personnel	27	9.9
	Others	58	21.2
Experience in the construction industry	0–5 years	38	11.7
	6–10 years	46	19.0
	11–15 years	47	17.2
	16–20 years	42	15.4
	21–25 years	31	11.4
	26–30 years	29	10.6
	31–35 years	17	6.2
	36–40 years	11	4.0
	Above 40 years	12	4.4
	Average	18.3 years	—

heuristic approaches are recommended to deal with this problem. In a BN, it can be assumed that the parameters that are not directly linked are conditionally independent or have an inconsiderable dependency. BN is also known for being a powerful tool for troubleshooting and analyzing complex systems and is widely used in practice (see Daly et al. 2011; Lucas et al. 2004; Weber et al. 2012).

Data Features

Table 1 presents the respondent profiles, while Table 2 presents the emotional intelligence and political skill variables used in the analysis process. In total, 356 sets of survey questionnaires were received from the respondents, of which 273 were valid. Many of the respondents were seasoned construction practitioners with an average work experience of more than 18 years. The average score of emotional intelligence was 77/100, while the average score of political skill was 5.37/7.00. Both scores indicated an average level.

Results and Discussion

BN, described previously, was utilized to model the causality consequences within the available database. As briefly mentioned, due to the large number of parameters, finding the optimum network with the available computing facilities was computationally intractable.

Table 2. Emotional intelligence and political skill variables

Code	Item	Average
EI	Emotional intelligence	77
PS1	I spend a lot of time and effort at work networking with others	4.51
PS2	I am able to make most people feel comfortable and at ease around me	5.78
PS3	I am able to communicate easily and effectively with others	5.87
PS4	It is easy for me to develop good rapport (relationship/understanding/bond) with most people	5.89
PS5	I understand people very well	5.58
PS6	I am good at building relationships with influential people at work	5.38
PS7	I am particularly good at sensing the motivations and hidden agendas of others	5.27
PS8	When communicating with others, I try to be genuine in what I say and do	6.21
PS9	I have developed a large network of colleagues and associates at work whom I can call on for support when I really need to get things done	5.52
PS10	At work, I know a lot of important people and am well connected	4.72
PS11	I spend a lot of time at work developing connections with others	4.32
PS12	I am good at getting people to like me	4.83
PS13	It is important that people believe I am sincere in what I say and do	6.15
PS14	I try to show a genuine interest in other people	5.87
PS15	I am good at using my connections and network to make things happen at work	5.23
PS16	I have good intuition or savvy about how to present myself to others	5.39
PS17	I always seem to instinctively know the right things to say or do to influence others	5.01
PS18	I pay close attention to people's facial expressions	5.16

Therefore, an evolutionary heuristic method was used (Cooper and Herskovits 1992) to find a near optimum BN. In heuristic methods, it is difficult to demonstrate the "optimality gap" in the absence of an optimum solution that could reveal this issue when used as benchmark. However, the convergence approach observed in the heuristic method could demonstrate the improvement in the solution which tends to be a near optimum solution

To evaluate the algorithm, 10-fold cross-validation was applied, which is a standard way of assessing trained algorithms. It should be noted that there are other validation methods, such as bootstrap, that could be used to evaluate BN performance. However, previous research has indicated that 10-fold cross-validation is a standard evaluation method to avoid randomness concerns in sampling (Braga-Neto and Dougherty 2004; van der Gaag et al. 2006; Rodriguez et al. 2010; Cheng et al. 2014). In this evaluation method, the data sets are divided into 10 folds, with around 9 folds used for training and the remaining 10% of the data being used for testing. To assess the quality of the learned algorithm, eight different metrics were picked, as reported in Table 3. This table presents the average of the 10 folds.

