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Effect of Emotional Intelligence Factors on Labour Force Management of Construction Firms in Ghana

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Abstract

Emotional Intelligence (EI) is a crucial factor influencing behaviour and performance across sectors, including construction. While EI's importance for personal growth and interaction is acknowledged, there remains limited understanding of the specific emotional intelligence factors impacting Labour Force Management (LFM) practices in the Ghanaian construction industry. This study aims to assess how identified emotional intelligence factors influence LFM practices in Ghanaian construction firms. The objectives are to: establish critical EI factors influencing LFM practices, examine literature to identify research gaps, and determine the factors on LFM practices. A questionnaire was given to project managers, engineers, contractors and consultants in the Ghanaian construction industry. Exploratory Factor Analysis (EFA) was used for analysis. This survey findings show that the emotional intelligence of construction firms' labour force is a function of experience, family background, skills and competencies, gender, empathy for co-workers, personality, organisational culture, social motivation, marital influence, maturity and age, religion and belief, work procedures, and workload. Job design, firms' policy, and knowledge and training received lower mean ratings, indicating less perceived impact on emotional intelligence compared to other factors. The findings reveal that several emotional intelligence factors significantly influence LFM practices in Ghanaian construction firms. Factors such as experience, family background, skills and competencies, gender, empathy for co-workers, personality, organisational culture, social motivation, marital influence, maturity and age, religion and beliefs, work procedures, and workload showed high perceived impact. While factors like job design, firms' policy, and knowledge and training had lower ratings, emotional intelligence factors collectively exert a substantial influence on LFM. This study suggests that managers and stakeholders in the Ghanaian construction industry should prioritise understanding these key EI factors. By recognising their importance, particularly those with high impact, managers can create an environment fostering emotional intelligence within their labour force, improving LFM practices and project delivery performance.

Keywords: *Emotional intelligence factors, Labour Force, Construction Industry, Ghana.*
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I. INTRODUCTION

The construction industry is a critical sector of any nation's economy, but it faces challenges such as poor labour force management, delays, cost overruns, accidents, and disputes [1, 2]. These problems are recurring tasks for construction project managers and researchers, who seek solutions to improve construction project work [3, 4]. Emotional Intelligence (EI) has been suggested as a key factor in addressing these challenges [5, 6]. EI involves monitoring emotions to achieve a balance between individuals' emotional differences in completing tasks. It reflects an individual's ability to combine intelligence and empathy with emotion to improve thinking and interpersonal dynamics [7, 8]. EI is increasingly recognised as a critical success factor in various industries, including construction [9,10]. While existing research has explored the link between emotional intelligence and various aspects of the construction industry globally, there is a discernible gap in comprehensive studies that specifically investigate the critical emotional intelligence factors influencing Labour Force Management (LFM) practices within the unique socio-economic and cultural context of Ghana [11,12,13]. Understanding these specific factors is crucial for developing targeted strategies to improve labour performance and project outcomes in the Ghanaian construction sector. This study aims to address this specific gap by empirically assessing the impact of a range of emotional intelligence factors on LFM in this context. Building upon the recognised importance of emotional intelligence in the construction sector, this study is guided by the following specific research objectives (ROs):

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RO1: To establish the Emotional Intelligence critical factors that influence LFM practices of construction firms in Ghana.

RO2: To examine the literature that has been published on Emotional Intelligence factors in the construction industry and identify the gaps that need to be considered.

RO3: To find out the effect of Emotional Intelligence critical factors on LFM practices of construction firms in Ghana.

II. LITERATURE REVIEW

The construction industry, a cornerstone of national economies, is inherently complex and challenging, marked by issues such as cost overruns, schedule delays, and labour management difficulties [14, 15]. Addressing these persistent challenges requires a multi-faceted approach, extending beyond traditional project management techniques to encompass the critical human element. In recent years, Emotional Intelligence (EI) has emerged as a significant factor influencing individual and team performance across various sectors, including construction [16, 17]. This review synthesises existing literature on EI and its relevance to the construction industry, particularly concerning labour force management, to establish a theoretical foundation and identify the research gap addressed by this study.

A. Emotional Intelligence

Emotional intelligence can be broadly defined as the ability to perceive, understand, manage, and utilise emotions effectively, both in oneself and others [18, 19]. It represents a confluence of cognitive and emotional skills, enabling individuals to navigate social complexities and make informed decisions by integrating emotional information into their thought processes. While the precise definition of 'intelligence' itself has been a subject of ongoing debate in psychological literature, the concept of EI has gained substantial traction across diverse fields, including psychology, sociology, healthcare, and business [20, 21].

A key aspect of EI lies in an individual's capacity for self-awareness, the ability to recognise and understand one's emotional states [22]. This self-understanding is foundational to managing emotions and, subsequently, understanding the emotional dynamics of others. Geher, Betancourt, and Jewell [23] succinctly summarise EI as the ability to comprehend one's own and others' emotional states within a given situation and leverage this understanding to influence thought and action.

B. Factors Influencing Emotional Intelligence

The development of emotional intelligence is a complex process shaped by a confluence of individual and environmental factors. Research indicates that foundational experiences during formative years, particularly within the family unit, play a significant role in shaping an individual's emotional maturity [24, 25]. Factors such as family structure, socioeconomic status, the number of siblings, and parental working status can all exert an influence [25]. The quality of parent-child relationships, especially with the primary caregiver, is particularly critical for fostering emotional development that extends into adulthood [26].

Beyond the immediate family, broader environmental factors contribute to emotional intelligence development. These include the area of residence, educational experiences, neighbourhood dynamics, and the wider societal context. As individuals enter the workforce, the work environment itself becomes a significant influence. Organisational factors such as the type of organisation, the nature and volume of workload, job stress, and even the design of job roles have been identified as contributors to an individual's emotional behaviour and well-being [27, 28].

Individual characteristics such as age and maturity also moderate the expression of emotional behaviour. Experience, accumulated over time, is intrinsically linked to maturity and further shapes an individual's emotional intelligence [29]. While some evidence suggests a relationship between cognitive intelligence (IQ) and broader patterns of adjustment and personality, the specific interplay between cognitive and emotional intelligence remains an active area of research.

C. Emotional Intelligence in the Construction Industry

The construction industry's demanding and often high-pressure environment underscores the critical need for effective emotional intelligence among its workforce. Construction projects involve complex interactions among diverse stakeholders, requiring strong interpersonal skills, conflict resolution abilities, and the ability to effectively manage stress and pressure [30]. Studies have begun to explore the benefits of EI in this sector, suggesting its potential to address pervasive challenges like poor labour force management, communication breakdowns, and interpersonal conflicts that contribute to delays and cost overruns [31].

Research indicates that project managers with higher emotional intelligence are better equipped to lead teams, foster cohesion, and ultimately improve project performance and success [32, 33]. At the worker level, emotional intelligence can influence safety behaviour, teamwork, and overall productivity. Factors such as empathy among co-workers, personality traits, and social motivation are crucial for building positive working relationships and a supportive team environment [34]. Similarly, organisational culture plays a vital role in shaping collective emotional norms and influencing individual emotional expression and regulation within construction firms [35].

While the importance of technical skills and experience in construction is undeniable, the behavioural dispositions and emotional capabilities of the labour force are increasingly recognised as equally critical for attaining higher performance and productivity ratings. Effective labour force management (LFM) in construction, therefore, necessitates an understanding of the emotional factors that influence worker behaviour and performance.

D. Research Gap

Despite the growing recognition of emotional intelligence in the construction sector globally, there is a notable need for focused research specifically examining the critical emotional intelligence factors influencing Labour Force Management (LFM) practices within the unique operational and cultural landscape of Ghana. While general studies on labour productivity in construction in regions like Yemen and reviews of influencing factors exist Alaghbari et al. [36], a comprehensive investigation into the specific facets of emotional intelligence most pertinent to the Ghanaian construction labour

force remains limited. Furthermore, understanding how factors such as family background, religion, and specific work procedures, identified as potentially influential in the broader literature, manifest and impact LFM in this context requires dedicated empirical inquiry. This study aims to bridge this gap by empirically identifying and assessing the influence of critical emotional intelligence factors on LFM practices within construction firms operating in Ghana.