The BN attained is shown in Fig. 1. In order to avoid any bias in the results, there was no predefined parameter in the utilized BN. The reported networks were obtained by the heuristic search without any manual interference. At first glance it seems to be a complex DAG, although it clearly shows the influence of political skill on emotional intelligence. To make the network more readable, the nodes with a direct link to political skill (denoted by "PS" in Figs. 1 and 2 were highlighted and then the direct links

Table 3. Quality assessment results of the trained algorithm

Class	True positive rate	False positive rate	Precession	Recall	F-measure	Matthews correlation coefficient	Receiver operating characteristic area	Precision-recall curves area
YES-PS2	0.883	0.392	0.907	0.883	0.895	0.471	0.850	0.943
NO-PS3	0.608	0.117	0.544	0.608	0.574	0.471	0.850	0.575
Average	0.832	0.341	0.839	0.832	0.835	0.471	0.850	0.875

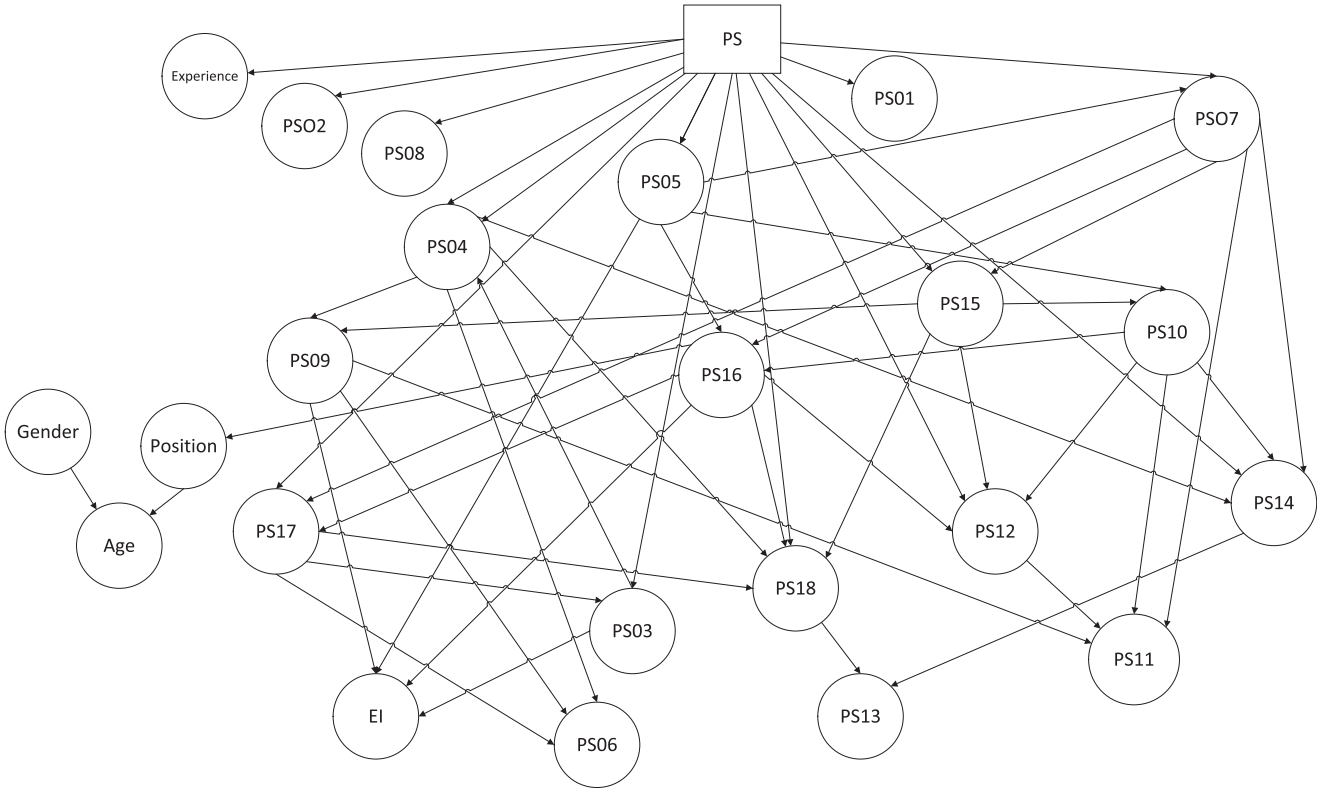

Fig. 1. Obtained Bayesian network from the available database.

to these nodes and political skill were removed. Since the study was interested in establishing the relationships between political skill and emotional intelligence, the nodes that had only one connection with political skill were also removed. The modified network is illustrated in Fig. 2.