III. METHODOLOGY

This study employed a structured questionnaire survey to gather data from selected participants of construction firms in Ghana. This approach was chosen to ensure that the research was easily answerable, unbiased, succinct, and straightforward to analyse [37]. This study participants comprised a diverse group of professionals within the Ghanaian construction industry, including project managers, engineers, contractors, and consultants. The demographic profile of the respondents is summarised in Table 1, providing details on their gender, age, occupation, educational qualifications, and work experience. This information is crucial for understanding the characteristics of the sample and interpreting the study's findings. Participants were asked to evaluate each item on a five-point Likert scale indicating their level of agreement or disagreement with labour Emotional Intelligence factors influencing LFM practices in Ghanaian construction firms. The sample frame was created using a list of registered construction firms in good standing obtained from the Association of Building and Civil Engineering Contractors of Ghana (ABCECG). At the time of data collection, 1284 construction firms were registered and were in good standing with the ABCECG. This study aimed for a sample size of 40% of the total study population, based on Leedy and Ormrod's [38] assertion that at least 20% of the population should be sampled for a population of approximately 1500. Consequently, a sample size of 514 (40% of 1284) was deemed sufficient for this study.

A probability sampling technique was used in this study so that representation was obtained from all segments of construction firms. A simple random sampling method was adopted, through which every member of the population had an equal chance of being selected [39]. For all these reasons, firms in Ghana, the nature and composition of firms dictated the use of this sampling approach, and [40] supports that random sampling is suitable for such studies. The 514 questionnaires given to construction firms' professionals in Ghana yielded a response rate of 91.82%, with 472 completed and returned. The collected data were coded and analysed using advanced statistical methods. A variety of multivariate methods were used, such as multivariate correlational analysis with EFA using SPSS version 26, structural equation modelling (SEM) using AMOS version 21, and confirmatory factor analysis (CFA). Moreover, the study discusses the statistical analysis techniques applied to test the validity and reliability of the measuring instrument and the results of the quantitative survey. This section commences by analysing the demographic information of the respondents. This is followed by scrutinising their responses to the specific objectives. Also, respondents' background was analysed using frequencies and percentage distribution.

IV. FINDINGS

This section presents the empirical findings derived from the analysis of survey data collected from construction professionals in Ghana. The results are presented in two main parts: a descriptive analysis of the identified emotional intelligence factors and the outcomes of the multivariate statistical analyses, including demographic characteristics among the study participants, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and Structural Equation Modelling (SEM).

A. Demographic characteristics among the Study Participants

The analysis of demographic characteristics among the study participants reveals a nuanced profile of the respondents. From Table 1, the gender distribution indicated a predominant presence of males (68.9%), with females accounting for a sizable but lesser proportion (25.4%), while a smaller fraction chose not to disclose their gender (5.7%). Age-wise, the respondents spanned a broad spectrum, with the highest representation in the 41-45 years bracket (37.9%), followed by individuals aged 46 years or older (17.2%), showcasing a mature and experienced cohort.

In relation to occupation, the sample reflected a diverse labour force, prominently comprising civil engineers (38.1%), project managers (20.1%), and architects (15.3%). Educational qualifications exhibited a well-educated cohort, with a significant majority holding master's degrees (50.6%) or bachelor's degrees (42.2%), although those with doctoral degrees (PhD) constituted a smaller fraction (4.9%). Regarding professional experience, a notable portion of respondents have substantial work tenure, especially within the category of 31 or more years (33.9%), followed closely by the 26-30 years category (24.6%).

The firms which participated in the study predominantly engaged in civil engineering projects (51.5%), while the others engaged in building construction projects (48.5%). Past project experiences varied. A significant proportion of the firms have worked on 7 or more projects (61.9%). Further, insights into the firms' demographics revealed a varied landscape, with firms existing for 26-30 years (44.5%) and 31 or more years (34.1%) forming the majority. Classification-wise, D3/K3 classification represented the largest segment (53.0%), followed by D4/K4 (26.3%).

TABLE 1: BACKGROUND INFORMATION OF THE RESPONDENTS

Gender	Frequency	Per cent (%)
Male	325	68.9
Female	120	25.4
Prefer Not to Say	27	5.7
Age group		
21 – 25	4	0.8
26 – 30	19	4.0
31 – 35	97	20.6
36 – 40	92	19.5
41 – 45	179	37.9
46 or more years	81	17.2

Educational qualification		
Diploma or HND	11	2.3
Bachelor's degree (First Degree)	199	42.2
Master's degree (MSc, MPhil & M-Tech)	239	50.6
Doctoral degree (PhD)	23	4.9
Occupation		
Project Manager	95	20.1
Civil engineer	180	38.1
Architect	72	15.3
Quantity surveyor	46	9.7
Mechanical Engineer	15	3.2
Electrical engineer	21	4.4
Contractor	34	7.2
Unspecified professional	9	1.9
Working experience		
1-5 years	1	0.2
6 -10 years	46	9.7
11 – 15 years	24	5.1
16-20 years	32	6.8
21-25 years	93	19.7
26-30 years	116	24.6
31 or more years	160	33.9
The construction project the firm is currently working on		
Civil engineering	243	51.5
Building construction	229	48.5
Number of projects worked on in the past		
1-2 projects	2	0.4
3-4 projects	12	2.5
5-6 projects	166	35.2
7 or more projects	292	61.9
Number of years the firm has been in existence		
6-10 years	7	1.5
11-15 years	8	1.7
16-20 years	22	4.7
21-25 years	64	13.6
26-30 years	210	44.5
31 or more years	161	34.1
Firms' classification		
D1/K1	31	6.6
D2/K2	67	14.2
D3/K3	250	53.0
D4/K4	124	26.3
TOTAL	**472**	**100**

B. Descriptive Analysis of Emotional Intelligence Factors

Table 2 provides a comprehensive overview of the descriptive statistics, including means and standard deviations, for the fifteen emotional intelligence factors (EIF) initially considered in this study. The mean scores indicate the perceived level of influence each factor has on Labour Force Management (LFM) practices among the respondents. A threshold of 0.5, after it is used, on the first 8 factors of the EI construct, the 8 factors load greater than 0.05. The remaining 7 factors load below 0.5 and were removed from the columns. Concerning their validity part, the figures didn't measure the EI construct under study.

As presented in Table 2, several factors garnered notably high mean ratings, suggesting they are perceived as highly influential contributors to emotional intelligence within the Ghanaian construction labour force. Specifically, 'Skills and competencies' (Mean = 4.30, SD = 0.792), 'Family background' (Mean = 4.25, SD = 0.833), and 'Experience' (Mean = 4.20, SD = 0.914) received the highest average scores. These high ratings, coupled with relatively consistent standard deviations, indicate a strong consensus among respondents regarding the significant impact of these factors on nurturing emotional intelligence in construction employees.

TABLE 2: EMOTIONAL INTELLIGENCE FACTORS (EIF)

Variables	Code	Mean	Standard deviation
Experience	EIF1	4.20	0.914
Family background	EIF2	4.25	0.833
Skills and competencies	EIF3	4.30	0.792
Gender	EIF4	4.19	0.742
Empathy for co-workers	EIF5	4.00	0.837
Personality	EIF6	4.00	0.838
Organisational culture	EIF7	4.07	0.807
Social motivation	EIF8	4.06	0.825
Marital influence	EIF9	4.00	0.891
Maturity and age	EIF10	4.14	0.932
Religion and Beliefs	EIF11	4.24	0.844
Work procedures and workload	EIF12	3.86	0.787
Job design	EIF13	3.85	0.822
Firms' policy	EIF14	3.94	0.846
Knowledge and training	EIF15	3.87	0.863