Fig. 2 shows that some political skill items have direct and indirect influences on emotional intelligence in the construction project environment. Those with a direct influence are PS3 (I am able to communicate easily and effectively with others), PS5 (I understand people very well), PS9 (I have developed a large network of colleagues and associates at work whom I can call on for support when I really need to get things done), and PS16 (I have good intuition or savvy about how to present myself to others).

First (PS3 → EI): effective communication is an important skill for emotionally intelligent people. The involvement of stakeholders who have conflicting interests is a common occurrence in construction projects. The dynamic and complex characteristics of construction projects pose additional challenges for project personnel in managing these projects successfully. In this case, effective communication is crucial to make sure that all stakeholders are adequately informed and their interests are taken care of so as to prevent conflict.

Second (PS5 → EI): politically skilled project personnel understand people well. This, in fact, aligns with the social awareness dimension of emotional intelligence, which is largely about recognizing other people's feelings.

Third (PS9 → EI): project personnel with high political skill are able to develop networks and receive support from their networks. This is the culmination of emotional intelligence, in which people are able to use awareness of their own and other's emotions to manage social interactions successfully.

Fourth (PS16 → EI): project personnel can exercise their political skill when presenting themselves to others. Similar to the previous point, emotional intelligence enables people to adjust their behavior depending on the emotions of others so that they can create positive first impressions and develop stronger relationships.

An important point about this finding is that political skill is actually the antecedent of emotional intelligence. This finding is the opposite of the hypothesis, which argues that emotional intelligence is the precursor of political skill and a key skill in developing interpersonal relationships. For example, in a public-sector context, emotional intelligence can improve the political skill of public employees and their job satisfaction (Vigoda-Gadot and Meisler 2010). Likewise, Meisler (2013) found that, in a financial