Factors such as 'Religion and Beliefs' (Mean = 4.24, SD = 0.844), 'Maturity and age' (Mean = 4.14, SD = 0.932), 'Organisational culture' (Mean = 4.07, SD = 0.807), 'Social motivation' (Mean = 4.06, SD = 0.825), 'Empathy for co-workers' (Mean = 4.00, SD = 0.837), 'Personality' (Mean = 4.00, SD = 0.838), and 'Marital influence' (Mean = 4.00, SD = 0.891) also received substantial mean ratings, highlighting their considerable perceived importance in the development and manifestation of emotional intelligence within this context. The standard deviations for these factors indicate some variability in perceptions, but overall, they underscore their recognised significance.

Conversely, factors such as 'Work procedures and workload' (Mean = 3.86, SD = 0.787), 'Job design' (Mean = 3.85, SD = 0.822), 'Firms' policy' (Mean = 3.94, SD = 0.846), and 'Knowledge and training' (Mean = 3.87, SD = 0.863) received comparatively lower mean ratings. This suggests that while still considered relevant, their perceived direct impact on emotional

intelligence is relatively lower compared to the other factors. The standard deviations for these factors again reflect varying viewpoints among the respondents regarding their influence.

C. Multivariate Statistical Analysis: EFA and CFA

To further explore the underlying structure of the emotional intelligence factors and assess the reliability of the measurement instrument, Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were employed.

The one-dimensionality and reliability of the Emotional Intelligence Factors (EIF) construct were initially assessed using EFA on the fifteen items. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.819, exceeding the recommended threshold of 0.70, and Bartlett's test of sphericity was significant ($p < 0.000$), indicating that the data were suitable for factor analysis.

Using Principal Component Analysis with a factor loading threshold of 0.5 (exceeding the recommended 0.40), eight items loaded onto a single component representing Emotional Intelligence Factors (EIF). These items were: 'Social motivation', 'Empathy for co-workers', 'Experience', 'Skills and competencies', 'Personality', 'Organisational culture', 'Gender', and 'Family background'. The remaining seven items, 'Knowledge and training', 'Maturity and age', 'Marital influence', 'Religion and beliefs', 'Firms' policy', 'Work procedures and workload', and 'Job design', recorded factor loadings below the 0.5 threshold, indicating they were less representative of this primary emotional intelligence construct in this analysis. While these latter factors showed moderate to high mean ratings in the descriptive analysis, the EFA suggests they might represent distinct dimensions or have a weaker association with the core latent EI construct in this sample.

Table 3 presents the results of the one-dimensionality and reliability analysis for the items retained in the EFA component. The Cronbach's Alpha for this eight-item construct was 0.855, which is well above the acceptable threshold of 0.800, indicating good internal reliability. The corrected item-total correlations for the retained items were all above the suggested cut-off value of 0.30, further supporting their internal consistency.

TABLE 3: UNIDIMENSIONALITY AND RELIABILITY OF EMOTIONAL INTELLIGENCE FACTORS (EIF) CONSTRUCT

Variables	EIF	Corrected item-total correlation	Squared multiple correlation	Cronbach's Alpha if the item is deleted	Cronbach's Alpha
Social motivation	0.706	0.317	0.426	0.746	
Empathy for co-workers	0.700	0.301	0.274	0.747	
Experience	0.693	0.392	0.358	0.738	
Skills and competencies	0.679	0.320	0.348	0.745	
Personality	0.663	0.402	0.410	0.737	0.855
Organisational culture	0.630	0.370	0.388	0.740	
Gender	0.625	0.342	0.347	0.743	
Family background	0.529	0.436	0.376	0.734	
Knowledge and training					
Maturity and age					
Marital influence					
Religion and beliefs					
Firms' policy					
Work procedures and workload					
Job design					

Following the EFA, a Confirmatory Factor Analysis (CFA) was conducted on the retained eight-item model to assess its fit with the sample data. The model fit was evaluated using a range of indices, as recommended for structural equation modelling. Table 4 summarises the robust fit indices for the CFA model as shown in Fig. 1.