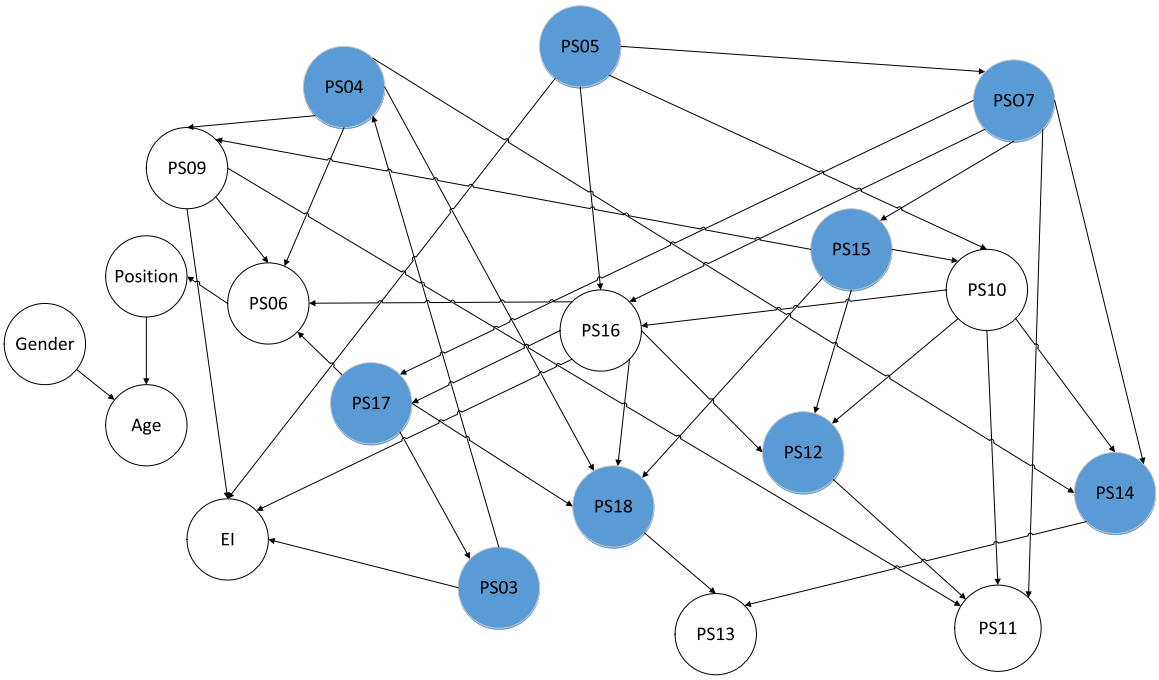

Fig. 2. Pruned Bayesian network.

organization, emotional intelligence affects political skill, which in turn affects job satisfaction.

This indicates that the organizational politics in the construction industry differ from that of other industrial sectors. As explained earlier, several stakeholders from a number of organizations and fields can be involved in one construction project. The larger the project the more delicate the relationships among these stakeholders. In this work environment, political skill seems to be the crucial element to managing interpersonal relationships. One should consider that a complex, disjointed, and conflicting web of accountabilities can cause unnecessary stress that leads to emotional and mental exhaustion, decreased job satisfaction, and burnout (Perrewé et al. 2000). In this case, political skill could be used to reduce the negative effects of stressors in the typically ambiguous and conflict-laden environment of the construction industry. This view, therefore, argues that political skill could be used to stabilize the politically charged environment of the construction project environment, allowing construction personnel to apply emotional intelligence effectively in managing stakeholder relationships. In fact, Ferris et al. (2005b) claimed that emotional intelligence focuses predominantly on the emotion-based aspects of interpersonal effectiveness, influence, and control, while political skill incorporates knowledge and skills that go beyond emotions (Ferris et al. 2005b). Similarly, Zou and Sunindijo (2013) found that apparent sincerity, a dimension of political skill, is a foundation skill for construction project personnel to manage health and safety performance in construction projects.

Managing interpersonal relationships is extremely important in the construction industry because of the involvement of various stakeholders in a construction project. Many of these stakeholders are not under the control of construction project personnel and they can wield significant power to influence the achievement of project objectives. In this kind of work environment, the current research found that political skill is a key attribute that allows construction project personnel to apply their emotional intelligence to manage interpersonal relationships effectively. Indeed research has found that politically skilled individuals who use high levels of management tactics achieved more desirable ratings than their counterparts (Harris et al. 2007).

Conclusions

This research investigated the relationship between political skill and emotional intelligence in the construction industry using BN analysis. BN is a popular tool that has been widely used in various contexts to analyze complex systems. The relationship between political skill and emotional intelligence has not been investigated in the context of the construction industry previously. Based on existing theories, emotional intelligence was thought to serve as the foundation of political skill. However, contrary to the proposed hypothesis, the analysis results found that political skill was the precursor of emotional intelligence in the construction project environment. This finding is significant because it confirmed that the implementation of management skills and approaches cannot be generalized, indicating they are strongly influenced by their context. In the case of this research, political skill was important to stabilize the politically charged environment of construction projects due to the involvement of influential stakeholders, thus allowing construction project personnel to apply their emotional intelligence to manage interpersonal relationships effectively.

This finding could be used to improve human resource management in construction organizations. For example, they should include a political skill assessment in their recruitment process, particularly for high-level managerial positions where employees are required to manage the expectations of external stakeholders. Similarly, political skill should be one of the considerations when deciding whether to promote employees to higher managerial positions. Political skill training should also be offered to employees, because the mastery of political skill is beneficial for both the employees and the organization. The employees could use political skill to reduce stressors when working in the construction industry, while the organization could reap better outcomes from their projects due to effective management of stakeholders.

Data Availability Statement

Some or all data, models, or code generated or used during the study are proprietary or confidential in nature and may only be provided with restrictions.

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