TABLE 4: ROBUST FIT INDEX FOR EMOTIONAL INTELLIGENCE FACTORS (EIF)

Fit Index	Cut-Off Value	Estimate	Comment
S-Bχ2		7.666	
Df	0≥	14	Acceptable
CFI	0.90≥ acceptable	0.944	Acceptable
PCFI	0.95≥ good fit	0.596	Good fit
RMSEA	Less than 0.80	0.019	Acceptable
RMSEA 95% CI	Less than 0.08	0.009-0.040	Acceptable
NFI	0.00-0.08 "good fit"	0.961	Good fit
IFI	Greater than 0.90 "good fit"	0.995	Good fit
PNFI	Greater than 0.90 "good fit"	0.587	Good fit
RMR	Less than 0.80	0.036	Acceptable
GFI	Less than 0.05 "good fit"	0.943	Good fit

The S-Bχ^2 statistic was 7.666 with 14 degrees of freedom and a p-value of 0.0000. While the chi-square test is sensitive to sample size, other fit indices provide a more robust assessment. The Comparative Fit Index (CFI) was 0.944, exceeding the acceptable threshold of 0.90, indicating a good fit. The Non-Normed Fit Index (NFI) was 0.961, also above the 0.90 threshold. The Incremental Fit Index (IFI) was 0.995, further supporting a good model fit. The Root Mean Square Error of Approximation (RMSEA) was 0.019, with a 95% confidence interval of 0.009-0.040, both falling below the recommended 0.08 threshold for good fit. The Root Mean Square Residual (RMR) was 0.036, below the 0.05 threshold, and the Goodness of Fit Index (GFI) was 0.943, exceeding 0.90. The Parsimony Comparative Fit Index (PCFI) was 0.596, and the Parsimony Normed Fit Index (PNFI) was 0.587, both below the 0.80 threshold, which is acceptable as these indices penalise for model complexity and lower values can still indicate good fit in the context of other strong indices. Collectively, these indices suggest that the proposed eight-item, unidimensional model for Emotional Intelligence Factors demonstrates a good fit to the sample data.

Table 5 (originally Table 6 in the text) presents the factor loadings and p-values from the CFA. All eight indicator

variables (EIF1 to EIF8, corresponding to the retained items) showed statistically significant loadings ($p < 0.05$) on the latent Emotional Intelligence Factor construct. The standardised coefficients (factor loadings) ranged from 0.566 to 0.672, with EIF2 (Empathy for co-workers) having the highest standardised loading (0.672), indicating it is a strong indicator of the EI construct in this model. The squared multiple correlations (R-squared values) indicate that the latent EI factor explains a substantial proportion of the variance in the indicator variables, further supporting the validity of the construct.

TABLE 5: FINAL CONCEPTUAL MODEL INDICATOR VARIABLES FOR EMOTIONAL INTELLIGENCE FACTORS (EIF)

Latent component	Indicator variable	Measurement variable	Label
Emotional Intelligence Factors (EIF)	EIF8	Social motivation	EIF1
	EIF5	Empathy for co-workers	EIF2
	EIF1	Experience	EIF3
	EIF3	Skills and competencies	EIF4
	EIF6	Personality	EIF5
	EIF7	Organisational culture	EIF6
	EIF4	Gender	EIF7

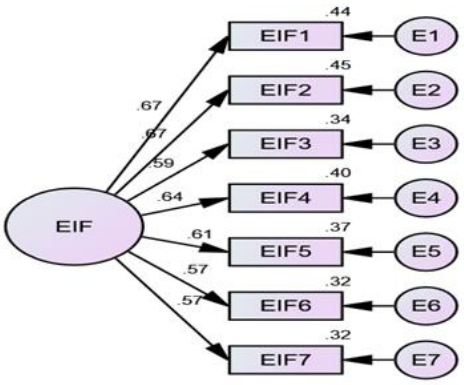

Fig. 1: CFA model for Emotional Intelligence Factors (EIF)

The results of the EFA and CFA support the existence of a core set of emotional intelligence factors relevant to the Ghanaian construction context and demonstrate the reliability and validity of the measurement model for these factors.

TABLE 6: FACTOR LOADING AND P-VALUE OF EMOTIONAL INTELLIGENCE FACTORS (EIF)

Hypothesised relationships (Path)	Unstandardised coefficient (λ)	Standardised coefficient (λ)	P-Value	R-Square	Significant at the 5% level
EIF1 ←EIF	1.000	0.665	0.00	0.442	Yes
EIF2 ← EIF	1.026	0.672	0.00	0.452	Yes
EIF3 ← EIF	0.975	0.585	0.00	0.343	Yes
EIF4 ← EIF	0.918	0.635	0.00	0.404	Yes
EIF5 ← EIF	0.930	0.608	0.00	0.370	Yes
EIF6 ← EIF	0.836	0.568	0.00	0.322	Yes
EIF7 ← EIF	0.766	0.566	0.00	0.320	Yes

V. SUMMARY OF FINDINGS

This study revealed several significant findings regarding the influence of emotional intelligence factors on Labour Force Management (LFM) practices within construction firms in Ghana. Based on descriptive analysis (Table 2), factors such as skills and competencies, family background, and experience were perceived as having the most substantial impact on emotional intelligence among the labour force. These findings align with broader literature highlighting the importance of skills, experience, and formative environmental factors like family background on individual emotional development. These findings align with broader literature highlighting the importance of technical and experiential competencies in construction management [13], as well as the foundational role of familial environments in shaping emotional maturity [24,25]. Notably, Lawani and Moore [13] emphasised that EI-driven recruitment and training strategies enhance workforce adaptability, corroborating the high relevance of skills and experience observed in this study. Other factors, including religion and beliefs, maturity and age, organisational culture, social motivation, empathy for co-workers, personality, and marital influence, also demonstrated considerable perceived importance. The prominence of organisational culture resonates with Watanabe et al. [35], who identified culture as a mediator between EI and project success. Similarly, the role of empathy aligns with Purohit [34], who underscored its centrality in fostering collaborative team dynamics. Social motivation and personality, as critical EI components, reflect earlier assertions by Geher et al. [23] on the interplay between emotional awareness and creative problem-solving.

Factors like work procedures and workload, job design, firms' policy, and knowledge and training received comparatively lower mean ratings. This suggests that while procedural and policy frameworks remain relevant, their direct influence on EI may be secondary to interpersonal and experiential factors. These results echo Alaghbari et al. [36], who noted that rigid organisational policies often lag behind human-centric EI interventions in improving labour outcomes.

Multivariate statistical analyses provided further insights into the structure and reliability of the emotional intelligence construct. Exploratory Factor Analysis (EFA) indicated that eight of the fifteen initially considered items loaded onto a single core component representing Emotional Intelligence Factors. These retained items demonstrated good internal reliability, with a Cronbach's Alpha of 0.855. This is consistent with methodological standards for survey-based research [38]. Subsequent Confirmatory Factor Analysis (CFA) on this eight-item model indicated a good fit to the sample data, as evidenced by robust fit indices including CFI (0.944), NFI (0.961), IFI (0.995), RMSEA (0.019), RMR (0.036), and GFI (0.943) (Table 4), which align with SEM best practices [39]. All indicator variables in the CFA model showed statistically significant loadings on the latent Emotional Intelligence Factor construct, further supporting the validity of the measurement model. Specifically, 'Empathy for co-workers' exhibited the highest standardised factor loading (0.672), indicating its strong association with the core EI construct in this study (Table 5), as theorised in prior studies on team cohesion [7,35].

These findings reinforce global literature on EI's role in construction management [9,10] while contextualising its nuances within Ghana's socio-cultural landscape. By bridging this gap, the study underscores the need for EI-centric LFM strategies to optimise project outcomes.

VI. RESEARCH LIMITATIONS

This study is subject to certain limitations. Firstly, the reliance on self-reported data through questionnaires may introduce potential biases, such as social desirability bias, where respondents might provide answers, they perceive as more favourable. Secondly, the study's focus is specifically on construction firms in Ghana, which may limit the generalizability of the findings to other geographical regions or different sectors of the construction industry. Future research could employ mixed methods approaches or replicate the study in different contexts to address these limitations.

VII. CONCLUSION AND RECOMMENDATIONS

This study was undertaken with the explicit purpose of investigating the effect of emotional intelligence factors on labour force management practices within construction firms operating in Ghana, thereby addressing a recognised gap in the existing literature. The research was guided by specific objectives aimed at establishing the critical emotional intelligence factors influencing LFM practices and determining their observed effect. Based on the empirical evidence gathered and analysed, the study successfully identified a core set of emotional intelligence factors perceived as significant contributors to effective Labour Force Management in the Ghanaian construction context. The findings from the descriptive analysis (Table 2) highlighted factors such as skills and competencies, family background, and experience as having a particularly strong perceived influence on employee emotional intelligence. Furthermore, the rigorous multivariate analyses, including EFA and CFA, confirmed the reliability and structural integrity of a core emotional intelligence construct comprising factors such as social motivation, empathy for co-workers, experience, skills and competencies, personality, organisational culture, gender, and family background (Tables 3, 4, and 5).

These analytical results underscore the tangible aspects of emotional intelligence that are empirically relevant in this specific industry setting. The significant influence of these identified emotional intelligence factors on LFM practices, as evidenced by both descriptive and inferential statistics, carries substantial implications for the operational dynamics within Ghanaian construction firms. Effective Labour Force Management is fundamentally rooted in understanding and positively influencing human behaviour and interactions on site. The study's findings affirm that emotional intelligence is not merely a 'soft skill' but a critical determinant of how well the labour force can be managed to achieve desired outcomes, including enhanced job performance and productivity. Therefore, a key conclusion is that prioritising the cultivation and management of emotional intelligence within the construction labour force is essential for improving overall project delivery and achieving organisational excellence. This moves beyond traditional approaches to LFM and emphasises the importance of the behavioural and emotional capacities of workers. Based on these conclusions, the following recommendations are put forth for managers and stakeholders in the Ghanaian construction industry:

1. Focus on Key EI Factors in Recruitment and Development: Given the high perceived importance of factors like experience, skills, and competencies, alongside the empirical significance of traits such as empathy and social motivation, construction firms should integrate assessments of these emotional intelligence dimensions into their recruitment and selection processes. Furthermore, training and development programs should be designed not only to enhance technical skills but also to explicitly foster emotional intelligence among both site managers and the labour force.

2. Cultivate a Supportive Organisational Culture: This study highlights organisational culture as a significant factor influencing emotional intelligence. Leaders should proactively work to create a work environment that values and encourages emotional intelligence, promoting open communication, empathy, and mutual respect among team members.

3. Recognise the Influence of Personal Background: While organisational interventions are crucial, the findings underscore the lasting impact of personal factors like family background and maturity on emotional intelligence. While firms cannot change these backgrounds, understanding their influence can inform management approaches and highlight the potential need for targeted support or mentorship programs to help individuals leverage their strengths and address potential challenges.

4. Champion EI from Leadership*:* Project leaders and senior management must champion the importance of emotional intelligence and model emotionally intelligent behaviours. By demonstrating its value, they can encourage its adoption throughout the organisation and integrate a constructive EI philosophy into daily LFM practices.

In summary, this study provides empirical evidence from the Ghanaian context, reinforcing the critical role of emotional intelligence factors in effective Labour Force Management within the construction industry. By understanding and strategically addressing these factors, construction firms can cultivate a more emotionally intelligent workforce, leading to improved performance, productivity, and ultimately, greater project success.

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